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Parents' Perception of Education and Choice of Childhood Activities: Evidence from Pakistan

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We investigate parents' perceptions of various educational systems and their impact on the decision to either send their children to school, or engage them in other childhood activities. Childhood activities are categorised as follows: secular schooling, religious (non-secular schooling), child labour, child labour combined with secular schooling, and leisure (inactivity). The paper uses the household survey data of 2,496 children, 963 households, and 40 villages in Pakistan. A Multinomial Probit Model analysed the impact of various socio-economic variables on the likelihood of choosing an activity for children. Results indicate that the following factors influence the parents' decisions in selection of activities for their children: the parents' level of education, mother's relative authority in household decisions, degree of religiosity of the head of household, beliefs in tribal norms, household income, and proximity to the school. The findings provide insignificant evidence to support the "luxury axiom" hypothesis that children only work when their families are unable to meet their basic needs.

1. INTRODUCTION

The choice between schooling and other childhood activities, such as work (child labour), religious education and staying inactive, are influenced by the trade-offs between future returns, cost of schooling, religious education and present earnings from child labour. Parents prefer to send their children to work at an early age if they believe that the child's work experience will have greater payoffs compared to future earnings from formal schooling (Schultz, 1960; Rosenzweig and Wolpin, 1985; Becker, 1991; Dessy and Pallage, 2001; Cigno and Rosati, 2005; Edmonds, 2007; Dickson, and Harmon, 2011).

Furthermore, Weiner (1991) analysed that in India's context, poor families are more likely to send their children to work than are rich families. The results showed that a ban on child labour positively influenced the distribution of income. Similarly, Baland and Robinson (2000) declared child labour a socially inefficient childhood activity, and suggested that banning it can potentially improve welfare of the whole society. Whereas Asadullah, et al. (2012) found that in the context of rural areas of Bangladesh, madrasah

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enrolment falls as household income increases. At the same time, households holding deeper religious beliefs and those living further away from a secular school, are more likely to send their children to madrasahs.

In countries where schooling for children is not compulsory, the ability and willingness of parents to send their children to school plays a decisive role. For parents, the importance of education may depend on the quality and expected returns from education, as well as compliance with the parents' expectations of the type of available education.[1]

Pakistan presents an interesting case where basic education is compulsory; however, sending children to school for education is not obligatory. Furthermore, critical analysis of the educational history and performance of Pakistan indicates that no government has given this sector the requisite attention. Education in Pakistan is thus suffering from a crisis of quantity, quality, and to some extent, relevance. Numerically, around seven million children from five to nine years of age remain out of the education system, with only 52 percent primary level students enrolled at secondary level, assuming that all of them want to further their education (Lynd, 2007). Hence, the participation rates in secular school education are very low, with high dropout rates and gender disparities when compared with other countries within the region, and countries of a similar economic background around the world. When one compares statistics for literacy rates for Pakistan, the situation is most discouraging and thought provoking.

With the abovementioned dynamics in mind, human capital formation largely depends on parents' attitudes towards schooling and alternate childhood activities. Their perceptions regarding secular versus religious schooling and child labour affect their decision. Gaps in current literature regarding the effect of parental attitudes towards secular versus religious education and its impact on childhood activities motivate this study, which examines the impact of a comprehensive set of child, household, and community attributes, including parental perception on the choice of childhood activities. In Pakistan's context, the presence of multiple educational systems and various alternative activities for school-aged children thwart the target of higher literacy rates and children enrolled in schools.

Understanding Pakistan's future human capital formation depends on understanding factors that affect parent's choices between schooling and other childhood activities. This paper focuses on evaluating child, household, and community level determinants of participation in various childhood activities. Previous studies of childhood activity determinants were based on household survey data categorising childhood activities mainly as education, work, and leisure, excluding other alternative activities (Ersado, 2005; Edmonds, 2007; Hou, 2009).

In compliance with the existing trends of childhood activities in Pakistan, we identify five childhood activity categories: secular schooling, religious (non-secular schooling), child labour, child labour combined with secular schooling and leisure (inactivity). Excluding any of these groups or merging them together does not adequately represent the situation. By considering these five childhood activities, we believe that we have come close to reality and our study contributes to the gap in current literature by exhausting the entire list of activities.

[1]Secular education is offered by public and private institutions, whereas, religious is offered by private institutions only.

Furthermore, this study also revisits the results of Andrabi, et al. (2006). Their study showed that in Pakistan's context, parents' justifications for sending their children for religious education, based on household characteristics such as religiosity, appear inadequate. In the same study, the authors found that most of the households enrol at least one child in a religious seminary or *madrassa*[2] for religious education and about 75 percent send their second or third child to a public or private school. Previous studies on child labour show that it has various forms. The common understanding of child labour is a child involved in the labour market, whereas a child working in the family business and/or in their home is usually not considered child labour. Edmonds (2008) found that only a minority of working children are engaged in the labour market.

To the best of our knowledge, previous studies were limited to include only paid child labour because of data limitations. This study uses a broader definition of child labour[3] by including unpaid child labour[4] in the category of child labour. Additionally, there are children who work while attending school. This study treats them in a separate category of childhood activities, and test hypotheses that the various forms of child labour have different scenarios, causes, consequences and solutions.

This paper comprises of five sections.

(1) Introduction
(2) Theoretical Background
(3) Methodology
(4) Results
(5) Conclusion.

2. THEORETICAL BACKGROUND

Children between the ages of five and fourteen year of age, in countries such as Pakistan, are involved in various childhood activities. These activities range from going to school for secular education, going to religious schools or *Madrassas*, getting involved in the labour market (child labour), working in the family business, doing housework, and a combination of these activities. Parents generally decide the set of activities for their children. We assume that parental decisions are guided by the trade-off between the costs and benefits of child activity for the parents, for the whole family, and to some degree for the future of the child (Ahmed, et al. 2013). Sending children to school has a relatively high cost in the beginning. The immediate direct cost of schooling includes school fee, books, uniform, etc. An important consideration for the family is the opportunity cost involved in terms of lost income that the child could have earned when working as a paid child labourer, or working in the family business.

Future benefits to the child and family can be relatively large if schooling (secular or non-secular) gives access to a higher earning potential when the child has finished his/her school. The costs (direct and opportunity) and benefits (present and future) are expected to be different due to heterogeneity in child, household, and community factors. For example, the opportunity cost of a child's education is higher for an impoverished household compared to an affluent household. According to Hilson (2010), even though

[2]Religious school are locally called as *Madrassa.*
[3]See the basic distinctions in ILO child labour standards, Cigno and Rosati (2005).
[4]Children working in their own business or home instead of going to school.

parents value the importance of education for their children, their decision to educate their children might be constrained by the cost, or poor educational infrastructure. Consequently, they decide to send their children into the child labour market.

In Pakistan, school enrolment is also influenced by the type of educational system of the school; a school may allow multiple types of education (secular, religious, or combination) simultaneously (Andrabi, et al. 2006). Actually, the choice of childhood activity may depend on the economic position of the family, parents' formal education, their perception about system of education, future income expectation, and other socio-economic characteristics at the family and community levels.

2.1. Child Characteristics

There is much literature dealing with the gender of a child and its effect on the activity chosen by parents (Alderman and King, 1998; Amin, et al. 2006; Aslam, 2009, 2003; Cigno, et al. 2002; Mahmood, 2011). Cultural norms, as well as return on education cost affects educational opportunities for girls. Since culturally they are destined to be homemakers, girls are limited to basic education, or only household chores instead of proper education. Hence, parents often believe that learning basic skills like reading and writing is enough for girls who are pulled out of school after the first two or three years (Huisman and Smits, 2009; Webbink, et al. 2012).

Girls are more involved in unpaid child labour such as household chores while boys work, either in the family business, or attend school and work concurrently. The age at start of school also plays an important role because an older child is more likely to drop out of school to be put to work. Our hypothesis is that older children might have to participate more in non-educational childhood activities, as the wage for a child increases with his age.

2.2. Household Characteristics

Educated parents value the importance of education and send their children to school (Amin, et al. 2006; Antonovics and Goldberger, 2005; Tansel, 1997; Behrman, 1999; Walque, 2009; Dustmann, 2004; Ermisch and Francesconi, 2001; Handa, 1996; Mukherjee and Das, 2008; Dos Santos and Wolff, 2011). The established theories regarding household wealth reveal that children from a poor socioeconomic background are less likely to enroll in school. They tend to be in the work force more as compared to those from an affluent background (Basu and Tzannatos, 2003; Basu and Van, 1998; Bourdillon, 2006; Huisman and Smits, 2009; Goulart and Bedi, 2008; Suryahadi, et al. 2005). Children from the poorest families are more likely to stay inactive because of the difficulties that these households face in getting access to schooling as well as the child labour market.

Heads of households of a younger age may prefer secular education for their children as compared to older individuals, who show a preference for religious education. Along with other socio-economic factors, the parent's value and belief system also determines the level of investment in the education of a child or participation in other childhood activities. Religious values predominantly shape the decisions, particularly if the curriculum is not compatible with the parents' religious beliefs (Buchmann, 2000).

Furthermore, a child's ability to find gainful employment after completing his education is likely to play a role in the parent's decision. Therefore, parents' investment in the education of their children still depends on their hope of increasing future income potential.

An important dimension is maternal education, which may contribute to an increasing role of mothers in the decision making process which may be expected to improve children's well-being, health and school enrolment (Basu, et al. 2010; Emerson and Souza, 2007; Handa, 1994; Huisman and Smits 2009; Smits and Gündüz-Hosgör, 2006). Cultural norms also play an important role in determining the economic position of women and, subsequently, in their participation in a family's decision regarding their child's education (Webbink, et al. 2012). We hypothesise that educated mothers are likely to have relatively more authority in the decision making process, which may in turn, lead to a positive effect on a child's probability in going to school.

2.3. Community Characteristics

Previous studies on the subject underscored that parental decision on the choice of childhood activities also depends on community characteristics (Behrman and Birdsall, 1983; Brasington, 2002; Brasington and Haurin, 2005; Huisman and Smits, 2009; Webbink, et al. 2008). Studies indicate that, at the community level, availability of schools in the neighbourhoods, especially for girls, quality of education, level of development, and degree of urbanisation are relevant factors affecting parents' choice of childhood activities in urban and rural areas (Tansel, 2002; Alderman, et al. 2003; Stair, et al. 2006). In urban areas, generally, educational services are better in terms of quality, with less cultural restrictions that influence parents' decision to opt for school education.

3. METHODOLOGY

The decision to participate in childhood activities is simultaneous in nature. A simple analytical model presented by Edmonds (2007) is modified and used in this paper to analyse factors affecting this decision making process. In utility maximising household models, heterogeneity exists because of differences in child variables (school, age and gender), household variables (income, education level, age, and parents' perceptions of education), and community variables (school quality, proximity to school, expected future returns from the labour market).

The factors determining child's education and alternative activities consider an overlapping generation model[5] that consists of two periods. For simplicity, we model a household with one parent, one child, and two periods S^o and S^*. The household *i* utility representation is,

$$U = (S^0, S^*) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

where, S^o is the current standard of living of the family for a given household, child, and community (*hh*, *ch*, and *com*) characteristics, in a given time. S^* represents future standard of living of the child and household subject to the activity decision in the original period S^o. The decision of the parents regarding their children's activities is

[5]See the work of Allais (1947), Samuelson (1958), Diamond (1965), Barro (1974), and Emerson and Knabb (2006).

influenced by *hh*, *ch*, and *com* variables. Edmonds (2007) considered four childhood activities: education, leisure and play, work outside the household and work inside the household. However, in the context of this study, we define five categories of 'children time spending activities' which include secular education (S_e), religious education (R_e), engagement in child labour ($C_{l,}$), combination of child labour and secular education (W_s),[6] and inactivity[7] (S_{in}). Parents are responsible for choosing one of these childhood activities. For simplification, the model can be formulated as,

$$S_s + R_s + C_l + W_s + S_{in} = 1 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Edmonds (2007) named the fifth category as leisure and play; in the context of this study, we label this "inactivity", meaning that compared to the other four categories the children in this category are not involved in any productive activity. Superior knowledge and skills are developed if the child defers consumption of inactive time during the day and invests some of that time in acquiring education. Such an investment may lead to better outcomes (higher wage, higher social status etc.) in the future. Therefore, full time leisure is referred to as 'inactivity' in this study.

In some cases, children may be neglected because of their social and/or economic status. However, the 'inactivity' may not be the keenly chosen 'activity' by the parent and this may be the *ad hoc* choice that parents are forced to adopt due to poverty or other social constraints.

In another departure from the Edmonds model, we merge 'wage' and 'non-wage' child labour into one category. Utility maximisation strategy of the head-of-household (*hhh*) with given constraints in the period S^o will provide a relevant theoretical framework to fulfil the needs of this study. By adding one more category in the context of Pakistan "*Ws*", this model comprehensively captures the determinants of demand for secular education and alternative activities, with a given set of independent variables that describe household, child, and community characteristics.

The current standard of living of the *hh* in the time period S^o can be captured by a linear homogenous production function that depends on current consumption *c*, and input of the child's time *T* to *hh*.

$$S^0 = f(c,T) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

The standard of living of the child and family in the next generation S^* will depend on the degree of human capital formation in the current period S^o. Human capital formation will depend on the amount of time spent in formal education versus alternative activities and is positively related to secular education. The welfare production function of child is specified as follows:

$$S^* = f(S_e) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (4)$$

When a child participates in secular education, in addition to direct costs, there are also opportunity costs and inherent time constraints. The opportunity cost of education is the remuneration that a child foregoes while attending either a secular school or a religious

[6]In Pakistan, when a child is enrolled in *Madrassa* for religious education, it is a full time enrolment thus he/she is not allowed to participate in any other type of activity. That is why ($C_{l,} + R_{e)}$ or ($S_e + R_e$) is not possible in this context.

[7]The 'inactivity' refers to idleness that means neither working nor attending any types of (secular and non-secular) school, excludes those engaged in any sort of regular intra-household services

school. The cost of education denoted by e ($Se + Re$) is the forgone consumption in hh in the period S^o, which includes both the direct cost (such as school fee) and opportunity cost of education. In contrast, if the child is working, this will enhance household consumption by wC_l, in the period S^o. With a given income Y, the consumption function of the household is given by,

$$c = Y + wC_l - e(S_e + R_e) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (5)$$

Where w is the wage rate for child labour. Substituting Equation (5) into (3), the household standard of living in the current time period S^o with the time input of the child is given by,

$$S^0 = f[\{Y + wC_l - e(S_e + R_e\}, T] \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (6)$$

In this situation, the head of the household will choose an activity set for their child depending on the marginal utility of each alternative activity. The utility maximisation equation of household head is given as,

$$MaxU(S^0; S^*)0 = MaxU_{Se,\ Re,Cl,Ws,}\ \sin[S^0\{Y + WC_l - e(S_e + R_e), T\}; S^*(S_e)] \quad \ldots \quad (7)$$

Subject to:

$$S_e + R_e + C_l + W_s = S_{in} = 1 \quad \text{and } S_e \geq 0;\ R_e \geq 0;\ C_l \geq 0;\ W_s \geq 0;\ S_{in} \geq 0$$

If a child goes to school:

$$S_e = 1 = \frac{\partial U}{\partial S^*}\frac{\partial S^*}{\partial S_e} \geq \varphi + \frac{\partial U}{\partial S^0}\frac{\partial S^0}{\partial C}e \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (8)$$

In this case, the parent's marginal utility gained through human capital formation of their child from an additional year of secular school education is greater or equal to the parent's foregone utility as a result of schooling costs and marginal utility of time φ in other activities.

If a child participates in religious education:

$$R_e = 1 = \frac{\partial U}{\partial S^*}\frac{\partial S^*}{\partial R_e} \geq \varphi + \frac{\partial U}{\partial S^0}\frac{\partial S^0}{\partial C}e \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (9)$$

If a child is engaged in child labour:

$$C_l = 1 = \frac{\partial U}{\partial S^0}\frac{\partial S^0}{\partial C_l}w \geq \varphi \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (10)$$

If a child is working and attending secular school at the same time:

$$W_s = 1 = \frac{\partial U}{\partial S^*}\frac{\partial S^*}{\partial W_s} \geq \varphi + \frac{\partial U}{\partial S^0}\frac{\partial S^0}{\partial C}e \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (11)$$

If a child is inactive:

$$S_{in} = 1 = \frac{\partial U}{\partial S^*}\frac{\partial S^*}{\partial S_{in}} \geq \varphi + \frac{\partial U}{\partial S^0}\frac{\partial S^0}{\partial C}e \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (12)$$

Marginal utilities of schooling and alternative activities depend on a vector of different factors that can be separated into three groups: child, household, and community variables. The structural form of the equation is specified as,

$$H_{se,R_e,C_l,W_s,S_{in}} = f(hh, ch, com) \quad \cdots \quad \cdots \quad \cdots \quad \cdots \quad \cdots \quad (13)$$

The empirical analyses are based on the childhood activity choice equation of household stated above.

3.1. Description of the Data and Variables

Field surveys were conducted in all four provinces of Pakistan (Baluchistan, Khyber Pakhtunkhwa (KPK), Punjab and Sindh). Within the KPK province, Federally Administered Tribal Areas (FATA) were not covered due to political insurgency at the time when the survey was conducted. A questionnaire was structured, tested in pilot areas and revised for improvements based on feedback.

The survey was conducted in 43 urban and rural settings from August to December 2009, by a team of 40 students from Baluchistan University of Information Technology, Engineering and Management Science (BUITEMS), Quetta, Pakistan. Using a multistage stratified random sampling design, 963 heads-of-household were interviewed and data on 2,496 children was collected.

Provinces were taken as a natural stratification of the whole target population. This is appropriate and advantageous in respect to the precision of the results, as the four provinces are very heterogeneous in terms of socio-economic development. In the next stage, each province was divided into its main socio-political and geographical characteristics, i.e. northern, southern, upper, lower, highland, coastal, and covered with practically opened and definitely closed international borders, etc. to cover all types of heterogeneity in the data.

Hence, along with the population of each province other variables such as total geographical area, literacy rate and HDI were also taken into account. Information on population, geographical area, literacy rates and the HDI of each province were taken from the published national statistics of Pakistan.[8] Based on the aforementioned socio-economic factors, in the second stage of sampling, 43 areas from the four provinces were selected. Thus, oversampling was intentionally conducted with regards to the features of special interests (low literacy, less development, and geographical area). Therefore, the sampling is disproportionate in terms of the population of the country.

In the third sampling stage, stratification was conducted on the basis of household characteristics within these 43 areas, and resulted in 963 households with 2,496 children. Because of this disproportional multistage stratified random sampling technique, it is possible to gain a deep understanding of the problem of education and literacy in Pakistan.

Moreover, it is noteworthy that the data in this study is comparable to the national statistics in terms of broad patterns,[9] such as the participation rates of school-attending children aged 5 to 14 years of age in rural and urban areas (see Table 1). The difference between this survey and the national survey (PSLM) is around three average percentage points for overall school enrolment rates.

[8]See GoP (1998) and http://en.wikipedia.org/wiki/Administrative_units_of_Pakistan.

[9]See, PSLM 2008-09.

Table 1

Comparison of School Participation Rate of Survey Data with PSLM Data

Categories		*SPR (%) Survey Data 2009	~SPR (%) PSLM (2008-09)
Rural	Boys	69	68
	Girls	43	47
Urban	Boys	83	85
	Girls	76	81

*School Participation Rates (SPR) for children age 5-14 years.

A detailed description of the selected household, child, and community variables used in this paper is given in Table 2. The selection of variables was based on relevant theory and comparison of post analysis estimation of Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) values for alternative models. While comparing alternative models, special care was taken not to lose any important information.

Most of the independent variables are self-explanatory, while a few need further explanation. During the survey, parental perception regarding school education was measured by asking questions on the impact parental expectation from secular education could have on their child's future earnings. This is equivalent to testing hypothesis of Future Income Expectation (FIE) on the compatibility of secular school education with religious values Religious Compatibility Perception (RCP). In the survey, we asked parents "Do you think that acquiring secular school education will ensure greater future income for your child as compared to all other available alternative childhood activities?" to assess FIE. The RCP was a dummy variable with a 'Yes or No' response to a question "Do you think that secular school education is compatible with your religious values".

This paper measures the degree of religiosity of head-of-household, variable *degreg, as* an index number. The index for the degree of religiosity was constructed by collecting information on the regularity with which the head-of-household performs religious prayers, such as, *Nemaz,*[10] and *Vedic Sandhya*.[11] Accordingly, the numbers are assigned from zero to five in each case for the head-of-household, respectively. For example, in case of a Muslim household-head who prays regularly with *jamath,*[12] prays daily regularly but not with *jamath*, prays daily but irregularly, prays only on Fridays and *Eid,*[13] prays only on *Eids,* and never prays, were assigned the numbers 5,4,3,2,1, and 0, respectively.

If the household head believes in Hinduism, the degree of religiosity is measured by the regularity of the prayer, *Vedic Sandhya*. The categories are: prays regularly in the Temple or *Minder*[14], prays daily but at home, prays daily but irregularly, prays regularly on religious festivals, prays sometimes on religious festivals and never prays, were assigned the numbers 5,4,3,2,1, and 0, respectively.

[10]It means prayer, for Muslims it is obligatory to pray five times a day.

[11]Name of the prayer in Hindu religion, for Hindus it is mandatory to pray two times in a day.

[12]Pray in Mosque following the *Imam.*

[13]A religious festival of the Muslim.

[14]A place where the Hindus perform their religious prayers.

Social factors such as belief in tribal norms by the household head is measured by asking questions on the belief in tribal norms and a dummy variable is used for empirical analysis to distinguish those who believe in tribal norms and otherwise.

The variable (btn) is used to distinguish household-heads who believe in tribal norms from those who do not follow the tribal norms. Here, we were expecting the incidence of gender discrimination in households where the head-of-household has a belief in the tribal norms. The variable *resgap* is used to measure the average annual result gap of the nearest public and private schools in the community. For this purpose an average of previous year results for fifth, eighth and tenth standard of both types of the schools are taken to obtain their performance gap.

Table 2

Description of Variables Used in the Study

	No.	Variables	Description	Mean	Std. Dev.	Min.	Max.
Dept. Variable	1.	Child activity	Only school education (56.8%), Only religious education (14.3%), Only child labour (17.4%), School education and child labour (8.6%), and inactivity (2.9%)				
Household Variables	2.	Lndpcainc	Log value of daily per-capita household income	4.4	0.62	2.6	6.9
	3.	Hhhedu	Years of formal education successfully completed by the head-of- household	6.5	5.7	0	18
	4.	Medu	Years of formal education successfully completed by the mother of the child	2.9	4.2	0	16
	5	Hhhage	Age of the head-of- household	45.0	8.9	31	84
	6.	FIE (categorical)	Future income expectation of the hhh will increase: Disagree (29.9%), Ambivalent (20.4%) and agree (49.7%)				
	7.	RCP (categorical)	Religious compatibility perception of the hhh; Dissonant (17.2%), Ambivalent (37.2%) and compatible (45.6%)				
	8.	Degreg	Degree of religiosity of head-of- household (0 to 5, 5 being the highest)	3.4	1.2	0	5
	9.	Dagr (dummy)	Occupation of the hhh; *dagr* =1 if the hhh's occupation is agriculture and 0 if otherwise	0.29	0.45	0	1
	10.	rmdecm (dummy)	Role of child's mother in decision making; 1 = if mother has a role in decision making, and 0 if otherwise	0.3	0.5	0	1
	11.	btn (dummy)	Household-head believes in tribal norms = 1, and 0 if otherwise	0.53	0.49	0	1
Child Variables	12.	nchhh 5 to 14	Number of children 5 to 14 years of age in the household	3.06	1.17	1	9
	13.	Chage	Age of the child (when considered for school)	10.1	2.6	5	14
Iables	14.	chgend (dummy)	Gender of the child; 1 = if child is a female, and 0 if otherwise	0.5	0.5	0	1
Community Variables	15.	Resgap	Average annual result gap between nearest public and private school	27. 0	8.9	11.5	49.8
	16.	Avdisgirls	Average distance from nearest girls primary middle and high school (in km)	2.5	0.8	1	4.3
	17.	Avdisboys	Average distance from nearest boys primary middle and high school (in km)	2.5	0.9	1	4.0
	18.	Disdistcap	Distance from the district capital (in km)	46.6	47.0	5	225
	19.	rural (dummy)	Location of the area; 1 = for rural areas and 0 if otherwise	0.6	0.5	0	1

3.2. Regression Analysis

Multinomial probit (MNP) model is used to analyse the relationship of childhood activities (response variables) with the explanatory variables. There are two reasons for the choice of MNP from the family of models that can be used for the discrete choice model analysis. First, the decision of childhood activity is simultaneous; therefore, one needs a multinomial model to explain the determinants of childhood activity. Second, MNP does not impose the Independence of Irrelevant Alternatives (IIA) assumption (Greene, 2003).

The IIA property imposes the restriction that the relative odds of selecting between any two activities should not be dependent on the number of alternatives. However, in case of the choice of childhood activity, these are dependent, such as if there is a legal ban on child labour; the relative odds of choosing religious education, secular schooling, or inactivity will be changed. In the same way, a legal ban on religious education or other activity would also influence the relative odds of choosing alternatives.

These relationships were also confirmed by the results of a Hausman Specification test as childhood activity is a behavioural outcome and that behavioural phenomenon may sometimes violate IIA assumptions.

Arguably, we selected MNP as a benchmark methodology. The base line model takes the following form,

$$\boldsymbol{Y_{in}} = \begin{vmatrix} \mathbf{1} \\ \mathbf{O} \end{vmatrix} U_{in} \geq U_{jn}, j = 1, 2, \ldots\ldots\ldots, j \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (14)$$

Y_{in} Implies choice observed, households (n = 1, 2,…….., N) choose the child activity i = 1, 2, 3……., j which yield the greatest utility, U_{in} is unobservable random variable showing the utility perceived by the parents, $U_{in} = \beta X_{in} + \varepsilon_{in}$, X_{in} is a vector of (1 x k) factors (household, child and community) influencing the parents' decision of childhood activity options and i = 1, 2, 3……., j, β is a parameter variable to be estimated, and ε_{in} is the error tem. The empirical form of the model is as follows,

$$P\left(Y_{ij} = j\right) = \frac{e^{\beta X_{in}}}{\sum_{j=1} e^{\beta X_{in}}} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (15)$$

or It can be expressed as,

$$pr(childactivity = j) = \int_{-\infty}^{\beta X_1} \ldots\ldots \int_{-\infty}^{\beta X_{j-1}} f(e_{i1} \ldots\ldots e_{ij-1}) de_{i1} \ldots . e_{ij-1}$$

Where j = 1 is attending secular school, j = 2 is attending religious school, j = 3 is child labour, j = 4 is the combination of secular school attendance and child labour, and j = 5 is inactivity.

Moreover, the MNP model coefficients express the amount of change in the z-score or probit index for each unit of change in the predictor. The sign of each coefficient describes the effect of each variable on participation in that activity relative to the base outcome category. The category of secular school attendance is considered as the base outcome with which the probabilities of estimated coefficients of the other child activities can be compared. The choice of omitted category does not change the basic results; it only changes the basis of reference for the interpretation of the results. The MNP estimates of the determinants of household choice of childhood activity are presented in the Table 3.

Table 3

Multinomial Probit Model: Coefficient Estimates of Child's Activity Choices

Covariates	Religious Education	Child Labour	Working and Schooling	Inactivity
Log value of daily per-capita household income	-0.063	-0.323**	-0.514***	-1.008***
(measured in Pak. rupee)	(0.125)	(0.123)	(0.133)	(0.223)
Years of school education successfully	-0.030	-0.092***	-0.111***	-0.140***
completed by head-of-household	(0.018)	(0.020)	(0.019)	(0.043)
Years of school education successfully	-0.058*	-0.065	-0.181***	-0.121
completed by mother of the child	(0.030)	(0.051)	(0.038)	(0.093)
Age of head-of-household	0.016*	0.011	0.027***	0.020
	(0.007)	(0.008)	(0.008)	(0.011)
Perception regarding impact of secular				
schooling on future earnings of a child – FIE[a]	-0.783***	-0.921***	-0.274	-1.529***
(disagree vs. ambivalent)	(0.165)	(0.171)	(0.190)	(0.273)
Perception regarding impact of secular				
schooling on future earnings of a child – FIE[b]	-2.247***	-2.838***	-1.203***	-2.478***
(disagree vs. agree)	(0.214)	(0.273)	(0.239)	(0.383)
Perception on compatibility of secular school				
education with religious values – RCP[c]	-0.860***	-0.080	-0.371	0.275
(dissonant vs ambivalent)	(0.163)	(0.185)	(0.210)	(0.253)
Perception on compatibility of secular school				
education with religious values – RCP[d]	-2.406***	-0.446	0.073	0.178
(dissonant vs compatible)	(0.244)	(0.248)	(0.246)	(0.316)
Degree of religiosity of the head-of-household	0.271***	-0.116*	-0.280***	0.053
	(0.070)	(0.061)	(0.065)	(0.090)
Occupation of the HHH (dagr = 1 if the HHH's	-0.365*	0.339*	-0.058	0.082
occupation is agriculture and 0 if otherwise)	(0.159)	(0.152)	(0.168)	(0.222)
Role of mother in *hh* decision making (rmdecm				
= 1 when mother has role in decision making	0.068	-1.733***	-0.605*	-0.334
and 0 if otherwise)	(0.207)	(0.340)	(0.258)	(0.492)
Household head's belief in tribal norms (btn =1				
if HHH believes in tribal norms and 0 if	0.332*	1.566***	0.577***	0.770*
otherwise)	0.(173)	(0.243)	(0.191)	(0.360)
Child age	-0.037	0.425***	0.475***	-0.235***
	(0.029)	(0.034)	(0.035)	(0.047)
Gender of child (chgend = 1 when child is	0.773***	1.913***	-0.181	0.862***
female and 0 if otherwise)	(0.139)	(0.150)	(0.159)	(0.211)
Number of children 5 to 14 years of age in the	-0.071	-0.157**	-0.275***	0.027
household	(0.052)	(0.059)	(0.065)	(0.070)
Average annual performance gap between local	-0.029	-0.041	0.064**	0.023
public and private schools	(0.023)	(0.023)	(0.025)	(0.031)
Average distance from nearest primary, middle,				
and high school for boys	0.317	0.362	-0.237	-0.125
	(0.210)	(0.224)	(0.240)	(0.288)
Average distance from nearest primary, middle,	0.517**	0.583**	-0.069	-0.534
and high school for girls	(0.198)	(0.209)	(0.221)	(0.311)
Distance from nearby district capital	-0.007***	-0.006**	-0.007**	0.007**
	(0.002)	(0.002)	(0.003)	(0.002)
(Rural) dummy for location	0.321	0.326	0.779***	0.279
	(0.212)	(0.239)	(0.250)	(0.335)

< 0.1*, < 0.05**, and < 0.01***.

Note: The response variable "secular school attendance" is the base outcome category.

Numbers in parentheses are robust standard errors.

[a] Future Income Expectation (FIE), the results compare disagree versus ambivalent.

[b] Future Income Expectation (FIE), the results compare disagree versus agree.

[c] Religious Compatibility Perception (RCP), the results compare dissonant versus ambivalent.

[d] Religious Compatibility Perception (RCP), the results compare dissonant versus compatible.

4. RESULTS AND DISCUSSION

4.1. Estimates of Multinomial Probit

In this part of the analysis, the outcome measured is the probability of the chosen childhood activity and its relationship with household, child and community characteristics using the Multinomial Probit model. The MNP estimates of the determinants of household choice of childhood activity are presented in Table 3. The category of secular school attendance is the base outcome with which the probabilities of estimated coefficients of the other child activities are compared. The choice of omitted category does not change the basic results; it only changes the basis of reference for the interpretation of the results.

The MNP model coefficients express the amount of change in the z-score or probit index for each unit of change in the predictor. The sign of each coefficient describes the effect of each variable on participation in that activity relative to the base outcome of attending secular school. For example, the daily per capita income results show that income has a statistically significant negative impact on inactivity, working and attending school, and child labour compared to secular school attendance. Hence, with all other factors constant, an increase in the daily per capita income of the household reduces the probability of participation in these three activities compared to secular schooling.

The results also highlight that the head-of-household's duration of secular school education plays an important role in the probability of children attending secular school. *Ceteris paribus*, an increase in head-of-household education reduces the probability of participation in other than school going activities. Similarly, maternal education plays a statistically significant role in decreasing participation in religious education compared to secular. The significant and positive coefficients for the age of the head-of-household indicate that older parents are more likely to choose activities other than attending secular school. The head-of-household's age effect is not statistically significant with regard to only child labour and inactivity.

For FIE, the "disagree" response (among the three options of "disagree", "ambivalent", and "agree") is used as the reference category. In the first row of FIE perception, "disagree" is compared to "ambivalent", whereas in the second row of FIE "disagree" is compared with "agree". Statistically significant FIE results show that any positive change (from disagreement to agreement) in this perception reduces the probability of a child participating in alternatives to secular school attendance. A comparison of the coefficients for alternative childhood activities shows that these effects are greater for child labour, followed (in decreasing order of effect) by inactivity, religious education, attending secular school while working.

In the case of RCP, "dissonant" was selected as the reference category. The first row of RCP compares the results between "dissonant" and "ambivalent"; in the second row, a comparison of "dissonant" and "compatible" is shown. The RCP results show that the perception of consistency between secular schooling and faith reduce the probability of participation in religious education. The magnitude and significance of the levels of the estimated coefficients illustrate that the probability of choosing participation in religious education is linked with the perception that school education is dissonant with religious values.

This study shows that the active participation of mothers in household decision-making processes had a negative effect on the probability of selecting non-secular school activity options such as child labour, working and attending secular school and remaining inactive. Additionally, the probability of engaging in both types of child labour and remaining inactive also increases in households where the head strongly believes in tribal norms.

Multinomial probit estimates for the age of a child show that compared to secular school attendance, as the age of a child increases, so does the probability of being engaged in child labour, and combined work and school attendance. On the other hand, an increase in the child's age has a negative effect on the probability of choosing religious education or inactivity. The results on the gender of a child reveal that being a girl significantly increases the probability of being engaged in child labour, followed by inactivity and religious education, in comparison to secular school attendance.

The quality of secular education in public schools compared to private schools is measured by the gap of the average annual results of both types of schools in the community. The previous year's results for fifth, eighth, and tenth class from the nearest public and private schools were used for this calculation. The average annual results of private schools were higher than public schools. Therefore, an increase in the performance gap indicates a decline in the quality of education in public schools compared to private schools. Positive and statistically significant results show that an increase in the performance gap between public and private schools increased the probability of participation in working and attending school.

Furthermore, the study reveals that on average an increase in the distance from the nearest school for both girls and boys increases the probability of engaging in child labour and religious education when compared to secular schooling. The levels of significance of the results are higher for female children than their male counterparts. The effects of location on the selection of childhood activities are measured by two other community characteristics: distance from the nearest district capital and whether households are located in an urban or rural area. The results suggest that the increasing distance from the capital has a statistically significant negative effect on the probability of participating in religious education and combined work and schooling, and a significant positive effect on the probability of child labour, compared to secular school enrolments. The location of households in a rural setting shows a positive effect on all non-secular school attendance childhood activities, and statistically significant for combined work and schooling.

4.2. Marginal Effects

The dependent variable is the probability of a chosen childhood activity and its relationship with household, child, and community characteristics using the marginal effects on childhood activity selection. Hence, Table 4 presents the results of the marginal effect of explanatory variables on the probability of the selected childhood activity. Our results show that, *ceteris paribus*, a one percent increase in daily per capita income of the head-of-household increases the probability of attending secular schooling and religious education by 3.5 and 2.1 percent respectively, while lowering the probability of 'working and secular schooling' and inactivity by close to three percent.

Table 4

Marginal Effects on the Probability of Selected Child's Activity with Respect to Explanatory Variables

Regressors	Secular School	Religious School	Child Labour	Working and Schooling	Inactivity
Log value of daily per-capita household income (measured in Pak. rupee)	0.035*** (0.011)	0.021* (0.010)	-0.004 (0.009)	-0.026*** (0.008)	-0.025*** (0.006)
Years of school education successfully completed by head-of-household	0.008*** (0.001)	0.003 (0.002)	-0.0031* (0.0016)	-0.005*** (0.001)	-0.003* (0.001)
Years of school education successfully completed by mother of the child	0.011*** (0.003)	0.0001 (0.003)	0.002 (0.005)	-0.011*** (0.003)	-0.002 (0.003)
Age of head-of-household	-0.002*** (0.0006)	0.001 (0.001)	-0.0005 (0.0006)	0.0015** (0.0005)	0.0003 (0.0003)
Perception regarding impact of secular schooling on future earnings of a child – FIE[a] (disagree vs. ambivalent)	0.125*** (0.025)	-0.058** (0.021)	-0.058*** (0.016)	0.028* (0.014)	-0.036*** (0.011)
Perception regarding impact of secular schooling on future earnings of a child – FIE[b] (disagree vs. agree)	0.341*** (0.034)	-0.155*** (0.026)	-0.162*** (0.022)	0.018 (0.020)	-0.042*** (0.012)
Perception on compatibility of secular school education with religious values – RCP[c] (dissonant vs. ambivalent)	0.085*** (0.023)	-0.129*** (0.026)	0.035** (0.013)	-0.0098 (0.012)	0.019*** (0.006)
Perception on compatibility of secular school education with religious values – RCP[d] (dissonant vs. compatible)	0.146*** (0.029)	-0.245*** (0.025)	0.013 (0.018)	0.055*** (0.018)	0.030*** (0.010)
Degree of religiosity of the head-of-household	0.001 (0.005)	0.034*** (0.006)	-0.012** (0.005)	-0.021*** (0.004)	0.0006 (0.002)
Occupation of the HHH (dagr = 1 if the HHH's occupation is agriculture and 0 if otherwise)	0.009 (0.013)	-0.048*** (0.013)	0.045*** (0.011)	-0.010 (0.011)	0.003 (0.006)
Role of mother in *hh* decision making (rmdecm = 1 when mother has role in decision making and 0 if otherwise)	0.057*** (0.019)	0.075*** (0.020)	-0.144*** (0.030)	0.007 (0.020)	0.005 (0.013)
Household head's belief in tribal norms (btn =1 if HHH believes in tribal norms and 0 if otherwise)	-0.074*** (0.014)	-0.034* (0.016)	0.112*** (0.020)	-0.010 (0.013)	0.005 (0.010)
Number of children 5 to 14 years of age in the household	0.015*** (0.005)	0.001 (0.004)	-0.004 (0.004)	0.015*** (0.004)	0.0035* (0.0018)
Child age	-0.020*** (0.002)	-0.021*** (0.002)	0.029*** (0.002)	0.024*** (0.002)	-0.011*** (0.001)
Gender of child (chgend = 1 when child is female and 0 if otherwise)	-0.079*** (0.011)	0.007 (0.010)	0.152*** (0.009)	-0.084*** (0.009)	0.003 (0.005)
Average annual performance gap between local public and private schools	0.00006 (0.002)	-0.003 (0.002)	-0.005*** (0.0017)	0.006*** (0.002)	0.001 (0.0008)
Average distance from nearest primary, middle, and high school for boys	-0.014 (0.019)	0.024 (0.017)	0.032* (0.016)	-0.032* (0.015)	-0.009 (0.008)
Average distance from nearest primary, middle, and high school for girls	-0.039* (0.017)	0.038* (0.016)	0.044** (0.016)	-0.028** (0.014)	-0.025*** (0.008)
Distance from nearby district capital	0.0006*** (0.0002)	-0.0004** (0.0002)	0.0002 (0.0001)	-0.0003 (0.0002)	0.0003*** (0.00006)
(Rural) dummy for location	-0.047** (0.018)	0.009 (0.018)	-0.006 (0.019)	0.044** (0.017)	0.004 (0.009)

*, ** and *** denote statistical significance at < 0.1, < 0.05, and < 0.01 levels.

Note: Numbers in brackets are robust standard errors.

[a] Future Income Expectation (FIE), the results compare disagree versus ambivalent.

[b] Future Income Expectation (FIE), the results compare disagree versus agree.

[c] Religious Compatibility Perception (RCP), the results compare dissonant versus ambivalent.

[d] Religious Compatibility Perception (RCP), the results compare dissonant versus compatible.

Similarly, an increase in household income is associated with a greater increase in the probability of secular school education as compared to religious education.

The results suggest that the category of childhood inactivity is associated with poverty. There are also indications that, compared to "child labour," the category of "combined work and secular schooling" decisions are related to the financial status of households who consider schooling a better option for their child's future productivity. These findings support the broader definition of child labour used in this study, and there is little evidence to support the "luxury axiom" hypothesis that children only work when their families are unable to meet their basic needs (Basu and Van, 1998; Van de Walle and Gunewardena, 2001).

These results have important policy implications. For example, children from poorer segments of society are not able to participate in child labour markets. This is similar to Edmonds, et al. (2010) who found that the poverty elasticity of "inactivity" is greater than the poverty elasticity of market or domestic child labour in Indian households. Furthermore, results suggest that a consequence of poverty is 'working and going to school' instead of only working at an early age.

The Future Income Expectations (FIE) results show that an improvement in the perception of the head-of-household has an inverse relationship with activities such as child labour, joint work-secular schooling and inactivity. Our results also indicate that the perception that secular school education is compatible with religious values increases secular school education and decreases participation in religious education significantly. An increase in the degree of religiosity of the head-of-household is positively associated with an increase in the probability of educational activities, i.e. secular education and religious education enrolment, and negatively associated with child labour and work-schooling joint activity. These results are in line with the findings of Iannaccone (1998), who demonstrated a positive association between the degree of religiosity and human capital formation.

Regarding occupation of the head-of-household, our results show that being a farmer increases the probability of a child engaged in child labour by 4.5 percent while it decreases the probability of being enrolled in religious education by 4.8 percent. Additionally, our results confirm that social factors such as beliefs in tribal norms have an important influence on educational and non-educational childhood activities. We find that children belonging to a household where the head has strong beliefs in tribal norms attend educational activities relatively less and are more likely to be engaged in child labour.

Data collected for this study also provides an opportunity to analyse the role of mothers in the selection of childhood activities. Findings suggest that, *ceteris paribus*, if the mother of a child has a role in household decision-making, the probability of a child attending secular and religious education increases by 5.7 and 7.5 percent, respectively, compared to households where mothers do not have a significant role in decision-making. The role of mothers in household decision-making decreases the probability of a child's participation in labour by 14.4 percent. These findings provide important evidence for the hypothesis that an increase in the bargaining power of women in households with male heads (MHHs) has positive effects on children's education. These findings agree with the study by Handa (1996), which suggested that women place greater emphasis on sending their children to school.

With regard to a child's age before starting any of the activities, a negative and significant association was found between child age and the probability of attending secular school, religious education and inactivity. Furthermore, the results indicate that an increase in the age of a child is associated with an increase in the probability of child labour and "combined work and secular school attendance." Regarding gender, keeping other variables constant, girls have less probability of attending secular school and 'combined work and secular school attendance' compared to their male counterparts. In the case of child labour, girls have 15.2 percent higher probability of being engaged in child labour than their male counterparts. These results shed light on the issue that girls are engaged in non-wage child labour instead of education, especially in rural areas. Our results did not find evidence for madrasa enrolment, as shown by Andrabi et al. (2006) that most of the households enrol at least one child in a madrasa.

Proximity to schools is a necessary condition for the right to education. Results suggest that the further the distance to a secular school, the higher the likelihood for families to send their children for religious education and/or to child labour. For example, keeping other variables constant, a one-kilometre increase in the distance from a secular school increases the probability that a boy is engaged in child labour by 3.2 percent. Distance from a secular school plays a more important role for girls, and providing school facilities closer to girls can significantly reduce the incidence of child labour through increasing secular school enrolment.

5. CONCLUSION

The primary objective of this study is to assess the underlying determinants for parental decisions regarding children's childhood activities. Five childhood activity categories are taken into account: secular schooling, religious schooling, child labour, child labour combined with secular schooling, and inactivity. Our results indicate that affluent families send their children for secular and religious education, while the relatively poor send them to 'combined work and secular school' and children of the poorest are more likely to be inactive. This suggests that poverty is one of the primary reasons behind the decision of parents to allow their children to remain inactive and that extreme poverty causes their exclusion not only from school opportunities but also from the child labour market. While educated parents are more likely to send their children to secular and non-secular schools, younger household heads place greater importance on secular education.

Maternal education and mothers who have a say in household decisions have a significant role in increasing the chances of a child to go to a secular school. Results of the study also show that an improvement in the FIE of household heads increases secular school attendance and the improvement in RCP reduces enrolment in religious education. The degree of the religiosity of the head-of-household increases the probability of religious education enrolments and decreases the probability of child labour. As expected, the probability that a child is engaged in child labour increases if the father is engaged in agriculture and follows tribal norms.

Older children are less likely to participate in secular schooling, religious education and inactivity whereas the probability of choosing 'combined work and secular school attendance' as well as child labour increase with the age of child. For girls, an

increase in age decreases the probability of attending secular school and increases the probability of engaging in child labour, compared to their male counterparts. These results confirm the phenomena of high dropout rates from school and engagement in child labour, especially for girls, as they get older. Our results indicate that distance to the school, poverty, and low literacy rates among women have important impacts on the probability of sending children to secular school. As expected, the findings appear more important in the case of girls compared to their male counterparts.

In families where parents are uneducated, highly religious or poor, with a mother with no say in household decisions, a head of household following tribal norms, and living far away from developed cities, are most likely to send their male children for religious education or child labour and keep female children at home to learn household chores. However, these outcomes decrease with the increase in education levels of the family heads and participation of the mother in household decisions.

These results may suggest that creation of a proper, uniform, and effective system for basic education should be available and accessible to all, without any discrimination. Proximity of a school, particularly for girls, is important to motivate parents to send their children to school. Adult literacy programs for men and women will play an effective role in increasing the literacy rates of the next generation and will reduce the incidence of child labour.

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Does Job-Satisfaction Cause Life-Satisfaction? New Evidence Using Lewbel Methodology

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While studies on the direction of causality between job satisfaction and life satisfaction are abundant, their evidence is still inconclusive primarily because of the difficulty in finding suitable external instruments. We have constructed internal instruments, using the Lewbel methodology, which satisfy the desirable properties. It is important to determine the direction of causality since the implications for public and labour policies are different depending on the direction. The second contribution of this study is to examine the link between life satisfaction and the twelve aspects of job satisfaction in order to explore whether extrinsic (pay, benefits, and other work conditions) or intrinsic (kind of work) job satisfaction matters. For this purpose, a survey was conducted in Wah Cantt, Pakistan using a sample of 300 respondents. The study findings reveal that there is a bidirectional causality between life and job satisfaction. However, the effect of job satisfaction on life satisfaction is stronger than the effect of life satisfaction on job satisfaction. Mixed results related to causality between twelve aspects of job satisfaction and life satisfaction were found. The paper ends with important policy implications.

Keywords: Life Satisfaction; Job Satisfaction; Aspects of Job Satisfaction; Causality

I. INTRODUCTION

"*Economic things matter only in so far as they make people happier*" Oswald (1997).

For a long time, studies related to happiness or life satisfaction were largely considered a field of psychology and sociology. Generally, happiness and life satisfaction are used as synonyms and both are the most common indicators of subjective well-being (Dolan, Peasgood, and White, 2008). Literature shows that life satisfaction and happiness are highly correlated indicators of subjective well-being (Di Tella, Macculloch, and Oswald, 2003). According to Erdogan, Bauer, Truxillo, and Mansfield (2012), life satisfaction is "*an individual's cognitive assessment of satisfaction with his life circumstances*". Economists started to take a serious interest in this topic after a study by Easterlin (1974). In this study he suggested that the main objective of policy-makers

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should be the maximisation of life satisfaction (happiness) of people rather than maximisation of economic growth. The results of his study show that in the past half century, real income in most developed countries increased many times, but the reported life satisfaction (happiness) level remained the same. This is known as the "Easterlin Paradox".

Easterlin's study introduced the concept of life satisfaction for economists to think about. Over the last decade more than 1500 papers were published in this area (Mishra, Nielsen, Smyth, and Newman, 2014). According to Kaneko (2013), economists are concerned with factors that influence life satisfaction (LS) / happiness. Many economists attempted to explore the determinants of life satisfaction (happiness) and concluded that income, labour market status, job characteristics, health, education, family, social relationships, security, moral values, and religious faith are some of the important determinants of life satisfaction.

Literature reveals that employment is one of the important factors contributing to life satisfaction (Clark and Oswald, 1994; Frey and Stutzer, 2002a; Frey and Stutzer, 2002b). Layard and Layard (2011) says that work is the third most significant factor among seven factors that can influence happiness.[1] As a job is a very important part of an individual's life, it is not possible to separate job satisfaction from life satisfaction. Therefore, in recent years, the link between life satisfaction (LS) and job satisfaction (JS) has received increased attention from researchers. Job satisfaction is defined as ''the positive emotional state resulting from the appraisal of one's job or job experiences'' (Locke, 1976; cited by Aziri, 2011; and Mishra, et al. 2014). Existing studies found that there is a significant and positive association between life and job satisfaction. According to Filiz (2014), a person's job satisfaction relates to life satisfaction because people spend a large proportion of their life at their workplace.

There are three conflicting theories that predict a relationship between these two domains of satisfaction: spillover, compensation, and segmentation theories:

- The "spillover" theory defines how experiences in one domain of life (e.g. work) influence experiences in another domain or overall life. A number of studies have supported the "spillover" theory as that suggests a positive association between life satisfaction and job satisfaction (Parlow, 2010).
- The "compensation" theory describes a mechanism in which activities or experiences in one domain of life (e.g. family) compensate for poor experiences in another domain (e.g. work), while the person tries to balance their effects across the domains.
- The "segmentation" theory refers to a mechanism by which individuals try to separate life domains in order to avoid experiences being transmitted between life domain (e.g. work) and overall life (Dolan and Gosselin, 2000; Drobnič, Beham, and Präg, 2010).

Likewise, Diner (1984) suggests two more theories that are used to understand the casual nature of the relationship between life satisfaction and job satisfaction: the "bottom-up" and the "top-down" approach. The "bottom-up" approach is a situational explanation: a high level of job satisfaction leads to a high level of life satisfaction. The

[1]Krause, A. (2014). Happiness and Work. *Discussion Paper*.

"top-down" approach is a dispositional explanation: life satisfaction has a causal effect on job satisfaction.[2]

Much research examines the with inconclusive results. Studies found a two-way causation between life and job satisfaction (Alghamdi, 2015; Headey and Muffels, 2014; Rode and Near, 2005; Schmitt and Bedeian, 1982). Some studies indicate that job satisfaction caused life satisfaction, but life satisfaction did not cause job satisfaction [Chacko (1983); Orpen (1978)], while other studies posit that life satisfaction has a causal effect on job satisfaction (Judge and Watanabe, 1993; Headey, Veenhoven, and Wearing, 1991).

Some literature documents that different job characteristics have a significant effect on a person's job satisfaction as well as on their life satisfaction. Wages and other important job characteristics, such as occupation, hours of work, job security, and commuting time to work, affect job satisfaction. Among the many factors affecting job satisfaction, job security seems to be the most important (Oswald, 2002). The literature also documents that overall job satisfaction and subjective job characteristics, such as work environment, independence, social usefulness, stress, relationships within workplace, pride, contingent rewards and nature of work have a significant association with the overall life satisfaction of workers (Ahn, 2007; Bowling, Eschleman, and Wang 2010; Drobnič, et al. 2010; Landry, 2000).

Since we know that people spend a significant amount of time at the workplace, we can expect that satisfaction with their job will affect their overall life a great deal. Although there are a number of studies that have analysed the link between life and job satisfaction, there is no study on the direction of causality between job satisfaction, job characteristics and overall life satisfaction for Pakistan in particular. We have found very few studies in Pakistan on this issue: Naz (2015) investigates the relationship between life satisfaction and job satisfaction through correlation analysis. While exploring the relationship between women's autonomy and happiness in Pakistan, Ali and Haq (2006) finds a correlation between female labour force participation and happiness. Hasan (2016) finds a positive impact of income increment on happiness or life satisfaction in Pakistan, using Pakistan Socio-Economic Survey data 2001. Since a job is the main source of income for a majority of the people in Pakistan, this study questions whether people are satisfied with their jobs and lives together.

In our study, we not only examine the relationship between life satisfaction and job satisfaction but also investigate the association between different aspects of job satisfaction and life satisfaction. The research on the relationship between life satisfaction and the different aspects of job satisfaction is theoretically and practically applicable (Mishra, et al. 2014). Theoretically, it provides a better understanding of the fundamental relationship between life satisfaction and aspects of job satisfaction, while practically it helps employers in prioritising and designing intervention and counselling programs (Bruck, Allen, and Spector, 2002).

The direction of causality between job satisfaction and life satisfaction of workers with different socio-demographic variables is also examined, which is significant for both employees and employers. This study would be beneficial for employees to quantify the

[2]Alghamdi, F. S. (2015). Another Look at Job and Life Satisfaction among Employees: Evidence from a Developing Country.

job preferences affecting their performance and productivity. It is helpful for an employer to understand the requirements and preferences of employees so they can better facilitate them for proper utilisation of their skills to achieve efficiency. Measuring life satisfaction of the people is not only important for welfare analysis but also useful for formulating economic policy.

The paper proceeds as follows:

- Section II discusses data and methodology.
- Section III performs descriptive statistical analysis.
- Section IV estimates the model and delineates estimation results.
- Section V summarises the results and concludes the paper with policy implications and recommendations.

II. DATA AND METHODOLOGY

Data and Sample

Primary data is used for this study. A survey was conducted in August 2015 among employees working in various white and blue collar jobs in both public and private sectors in the vicinity of Wah Cantt.

Wah Cantt is a city in the Punjab, a province of Pakistan. It is a cantonment, which means the military administrates Wah Cantt, located in the northwest of Islamabad. It comprises of a population of 0.35 million in a 35 square mile area and is considered an advanced and developed city. Wah Cantt is unique in that all services and facilities, including education, transportation, medication, playgrounds, parks, and markets are provided by the POF (Pakistan Ordinance Factory) to all its employees as well as to all other residents.

In econometric modelling, identifying confounding factors is extremely important. One of the very important confounding factors is quality of life or standard of living in the relationship between job-life satisfactions. However, quality of life is a highly complex, multidimensional, and interdisciplinary concept. There are two ways to control the effect of this confounding factor; one is to collect all indicators of quality of life and include them in the model, and the other is to select a region where the quality of life is same. The first solution is not practical because a small sample size does not allow many variables in the model, and more importantly, our main concern is not the quality of life but the causal link between job and life satisfaction. Therefore, we have resorted to the second solution to control this factor; we chose a city that has more or less the same quality of life so that it does not affect the relationship between life satisfaction and job satisfaction.

The respondent group includes workers that are full-time employees between the ages of 18-65 years (self-employed persons are excluded). The method of selecting a unit of analysis is known as a sampling technique. Two main sampling techniques, probability and non-probability, are available in the literature. Under non-probability sampling, convenience, purposive and quota sampling techniques are used. The purposive sampling technique was employed to select the unit of analysis. Purposive sampling is a non-probability sampling technique in which the researcher uses his judgment when choosing members of the population to participate in the study. It saves time and money (Black, 2010 and Etikan, et al. 2016).

Questionnaires were distributed among 330 employees who met the abovementioned criteria. Out of the 330 questionnaires, 300 were filled and returned, and were used for further analysis. The response rate was 90.09 percent.

Variables Construction

Measurements of Life Satisfaction: Life satisfaction is measured through the personal well-being index (PWI) used by Cummins (2013) . The personal well-being index (PWI) is measured by the seven life domains that are personal health, living standard, personal relations, life achievements, personal safety, future security, and community connectedness. Each domain is rated from a scale 1 to 7 where 1 is 'completely dissatisfied' and 7 for 'completely satisfied'. After getting data on these seven domains we take an average across all domains for each respondent and then convert these results into the standard format of 0 – 100 by using the following formula:

$$\frac{X-K^{min}}{K^{max}-K^{min}} \times 100$$

Where

X is the average of all seven domains that are to be converted.
K^{min} stands for minimum score on the scale that is 1.
K^{max} represents the maximum score on the scale that is 7.

Measurement of Job Satisfaction: Job satisfaction is measured by twelve aspects that are pay, supervision, promotion, contingent rewards, fringe benefits, co-workers, operating procedures, communication, nature of work, job autonomy, training, career development opportunities, and work environment. Each aspect consists of four questions. Thus, job satisfaction is measured by the responses to forty-eight questions. Out of forty-eight questions, thirty-six questions were derived from Spector (1985) to measure the first nine aspects that are listed above. The literature shows that job autonomy, training and career development opportunities, and work environment are also important aspects of job satisfaction and therefore, we use these additional three aspects in our study. The response to each question is rated from 1 to 7 Likert scale where 1 stands for 'strongly disagree' and 7 indicates 'strongly agree'. First, the average of responses to four questions for each component is obtained and then job satisfaction is measured by taking a grand average of all aspects. Finally, job satisfaction is converted into the standard format of 0 – 100 by using the above formula. The results of the test show a scale reliability coefficient of 0.8929 that indicates a high internal consistency of our scale.

Control Variables: The literature on this issue reveals that life satisfaction and job satisfaction are also affected by other variables such as personal income, household income,[3] education, age, job experience, gender, marital status, spouse's labour market status, number of dependents, household size, and the nature and sector of the job. These variables act as control variables in our study and data is also collected on these variables.

[3]The rationale for including both salary and household income is given below: In the context of culture in Pakistan, we largely have a combined family system. When looking at the effect of salary on job-satisfaction or life satisfaction, it is necessary to control for the effect of household income since economic *a priori* criteria should always be preferred to statistical criteria (see Koutsoyiannis, 1977, p. 25). Moreover, the simple and partial correlation coefficients between salary and household income are not high.

Model

To examine causal relationship between life satisfactions and job satisfaction satisfactions, we use the following two equations:

$$LS = X'\beta_1 + JS\gamma_1 + Z'\delta_1 + \varepsilon_1 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

$$JS = X'\beta_2 + LS\gamma_2 + Z'\delta_2 + \varepsilon_2 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Where LS is life satisfaction and JS is job satisfaction, X' is the set of socio-demographic variables such as age, gender, marital status, education, income, job experience, spouse's labour market status, number of dependents, size of family, type of job and sector of job, ε1, ε2 are errors terms and Z' is a vector of instrumental variables.

Similar to the examination of causal relation between different aspects of job satisfaction with life satisfaction and job satisfaction by using following equations:

$$LS = X'\beta_1 + AJS'\gamma_1 + Z'\delta_1 + \varepsilon_1 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

$$CJS' = X'\beta_2 + LS\gamma_2 + Z'\delta_2 + \varepsilon_2 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (4)$$

Here LS is life satisfaction and AJS' is a vector of twelve aspects of job satisfaction including pay, supervision, promotion, contingent rewards, fringe benefits, co-workers, operating procedures, communication, nature of work, job autonomy, training and career development opportunities and work environment.

Methodology

The main objective of the study is to examine the direction of causation between job satisfaction and life satisfaction and explore the relationship between various aspects of job satisfaction and life satisfaction. Mishra et al. (2014), instrumental variable (IV) regression technique is used to check causality between the variables of interest. However, suitable instrumental variables in observed data are not available since it is hard to find some conceivable variable that affects job satisfaction but not life satisfaction and vice versa. It is possible that the estimated link between life and job satisfaction is sensitive to the selection of particular instrumental variables. Due to unavailability of external (observed) instrumental variables, Lewbel (2012) suggests internal instrumental variables created using the heteroskedasticity present in the data. The advantage of the Lewbel estimation technique is that it uses heteroskedastic covariance restriction to create internal instrumental variables (IV). In our model, we use $[Z - E(Z)]\varepsilon_2$ as an instrument, by assuming that:

$$E(X\varepsilon_1) = 0, \quad E(X\varepsilon_2) = 0, \quad cov\,(Z, \varepsilon_1, \varepsilon_2) \neq 0$$

Due to the problem of heteroskedasticity in ε_j we take a vector of Z as a subset of X containing age, education, monthly salary, household income, experience and household size. Using the above set of instruments, we employ two-stage least squares (TSLS) to estimate the IV regression. We use same set of instruments for all models.

III. DESCRIPTIVE ANALYSIS

Demographic Characteristics

All variables are described in Table 1. The socio-demographic characteristics of all the respondents are presented in Table 2. It shows frequency and percentage distribution of respondents with respect to all socio-demographic variables.

Table 1

Variable Description

S. No.	Variables	Description
1	Age	Age in years
2	Gender	Dummy variable; 1 if male and 0 otherwise
3	Marital status	Dummy variable; 1 if unmarried and 0 otherwise
4	Education	Level of education; primary =1, middle=2, matric=3, intermediate = 4, graduation= 5, post graduate =6, M.Phil. /Ph.D. = 7, others =8.
5	Size of household	Number of family members
6	No of dependent	No. of member below 15 year and above 65 years age
7	Spouse labour market status (SLMS)	Dummy variable ; 1 if working and 0 otherwise
8	Sector of job	Dummy variable; 1 if public sector and 0 if private sector
9	Type of job	Dummy variable; 1 if permanent and 0 if contractual
10	Experience	Categories; 1 if 5 years and below, 2 if 6 to15 years , 3 if 16 to 25years,and 4=if above 25 years
11	Salary (monthly)	Salary range; 1= less than 10,000, 2=10,001 to 20,000, 3= 20,001 to 30,000, 4= 30,001 to 40,000, 5= 40,001 to 50,000, and 6= 50,001and above.
12	Other source of income	Dummy variable; 1 if yes and 0 otherwise
13	Total household income	Range of household income; 1= less than 10,000, 2=10,001 to 20,000, 3= 20,001 to 30,000, 4= 30,001 to 40,000, 5= 40,001 to 50,000, and 6= 50,001and above.
14	SW	Satisfaction with pay
15	SP	Satisfaction with promotion
16	SS	Satisfaction with supervision
17	SFB	Satisfaction with fringe benefits
18	SCR	Satisfaction with contingent rewards,
19	SOP	Satisfaction with operating procedures
20	SCW	Satisfaction with co-workers
21	SNW	Satisfaction with nature of work
22	SC	Satisfaction with communication
23	STD	Satisfaction with training and career development opportunities
24	SJA	Satisfaction with job autonomy
25	SWE	Satisfaction with working environment
26	Job satisfaction (JS)	Calculated by taking average of 12 job satisfaction variables and converted these results into 0 to 100 scale.
27	Personal wellbeing index (PWI)	Calculated by taking average of 7 domains of life for each respondent and converted these results into 0 to 100 scale.

The analysis of data shows that the average age of respondents is 37.29 years. Table 2 shows that 37.33 percent respondents are aged below 30 years and only 15.33 percent respondents are aged between 51 to 60 years old. The table also reveals that 80 percent and 71 percent respondents are male and married respectively whereas 72.44 percent (163) spouses of married respondents are not in the labour force. The majority of respondents (58.3 percent) have higher education (Bachelor's and above) in our sample. About 88.67 percent respondents are working in the public sector and 89 percent respondents have a permanent job. The remaining 11 percent have contract-based jobs. Respondents who have 6 to 15 years job experience represented the majority of the sample at 32.33 percent.

Table 2

Percentage Distribution of Respondents by Demographic Characteristics

Control Variables	Categories	Frequency	Percentage
Age	30 and below	112	37.33
	31-40	77	25.67
	41-50	65	21.67
	51-60	46	15.33
Gender	Male	241	80
	Female	59	20
Marital Status	Unmarried	87	29
	Married	213	71
Education	Primary	1	0.33
	Middle	8	2.67
	Metric	48	16.00
	Intermediate	38	12.67
	Graduate	102	34.00
	post graduate	57	19.00
	M.Phil. , Ph.D.	16	5.33
	Other	30	10.00
Household Size	3 and below	25	8.33
	4 -7	235	78.33
	8 and above	40	13.33
SLMS	not Working	163	72.44
	Working	62	27.56
Sector of Job	public Sector	266	88.67
	private Sector	34	11.33
Type of Job	Permanent	267	89.00
	Contractual	33	11.00
Experience	5 and below	84	28.00
	6-15	97	32.33
	16-25	68	22.67
	above 25	51	17.00
Salary (Monthly)	below 10,000	6	2.00
	10,001 – 20,000	83	27.67
	20,001 – 30,000	73	24.33
	30,001 – 40,000	62	20.67
	40,001 – 50,000	54	18.00
	50,001 and above	22	7.33
Other Source of Income	No	152	50.67
	Yes	148	49.33
Total Household Income	10,001 – 20,000	32	10.67
	20,001 – 30,000	56	18.67
	30,001 – 40,000	57	19.00
	40,001 – 50,000	73	24.33
	50,001 and above	82	27.33

Among all respondents, only 2 percent earn below PKR10,000 monthly, while the majority of respondents (52 percent) earn PKR10,001–30,000 monthly. In addition, 49.33 percent respondents have another source of income. The majority of respondents (51.11 percent) have a monthly of income of PKR40,000 and above.

IV. EMPIRICAL RESULTS AND INTERPRETATION

Here we discuss the IV estimates obtained by using TSLS. Table 3 contains the TSLS estimates with coefficients, standard errors, and P-values. In this table, we are reporting the results of the models in which job satisfaction and life satisfaction appeared as dependent variables alternatively.

Table 3

TSLS Estimates (JS and LS as Dependent Variables Respectively)

Variables	JS as Dependent Variable	LS as Dependent Variable
LS	0.28039***	
	(0.0898)	
JS		1.960977***
		(0.4172)
Gender		
Female	–1.8948	10.1111
	(11.4315)	(22.99115)
Marital Status		
Married	–5.38925	19.43827
	(11.18498)	(25.0005)
Age		–16.8513**
		(7.1778)
Age^2		0.22997***
		(0.0875)
Experience	–1.50482**	
	(0.6361)	
Education	–5.215429*	10.58873*
	2.6708	(6.0475)
Household Size	–6.70234**	–18.96052***
	(3.2309)	(5.2044)
Sector of Job		
Private Sector	25.67784*	–31.9992
	(13.348)	(29.4272)
Type of Job		
Contractual	–23.77844*	30.7314
	(13.4362)	(27.0956)
Salary (Monthly)	14.75618***	23.7334*
	(4.7288)	(12.229)
Household Income	–0.55924	18.68135**
	(5.3823)	(9.02556)
Constant	184.05***	40.33199
	(31.8839)	(178948)

Standard Errors in parentheses.

* / ** / *** indicate level of significance at the 10 percent / 5 percent / 1 percent respectively.

The results show that both job satisfaction and life satisfaction are significant and positive predictors of each other. The magnitude of the coefficient of job and life satisfaction reveals that they have a different effect on each other. When we take job satisfaction as a dependent variable the coefficient of life satisfaction shows that one percentage point increase in life satisfaction causes 0.28 percent increase in job satisfaction. When life satisfaction is taken as the dependent variable the value of the coefficient of job satisfaction indicates that one percentage point increase in job satisfaction leads to 1.96 percent increase in life satisfaction. So we can conclude that the value of coefficients indicates that job satisfaction has a stronger effect on life satisfaction than life satisfaction on job satisfaction as concluded by Alghamdi (2015). These results are also consistent with the "spillover" theory and the "bottom-up" approach.

The effects of other socio-demographic and socio-economic variables on job and life satisfaction are also presented in the Table 3. Gender, when female, has a negative effect on job satisfaction consistent with the findings in Ali and Haq (2006) but it has a positive impact on life satisfaction. However, these results are statistically insignificant. Being a female, the negative effect on job satisfaction is understandable since the majority of working women are in low-paid jobs involuntarily due to financial need. They also have to bear the additional burden of housework while working in a job situation.

The results show that age and age-squared are statistically significant. The coefficient of age and age-squared shows that age is negatively, and age-squared is positively, associated with life satisfaction. That means age has a nonlinear U-shaped relationship with life satisfaction as concluded by many studies (Mishra, et al. 2014; Kaneko, 2013; Degutis and Urbonavicius, 2013). On the other hand, work experience is significantly and negatively associated with job satisfaction.

In addition, education is an important factor that affects both job and life satisfaction. The results reveal that the coefficient of education is significantly associated with both life and job satisfaction. The results of the model where job satisfaction is taken as a dependent variable show that more educated people are less satisfied with a job (a negative association between education and job satisfaction). This result is consistent with Mishra, et al. (2014) and Mottaz (1984). The reason behind this negative association between education and job satisfaction may be higher work values or higher job expectations by highly educated employees. The model where life satisfaction is a dependent variable, the coefficient of education shows that with the increase in education, life satisfaction also increases (a positive effect on life satisfaction). These results are in line with Castriota (2006), Mishra et al. (2014), Lu (2010) and Degutis and Urbonavicius (2013). The reason may be higher expected wage and employment probability, better awareness of life and better health (Castriota, 2006).

The coefficient of household size indicates that household size has a negative and significant relationship with job satisfaction and life satisfaction as concluded by Kaneko (2013). Other variables like the sector and nature of job have no significant effect on life satisfaction. However, both variables have a significant effect on job satisfaction. The coefficient of a sector of the job shows that people who work in the private sector are more satisfied with their job than those who work in public sector. Similarly, the coefficient of nature of job indicates that permanent employees are more satisfied with their job than contractual employees are.

Income is also an important variable that affects both job satisfaction and life satisfaction. In this study, the two variables used are monthly salary and total household income. The results indicate that total household income has an insignificant effect on job satisfaction but has a positive and significant effect on life satisfaction, whereas monthly salary is positively related to life satisfaction but has an insignificant effect on job satisfaction. These results confirm that income has a positive and significant relationship with life satisfaction and job satisfaction. These results support the findings of Iverson and Maguire (2000), Headey and Muffels (2014) and Mishra, et al. (2014).

Table 4 and 5 show TSLS estimates for the association between life satisfaction and twelve aspects of job satisfaction. We use a set of control variables as in Table 2 but in Table 4 and 5, we only present the key variables of interest in our study. These tables present the results of the model in which we disaggregated job satisfaction into its twelve aspects and each of these twelve aspects of job satisfaction is taken as a dependent variable in Table 4, with life satisfaction as a dependent variable in Table 5.

In Table 4, the coefficient of life satisfaction explains that life satisfaction has a positive and significant effect on satisfaction with pay, supervision, fringe benefits, contingent rewards, job autonomy, training and career development opportunities and work environment. These results are consistent with the findings in Mishra et al. (2014), Bowling, et al. (2010), Kantak, Futrell, and Sager (1992) and Mehta (1978). Satisfaction with the nature of work is the only aspect of job satisfaction that is significant at 10 percent, and is negatively associated with life satisfaction. Life satisfaction has an insignificant effect on the four aspects of job satisfaction: satisfaction with promotion, co-workers, operating procedures, and communication.

Overall results, reported in Table 4, show that life satisfaction has a significant effect on all components of job satisfaction, except satisfaction with co-workers, promotion, communication and operating procedures. These results indicate that causality runs from life satisfaction to eight aspects of job satisfaction (pay, supervision, contingent rewards, fringe benefits, nature of work, job autonomy, training and career development opportunities and work environment).

In Table 5 we report Lewbel IV estimates using TSLS in which we use life satisfaction as the dependent variable and twelve aspects of job satisfaction as independent variables separately with the set of all control variables. In Table 5, we only present the results of the main variables.

The results in Table 5 confirm that satisfaction with pay significantly and positively affect the life satisfaction. These results are consistent with Mehta (1978).

Similarly the results also indicate a significantly positive relationship between satisfaction with promotion, supervision, fringe benefits, contingent rewards, operating procedures, training and career development opportunities, work environment and overall satisfaction with life as concluded by Kantak, et al. (1992), Bowling, et al. (2010), Mafini and Dlodlo (2014), Mishra, et al. (2014), and Landry (2000). The results indicate a positive and significant relationship between satisfaction with job autonomy and life satisfaction consistent with the findings in Coad and Binder (2014) and Suppa (2012).

However, results indicate that satisfaction with co-workers, communication, and nature of work have an insignificant effect on life satisfaction. These results are consistent with the findings in Mehta (1978) that suggest nature of work has no

contribution in the life satisfaction of an employee whereas Mishra, et al. (2014) and Bowling, et al. (2010) indicate satisfaction with co-workers and with communication does not influence life satisfaction of an employee.

Table 4

TSLS Estimates (Component of Job Satisfaction as Dependent Variables).

Variables	SW	SP	SS	SFB	SCR	SOP	SCW	SNW	SC	STD	SJA	SWE
LS	.0031**	.0001	.0051***	.0084***	.0044**	.0016	-.0007	-.0019*	-.0013	.0053***	.0042**	.0047***
	(.0013)	(.0014)	(.0013)	(.0014)	(.0017)	(.0016)	(.0011)	(.0012)	(.0014)	(.0017)	(.0017)	(.0016)

Standard Errors in parentheses.

* / ** / *** indicate level of significance at the 10 percent / 5 percent / 1 percent respectively.

Table 5

TSLS Estimates (Life Satisfaction as Dependent Variables)

Variables	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
SW	50.279***											
	(18.201)											
SP		77.691***										
		(20.536)										
SS			89.126***									
			(18.451)									
SFB				73.978 ***								
				(16.389)								
SCR					87.768***							
					(24.751)							
SOP						84.158***						
						(21.642)						
SCW							57.418					
							(50.704)					
SNW								25.466				
								(24.016)				
SC									24.119			
									(25.581)			
STD										71.588***		
										(18.271)		
SJA											69.495***	
											(17.977)	
SWE												71.621***
												(19.549)

Standard Errors in parentheses.

* / ** / *** indicate level of significance at the 10 percent / 5 percent / 1 percent respectively.

V. CONCLUSION AND DISCUSSION

The main objective of our research is to find out the relationship between life satisfaction and job satisfaction and investigate the direction of causality between these two variables. Our results show that both job satisfaction and life satisfaction positively and significantly affect each other. The results also indicate that causality between job and life satisfaction runs in both directions. This bidirectional causality between JS and LS is consistent with Landry (2000), Bowling, et al. (2010), Mishra, et al. (2014), Headey and Muffels (2014) and Headey and Muffels (2014).

Our results are also in line with both the "spillover" theory and valence-expectancy theory. According to the "spillover" theory, experiences at work spill over into the experiences of one's overall life (Dolan and Gosselin, 2000; Judge & Watanabe, 1993). According to Lawler's "valence-expectancy" theory, the causality runs from LS to JS because the high level of satisfaction with a non-working domain of life produces

strong internal control, which leads to high expectation and strong instrumentality beliefs.[4]

On the other hand, if we see the magnitude of coefficient of both job satisfaction and life satisfaction it shows that although, both JS and LS influence each other, the effect of job satisfaction on life satisfaction is stronger than the effect of life satisfaction on job satisfaction as shown also by Iverson and Maguire (2000), Rode (2004) and Alghamdi (2015).

These results are in line with the "bottom-up" approach that suggests employees who enjoy their work show a high level of satisfaction with their life. According to Alghamdi (2015), a job can affect life satisfaction because it provides income, financial support and a sense of identity. However, life can contribute to job satisfaction through providing emotional stability and strong family assistance.

We also investigate the relationship between each of the twelve aspects of job satisfaction and life satisfaction. It is important to analyse this relationship because it provides a clear picture of the relationship between life satisfaction and job satisfaction. The examination of the results reveals that out of the twelve aspects of job satisfaction, seven aspects have a positive and significant relationship with life satisfaction. There is bidirectional causality that runs between life satisfaction and the seven aspects of job satisfaction (paid supervision, contingent rewards, fringe benefits, job autonomy, training and career development opportunities and work environment). These results are also supported by the "spillover" theory and "valence-expectancy" theory.

Satisfaction with operating procedures and promotion supports "spillover" and "bottom-up" approaches. The results indicate that satisfaction with operating procedures and promotion has a positive and highly significant effect on life satisfaction but conversely, life satisfaction has an insignificant effect on both variables. The results show that although satisfaction with the nature of work does not affect life satisfaction greatly, it still has a positive but small effect at 10 percent significance.

This relationship is also supported by "valence-expectancy" theory and "top-down" approach. Life satisfaction, and satisfaction with communication and co-workers have no effect on each other i.e., they are independent, as concluded by Mishra, et al. (2014). These findings are consistent with the "segmentation" theory. According to this theory, individuals try to separate their life domains in order to avoid experiences being transmitted between life domain (e.g. work) and overall life (Dolan and Gosselin, 2000).

If we compare the strength of their relationship, the magnitude of estimates reveals that eight aspects of job satisfaction (pay, supervision, promotion, contingent rewards, fringe benefits, job autonomy, training and career development opportunities and work environment) have a stronger effect on life satisfaction, rather than the effect of life satisfaction on these eight aspects of job satisfaction. Small values of coefficients of life satisfaction show that changes in life satisfaction have a small effect on the eight aspects of job satisfaction. Whereas large values of coefficients of the eight aspects of job satisfaction indicate these aspects strongly influence life satisfaction.

[4]Mishra, V., Nielsen, I., Smyth, R., & Newman, A. (2014). The Job Satisfaction-Life Satisfaction Relationship Revisited: Using the Lewbel Estimation Technique to Estimate Causal Effects Using Cross-Sectional Data: Discussion paper.

Existing literature suggests a strong relationship between life satisfaction and intrinsic job aspects (Mehta, 1978; Steiner and Truxillo, 1987) whereas our results provide mixed support for this relationship. Out of the seven aspects of job satisfaction that have bidirectional causal relation with life satisfaction, four aspects are extrinsic: pay, contingent rewards, fringe benefits, training and career development opportunities, and three aspects are intrinsic: supervision, job autonomy, and work environment. Similarly, satisfaction with communication and co-workers being intrinsic with promotion being extrinsic aspects of job satisfaction, are insignificantly related to life satisfaction.

Policy Implications

The findings of this study have different practical implications as the results show a bidirectional relationship between life satisfaction, job satisfaction and different aspects of job satisfaction. However the effect of job satisfaction, and its different aspects, on life satisfaction is stronger than the effect of life satisfaction on job satisfaction. Hence, it recommends that organisations should guide their workers to deal with issues related to working and non-working domains as well as particularly focus on improving the extrinsic and intrinsic aspects of job satisfaction highlighted in the paper.

Therefore, the recommendations for organisations are to improve employee life satisfaction by adjusting factors of job satisfaction including pay, supervision, promotion, nature of work, contingent rewards, fringe benefits, operating procedures, job autonomy, training and career development opportunities and work environment. This may decrease high job turnover, absenteeism, and unsatisfactory work performance. This reduction leads to enhanced efficiency and productivity of an organisation as both life satisfaction and job satisfaction are positively linked to organisational performance. In addition, the government should develop welfare policies that enhance employee satisfaction with job and life together, particularly focusing on improving labour market conditions.

In future, larger sample and panel data can be used for this type of analysis in order to get more reliable and authentic results that can be generalised for the whole population.

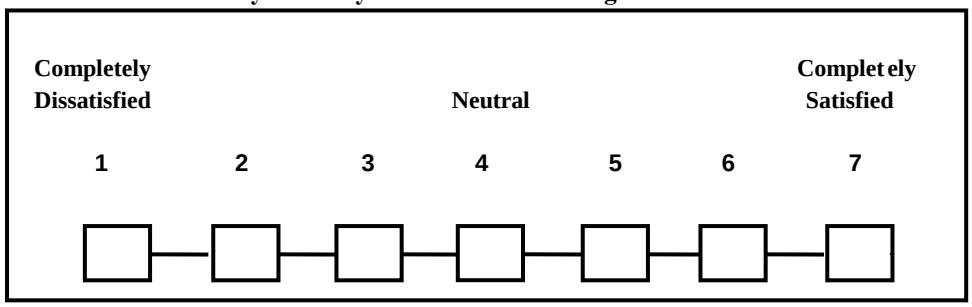
APPENDIX A

Section: JOB SATISFACTION

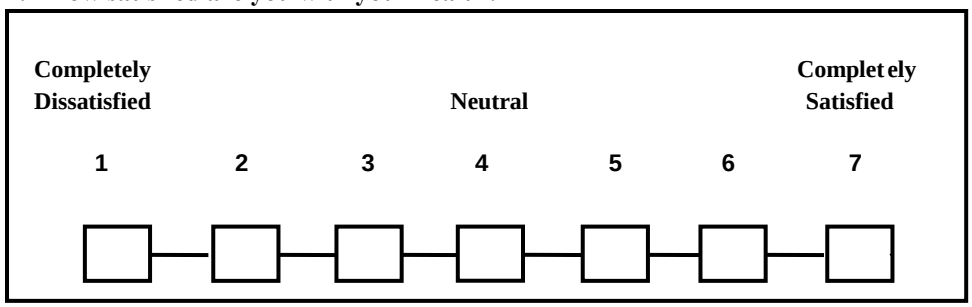
	Please Encircle the One Choice Against Each Question	Disagree, Strongly Disagree Moderately Disagree Neither agree nor disagree Agree, Agree moderately Agree strongly						
	Pay							
1	You feel that you are being paid a fair amount for the work you do.	1	2	3	4	5	6	7
2	You feel satisfied with your chances for salary increases.	1	2	3	4	5	6	7
3	You feel unappreciated in term of pay that you are receiving from the organisation.	1	2	3	4	5	6	7
4	You feel that you are adequately paid compared to your colleagues at other organisations.	1	2	3	4	5	6	7
	Promotion							
5	There is really too little chance for promotion on your job.	1	2	3	4	5	6	7
6	Those who do well on the job have a fair chance of being promoted.	1	2	3	4	5	6	7
7	You feel that you have better Promotion opportunities relative to other organisations.	1	2	3	4	5	6	7
8	You are satisfied with your chances for promotion.	1	2	3	4	5	6	7
	Supervision							
9	Your supervisor is quite competent in doing his/her job.	1	2	3	4	5	6	7
10	Your supervisor is unfair to you.	1	2	3	4	5	6	7
11	Your supervisor is concerned about the welfare of those who are working under him/her	1	2	3	4	5	6	7
12	You like your supervisor.	1	2	3	4	5	6	7
	Fringe Benefits							
13	You are not satisfied with the benefits you receive.	1	2	3	4	5	6	7
14	The benefits you receive are as good as most other organisations offer.	1	2	3	4	5	6	7
15	The benefit package you have is equitable.	1	2	3	4	5	6	7
16	The benefits offered provide security for you and your family	1	2	3	4	5	6	7
	Contingent Rewards							
17	Your organisation offers rewards based on your performance	1	2	3	4	5	6	7
18	Your performance incentives are clearly linked to standards and goals	1	2	3	4	5	6	7
19	Employees are recognised for good work performance	1	2	3	4	5	6	7
20	When you do a good job, you receive the recognition for it that you deserve.	1	2	3	4	5	6	7
	Operating Procedures							
21	Most of the rules and procedures make doing a good job difficult.	1	2	3	4	5	6	7
22	Your efforts to do a good job are seldom blocked by red tape.	1	2	3	4	5	6	7
23	You have too much to do at work.	1	2	3	4	5	6	7
24	You have too much paperwork.	1	2	3	4	5	6	7
	Co-Workers							
25	You like the people you work with.	1	2	3	4	5	6	7
26	You feel you have to work harder at your job because of the incompetence of people you work with.	1	2	3	4	5	6	7
27	You enjoy with your coworkers.	1	2	3	4	5	6	7
28	There is too much bickering and backbiting at work.	1	2	3	4	5	6	7
	Nature Of Work							
29	Sometimes you feel that your job is meaningless.	1	2	3	4	5	6	7
30	You like doing the things you do at work.	1	2	3	4	5	6	7
31	You feel a sense of pride in doing your job.	1	2	3	4	5	6	7
32	Your job is enjoyable.	1	2	3	4	5	6	7
	Communication							
33	Communications seem good within this organisation.	1	2	3	4	5	6	7
34	You often feel that you do not know what is going on with the organisation.	1	2	3	4	5	6	7
35	The goals of this organisation are confusing.	1	2	3	4	5	6	7
36	Work assignments are not fully explained.	1	2	3	4	5	6	7
	Training And Career Development Opportunities							
37	You have an opportunity to develop your own special abilities	1	2	3	4	5	6	7
38	You have opportunity to utilise your skills and talents	1	2	3	4	5	6	7
39	Organisation provide support for additional training and education	1	2	3	4	5	6	7
40	Your job requires that you keep on learning new things	1	2	3	4	5	6	7
	Job Autonomy							
41	you have enough freedom in your position to take independent action when you need	1	2	3	4	5	6	7
42	You have a lot of freedom to decide how to do your own work	1	2	3	4	5	6	7
43	You decide yourself when to take a leave	1	2	3	4	5	6	7
44	Employees in the organisation have necessary authority to perform their duties effectively	1	2	3	4	5	6	7
	Work Environment							
45	Your physical working conditions are good	1	2	3	4	5	6	7
46	You feel physically safe in your work environment	1	2	3	4	5	6	7
47	There is adequate noise control to allow you to focus on your work	1	2	3	4	5	6	7
48	General work area is adequately heated/cooled	1	2	3	4	5	6	7

Section: Life Satisfaction

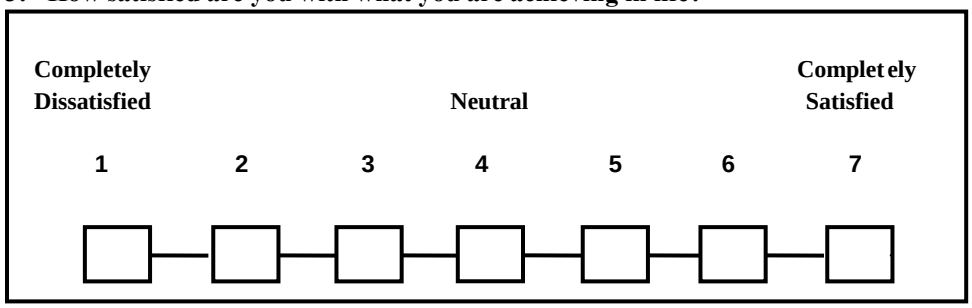
1: "How satisfied are you with your standard of living?"



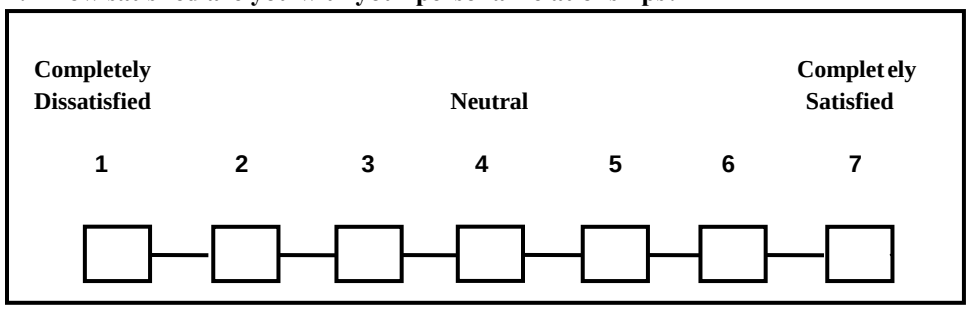
2: "How satisfied are you with your health?"



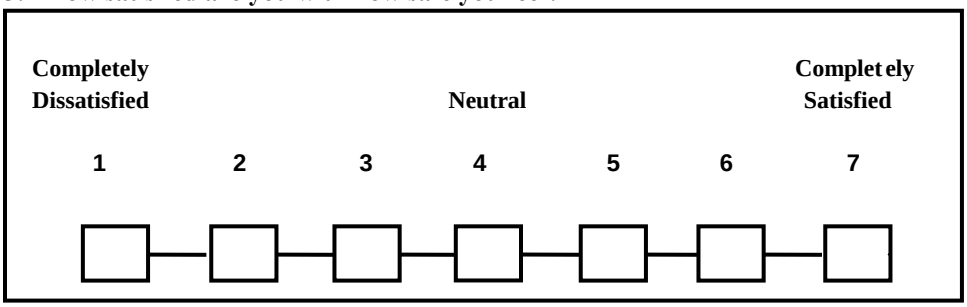
3: "How satisfied are you with what you are achieving in life?"



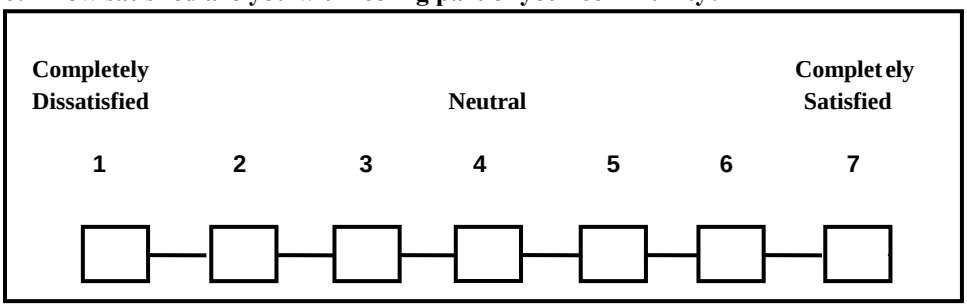
4: "How satisfied are you with your personal relationships?"



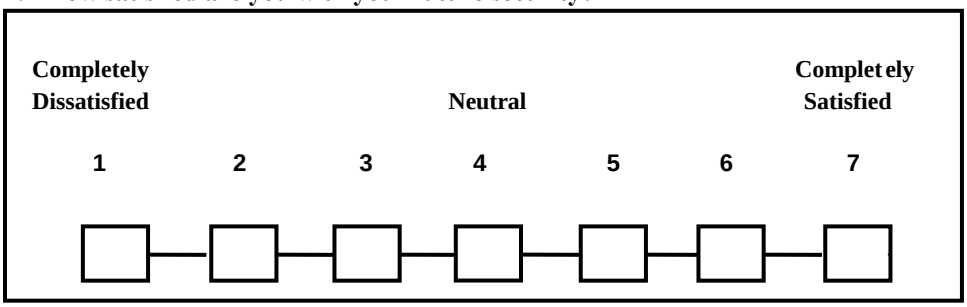
5: "How satisfied are you with how safe you feel?"



6: "How satisfied are you with feeling part of your community?"



7: "How satisfied are you with your future security?"



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Competitive Structure and Bank Loan Rate in Pakistan's Banking Industry

AMIR JAHAN KHAN

This paper estimates the relationship between loan price and the number of banks in the corporate loan markets of Pakistan. An original data set is constructed that includes loan price (interest rate) and market structure (number of banks) in more than 300 geographical markets across Pakistan. Variation in market structure (number of banks) along with variation in borrower and lender characteristics is employed to identify the factors that affect interest rates in loan markets. The findings based on regression result show that a competitive structure influences market price as loan rates decline when the number of banks increase in a market. Although the statistical evidence goes in favour of the structure conduct hypothesis, the findings are not robust across various functional forms. The detailed analysis of the Credit Information Bureau data and institutional details documented in this paper will be a useful reference for further research on the Industrial Organisation of Banking in Pakistan.

JEL Classifications: L10, L11
Keywords: Price-concentration, Loan Price, Industrial Organisation, Banking

1. INTRODUCTION

In this paper, I estimate the relationship between the loan price and number of banks in the corporate loan market of Pakistan. I have constructed an original data set that includes loan price (interest rate) and market structure (number of banks) in more than 300 markets across Pakistan. The constructed loan data set is based on a loan level universe, which includes all loans issued to the corporate borrower between 2006 and 2012 in Pakistan. I utilised variations in market structure (number of banks) along with variations in borrower and lender characteristics to identify the factors that affect interest rates in the loan markets.

The existing literature in the context of developing countries focuses primarily on policy interest rate pass-through and the impact of monetary policy on the interest rates (Edwards and Khan, 1986). However, there is limited information available on how market structure and related characteristics affect loan prices in geographically isolated markets. The analysis in this paper bridges that gap by employing market-level loan data

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to study the price-concentration relationship in the banking industry of Pakistan. To the best of my knowledge, this is the first effort to measure a price-concentration relationship in the Pakistani banking industry at a geographical market level. The findings of this paper can be useful for policy analysis and further research in the industrial organisation of banking in Pakistan and South Asia.

The structure conduct (SC) hypothesis says that an oligopolistic structure of markets results in higher concentration and higher prices for loans or lower prices for deposits (Berger and Hannan, 1989). Therefore, borrowers will face higher loan prices in markets where there are fewer banks, or a smaller number of larger banks, compared to markets with a larger number of banks with less market power. On the other hand, efficient structure (ES) logic says that a few banks with a larger share of the market reflect the efficiency of these banks as they capture the market due to lower cost and thereby lower loan prices (Demesetz, 1973).

In Pakistan both forces can be in operation, as post liberalisation experience shows an improved efficiency of the banking industry (Burki and Niazi, 2010). However, the outreach of the new private banks is limited to large cities, with negligible banking operations in fringe markets (Patti and Hardi, 2005). This results in a higher concentration of banks in smaller, geographically isolated markets compared to large cities.

The positive correlation between market concentration and bank performance is well documented in OECD countries (Weiss, 1989). However, since researchers have had limited access to micro-level loan data from developing countries, research was restricted to aggregate data only. The availability of micro-level data in developing countries has improved in the last decade (Khawaja and Mian, 2008) making it possible to work on the industrial organisation of the banking industry in these countries.

Liberalisation reforms in the banking industry started in Pakistan in the 1990s. The post liberalisation changes require an inquiry into the banking industry as the new local and foreign entrants changed the structure of the market, which potentially affected operations of large incumbent market players in the banking industry. The financial market reforms included interest rate liberalisation reforms, which allowed banks to offer multiple products at different price levels across different markets in the country (State Bank of Pakistan, 2004).

The entry and price liberalisation reforms in the banking industry of Pakistan is of potential research interest, but that research is restricted due to the lack of availability of disaggregated data. The availability of market-level business loans Credit Information Bureau (CIB) data have made it possible to measure the price-concentration relationship.

As the liberalisation and regulatory reforms since 1990 have changed the market structure of the banking industry, it is interesting to explore the connection between competitive structure and loan prices. Previous research on post reforms banking industry shows a substantial improvement in banks performance and reduction in market concentration at the country level (Mahmood, 2009; Patti and Hardy, 2005).

The entry of new banks in the market potentially changed the strategic behaviour of the large incumbents as they were facing less competition before liberalisation reforms.[2] In the early period of the reforms, operations of incumbent large banks were on

[2]The banking reforms also have direct impact on performance, for instance privatisation changed ownership and potentially management practices in incumbent banks.

a wider geographical scale. Later, the central bank encouraged small banks to enlarge their market and open new branches in locations other than large cities.

Loan data for each corporate borrower and regional market, and information about the branch network at a local level, is used in this paper to estimate the relationship between competitive structure and market prices in the banking industry. The simple model estimated in the paper shows that interest rates charged by banks decrease as the number of banks increase in a market, and the loan price is substantially less in the markets where post liberalisation entry has occurred.

The paper is comprised of seven sections:

2. Literature review of selected industrial organisations.
3. Structural change in the Pakistani banking industry.
4. Data and related issues.
5. Econometric specification.
6. Summary statistics and findings.
7. Conclusion and plans for further research.

Additional tables and Figures are provided in the data appendix.

2. LITERATURE REVIEW

A number of oligopoly theories predict that price will increase with the increase in concentration in the market. The classic oligopoly theories of Cournot and Bertrand imply a negative correlation between price and number of firms under specific assumptions for cost and demand conditions (Weiss, 1989).[3] According to another set of early theories, firms in the market start acting collusively when their market share reaches a certain level (Chamberlin, 1962). Firms will set a price above minimum average cost once they realise they have reached that concentration level. Weiss (1989) and Newmark (2004) document theoretical intuition behind a number of price concentration studies, and Weiss (1989) includes empirical studies on price concentration conducted in various industries.

The price-concentration studies directly measure the relationship between concentration and pricing strategy of banks. The results from these studies are also employed to test structure-performance hypothesis (Berger and Hannan, 1989). The price-concentration regressions are estimated in literature using various concentration measures depending on the availability of data. The conceptualisation of concentration measures in some studies captures the nature of competition in the market as well (Tabak, et al. 2009). Similarly, the price variable in the estimated econometric equation depends on the availability of the data by researchers. For example, Berger and Hannan (1989) used deposit rates that banks pay to customers, to test negative relationships between price and banking concentration. In this study, price-concentration equations similar to Berger and Hannan (1989) are employed to test for structure conduct hypothesis.

In this paper, the number of banks in a given market are considered exogenous and that is a maintained assumption as discussed in the next sections. However, the concentration or number of firms in the price equations are considered endogenous in

[3]For example, in Cournot model with zero costs, the price will be proportional to $1/N$ where N is number of firms.

previous literature (Schmalensee, 1989). In the banking industry the number of banks in a town will depend on demand and cost conditions in that town, while loan prices will also be determined by the same conditions in that town. For example, a large city with high demand will attract many banks as compared to a remote and less commercial town with low demand. As argued in the next section, in this study the number of banks in a market are treated as exogenous because entry conditions are restricted by licencing arrangements made by the central bank.

The endogenous market structure has received attention in modern industrial organisation literature. One approach is to use a panel data method with instrumental variable technique in order to fix the OLS bias (Evans, et al. 1993). Singh and Zhu (2008) have used a two-step estimation technique where in the first stage the equilibrium model of entry is estimated to predict the number of competing firms in a market, and in the second stage, the correction term (derived in the first stage) is used to correct for correlation between price and competitive structure. Both of these approaches require appropriate data in order to estimate the price-concentration equation.

Studies such as Evans et al. (1993) require a panel data set while the estimation of entry model similar to Singh and Zhu (2008) requires detailed information on demand and cost conditions in the relevant markets. There are limitations to construct panel data or to estimate an entry model by employing loan data provided by the Credit Information Bureau (CIB), the data used in this paper for the analysis.

3. STRUCTURAL CHANGES IN BANKING INDUSTRY OF PAKISTAN 1990-2007

The banking industry in Pakistan was dominated by five large government owned banks until financial reforms started in the late 1980s. Before the reforms, more than 80 percent of the total banking assets were owned by the five government banks.[4] The remaining market was served by 25 foreign banks operating in urban areas and niche markets, and branch operations of these banks were restricted by regulation (Patti and Hardy, 2005). The Government of Pakistan initiated broad range financial sector reforms in the late 1980s and during these reforms privatisation of state owned banks was followed by permission to open 10 private domestic banks and 3 foreign banks in 1991 (State Bank of Pakistan, 2003).

A number of new private banks opened in the following years. The number of domestic private banks increased from 0 to 15 and total banks went up from 25 to 46 between 1986 and 1997 (See Table 1 and Figure 1). During this time period, foreign bank branches increased from 51 to 75, while local bank branches went up from 6,955 to 8,446. During the 1990's the banking industry witnessed substantial growth and changes in governance and corporate structure of banks. The initial banking reforms were followed by an institutional strengthening of the central bank, where the central bank received more autonomy and increased the quality and spread of banking regulations.

[4]Five Banks are, Habib Bank Ltd HBL (1450 branches), National Bank Ltd (1245 branches), United Bank Ltd UBL (1082 branches), Muslim Commercial Bank MCB (1025 branches), and Allied Bank Limited ABL (760 branches), number of branches in 2008. UBL, MCB and ABL were privatised from 1991 to 1993.

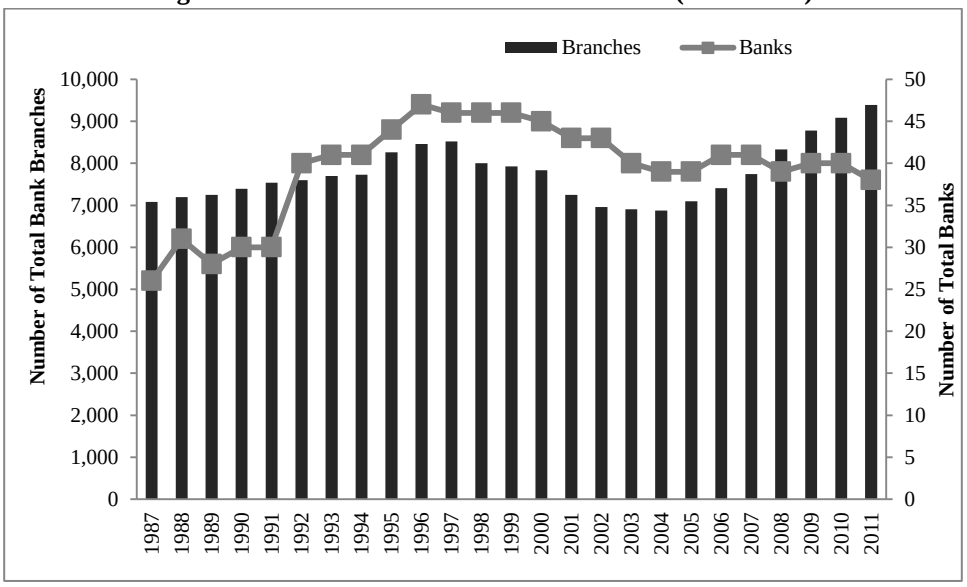
Table 1

Number of banks in Pakistan 1990-2007

	1990	1995	2000	2003	2007
Government Owned	6	6	6	5	4
Domestic Private	0	15	14	18	26
Foreign Private	21	20	20	14	6
Specialised Banks (domestic)	4	4	4	3	4
Total	31	45	44	40	40

Source: Mahmood (2009).

Fig. 1. Number of Banks and Bank Branches (1987–2011)



Source: State Bank of Pakistan.

Post reforms, market share of the private domestic banks and foreign banks increased, but the foreign banks primarily focused on select clients and multinational companies (Mian, 2004). The private bank entries, mainly domestic banks, occurred during 1991 to 1995. From 1995 onwards, the issuance of licences to open new banks was implicitly suspended[5] and remained in effect during the current analysis period from 2006 to 2012. However, restrictions on opening of private bank branches (local and foreign) decreased, while government banks were restricted in opening new branches. In addition, government banks were encouraged to close unprofitable branches (State Bank of Pakistan, 2003).

The introduction of risk based capital requirements in 1997, and later, an increase in paid-up capital requirements, was followed by a central bank facilitated merger and the acquisition of the banking sector in Pakistan (Mahmood, 2009). All of these

[5]Motivation of moratorium could be due to bad performance of new banks (Mahmood, 2009), proliferation of banks and restricting foreign bank entry (Patti and Hardy, 2005). State Bank of Pakistan issues licence to any bank want to do banking business in the country.

developments rendered the number of banks quite stable during 2006 and 2012, and the number of banks are assumed exogenous in the empirical model.

The Pakistani banking industry is dominated by five banks with more than a 50 percent share of total banking advances in 2008. These banks are considered the dominant banks with a large market share and an extensive branch network throughout the country. The dominant banks owned 5,562 bank branches out of a total of 8,274 domestic bank branches in 2008. Although the big five banks are still widely operating across the country, their market share has gone down since 1999 (Mahmood, 2009). The new entrants have potentially increased competition as the market share of the big five banks is declining. The non-price competition, including quality of services and new product facilities, has motivated the big five banks to catch up with the new entrants. The Credit Information Bureau (CIB) data reveals that the incumbents (big five) and new entrants are selling similar products in the corporate loan market.

The empirical analysis in this paper assumes that the number of banks in the corporate loan market was stable from 2006 to 2012. The consolidation process started in 1997 and negligible new entries in the industry support stagnation in the market structure. The number of total bank branches has gone up since 2006, as shown in Figure 1, but that includes all branches while the price-concentration analysis in this paper is based on bank branches that offer corporate loans to firms. The political situation of the country and capital requirement by the central bank might also have forced an implicit ban on new corporate lending banks in Pakistan between 2006 and 2012, providing further credence to the assumption that a competitive structure is exogenous.

4. THE CREDIT INFORMATION BUREAU (CIB) DATA

One of the key contributions of this paper is to employ a unique loan universe in order to construct market-level data that includes loan prices (i.e. interest rate), and the number of banks for more than 500 markets across Pakistan. The Credit Information Bureau (CIB) at the State Bank of Pakistan (SBP) provides the loan level universe.[6] In addition, the bank branches data published by the State Bank of Pakistan (SBP) is employed for part of the analysis in the paper. Loan level CIB data and bank branches data are collected by SBP to implement "prudential regulation" and are used to regulate and monitor financial performance of the banking industry in Pakistan.

The CIB data used in this paper lists the end of month report for each outstanding corporate loan issued between April 2006 and May 2012, and the universe of loans includes all outstanding corporate loans throughout the country.[7] A corporate loan is given to business organisations; these include listed companies, non-listed companies, and partnerships. Importantly, the CIB universe employed here does not cover single person liability businesses[8] (i.e. the unregistered enterprises owned by individual entrepreneurs).

[6]State Bank of Pakistan (SBP) is the central bank and financial regulator in Pakistan.

[7]Only fund-based loans, where actual amount was disbursed, are included in the sample and non-fund loans including letter of credit or letter of guarantee are dropped from the analysis.

[8]Unregistered businesses owned by individuals are quite pervasive in informal developing economies such as Pakistan; in the CIB data, business loans issued to single person owned unregistered firms are categorised as consumer loans.

The CIB data is of an established quality and has been used in recent banking literature (Khwaja and Mian, 2005; 2008). In this paper, it covers a recent period and includes new fields including borrower and lender identifier, loan size, interest rate, borrower's type, and loan maturity date. The description of selected variables covered in CIB is presented in appendix Table 1A. Khwaja and Mian (2005) augmented the CIB data with additional borrower and lender characteristics. For instance, one of their studies includes information on the political connections of the borrower. Higher confidentiality conditions with the CIB universe employed in this paper restricts the scope of merging external borrower and lender details similar to Khwaja and Mian (2005) with the CIB data.

The CIB data reports a loan in the database until the loan is settled. There is no loan identifier in the data, therefore outstanding loans reported over time cannot be identified with a numeric identifier. However, as each borrower and bank is uniquely identified, I can trace a loan issued by a specific bank to a specific borrower on a given date for a given product. Therefore, the loan is defined by the borrower-bank-product pair for each reported month. The outstanding loan data is reported in the CIB database for each loan until a loan is settled. However, for the analysis, only first time reported entry for a loan is used because the main purpose is to measure the relationship between the loan price offered by a bank and the number of banks in each market. The price of loan and other characteristics can be observed in the first reported transaction. The selection on first transaction entry leaves 36,279 borrowers, 107 lending institutions and 260,332 reported loans in the data.

Defining the loan market is critical for estimating the price-concentration relationship, and this is not free of problems. The loan market in this paper is identified according to the location of borrowers (i.e. business location), I have assumed that firms borrow locally, or borrow from the nearest town, in case the location is a very small village without any bank. There is no published evidence to confirm that firms actually borrow locally. However, unstructured qualitative interviews with bank managers and CIB officials support the notion that firms borrow locally, particularly for working capital loans and other routine services.

Banks issue loans to local firms in order to lower their transaction cost. In most of the transactions, individual guarantees, credit relationships, and physical assets (e.g. land, plant, and other physical assets) are employed as collateral for loans. Bank managers prefer issuing loans to local firms where verifying collateral is easy and past customer relationships can lower the risk of a default on a loan. About 9 percent of total loans issued to the firms that borrow from more than one location are omitted from the analysis.

The market is defined in this paper according to the location of a borrower with one central concentration of population, or urban centre, including small locations at margins, which in some way are economically connected to the main market centre. The notion of market here is similar to the Metropolitan Statistical Area (MSA) in North America with the exception of villages, as villages in Pakistan are also highly populated. In Pakistan, areas resembling MSAs are concentrated around a large town, usually the capital of an administrative district. The large town and district have the same name in most cases.[9] However, each district has other towns and villages with a concentration of

[9]For example, capital of "District Lahore" is the city of Lahore. And the businesses located in industrial belts around district towns are likely to be borrowing from banks in various locations of Lahore.

population, but varying amounts of economic activity. Therefore, a market can be a village, a town or a district capital depending on the location of the market and the isolation of that market from surrounding markets.

The market for a loan can also be identified by the lender's corresponding bank branch. The information about bank name and branch address is confidential in the CIB data, however a bank branch can be uniquely identified by the bank-branch pair code. This information matched with secondary information on total number of branches reveals that a quarter of the total bank branches in the country report data to the CIB. One potential reason for fewer reporting branches could be that another branch (e.g. head office) of the same bank reports data from non-reporting branches. Therefore, the borrower location is a better candidate for designating a loan market than the bank branch location.

Loans Sample and Discussion

There are 260,332 business loans reported in the CIB data between 2006 and 2012 for 36,279 borrowing firms and 107 lending institutions[10] across 563 markets. Figure 1A in the appendix shows the quarterly trend for number of loans. The number of loans declined after 2008 as monetary policy tightened and credit expansion was restricted by banks. There is diversity in the nature of banks and in the products that they offer to the consumers. About 76 percent of the loans are disbursed by private banks, four public banks issue 10 percent of the loans, and two specialised banks command 7 percent market share. A large number or the remaining loans are issued by small lending institutions.

The banks offer a variety of loan products for various business needs; the majority of banks offer more than 10 different types of loans. There are more than 50 types of product offered by banks, but in order to create homogeneity in loan prices for a given product, the number of products can be merged according to the nature of product. For example, loans are classified as working capital and fixed capital loans. In addition, businesses demand some products locally (e.g. to meet routine needs) so that the competitive structure in a given location can potentially affect the price (i.e. interest rate) for that product.

Loans are split into subcategories; 46 percent of loans are classified as working capital loans or credit lines. Firms usually generate working capital locally as borrowing for running finance is quite a regular transaction for a business. Another 25 percent of loans are based on various specialised transactions related to foreign trade and foreign investment. Specific banks, or bank branches in large cities, possibly issue these loans to companies engaged in international trade, and thereby the loan market becomes national for these types of loans. In addition, 10 percent of loans were disbursed for fixed capital or equipment purchase including lease based capital, and 7 percent of loans were issued to businesses related to farming.

[10]In total forty six banks were in operation during 2006 to 2012 thorough the country, the rest of the lending institutions including small leasing companies and Islamic "modarabas" are operational in large markets only. The analysis in the main text is based on the data for the banks only, some regressions in appendix are based on data for all lending institutions.

The disaggregation of loans into different types is useful in order to estimate the price-concentration relationship by nature of localisation of product, and empirical specifications can be estimated separately for various types of loans. In this paper, working capital loans and loans disbursed for miscellaneous routine activities[11] (classified as "other type") are employed in the empirical analysis.

The key dependent variable, the interest rate, is missing for more than half of the reported loans in the CIB data. One possible reason[12] for the missing observation could be that banks are reporting the figure in "KIBOR[13]-+premium %" format in the CIB system. This potentially creates a problem, as the Credit Information Bureau (CIB) might not be aware of the corresponding KIBOR rate for each transaction, which could result in missing values. Although the CIB reports that either the interest rate was unknown at the time of reporting, or the corresponding transaction with missing interest rates are non-fund based loans (e.g. a bank guarantee). The loan size distribution for the missing interest rate cases is quite similar to the distribution of non-missing cases (appendix Figure 2A). Therefore, there is less of a chance that missing loan rate data might follow some selection pattern.

Interest rate/loan size: Interest rate data appears to be of good quality based on a consistency check presented in Figure 2. The trend in the CIB reported interest rate follows the trend in the reported private sector rate in published reports by the central bank. The average interest rate during the sample period is 14 percent with a standard deviation of 3.6. The trend depicts monetary policy changes during the period with monetary tightening since 2008 and a relatively steady interest rate period after 2009. The average loan size is PKR 69.4 million,[14] with 75 percent of loans less than or equal to PKR 40 million. Loan utilisation can be determined by the difference of outstanding loan and actual loan amount granted. Both variables can be observed in the CIB data, showing that three quarters of the loans have utilised more than 50 percent of the allocated loan limit.

On the demand side, less than 5 percent of firms borrow from more than five banks at various times, while 75 percent of firms borrow from at most one bank. Private firms are borrowers of 90 percent of loans. The firms that borrow from different banks over the years could be large conglomerates with better access to credit markets. About 88 percent of loans have a maturity date within the sample period, and 95 percent of loans have about four years or less duration, while the median duration is 1 year 2 months.[15]

In light of the above discussion, the sample is restricted to loans for working capital and other routine services, including loans for fixed capital, machinery and other physical capital. Loans for farming businesses and trade related activities are excluded from the sample as both types of loans are concentrated in specific markets and disbursed by specialised banks. In addition, loans with a missing interest rate are not used for the

[11]Mainly physical capital and fixed capital loans.

[12]Confirmed in an interview with an anonymised bank manager.

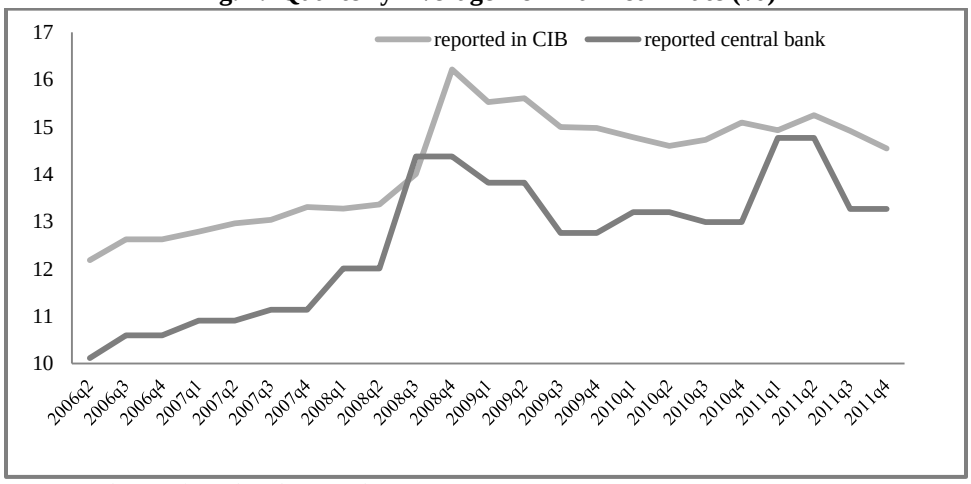
[13]Karachi Interbank Offered Rate (KIBOR).

[14]0.9 million US Dollars.

[15]The duration is calculated on the basis of loan issue date and loan maturity date, in some cases loan maturity date is also loan extension date and for those cases average loan duration will be longer than calculated here.

analysis because no imputation for the missing interest rate is required given a large sample of loans. The final sample includes 61,044 loans reported by 39 banks, in 302 markets, over 25 quarters. Summary statistics for main variables are given in Table 2.

Fig. 2. Quarterly Average Nominal Loan Rate (%)



Source: Author's estimate based on CIB data.

Table 2

Summary Statistics for the Variables Used in Regression Analysis

Variable	Observations	Mean	Standard Deviation	Min	Max
Interest rate (%)	61044	14.56	3.08	3	20.7
Number of new banks in a market	61044	29.25	12.64	0	38
More than 5 banks dummy	61044	0.98	0.13	0	1
New private bank/lender dummy	61044	0.89	0.32	0	1
Number of total banks	61044	34.74	12.93	1	44
Loan Size (million Rupees)	61044	74.42	424.58	0.01	23,328.9
Loan duration in months	61044	15.37	18.09	0	367
Private borrower dummy	61044	0.92	0.27	0	1

Notes: The sample is based on loans issued for working capital and loans used for multiple purposes including fixed capital loans, the break up for two categories is give in appendix Table 2A.

5. ECONOMETRIC SPECIFICATION

The price-concentration hypothesis has been tested in previous research on the banking industry using a simple econometric specification, where market concentration is treated as exogenous and other exogenous controls are added to basic specification (Berger and Hannan, 1989). The framework shows that the competition in a given market will affect loan price or deposit rate. In the main model, various concentration measures can be employed to proxy competition in a given market. The basic econometric specification presented in Berger and Hannan (1989) looks like Model 1 below.

$$R_{ijt} = \alpha + \beta conc_{ijt} + \lambda' x_{ijt} + u_{ijt} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

Where *r* is interest rate charged by bank *i* in market *j* during time period *t*, *conc* is a measure of the market concentration, usually a Herfindahl index or the 3 firm-ratio is used to proxy for the competition in the market, and *x* is a vector of exogenous control variables, the coefficient of potential interest here is β. For instance, a high market concentration will result in a lower interest rate offered to depositors by the banks implying $\beta < 0$. The model in Berger and Hannan (1989) predicts the interest rate that a bank offers for various deposits. While the loan data employed in this paper reports the rate borrowers were paying for a particular loan, depending on loan characteristics, borrower characteristics and market characteristics, therefore in this case $\beta > 0$ in Equation 1.

I have conceptualised the price-concentration hypothesis in two models. In the first model, the key variable explaining variation in loan prices according to market competition is a dummy variable, where the dummy takes the value of 1 if the market contains at least one bank other than the large banks (*BIG5*).[16] The cut-off of "five banks" is used to separate markets that only contain old large banks, from the markets that contain at least one new private bank. This model is reported here in Equation 2.

$$R_{ijt} = \alpha_1 + \beta_0 BIG5_j + v\, NEW_{ijt} + \lambda\, private_{ijt} + \gamma_0\, dur_{ijt} + \gamma_1\, dursquare_{ijt} + \varphi\, loan_{ijt} + \theta\, t_t + \varepsilon_{ijt} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Model 2 controls for the nature of a firm's ownership where *(private)* is a binary variable that takes value 1 if the loan was issued to a private firm. Duration of loan *(dur)*, and size of loan *(loan)*, further quarterly dummies vector *(t)* is included to control for time variation, while variable NEW takes value of 1 if the lending bank is a private bank.[17]

The nature of competition in different markets is unobservable and it is not clear how the five large incumbents compete with new entrants, so the selection of a concentration measure or cut-off based on the number of banks in a given market may become arbitrary. As discussed earlier, before liberalisation, five government-owned banks dominated the banking industry in the country. During the reforms, four of these banks were privatised. There was also an issuance of licences to new private banks. In this context, the competition in a location can be viewed as the presence of private banks other than large old banks[18] in the market as presented in model 2. However, intuitively, competition in a market increases with the presence of any additional bank; including fringe banks, as the regulator has set a level playing field for all banks in the industry. Therefore, model 2 is modified with the inclusion of the number of total new banks in the market.

The quadratic form is assumed in the Model 3 given below where $BANK$ is the number of new banks in a given market.

$$R_{ijt} = \alpha_2 + \beta_1 BANK_j + \beta_2 BANK_j + v_1 NEW_{ijt} + \lambda_1 private_{ijt} + \gamma_2 dur_{ijt} + \gamma_3 dursquare_{ijt} + \varphi_1 loan_{ijt} + \theta_1 t_t + u_{ijt} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

[16]The large old banks mainly five banks, number of branches given in foot note 4.

[17]Complete list of dependent variable, exogenous variable and controls are given in Appendix Table 4A.

[18]The summary statistics in Table 1 shows 98 percent loans are issued in markets that contain at least one bank other than large old banks, so the result in specifications using *BIG5* should be taken with caution.

In Equation 3, the number of new private banks (BANK) in the market measures market concentration. The important assumption here is that the number of banks in a market is predetermined. This assumption is supported by the fact that entry and exit in the banking industry in Pakistan between 2006 and 2012 was quite negligible. In the latter part of the sample, the number of banks goes down, probably because of the closure or merger of small banks, as these banks were struggling to maintain strict reserve capital requirements introduced under banking regulation. The CIB data shows that small banks were mainly operating in very large markets with little impact on market structure in most of the medium and small markets. Ordinary Least Square (OLS) can estimate models 2 and 3. Although standard errors need to be adjusted for the source of variation in data and preferably clustered at market level, the estimation and results are discussed in the next section.

6. RESULTS AND DISCUSSION

The price-concentration specifications 2 and 3 are estimated by pooled OLS for the samples of working capital loans and multiple purpose loans. The selection of one specific loan category into a subsample will be useful to group loan type according to the nature of the market for that specific product. For example, working capital is required to maintain routine business activities and therefore usually borrowed in the local markets. The estimates are based on OLS while clustered standard errors are estimated for statistical inference (i.e. clustered at market level). For robustness checks, linear and quadratic functional forms (in terms of *BANK* variable) for equation 3 are estimated after controlling for independent variables. The results are given in Table 3.

The linear and quadratic functional form results for Model 3 are given in column (1) and (2) of Table 3 respectively, while results for Model 2 are given in column (3) of Table 3. In the linear functional form of Model 3, the coefficient for the *BANK* variable measures the effect of the number of banks in the market on average interest rate. The OLS estimated coefficient on *BANK* reported in column (1) of Table 3 shows that loan price for working capital declines by 2.7 basis points[19] with the availability of an additional bank in the market.[20] This statistically significant finding is consistent with the notion that market concentration in a given market is positively associated with the interest rate the banks charge to businesses in that market.

The average effect of an additional bank in the market on working capital loans declines to 1 basis point when a quadratic functional form is employed for estimating Equation 3, the linear and quadratic *BANK* terms are jointly significant in column (2) of Table 3 for the working capital loans. In the case of multiple purpose loans, the estimation of a linear function shows that on average, the loan rate decreases by 3 basis points with the addition of one more bank in the market. However, this effect is not statistically significant when quadratic functional form is used.

Other estimated coefficients in column (1) and column (2) of Table 3 are in line with the corresponding economic intuition that the interest rate increases with loan

[19]1 basis point (bp) is equal to 1/100th of 1 percent.

[20]The average presence of other competing banks in a market is based on observed Credit Information Bureau data. That does not include banks which were present in the market but were not engaged in issuing business loans during 2006 to 2012.

Table 3

Table 3

Pooled Regression Results for the Effect of Concentration on Loan Rates

	Working Capital Interest Rate			Multiple Purpose Interest Rate		
	(1)	(2)	(3)	(1)	(2)	(3)
Number of new Banks	–0.027***	0.029		–0.034***	–0.075	
	(0.005)	(0.021)		(0.007)	(0.044)	
Squared number of Banks		–0.001*			0.001	
		(0.001)			(0.001)	
BIG5 dummy			–0.268			–1.524***
			(0.278)			(0.37)
Private Bank Dummy	–0.841**	–0.838**	–1.102**			
	(0.274)	(0.276)	(0.338)			
Private Borrower Dummy	–0.154	–0.171	–0.23	–0.455	–0.401	–0.747
	(0.181)	(0.189)	(0.189)	(0.546)	(0.544)	(0.543)
Log Loan Amount	–0.245***	–0.239***	–0.291***	–0.080**	–0.079**	–0.080***
	(0.044)	(0.041)	(0.048)	(0.025)	(0.025)	(0.023)
Loan Duration	0.026**	0.026**	0.028**	0.039***	0.039***	0.037***
	–0.009	(0.009)	(0.009)	(0.01)	(0.01)	(0.01)
Public Borrower* Private Bank				–1.620**	–1.620**	–2.167***
				(0.598)	(0.601)	(0.619)
Private Borrower* Private Bank	0.554*	0.553*	0.705**	–0.669***	–0.725**	–0.869***
	(0.257)	(0.261)	(0.272)	(0.200)	(0.223)	(0.159)
Constant	–20.950***	–21.300***	–19.842***	–21.299***	–20.819***	–17.198***
	(1.775)	(1.727)	(1.777)	(2.751)	(2.734)	(2.348)
Sample Size	43363	43363	43363	7317	7317	7317
R Square	0.771	0.771	0.767	0.718	0.718	0.714

Notes: Dependant variable real interest rate annual %, results based on pooled sample 2006–2012, * p<0.05, ** p<0.01, *** p<0.001, standard errors in parentheses clustered at market level, quadratic loan duration terms are included in all specifications, further quarter dummies included in all specifications. R-square for all models is between 0.71 to 0.77, further Ramsey RESET reject the null hypothesis that models have no omitted variables in most of the specifications.

duration, where the loan rate is the lowest for 5 year duration loans for working capital, and 8 year duration loans for multiple purpose loans. The interest rate declines with the loan size, on average the interest rate declines by 2 basis points with an increase in loan size of 10 percent for working capital loans (0.8 basis points for multipurpose loan).

The private banks charge a lower loan rate than government owned banks and the results are significant for the working capital loans sample,[21] where the average gap is above 80 basis points. This potentially has two implications. Firstly, the lower price charged by private banks is consistent with selection of high credit worthy borrowers (i.e. low risk clients) by the private banks, and secondly, the competition will be higher in the markets where private banks are present. The coefficient for private borrower dummy is significant for working capital loans, where on average, private firms pay a 34 basis point higher loan rate than government enterprises, but significance declines as borrower and lender interaction terms are incorporated.

Specifications in column (3) of Table 3 are based on model 2, where *BIG*5 is a dummy variable separating markets containing at least one new private bank from the markets with only large old banks. Although arbitrariness cannot be ruled out in the selection of the *BIG*5, but institutional facts support the inclusion of the intercept shift through the *BIG*5 in model 2.

The five major government banks in the Pakistani banking industry have dominated the loan market over the years (Mahmood 2009). These are the large banks of the country, with a wide network of branches, and the liberalisation reforms exposed these banks to competition from new private local and foreign banks by the late 1990s. The binary variable *BIG*5 is capturing the exposure of the market to new competing banks, and comparing markets with new banks to markets with old large banks, the downside of this variable is that only a few markets contain just large old banks. The mean of the indicator variable *BIG*5 is 0.98. However, the estimated coefficient on *BIG5* is statistically significant and shows that borrowers in markets containing at least one new bank pay 27 basis points lower interest rate for working capital and 152 basis points lower interest rate for multiple purpose loans, compared to markets containing only large old banks.

The competitive structure of the banking industry is influenced by the operation of the conventional banks in most of the markets across the country. However, the CIB data shows that other small financial institutions, including Islamic finance companies and leasing companies, are also lending to corporate borrowers mainly located in large cities. In order to incorporate the competitive effect of other financial institutions, model 2 and 3 are estimated for the sample of loans for all financial institutions, the results are presented in appendix Table 3A. The findings that loan rate decreases with the increase in the number of banks in a market stays stable in various specifications in appendix Table 3A, where total number of lending institutions is used to proxy *BANK* variable instead of number of conventional banks. The relationship between number of banks and loan price remains statistically significant in Table 3A.

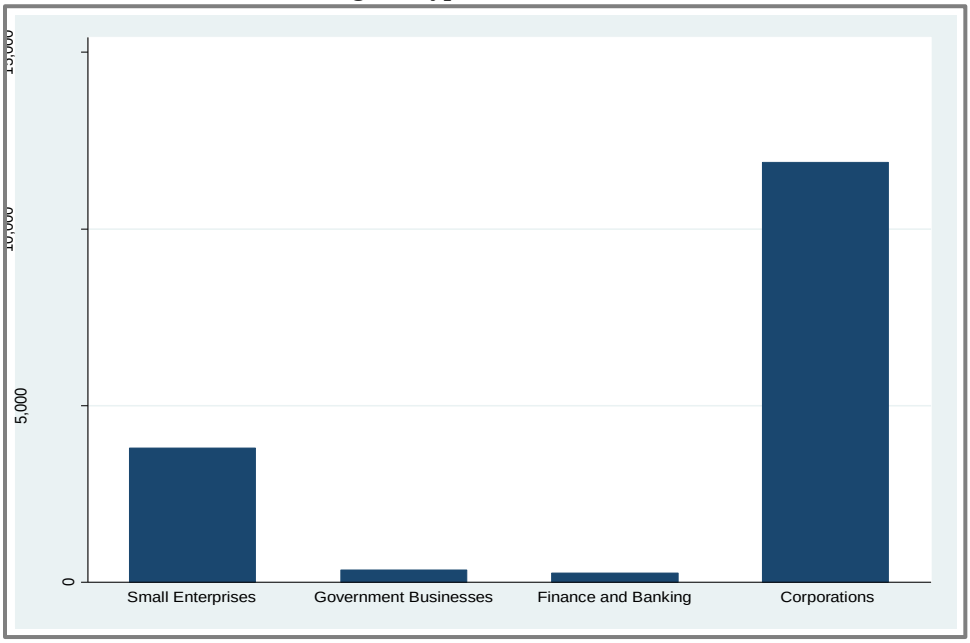
Most of the other coefficients in Table 3A are not much different from Table 3, although the coefficient of a private lender dummy is higher in magnitude, particularly

[21] The effect of private bank dummy cannot be estimated for multiple purpose due to collinearity with some of interaction terms.

for multi-purpose loans. This is likely because smaller financial institutions mostly issue fixed capital loans that fall under the multiple loan category. For example, the coefficient in column (3) of Table 3A for multiple purpose loans shows that private financial institutions charge borrowers 120 basis points lower interest rate compared to government banks, holding other factors constant.

The nature of competition between small financial institutions and large banks is not clear, however the CIB data shows that small institutions are mainly leasing companies and Islamic finance companies. The analysis also incorporated additional interaction terms for lender type and borrower type for public and private market segments. However, a majority of the results are insignificant, although there is some evidence that for multi-purpose loans, government companies get loans from private banks at lower rates compared those offered to private borrowers by private banks.

Fig. 3. Types of Borrowers



Source: Author's estimate based on CIB data.

Most of the other coefficients in Table 3A are not much different from Table 3, although the coefficient of a private lender dummy is higher in magnitude, particularly for multiple purpose loans. This is likely because smaller financial institutions mostly issue fixed capital loans that fall under the multiple loan category. For example, the coefficient in column (3) of Table 3A for multi-purpose loans shows that private financial institutions charge borrowers 120 basis points lower interest rate compared to government banks, holding other factors constant. The nature of competition between small financial institutions and large banks is not clear, however the CIB data shows that small institutions are mainly leasing companies and Islamic finance companies.

In markets where large banks are operational, competition is neutralised due to customer relationships of a long duration between the big 5 banks and borrowers (i.e.

brand loyalty or switching cost). Since before liberalisation, most of the businesses were financed by the big 5 banks in virtually all markets of Pakistan. There is a high probability that the client relationship between firms and banks continued, particularly in the local markets where no post reforms entry occurred. In credit markets with long customer relationships, banks can charge marginally higher rates to old customers as switching costs might be higher, while new borrowers/firms in large cities can take advantage of competition in the market and switch to a bank with lower interest rates for business financing.[22] In markets where large banks are operational, competition is neutralised due to customer relationships of a long duration between the big 5 banks and borrowers (i.e. brand loyalty or switching cost). Since before liberalisation, most of the businesses were financed by the big 5 banks in virtually all markets of Pakistan. There is a high probability that the client relationship between firms and banks continued, particularly in the local markets where no post reforms entry occurred. In credit markets with long customer relationships, banks can charge marginally higher rates to old customers as switching costs might be higher, while new borrowers/firms in large cities can take advantage of competition in the market and switch to a bank with lower interest rates for business financing.[23]

One possible solution is to check sensitivity of results by employing different measures of concentration. There is a limitation on selecting other measures of concentration because the other measures of market concentration are available at aggregate level over the sample period, while loans are reported quarterly. Therefore, the additional concentration measure might not capture the actual impact of market concentration on the loan rate. The empirical model can be improved by incorporating the entry of a competitive player into the market, but the required information is not available in the CIB data.

Further, the identification of a geographical market is based on the borrower's address as branch details are confidential in the Credit Information Bureau data,[24] and most borrowers reported their main region as the location rather than the detailed street address. Therefore, there is a risk that the loan was actually generated by a bank located in a market with a high bank concentration, while the loan was reported in the CIB system for an urban market according to the main address, and in that market many banks were in operation. Similar data reporting issues can potentially dilute the influence of the competitive structure of the banking market on the interest rate charged by a bank for a given loan in that market.

Finally, in a large informal economy such as Pakistan, most businesses are unregistered firms or firms with single person liability, particularly family or individual owned small firms in local markets.[25] The CIB data reports loans only for organised large firms including listed companies, and large corporations (See Figure 3A). The variation in borrowing cost for credit is likely to be higher for small businesses across different markets, where borrowing cost depends on the nature of competition in the market. As CIB data covers only established firms and does not includes single person liability firm,

[22]This notion is reconfirmed with an unstructured qualitative interview with a leading bank manager.

[23]This notion is reconfirmed with an unstructured qualitative interview with a leading bank manager.

[24]The branch information might not be very useful in identifying market location as well (as discussed in Section 4).

[25]Including farming, transport, trade, retail services, and many other small-scale activities.

the effect of banking concentration on business loans cannot be estimated for all types of firms in the market. Single liability business loans are classified as personal loans in the CIB data. For further research, enlarging the sample of loans by including single liability firms can provide further insight into the analysis of the structure-conduct hypothesis for the loan market in Pakistan.

7. CONCLUDING REMARKS

This paper estimates the price-concentration relationship for the banking industry in Pakistan. It bridges an important gap, as there is no substantial empirical literature available on competition and market outcomes of the banking industry in the country at a micro level. The simple model estimated here shows that the interest rate charged by banks decreases as the number of banks grows in a geographical market. The loan price is substantially less in markets where post liberalisation entry has occurred.

The banking efficiency literature shows that new private banks are operating efficiently in the banking industry of Pakistan. This means that low cost entrants are creating competitive pressures for large old incumbents. However, the post liberalisation private bank entry occurred mostly in large cities, so it may be the case that the overhead cost of banks in small-town markets is higher compared to large cities. The increased cost of banking in small towns potentially confounded the negative influence of competition on the loan price with the positive impact of cost on the loan price.

On the policy front, the central bank of Pakistan has encouraged banks to open branches in small towns and local markets in recent years, as the major post liberalisation entry occurred only in large cities, urban centres, and industrial towns. Before any policy prescription can be written, the logical question would be to ask what determines the number of banks in a given market, and what factors are important for a bank to decide entry in or exit from the market. These are important research questions in the field, and future research should be directed in this line.

DATA APPENDIX

Table 1A

Credit Information Bureau (CIB) selected variables

- Lending Institution Code, unique bank identifier
- Borrower's Code, unique firm identifier
- Borrower's location City, Town or District
- Name of credit facility, type of loan (e.g. working capital)
- Date on which the credit facility was given to the borrower
- Nature of facility (e.g. fund based, non- fund based)
- Maturity date, or renewal date of the credit facility in case credit line is renewed
- Limit amount of the credit facility in Rupees
- Principal outstanding amount against the facility including interest rate in Rupees
- Nature and value (in Rupees) of collateral against the loan facility provided by the bank
- Interest rate at charged for the loan (Annual Percentage Rate - APR)
- Borrower's credit rating if available , including internal and external rating

Source: Credit Information Bureau, State Bank of Pakistan.

Table 2A

Summary Statistics Group Wise

Variable	Observations	Mean	Standard Deviation	Min	Max
Loans for Multiple Purposes					
Interest rate (%)	7317	14.20	3.46	3	20.68
Number of new banks in a market	7317	26.56	14.12	0	38
More than 5 banks dummy	7317	0.97	0.16	0	1
New private bank/lender dummy	7317	0.79	0.41	0	1
Number of total banks	7317	31.97	14.51	1	44
Loan Size (million Rupees)	7317	120.19	839.10	0.01	23327.97
Loan duration in months	7317	15.54	22.22	0	170
Working Capital					
Interest rate (%)	43363	14.45	3.04	3	20.68
Number of new banks in a market	43363	28.37	13.06	0	38
More than 5 banks dummy	43363	0.98	0.14	0	1
New private bank/lender dummy	43363	0.90	0.30	0	1
Number of total banks	43363	33.84	13.34	1	44
Loan Size (million Rupees)	43363	64.98	289.81	0.01	22820
Loan duration in months	43363	9.97	9.86	0	240

Fig. 1A. Number of Loans (Quarter Wise)

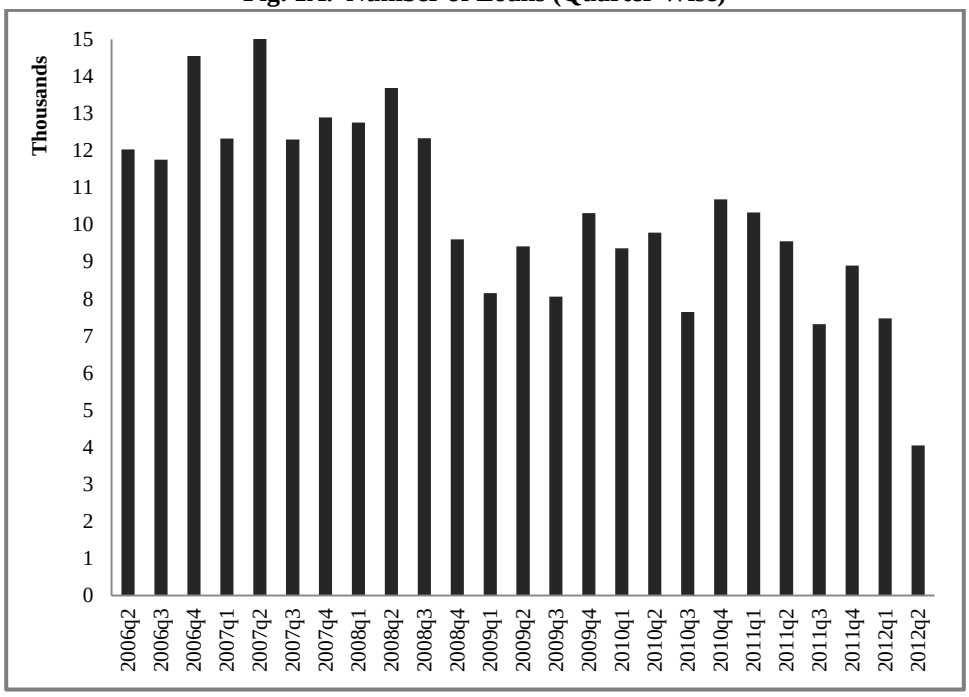


Table 3A

Table 3A

Pooled Regression Results (All Financial Institutions) for the Effect of Market Concentration on Loan Rates

	Working Capital Interest Rate			Multiple Purpose Interest Rate		
Dependent Variable	(1)	(2)	(3)	(1)	(2)	(3)
Number of new Banks	–0.011***	–0.001		–0.007**	–0.041**	
	(0.001)	(0.006)		(0.002)	(0.015)	
BIG5 dummy	–0.890**	–0.890**	–0.466*	–1.485***	–1.462***	–1.569***
	(0.283)	(0.284)	(0.216)	(0.29)	(0.29)	(0.378)
Private Bank Dummy	–0.187	–0.202	–1.124***	0.27	0.335	–1.597***
	(0.182)	(0.187)	(0.316)	(0.50)	(0.500)	(0.295)
Private Borrower Dummy	–0.236***	–0.236***	–0.207	–0.120***	–0.115***	0.225
	(0.042)	(0.042)	(0.170)	(0.033)	(0.033)	(0.518)
Log Loan Amount	0.027**	0.027**	–0.289***	0.039**	0.039**	–0.117***
	(0.009)	(0.009)	(0.048)	(0.013)	(0.013)	(0.031)
Loan Duration	0.027**	0.027**	0.029**	0.039**	0.039**	0.036**
	(0.009)	(0.009)	(0.009)	(0.013)	(0.013)	(0.012)
Private Borrower * Private Bank	0.565*	0.572*	0.685**	0.204	0.14	0.265
	(0.276)	(0.280)	(0.260)	(0.332)	(0.328)	(0.353)
Constant	–21.234***	–21.276***	–19.812***	–27.276***	–27.046***	–24.416***
	(1.751)	(1.749)	(1.719)	(3.706)	(3.699)	(3.217)
Sample Size	43719	43719	43719	8349	8349	8349
R Square	0.772	0.772	0.768	0.728	0.729	0.727

Notes: Dependant variable is interest rate annual %, results based on pooled sample 2006–2012, * p<0.05, ** p<0.01, *** p<0.001, standard errors in parentheses clustered at market level), quadratic loan duration terms are included in all specifications, quadratic BANK term included in specification (2). R-square for all models is between 0.73 to 0.77, further Ramsey RESET reject the null hypothesis that models have no omitted variables in most of the specifications.

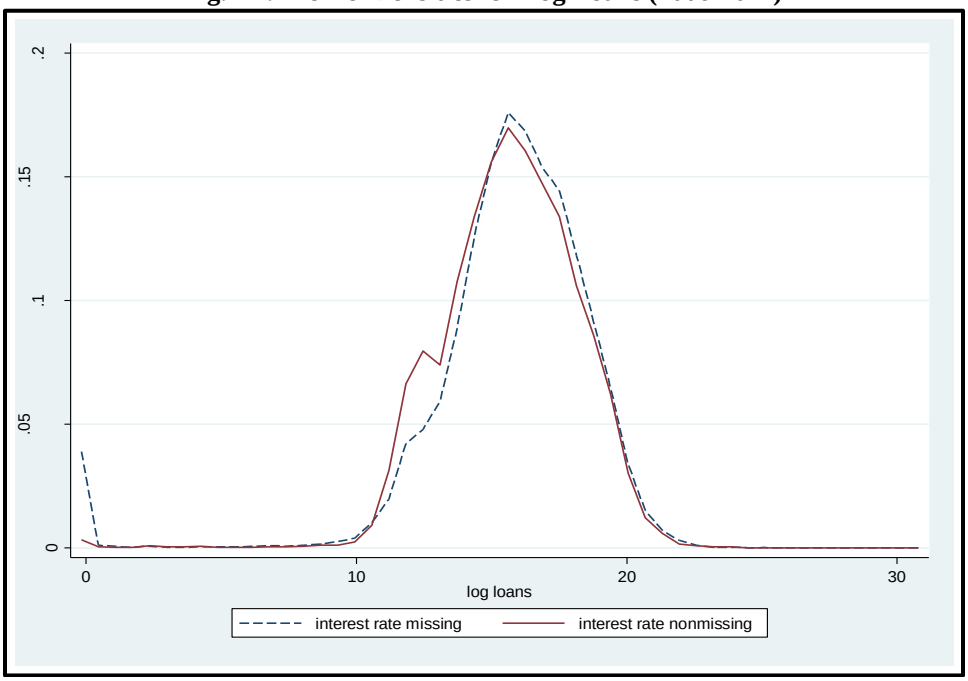
Table 4A

Table 4A

Description of Variables Used in the Regression Analysis

Acronym	Variable	Description
r	Interest rate (%)	Inter rate charged for each loan
Number of new Banks	Number of new banks in a market	Number of total private bank entered and operating in the market after liberalization
BIG5 Dummy	More than 5 banks dummy	Takes the value 1 if loan is issued in a market where at least one bank other than the large banks operate
Private Bank Dummy	New private bank/lender dummy	Takes value of 1 if the loan is issued by a private bank and 0 otherwise
Loan Amount	Loan Size (million Rupees)	Amount of loan in local currency
Loan Duration	Loan duration in months	Loan contract duration in months
Private Borrower Dummy	Private borrower dummy	Takes value of 1 if loan is issued to a private firm, and 0 if a government owned firm

Fig. 2A. Kernel Densities for Log Loans (2006-2012)



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Strengthening Pakistan's Trade Linkages: A Case Study of Regional Comprehensive Economic Partnership (RCEP)

ADNAN AKRAM, EJAZ GHANI, and MUSLEH UD DIN

This paper explores Pakistan's trade potential because of Pakistan's possible inclusion in the proposed Regional Comprehensive Economic Partnership (RCEP). Using a variety of analytical tools including the trade-cost augmented gravity model, indices of trade complementarity and revealed comparative advantage, the paper demonstrates that FTA between Pakistan and the proposed RCEP will increase bilateral trade, on average, by a factor of 1.84. Trade complementarity indices reveal that Pakistan's import pattern tends to match over time with the export pattern of RCEP countries indicating that Pakistan can benefit from sourcing its imports from the RCEP countries. Moreover, there exists significant potential for Pakistan's trade expansion with ASEAN members as well as other potential trading partners in RCEP. Whereas Pakistan can export cotton, made-up textiles and clothing, fish, cereals, leather products, pharmaceutical products, sugar and sugar confectionary, and light engineering manufactures, the proposed RCEP countries can export basic raw materials, machinery and equipment, steel products, and miscellaneous manufactured goods, to Pakistan. The study recommends that Pakistan should pursue its FTA arrangements actively with the ASEAN, as it is a prerequisite to get membership in the proposed RCEP. Greater integration with the proposed RCEP region will help Pakistan boost trade and investment and promote sustainable growth.

1. INTRODUCTION

Since the creation of the World Trade Organisation (WTO) in 1995, member countries of the WTO have actively pursued trade agreements with other members, both at the bilateral and regional level. The number of regional trade agreements (RTAs) has sharply increased from 50 in 1990 to 291 as of January 2019 (WTO, 2019). Bhagwati (2008) argued that proliferation of regional trade agreements has been associated with slow growth in multilateral trade negotiations. On the other hand, geopolitical developments during the 1980s, such as the process of European integration, influenced other countries like the US to be part of the RTAs to secure a market for their products.

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However, recent developments in trade negotiations indicate that there is more emphasis on commercially meaningful associations. Therefore, current RTAs include more partners with varying levels of economic development from different regions with a focus to go beyond market access to trade in services, investment, competition policies, intellectual property protection, economic and technical cooperation and other areas such as e-commerce.

Recent years have seen the emergence of another class of RTAs known as mega-regional trade agreements or simply the mega-regionals. Melendiz-Ortiz (2014) defines mega-regionals as "deep integration partnerships in the form of RTAs between countries or regions with a major share of world trade and FDI and in which two or more of the parties are in a paramount driver position, or serve as hubs, in global value chains (i.e. the US, the EU, Japan, China)." This class of RTAs include, recently in effect, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP);[1] the emerging Transatlantic Trade and Investment Partnership (TTIP) between the EU and the US; and the proposed Regional Comprehensive Economic Partnership (RCEP) between ASEAN member states and six of its FTA partners: Australia, China, India, Japan, South Korea and New Zealand. The scope of mega-regionals is much wider than members' WTO obligations (WTO-plus) or beyond the coverage of WTO obligations (WTO-beyond or WTO-extra).

The present paper focuses on estimating the potential of economic cooperation between the proposed RCEP and Pakistan. The future of the RCEP looks promising, if realised, as it offers a combined market of 3.4 billion people with a 27 percent share in world trade and a 39 percent share in world GDP in 2017 (Hunt, 2018). The essence of the stated RCEP objectives is to broaden and deepen integration in the region, building upon existing economic linkages. The coverage of the RCEP includes trade in goods and services, investment, economic and technical cooperation, intellectual property protection, compatibility policy, dispute settlement, e-commerce, small and medium enterprises (SMEs) and other issues like harmonisation of regulatory procedures.[2]

On the other hand, Pakistan's trade policy emphasises regional economic integration as a strategy to boost trade and investment for greater prosperity and development. Pakistan adopted its strategic *"look Asia"* policy in 2003 to establish deeper trade relations with fast-growing Asian countries including ASEAN members. This policy has resulted in signing of free trade agreements (FTAs) with China, Indonesia and Malaysia while negotiations are under way to establish FTAs with Thailand and South Korea.

At present Pakistan has RTAs[3] with several countries, with China being a dominant trading partner (Table 1).

[1]Trans-Pacific Partnership save the US, also known as TTP-11. It includes Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam and came into effect on December 30, 2018.

[2]ASEAN Secretariat.

[3]Chronological order of the Pakistan's RTAs along with salient features of the agreements is given in Table 2 in the Appendix.

Table 1

Trade Profile of Pakistan with RTA Partners

	2018		2017		2016		2015	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
China	1818	14545	1508	15383	1591	13680	1935	11019
Indonesia	303	2502	166	2583	128	2089	141	2042
Iran	23	374	27	327	36	323	32	261
Malaysia	158	1160	129	1101	152	945	186	911
Sri Lanka	355	105	269	103	237	77	260	72
Mauritius	19	9	19	4	17	4	61	22

While these RTAs have been instrumental in bolstering the volume of bilateral trade between Pakistan and its trading partners, the balance of trade is generally tilted towards the partner countries. Pakistan has been unable to take advantage of improved market access, mainly due to policy weaknesses and lack of export diversification (KCCI, 2013). Moreover, Pakistan pursued a policy of import-substitution industrialisation in the past, which adversely affected the export-oriented sector.

Further, as Pasha (2017) argues, Pakistani currency has been overvalued by 20 percent whereas other developing economies used competitive devaluation of their currencies as a deliberate policy instrument to remain competitive *vis-à-vis* their competitors in major international markets. Structural issues such as limited access to credit facilities, over-taxation, lack of access to quality infrastructure, and costly provision of utilities have further aggravated the situation for export-oriented manufacturers. As a result, the export sector witnessed an erosion in international competitiveness leading to increasing pressure on the balance of payments.

Though past RTA's have met with little success in terms of boosting Pakistan's exports, the current trade policy regime promises to address structural weaknesses of the export sector while at the same time seeking to widen global market access. In this context, Pakistan has a strong interest to be a partner in RCEP negotiations as almost all the non-ASEAN countries invited to join the proposed RCEP are direct or indirect competitors of Pakistan's exports to major markets like Malaysia, China, India, Indonesia, Singapore and Australia. The non-ASEAN countries will enjoy major concessions upon joining the proposed RCEP and this will adversely affect Pakistan's exports to the region. It is thus important to ensure that Pakistan maintains preferential trade relations with key trading partners to offset potential disadvantages in market access.

Given this backdrop, the objective of this study is to investigate the trade effects of the potential RCEP in the context of Pakistan. In so doing, the study attempts to answer the following questions: is there potential for mutually beneficial trade linkages between Pakistan and the RCEP? Should Pakistan negotiate FTA arrangements with ASEAN[4] to counter the potential trade diverting effects of the proposed RCEP? In addition, the study aims to identify specific products, which could be targeted to gain trade concessions.

We use a trade-cost augmented gravity model of international trade as derived by Anderson and Van Wincoop (2003). In addition, we use trade complementarity index

[4]FTA with ASEAN is a pre-requisite to be part of the RCEP.

(Michaely, 1996) and bilateral revealed comparative advantage index (Blassa, 1966) to identify sectoral trade potential. Our research contributes to the existing empirical trade literature on Pakistan by investigating the potential of trade expansion and the role of trade costs in Pakistan's trade with the proposed RCEP.

The structure of the paper is as follows:

Section 2 provides a brief review of literature.
Section 3 analyses Pakistan's trade with the RCEP.
Section 4 presents methodology of the paper and estimation results.
Section 5 discusses the empirical findings.
Section 6 spells out conclusions and policy recommendations.

2. REVIEW OF LITERATURE

A significant body of literature has analysed the impact of regional trade agreements in a variety of contexts. Several theoretical studies have highlighted the importance of preferential trade agreements (PTAs). In particular, studies argue that RTAs promote broader cooperation among the trading countries, covering trade in goods, investment, and trade facilitation, thus contributing to economic growth. Bagwell and Staiger (2003) and Ossa (2010) show that multilateral trade agreements based on simple rules that allow countries to coordinate tariff reductions and reciprocal market access, are one of the best options to improve terms of trade and increase national income. Moreover, these agreements enhance confidence, improve policy credibility, and encourage policy reforms, leading to greater openness and enhanced regional trade (WTO, 2011).

Magie and Rodriguez-Clare (1998) argue that credibility problems arise when domestic pressure groups lobby governments to adopt a specific policy. The authors argue that the protectionist policies reward import competing sectors by diverting resources from other sectors. The cost of this distortion may be large in the long term, but in the short term, domestic lobbying by sectors competing for imports will prompt governments to set high restrictions on trade.

This study identifies two reasons why governments may want to sign trade agreements: to minimise the distortionary cost because of lobbying by a sector lacking comparative advantage; and to avoid delay in the adjustment process for the under pressure sectors relying on government protection. Trade agreements relate to the need to achieve deeper integration, which goes beyond traditional trade measures such as tariffs (Lawrence, 1996). This deeper integration may require a degree of institutional policy coordination that is more easily achievable at the regional level, rather than with multilateral arrangements (WTO, 2011).

A large number of empirical studies have explored the benefits of regional economic integration. Brenton *et al*. (1999) argue that regional economic integration provides an important stimulus to trade. Clausing (2001) and Trefler (2004) examine the welfare effects of Canada-United States free trade agreement (CUSFTA) and find that trade creation outweighs trade diversion and increases the welfare of the partners. Within East Asia, Lee and Shin (2006) find a trade creating effect of PTAs, which takes place without reducing trade from non-member countries. Baier and Bergstrand (2007) analyse the effects of PTAs, controlling for the endogeneity problem, and argue that PTAs exert a

positive effect on trade flows and that the effect is statistically more robust and five times larger than the estimates that disregard the endogeneity problem.

Clarete et al. (2003) estimates the impact of different preferential trading arrangements (PTAs) in the Asia-Pacific region and concludes that PTAs have significantly contributed to trade expansion both at the global and regional level. This study also shows that PTAs create rather than divert trade. Using GTAP analysis, Reihan and Razzaque (2007) measure the trade creation and diversion, and welfare effects, for different regional integration and bilateral FTAs in South Asia.

This study suggests that free trade arrangements will lead to welfare gain for India, Sri Lanka and rest of South Asian economies except Bangladesh. Acharya, et al. (2011) examines the trade creation effects both within and outside the PTA for 17 PTAs and find a strong effect of intra-PTA trade creation with no evidence of trade diversion. The study also examines the trade creation effect of PTAs on non-member trade partners and finds significant trade creation effects with ASEAN and MERCOSU. For the Caribbean Community (CARICOM), the Central European Free Trade Agreement (CEFTA), the Common Market for Eastern and Southern Africa (COMESA) and the Closer Economic Relations (CER) FTAs, trade diversion effects are found.

Some studies report evidence of trade diversion because of regional economic integration. For example, Romalis (2007) examines the North America Free Trade agreement (NAFTA) using the changes in EU trade to capture the effects in the absence of NAFTA, and concludes that the overall effect of the NAFTA is trade diverting; however, the welfare costs of NAFTA are small. Similarly, Chang and Winters (2002) find trade diverting effects of the Southern Common Market (MERCOSUR). Egger (2004) concludes that membership of a regional trade bloc does not have a significant impact on trade volumes in the short term but there is a substantial trade creation effect in the long term. The authors find that hypothetically, dismantling the European Economic Area (EEA) would reduce trade level by 4 percent within the EEA and by 15 percent trade in NAFTA.

Recent research has explored the role of mega-trade deals in shaping bilateral and global trading patterns. Nugraheni, et al. (2018) analyse the impact of ASEAN FTAs with China, Japan, Korea, Australia, and New Zealand using computable general equilibrium model (CGE). The study found that these agreements increased the welfare of each region and reduced trade deficits of partner countries by increasing the volume of bilateral trade.

Urata (2018) argues that TPP is the best-negotiated trade agreement, therefore, remaining countries of the transpacific partnership (TPP) should continue with the agreement. Secondly, implementations of TPP will put competitive pressure on the RCEP and TTIP negotiations, which will help to counter the rising tendencies of protectionism. Petri, et al. (2017) analyse the impact of TPP11 and show that, if enacted, the real income of the participating countries will increase by 1.1 percent as compared with the baseline value.

Liaqat (2017) examines the impact of TPP on Canada's trade using gravity modeling technique with a decomposition of the impact into output growth effect and trade cost effect. The study concludes that TPP will contribute to a reduction in trade costs and thus increase the bilateral trade of Canada.

Jacks, et al. (2017) analyse the factors that determine expansion and contraction in international trade using a theoretically founded measure of trade cost. The study stresses the dominant role of declining trade cost in the pre-World War I period and that of output growth in the post-World War II period. In addition, contraction in trade during the interwar period is associated with increases in trade costs.

Draper, et al. (2014) argue that Transatlantic Trade and Investment Partnership (TTIP) will significantly benefit trade among the EU, the US and the third party service providers through harmonisation of regulatory procedures, technical standards, and conformity assessment requirement. Novy (2013) developed micro-founded and heterogeneous firms' model and showed that trade cost for the US with its trading partners declined by about 40 percent over a period of 1970-2000.

Fukunaga, et al. (2013) examine ASEAN member FTAs with dialogue partners of the RCEP and find that existing FTAs have not liberalised flow of goods and services as expected but rather created a noodle-bowl on the rules of origin (ROOs). The study recommends that while negotiating the RCEP the members should set a general rule for ROOs and stress the elimination of non-tariff measures.

Fontagne, et al. (2013) investigate the effect of NTMs elimination on the economies of the EU and the US using CGE model. They estimate the impact of a 25 percent reduction in NTMs with zero tariff and find an increase of 0.3 percent in the GDP of both EU and US in the long term, along with an increase in exports amounting to 8 percent and 10 percent respectively for the EU and US.

Several studies have investigated the role of trade agreements in the context of Pakistan's economy. Akram, et al. (2012) explores the possibilities of intra-industry trade of Pakistan with SAARC countries, while Gul and Yasin (2011) estimate Pakistan's trade potential and conclude that it is highest with countries that are members of ASEAN, the EU, and with those in the Middle East. Akhter and Ghani (2010) analyse the impact of free trade agreement among the SAARC countries and show that the regional trade agreement of the SAARC countries could divert trade for member countries as well as for the non-member countries. However, the trade volume is expected to increase if the major trading partners (i.e. Pakistan, India and Sri Lanka) sign a regional trade agreement.

Akram (2008) examines the export potential of Pakistan with 154 countries including SAARC for 19 major sectors and concludes that potential exists to increase exports to partner countries. Qamar (2005) argues that Pakistan can benefit not only by accessing markets for its exports but can also save significantly by substituting its expensive imports from the rest of the world with those from India by granting MFN status to India.

From the foregoing review, it is apparent that no study on Pakistan has explored the trade potential of Pakistan *vis-à-vis* RCEP using a rigorous empirical framework. The present study addresses this gap by using a trade-cost augmented gravity model as derived by Anderson and Van Wincoop (2003). This analysis is complemented by the use of two widely known trade indices to identify the potential of trade at the sectoral level.

3. AN OVERVIEW OF PAKISTAN'S TRADE WITH RCEP

Though the current level of trade between Pakistan and ASEAN member states is not very encouraging,[5] the potential of Pakistan's future trade with ASEAN + 6 looks promising

[5]ASEAN's exports to Pakistan account for only 0.5 percent of its total exports to the world while ASEAN's imports from Pakistan are mere 0.1 percent of its total imports from the world.

as China, Japan, Malaysia, India, Indonesia, and Korea have been among the top ten import sources for Pakistan in recent years. Pakistan has FTAs with China and Malaysia and shares a regional economic integration platform (SAFTA) with India. Besides FTAs, Pakistan also shares cultural and historical ties with India, Indonesia and Malaysia. This suggests a high probability of a successful trading arrangement between Pakistan and the proposed RCEP. The complementarities that exist between Pakistan and RCEP indicate a much higher trade level than has been realised so far. From the RCEP perspectives, the magnitude of complementarity index, albeit low, is increasing over time.

The observed trading patterns of Pakistan with the RCEP suggest that Pakistan has significant trade relations with member states of the proposed RCEP. In addition, Pakistan's trade with the region has increased significantly over the last decade. Pakistan's exports to the proposed members of RCEP have increased from 10.4 percent of total exports in 2003 to 16.83 percent in 2015 and to 18 percent in 2018. Similarly, imports have increased from 32.8 percent of total imports to 46.31 percent in 2015 and then declined to 44 percent in 2018.

Pakistan's exports to the ASEAN countries stood at US$ 1.23 billion in 2018 while its imports from ASEAN amounted to US$ 6.4 billion in the same year. The major trading partners of Pakistan in the region include Indonesia with 3 percent of total trade, Malaysia (2 percent), Thailand (2 percent) and Singapore (1 percent). Pakistan's share of trade with proposed RCEP members is 37 percent of its total trade. China, India and Japan have been its major trading partners in RCEP with 20 percent, 3 percent and 3 percent trade share respectively. China and Japan are the ASEAN's largest trading partners with 17.15 percent and 8.51 percent share in ASEAN's total trade with the world respectively (see Table 2).

Table 2

ASEAN Trade with Selected Economies, 2017

Partners	Total trade (USD Billion)	Share
ASEAN	590.4	22.93
Australia & New Zealand	68.7	2.67
China	441.6	17.15
EU 28 1/	261.3	10.15
India	73.6	2.86
Japan	219	8.51
Republic of Korea	153	5.94
Pakistan[a]	7.6	0.3
USA	235.2	9.13
Rest of the World	532.1	20.67

[a]2018.

As shown in Table 3, seven out of the ten largest import commodity groups of Pakistan match with the top ten traded commodity groups of the ASEAN region. This indicates that the ASEAN region can be an important source for a diverse range of Pakistan's import requirements including mineral oils and products, electrical machinery and equipment, vehicles, and organic chemicals. The fact that Pakistan can be an important market for the ASEAN countries indicates Pakistan's potential as an important trading partner of ASEAN.

Table 3

Shares of Top ASEAN Exports in ASEAN's Total Exports and Share of These Products in Pakistan's Total Imports

HS Code	Commodity Group	Export (%)	Import (%)
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	9.5	12.1
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, parts and accessories of such articles	25.6	23.4
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	11.4	13.1
87	Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof	3.7	3.9
39	Plastics and articles thereof	3.2	4
29	Organic Chemicals	2.3	1.9
90	Optical, photographic, cinematographic, measuring, checking, medical or surgical instruments and apparatus; parts and accessories	3.1	2.8
71	Natural, cultured pearls; precious, semi-precious stones; precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin	3.7	3.2
40	Rubber and articles thereof	2.5	
72	Iron and Steel		3.3

4. METHODOLOGY

The paper uses trade complementarity index (TCI) and revealed comparative advantage (RCA) to estimate Pakistan's trade potential at the sectoral level. This analysis is supplemented by the estimation of trade-cost augmented gravity model to quantify potential gains from trade that can accrue to Pakistan and proposed members if Pakistan joins the proposed RCEP.

4.1. Trade Complementarity Index

The trade complementarity index (TCI), introduced by Michaely (1996) is a type of overlap index that measures the degree to which the export pattern (it can also be calculated for imports) of one country matches the import pattern of another. A high degree of complementarity implies favourable prospects for a more successful trading arrangement. Changes in the TCI over time may tell us whether the trade profiles are becoming more, or less, compatible. TCI is defined as the sum of the absolute value of the difference between the import category shares and the export shares of the countries under study, divided by two. The following formula is used to compute the index:

$$\left[1 - \left[\frac{\sum\left|\frac{\sum_w m_{iwd}}{\sum_w M_{wd}} - \frac{\sum_w x_{isw}}{\sum_w X_{sw}}\right|}{2}\right]\right] \times 100 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

Where *d* is the importing country of interest, *s* is the exporting country of interest, *w* is the set of all countries in the world, *i* is the set of industries, *x* is the commodity export flow, *X* is the total export flow, *m* the commodity import flow, and *M* the total import flow. Division by two yields a value between 0 and 1. The two extreme values

respectively reflect no complementarity, and perfect complementarity. The value thus obtained is subtracted from 1 to reverse the sign and is multiplied with 100 to obtain the TCI in percentage form.

4.2. Revealed Comparative Advantage (RCA)

Comparative advantage underlies explanations by economists for the observed pattern of inter-industry trade. In theoretical models, comparative advantage is expressed in terms of relative prices evaluated in the absence of trade. Since these prices are not observed, in practice we measure comparative advantage indirectly. Revealed comparative advantage indices (Balasa, 1965 and Laursen, 2000; CEPII, 2019) use the trade pattern to identify the commodities/sectors in which an economy has a comparative advantage, by comparing the trade profile of a country with the world average. In other words, it is the ratio of the exports of the commodity from the source to total exports from the source, over the same ratio for the world

$$\frac{\sum_d x_{isd} / \sum_d X_{sd}}{\sum_{wd} x_{iwd} / \sum_{wd} X_{wd}} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

Where, *s* is the country of interest, *d* and *w* are the set of all countries in the world, *i* is the commodity/sector of interest, *x* is the commodity export flow and *X* is the total export flow. It is a ratio of two shares. The numerator is the share of good *i* in the exports of country *s*, while the denominator is the share of good *i* in the exports of world.

The RCA is very useful in a wide range of contexts. For example, while doing trade tracker analysis RCA proves very useful in identifying industries/sectors in which a country appears to enjoy a comparative advantage and the industries/sectors where the comparative advantage is changing for the better or worse. The RCA also proves useful in formulation and evaluation of trade policy and potential FTAs and indicates the extent to which a given agreement is likely to be welfare enhancing or otherwise. Finally, RCAs help identify potential export opportunities.

4.3. The Gravity Model

In order to quantify the gains from the proposed integrated market, we use the traditional gravity model of international trade augmented by trade costs as derived by Anderson and Van Wincoop (2003). Since its introduction in international trade literature by Tinbergen (1962) and its subsequent empirical success, the legitimacy of the gravity model has been firmly established, theoretically and empirically (Jacks, et al. 2011). The gravity equation states that trade flows between countries depend upon their respective national incomes measured by GDPs and bilateral trade cost (measured by bilateral distance, tariff barriers and policy-induced costs etc.). Formally, following Jacks et al. (2011),

$$\ln(x_{ij}) = \alpha_i + \alpha_j + \gamma \ln(y_{it} y_{jt}) + \beta z_{ijt} + \delta FTA + \varepsilon_{ijt} \quad \dots \quad \dots \quad (3)$$

Where α_i and α_j represent reporters and partners fixed effects. x_{ij} is total bilateral trade between home country *i* and trading partner *j*. the y_{it} and y_{jt} represent economic size of countries *i* and *j* measured in terms of GDP, and z_{ijt} is a vector of trade barriers between

countries *i* and *j*. These barriers can be distance, language (whether the official language of trading partners is the same), and contiguity (whether trading partners share borders). We introduce fixed effects to capture time-invariant characteristics of countries, which might affect their trade patterns, for example, differences in factor endowments and productivity differences among trading partners.

Equation (3) implies that trade between countries is an increasing function in economic size measured by GDP and a decreasing function in bilateral trade costs—such as bilateral distance, language barriers and their proximity. In other words, high-income countries tend to trade more while the volume of trade will be lesser among countries located farther from each other.

4.4. Data and Data Sources

Annual trade and GDP data are derived from UN Comtrade database and data on trade barriers and regional trade agreements are extracted from CEPII and Asia-Pacific Trade and Investment Agreement Database (APTIAD) respectively.

5. RESULTS AND DISCUSSION

5.1. Trade Complementarity and Trade Cost Analysis

An analysis of trade complementarity between Pakistan and the RCEP countries is conducted to gauge their potential as trading partners. We observe that a high level of trade complementarity exists between Pakistan and member states of the proposed RCEP, and that trade complementarity with almost all the RCEP countries has increased overtime (Table 4). In other words, the import pattern of Pakistan tends to match over time with the export pattern of RCEP countries. We have also analysed Pakistan's comprehensive bilateral trade cost with ASEAN+6 countries derived from ESCAP-WB trade cost database (Table 4). The tariff based cost and the cost of non-tariff measures, reported separately, are expressed in ad-valorem equivalent form. Non-tariff cost includes the cost of freight, documentation, customs procedures, and the cost arising from the number of days required to process the shipment of goods.

The ad valorem equivalent trade cost of Pakistan-Malaysia for manufacturing goods in 2011 is 96.45 percent, which means that, on average, trading manufactured goods between Pakistan and Malaysia involves an additional cost amounting to 96.45 percent of the value of goods as compared to when the two countries trade these goods domestically.

The trade cost between Pakistan and China in 2010 was 116.32 percent, which implies that trading manufactured goods between Pakistan and China involves an additional ad valorem equivalent cost of 19.87 percent compared to trading goods between Pakistan and Malaysia. Table 5 shows that Malaysia is the lowest cost trade partner for Pakistan in ASEAN+6 economies followed by Vietnam, China, Republic of Korea and India. Brunei Darussalam and Lao PDR are very high cost trade partners in the region. Given the low level of Pakistan's trade with Asean+6, the high trade cost between the potential partners may reflect the rather high cost associated with market entry. These trade costs can be reduced given the presence of high trade complementarities between Asean+6 and Pakistan if Pakistan is allowed to be a member of the proposed regional economic partnership.

Table 4

Complementarity Index of the RCEP with Pakistan

Countries	2000	2009	2015
Australia	16.21	28.17	44.33
Brunei	18.37	26.13	29.47
Cambodia			14.81
China	15.09	21.01	47.62
India	10.40	21.12	56.13
Indonesia	18.90	24.37	66.43 (2014)
Japan	20.47	31.35	56.21
Korea, Rep.	14.28	24.42	55
Lao, PDR			
Malaysia	11.90	25.40	60.72
Myanmar			
New Zealand	17.48	59.23	24.43
Philippines	13.26	25.53	
Singapore	11.82	22.34	52.36
Thailand	13.68	24.74	50.48
Vietnam	20.81	30.71	39.97

Table 5

Bilateral Trade Cost of Pakistan with the RCEP

	Manufacturing		Agriculture	
Countries	t_{ij}	Non-tariff t_{ijji}	t_{ij}	Non-tariff t_{ijji}
Australia 2010	168.01	142.95	192.04	178.30
Brunei 2010	361.19	317.37	n.a	n.a
Cambodia 2011	194.93	152.75	363.31[a]	327.05[a]
China 2010	116.32	96.03	194.86	171.97
India 2011	147.27	124.13	169.81	128.27
Indonesia 2011	166.84	135.33	179.79	156.41
Japan 2010	177.99	154.26	335.85	323.34
Korea, Rep. 2011	137.56	111.44	330.67	229.26
Lao, PDR 2011	599.64	526.89	631.43	580.58
Malaysia 2011	96.45	70.23	182.52	167.92
Myanmar				
New Zealand 2006	172.20	148.20	441.40	422.87
Philippines 2011	199.34	161.29	277.25	235.20
Singapore 2011	211.70	190.96	197.96	194.85
Thailand 2010	148.06	112.44	197.57	161.58
Vietnam 2011	106.47	81.12	164.37	149.13

a: data for the year 2005.t_{ij}: Comprehensive bilateral Trade Cost; Non-Tariff t_{ijji} : bilateral trade cost excluding tariff, n.a.: not available.

5.2. Evidence from Gravity Model

Equation (3) is estimated using fixed effects panel data techniques. The dependent variable ($lntrade_{ij}$) is log of trade between country *i* and country *j*. The coefficients of *GDP* of reporter and partner countries are expected to be positive, which implies that countries with similar income tend to trade more. Similarly, coefficients of *Contiguity* and *Common Language* are expected to be positive. The language dummy is used to capture the historical and cultural similarities between trading partners, which are thought to increase the bilateral trade. Coefficient of distance is expected to be negative, which implies that the farther the countries, the lower their bilateral trade will be. Table 6 reports the estimation results. All estimated coefficients are significant at less than one percent significance level in the both specifications. The estimated coefficients of the $lnGDP_i$ and $lnGDP_j$ imply that, on average, a 1 percent increase in a country's GDP will lead to more-than-proportional increase in its imports and exports.

Table 6

Estimates of the Gravity Equation

Variable	Specification 1 Coefficients	Specification 2 Coefficients
Ln(Distance)	–0.809(0.0234)	–0.832(0.0211)
$Ln(GDP_i)$	1.021 (0.0692)	0.899 (0.0468)
$Ln(GDP_j)$	1.048 (0.00638)	0.767 (0.0439)
$(\text{Common Language})_{off}$	0.681 (0.0402)	0.131 (0.0386)
Contiguity	0.438 (0.658)	0.895 (0.0509)
FTA	1.045 (0.0394)	0.468 (0.0349)
R^2	0.74	0.84
Reporters and Partners fixed effects	No	Yes
Time fixed effects	Yes	Yes

Note: Dependent variable is bilateral trade between Pakistan and its trading partners; robust standard errors clustered by distance are used; coefficients are significant at less than 1 percent; Standard errors are reported in parentheses.

A one percent increase in distance tends to decrease trade by about 0.81 percent. The indicator variable for common official language implies that countries trade 98 percent more, on average, with a partner with the same official language. The countries that share a common border tend to trade 55 percent more than those countries that do not share a common border. Our particular interest lies in the effect of the coefficient of future FTA dummy on the level of bilateral trade, which is positive and significant in both specifications. More specifically, according to the model without reporters and partners' fixed effects, FTA between Pakistan and RCEP will increase, on average, bilateral trade by a factor of 1.84 or by 184 percent ($\exp^{1.045} - 1 = 1.843$). Though the impact of FTA becomes much smaller in model with fixed effects, the trade is predicted to increase significantly (60 percent) because of RCEP. Thus, the estimation results of the gravity equation are consistent with the predictions of the gravity model in determining international trade flows.

5.3. Trade Potential

To assess trade potential of the member states of the proposed RCEP with Pakistan and vice-versa, we use the following formula:

$$TP_{ij} = \frac{Estimated\ trade_{ij}}{Actual\ trade_{ij}}$$

If $TP_{ij} > 1$: potential for trade expansion
If $TP_{ij} < 1$: *exceeding* trade potential

where TP_{ij} is trade potential of country *i* with its trading partner *j*; *estimated* $trade_{ij}$ is the estimated bilateral trade of country *i* with its trading partner *j*; and *actual* $trade_{ij}$ is the actual trade of country *i* with its trading partner *j*. If this ratio is greater than 1 then it implies that there exists potential for trade expansion between the trading partners and if this ratio is less than 1 then it implies that bilateral trade has exceeded its trade potential. The results show that Australia, Brunei, China, India, Japan, Korea, Lao, Myanmar, New Zealand and the Philippines have potential for trade expansion with Pakistan and vice versa, which implies that, in the given situation, bilateral trade between Pakistan and the aforementioned countries can be increased (Tables 7 and 8).

On the other hand, Cambodia, Indonesia, Malaysia, Singapore, Thailand and Vietnam appear to have fully exploited their trade potential with Pakistan and, in the given situation, there is no room left for improvement in their bilateral trade. However, if the countries offer concessions to each other, trade flows can be increased. In other words, a free trade agreement can help Pakistan and these countries to expand their bilateral trade by lowering tariffs and removing trade barriers. Pakistan has already signed preferential trade agreements with Indonesia and Malaysia. To increase their trade potential these countries have to renegotiate their trade agreement and introduce concessions on each other's product lines, which are of high value to them.

Table 7

Trade Potential of Pakistan with the RCEP

Partner	$\ln(Trade_{ij})$	Predicted $\ln(Trade_{ij})$	Difference in Predicted Values
Australia	20.376	21.091	1.035
Brunei	13.442	16.129	1.2
Cambodia	17.323	16.706	0.964
China	23.282	24.949	1.072
India	21.402	24.245	1.133
Indonesia	21.5	20.485	0.953
Japan	21.359	22.146	1.037
Korea, Rep.	20.709	21.111	1.019
Lao PDR	13.878	16.609	1.197
Malaysia	20.807	20.597	0.99
Myanmar	16.964	18.211	1.074
New Zealand	18.261	18.803	1.03
Philippines	18.505	20.098	1.086
Singapore	20.786	20.181	0.971
Thailand	20.693	20.06	0.969
Vietnam	20.036	19.307	0.964

Table 8

Trade potential of the RCEP with Pakistan

Partner	$\ln(Trade_{ij})$	Predicted $\ln(Trade_{ij})$	Difference in Predicted Values
Australia	20.355	21.048	1.034
Brunei	13.759	16.211	1.178
Cambodia	17.466	16.779	0.961
China	23.663	24.85	1.05
India	21.607	24.19	1.12
Indonesia	21.495	20.454	0.952
Japan	21.384	22.072	1.032
Korea, Rep.	20.795	21.067	1.013
Lao PDR	15.294	16.687	1.091
Malaysia	20.976	20.595	0.982
Myanmar	17.436	18.252	1.047
New Zealand	18.378	18.814	1.024
Philippines	18.578	20.096	1.082
Singapore	20.996	20.179	0.961
Thailand	20.741	20.05	0.967
Vietnam	20.178	19.316	0.957

5.4. Revealed Comparative Advantage

To complement the analysis of gravity model, we have computed revealed comparative advantage of Pakistan with each member country of the RCEP. The results for Pakistan's trade with each country are discussed below. The summary of the number of products with comparative advantage equal to/greater than one is presented in Table 9.[6] Among Pakistan's potential RCEP partners, there is significant potential in the export markets of Australia, China, Indonesia, Malaysia, South Korea, Singapore and Thailand. Similarly, these countries, in the proposed RCEP partnership, can expand their exports to Pakistan in a variety of products including basic raw materials, machinery and equipment, steel products, and miscellaneous manufactured goods. Pakistan's export potential in these markets exists in a wide array of products including cotton, made-up textiles and clothing, fish, cereals, leather products, pharmaceutical products, sugar and sugar confectionary, and light engineering manufactures.

[6]For each country, we calculated RTA for each product in which the country enjoys comparative advantage. The details are available upon request.

Table 9

RCA at HS-6 Digits

	RCEP Countries CA with Pakistan Number of Products	Pakistan CA with RCEP Countries Number of Products
Australia	107	335
Brunei Darussalam	04	52
Cambodia	06	45
Indonesia	218	120
Malaysia	252	340
Japan	443	235
Rep. of Korea	494	300
Philippine	114	161
Thailand	546	248
Singapore	571	331
China	999	300
New Zealand	77	200

5.5. Pakistan's Locational Advantage

Besides the potential to expand trade based on economic factors, Pakistan's geostrategic location also makes it an important player in world relationships. To establish seamless connectivity within the RCEP region, Pakistan's geographical location will prove to be a strategic asset for the Asia-Pacific economies. The proposed TIPI-BM (Turkey, Iran, Pakistan, and India-Bangladesh, Myanmar) road corridor and ITI-DKD (Istanbul-Tehran-Islamabad-Delhi-Kolkata-Dhaka) Railway Corridor are under consideration. The TIPI-BM would be Asia's new silk route connecting Central and West Asia with East Asia, with South Asia functioning as a land bridge. The route will be a vital corridor for expansion in trade and transportation. The ITI-DKD Railway Corridor has the potential to become a premier trade corridor for Europe, Central Asia, West Asia, South Asia, and East Asia.

Although the quality of seaports and rail transport is not exceptionally high in Pakistan, it still has a significant cost advantage over its neighbours in the South and South-West Region in terms of the time involved in procedural formalities, and cost per container to export a shipment (see Table 1 in the appendix). The economic integration with ASEAN countries is expected to encourage Pakistan to further improve the trade related infrastructure with increased bilateral investment flows from the RCEP region – which means investment opportunities for the RCEP member states.

Furthermore, Pakistan has signed ECOTTA (Economic Cooperation Organisation Transit Trade Agreement) which will be instrumental in providing a range of transit facilities allowing quick transportation to ultimate destinations. Assuming that the agreement will take effect in the coming years, Pakistan's entry into the proposed RCEP can provide the member states with a cheaper and quicker route to the Middle East thus boosting their trade prospects.

6. CONCLUSIONS AND POLICY RECOMMENDATIONS

This paper has explored the potential benefits accruing to proposed RCEP members and Pakistan in the event of Pakistan's inclusion in the proposed trade grouping. Employing a variety of approaches including trade indices and trade-cost augmented gravity model, the study shows that a significant potential exists for expanding intra-regional trade of all the member states. An added benefit of lower cost of trading can prove beneficial for all members of the trading block. More specifically, our analysis suggests that with the entry of Pakistan in the proposed trading block the quantum of bilateral trade of all the member states will increase. In addition, the geographical location of Pakistan will allow the member states quicker and cheaper access to wider markets, including Middle East and Central Asian Republics.

The inclusion of Pakistan in the proposed trading block is thus clearly a win-win scenario whereby all the countries can reap the dividends emanating from greater intra-regional trade and investment flows, reduced transactions costs, and improved access to important markets. Therefore, the study recommends that Pakistan should actively pursue its membership in the proposed RCEP to boost bilateral trade with members of the RCEP.

At the sectoral level, while Pakistan can enhance its exports of textiles and made-ups, leather products and light engineering, it can be a market for RCEP countries in electric machinery and equipment, mineral fuels, oils and products, basic raw materials, and steel products. Finally, in view of the limited room for further trade expansion with existing PTA partners such as Malaysia and Indonesia, renegotiation of the terms is needed to seek concessions on products that are of high value to Pakistan, such as cotton, made-up textiles and clothing, cereals, leather products, pharmaceuticals and light engineering manufactures. The revised concessions are likely to help Pakistan boost its exports of products in which it has a significant comparative advantage, resulting in the revival of the export-oriented sector, job creation and economic growth.

APPENDIX

Table 1

Documents, Cost and Time to Exporting South and South-West Asia, 2012

Country	Documents to Export (Number)	Time to Export (Days)	Cost to Export (US$/Container)
Afghanistan	10	74	3545
Bangladesh	6	25	965
Bhutan	8	38	2230
India	8	16	1095
Iran, Islamic Republic	7	25	1275
Maldives	8	21	1550
Nepal	9	9	1960
Pakistan	7	7	660
Sri Lanka	6	6	715
Turkey	7	14	990
Coefficient of Variation	16	82	56

Source: UN-ESCAP based on Doing Business Database, World Bank.

Table 2

Salient Features of Pakistan's Preferential Trade Agreements

Indonesia (2013)	Tariffs: • Indonesia and Pakistan offer preferential rates on 216 and 287 tariff lines, respectively. • Pakistan has extended a 15 percent Margin of Preference (MoP) over the standard tariff rate to Indonesian palm oil products Rules of Origin: • Wholly Produced or Obtained: Yes • Minimum Value Addition: 40 percent of f.o.b. • Cumulation Rules: Minimum value addition in two countries of 40 percent • Product Specific Rules: none
Malaysia (2008)	Tariffs: • Under fast track tariffs would be reduced to 0 %in 2009. • Under Normal Track tariffs will gradually reduce to 0 percent in 2012 • Sensitive Tracks (ST): tariffs would be brought down to 5 percent by 2014 under ST1; tariffs would be brought down to 10 percent under ST2; and under ST3 tariffs would be reduced to 20 percent by 2011. • Margin of preference (MoP) would be increased to 20 by 2014 and to 15 percent by 2010 for some products. Rules of Origin: • Wholly Produced or Obtained: yes • Minimum Value Addition: 40 percent of f.o.b. • Cumulation Rules: Minimum value addition of 25 percent in exporting country • Product Specific Rules: Certain textiles and jewelry
China (2007)	Tariffs: • For china, 35.6 percent tariff lines are tariff free by 2010, 19.9 percent tariff lines would be charged 0-5 percent tariff by 2012; and 1.4 percent tariff lines are excluded. • MoP would be reduced from 50 percent by 2012 on 2 percent tariff lines. Whereas MoP would be reduced from 20 percent by 2012 on 26.1 percent tariff lines. • For Pakistan, 35.5 percent tariff lines are tariff free by 2010; 34.4 percent would be charged 0-5 percent customs duties by 2012. • MoP would be reduced from 50 percent by 2012 on 8 percent tariff lines. Whereas MoP would be reduced from 20 percent by 2012 on 7 percent tariff lines. • Both countries offer no concession on 15 percent of their respective tariff lines. Rules of Origin: • Wholly Produced or Obtained: Yes • Minimum Value Addition: 40 percent of f.o.b. • Cumulation Rules: Minimum value addition of 25 percent in exporting country • Product Specific Rules: None
Mauritius (2007)	Tariffs: • Pakistan offers Mauritius TRQ and MoP that varies from 35 percent at entry to 50 percent while 100 percent at end of the year on textiles and non-textiles item whereas • Mauritius offers MoP of 30-100 percent in two years. Rules of Origin • Wholly Produced or Obtained: Yes • Minimum Value Addition: 35 percent of f.o.b. • Cumulation Rules: Minimum value addition of 25 percent in exporting country
Iran (2006)	Tariffs: • Pakistan offers Iran concessions of 5-30 percent on 338 product lines whereas Iran offered the same on 309 product lines. Rules of Origin: • Wholly Produced or Obtained: Yes • Minimum Value Addition: 50 percent of f.o.b. • Cumulation Rules: None
Sri Lanka (2005)	Tariffs: • 206 and 102 tariff lines of Pakistan and Sri Lanka, respectively, enjoy duty free access immediately. • Pakistan grants MoP on applied MFN rates of 20 percent for ceramic products and • TRQ access of 1200MT per financial year at 35 percent MoP to articles of Apparel knitted or crocheted/not knitted or crocheted. • Duty free TRQ access to tea of MT for each financial year • Sri Lanka allows duty free TRQ access to Pakistani Basmati rice and potatoes of 6000 MT per year and 1000 MT per year respectively. Rules of Origin: • Wholly Produced or Obtained: Yes • Minimum Value Addition: 35 percent of f.o.b. • Cumulation Rules: Minimum value addition of 25 percent in exporting country • Product Specific Rules: None

Source: UNESCAP/TID/APTIAD/trade agreement database; and Ministry of Commerce, Pakistan.

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Corruption, Tax Evasion, and Economic Development in Economies with Decentralised Tax Administrative System

ANUM ELLAHI

This theoretical paper looks into joint determination of corruption and development where there is a decentralised bureaucratic setup in a multi-tiered system: tier one bureaucrats and tier two bureaucrats. Corruption takes place at two levels, firstly when tier one bureaucrats collude with households for tax evasion, and secondly when tier one and tier two bureaucrats collude to hide corruption. This paper determines that at high levels of corruption, there is low development, and at a low incidence of corruption, there is high development. This paper postulates that for a developing country like Pakistan, low tax collection due to poor institutional decentralisation leads to low economic growth and development.

JEL Classifications: E02, E26, E42
Keywords: Corruption, Tax Evasion, Economic Growth

1. INTRODUCTION

In the last decade, there has been much concern that corruption in government seems to have a negative impact on economic growth and development. According to Nawaz, Iqbal and Khan (2014) institutions with well-defined mechanisms will curb corruption and promote economic growth and development. Controlling corruption in democratic institutions is growth enhancing (Khan, 1996; Nawaz, Iqbal & Khan, 2014; Iqbal & Daly, 2014). In an economy, institutions are one of the main drivers of investment and economic development (Knack & Keefer, 1995; Mauro, 1995; Rose-Ackerman, 1996; Barro, 1997).

An institution's impact on growth comes from economic development that depends on cultural and social norms, which vary across countries (Alonso & Garcimartin, 2013). Leys (1965) points out that in certain economies (Africa) where public offices are elaborate but inefficient, corruption helps to cut red tape in public projects and may be the only way to speed up the development process.

Well-defined democratic measures (rules, regulation and accountability) are necessary for institutions that are responsible for revenue collection and public expenditure. Tax collection is the main source of revenue collection. Pakistan has a low tax base and revenue collection has shown a fluctuating trend and, at 10 percent, is one of the lowest in the world (Iqbal, Din & Ghani, 2012). The probable reason for low tax

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collection is (1) an improperly designed tax system, and (2) tax evasion by individuals. Tax evasion when combined with low institutional quality leads to poor accountability of public officials and would increase corruption resulting in low economic development (Wade, 1982; Iqbal, Din & Ghani, 2012).

Fiscal decentralisation, a growing phenomenon in developed and developing economies, is devolution of power between central and provincial governments. The role of the provincial government is revenue collection and provision of public goods and services. In developed economies, fiscal decentralisation is accompanied with well-structured rules and regulations for accountability (U.S.A, Canada, Europe) (Yilmaz, 1999). Pakistan over the years has tried to strengthen fiscal decentralisation (e.g.: Niemeyer Award 1947, Raisman Award 1952, One Unit formula 1961,1965 and NFC Award 1990, 1996, 2006, 2009). According to Iqbal, Din and Ghani (2012) revenue decentralisation has a positive impact on economic growth while expenditure decentralisation has a negative impact.

According to Blackburn, Bose and Haque (2010), the public sector suffers from corruption due to delegation of power from government to bureaucrats (principal-agent relationship). This transference of power allows subordinates to use their judgment in decision-making. In an economy where institutions are weak, such delegation of power gives incentive to bureaucrats to capture economic rents through bribery (Bardhan, 1997; Rose-Ackerman, 1998). Becker and Stigler (1974) state that if government employees are paid a higher wage, it would act as a deterrent to corruption.

Wadho (2009) in his paper states that efficiency wage lowers the level of dishonesty in the public sector. Furthermore, literature on corruption and welfare efficiency focuses on deterring corruption through partial equilibrium in microeconomic environment where the focus has been the cause and repercussion of corruption, (Shleifer & Vishny, 1993; Rose-Ackerman, 1975, 1978, 1999). Evidence in theoretical papers shows that there is a negative relationship between corruption and growth (Shleifer & Vishny, 1993; Barreto & Alm, 2003; and Wadho, 2013). Empirical literature shows that economies with a high incidence of corruption have low economic growth and development (Mauro, 1995, 1997; Mo, 2001).

There is not much literature on the joint determination of corruption and economic growth and development in a decentralised bureaucratic system. This paper aims to form a link between fiscal decentralisation with poor democratic measures of low tax collection, and their impact on capital investment with its repercussions for economic growth and development.

Iqbal, Din and Ghani (2012) state that in fiscal decentralisation the central government can appoint provincial governments to check on public goods and services. However, the problem remains unaddressed if the central government itself is corrupt. Therefore, this paper attempts to fill in the gaps in existing literature by exploring corruption in tax compliance under a decentralised bureaucratic setup, where the tax department has two grades of employees: tier-two bureaucrats (superiors) and tier-one bureaucrats (tax collectors).

Tier-two bureaucrats delegate the responsibility of tax collection from households (private individuals) to tier-one bureaucrats. Tier-one bureaucrats can collude with households to hide their true taxable income or pay less/no tax by receiving a bribe. Tier-

one bureaucrats can also collude with tier-two bureaucrats to hide the corruption (low tax revenue collected) from the government.

The remaining paper is organised as follows:

- Section 2 elaborates on the past empirical theoretical literature.
- Section 3 gives a description of the economy with model setup.
- Section 4 analyses the incentives for corruption.
- Section 5 elaborates on equilibriums of the model.
- Section 6 looks at the two-way relationship between corruption and economic growth and development.
- Section 7 gives comparative statistics.
- Section 8 discusses the finding and conclusion.

2. LITERATURE REVIEW

Disparate institutional quality is the main reason for changing capital accumulation, human capital, and economic development and growth across countries (Hall & Jones, 1997). Institutions with democratic mechanisms have a positive impact on growth. Corruption is defined as misuse of public office for private gains (Shleifer & Vishny, 1993; Barreto, 2000; Banerjee, Mullainathan & Hanna, 2012). Efficient and uncorrupt institutions make sure that labour is employed in productive projects, not wasted in rent seeking activities (North, 1990; Iqbal & Daly, 2014). If the rules and regulations governing institutions are not properly defined, labour becomes involved in low return economic projects, which in turn lowers growth, (Murphy, Shleifer & Vishny, 1993).

According to Nawaz, Iqbal and Khan (2014) as institutional quality improves, corruption decreases and income in the economy increases, and vice versa. The impact of institutions varies across Asian economies depending on the level of economic development. Ades and Di Tella (1999) and Triesman (2000) show by empirical studies that corruption not only affects institutions, but also is intensified by weak institutions.

A corrupt economy has inefficient institutions that appear in the form of weak legislative and judicial systems along with bureaucratic red tape, which dampens economic growth (North, 1990; Mo, 2001; Aidt, 2009). Unequal distribution and misallocated resources in a corrupt economy slow down growth and lower living standards (Blackburn, Bose & Haque, 2010). According to Barreto and Alm (2003), public officials are repeatedly found to be self-seeking, abusing their public position for personal gains. Their actions include demanding bribes to issue licenses, exchange of money for awarding contracts, stealing from the public treasury and selling government owned commodities in the black economy.

Empirical literature focuses on corruption, transparency and economic growth. Studies indicate that countries that have a higher degree of corruption are less transparent fiscally and experience low levels of GDP per capita. Fiscal decentralisation classifies government into tiers where the local government acts as a subordinate tier in a multi-tiered system. This paper uses the definition of fiscal decentralisation from the works of Bjedov and Madies (2010) where decentralisation is *deconcentration:* giving power to agents to exercise in certain boundaries but answerable to a central government,

delegation: transfer of power to the agent to be exercised for certain responsibilities, and *devolution:* transfer of power and responsibility to chosen agents through election.

The principle roles and responsibilities of each tier are clearly defined (Shah & Shah, 2007; Bjedov & Madies, 2010). According to Amagoh and Amin (2012) the classification of government into such tiers improves efficiency levels with economic growth and output. In a corrupt economy, the advantages of decentralisation are overshadowed by the disadvantages of poor accountability and inefficiency. Shleifer and Vishny (1993) point out that delegation of power results in dispersion of government decision-making, which leads to lack of coordination and thus rent extraction.

Enikolopov and Zhuraasvkaya (2003) find that a strong party system is beneficial for decentralisation in less developed economies for better provision of public goods, government quality, and economic growth. According to Iqbal, Din and Ghani (2012) fiscal decentralisation increases accountability and transparency in the political process and lowers corruption. Fan, Lin, and Triesman (2009) find that increased government tiers lead to bribery in government contracts and public services (utilities and customs). Fiscal decentralisation of revenue generation in Pakistan has had a positive impact on growth while the decentralisation of expenditure has had a negative impact (Igbal, Din & Ghani, 2012).

Shleifer and Vishny (1993) elaborate that corruption is expensive. The demand for secrecy shifts the country's investment away from high value projects in health and education, towards potentially low value projects in infrastructure (Mauro, 1997). Mauro (1995) finds that corruption lowers private investment, thereby reducing economic growth. Mo (2001) established that economic growth decreases by 0.72 percent when corruption increases by 1 percent. Corruption reduces sustainable development by reduced growth in genuine wealth (Aidt, 2009). However, Khan (1996) points out rent seeking activities that allow the economic agents to sidestep restrictive monopolies actually improve the welfare of the economy thus leading to economic growth (Leff, 1964; Leys, 2017).

Revenue generation through taxes is one of the main source of infrastructural development in an economy. Barro (1991) states that government services (utility and production) financed by taxes enhance growth. Tax revenue is utilised for public and physical capital investment, which converts raw material into output. Romer (1994) states that as physical capital increases, an economy moves towards high growth. Increased physical capital leads to spillovers, leading to economic growth and development (Solow, 1994).

Tax evasion is a form of corruption, which has a varied impact on economic growth. Lin and Yang (2001) in static model analysis shows that at a low taxation level, the extent of tax evasion is small and growth decreases. Furthermore, the dynamic model showed that an increase in taxation allows tax evasion leading to increased saving, investment, and growth in an economy. Eichhorn (2001) shows that tax evasion is beneficial for growth as households evade taxes only if it is profitable and leads to increased savings. The lack of provision of public goods does not have an impact on growth.

Corruption negatively affects savings, which in turn affects investment. Since Foreign Direct Investment (FDI) is the savings of foreigners in a foreign country, the

corruption in the destination country cannot affect the saving decisions of FDI of host countries. In this case, if FDI is a bigger share of total investment then corruption might have negligible effects on investment. However, literature on FDI and corruption highlights that corrupt economies are not attractive destinations for FDI.[1]

According to Wei (2000) international investors do not find it worthwhile to invest in economies where the corruption index is high. A country's investment environment is measured through its institutional quality, which is an indicator of political institutions, rule of law, property rights, non-transparency and instable economic policies. If the institutional quality of a country were poor, then FDI in that country would be low for it creates operational inefficiencies (Globerman & Shapiro, 2002; Habib & Zurawicki, 2002). Corruption lowers the productivity of public inputs leading to a decrease in the country's locational attractiveness, which is an important factor for foreign investment (Egger & Winner, 2005). The location plays an important role when investors are deciding on host countries from an investment point of view.

Ehrlich and Lui (1999) developed a model where the prospect of corruption in the public sector allows individuals to become a part of government and thus divert economic rents towards rent seeking activities rather than growth enhancing projects. Similarly Sarte (2000) talks about rent seeking individuals that hinder progress in the formal sector's security and property rights, and promote the informal sector with less security.

Blackburn, Bose and Haque (2010) (hereafter BBH) in their neoclassical growth model employ bureaucrats as agents of the government for tax collection. Corruption, as bribery and tax evasion, takes place amongst tax collectors and households. The bribery goes undetected because of poor monitoring by the government. Wadho (2009) uses the endogenous monitoring where corruption by tax collectors can be caught. Corruption takes hold when corrupt tax collectors match corrupt households. In addition, efficiency wage ensures that corruption does not take place. In case corruption does take place because of lower wages then effective auditing will report the corruption to the government.

The population setup and external monitoring is similar to the Wadho model, while the tax collectors and household setup is same as the BBH model, but this paper adds tier-two bureaucrats to the model. The tax administrative department is two tiered; tier-two bureaucrats, as effective auditors, are hired by the government for monitoring tax collection and maintaining a corruption free environment, while the government hires tier-one bureaucrats, known tax collectors, for tax collection from households. Taxes are collected from high-income household at the tax rate determined by the government.

Tier-one and tier-two bureaucrats have the opportunity to be corrupt. The two levels of corruption are: 1) bribes that tier-one bureaucrats receive from households to be reported as low income and to pay low/no taxes. 2) Payoff to tier-two bureaucrats by tier-one bureaucrats during audit, if they are caught. The payoffs amongst the bureaucrats are decided through Nash bargaining, (Cerqueti & Coppier, 2009). The focus of this model is not just tax collection but also the saving of the economy as it leads to economic growth. This model shows that investment in equilibrium with corruption is low compared to investment in equilibrium with no corruption. In addition, public goods are rival and non-excludable and the agents in the economy live for two time periods and two generations.

[1]The actual FDI is lower than the potential FDI.

3. FRAMEWORK

3.1. The Environment-Economy

This paper builds a stylised model using an overlapping generation model where each generation consists of constant population *N*, who lives for two time periods and are risk neutral. A proportion $\theta \in (0,1)$ of agents are corruptible, i.e. they will be corrupt if it pays them to be corrupt and the remaining fraction $(1-\theta)$ is not corruptible, who irrespective of the monetary gains will stay honest. Agents of each generation are divided into three sets; private individuals referred to as *households* of which there is a fixed measure *n*, for the purpose of collecting taxes there is a fixed mass of *m* tax collectors classified as *tier one bureaucrats*. The hiring and overseeing of the tier-one bureaucrats is done by a fixed mass *s* of *tier two bureaucrats* (known as super auditors) where $n>m>s$ and $n+m+s=N$.

In the economy, households are differentiated based on their labour endowment, which determines their relative income and their propensity to be taxed. A fraction $\mu \in (0,1)$, of households are endowed with $\varepsilon > 1$ units of labour (high income bracket) who are liable to pay a proportional tax $\tau \in (0,1)$ which is decided by the government, while the remaining fraction $(1-\mu)$ have labour endowment $\varepsilon = 1$(low income bracket) and they are not liable to pay any taxes.

The government is aware of the total μ without knowing the individual taxes due by households. This paper assumes that both tier-one and tier-two bureaucrats are not liable to pay taxes, i.e. they are low type, whereas tier-two gets a premium $\upsilon < \varepsilon$.[2] The tax is collected by the tier-one bureaucrats from $\frac{2n}{2m}$ households. At the first level, corruption takes place when the tax collector conspires with households to conceal their information about their true income. In this scenario, the tax collector expects a gain in the form of a bribe and households expect gains in the form of tax evasion. There is a fraction $\lambda \in (0,1)$ of tax collectors that are corrupt in this way and the remaining fraction $(1-\lambda)$ are honest (non-corrupt). At the second level, corruption happens during the annual audit when this misreporting is revealed to tier-two bureaucrats. Assuming that if the superior bureaucrat is honest, the corrupt tier-one bureaucrat is reported and punished. When the corrupt tier-one bureaucrat matches up with corruptible tier-two bureaucrats, the tier-two bureaucrat does not reveal this misreporting, and the tax collector pays a share out of total bribes determined through Nash bargaining to superiors.

All agents in the society work (save) during the first time period and consume in the second time period. Firms are responsible for the output production, of which there is continuum of unit mass. The households provide the labour for hiring to the firms and the firms hire the rent capital from all agents of the society. All markets are perfectly competitive.

3.2. Households

Households of generation $i = (1,2)$ at time period t earn income $I_{i,t}$ by supplying their labour to firms in the private market and earn wages, $w_{i,t}$. Each household faces a linear utility function of its expected income. A household which has labour endowment

[2]This is to simplify the model and it does not affect the qualitative results of this model.

ε=1 earns labour income w_i in each time period and are exempted from taxes. Households with labour endowments $\varepsilon > 1$ earn labour income εw_i and pay proportional tax τ to the government. Both the high income and low-income households save their current wages at the prevailing market interest rate for the next time period r_{t+1} that is received in the next period to be consumed with the next period wages. For the time period t+1 the income for the household is I_{it+1} and the wages are $w_{i,t+1}$, as this model will show in the steady state where $w_{i,t} = w_{i,t+1}$.

This paper focuses only on high-income households, as they are the ones who are liable for taxes and could collude with the tax collectors (tier-one bureaucrats) for tax evasion. Honest households do not evade taxes such that their net income equal to $\varepsilon w_{i,t}$ $(1-\tau) + r_{t+1}\ \varepsilon w_{i,t}\ (1-\tau) + \varepsilon w_{i,t+1}\ (1-\tau)$. Since in the steady state $w_{i,t} = w_{i,t+1}$, for the next section onwards this paper uses w without the subscript. For corruptible households, income is uncertain and depends on the bribe that they pay to bureaucrat and the probability of being caught. With probability p their corruption is detected through audit. This model assumes that the effective probability depends on the type of tier two bureaucrats. With probability θ, tax collector matches with a corruptible tier-two bureaucrat. In this case, the tier-two bureaucrat does not reveal this corruption and they bargain on the share of bribes that each of them receives. Given this setup the effective probability of being caught $p(1-\theta) \in (0,1)$. Assuming that when detected, a corrupt household is asked to pay its taxes. Given this, the net income of corruptible household is

$$E(I;b,r) = \begin{cases} \varepsilon w(1-\tau)(2+r_{t+1}), & if\ \ b = 0 \\ \varepsilon w(2+r_{t+1})(1-b_t - p(1-\theta)\tau), & if\ b > 0 \end{cases} \quad \ldots \quad (1)$$

Where $b > 0$ implies that the household is involved in corruption.

3.3. Tax Collectors—Tier One Bureaucrats

Tax collectors differ in their behaviour in public offices. They supply their unit endowment of labour to government inflexibly and earn wages equal to, w_g in each time period. Any bureaucrat (corruptible or non-corruptible) working for a firm, while supplying one labour unit to receive a non-taxable wage equal to the wage paid to households. Therefore, any bureaucrat who is willing to accept a wage less than the stated wage must be expecting to receive compensation through bribery and hence is identified as being corrupt.[3]

Each bureaucrat has $\frac{2\mu n}{2m}$ households under his jurisdiction. Honest bureaucrats do not indulge in corruption and earn a lifetime income, $w_g(2 + r_{t+1})$. Whereas, corruptible tax inspectors can be corrupt if it pays them to be corrupt. Only the households, which are corrupt pays $\frac{2\theta\mu n}{2m}$ to the corrupt tax collector. Further, this model assumes that an honest household even when it encounters a corrupt bureaucrat refuses to collude and declares its true income. Thus, with probability θ, a corruptible tax collector matches with a corruptible household who pays him a bribe (b) and colludes to hide its true income.

A fraction $\lambda \in (0,1)$ of corruptible tax collectors are corrupt and demand bribes to conceal information about households' income. The income of the corrupt bureaucrat is

[3]See Blackburn, Bose and Haque, 2010 for more discussion.

uncertain and depends on chances of being caught. If caught then the fine constitutes the bribe they receive, penalty associated with being corrupt, and the return they get on their investment from the bribe income. They face an effective probability $p(1-\theta)$ of being caught through audit. Particularly, with probability *(1-θ)* tax inspector matches with honest, tier-two superior, who reports his corruption. With probability θ tax inspector matches with corruptible tier two bureaucrats, who demands a share $\varphi \epsilon (0,1)$ from bribe income to conceal his corruption.

Assuming that the tax inspector is willing to pay this share and its value is determined through Nash bargaining. Since, corruption is illegal, tax inspector hides the illegal income, and given the opportunity tax collector will try to utilise it by converting it into black or white money. If the money goes into to the formal sector the chances of being caught are high, as the source income needs to be identified. Therefore, the corrupt tax collector treats the money as black money and invests in the informal market or in those sectors where the probability of being caught is low or zero. To keep up with the growth model money is not left idle. The black money is invested in the market at rate of return which is smaller and is equal to $r_{t+1} - \rho$, where $\rho > 0$.[4]

This paper assumes that when tax inspectors are caught through the audit, their entire income is confiscated which constitutes their earnings and the bribe they have received from the household. Given this the expected net income of a corruptible tax inspector is:

$$E(I;b,r) = \begin{cases} w_g(2+r_{t+1}) & b = 0 \\ [1-p(1-\theta)]\left\{w_g(2+\ r_{t+1}) + (2+r_{t+1}-\rho)\left(\frac{\theta\mu n}{m}\right)\varepsilon w b_t(1-\varphi)\right\}, & b > 0 \end{cases} \quad (2)$$

3.4. Super Auditors—Tier Two Bureaucrats

Tier two bureaucrats supply their labour to the government and earn wages equal to υw_g, where $1< \upsilon < \varepsilon$. This implies that tier two bureaucrats are paid a higher wage than tier one bureaucrat is, whereas, for simplicity this paper assumes that they do not pay taxes. Honest tier two bureaucrats do not collude with tax inspectors and they earn only wage income, whereas, corruptible tier two bureaucrats collude with corrupt tax inspectors and their income is uncertain. The bribe income of tier two bureaucrats depends upon the bribe paid by the corrupt households and the corrupt tax collectors $\left(\frac{2\theta\mu n}{2m}\right)\left(\frac{2\theta m}{2s}\right)$ since $m > s$ there would be $\frac{m}{s}$ tax collectors under tier two bureaucrats. Symmetric to tier one bureaucrat, it is assumed that when tier two bureaucrats are caught being corrupt, their entire income is confiscated, and they invest their bribe income in black market with smaller returns. Given this, the expected net income of tier two bureaucrats is:

$$E(I;b,r) = \begin{cases} \upsilon w_g(2+r_{t+1}), & \varphi\ = 0, b = 0 \\ (1-p)\left[\upsilon w_g(2+r_{t+1}) + (2+r_{t+1}-\rho)\left(\frac{\theta\mu n}{s}\right)\varepsilon w b\varphi\right], & \varphi > 0, b > 0 \end{cases} \quad (3)$$

[4] Assumption for this model.

3.5. Government

The government provides public goods through revenues, which are collected through levying a proportional tax on high-income households, along with the fine that is collected from tier one and tier two bureaucrats when they are caught being corrupt. The government audits the conduct of bureaucrats that costs its resources.

For simplicity, this model assumes that the cost of auditing is equal to revenues collected through successful auditing. The government assigns a fixed proportion, $\Phi \in (0, 1)$ of tax revenue generated on public goods, G_t and the remaining portion to the payment of wages to tier one and tier two bureaucrats. Given that no corruptible bureaucrat would ever reveal himself in the way described above, therefore, to minimise the labour costs the government sets the wages of all bureaucrats equal to the wages households receive from the private firms to ensure complete bureaucratic participation, (Blackburn et.al, 2010).

3.6. Firms

The representative firm produces output according to following Cobb-Douglas production function

$$Y_t = AL_t^{\beta} K_t^{1-\beta} G_t^{\alpha} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (4)$$

When there is congestion of the public services (Barro & Sala-I-Martin, 1992), such that $G_t = {}^{G}/_{K}$, where G is the quantity of the public services and K is the private capital available to the private firms. Public goods are rival and non-excludable i.e. there is congestion[5]. Given there is congestion of public goods the production function becomes:

$$Y = AL_t^{\beta} K_t^{1-\beta} \left(\frac{G_t}{K_t}\right)^{\alpha} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (5)$$

Where A>0, $\alpha, \beta \in (0, 1)$, $\beta + \alpha < 1$. Also L_t is the labour of the economy and K_t is the capital of the economy. Firms hire the labour from the households at competitive wage rate w_t and rents capital at competitive rental rate r_t. Profit maximisation implies that:

$$w_t = \beta A L_t^{\beta-1} K_t^{1-\alpha-\beta} G_t^{\alpha} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (6)$$

$$r_t = (1-\alpha-\beta) A L_t^{\beta} K_t^{-\alpha-\beta} G_t^{\alpha} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (7)$$

4. THE INCENTIVE TO BE CORRUPT

This paper looks into the behaviour of households, tax collectors and tier two bureaucrats in the environment of tax evasion and bribery[6]. In a two-dimensional problem where tier one bureaucrats decide whether to be corrupt or not and later to decide on the minimum bribe that is acceptable to them while considering the share φ that they would have to give to tier two bureaucrats in order to evade being caught through the effective auditing. The share of bribe φ is decided between tax collector and

[5]Relative congestion: you benefit from the public good if you utilise it, otherwise there is no impact on the non-user utility.

[6]This model looks at the economy in equilibrium such that w_g= w as stated wage to private and public agents is same.

tier two bureaucrats through the Nash bargaining. The point where they will both agree will decide the share.

By including bargaining in this, a tax collector maximises the net benefits from this collusion. If he colludes, the effective probability of being caught is smaller. It is equal to $p(1 - \theta)$ because his corruption can only be revealed if he matches with honest auditor. However, he will have to share the bribe income with a corrupt auditor. Moreover, if he does not collude, he is going to be caught with probability (p) irrespective of who is the auditor. Given this the net gains of colluding for tax collector with tier two bureaucrat are:

$$\Delta B_1 = \left\{p\theta w(2 + r_{t+1}) + (2 + r_{t+1} - \rho)\left(\frac{\theta\mu n}{m}\right)\varepsilon w b([1 - p(1-\theta)] - [1-p])\right\}^{0_1} \quad \ldots \quad (8)$$

Similarly, net gains of tier two bureaucrats from this collusion is:

$$\Delta B_2 = \left\{\left[\upsilon w(2 + r_{t+1}) + (2 + r_{t+1} - \rho)\left(\frac{\theta\mu n}{s}\right)\varepsilon w b\varphi\right] - \upsilon w(2 + r_{t+1})\right\}^{O_2} \quad \ldots \quad (9)$$

$$\varphi^{NB} = \Delta B_2 . \Delta B_1$$

Keeping this in mind following share of bribe is given as:

$$\varphi^{NB} = \left[\frac{O_2}{0_1 + O_2}\right] . \left[\frac{p\theta}{[1-p(1-\theta)]}\right]\left[1 + \frac{(2 + r_{t+1})}{(2 + r_{t+1} - \rho)\left(\frac{\theta\mu n}{m}\right)\varepsilon b}\right] \quad \ldots \quad \ldots \quad \ldots \quad (10)$$

From the above expression, this model establishes the share of bribe tier two bureaucrats demand of the tax collectors. The comparative statistics $\frac{\partial(\varphi^{NB})}{\partial O_2} > 0$, which explains that increase in bargaining power of tier two bureaucrats, increases their share in bribe, by $\frac{\partial(\varphi^{NB})}{\partial 0_1} < 0$ we see that if the bargaining power of the tax collectors increases, the share in bribe of tier two collectors would decrease. The increase in the rate of interest, the bribe and the proportion of corruptible agents have a negative impact on the share of tier two bureaucrats on bribe, $(\frac{\partial(\varphi^{NB})}{\partial\, r_{t+1}} < 0\,,\ \frac{\partial(\varphi^{NB})}{\partial b_t} < 0, \frac{\partial(\varphi^{NB})}{\partial\theta} < 0\,)$. If the probability of being caught were to increase, the share would also increase to cover the risk associated with it, $\frac{\partial(\varphi^{NB})}{\partial p} > 0$.

Tax collectors are corrupt only when the expected utility from getting a bribe leaves them no worse than not getting a bribe. The bribe would be large enough to cover the risk and share of tier two bureaucrats. This model finds that a corruptible tax collector will be corrupt if:

$$b_t^* \geq \frac{p(1-\theta)(2+r_{t+1})}{[1 - p(1-\theta)](2+r_{t+1}-\rho)\left(\frac{\theta\mu n}{m}\right)\varepsilon(1-\varphi)} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (11)$$

The second incidence of corruption happens when the tax collectors and the households collude together to hide the true extent of the household's income. The corrupt high-income households will be willing to pay a bribe as long as it feasible for them, such that expected utility from paying the bribe and the expected utility from not paying is at least equal. Keeping this in mind the optimum bribe rate for the households is calculated through Equation (1) and is estimated to be

$$b_t^* = \left[1 - p(1-\theta)\right]\tau_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (12)$$

Equation 12 states that the households will not pay the tax collectors more than they expect to save from tax evasion. In this model, incidence of corruption happens only when the tax collectors and the households concur on the same bribe such that they simultaneously satisfy one another, this is seen when equation (11) and (12) are solved together:

$$\left[1 - p(1-\theta)\right]\tau_t \geq \frac{p(1-\theta)(2+\mathrm{r}_{t+1})}{[1-p(1-\theta)](2+\mathrm{r}_{t+1}-\rho)\left(\frac{\theta\mu n}{m}\right)\varepsilon(1-\varphi)} \quad \ldots \quad \ldots \quad \ldots \quad (13)$$

The above condition relies on the economy wide variable τ and r_{t+1}. The current tax rate and the future market interest rate are of interest; determined by the current economic situation in the economy. The prevalent economic condition in the economy accounts for corruption in my model. The current statistics show the presence of corruption will provide incentive to the upcoming bureaucrats. The current time period *t* corruption will determine the future corruption, which in return determines the future market interest rate.

The behaviour of the economy is analysed under two scenarios 1) economy where there is no corruption and 2) economy where there is corruption. Furthermore, the model looks into the behaviour of capital in steady state alone such that $Y_{1,t} = Y_{1,t+1}$ *and* $Y_{2,t} = Y_{2,t+1}$ *and* $Y_{1,t} = Y_{1,t+1} = Y_{2,t} = Y_{2,t+1} = Y$ and $K_{1,t} = K_{1,t+1}$ and $K_{2,t} = K_{2,t+1}$ *and* $K_{1,t} = K_{1,t+1} = K_{2,t} = K_{2,t+1} = K$. Solving the equation (3), (4) and (5) current market interest rate and the current wage in the market is calculated. Where $w = \beta L^{-1}\Psi K^{\chi}$ and $r = (1-\alpha-\beta)\Psi K^{\chi-1}$this shows that the economy-wide variable relies on the labour force in the market along with the labour and capital share in the output function. Furthermore, the presence of *K* shows that the current level of the capital in the economy plays a dominant role for the determination of current wage, current market interest rate.

With this in mind, it can be concluded that the presence of future capital K_{t+1} would determine future market interest rate r_{t+1} that would be accounted as the investment of the economy for the economic growth. In this model, the fixed proportion for the government services is such that $G_t = \Phi Y_t$, thus when in equilibrium it is see that that the total labour supply $L = [(1-\mu) + \varepsilon\mu]\, n$, which is the sum of total labour supply of high income households $\varepsilon\mu n$ and labour supply of low income households $(1-\mu)n$.[7] This model finds the government share in the economy through $G = \Psi K^{\chi}\Phi$ where $\Psi = \left[A(\Phi)^{\alpha}L^{\beta}\right]^{1/1-\alpha}$ and $\chi = \frac{1-\alpha-\beta}{1-\alpha}$.

The economy follows balanced budget condition *tax revenues = G+(mw+svw)* and replacing the values of *G* and *w* gives the following relation:

$$Tax\ revenue = \Psi[\Phi + \beta(m + s\upsilon)]K^{\chi}$$

According to growth theory, the presence of physical capital translates into investment of the economy; accumulation of physical capital comes from saving of the economy. The savings in an economy comes:

[7] This holds true when there is equilibrium in the labour market.

Households

Low-income HH = $(1-\mu)nw$

High-income HH (honest) = $\mu n\varepsilon w(1-\theta)(1-\tau)$

High-income (HH)(dishonest)= $\theta\lambda\mu n\varepsilon w(1-b-p(1-\theta)\tau), (1-\lambda)\theta\mu n\varepsilon w(1-\tau)$

Tax Collectors (Tier One Bureaucrats)

B_1 Honest = $[(1-\theta)+\theta(1-\lambda)]mw$

B_1 Dishonest/ Corruptible = $\theta\lambda\mu mw\left\{[1-p(1-\theta)][w(2+r_{t+1})+(2+r_{t+1}-\rho)(\frac{\theta\mu n}{m})\,\varepsilon wb(1-\varphi)]\right\}$

Super Auditors (Tier two Bureaucrats)

B_2 Honest = $(1-\theta)s\upsilon w$

B_2 Dishonest/ Corruptible = $(1-\lambda)s\upsilon w, \lambda\theta s\left\{(1-p)\left[\upsilon w+\left(\frac{\mu n}{s}\right)\theta\varepsilon wb\varphi\right]\right\}$

Where saving equal future capital:

$$s_t = K_{t+1}$$

5. GENERAL EQUILIBRIUM

5.1. Equilibrium with No Corruption

In equilibrium with no corruption, total tax revenue collected in the economy is $\hat{\tau}\mu n\varepsilon w$, which is used for payment of wages of tier one and tier two bureaucrats *mw* and *sw* respectively, and to provide public good and services G, which is utilised by the private firms.

Given that the government runs a balanced budget, tax rate without corruption is:

$$\hat{\tau}_t = \frac{G+\mathrm{w}(m+s\upsilon)}{\mu n\varepsilon w} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (14)$$

$$\hat{\tau}_t = \left[\frac{L\Phi+\beta(m+s\upsilon)}{\beta\mu n\varepsilon}\right] \equiv \hat{\tau} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (15)$$

Looking at this tax level the optimum tax rate, household's willingness to pay the bribe would be $\widehat{b_t} = \left[1 - p(1-\theta)\right]\hat{\tau}_t$ (from equation (12)).

In equilibrium with no corruption $\lambda=0$, total savings of the economy come from the honest low-income individuals $(1-\mu)nw$ and honest high-income households $\mu n\varepsilon w\,(1-\hat{\tau})$. The savings of the tier one and tier two bureaucrats is mw and $s\upsilon w$ respectively. Combining all these expressions together and replacing the values of $\hat{\tau}$ and algebraic manipulation gives:

$$wL - G = \widehat{K}_{t+1} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (16)$$

Using Equation (16) and replacing $G = \Psi K^{\chi}\Phi$ and $w = \beta L^{-1}\Psi K^{\chi}$ I get the following expression for the future accumulation of the physical capital:

$$\widehat{K}_{t+1} = \Psi K_t^{\chi}[\beta - \Phi] \equiv \widehat{K}(K_t) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (17)$$

As already established that $\hat{r}_t = (1-\alpha-\beta)\Psi\widehat{K}_t^{\chi-1}$, then from this it is determined $\hat{r}_{t+1} = (1-\alpha-\beta)\Psi\widehat{K}_{t+1}^{\chi-1}$, combing this relationship with equation (17) following relation is attained:

$$\hat{R}_{t+1} = (1-\alpha-\beta)\Psi\,[\beta-\Phi]^{\chi-1}.\hat{K}_{t+1}^{\chi(\chi-1)} \equiv \hat{R}(K) \quad \ldots \quad \ldots \quad (18)$$

From ICC constraint:

$$\hat{R}(K_t) \geq \frac{2\,\bar{Z}-(2-\rho)\hat{\tau}}{(\hat{\tau}-\bar{Z})} \equiv \widehat{W} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (19)$$

5.2. Equilibrium with Corruption

In equilibrium with corruption, *λ=1*. The total tax receipts come only from honest high-income households. Corruption happens when corrupt households meet with a corrupt tax collector. With probability $(1-\theta)[(1-\theta)+\theta(1-\lambda)]$ honest households meet up with honest tax collectors, with probability $(1-\theta)\,\lambda\theta$ honest households meet up with corrupt tax collectors, corrupt households match with honest tax collector with probability $\theta[(1-\theta)+\theta(1-\lambda)]$. Combing all these three cases the total tax receipts submitted to the government equal $\tilde{\tau}\mu n\varepsilon w$ $((1-\theta^2)$. When a corrupt household meets with corrupt tax collector with probability θ^2 and no tax receipts are submitted.

A corrupt tax collector is caught with probability *p (1-θ).* He loses his corrupt income and is fined the amount that he has gained as illegal income. Once caught the corrupt tax collector has to pay the tax difference. Thus the revenues for the government coming from tax collector being caught is $p\tilde{\tau}\mu n\theta^2\lambda$ and $(p\,(1-\theta))[w(2+\,r_{t+1})+(2+r_{t+1}-\rho)(\frac{\mu n}{m})\,\theta\varepsilon wb]$. The cost of the effective audit is $c\eta\tilde{\tau}\mu n$ and for external audit is $c\sigma\tilde{\tau}\mu n$. The cost is covered by the fine collected. The total cost and the fine are taken equal such that the government does not spend extra. Keeping all this in view, optimal tax expression is:

$$\tilde{\tau}_t = \frac{G+\mathrm{w}(m+s\upsilon)}{(1-\theta^2)\mu n\varepsilon w} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (20)$$

$$\tilde{\tau}_t = \left[\frac{\Phi L+\beta(m+s\upsilon)}{(1-\theta^2)\mu n\varepsilon\beta}\right] \equiv \tilde{\tau} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (21)$$

The optimum level of bribe that households are willing to pay and the tax collectors are willing to accept is $\tilde{b}_t = \left[1-\,p\,(1-\theta)\right]\tilde{\tau}_t$ (from equation (13)). The total saving in such an economy comes from the corrupt as well as the honest agents.

Combing all the savings expression of honest and dishonest households, tax collectors and tier two bureaucrats; replacing the value of $\hat{\tau}$ and algebraic manipulation gives the following relation:

$$\begin{aligned} &Lw + mw[1-p\theta(1-\theta)] + s\upsilon w\frac{(1-\theta)}{(1-\theta^2)}[G+\mathrm{w}(m+s\upsilon)][1+\theta p] \\ &\quad -\theta\mu n\varepsilon\mathrm{w}\tilde{b}_t\{1-\theta\varphi-[1-p(1-\theta)\theta(1-\varphi)]\} = \tilde{K}_{t+1} \quad \ldots \quad \ldots \quad (22) \end{aligned}$$

Working with equation (22) and replacing $\widehat{b_t} = \left[1-\,p(1-\theta)\right]\hat{\tau}_t$, $G = \Psi K^{\chi}\Phi$ and $w = \beta L^{-1}\Psi K^{\chi}$ following capital accumulation exists in equilibrium with corruption:

$$\begin{aligned} \tilde{K}_{t+1} = \Psi K_t^{\chi}[&\beta + \frac{\beta}{L}m[1-p\theta(1-\theta)] + \frac{\beta}{L}s\upsilon(1-\theta p) \\ &-\frac{(1-\theta)}{(1-\theta^2)}\left[\Phi + \frac{\beta}{L}(m+s\upsilon)\right][1+\theta p] \\ &-\frac{\theta\mu n\varepsilon\beta\tilde{\tau}}{L}\left[1-\,p(1-\theta)\right]\{1-\theta\varphi-[1-p(1-\theta)\theta(1-\varphi)]\}] \quad \ldots \quad (23) \end{aligned}$$

As $\tilde{r_t} = (1-\alpha-\beta)\Psi\tilde{K}_t^{\chi-1}$, then from this it can derived that $\tilde{r}_{t+1} = (1-\alpha-\beta)\Psi\tilde{K}_{t+1}^{\chi-1}$, combining this relationship with equation (23) this model gets the following relation:

$$\tilde{R}_{t+1} = (1-\alpha-\beta)\Psi\left[\Psi\left[\beta+\frac{\beta}{L}m[1-p\theta(1-\theta)]+\frac{\beta}{L}s\upsilon-\frac{(1-\theta)}{(1-\theta^2)}\left[\Phi+\frac{\beta}{L}(m+ s\upsilon)\right][1+\theta p]-\frac{\theta\mu n\varepsilon\beta\tilde{\tau}}{L}\left[1-p(1-\theta)\right]\{1-\theta\varphi-[1-p(1-\theta)\theta(1-\varphi)]\}\right]\right]^{\chi-1}$$
$$.K_{t+1}^{\chi(\chi-1)} \equiv \tilde{R}(K_t) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (24)$$

From ICC constraint:

$$\tilde{R}(K) \geq \frac{2\bar{Z}-(2-\rho)\tilde{\tau}}{(\tilde{\tau}-\bar{Z})} \equiv \widetilde{W} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (25)$$

6. CORRUPTION AND DEVELOPMENT

6.1. From Low Development to Corruption

This model solidifies the relationship of corruption, capital accumulation and economic development already discussed in literature. What is of interest is to see whether at the equilibrium level, there is corruption or not, and what level of capital there is high growth, or low growth, in the economy, and if these levels are the same for both the equilibrium with and without corruption.

From the Equations (18 and 26) this paper finds that $\tilde{R}(K)$ and $\hat{R}(K)$ have monotonically downward function with respect to K. From equation (18), (19), (24) and (25) it is established that $\tilde{R}(K_t) > \hat{R}(K_t)$ and $\widetilde{W} < \widehat{W}$ for all values of K_t. Intuitively speaking this model says that future rate of return, as a function of K in a corrupt economy would be higher compared to the rate of return as a function of K in an economy with no corruption. Furthermore, $\widetilde{W}$ and $\widehat{W}$ are not a function of K but depend upon the bargaining power of the bureaucrats, audit probability and corruption probability.

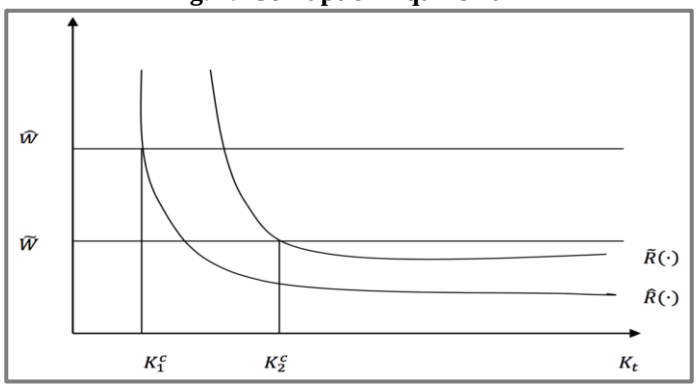
As already pointed out in literature these three components are dependent on the institutional quality and vice versa. Keeping this view in mind, this model concludes that in the presence of corruption with the increase in probability of being caught or increase in bargaining power it would reduce $\widetilde{W}$ and it increase $\widehat{W}$.

This paper find the optimum level of K_t, which defines a point in economy there is high growth. I define K_1^C and K_2^C around that can defined as K_t at which where they may be growth, low growth or multiple growth level. For all $K_t < K_1^C$, $\hat{R}(K_t) > \widehat{W}$ and for all $K_t > K_1^C$, $\hat{R}(K_t) < \widehat{W}$. Similarly, for all $K_t < K_2^C$, $\tilde{R}(K_t) > \widetilde{W}$ and for all $K_t > K_2^C$, $\tilde{R}(K_t) < \widetilde{W}$. Where $K_1^C < K_2^C$.[8]

Proposition 1: For $\forall\, K_t < K_1^C$, there is a unique equilibrium where all corruptible bureaucrats are corrupt. For $\forall\, K_t > K_2^C$, there is a unique equilibrium where no corruptible bureaucrat is corrupt. For $\forall\, K_1^C < K_t \leq K_2^C$ there is multiple equilibrium.

[8] See Figure 1.

Fig. 1. Corruption Equilibrium



Where

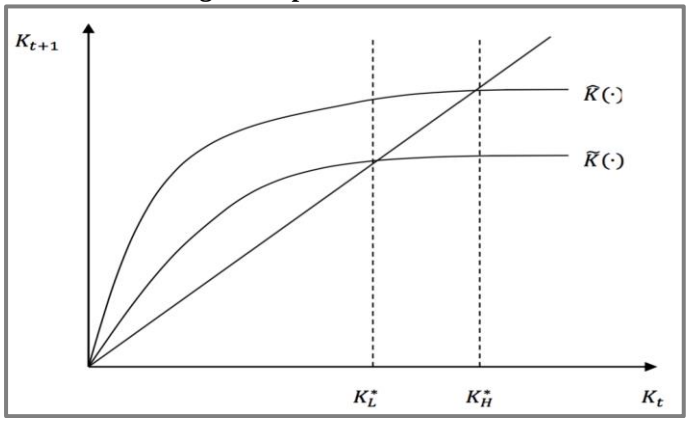
$$K_1^C \geq \left[\frac{\bar{S}(\tilde{\tau}_t - \bar{Z})}{2\bar{Z} - (2-\rho)\tilde{\tau}_t}\right]^{\chi(\chi-1)}$$

$$K_2^C \geq \left[\frac{\bar{V}(\tilde{\tau}_t - \bar{Z})}{2\bar{Z} - (2-\rho)\tilde{\tau}_t}\right]^{\chi(\chi-1)}$$

6.2. From Corruption to Low Development

Two paths of capital accumulation has been identified one for equilibrium where there is no corruption and one for where there is corruption, $\widehat{K}^*$ and $\widetilde{K}^*$. In equilibrium where there is no corruption, the economy moves on higher development path K (·) and thus has a high level of steady state equilibrium $\widehat{K}_H = \{\Psi[\beta - \phi]\}^{1-\chi}$ (from equation 17). Whereas in equilibrium where there is corruption the economy moves on lower development path K (·) so there is low level of steady state: $\widetilde{K}_L = \left[\Psi\left[\beta + \frac{\beta}{L}m[1 - p\theta(1-\theta)] + \frac{\beta}{L}sv - \frac{(1-\theta)}{(1-\theta^2)}\left\{\phi + \frac{\beta}{L}(m+sv)\right\}(1+\theta p) - \frac{\theta\mu n\varepsilon\beta\tilde{\tau}}{L}[1-p(1-\theta)]\{1 - \theta\varphi - [1-p(1-\theta)]\theta(1-\varphi)\}\right]\right]^{1-\chi}$ (from Equation 23)

Fig. 2. Capital Accumulation



Intuition

In an economy with equilibrium with corruption, and as the probability of being caught increases $\left(\frac{\partial \tilde{K}_L}{\partial p} > 0\right)$, capital accumulation increases $\left(\frac{\partial \tilde{K}_L}{\partial \theta} < 0\right)$. As the proportion of the corrupt individual increases, capital accumulation in a corrupt economy decreases. Furthermore, in an economy with corruption $\tilde{K}^*$ is not true indicator of capital accumulation, as a large amount of the income has not become part of the economy and not contribution towards economic growth and development. Figure 2 identifies K_L^* as a low level of capital accumulation and is found on the capital accumulation path of the economy with corruption. Where as K_H^* is the high capital accumulation level and is found on the capital accumulation path of economy with no corruption.

7. COMPARATIVE STATICS

For a given level of physical capital K_t in an equilibrium with or without corruption satisfy, $\tilde{\tau} > \hat{\tau}, \tilde{r} > \hat{r}$. For a given level of physical capital K the optimum tax rate of the corrupt economy is higher than that of the equilibrium with no corruption, $\tilde{\tau}_t > \hat{\tau}_t$as seen from equation (15) and (21), as of which $\tilde{b}_t > \hat{b}_t$. Intuitively, this holds true for the government's need to run a balanced budget, the revenues collected in equilibrium with corruption are lower than the expenditure. The government raises taxes to overcome the shortage.

Similarly from Equation (17) and (23) I see that $\widetilde{K}_{t+1} < \widehat{K}_{t+1}$and Equations (18) and (24) clearly show that $\tilde{r}_{t+1} < \hat{r}_{t+1}$. Together this establishes that in equilibrium with corruption the level of taxes is high because of which the cost of concealment in the shape of bribe is also high. Furthermore, the accumulation of the physical capital is lower compared to the equilibrium with no corruption, and the rate of interest is also high. In equilibrium with corruption, the level of taxes is high due to which households pay a large bribe to evade taxes, which leads to low saving and capital accumulation. In equilibrium with no corruption, the taxes are not high such that all households pay the taxes. Their savings are high enough for capital accumulation and economic growth. When the rate of capital accumulation is high the rate of interest associated with it is low, this is due to diminishing marginal returns to capital.

8. CONCLUSION

This paper adds to the existing literature on how corruption in weak decentralised institutions affects economic growth and development through tax evasion and capital accumulation.

The basic setup for the corrupt bureaucrat is the same but the model introduced in this paper introduces a multi-level tax administrative system, where tier two bureaucrats and tax collectors are both involved in double incidences of corruption. Furthermore, this model shows that the households bribe the tax collector, who in turn offer bribes to their tier two bureaucrats. The transfer of resources creates illegal income, which is not included in savings. The reduced savings result in lower capital investment of economy.

This paper treats legal income differently from corruption income. Corruption creates unfavourable conditions for investment in physical capital and thus growth. Blackburn, et al. (2010) and Wadho (2009) look at a single public office tier. This model is a further extension of the model discussed in Blackburn, et al. (2010) and Wadho (2009) with two government tiers, which implies that the share of the bureaucrats has decreased while the proportion of the illegal income is same. There is fixed value of bribes that are shared among the bureaucrats. If the number of bureaucrats were to increase, then the share of each bureaucrat would decrease, as now the bribe would have to be divided into more shares. Increase in the number of bureaucrats could lead to both negative and positive effects.

Taking the multiple tiers may also increase the size of the bribe. This could be done when the tier two bureaucrats ask a particular percentage of bribes from tax collectors who in return will ask for higher bribes from households by framing them. If there were 'n' number of tiers, the negative effect will appear in the form of a smaller share in the bribe. The positive effect will appear because when there are more corrupt bureaucrats, there would be framing and extortion. There might be optimal level of 'n'. This paper does not focus on the number of tiers but rather on how corruption affects economic development through savings and physical capital investment.

Low investment in capital becomes visible as low economic growth and development. This paper explains how corruption accompanies low growth and development, and how low development accompanies high corruption. Although this paper has tried to explain the corruption and economic growth relationship through theoretical models, further research will be helpful. Pakistan, as a developing country, needs to direct its resources to strengthen its rules and regulation for better accountability and efficiency. This paper tries to give a clearer explanation for the reasons why the tax revenue for an economy like Pakistan is low.

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Exploring Spatial Patterns and Determinants of Poverty: New Evidence from Pakistan

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This study aims to explore two types of spatial determinants of district level poverty in Pakistan: factors that have direct effect, and indirect or spillover effect, on poverty levels of neighbouring districts. The Spatial Autoregressive (SAR) model has been applied to estimate previously mentioned objectives. Data of 148 districts were collected from the National Socio-Economic Registry (NSER), and provincial development statistics. The Small Area Estimation (SAE) technique provides district level poverty estimates. Empirical results reveal that spatial autocorrelation arises owing to the lag effect of outcome variables, and autocorrelation of error terms with neighbouring districts. Moreover, results are suggestive of factors that have direct influence on poverty levels of respective districts. These include urbanisation, population growth rate, average family size, education, road infrastructure as well as climatic factors (i.e. monthly temperature and rainfall). Apart from direct effects, some determinants of district level poverty have spillover or indirect impact on poverty levels of neighbouring districts. Such factors include level of employment, road length, literacy rate, and climatic factors. Poverty in one district itself has a spillover impact on determining poverty level of adjacent districts. The findings of this paper suggest that the government should enhance regional connectivity, which may be helpful in exploiting the spillover effect of road, health, and education infrastructure to reduce regional poverty levels in Pakistan.

1. INTRODUCTION

Poverty is a complex and multidimensional phenomenon because of two notable features. First, despite various efforts to address it, globally about 902 million people live below the poverty line as per the money metric measure, whereas 1.6 billion people are facing multidimensional poverty. Second, the incidence of poverty not only varies across regions and countries, but also varies within a particular country. For example, the highest poverty level is noted in Sub-Saharan Africa (35.2 percent), followed by South Asia (13.5 percent), Latin America (5.6 percent) and East Asia Pacific (4.1 percent) (World Bank, 2018).These estimates reveal that challenges to addressing poverty across regions remain inadequately addressed.

Despite various reforms, addressing poverty remains an unfinished task in Pakistan because 24.5 percent of the population is living below the poverty line, whereas 12.5

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percent and 30.5 percent population is estimated to be poor in urban and rural areas respectively. Provincial estimates as per multidimensional poverty markers indicate that Baluchistan at 71 percent is the poorest province of Pakistan, while the populations of KPK at 50 percent, Sindh at 43 percent, and Punjab at 32.5 percent are multi-dimensionally poor (GoP, 2017-18). Documented studies conducted by researchers also suggest disparities in the prevalence of geographical poverty levels in Pakistan (e.g. Cheema, 2010; Arif, 2015; Begum, 2015; Iqbal & Nawaz, 2016).

Multiple socioeconomic factors may also significantly impact the prevalence of poverty in Pakistan. Some of these factors include dependency ratio and financial constraints to households, while unemployment, inflation, macro-economic instability, political instability, population growth, and adverse impacts of climate change are macro-level determinants of poverty[1]. These studies have some limitations. Firstly, all studies have employed OLS to estimate determinants of poverty, which gives biased and inefficient parameters if spatial autocorrelation is ignored. Secondly, the spillover effect of some spatial determinants is missed regarding Pakistan.

Spatial autocorrelation arises owing to spatial dependence across locations. In order to make a spatial analysis of poverty levels, researchers pay a lot of attention to tackling spatial dependence. So that they may estimate unbiased and efficient determinants of poverty, (e.g. Petrucci, et al. 2004; Amarasinghe, et al. 2005; Higazi, et al. 2007). Anseline (1999) have suggested that spatial dependence comes into existence owing to autocorrelation of error terms, lag effect of outcome variable, and covariates of the model. It causes econometric problems like *Heteroscedasticity* and *Autocorrelation*, if parameters are estimated by OLS estimator (Higazi, et al. 2007).

Contrary to OLS, researchers apply the Spatial Autoregressive (SAR) model, which provides unbiased and efficient parameters even in the presence of spatial dependence across regions. Furthermore, SAR decomposes the total effect of a variable into direct and indirect impacts of a variable on the outcome variable. Indirect impact means the spillover effect of a variable for a neighbouring location. Spatial lags are quite different from a time series analysis, while in the context of spatial analysis, lags indicate adjacent location. These lags are specified by employing a spatial weighting matrices scheme. For that reason, SAR models are being widely used to estimate spatial determinants of poverty levels in developing countries (e.g. Anseline, 1995, 1999; Amarasinghe, et al. 2005; Farrow, et al. 2005; Higazi, et al. 2007).

This study aims to investigate spatial determinants of district level poverty in Pakistan by applying Spatial Autoregressive (SAR) model. The specified objectives are outlined as follows.

1. To explore factors which have a direct effect on district level poverty.
2. To explore factors which have a spillover effect on poverty levels of neighbouring districts.

This paper contributes to literature in two ways. Firstly, it applies the spatial autoregressive model to decompose the impacts of spatial determinants of poverty into direct and spillover effects which are missed by previous studies for Pakistan. Secondly,

[1]See e.g. (Ma, *et al*. 2018; Pervaiz and Rizvi, 2013; Yousaf and Ali, 2014; Jan, et al. 2008; Aftab, et al. 2002; Arif, et al. 2011, 2015; Arif & Iqbal, 2009; Awan, et al. 2011; Iqbal & Awan, 2015).

district level consumption-based poverty of 148 districts of Pakistan is predicted by combining HIES and the National Socio-Economic Registry (NSER). The NSER is the largest data set comprising a truly representative sample of districts of Pakistan including FATA, AJK, and Gilgit-Baltistan.

The rest of the paper is organised as follows:

Section 2 briefly reviews the literature.
Section 3 discusses data design and construction of variables.
Section 4 presents the methodological framework.
Section 5 presents empirical results and discussions.
Section 6 concludes and gives some policy recommendations.

2. LITERATURE REVIEW

Initially Anseline (1986, 1994, and 1995) suggested the use of the spatial regression model. Later, the model was developed into a geographically weighted model. It has been widely applied by researchers to obtain unbiased and efficient parameters (Marshal, 1991; Bailey and Gatrell, 1995; Anseline, 1999; Anseline and Bao, 1997; Fotheringham, et al. 2000; Anseline, et al. 2002a).

A study conducted by Petrucci, et al. (2004), employs the spatial regression model to estimate the spatial determinants of poverty for Ecuador. Study findings indicate that infant mortality rate, birth rate, population growth rate, and percentage of adult literacy are the main drivers of poverty. Environmental factors such as temperature and rainfall, slippery roads, and landslides are also estimated as spatial determinants. Moreover, distance from the main road, cereal production, irrigated area, and arable land are significant spatial determinants of regional poverty.

Amarasinghe, et al. (2005) has identified spatial patterns of food poverty in Sri Lanka. They apply the Spatial Autoregressive (SAR) model to estimate spatial determinants of food poverty. The results of their study indicate such factors as agricultural employment, better access to roads, and water availability for irrigation and average landholding size. Further findings unleash the spillover impact of employment level on adjacent regions. Farrow, et al. (2005) estimate similar results for Ecuador.

Kam, et al. (2005) have estimated the spatial determinants of poverty for Bangladesh using the spatial regression model. Their findings show that the proportion of landless households, agriculture area under tenancy, livestock holding, schooling, modern irrigated facilities, road infrastructure, access to amenities, and structure of agriculture land are the factors affecting rural poverty in Bangladesh.

Palmer-Jones and Sen (2006) explored spatial determinants of poverty in India. The results demonstrate that dependency ratio, population growth, cultivatable area of land, climatic variables, physical infrastructure, and financial constraint are the important determinants of poverty. Similarly, Okwi, et al. (2007) & Ma, et al. (2018) also have applied the spatial regression model to estimate spatial determinants of poverty in Kenya and China respectively. Some recent studies (e.g. Owada, et al. 2019; Tong and Kim, 2019; Maalsen, 2019) have used the SAR model also.

Mainly, two factors affect poverty in Pakistan: macro-level, and household level. The household level determinants of poverty include education, housing

conditions, household occupation, level of employment, financial constraints, land ownership, and idiosyncratic shocks. Moreover, demographic factors like household size, dependency ratio, and gender composition are significant determinants of poverty in Pakistan (i.e. Yusuf, et al. 2017; Sadiq, 2010; Arif and Ahmed, 2001; Mcculloch and Baulch, 2000). Macro-level determinants of poverty are inflation, unemployment, exchange rate volatility, poor infrastructure of health and education, political instability, and poor quality of human capital. In addition, covariate shocks such as floods, climatic changes, and vulnerability to key economic factors are estimated as significant determinants of poverty in Pakistan (i.e. Arshed, et al. 2017; Pervaiz and Rizvi, 2013; Yousaf and Ali, 2014; Hashmi, et al. 2008; Jan, et al. 2008; Anwar and Qureshi, 2002; Amjad and Kemal, 1997).

Arif (2015) has assessed Pakistan's poverty profile. The two definitions of poverty used are multidimensional poverty and PMT score by using NSER. Results indicate that districts of FATA and Baluchistan have a high poverty rate. Begum (2015) has simulated district level poverty by combining both HIES and PSLM survey datasets for the year 2010-11. Estimated magnitude of district level poverty are observed to be quite a bit less than assessed by Arif (2015), however, ranking of poverty remains the same. Similarly, Cheema (2010) also calculated district level poverty in Punjab by using SAE approach. Findings suggest that districts of South Punjab are poorer than the districts of central Punjab.

The literature review above highlights that those studies regarding Pakistan (e.g. Arshed, et al. 2017; Pervaiz and Rizvi, 2013; Yousaf and Ali, 2014; Jan, et al. 2008; Akram, et al. 2008; Aftab, et al. 2002) have missed tackling spatial variation and dependence across regions which may provide biased and inefficient parameters. This study attempts to overcome the deficiencies of previous studies regarding determinants of poverty in Pakistan.

3. DATA SOURCE, VARIABLES AND DESCRIPTIVE STATISTICS

3.1. Data Sources

Data of 148 districts of Pakistan including FATA, Gilgit-Baltistan (GB), and Azad Kashmir (AJK), are compiled from multiple data sources such as the National Socioeconomic Registry (NSER)[2], and development statistics of respective provinces (2010-11). In addition, data on the share of urban population are collected from Arif (2015). District level poverty estimates are calculated by combining NSER and HIES household datasets. NSER provides us with an opportunity to compute district level predicted estimates of poverty for 2010-11 through the application of SAE. In brief, the present study is based on cross-sectional data, because we do not have panel data of district level consumption-based poverty in Pakistan. Finally, spatial information for all districts is generated by using shape files.

[2]NSER is a census type household data, collected by BISP during 2010-11 to identify beneficiaries of a program on the basis of PMT score. It covers over 27 million households that constitutes more than 150 million people across the country. Provincial coverage shows that 14.88 million households of Punjab, 6.6 million from Sindh, 3.6 million of KP and 1.1 million of Baluchistan were surveyed. NSER also covers around 0.588 million household of AJK, and 0.15 million household of Gilgit-Baltistan, and 0.40 million are covered from FATA.

3.2. Methodological Framework

3.2.1. *Conceptual Framework*

In order to estimate unbiased and efficient parameters, a growing body of literature has suggested the application of spatial regression (i.e. Anselin, 1988; Bailey and Gatrell, 1995; Weiss, 1996; Kim, et al. 2002; Farrow, et al. 2005). These studies argue that Ordinary Least Squares (OLS) estimator violates BLUE property owing to the presence of spatial dependence in the model. This means that when a value is estimated for one location, it may depend on the neighbouring location as well. There are three main sources of spatial dependence, which are: spatial autocorrelation of error terms, lag of outcome variable, and effects of covariates. Spatial dependence, which occurs due to spatial error terms, suggests that error terms of neighbouring locations are auto-correlated. Lag of dependent occurs when the outcome variable of one region is affected by the lag of outcome variable of neighbouring locations. Spatial lags are quite different from time series analysis. Nonetheless, in spatial analysis, lags indicate adjacent location. These lags are specified by creating a spatial weighting matrices scheme. Similarly, covariates of one location have significant impacts on outcome variable of adjacent locations (e.g. Anselin, 1999; Higazi, et al. 2013).

Another benefit of spatial analysis is the decomposing of total spatial effect into direct and indirect effect. Direct effect establishes influence of one variable on the outcome variable of the same location. Likewise, indirect impact indicates that spillover effects of one variable determines outcome variable of neighbouring location. Incorporating spatial considerations provide significant variations in the model which validates reliability of estimated findings (i.e. Owada, et al. 2019; Tong and Kim, 2019; Maalsen, 2019; Okwi, et al. 2007).

3.2.2. *Econometric Specification of Spatial Autoregressive Model (SAR)*

The previous section identifies three sources, which determine spatial dependence. In order to capture it, three specifications of SAR are required: spatial lag model, spatial error model, combination of both models along with lag of covariates (i.e. Liu 2017); Drukker, et al. (2013); Haining, et al. 2000). These models are specified as follows.
We start with the linear regression model. After that, spatial regression specifications will be introduced in the original linear model.

$$Y = \beta X + \in \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

In Equation (1), Y is outcome variable, X represents vector of independent variables, β is also vector of parameters, and whereas $\in$ error terms of respective district.

District level poverty, in this paper, is set as the outcome variable. Explanatory variables include average family size, dependency ratio, female ratio, the different age groups of family members, and asset ownerships by households in respective districts. Moreover, district level educational variables, infrastructure (roads, health and educational institutions), and urbanisation, climatic (temperature and rainfall), regional dummies.

Adding spatial lag of outcome variable in above equation makes it the spatial lag of outcome variable. Specification of SAR lag model is given as follows.

$$Y = \beta X + \lambda W y + \in \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Equation (2) has the additional term, λWy which stands for lag of dependent variable. Here, W is weighting matrix. Weighting scheme is generated based on distance between locations. ʎ is the spatial estimated value lag coefficient. Similarly, spatial error lag model gets the following specification.

$$Y = \beta X + \lambda Wy + (1-\rho)^{-1} \in \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

In the above equation, ρ is coefficient of spatial autocorrelation in the spatial error model. Equation (3) comprises both specification SAR outcome lag and error lag model jointly. Finally, the third specification of SAR captures spatial dependence by allowing lag of covariates to be correlated with outcome variable of neighbouring districts.

$$Y = \beta X + \beta WX + \lambda Wy + (1-\rho W)^{-1} \in \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (4)$$

Term, βWX is added in above model, which captures allowing lag of explanatory variable to be correlated with dependent variable of adjacent locations. Above specified models are estimated by employing Maximum Likelihood (ML) approach (Haining, et al. 2000).

3.3. Variables Construction

District Level Poverty: consumption based poverty is calculated by applying official poverty line, PKR 3030 per adult equivalent monthly consumption for Pakistan. District level poverty head count ratio (%) is simulated through Small Area Estimation (SAE) approach because one-dimensional poverty estimates for 148 districts of Pakistan are not available due to lack of data on district level household consumption.

SAE simulates monthly per adult equivalent consumption by combining both HIES and NSER. A large amount of literature suggests application of SAE to map poverty estimates at smaller administrative units of developing countries owing to unavailability of household consumption data (e.g. Elbers, et al. 2002; Minot and Baulch, 2002a; World Bank, 2000; Alderman, et al. 2002; Henninger and Snel, 2002).

SAE comprises two stages. First stage is to use HIES dataset to estimate monthly per adult equivalent consumption. The specified model is given as follows.

$$logy_{ch} = X_{ch}\beta + U_{ch} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (5)$$

Where, log y_{ch} is log of monthly expenditures per adult equivalent, X_{ch} is vector of explanatory variables, which are common variables in both household surveys HIES and NSER. For example, family size, age of the head of family, gender of the family head, dependency ratio and household asset related. And β stands for vector of estimated coefficients, and u_{ch} is error term. Error term comprises two effects i.e. cluster effect and household effect. From equation (5), unbiased and efficient parameters are estimated.

The second stage of the SAE is to impute the parameters estimated from the first stage with NSER. It simulates monthly household consumption. From simulated per adult equivalent consumption, poverty head counts for all districts are calculated including districts of AJK, GB, and FATA.

District Level Family Demographic Profile: From NSER, district level average of family size, female to male ratio, and dependency ratio are generated.

Total number of females are divided by the total number of male members in a family. Based on household information, district level average of ratio is computed. If the

ratio is found equal to 1, then the number of male and female members in a family is equal. Likewise, a ratio above 1 indicates that households have more females than males.

The dependency ratio is constructed by taking the ratio of non-working age groups to working age groups. The higher value of ratio suggests a higher age dependency ratio. Finally, age composition is also measured by categorising it into different age groups[3] of population.

District Level Education Groups: household education is categorised into illiterate, primary, middle, matriculation, intermediate, and above intermediate education. Unit and percentage measure these categories. Illiterate households (%) are specified as reference group.

District Level Employment: three variables related to employment are constructed from NSER such as percentage of population having government job, percentage of population engaged with private jobs, and percentage of pension receiving household members.

District Level Household Asset Ownership: district level household asset ownership is categorised into durable assets, capital assets, and livestock ownership.

District Level Infrastructure: the study employs district level road, health, and education infrastructure related variables. These variables are comprised of per kilometres road length, availability of basic health centres, and total number of schools at district level.

District Level Urbanisation: district level urbanisation is measured by taking a percentage of urban population to total population.

Climatic Variables and Regional Dummies: Ten-year averages of monthly temperature and rainfall for districts are measured. Similarly, square terms of both temperature and precipitation are also used to identify non-linear impacts of climatic variables. Provincial and agro-climatic zone binary variables are constructed to control regional effects. Agro-climatic zones are generated according to studies by Arif (2015) & Ahmed *et al.* (2015).

For a quick view, a description of abovementioned variables is given in Table 1.

Table 1

Definitions of District Level Variables

Variables	Description of Variables
District Level Poverty	District level poverty (%) is predicted by using SAE approach
Family Size	Average Family size of HHs at district level
Female to Male Ratio	% of ratio of females to male members
Dependency Ratio	Ratio of non-working to working age groups
Primary Education	Percentage of individuals having primary education
Middle Education	Percentage of individuals having middle education
Metric Education	Percentage of individuals having metric education
Intermediate	Percentage of individuals having intermediate education
Above Intermediate	Percentage of individuals having above intermediate
Govt Job	Percentage of HHs who have Govt. job
Private Job	Percentage of HHs who have private job
Pension	Percentage of HHs who receive pension amount
Durable assets	Percentage of HHs owning TV, AC, Air cooler, etc.
Capital assets,	Percentage of HHs owning tractor, car, scooter, etc.
Livestock	Percentage of HHs owning livestock
Health Units	Availability of basic health centres per person
Schools	Primary, middle and secondary schools per person
Urbanisation	Percentage share of the urban population
Temperature	District level 20 years average of temperature
Rainfall	District level 20 years average of rainfall
Population Growth	Population growth rate of each district
Roads Lengths	Total road length (km) in respective districts

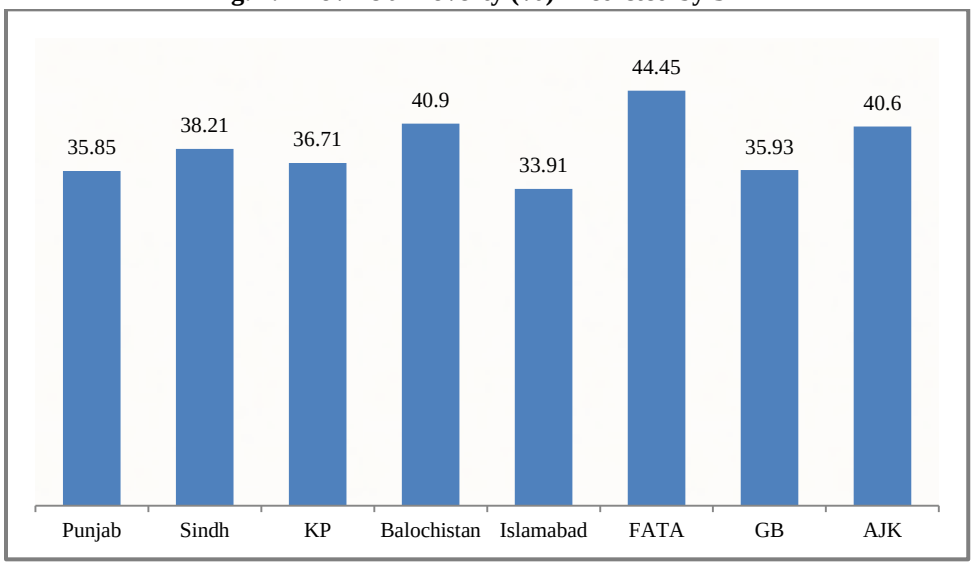
[3] Six groups of district level percentage of population are generated such as below 5 years, between 6 to 15 years, 16-25 years, 26 to 35 years, 36 to 50 years, and above 50 years old.

4. RESULTS AND DISCUSSION

4.1. Analysis of Predicted Poverty

Figure 1 compares simulated poverty estimates across provinces. Provincial comparison employs the official poverty line, PKR 3030 per adult equivalent monthly consumption. Predicted poverty estimates demonstrate that Punjab appears to be the province with the lowest poverty levels (35.85 percent). Sindh (38.21 percent), KPK (36.71 percent), and Balochistan (40.9 percent) are relatively poorer provinces while Islamabad has 33.91 percent poor households. Furthermore, simulated poverty estimates for other regions of Pakistan show that FATA (44 percent) AJK (40.6 percent) and Gilgit-Baltistan (35.93 percent) are respectively much poorer. In conclusion, FATA and Baluchistan are the poorest regions amongst the provinces. This paper does not capture rural and urban differences because NSER dataset does not identify rural and urban households (see Table 1).

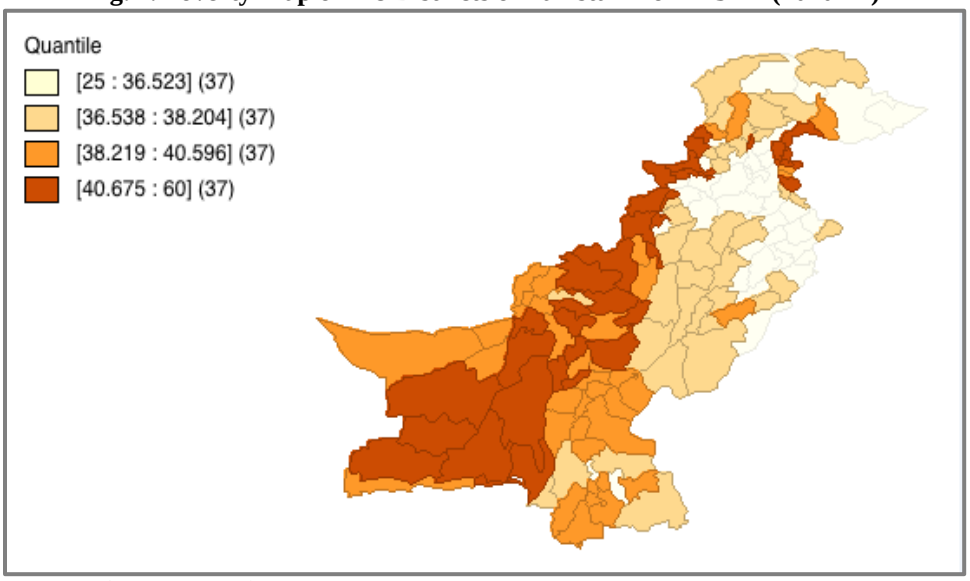
Fig. 1. Provincial Poverty (%) Predicted by SAE



Source: Authors' own calculation.
Poverty line: PKR 3030 per adult equivalent monthly consumption.

Figure 2 depicts district level poverty maps, which illustrate that the poorest districts lie in quintile-IV across all provinces. Most of the districts of Baluchistan are located in said quintile. These districts of Baluchistan include Barkhan, JhalMagsi, Harani, Lasbela, Awaran and Dera Bugti. Likewise, Sukhar, Mitiari, Umerkot are the poorest districts of Sindh while Lower Dir, Swat, and Bannu districts of KPK are at the same level of poverty. As far as districts of Punjab are concerned, Rahim Yar Khan, Dera Ghazi Khan, Rajan Pur and Vehari are seen to be the poorest districts of Punjab. Finally, district level analysis also reveals Baluchistan and Sindh are much poorer as compared to Punjab. The least poverty stricken districts are Lahore, Sialkot, and Rawalpindi, which can be seen in quintile-I.

Fig. 2. Poverty Map of 148 Districts of Pakistan from NSER (2010-11)



Source: Author's own Mapping.

5. RESULTS ESTIMATED FROM SPATIAL AUTOREGRESSIVE (SAR) MODEL

5.1. Diagnostic Test for Spatial Dependence

To diagnose spatial dependence, Moran I test has been applied.[4] Three specifications of Moran 1 test are used by creating weighting matrices: contiguity weighting matrix, distance weighting matrix, and a combination of both contiguity and distance matrix.

Findings demonstrate the presence of spatial dependence which means application of OLS estimator would give biased and inefficient parameters (see Table 2). The statistical significance of Moran I test implies justification of using SAR model owing to presence of spatial dependence. Similarly, estimations of SAR also suggests that an error term of one district is also found to have a significant correlation with nearby districts which highlights that spatial autorotation is significantly measured in models (see Table 4).

Table 2

Estimated Results of Moran I Test

Test Name	Chi^2 Statistic	p-value	Conclusion
Moran I Test: Contiguity Weight Matrix	4.25	0.039	Spatial Dependence
Moran I Test: Distance Weight Matrix	2.83	0.076	Spatial Dependence
Moran I Test: Both Contiguity & Distance	4.42	0.096	Spatial Dependence

Note: Null hypotheses in Moran I and Wald tests are no presence of spatial dependence.

[4]Moran I test is a post estimation test. To apply it, we have to estimate model through OLS. This test hypothesises whether spatial dependence exists or not. In this regard, Null Hypothesis is no spatial dependence against Alternative Hypothesis: spatial dependence exists.

5.2. Discussion on Spatial Determinants of Poverty in Pakistan: Direct Effects

This section discusses factors that have direct impact on district level poverty. Three specifications of SAR model are employed: Model-1, Model-2 and Model-3.[5] Primarily the whole discussion is based on Model-1, because it contains outcome and error lag effects as well. Nonetheless, results estimated from the other two specifications are also reported for comparison with Model-1 (see Table 3). Estimated results suggest that by and large, the findings of aforesaid specifications look similar as per sign and statistical significance of variables.

Direct effects of determinants of district level poverty are estimated by using OLS as well but a significant presence of spatial dependence in the model hinders us from continuing to apply OLS because it would provide inefficient parameters. Appendix-A encompasses estimated previously mentioned model. We will detail those findings. However, when results of OLS are compared with SAR, they seem quite different in terms of sign and statistical significance. This study only discusses direct effects of determinants of poverty estimated by SAR in this section.

Estimated factors, which have direct impact on district level poverty, indicate average family size has been found positive and highly significant. A positive impact implies that an increase in average family size would increase poverty in a particular district, other things remaining the same. Similarly, female to male ratio also shows a significant direct impact on district level poverty, whereas dependency ratio has no direct significant effects (see Table 3).

The study categorises age of households into five groups to show the impact of each age group separately while below 15 years age group has been kept as a reference category. Estimated results indicate that age composition has significant and direct impacts on district level poverty. Four variables of district level age groups (16-25, 26-35, 36-50, and above 50 years) show negative impacts on poverty. The negative sign of these variables means that with the increase of population of abovementioned age groups, compared to below 15-year age group, poverty will decrease, other things remaining the same.

Estimated results of district level educational variables show a mixed impact on poverty. Metric and Intermediate levels of education show significant influences whereas middle and above metric level education do not show any statistically significant impact. Likewise, primary level of education does not demonstrate any significant effects on district level poverty. These results are consistent with the previous studies (Amarasinghe, et al. 2005).

District level employment suggests that government jobs have statistically significant impacts on poverty while private employment and pension indicate insignificant effects. The negative sign implies a significant role of government jobs in reducing district level poverty.

[5]Three specifications are: (1) **Model-1** allows outcome variable to be associated with covariates of neighboring districts and other two specification as well. (2) **Model-2** is estimated by allowing only outcome variable to be correlated with poverty of adjacent districts, and (3) **Model-3** allows the outcome variable to be correlated with the error of nearby districts along with outcome variable itself.

The study includes three types of assets in the model: capital, household durable, and livestock.[6] In Model-1, household assets have no significant influence on poverty. However, capital and durable assets demonstrate significant impacts in Model-2 and Model-3.

Urbanisation has direct and significant effects on determining district level poverty. Similarly, the population growth rate of the sampled district shows significant impacts as well.

Further findings demonstrate that road length, which indicates road infrastructure and regional connectivity, is found highly significant with negative sign. It implies that road infrastructure has beneficial impacts on determining district level poverty.

Unlike road infrastructure, provision of health and education facilities has insignificant influences on district level poverty. These insignificant effects of education and health infrastructure may imply that most of the districts in Pakistan lack well-established education and health infrastructure. One of the reasons for the insignificant effects of infrastructure may be due to the 148 sampled districts of FATA, AJK, and Gilgit Baltistan (GB). Inclusion of districts of these regions may bring about insignificant impacts of health and education infrastructure.

The study also attempts to show the direct influence of climate variables on district level poverty. In this respect, the SAR model provides statistically significant impacts of climatic norms such as average temperature and precipitation. Empirical findings exhibit significant non-linear effects of 20-year averages of monthly temperature and rainfall. Square terms of both temperature and rainfall suggest non-linear impacts while linear terms portray linear effects. Temperature has no linear effect whereas average rainfall indicates a significant impact, which means significant linear effects of average rainfall on poverty. In addition, the interactive term of both temperature and rainfall is also introduced to see their joint impact. The interactive term also provides the direct significance on district level poverty. Summing up the total impact of climate variables, one sees that extreme events of weather reflect climate change, which is threatening the wellbeing of households as well.

Finally, dummy variables of provinces and agro-climate zones are introduced in the models to control their impacts. Results obtained from SAR demonstrate that cotton and wheat growing areas, and arid Punjab zones have significant impacts. Additionally, provincial dummies of KPK and Baluchistan are also estimated as statistically significant. These findings conclude that provincial and agro-climate zones are showing their impacts (see Table 3).

It is important to mention that the problem of endogeneity is not supported by literature and diagnostic test. Literature regarding spatial determinants of poverty does not indicate which variable is causing the above problem. Moreover, we apply Hausman-Wu test[7] to diagnose whether explanatory variables correlate with error terms or not. Results of diagnostic test suggest that the problem of endogeneity does not exist in the model (see Appendix-B).

[6]Capital assets comprise the percentage of households in district which possess car, tractor, motorcycle, and threshers etc. and, livestock assets consists of percentage of households in district which own small and large animal species while household durable assets comprise tv, fridge, freezer, and air cooler etc.

[7]To apply Hausman-Wu test, we apply OLS to estimate determinants and computed residual of model. Estimated residual is used as independent variable in original model. This model is again estimated and if this additional variable is not found statistically significant, then there is no problem of endogenity, vice versa. See Appendix B where "y1 1" is not significant.

Table 3

Spatial Determinants of District Level Poverty: Direct Effects from SAR Models

	Model-1		Model-2		Model-3	
Variables	Coeff.	S.E	Coeff.	S.E	Coeff.	S.E
Family Size	0.762***	0.267	0.929***	0.250	0.782***	0.265
Female Ratio	–1.832***	0.534	–1.789***	0.560	–1.695***	0.583
Depend Ratio	–0.094	0.221	–0.1429	0.232	–0.194	0.233
Age 16–25 years	–0.042	0.037	–0.053	0.037	–0.085**	0.039
Age 26–35 years	–0.122*	0.066	–0.107*	0.065	–0.069	0.071
Age 36–50 years	–0.090	0.070	–0.059	0.067	0.012	0.074
Age >50 years	–0.113**	0.055	–0.124**	0.054	–0.121*	0.064
Primary Education	0.065*	0.038	0.063*	0.038	0.061*	0.035
Middle Education	–0.048	0.050	–0.042	0.051	–0.021	0.046
Metric Education	0.165***	0.051	0.153***	0.052	0.143***	0.044
Inter Education	–0.151***	0.036	–0.142***	0.036	–0.172***	0.035
Above Inter (>12)	–0.026	0.046	–0.0327	0.050	–0.024	0.048
Government Job	–0.103**	0.049	–0.096*	0.051	–0.100**	0.049
Private Job	0.019	0.027	0.010	0.026	–0.006	0.026
Pension HH	0.019	0.018	0.020	0.017	0.024	0.017
Livestock Asset	–0.007	0.015	–0.004	0.015	–0.009	0.015
Capital Asset	–0.062	0.049	–0.086*	0.050	–0.077	0.050
HH Assets	–0.010	0.007	–0.008	0.008	–0.014*	0.008
Rooms availability	–6.095**	3.029	–5.562**	3.011	–7.649***	2.665
Road Length	–0.001***	0.0001	–0.001***	0.0001	–0.009***	0.0002
Health Institution	4.06412	39.87	5.154.8	39.89	2.14493	40.26
Number of Schools	–4.5782	18.57	–11.884	18.40	–41.869	19.54
Urbanisation	–0.028*	0.017	–0.026	0.017	–0.0169	0.017
Population Growth Rate	–0.348**	0.147	–0.315**	0.151	–0.34**	0.171
Average Temperature	–0.081	0.163	–0.058	0.162	–0.173	0.166
Temperature square	0.002	0.004	0.002	0.004	0.003	0.004
Average Rainfall	–0.003***	0.001	–0.003***	0.001	–0.004***	0.001
Rainfall square	3.9E-07*	2.0E-07	3.95E-07*	0.000	3.44E-07	0.000
Interaction Temp*Rainfall	8.1E-05	0.000	8.5E-05*	0.000	0.0002**	0.000
Rice-wheat Zone	0.345	0.783	0.357	0.771	–0.541	0.712
Cotton-wheat Zone	1.533*	0.834	1.640*	0.842	0.595	0.730
Arid Punjab	2.093**	1.050	2.037*	1.058	0.229	1.103
KP	–3.252***	0.545	–3.112***	0.537	–2.537***	0.578
Baluchistan	1.842**	0.881	1.893**	0.899	2.228***	0.658
Constant	50.327***	5.024	48.846***	4.925	53.087***	4.536
			Models Specification Test			
Chi^2 Statistic	186.27***		170.16***		154.76***	

Significance level *** p<0.01, ** p<0.05, * p<0.1.

5.3. Factors That Have Spillover Effect on Poverty of Neighbouring Districts

This section discusses the spillover effect of covariates, which are estimated by SAR models. Liu (2017) has suggested that SAR also decomposes total effect into direct and indirect effect. This study has discussed direct effects in the previous section, whereas spillover effects of determinants of district poverty are given in Table 4.

Table 4

Factors that have Spillover Effects on Poverty of Neighbouring Districts

	Variables	Coefficients	S.E	Z-stat.
Spatial Errors	Spatial Autocorrelation	–1.059***	0.246	–4.29
	Spatial Factors Having Spillover Effect on Poverty			
Outcome Variable	Outcome Variable (Poverty)	0.095*	0.051	1.88
Spatial Covariates	Rice-wheat zones	–3.339**	1.429	–2.34
	Cotton-wheat zones	–3.588**	1.414	–2.54
	Primary Education	0.234**	0.098	2.37
	Secondary Education	–0.264***	0.086	–3.05
	Private Sector Employment	–0.044*	0.024	–1.83
	HH Capital Asset	–0.233**	0.108	–2.15
	HH Animal Asset	–0.215*	0.129	–1.66
	Road Lengths	–0.002***	0.0004	–3.85
	Average Temperature	0.267***	0.085	3.13
	Average Rainfall	–0.002*	0.0009	–1.79

Significance level; *** p<0.01, ** p<0.05, * p<0.1.

Estimated findings show that the poverty levels of one district significantly affects the poverty levels in its adjacent districts. The coefficient of the outcome variable is positive which implies that the increase in poverty of one district may cause an increase in poverty of neighbouring districts.

Further findings reveal that primary and secondary levels of education cause significant spillover effects on the poverty levels of neighbouring districts. The sign of primary education is estimated as positive whereas secondary level of education contains negative signs. Overall impacts of education imply that higher levels of education in one district would cause reduction in poverty of its neighbouring districts, and vice versa.

District level employment in the private sector indicates a statistically significant spillover influence on poverty levels of the adjacent district. The result posits that any district where most people are working in the private sector may have significant effects on the poverty of its nearby districts. Private employment is an indicator of business and entrepreneurial activities, which generate employment opportunities. It provides employment to people of neighbouring districts. Ultimately, it is conducive to reducing poverty in neighbouring districts as well. Similarly, livestock and capital assets release beneficial spillover effects. Findings are significant with negative sign of both asset variables. It implies that asset ownership overall in one district, will be helpful in reducing poverty in adjacent districts (see Table 4).

Likewise, assets such as road length also reveal significant indirect impacts on poverty levels of neighbouring districts. Road length determines the regional integration through road connectivity and has a profound impact on regional wellbeing. For Pakistan, this result may have significant implications in the context of China Pakistan Economic Corridor (CPEC).

Climatic norms (temperature and rainfall) also extract spillover effects on bordering districts. The previous section makes it clear that climate changes have adverse

impacts on district level poverty. Here, average temperatures in particular contain an adverse spillover effect on determining the outcome of adjacent districts. Finally, controlling agro-climate zones have significant influences on neighbouring locations (see Table 4).

6. CONCLUSION AND POLICY IMPLICATIONS

The primary objective is to explore spatial determinants, which have direct and spillover effects on poverty levels of 148 districts. Simulated poverty estimates indicate that districts of FATA and Baluchistan are the poorest whereas Punjab has the lowest levels of poverty as compared to other provinces. The application of Moran I test validates the presence of spatial dependence in the model, which means OLS would yield biased and inefficient estimates. Therefore, Spatial Autoregressive (SAR) model is employed to tackle spatial dependence.

Estimated findings reveal that determinants of district level poverty such as urbanisation, population growth rate, and road length, tertiary education, government job, and average family size, show significant and direct effects. Similarly, climatic factors such as average temperature and rainfall also indicate significant direct impacts on district level poverty.

Furthermore, the study explores those factors that have spillover effects on poverty levels of neighbouring districts. These factors include poverty itself, employment, education, road length, and climatic norms such as temperature and rainfall as the determinants that demonstrate indirect or spillover effects on poverty levels of neighbouring districts.

The key implications of these findings demonstrate that building a road infrastructure in one district would reduce poverty in neighbouring districts because road length is an indicator of connectivity among districts. Similarly, literacy rate and generating private employment opportunities indicate spillover effect on adjacent districts. These stylised implications can provide new insights to government to combat regional poverty in Pakistan

This study offers three main recommendations. Firstly, health and education infrastructures need to be enhanced on a priority basis in all underdeveloped districts. Secondly, regional connectivity needs to be extended from developed to the deprived districts. Thirdly, private employment opportunities should be promoted through establishing industry in districts, which would generate employment prospects for people of the closest districts.

APPENDIX: A

poverty_district	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
Family Size	–0.0367	0.02841	–1.29	0.199	–0.09297	0.019567
Female Ratio	–1.02957	0.599946	–1.72	0.089	–2.21784	0.1587
Depend Ratio	–0.12343	0.255386	–0.48	0.63	–0.62925	0.382394
Age 16–25 years	–0.03349	0.037242	–0.9	0.37	–0.10726	0.04027
Age 26–35 years	–0.01264	0.059791	–0.21	0.833	–0.13106	0.105781
Age 36–50 years	0.049855	0.079191	0.63	0.53	–0.10699	0.206703
Age >50 years	–0.08865	0.064505	–1.37	0.172	–0.21641	0.039107
Primary Education	0.066283	0.040697	1.63	0.106	–0.01432	0.146889
Middle Education	–0.05638	0.052433	–1.08	0.284	–0.16023	0.047471
Metric Education	0.193879	0.054978	3.53	0.001	0.084989	0.302769
Inter Education	–0.17064	0.038674	–4.41	0	–0.24724	–0.09404
Above Inter (>12)	0.000464	0.051923	0.01	0.993	–0.10238	0.103303
Government Job	–0.17627	0.05381	–3.28	0.001	–0.28285	–0.0697
Private Job	–0.02057	0.020942	–0.98	0.328	–0.06205	0.020908
Pension HH	–0.03829	0.011279	–3.4	0.001	–0.06063	–0.01595
Livestock Asset	0.001962	0.017368	0.11	0.91	–0.03244	0.036361
Capital Asset	–0.03692	0.051485	–0.72	0.475	–0.1389	0.06505
HH Assets	–0.01955	0.00898	–2.18	0.032	–0.03733	–0.00176
Rooms availability	–5.9529	2.730453	–2.18	0.031	–11.3609	–0.5449
Road Length	–0.00096	0.000305	–3.15	0.002	–0.00156	–0.00036
Health Institution	0.00395	0.011869	0.33	0.74	–0.01956	0.027459
Number of Schools	–0.0039	0.005424	–0.72	0.474	–0.01464	0.006847
Urbanisation	–0.00351	0.018583	–0.19	0.851	–0.04031	0.0333
Population Growth Rate	–0.45219	0.190109	–2.38	0.019	–0.82873	–0.07566
Average Temperature	0.047895	0.040158	1.19	0.235	–0.03164	0.127432
Average Rainfall	–0.00059	0.00037	–1.59	0.114	–0.00132	0.000144
Rice-wheat Zone	–1.44578	0.728785	–1.98	0.05	–2.88923	–0.00233
Cotton-wheat Zone	–0.36006	0.652018	–0.55	0.582	–1.65147	0.931342
Arid Punjab	1.311883	1.286285	1.02	0.31	–1.23577	3.859532
KP	–2.27252	0.767758	–2.96	0.004	–3.79316	–0.75187
Baluchistan	2.156895	0.697	3.09	0.002	0.776399	3.537391
Constant	53.72838	3.843929	13.98	0	46.115	61.34176

APPENDIX: B

poverty_district	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
Family Size	–0.0367	0.028534	–1.29	0.201	–0.09322	0.019816
Female Ratio	–1.02957	0.602549	–1.71	0.09	–2.2231	0.163964
Depend Ratio	–0.12343	0.256494	–0.48	0.631	–0.63149	0.384635
Age 16–25 years	–0.03349	0.037403	–0.9	0.372	–0.10758	0.040596
Age 26–35 years	–0.01264	0.06005	–0.21	0.834	–0.13159	0.106305
Age 36–50 years	0.049855	0.079534	0.63	0.532	–0.10769	0.207397
Age >50 years	–0.08865	0.064784	–1.37	0.174	–0.21698	0.039673
Primary Education	0.066283	0.040874	1.62	0.108	–0.01468	0.147246
Middle Education	–0.05638	0.052661	–1.07	0.287	–0.16069	0.047931
Metric Education	0.193879	0.055216	3.51	0.001	0.084507	0.303251
Inter Education	–0.17064	0.038842	–4.39	0	–0.24758	–0.0937
Above Inter (>12)	0.000464	0.052148	0.01	0.993	–0.10283	0.103759
Government Job	–0.17627	0.054044	–3.26	0.001	–0.28332	–0.06922
Private Job	–0.02057	0.021032	–0.98	0.33	–0.06223	0.021092
Pension HH	–0.03829	0.011328	–3.38	0.001	–0.06073	–0.01585
Livestock Asset	0.001962	0.017443	0.11	0.911	–0.03259	0.036513
Capital Asset	–0.03692	0.051708	–0.71	0.477	–0.13935	0.065501
HH Assets	–0.01955	0.009019	–2.17	0.032	–0.03741	–0.00168
Rooms availability	–5.9529	2.742299	–2.17	0.032	–11.3849	–0.52094
Road Length	–0.00096	0.000307	–3.13	0.002	–0.00157	–0.00035
Health Institution	0.00395	0.011921	0.33	0.741	–0.01966	0.027563
Number of Schools	–0.0039	0.005448	–0.72	0.476	–0.01469	0.006895
Urbanisation	–0.00351	0.018664	–0.19	0.851	–0.04048	0.033463
Population Growth Rate	–0.45219	0.190934	–2.37	0.02	–0.83039	–0.07399
Average Temperature	0.047895	0.040332	1.19	0.237	–0.03199	0.127785
Average Rainfall	–0.00059	0.000371	–1.58	0.116	–0.00132	0.000147
Rice-wheat Zone	–1.44578	0.731947	–1.98	0.051	–2.89563	0.004062
Cotton-wheat Zone	–0.36006	0.654847	–0.55	0.583	–1.65719	0.937064
Arid Punjab	1.311883	1.291865	1.02	0.312	–1.24705	3.87082
KP	–2.27252	0.771089	–2.95	0.004	–3.79989	–0.74514
Baluchistan	2.156895	0.700024	3.08	0.003	0.770283	3.543507
YY	1.978806	4476779	0	1	–8867637	8867641
Constant	53.72838	3.860605	13.92	0	46.08126	61.3755

APPENDIX: C

Variables	Obs	Mean	Std. Dev.	Min	Max
Family Size	148	5.96516	1.173162	4.112527	11.322
Female Ratio	148	0.799016	0.470479	0.278743	4.322
Depend Ratio	148	6.349761	1.680483	2.5433	12.432
Age 16–25 years	148	52.18351	12.34364	5.120372	74.45319
Age 26–35 years	148	37.68074	9.662385	3.913012	58.32
Age 36–50 years	148	14.9922	6.77094	1.403738	40.47619
Age >50 years	148	11.36353	5.743753	1.168831	30.49155
Primary Education	148	33.19765	18.25089	0	69.92481
Middle Education	148	32.14418	18.44558	0	75
Metric Education	148	20.44654	14.39391	0	56.37681
Inter Education	148	20.91282	14.76894	0	100
Above Inter (>12)	148	12.31326	8.310088	0	38.24405
Government Job	148	8.553131	6.420144	0.6784	34.332
Private Job	148	90.36203	16.34173	9	100
Pension HH	148	3.438996	5.9697	0	50
Livestock Asset	148	42.43405	17.99705	0.709322	87.89626
Capital Asset	148	6.86838	5.466271	0.400534	29.36321
HH Assets	148	53.13047	30.43479	2.333	99.48795
Rooms availability	148	0.343845	0.111964	0.024717	0.984332
Road Length	148	966.6302	958.5573	0	4132.83
Health Institution	148	32.95946	23.9361	3	126
Number of Schools	148	958.1757	882.0678	19	4151
Urbanisation	148	18.79284	14.91972	1.7	100
Population Growth Rate	148	2.307961	1.322583	–4.81	7.38
Average Temperature	148	21.52148	6.902419	–0.03905	33.3457
Average Rainfall	148	620.0881	711.7694	92.245	4876.245
Interaction Temp*Rainfall	148	10812.3	11344.17	–20.371	100695.9
Rice-wheat Zone	148	0.114865	0.319942	0	1
Cotton-wheat Zone	148	0.128378	0.335647	0	1
Arid Punjab	148	0.033784	0.181286	0	1

APPENDIX: D

"STATA do-file for poverty estimation at district level using SAE

cd "C:\Users\kifayat\Desktop\kifayat\files\"

use sheet.dta //file including all covariates and log of adult equivalent consumption expenditure svyset psu [pweight = weight], strata(prov) // declaring survey data forval i=1/4 {

svy: reg y x if prov ==`i'

mat beta`i' = e(b)

predict e`i', residual // predicting residuals for each prov to standard error calculation

replace e`i' = (e`i')^2}

gen se`i'=r(sum)}

replace se1=se1/6915 //the number of obs for punjab is adjusted for degree of freedoms.

replace se`i'=(se`i')^0.5

gen lpren`i' = beta`i'a*X if prov==`i' replace lpren`i' = 0 if lpren`i'==.

replace lpreg = lpreg + lpren`i'}

gen probabilities=normal(z) //estimating of probabilities using cumulative normal distribution mean probabilities, over(district) //calculation of poverty as average of probabilities over each district."

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TAX SYMPOSIUM

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Tax Structure in Pakistan: Fragmented, Exploitative and Anti-growth

MAHMOOD KHALID and MUHAMMAD NASIR

INTRODUCTION

Taxes are involuntary charges levied on individuals or corporations and enforced by a government entity—whether local, subnational or national—in order to finance government activities. As such, the prime objective of the taxes is revenue generation. However, for sustained stream of revenues, the tax policy also needs to be growth facilitating. These dual objectives can only be achieved if the tax policy reduces the deadweight loss resulting from imposition of taxes, and help transactions grow. Higher number of transactions is associated with higher economic growth and more employment. Increased growth enhances the taxable capacity of the economy and therefore generate sustainable streams of revenues.

Unfortunately, this has not been the case in Pakistan. The objective of the tax policy is reduced to only to collecting more revenues to achieve illusive targets of Tax—GDP ratio and to reduce fiscal deficit. Growth facilitation has not been the priority. Increasing the tax-to-GDP ratio even at the cost of violating the basic principle of taxation—fairness, certainty, efficiency, and convenience—has become the cornerstone of policy. Consequently, the tax structure has taken the shape of an exploitative and anti-growth design that kills transactions. The amplified share of indirect taxes in total collections, the increase dependence on withholding taxes accompanied by compliance cost, and the use of tariff for revenue generation instead of a trade facilitation instrument are some of glaring examples of a tax structure that would go for short-term revenue gains by sacrificing long-term growth.[1]

In this brief note, we critically review the taxation structure of Pakistan and suggest some measures on making tax policy consistent with the established principle of good taxation.

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[1]The objective of the policy is to first achieve a higher tax-to-GDP ratio no matter what is the cost, and then generate growth and employment through Public Sector Development Programmes (PSDP). There are, however, several issues with this paradigm of tax policy and growth which are discussed in this note.

LEGISLATIVE TAX STRUCTURE IN PAKISTAN

In Pakistan, resource mobilisation takes place at the federal and provincial government levels. Main taxes are broadly differentiated in direct and indirect taxes (with surcharges included in the indirect taxes). As per the constitution of Pakistan, the taxes for collection for different tiers of the governments are defined as shown in Table 1.

Table 1

Tax Structure by Legislation for Pakistan

Level of Government	Direct Taxes	Indirect Taxes
Federal Government	Income Tax	Sales Tax
	Corporation Tax	Excise Duty
	Wealth Tax	Import Duty
	Property Taxes	Export Duty
		Gas and Petroleum Surcharge
		Foreign Travel Tax
Provincial Government	Land Revenue	Sales Tax on Services
		Stamp Duty
	Urban Immovable Property Tax	Motor Vehicle Tax
	Tax on Transfer of Property	Entertainment Tax
	Agriculture-Income Tax	Excise duty
	Capital Gains tax	Cotton fee
	Tax on Professions, trades and callings	Electricity Duty

Source: The Constitution of Pakistan; Fourth Schedule-legislative List.

TAX STRUCTURE AND ITS IMPLICATIONS

Tax Composition

The share of indirect taxes (and surcharges) has been more than share of direct taxes in the consolidated (federal and provincial) revenue resources. This put excess burden on the economy as indirect taxes create distortion in the resource allocation. The share of direct taxes were just 25 percent of the consolidated revenues in 1949-50, 33 percent in 1959-60, and subsequently reduced to just 14-17 percent in the 1970s (Ahmed and Rashid, 1984). However, in the later periods efforts were made to cover for this deficiency. As noted by Fatima and Qazi (2001), the emphasis of fiscal policy in 1990s was to increase the share of direct taxes in tax revenue, which eventually did increase a bit, but the overall tax-to-GDP ratio could not be increased. As of fiscal year 2019-20, the ratio of direct taxes in the total taxes is 32 percent out of which 70 percent are collected in a withholding basis (which defies the Direct Tax claim).

Taxation Principles

A good tax system need to be least distortionary, has ease of collection, doesn't discriminate and is politically acceptable. Most experts are of the view that Pakistan's tax policy is not based on these well-known and clear principles.[2] Ad-hoc tax revenue

[2]See Haque, *Macroeconomic Research and Policy Making: Processes and Agenda* https://www.pide.org.pk/pdf/Macroeconomic-Research-and-Policy-Making-Processes-and-Agenda-Dr-Nadeem-ul-Haque.pdf

enhancing measures through SROs and mini-budgets have developed a complex tax system that confounds principles of rational tax policy. FBR sets an ambitious target and to chase that number arbitrary measures are taken which create uncertainty that eventually kills transactions. These unrealistic targets cannot be achieved without enhancing the taxable capacity of the country; instead these are stifling the economic activity.[3]

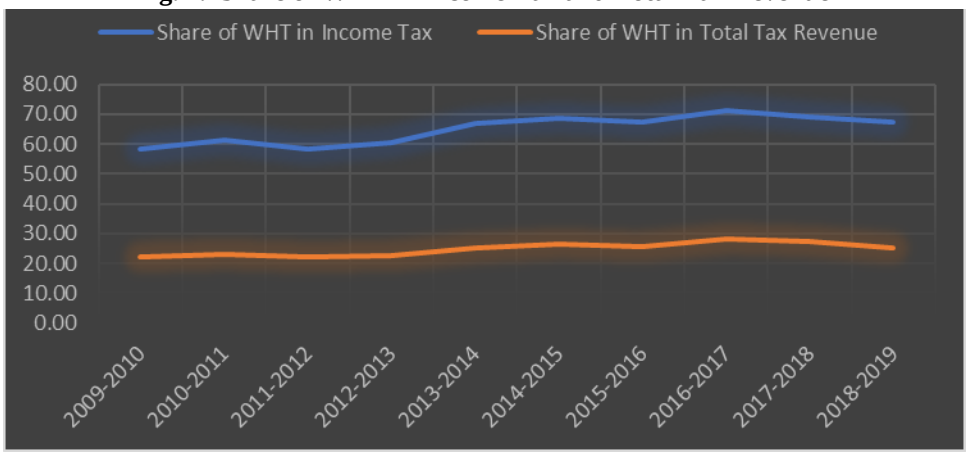
The current tax structure in Pakistan is regressive in nature and is in contrast to the fairness principle of tax policy. Frequent changes in policy and rates make the environment very uncertain especially for potential investors. The reliance on indirect taxation and withholding regimes increase the compliance cost for the tax payers (especially business). Similarly, excessive documentation requirements increase transaction cost. Together, these make the tax policy inefficient and inconvenient.

This situation calls for tax reforms. There have been 16 Tax Reforms efforts since independence. The unmet need for more reforms considering inelastic structure and low tax collection from the economy warrants a critical analysis of the history of reforms and the subsequent outcomes.

Excessive Withholding Regime

As an extractive practice FBR has been able to switch burden of collection to those doing transactions and can be forced to collect withholding taxes on behalf of FBR. About 70 percent of tax revenue is collected through withholding tax agents such as banks, utilities, telecom etc. placing the burden of collection on these businesses and increasing their business costs (Figure 1). While these withholding taxes may provide an easy source of collection for Federal Board of Revenue (FBR), they make the tax system incredibly complex for the taxpayers. This also questions the role of FBR as a tax collecting authority.

Fig. 1. Share of WHT in Income Tax and Total Tax Revenue



Source: Author's estimation based on data from FBR Website.

[3]See Haque, N. Kill Transactions, Kill Economic Growth https://medium.com/@nadeemhaque/kill-transactions-kill-economic-growth-5b45ae75abc1

A recent report titled "Growth Inclusive Tax Policy: A Reform Proposal" by the Macroeconomics Section of PIDE estimates that there are about 35 out of a total of 82 Withholding taxes in Income Tax, five hundred ninety-six out of total 821 in domestic sales tax lines; 42 out of 97 for sales tax on imports, 37 out of 95 in case of customs and 09 out of 37 in case of Federal Excise Duties which contribute less than 1 percent in their respective revenue heads. The report further estimates that about 11.14 Billion rupees of compliance cost of these taxes and 0.24 Billion FBR cost of collection is saved if these taxes are not levied. Further if these taxes are not levied, businesses would reinvest them to expand, then the overall impact would be more economic activity resulting in even more tax collections than that forgone. But unfortunately, while policies are made, no one notices the loss to economic growth and job creation due to these adverse tax measures.

High Compliance Cost

Current withholding regime and other documentation drives by FBR are counterproductive because of higher cost of compliance. This cost consists of the number of hours required for record keeping, tax planning, and forms completion and submission. It takes around 577 hours (per year) to complete the tax payment process in Pakistan compared to the world average of 108 hours. Adding this to the high number of payments (47) tremendously increases the average tax burden in the country (Nasir, et al. 2020). In such a non-conducive environment, any documentation drive would kill transactions and with it any hopes of increasing economic growth and sustainable revenue streams.

Fragmented Tax System and Growth

Tax basis are fragmented with services subject to taxes at the provincial level and goods at the federal level. There is also variation in rates (from 1 percent to 17 percent), in addition to several specific exemptions. The standard rates on services also vary between provinces. In Baluchistan and KPK it is 15 percent, in Punjab it is 16 percent and in Sindh it is 13 percent. Such fragmentation and exemptions also add to the existing uncertainty.[4] This fragmented and contentious tax policy has resulted in decline of long term growth and productivity. These measures multiply as unrealistic targets are chased with mini budgets every quarter. The study further identifies that the policy priority has been to increase tax-to-GDP ratio thus leaving growth and employment to an outcome mainly produced from Public Sector Development Programmes (PSDP).[5] Arbitrary and frequent tax changes have created an environment of uncertainty (Nasir, et al. 2020).

Complex Taxation Structures

Pakistan ranked 161st among 190 economies for "paying tax" indicator in the 2020 Doing Business Report. The low performance for this indicator is due to the complex tax system and high tax compliance costs (The World Bank Report, 2019). PIDE report (2020) identifies that the number of complaints received at FTO have been

[4]See Huzaima & Ikram, Overcoming fragmented tax system, *Business Recorder*, October 19, 2018.

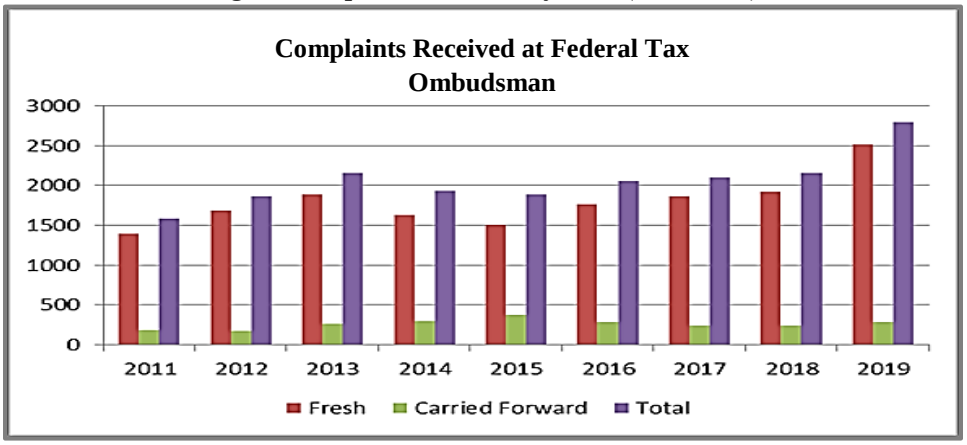
[5]PIDE has already developed a book (Haque et al, 2020) as well as a policy viewpoint on the subject to note that our growth policy remains framed in the now obsolete Haq/HAG model.

https://forms.gle/UCqHjnwU4AZPPYXRA

https://pide.org.pk/pdf/Policy-Viewpoint-11.pdf

increasing over time (see Figure 2 and Table 2). Out of the total cases decided in 2019 a total of 66 percent complaints were in fact accepted. Statutes and Regulation of FBR are provided in 34 documents besides the clarifications and notifications (15 Acts, 11 ordinances and 8 Rules). For example, only the Income Tax Ordinance 2001 Amended up to December 31st, 2019 have 634 pages of pure legal language. This makes businesses to rely on tax Accountants and lawyers which is costly; requires time and may result in double bookkeeping and prolonged process of rights claim.

Fig. 2. Complains Received by FTO (2011-2019)



The practice of refund claims is also not pervasive in Pakistan due to low refund payback rate and fear of getting audited if refund claim is presented. The Doing business report of World Bank for Pakistan states that 50-70 percent of all VAT refund cases are subject to an Audit.

Table 2

Number of Complaints for Each Tax Type

Category	Income Tax	Sales Tax	FED	Customs	Total
Refund Related Complaints	1172	381	1	127	1681
Maladministration	225	210	6	52	493
Unnecessary Notices	58	18	3	46	125
Others	125	30	4	52	211
Total	1580	639	14	277	2510

Source: FTO Annual Report 2019.

Tariff as Instrument of Taxes or Trade Policy

Openness is important for growth but in Pakistan there has been a policy of protection and that too on the basis of setting higher tariff. This has barred businesses to become competitive and rely on perpetual government assistance. Protectionism, especially for the manufacturing sector, is the standard policy of the government**.** Manufacturers enjoy exemptions and concessions on the import of these items which if imported by others are liable to duties etc. The local manufactures neither developed their

capacity nor upgraded technology to bring in quality for their captive market (Nasir, et al. 2020). The unprecedentedly high (52-90 percent) duties on raw material reduce the share of manufactured goods in Pakistan as compared to those of India and Vietnam.

Low Fiscal Resource Mobilisation

Due to complex laws, primitive mechanisms for tax collections and high degree of discretion with the tax collecting authorities, the revenue collection is low and an impression of corruption and inefficiency for the tax collection authorities has emerged. Further, the tax base for almost all the taxes are narrow due to the wide ranging exemptions,[6] concessions and the presence of a black economy (Zaidi, 2005). The political economy angle of tax reforms reveals that vested interest groups at the helm of affairs and strong lobbies have been able to manage the tax-free ride at the cost of high deficits and others bearing the burden of higher indirect taxes. The lack of commitment by those making the polices, state capture by vested interest groups and wrong strategy of implementation of reforms have been the main reasons for such low fiscal resource mobilisation in Pakistan (Pasha, 1995).

Inefficient Tax Planning

As an example PIDE report (2020) states that Income Tax code considers incomes in separate blocks. Further all types of incomes, required to have an advance tax, considers some these as fixed and final which is fundamentally wrong because the actual liability may be even much more. The actual tax liability should be evaluated at the end of the year where the returns will reconcile all advance payments. All incomes should be treated as income and should not be differentiated.

Increasing the number of filers has also become an obsession with FBR. Limited research is available on data of filers. Often the ones filing are actually not paying significant taxes along with it. To increases the number of filers, for the last couple of years, FBR has developed numerous discriminatory taxes to segment filers from non-filers. From bank withdrawals to asset purchases non-filers are penalised through such transaction taxes. The Revenue collection has not increased but the distortion in transactions and asset prices have slowed down investment and the economy. The acceptance of transaction taxes and presumptive taxes from non-filers reduces the pressure to file. Overall distinction based on filer and non-filer through rate differential has not worked, rather it has established a premium for being non-filer.

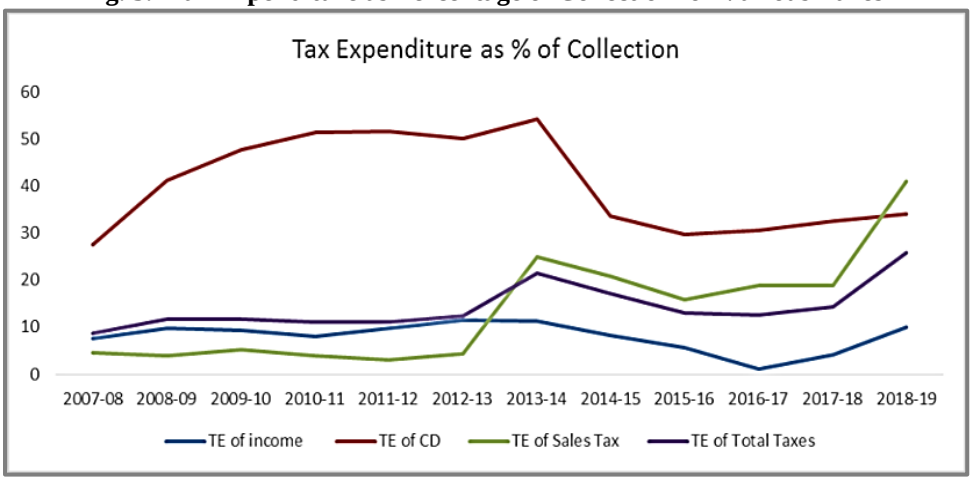
Tax Expenditures

There is a significant revenue loss from SROs based and under 5th, 6th, and 8th Schedules of tax codes. There has been hardly any economic appraisal of these waivers. The recent Tax Expenditure report by FBR identified that as much as Rs. 1.15 trillion

[6]Still agricultural sector, which contributes around 20 percent of the GDP, is not fully considered for agricultural income tax. Further, there are 0-rated industries/sectors such as textile industry, which enjoys a tax holiday for quite some time now and lastly the packaged and unpackaged food items such as tea, pulses, vegetable oil, etc. are also tax-exempt. Although the reformed GST which was floated in 2011 was supposed to include these items also, but it was not implemented.

was provided as exemptions in FY 2020, which was Rs. 972.4 billion in FY2019. These exemptions are increasing over time and are almost one third of the total revenues collected otherwise (Figure 3).

Fig. 3. Tax Expenditure as Percentage of Collection for Various Taxes



THE WAY FORWARD

There is a clear need to have a transaction-facilitating policy rather than having one that kills transactions. The economy is shrinking because of this policy of suspicion on all transactions. Some measure that should make the policy growth-facilitating are as follows:

- A tax system must be simple and clear.
- It should not seek to tax different goods and services differently to allow all consumer and investment decisions to be based on market realities.
- Tax rates and policies should be stable and not changing in minibudgets every few months forcing all to speculate on tax policy.
- Those withholding taxes that contribute only meagerly but have higher cost of collection (compliance cost) should be abolished.
- The culture of SROs should be completely abolished.
- Tax expenditure are forgone revenues due to exemptions, concessions, and preferential treatments to particular industry, sector, or activity. Research is needed to assess which industry need such exemption and why? And for how long? Whether those that have been given these exemptions/concessions have achieved the desired results such as jobs creation and economic growth.

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Pakistan: Withholdingisation of the Economic System—A Source of Revenue, Civil Strife, or Dutch Disease+?

MUHAMMAD ASHFAQ AHMED

The paper takes an incisive shot at the systemic inadequacies that have tiptoed into the economic order of the state over time via the apparently innocuous mechanism of withholding taxes. Withholding tax—a legitimate instrument of preponing the state revenues on clearly identifiable chunks of incomes—has historically been resorted to by most states, and to that extent it should be normal with Pakistan, too. However, what has happened in Pakistan is that the tool of withholding taxation has been used as a source of revenues way too large in scale, size, scope and intensity. In addition to the pulling forward of tax collection on clearly demarcated chunks of *incomes*, a large number of *transactions* have also been roped into its nexus and then charged to tax by presumptivising gross receipts as income—a withholdingisation of the sorts not only of the tax system but of the entire economic system as a weighty portion of ubiquitous withholding taxes gets stuck into the pricing structure of the final goods and services produced in the economy rendering them price-incompetitive in the international market. This overwhelming withholdingisation of the economic system, it is argued, has been brought about by a numb state continually operating under, using a Freudian framework, the "pleasure principle" instead of the "reality principle" with political governments complacently choosing to continue harvesting quick bucks into the exchequer, pushing the extractive system into a total disarray, the society into burgeoning civil strife, and the economy to the Dutch Disease effect.

JEL Classification: H1
Keywords: Withholdingisation; Withholding Taxes, Pakistan Tax System; Federal Board of Revenue; Civil Strife; Dutch Disease Effect; Cost of Collection; Tax Reform

I. INTRODUCTION

"The central dilemmas of collective life are embodied in the question of taxation."[1]

Historically, the state has raised extractive structures, inter alia, to meet its expenditure needs with taxes availing centrality and forming foundational pillars of most public finance systems. Tax defined as "a compulsory contribution to the government, imposed in the common interest of all, for the purpose of defraying the expenses incurred in carrying out the public functions…without reference to the special benefits conferred on the one making the payment,"[2] manifests itself in multiple forms and models. In order to achieve cardinal objectives, that is, equity, neutrality, and certainty, states have

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[1]Evan S. Lieberman, *Race and regionalism in the politics of taxation in Brazil and South Africa*, Cambridge studies in comparative politics (Cambridge; New York: Cambridge University Press, 2003).

[2]R.W. McGee, *The philosophy of taxation and public finance* (Springer US, 2011). 16.

experimented with differing taxing models. Since different taxes have varying yield times—Income Tax, Wealth Tax, and Capital Gains Tax being annual levies; Value Added Tax including its variants like Sales Tax, General Sales Tax, and Excise duties being monthly or activity-based levies; Gift Tax and Inheritance Tax (Estate Duty) being occurrence-dependent charges—governments are always striving to find ways and means to reduce the lag between the point at which revenues become *due*, and the point at which those can actually be *collected*—that is, by advance payment of taxes.

This objective is generally achieved through two modes i.e. *advance taxes*[3]and *withholding taxes*.[4] In the sub-continental context, the fiction of advance tax was introduced during 1940s purely as a war measure to harvest quick bucks into the exchequer, "combat inflation and to withdraw a part of the unprecedented amount of currency in circulation."[5] To be exact, "'advance tax' popularly styled as 'pay as you earn' scheme was introduced in 1944," and it covered "all types of taxable income (except salaries and interest on securities where provision already existed for deduction at source) exceeding twenty-five thousand rupees."[6] It was observed that though "like many other innovations in taxation legislation, this innovation also has outlived its used by date which gave it birth,"[7] over time, the payment of advance tax in instalments has become a necessity; an important ingredient of most public finance systems across the globe.

Withholding tax, on the other hand, has rather deeper roots in time. Not only that its origins can be traced as far back in history as 1512, but also that "most forms of direct taxation during the 16th, 17th and 18th centuries contained taxation at source, and that its use increased with the passage of time."[8] The importance of withholding taxation continued to increase throughout "the nineteenth century as the income tax evolved into a major form of direct taxation."[9] During the British period, the mechanism of withholding tax, for the first time, was introduced in 1861, and salary income of government employees was brought under its scope.[10] It was argued that due to the application of withholding tax, the contribution of government employees "to the fisc rose from 14 per cent in 1860, to 21 percent in 1864."[11] Over the past one and a half century since, the withholding regime has considerably expanded in most countries eliciting arguments both for and against its application, and expansion.

In Pakistan's context, justifying the need and efficacy of withholding regime, Khan posits that "since withholding taxes are transaction related, they are easy to

[3]"Advance tax" implies approximation and payment by a person in monthly or quarterly instalments of his total annual tax liability worked out on the basis of estaimated total annual taxable income.

[4]"Withholding tax" refers to deduction of certain percentage of various types of incomes at the very payment or release stage.

[5]This observation was made in *Prushottamdas vs. Commissioner Income Tax*, 48 ITR 206(2011).

[6]GOP, "The Taxation Enquiry Committee Report (Volume 1)" (Karachi: Ministry of Finance, 1960), 150.

[7]*Prushottamdas vs. Commissioner Income Tax*.

[8]P. E. Soos, *The origins of taxation at source in England* (Amsterdam: IBFD, 1997).

[9]Stephen Dowell, *A history of taxation and taxes in England* (London: Frank Cass & Co. Ltd., 1865).

[10]C. L. Jenikens, "Legislative comment—1860: India's first income tax," *British Tax Review* XX, no. 87 (2012).

[11]Ibid.

collect."[12] He also asserts that "in a country like Pakistan where the economy is predominantly un-documented and outreach of the department is limited," withholding "taxes easily cover some otherwise difficult sources of income."[13] He goes on to maintain that taxpayers also "find it convenient as their annual tax burden is spread over the year, helping them discharge their tax liability in instalments," and that "withholding tax regime provides considerable documentation to the economy and effective control to…escapement of income being all pervasive in the economy."[14] Withholding taxes have also been credited as being able to "provide a clear picture to the other economic partners and prospective investors about the taxation regime and serves as important source of policy initiatives of a country."[15] It is logical that, given its wide-going merits, at-source withholding is worldwide recognised as a legitimate tool of fast-forwarding of revenue collection.

However, what has happened in Pakistan in this context is completely different. What happened in Pakistan was no preponing of tax collection on clearly demarcated chunks of revenues that, as per accepted accounting norms, have attained the character of *income* in the hands of their recipients or are likely to do that; it is rather tantamount to withholdingisation of the entire tax system; perhaps the entire economic system. Withholdingisation could operationally be defined as the process of envelopment of economic market whereby at every single stage in the economic chain the state chooses to expropriate a chunk of the value of each transaction—a sort of *Chinacutting* of transactions.[16] The state's ostensible journey from withholding to withholdingisation—intense and all-pervading as it has been, inter alia, was marked by a brutal sprawl of tentacles of withholding regime aggressively grabbing more and more areas of economic activity into its fold with every year passing over the past three decades. When disaggregated, withholdingisation appears to have been attended by and evidenced in an increase of withholding tax provisions being legislated into the fiscal code; tally of withholding provisions brought within the purview of Presumptive Tax Regime (PTR); application of withholding regime to transactions as against incomes; extension of withholding regime to admit of collection at source (CAS) as against deduction at source (DAS);[17] share of withholding taxes as percentage of total revenues; reallocation of resources by the revenue administration to intenser and deeper monitoring of withholding regime; stringency and toughness being brought into the punitive and prosecutive implications for defaulting withholders; number of

[12]Sardar Aminullah Khan, "Standard operating procedure for monitoring of withholding taxes," (Islamabad: FBR, 2011).

[13]Ibid.

[14]Ibid.

[15]Ibid.

[16]"*Chinacutting*" is a term that is specifically used in Pakistani journalistic circles and refers to a process whereby land grabbing goons known as "land mafia" surreptiusouly occupy, cut, build, and usurp parts (generally nooks and corners) of precious private and public lands lying unattended for a time. The phenomenon being a major governance challenge is quite prevalent in cities like Karachi, Lahore, and Quetta.

[17]The DAS mode refers to the process whereby tax is withheld at source by a fixed percentage on the release of payments that are in the nature of INCOME. On the contrary, the CAS mode implies application of almost the same process but on PAYMENTS undertaken in the economy for sale/purchase of goods and services—including intermediary ones.

economic transactions being made to suffer withholding taxes at both ends; and transference of cost of collection from the state exchequer to the citizenry. The paper premises that withholdingisation being applicable at each joint in the transaction chain cumulatively enhances the end-price of goods and services being produced in the economy—triggering a process that could operationally be dubbed as taxflation[18]—inflation (increase in prices) due to taxation—much of which is neither due, nor adjusted nor refunded.[19] The data of a select set of withholding provisions, year-wise tax withheld thereunder during T/Ys 2012 to 2016, total tax claimed and percentage of tax withheld remaining unclaimed is presented in Table 1.

In all categories, the tax claimed in tax returns far exceeds the tax withheld. In fact, out of the total tax withheld at Rs. 451.6 billion under just 10 withholding provisions only 101.9 i.e. 77.4 percent was claimed.[20] This is what makes the economic outputs overpriced in both production and consumption markets of the economy, and uncompetitive internationally and unaffordable domestically for the lower rung consumers. Since economics is the basic most ingredient of any social fabric, withholdingisation of the economic system (national web of economic transactions) can have far-reaching implications for the economy, the society and the state. To make things worse and worrisome both the society and the polity are quite oblivious of the negative dimensions of withholdingisation.

Table 1

Withholding Provisions—Tax Withheld, Claimed & Unclaimed

Year/ WHT Provision[21]	2012	2013	2014	2015	2016	Total Tax* Withheld	Total Tax Claimed	Total Tax Unclaimed (%-age)
Section 236	36.9	27.1	51.9	44.6	47.6	208.1	19.9	90.4
Section 231A	12.2	12.0	18.6	23.2	28.6	94.6	43.5	54.0
Section 231B	1.2	1.1	3.2	7.4	7.5	20.4	10.7	47.5
Section 234	3.3	3.6	6.3	6.5	8.9	28.6	8.4	70.6
Section 236A	X	X	13.6	3.0	3.6	20.2	7.3	63.8
Section 236C	X	X	0.7	1.5	2.1	4.3	1.4	67.0
Section 236K	X	X	X	4.0	6.2	10.2	3.2	67.0
Section 236D	X	X	0.7	0.6	0.7	2.0	4.7	335^
Section 236I	X	X	1.2	1.9	2.5	5.6	1.1	80.0
Section 236P	X	X	X	X	21.6	21.6	1.7	92.0
Total	**53.6**	**43.8**	**96.2**	**92.7**	**129.3**	**451.6**	**101.9**	**77.4**

**Source:* FBR/DRS/PRAL; X = Withholding tax provision was not yet legislated. ^Implies excess tax claims.

[18]"Taxflation" has been used in the paper in a sense slightly different from the one that is generally associated with it whereby an inflation-related increase in income pushes its recipient into higher applicable tax brackets off-setting the impact of increase in income—something also known as "bracket-creep."

[19]This is because, theoretically speaking, all direct taxes are supposed to be borne by a payer of the tax himself.

[20]For an in-depth analysis see Faisal Mushtaq Dar, "Unjust taxation in Pakistan," (Peshawar: National Institute of Management, 2017).

[21]Section 236 deals with CAS mode taxation on mobile phone cards; section 231A with DAS mode on cash withdrawals; section 231B with CAS mode on vehicle registration; section 234 with CAS mode on token tax renewal; section 236A with CAS mode on auction of property; section 236C with CAS mode on sale of immovable property; 236K with CAS taxation on purchase of immovable property; section 236D with CAS mode on marriage halls; and section 236I in CAS mode on educational institutions.

The paper, by adopting narrow-to-wide angle approach, explains the process of withholdingisation in Pakistan in detail, and brings out its implications in different domains—extractive system, economy (and its various sectors), and the polity. It argues that withholdingisation has perverted the extractive system of the state, disengaged it from the macroeconomic framework and resultantly contributed towards enhancement of the extant economic status quo. The process of withholdingisation has occurred at the same time as the process of defanging, stunting and weakening of the (traditional) tax system—the hallmark of all well-functional states. The state's mad rush into withholdingisation has a method in madness and may have been undertaken with a purpose and under a grander design of things. This is what makes withholdingisation an elitist enterprise in Pakistan. In this sense of the matter, withholdingisation becomes the parameter of Pakistan tax system, and therefore, a highly worthy and intriguing subject of enquiry. The paper looks to peg withholdingisation and all what it stands for the state in the elitist framework already developed, and dissect and lay bare its various dimensions with a view to seeing if it really is an abundant source of revenue, or Dutch Disease? This is the cardinal two-pronged overarching research question that the paper looks to answer in some depth.

The paper is divided into 7 sections. After Section 1 has introduced the subject, Section 2 develops the requisite theoretical framework within which to analyse the process of withholdingisation in Pakistan. While Section 3 critically traces its evolution through the nation's history, Section 4 unravels the underlying mechanics and nuts and bolts of withholdingisation and expands its concept to cognise it as the new normal of Pakistan's economic system. Section 5 lays bare the relationship between withholdingisation and tax collection cost, and seminally develops the concept of *national* tax collection cost and modifies that of taxflation to fit the spatial context. Section 6—the very core of the paper—dissects withholdingisation in three separate parts i.e. as a source of revenue, civil strife, and Dutch Disease, and without being monocausal, argues that this may perhaps be the most critical pull-back factor operating on the economy impelling its underperformance in most critical areas—including receding exports, home remittances, and foreign investment. Section 7 summarises the debate with forebodings for the future.

2. THEORETICAL FRAMEWORK

Although, the elitist framework has long been exploited to interpret Pakistan's power and politico-economic structures,[22] yet Ahmed contrived the convenient conceptual vehicle of Elites Ltd, crystallised the elitist model, and expanded its scope to systematically analyse the monopolisation of Pakistan's extractive function, and disaggregated it to comprehend various mutually reinforcing dynamics and cross-cutting

[22]See, for instance, Asaf Hussain, "Elites and political development in Pakistan," *The Developing Economies* 14, no. 3 (1976); Hamza Alavi, "The state in post-colonial societies: Pakistan and Bangladesh" *New Left Review* 1, no. 74 (1972); Saeed Shafqat, *Political system of Pakistan and public policy: Essays in interpretation* (Lahore: Progressive Publishers, 1989); Ishrat Husain, *Pakistan: The economy of an elitist state* (Karachi: OUP, 1999); Stanley A. Kochanek, *Interest groups and development: Business and politics in Pakistan* (New York: Oxford University Press, 1983); Hamza Alavi, "Pakistan and Islam: Ethnicity and Ideology," in *state and ideology in the Middle East and Pakistan*, ed. Fred Halliday and Hamza Alavi (Hong Kong: Macmillan Education Ltd., 1988).

mechanics at work by way of an explanation of its historically embedded low performance.[23] The state's political crust, it is argued therein, is essentially underpinned by Elites Ltd which, in turn, is composed of seven effective elite groups i.e. industrial elite, business elite, religious elite, feudal elite, military elite, and sundry (judicial, media, non-profits, and professional) elite; that while elites enter into zero-sum transactions on the political chessboard, they resort to non-zero-sum transactions in the economic realm; that elites face a rational actor dilemma in that they need a state to govern but they also want to maintain it at least cost to themselves; that in order to resolve this dilemma, the elitist state takes to optimally extract from international sources; and that since an infinite international extraction is not possible, it descends down to undertake internal extraction through six unwholesome and perverse modes by way of domestic resource-match[24]—withholding taxes being one such mode. Ahmed reckons extraction as a critical variable of state-building, and in Pakistan's context, lays bare the level of importance which various societal agents accord to it, and enquires into how elites, after effectively monopolising the *infrastructure* of the state i.e. means of production,[25] take to exploit the *superstructure* of the state to numb and opiate the citizenry to conveniently rig the extractive policy formulation process and weaken the extractive arm.[26] This position is based on the premise that only a weak extractive system can help elites underwrite full control over their riches that they amass over time through monopolisation and manipulation of the infrastructure, and maintenance of the economic status quo. He further posits that in order to achieve their spurious agenda of maintaining and enhancing the economic status quo, at strategic level, Elites Ltd forms alliance with the Generalist Juggernaut—generalist cadres of Pakistan civil services—an elites-generalist duopoly of sorts.[27] The paper looks to operationalise the conceptual framework recapitulated hereinabove, by lowering down its focus to one elitist tactical ploy—withholdingisation—and by breaking it into its elements, and seeing how it pans out in the overall scheme of statecraft in Pakistan, and by gauging its implications for the people, the economy, and the system.

The paper seeks to induct Freud's competing psychological concepts of "the pleasure principle" and "the reality principle" into this political economy analysis of the extractive function to supplement the theoretical underpinnings and explain the state's submissive descend into withholdingisation with all its wide-going destructive potential. The pleasure principle implies the drive through which a person seeks pleasure and looks to satisfy his or her biological (and other) needs simultaneously avoiding pain, suffering and hard work—say, for instance, adolescent phase of human life. However, as one attains maturity, spontaneous pleasure-seeking is overtaken by the reality principle.—operating conditions of the real world. Once dominance of the reality principle is established, the search for fulfilment of needs and satisfaction does not take the most

[23]Muhammad Ashfaq Ahmed, "Pakistan: Extraction, elites and state autonomy: A theoretical configuration," *The Pakistan Development Review, 56*(4), (2017).

[24]Ibid.

[25]For a detailed analysis see Husain, *Pakistan: The economy of an elitist state*: 133.

[26]Muhammad Ashfaq Ahmed, "Pakistan: State-building, extraction, and (misplaced) societal preferences," *Journal of International Stability Studies* 2, no. 1 (2016).

[27]Muhammad Ashfaq Ahmed, "Pakistan's governance goliath: The case of non-professional chairman, F.B.R," *The Pakistan Development Review, 55*(4) (Winter) (2016).

direct route, but instead defers attainment of its goal in accordance with the conditions imposed by the external world and operating realities.[28] It has been remarked that both "the reality principle and the pleasure principle pursue personal gratification, but the crucial difference between the two is that the reality principle is more focused on the long-term and is more goal-oriented while the pleasure principle disregards everything except for the immediate fulfilment of its desires."[29] At some level, Freud knew and underscored "the potentially destructive aspects of the blind quest for pleasure," [30] when he posited "that the pleasure principle seems actually to serve the death drives."[31] It has been asserted that "unconscious persistence of the pleasure principle turns the mind's internal state of nature into a looming threat, and ever-present potentiality of chaos…justifying a tyranny in the mind as necessary to prevent disastrous and pathological potentialities from turning into overwhelming eventuality."[32] Moreover, excessive zealousness to pursue pleasure produces "an unpleasurable and wasteful situation," in the longer run.[33] The study borrows from Freud to argue that Pakistani state, for most part of its history, has operated under "the pleasure principle" at the expense of the "the reality principle" although most functional states operate or aspire to operate under the latter principle. By way of aside, it could be remarked that Pakistani state's below par performance on most fronts could well be interpreted in terms of its preference for and gravitation toward the pleasure principle—always repressing the reality principle for a later day; into the future—that has never come.

In order to examine the state's constant drift into withholdingisation, Anuj Desai's work that he undertook to explore into the intrusion of withholding tax into the US system with its grit and stubbornness to stay there despite efforts aimed at its elimination, would be insightful.[34] Desai brings in a couple of powerful legalese, namely, "Entrenchment" and "Superstatute," and examines the impact of the Current Tax Payment Act, 1943, through which, withholding tax on Wages was introduced in the US in the wake of World War II-induced increase in public expenditure. Desai borrows Eskridge & Ferejohn's notion of Entrenchment[35] which no longer means "simply an unelected judiciary overriding an elected legislature or executive"[36] but an expanded concept under which "entrenchment becomes a more complex phenomenon, whereby statutes—the product of legislatures themselves—can in turn act to bind future legislatures."[37] A Superstatute, on the contrary refers to a law or a legal convention "that seeks to establish a new normative or institutional framework for state policy and that has a broad effect on the law due to its cultural influence, in such a manner that

[28]David Rook, "The buying impulse," *The Journal of Consumer Research* 14, no. September (1987).

[29]Ibid.

[30]J.A Brunner, *Freud and the politics of psychoanalysis* (Piscataway NJ: Transaction Publishers, 1999). 73.

[31]S. Freud, *Beyond the pleasure principle* (Dover Publications, 2015).

[32]Brunner, *Freud and the Politics of Psychoanalysis*: 75.

[33]Ibid., 77.

[34]Anuj C. Desai, "What A History of Tax Wtihholding Tells Us About the Relationship Between Statutes and Constitutional Law," *Northwestern University Law Review* 108, no. 3 (2014).

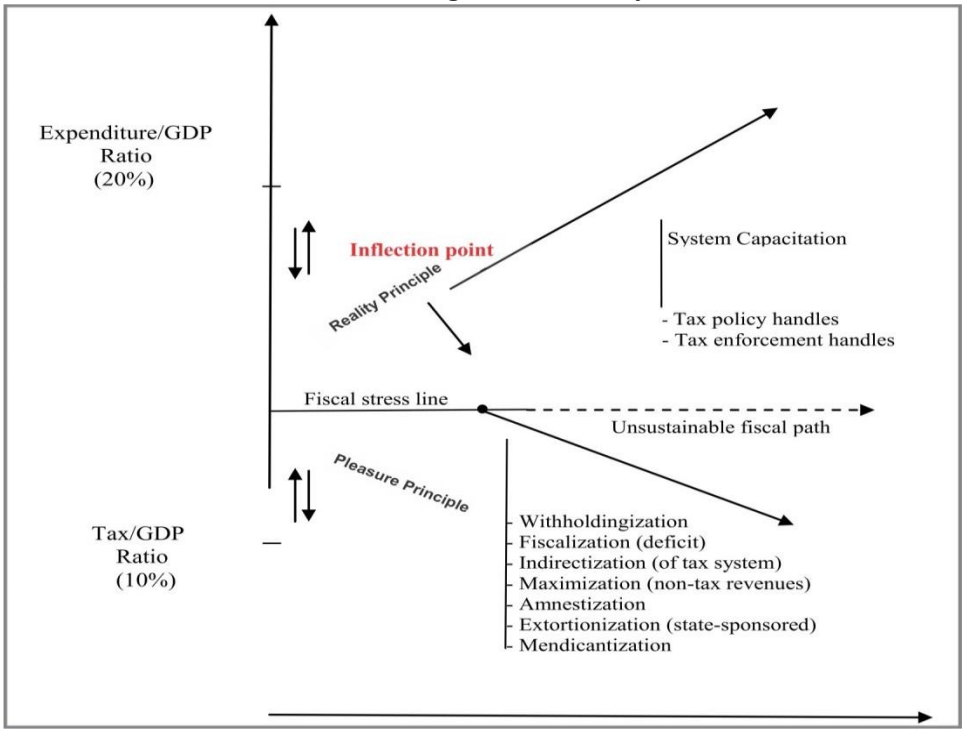
[35]W.N. Eskridge & J.A. Ferejohn, *A republic of statutes: The new American constitution* (Yale University Press, 2010).

[36]Desai, "What a history of tax wtihholding tells us about the relationship between statutes and constitutional law," 861.

[37]Ibid.

even constitutional provisions are interpreted with reference to it."[38] In order to better comprehend the exact contours of Superstatute, Desai explores into the history of withholding taxes in the post-WWII scenario in the US, "explaining in turn how that history sheds light on the underlying notion of a superstatue."[39] The paper admits both Entrenchment and Superstatue—essentially countermajoritarian concepts—into the analytical framework to throw light on the withholdingisation in Pakistan under all regime types—democratic, authoritarian, and hybrid, and its innate ability to be ever-winner, ever on the expansion. Thus, while Ahmed provides theoretical platform shedding light on how the institutional infrastructure of the state is occupied, monopolised, and mobilised by Elites Ltd into action towards the achievement of its objectives using withholdingisation as a tested too, the Freudian pleasure principle and reality principle help explain how an elitised state conveniently and comfortably walks into withholdingisation—an obvious exhibition of the pleasure principle, and Desai provides a conceptual closure as to how it may not perhaps be possible to reverse the process of withholdingisation, and that the system is there to stay and get more and more perverted with time if the underlying political settlement continues to hold its ground. The theoretical premise developed hereinabove can as well be diagrammatically portrayed.

Theoretical Argument—Portrayal[40]



[38]H.A. Hamoudi, *Negotiating in civil conflict: Constitutional construction and imperfect bargaining in Iraq* (University of Chicago Press, 2013). 29.

[39]Desai, "What a history of tax wtihholding tells us about the relationship between statutes and constitutional law," 859.

[40]Muhammad Ashfaq Ahmed, "Pakistan: Economy under elites—Tax amnesty schemes, 2018," *Asian Journal of Law and Economics* 10, no. 2 (2019). In this particular paper "Amnestisation" was operationalised.

What the picture portrays is that at any given point in time, Pakistan is found operating under significant amount of fiscal stress, that is, its expenditures exceed its revenues. This means that Pakistani state every now and then finds itself at the inflection point—the crossroads—at which it has two choices i.e. either to strengthen the extractive system enough to undertake sufficient taxation like all functional states, which is also good enough to meet its expenditure needs or to resort to the easier yet perverse extraction through the seven domestic resource-match ploys. The Freudian analytical concepts of *reality principle* and *pleasure principle* amplify and illuminate option exercised by the state. The paper operationalses the above theoretical framework by juxtaposing withholdingisation therein and critically analysing it from all essential angles.

3. WITHHOLDINGISATION—EVOLUTION IN HISTORICAL CONTEXT

While it has already been observed that the roots of withholding taxation are anchored as far back in time as early 16th century England, and mid-19th century British India, this section undertakes a brief rundown of withholdingisation-related developments that took place on this account in the post-1947 period. The evolution of withholdingisation in Pakistan is primarily traced by exploring into the development of the tax laws alongside a thorough analysis of various studies and reports that were conducted with the objective to reappraise and redesign the tax system to render it more responsive to fiscal imperatives of the state. But all, instead, ended up achieving diametrically the opposite—more withholdingisation. At independence, Pakistan conveniently adopted the pre-partition tax code with minimal changes.[41] Since the British India government had already imposed withholding tax on Salary, Interest-on-Securities, Dividend, and (Super-tax) on Bonus Shares,[42] it could safely be assumed that Pakistan's withholding regime continued to stay confined to these very sources throughout 1950s. Under the system, the withholder was responsible to provide a certificate of deduction to the withholdee that the latter could furnish to the revenue service alongwith his return as a valid claim for payment of tax or that of refund. Naqvi had observed that the "essence of this system was the recovery of tax from the person who disburses income instead of from the person who receives income."[43]

In 1959, contract receipts were made liable to withholding tax in order to alleviate mounting pressure on the exchequer.[44] This betrayed seeds of withholdingisation starting to germinate under the pleasure principle. The Taxation Enquiry Committee (TEC), 1960, affirmatively observing that the "principle of source deduction has been extended to supply of goods, contract payments etc. by the Finance Ordinance 1959"[45]—expressed oblique skepticism about its faithful implementation. It was around that time that the punitive implications for defaulting withholders also started to become more stringent.

[41]The tax code adopted was The Income Tax Act, 1922.

[42]S. M. Raza Naqvi, *The income tax act, 1922* (Lahore: Taxation House, 1963).

[43]Ibid. 619.

[44]GOP, "Budget speech 1959-60," in *Budget Speeches 1947-48 To 1984-85 (Volume 1).* (Islamabad 1984).

[45]GOP, "The taxation enquiry committee report (Volume 1)" 149.

TEC normatively asserted that "If the person responsible for making a payment from which tax should have been deducted, fails to deduct it or having deducted tax, fails to deposit it in a Government Treasury, he is deemed in default in respect of such tax and personally held liable for its payment."[46] TEC also grappled with the cardinal question of "extending the principle of source deduction to other incomes," that is, "to interest, rents, royalties, payments to contractors etc."[47] But then noting that contractual receipts had already been roped into the nexus of withholding scheme a year ago, TEC, teetering on the edge of withholdingisation, observed:

We are of the view that, despite the effectiveness of the system in reducing opportunities for tax evasion, its extension is beset with certain obvious difficulties. It will, for instance, be difficult to ensure that the persons or agencies deducting tax at source will promptly deposit it in the Treasury. Again, in a large number of cases, the tax deducted at source will be in excess of the actual tax payable by the assessee. This will increase claims for refunds and put both the Administration and the tax-payer to considerable inconvenience. The verification of the payment of tax into Government Treasury will delay the disposal of these claims. These are serious bottlenecks which have to be taken into consideration before extending the system to other sources of income. We have considered the question in its various aspects and would not recommend the extension of the system of source deduction to other items.[48]

However, this muted and muffled resistance was not to last long as right at the onset of the 1960s, the state started to pursue the pleasure principle rather recklessly as withholdingisation spread its tentacles far and deep into the economic system. The Commission on Taxation and Tariff (CTT), 1966, remarked that a provision had already been "made for withholding a prescribed amount on account of income-tax out of payments made to contractors by Government and other public bodies mentioned in the Act."[49] CTT deliberated upon the matter at length and sought to consolidate withholdingisation gains stipulating that "necessary rules should be framed without further delay so that the relevant law relating to deduction of tax at source in the case of contractors is put into operation."[50] The reality principle, it appears, had started to lose ground very much during 1960s.

The Taxation Commission (TC), 1974, defended and justified the systemic bathos into withholdingisation under the pleasure principle noting that in "a country where evasion takes place on a large scale, provisions relating to deduction of tax at source have to be properly implemented.[51] It was for the first time that *tax non-deduction* was imperceptibly equated with *tax evasion*. TC also significantly focused non-implementation of various withholding provisions, and vehemently harangued that the "provisions relating to deduction of tax at source, are not as effectively implemented as the law requires," as in "many cases employers do not act upon these provisions,"

[46]Ibid.

[47]Ibid, 150.

[48]Ibid.

[49]Ibid. "The commission on taxation and tariff (Second Report)," (Islamabad: Ministry of Finance, 1966), 14.

[50]Ibid, 50.

[51]Ibid. "The taxation commission report (Volume 1)," (Islamabad: Ministry of Finance, 1974), 203.

whereby in quite a few such "cases tax is evaded by persons who are responsible for deducting tax at source,"[52] and expended substantial amount of energies to beef up the punitive regime. Thus, observing that the existing law pertaining to deductions at source was not being implemented fully, TC ended up recommending that penal provisions should be invoked in all such cases, and that every "notice or form which requires the deduction of tax at source should also bear a warning at the bottom, indicating the liability that a person incurs in failing to make deduction at source."[53] In 1976 imports were also made to pass under the withholding axe thereby introducing the CAS mode for the first time, and expanding the net of transaction-taxing in Pakistan. It is also about this time that the state's focus starts to shift from *the tax-payer* to *the tax-withholder* as the one ultimately responsible to carry the state's fiscal burden.

The National Taxation Reform Commission (NTRC), 1986, looked to justify relentless withholdingisation, which by now had begun to emerge to the state with all its perverse potentialities as the only "viable" source of revenue repressing the reality principle deep down into its sub-consciousness. "The growing emphasis on current payments of tax," it was remarked, "happens to be one of the most pervasive and significant world-wide trends in income tax administration," and of "all current payment devices, withholding is the most common and generally the most significant in terms of its contribution to revenue collections."[54] Recognising and propagating withholding as *the tool* of tax policy—particularly that of curbing tax evasion and promoting tax compliance with reference to taxation of import-based transactions, NTRC stipulated that this "provision was incorporated in the law to enable the tax administration to reach the ever-increasing number of delinquent importer-taxpayers, who traditionally operate without any easily locatable business premises."[55] NTRC eulogising the process of withholdingisation argued that "the system of deduction at source has enabled the income Tax Department to bring a large number of taxpayers on its records," and therefore "withholding net may be extended further" to brokerage and commission payments, and public transport owners.[56] Interestingly, NTRC did recommend certain other measures to strengthen and capacitate the system but all such measures were conveniently ignored for implementation.

The GOP-sponsored Study of Direct Taxation (STD), 1989, stands out in its rule-based and empirical appraisal of withholdingisation in Pakistan. STD took note of Pakistan's irresistible slide into withholdingisation and asserted that if NTRC's prescription to bring brokerage and commission payments into the ambit of withholding regime had been accepted, it would "have taken the wide-ranging system of withholding of tax in Pakistan as far as it can go."[57] STD while making this comment absolutely had no idea that it was merely a tip of the iceberg and that worse was yet to come. It was also cautioned that "Low withholding rates which were final—favoured in a number of countries—have the advantage of simplicity and

[52]Ibid.

[53]Ibid.

[54]Ibid. "The national taxation reform commission report (Part 1)," (Islamabad: Ministry of Finance, 1986), 69.

[55]Ibid., 73.

[56]Ibid., 132.

[57]Ibid. "Study of direct taxation," (Islamabad: CBR, 1989), 64.

certainty but seem…to be unsatisfactory as a payment solution, since they produce a structure which favours the better off recipients."[58] The Committee on Tax Reforms (CTR), 1991, cast its vote unequivocally in favour of pushing withholdingisation further. CTR observed that "a large number of contractors and suppliers are getting their payments split into amounts below Rs. 50,000 to avoid the deduction limit," and recommended that "the present limit of deduction at Rs. 50,000 under section 50(4) be reduced to Rs. 20,000 for all classes of recipients i.e. goods and services."[59] The change was readily effected through Finance Act, 1991 giving traction to CAS mode and the process of withholdingisation as all critical economic indicators were seen going into downward spiral. If one were to pick a point at which withholding regime started to get fundamentally transformed from a standard tool of preponing of legitimate government dues to withholdingisation of the entire system, it was at the turn of 1990s.

The Resource Mobilisation and Tax Reforms Commission (RMTRC), 1991, was established in continuation of and as a sequel to CTR right in the midst of extreme economic chaos and politico-strategic unrest chiefly generated by a waning US interest in the region in the wake of Soviet withdrawal from Afghanistan. The country's appetite for revenues was insatiable and a fledgling democratic dispensation resurrected after a decade-long military rule was all willing to pursue the pleasure principle regardless of its consequences. RMTRC being an elitist initiative stands out for five significant points. One, RMTRC in innuendos claimed credit for and revelled in the success of withholdingisation when it argued that "the success of this regime is that the discretionary powers of the tax collectors have been reduced—for the simple reason that when 'deductions at source' predominate as they do now, the incidence of 'collection of demand' declines."[60] It was remarked that "while between 1984-85 and 1992-93 the 'deductions at source' increased from 41.5 percent to 68.1 percent of total income tax collection, the 'collection of demand' fell from 25.2 percent to 9.1 percent during the same period."[61]

Two, RMTRC provided legitimation to income-presumptivisation of receipts for the first time assigning an entirely a new dimension to withholdingisation. "Initially, as a measure of reform, an attempt has been made,…to convert withholding taxes into presumptive taxes, representing fixed and final settlement of tax liabilities," of which, "primary objective is to simplify the tax collection and to reduce the compliance cost of taxpayers."[62] Three, RMTRC provided politically loaded but theoretically misplaced justification for the inequity that was now grossly entrenched into the system. It was argued that the "tax system in Pakistan is by and large inequitable and violates the dictates of horizontal and vertical equity," and while "horizontal equity is violated because agricultural income and service activities are inadequately taxed, or escape taxation altogether," in fact, vertical equity was "also compromised because direct taxes contribute no more than 2.7 percent to the GDP; and this despite the fact that the recent

[58]Ibid., 80.

[59]Ibid. "The committee on tax reforms report," (Islamabad: Ministry of Finance, 1991), B-29.

[60]Ibid. "The resource mobilisation and tax reforms commission report," (Islamabad: Ministry of Finance, 1994), 48.

[61]Ibid.

[62]Ibid., 52.

introduction of withholding and presumptive taxes has dramatically increased the direct-to-indirect tax ratio to 23 percent or so."[63] RMTRC ill-argued that withholdingisation had "probably contributed to a greater (horizontal) equity of the tax system," as it had led to "a more effective taxation of capital incomes, levy of withholding tax on income proxies, the introduction of taxes on agricultural wealth and the levy of excise duties on services like telephones consumed by the upper income groups."[64] This was quite an oversimplification of the complex equity concept already well-developed in the realms of political philosophy and political economy elsewhere in the world.

Four, RMTRC looked repressing the reality principle. On the one hand, it candidly noted that "the switchover from withholding to fixed (presumptive) taxes in the case of contractors, importers, etc. has imparted the characteristics of indirect taxes to a component of the income tax," and that "the regressivity of the tax burden has been accentuated by the introduction of the minimum tax," whereby "the reduction in income tax rates has mostly benefited the upper income groups."[65] On the other hand, it argued that "overemphasis on the deduction of the tax collected at the source can take away the very pressures that are necessary to improving the administrative machinery by generating information about the tax-payer's taxable capacity, by spreading greater tax awareness among the public, and above all, by inculcating a "tax culture" among the people," and as such, "taxation, based on self-assessment, must be according to the ability of the tax-payers to pay."[66] The capacitation of the revenue system as a viable alternative was deferred stating that "after the first phase of development of withholding and presumptive tax regimes, the focus in the second phase will have to shift to improvements in management and information system; assessment practices, speedy and fair disposal of appeals and more effective enforcement generally."[67] Not only that no roadmap or timelines were set out for the promised "second phase" but also that the same has never been realised even after a lapse of over two and a half decades. Five, RMTRC, in combine with TRC proved phenomenal towards extension and expansion of withholding net in Pakistan. In 1991, the system of deduction/withholding of tax at source for adjustment against tax as subsequently determined were converted into a presumptive tax. Likewise, a fixed tax at a flat rate of ten percent was imposed on Interest from financial institutions and on Dividend. In 1992 a nominal withholding tax in CAS mode was enforced on exporters to be collected by State Bank of Pakistan (SBP) at the time of the realisation of foreign exchange proceeds.[68] RMTRC perhaps played the most important role in putting the economic system on the scaffolding of withholdingisation.

The Task Force on Fiscal Reforms (TFFR), 1996, substantially helped consolidate the expansion of withholdingisation. TFFR observed that presumptive tax was "being charged on various types of income including profit on bank accounts and deposits; value of contracts and supplies; imports and exports; proceeds of bearer certificates; dividends; auction of the lease of rights to collect octroi and duty; prizes on prize bonds, and profit

[63]Ibid., 37.
[64]Ibid., 75.
[65]Ibid.
[66]Ibid., 48.
[67]Ibid., 51.
[68]Ibid., 52.

on bonds, certificates or securities."[69] TFFR did engage into an apparently innocuous debate as regards oppressive implications of the presumptive regime, but then throwing the gauntlet on the tax administration, charge that it was because of CBR that switch-over from the fixed presumptive tax to adjustable withholding tax was not feasible.[70] It was further posited that till the "time that the economy is completely documented and the income tax department is fully computerised duly backed by constant updating of soft-ware for assessment and collection of direct taxes, the proposed switching over may be postponed."[71] TFFR also noted that extension of withholding scheme had "substantially curtailed the oft-spoken discretion of the assessing officers and brought to an end the complaints about discrimination in the matter of assessments," and that this "has made the collection of tax easy and prompt and settled once for all the complaints against officials of the income tax department regarding malpractice associated with the issuance of refunds."[72] This was the most dangerous, self-defeating and self-contradictory narrative of the state's revenue function that was built by none other than the very initiative that had been put in place to strengthen and capacitate it. The same narrative was then on-transmitted and propagated by a number of studies.[73] This was withholdingisation at its crescendo but not quite—the worst was yet to come.

The Task Force on Tax Reforms (TFFR), 2000, after observing that "income and corporate tax revenues have increased from 2 percent of the GDP in 1990-91 to 3.6 percent of the GDP in 1999-2000," held that the "two-percentage point increase in income tax (as a share of GDP) is largely attributed to an increase in withholding taxes," which, in fact, accounted "for approximately 70 percent of total income tax revenue."[74] At the turn of the century, out of the total withheld taxes, "about 54 percent were non-adjustable or treated as final discharge of liability."[75] The TFTR went on to candidly remark that "within this category, some taxes, such as tax on dividends and on interest income, can properly be regarded as income taxes but there are several others, which are in the nature of export duties, import levies, turnover or other indirect taxes," and that once adjustment had been made for these "indirect taxes," the performance of the revenue agency became highly questionable.[76] This was quite perfunctory analysis of the revenue drawing-board of the nation as TFTR was ignoring the simple fact that revenue was a zero-sum affair between the functional tax system and a withholdingised one in that if the charge had already been collected at the transaction stage, there would be no or nominal revenue left to be collected at the declaration stage or even at the audit (post-declaration) stage, and the shift there could not solely be ascribed to the revenue administration's efficacy or effectiveness; this being the state's deliberate choice to time collection of dues. After holding that "about 42 percent of the withholding taxes" were "in the nature

[69]Ibid. "The task force on tax reforms report," (Islamabad: CBR, 1996), 29.

[70]Ahmed, "Pakistan: Extraction, elites and state autonomy: A theoretical configuration."

[71]GOP, "The task force on tax reforms report," 30.

[72]Ibid.

[73]See, for instance, Hafiz A. Pasha, "Political economy of tax reforms: The Pakistan experience," *Pakistan Journal of Applied Economics* vol. 11, no. n1-2 (1995); Saadia Refaqat, "Social incidence of indirect taxation in Pakistan (1990-2001)," (Bath: University of Bath, 2008).

[74]GOP, "The task force on reform of tax administration report," (Islamabad: Ministry of Finance, 2001), 7.

[75]Ibid.

[76]Ibid.

of indirect taxes,"[77] TFFR should have gone on to make some suggestions to rein in the fast-sprouting withholdingisation; it instead, ended up proposing a few insignificant steps geared to strengthening the very process of withholdingisation. TFTR-proposed new-look tax system had "universal self-assessment, selective audit, functional specialisation, a centralised information system, strong audit capacity, survey and research capability, and taxpayer education and assistance programs," as its main prongs, which would have expected to "increase voluntary compliance, improve the quality of tax audits, make tax audits fair and non-discriminatory, and strengthen the ability to detect and punish evasion and fraud."[78] However, what TFTR did not realise was perhaps that withholdingisation was like the tail-eating snake—once let loose it was to gulp the envisioned egalitarian tax system, howsoever, good it might be or wholesome. In fact, withholdingisation stood in-between TFTR-contrived utopia and in reality fast panning out dystopia of a tax system.

The Tax Reform Commission (TRC), 2016, succinctly observing that FBR was "collecting 95 percent of taxes by imposing more and more tax obligations on organisations and individuals in the form of withholding tax provisions,"[79] viewed withholdingisation in a negative light chiefly for two reasons. First, it was reckoned that withholdingisation was per se spurious because, inter alia, it (a) had "reduced the tax base rather than realistically expanding it, eroding the administrative efficiency as against improving it;"[80] (b) had obliterated "the concept of maintaining the full sets of books of accounts…from the taxpayer's mind due to taxation of its gross receipts on Presumptive basis;" and (c) was "fraught with the possibilities of ultimately complicating the system more than simplifying it."[81] Second, withholdingisation has afforded the revenue administration an opportunity to "hide behind the façade of withholding taxes to show overall tax collection of their unit," and that this misrepresented their "actual effort…in tax collections."[82] Against such a backdrop of avowed disapproval of withholdingisation in Pakistan, TRC, 2016 recommended developing a much-touted mechanism of "rationalisation of differential withholding taxes for compliant and non-compliant tax payers"[83] initially in 2014. While TRC was proposing gradual phasing out of FTR, the polity resorting to an extensive use of withholdingisation as a tool of tax policy over the period that TRC was well in position, brought about a dozen new withholding provisions onto the tax code.

It could be argued that states engage their societies, inter alia, in two important ways i.e. extractive engagement and distributive engagement. Distributive engagement is not only the most desired one sans any upper caps; but extractive engagement has strict principles and parameters. In Pakistan, the extractive engagement has not only been insufficient but also perverse and roguish, and its triggers and, at times, even its theoretical and ideological explanations, howsoever off-mark and misplaced, were supplied by various tax reform commissions and committees as explained above. It is obvious that tax reform commissions and

[77]Ibid.
[78]Ibid., 31.
[79]Ibid. "Tax reform commission report," (Islamabad: FBR, 2016), 1.
[80]Ibid., 44.
[81]Ibid.
[82]Ibid., 31.
[83]Ibid., 28.

committees were extensively used for surrogate insemination of elitist policy options.[84] Even worst of tax policy prescriptions when processed through and stamped by a tax reform commission or committee, governments got them legislated and implemented with ease and without resistance. Not surprisingly, as also shown in Figure 1, currently Pakistan has by far the widest withholding regime in the world. It could be observed that withholdingised extractive engagement between the citizen and the state effectively neutralises and dilutes the impact of the distributive engagement whatever little of it is undertaken by the latter.

4. WITHHOLDINGISATION—INFRASTRUCTURAL NUTS & BOLTS

Given its multiple merits, at-source withholding of taxes is worldwide recognised as a legitimate and important source of fast-forwarding of revenue collection and to that extent it should be normal in Pakistan. However, in Pakistan withholding regime has been used as a source of revenue way too large in scale, size, scope and intensity. In addition to the preponing of tax collection on clearly demarcated chunks of *revenue* that, as per accepted accounting principles, have attained or are at the verge of attaining the character of *income* in the hands of the recipients, a large number of *transactions* were also brought into its nexus and then charged to tax by grossing up and presumptivising receipts as income—a withholdingisation of sorts. Withholdingisation, at a greater length, as already pointed out, refers to the process of wrapping of the entire economic system whereby at every single stage in the economic chain the state subtracts a part of the value of each transaction. Marginal subtraction of the value of each transaction—a part of it being picked by withholdee and part of it being passed on—when aggregate, inflate the end-value or price-tag of the goods and services produced in the economy. The elitist state's mad rush into withholdingisation took a raw turn when towards the onset of the present century after perhaps reaching a saturation point in identification of any new incomes or transactions that could be slapped withholding taxes, started to tax transactions at both ends—first in DAS mode and then in CAS mode under two different provisions of the law. The number of transactions falling victim to dual-end withholdingisation is increasing every year.

Since withholdingisation emanates from, is under-grid by, and lies in the trifurcation of tax system into Normal Tax Regime (NTR), Minimum Tax Regime (MTR), and Final Tax Regime (FTR), brief description of each would set the stage for the ensuing analysis and debate. NTR comprises standard set of rules and regulations whereby a taxpayer makes out a solemn declaration of his income or loss at a specified date in respect of a statutorily defined accounting period, whereupon the revenue administration, depending upon the operating procedures, and within the parameters of bounded rationality, either accepts the declaration as such or frames its own assessment after investigations as it may consider necessary. The tax withheld at source on various counts is added up and after

[84]Muhammad Ashfaq Ahmed, "Elites, extraction, and state autonomy: Pakistan and U.S in comparison," (Islamabad: Quaid-e-Azam University, 2015).

giving credit of the same, the resultant tax or refund is worked out and communicated to the taxpayer. MTR implies an arrangement put in place by the state whereby the tax withheld at source is considered a minimum tax liability in lieu of normal tax liability, if normal tax liability is less than the minimum tax liability. FTR, on the other hand, is based on the underlying principle of income-presumptivisation of receipts which, in turn, originates from the legal fiction of deeming gross receipts as income and charging them to tax at a specific reduced rate.[85] Under FTR withholding taxes deducted or collected at source, if done at the applicable rate, are adjusted against the total receipts deemed as income and the taxpayers' tax affairs to the extent of that accounting period are considered finalised. A taxpayer fully covered under FTR does not necessarily need to have his accounts finalised, get them audited and file a comprehensive tax declaration. In fact, the treatment of withholding taxes is not only at the bottom of all three tax regimes, it is also their distinguishing feature.

The transition of the system from withholding to withholdingisation—though slow yet steady—has been marked by the spread of tentacles of withholding regime aggressively grabbing more and more space of economic activity into its fold. Such an ingress of withholding scheme into the economic system was, inter alia, evidenced by an ever-increasing (i) number of withholding provisions in operation at any given time; (ii) tally of withholding agents; (iii) number of withholding provisions being legislated year after year; (iv) extension of withholding regime in FTR mode; (v) modification of withholding regime to admit of collection at source (CAS) as against deduction at source (DAS); (vi) application of withholding regime to transactions; (vii) share of withholding taxes' share as a percentage of total tax revenues; (viii) compliance requirements for tax withholders; (ix) reporting requirements for tax withholders; (x) punitive implications for tax withholders; (xi) application of withholding regime at both ends; (xii) lopsided resource allocation for withholding monitoring operations.

The foregoing variables when come into play with and reinforce eachother, cause to unleash an oppressive trigger that percolates from top to bottom and back in the economy resulting in massive negative fallouts for all economic agents, sectors and stakeholders except perhaps the state itself, which thrives on easy bucks—but only in the short run. In the long run, however, it is not only the active economic agents who suffer, but also the state and its underlying society, as the TRANSACTION gets shackled and gridlocked in a withholdingised economic system not only because of the withholdee's unlimited choice to pass on the tax withheld but also because part of the tax so withheld gets stuck and reflected inside the price-tag of the final product. A brief analysis of factors of withholdingisation will help galvanise the debate and the thesis.

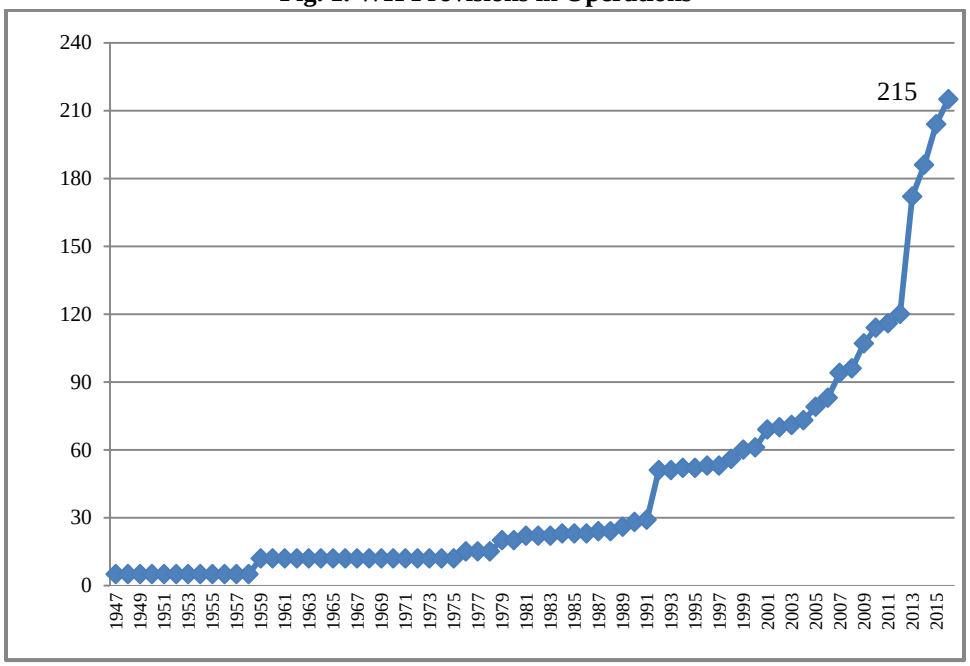
4.1. Withholding Provisions in Operation

During its first one hundred years i.e. between 1860 and 1960 withholding tax regime faired quite conservatively admitting into its fold only three revenue sources, namely, Salary, Interest-on-Securities, and Dividend. Even Profit-on-Debt that otherwise

[85]FTR replaced Presumptive Tax Regime (PTR) in the wake of promulgation of the Incoome Tax Ordinance, 2001.

had all the traits of income was not brought into the ambit of withholding net. Between 1960 and 1990, when the economy industrialised, its revenue yielding capacity was punctured through wide-going exemptisation and repeated amnestisation. Pakistan being an expensive state to maintain, revenue needs were attempted to be met through an enhanced dependence on withholding taxes as not only Profit-on-Debt and Rent-on-Property were placed under it, but also receipts from contract execution and supplies met the similar fate. Simultaneously, withholding regime for non-residents also expanded at a rapid pace. However, the real rot started towards the onset of the 1990s. This was also the time when democracy returned to Pakistan after a prolonged hiatus. The Soviet withdrawal from Afghanistan almost diminished the US interest in the region and caused a decrease in opportunities of international rents for Pakistan. The resultant pressure for extraction from domestic sources needed to be deflected. The elites' rational actor dilemma looked to resolve as modes of withholdingisation started to reproduce at an exorbitant pace.[86]

Fig. 1. WH Provisions in Operations



Source: FBR/PRAL.

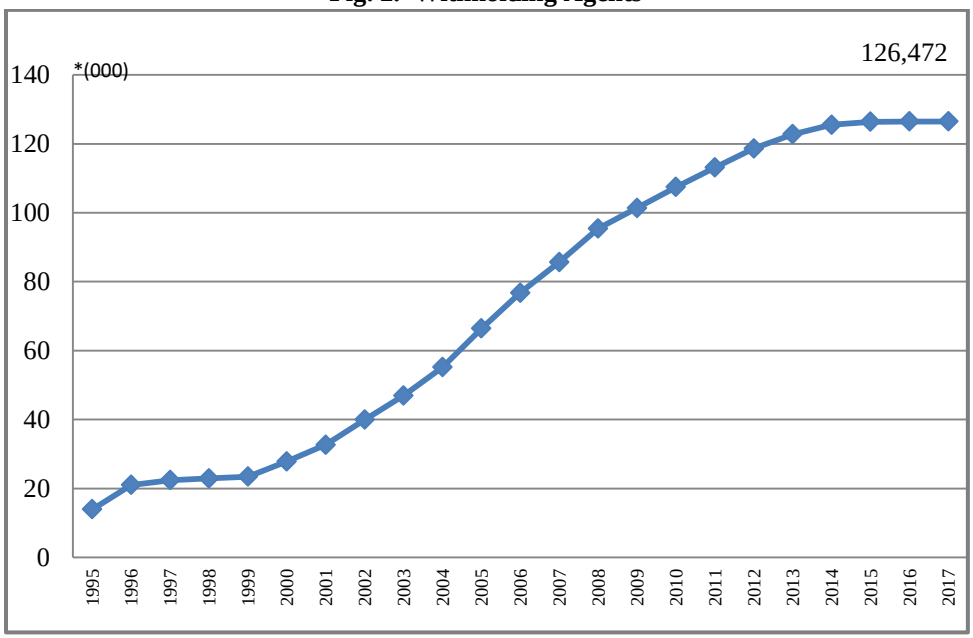
Figure 1 depicts time series data of withholdingisation of Pakistan's economy, that is, the number of withholding provisions being in operation at any given time. It may be noted that within the context of this study each withholding tax rate variation has been reckoned as a separate withholding provision. This is because each withholding tax rate variation represents an economic class or creates a new economic class or an economic interest group—denoting, by implication, some notches of added pressure on the polity in terms of lobbying or interest articulation for favourable "group taxation" policy options.

[86]See, for a detailed analysis, Ahmed, "Pakistan: Extraction, elites and state autonomy: A theoretical configuration."

4.2. Number of Withholding Agents

Overtime, number of withholding agents has also steadily gone up. Unlike the initial 100 years of withholding regime when only the payers of Salary, Dividend and Interest-on-Securities were withholders, now practically in Pakistan every other participant in economic activity or transaction is a withholder. The time series data of withholding agents since 1995[87] is plotted in Figure 2, which shows that till about 2013 the number of withholders with every passing year was increasing steadily, but then the line tends to straighten up around 2014 onwards. It implies that while new withholding provisions continued to be added to the code, the tally of withholders did not go up having reached a near-saturation point. It can safely be inferred that the same set of withholders were now implementing even a larger number of withholding provisions, deepening the oppressive impact of withholdingisation on its frontline victims.

Fig. 2. Withholding Agents



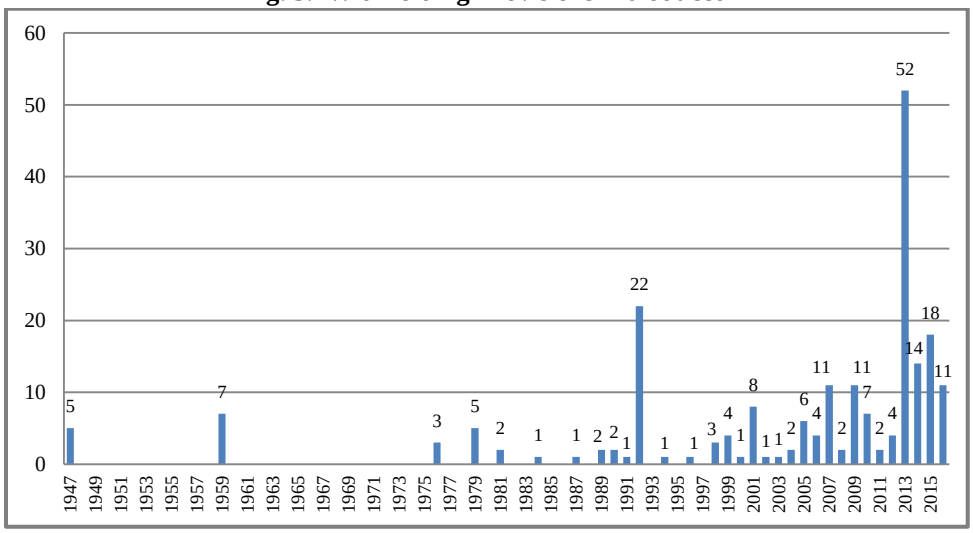
Source: FBR/PRAL.

4.3. Withholding Provisions Introduced

Although, the primary purpose of the expansion of withholding regime as always claimed was to collect data of potential taxpayers and net them into the tax system, yet in reality, withholding has been used as a favourite tool of tax policy—particularly since mid-1970s. Figure 3 exhibits the number of withholding provisions promulgated each year and leads one to an irresistible conclusion that this prong of withholdingisation has been resorted to rather with vengeance since early 1990s. It conversely also means that while the polity remained adrift into withholdingisation, in the process, it continued to have the system weakened and incapacitated.

[87]Withholders' data for the years prior to 1995 is not available in a reliable form.

Fig. 3. Withholding Provisions Introduced

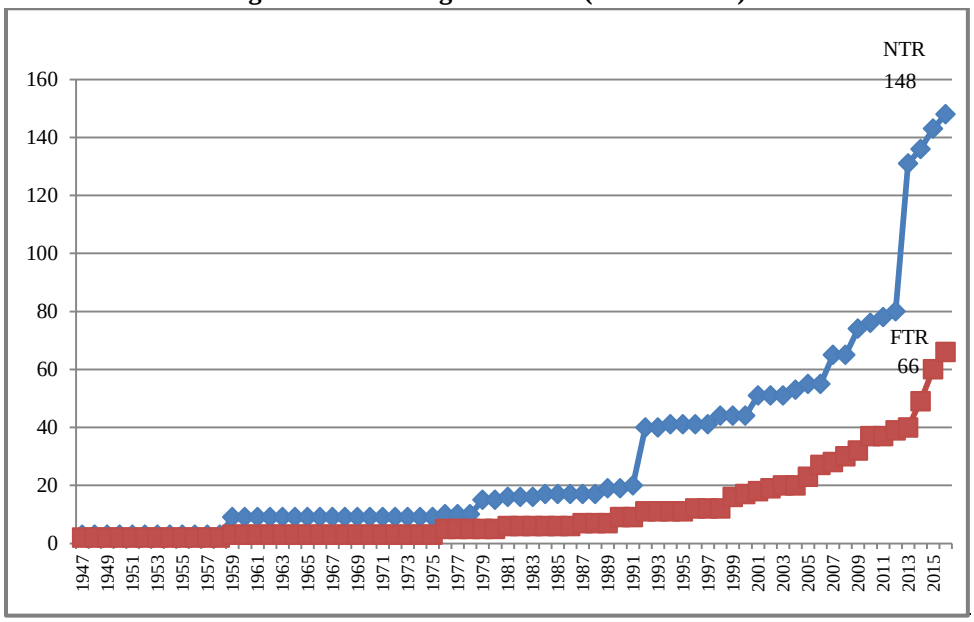


Source: FBR/PRAL.

4.4. Expansion of FTR

With time the tally of withholding provisions being brought into the purview of FTR has been increasing by the year. What it plainly implies is that while the state is increasingly extricating itself from the process and effort of reaching out to the correct tax base on its citizens in a differentiated manner, in the process, it is de-capacitating its tax administration continually.

Fig. 4. Withholding Provisions (FTR & NTR)



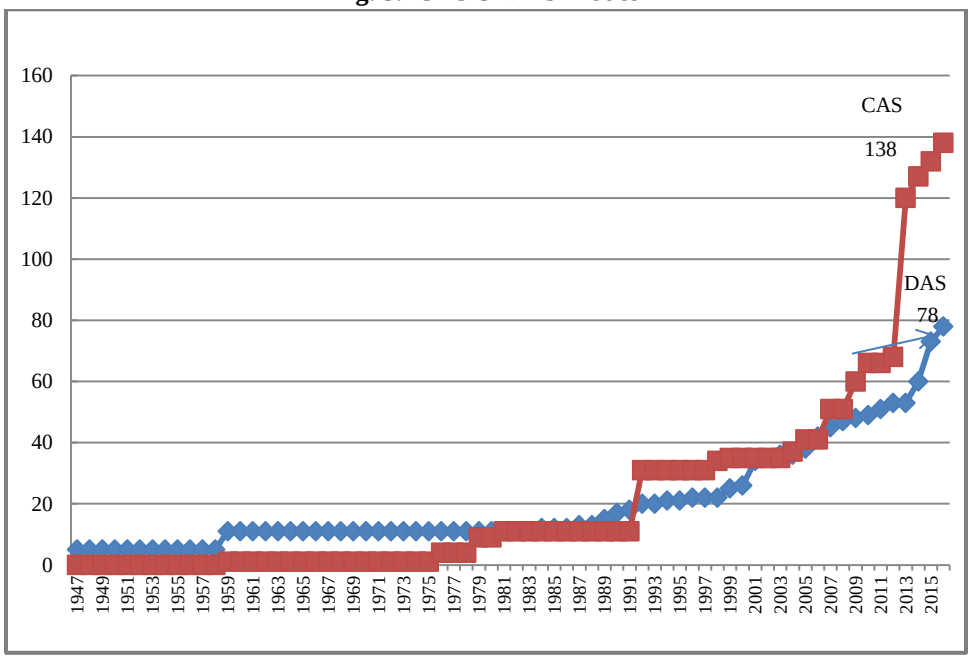
Source: FBR/PRAL.

It is evident that there visibly exists a positive correlation between withholding tools being legislated on the taxing statute and expansion of FTR as portrayed in Figure 4. Although, the number of withholding provisions under FTR is still less than that under NTR, yet the latter set of provisions also contains those extortionary legal tools where-under the option of adjustment is available, but in actuality, the claims of adjustment of tax withheld are never or only negligibly filed.

4.5. Shuffle from DAS to CAS Mode

Similarly, a homegrown innovation on the withholding regime has been to apply it to CAS mode as against DAS mode, which is an internationally accepted mechanism of preponing of government revenues. Data plotted in Figure 5 shows relative movement of CAS and DAS modes overtime. While even the total number of DAS points at 78 may be taken as too high in an international comparison, yet the fantastic number of 138 CAS points may be reckoned as a bizarre Pakistani exceptionalism. This may be taken as the key variable and expression of brute withholdingisation in Pakistan.

Fig. 5. CAS & DAS Modes

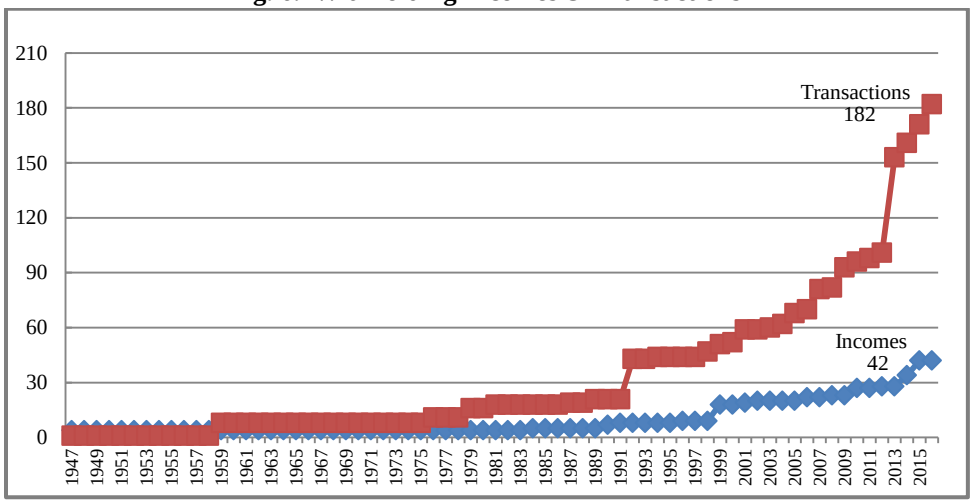


Source: FBR/PRAL.

4.6. Withholdingisation of Transactions

While application of withholding scheme to incomes has long history and wide coverage internationally, its application to transactions is not too common. Figure 6 exhibits a consistent trend of upward increase in withholding regime's application to the value of gross *transactions* at 182 as against 42 *incomes*. This coercive *Chinacutting* of transactions when aggregated at the national level turns to be of serious size and implications for the economy.

Fig. 6. Withholding Incomes & Transactions

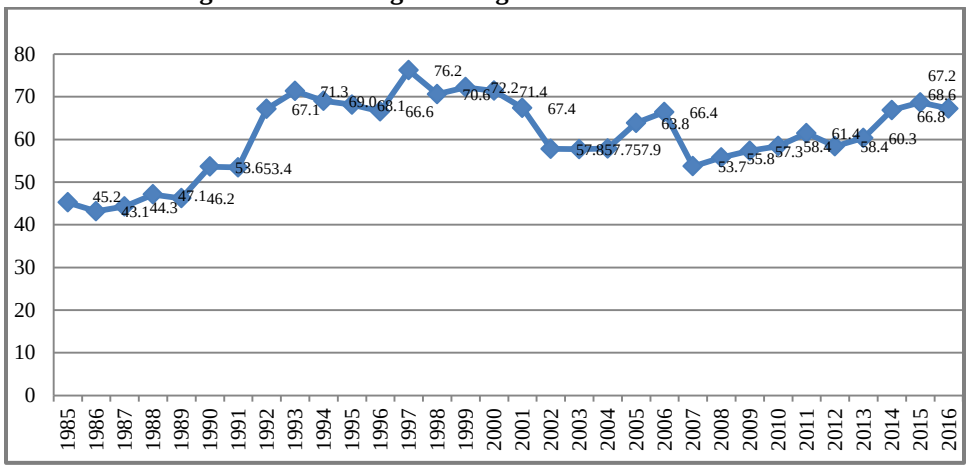


Source: FBR/PRAL.

4.7. Withholding Share in Total Taxes

The relative share of withholding taxes in the overall national tax take can be a meaningful gauge of how quickly and effectively the economy is falling into the shackles of withholdingisation. Data plotted in Figure 7 vividly reveals that continually share of tax collection through withholding has gone up. Likewise, the average rate of tax of deduction at source—particularly the one pertaining to transactions—execution of contracts, supplies, and imports—has also steadily moved up the ladder. This indicates the polity's preference for and dependence on withholding mode and there too on taxation of gross transactions. It is apparent that such a perverse preference exercised under the pleasure principle effectively scuttled the continuum and aggregate of economic transactions—banking and real estate sectors being its vivid examples.

Fig. 7. Withholding as %-Age of Income Tax Revenue

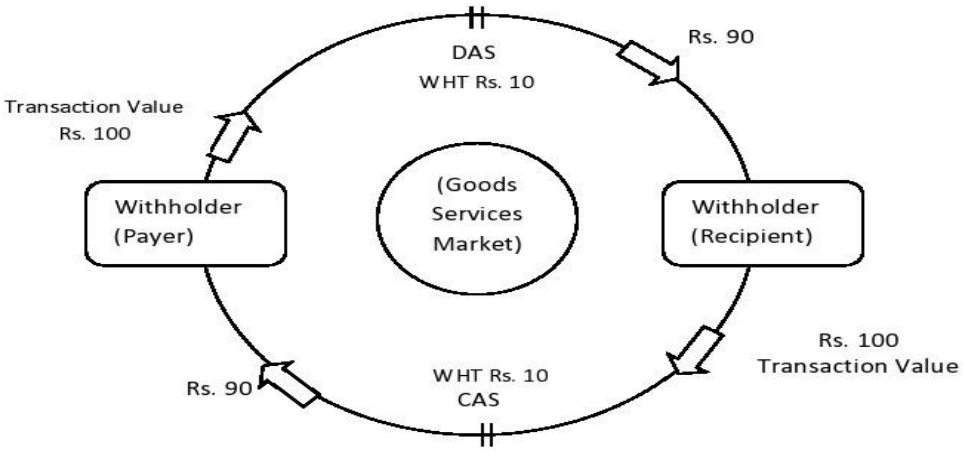


Source: FBR/PRAL.

4.8. Dual-end Withholding Taxes

Although, the impact of dual-end withholdingisation on transactability in the economy—at least, in the recorded economy—is still to be systematically analysed and gauged, yet the same cannot be expected to be halcyon by any standard. Figure 8 is the graphic representation of dual-end withholdingisation simultaneously operating under DAS/CAS modes. Illustratively, while impact of withholding tax for a transaction in DAS mode is Rs. 10, but when the same transaction undergoes identical taxation also in CAS mode, the net impact gets doubled to Rs. 20, as reduced by each withholders' ability to absorb the tax withheld by the other. Such aggressive taxation can have reverse-multiplier effect on the economy.

Fig. 8. DAS/CAS Coupling Scenario



4.9. Withholders' Compliance Requirements

According to law, the tax collected or deducted is held by the withholder "in trust for the Federal Government,"[88] and thereafter the same is "paid to the Commissioner" within seven days…in the manner" prescribed.[89] It has been ordained that in case "a person fails to collect tax…or having collected…fails to pay the tax to the Commissioner as required under" law, he "shall be personally liable to pay the amount of tax to the commissioner."[90] Albeit the fact that in case "a person fails to collect tax as required under" the law, the Commissioner has the powers to "recover the amount not collected or deducted from the person from whom the tax should have been collected or to whom the payment was made,"[91] yet it would "not absolve the person who failed to deduct tax…from any…legal action in relation to the failure, or from a charge of default surcharge or the disallowance of a deduction for the expense to which the failure relates."[92] The withholder is also duty-bound under the law to issue to the withholdee "a

[88]Section 166(1)(a) of Pakistan, "The income tax ordinance, 2001," (Islamabad: FBR, 2001).
[89]Section 160 of ibid.
[90]Section 161(1) of ibid.
[91]Section 162(1) of ibid.
[92]Section 162(2) of ibid.

certificate setting out the amount of tax collected or deducted and…other particulars."[93] Still, to top all, a withholder has to be ready and brace for withholding monitoring audits for an indefinite period of time. One can spot a steady trend of increase in compliance compulsions for economic agents (withholders) over time surreptitiously rendering their operationalisation more and more difficult in a withholdingised economic system.

4.10. Withholders' Reporting Requirements

An identical trend can be spotted in the reporting regime for withholders. Having deducted and paid off the required amount of withholdable tax to national exchequer, the withholder is supposed to "furnish to the Commissioner a monthly statement in the prescribed form setting out" complete particulars about his own person, those of the withholdee, the transaction, and its payment to the treasury.[94] It used to be an annual withholding reporting return which each withholder was obliged to furnish to the tax administration. Subsequently, it became a quarterly requirement in 1982, and it was not until 2011 that the submission of withholding statements was rendered a monthly requirement. The prescribed withholding statement requires of a withholder to fill in and supply a great amount of information apart from reproducing his entire cash book and bank book, which makes it quite a cost-intensive affair. Moreover, since withholding statements are to be furnished online, a withholder needs a substantial in-house capacity to timely meet the reporting requirements, which factor pushes the compliance cost for an enterprise further up. It will not be out of place to mention that withholders who happen to substantially contribute to the exchequer have been negotiating and getting selective reporting waivers e.g. banks in the case of interest-bearing depositors. But, in overall terms, the withholders' reporting requirements have increased—including the withholding audits.

4.11. Withholders' Punitive Regime

Something that may have started as a regulatory vigilantism on the withholders towards the onset of the withholding regime has, with time, evolved into a full-blown parallel stream of taxation with its own operating coercive mechanisms duly supported by well laid down punitive and prosecutive implications. The minimum penal action that a withholder is subjected to in case of a default is that such "person shall be personally liable to pay the amount of tax to the Commissioner who may pass an order to that effect and proceed to recover the same."[95] Moreover, the defaulting withholder would pay "default surcharge at the rate of twelve percent per annum from the date he failed to collect or deduct the tax to the date the tax was paid."[96] Non-furnishing of monthly withholding statements calls for imposition of penalty at the rate of Rs. 2,500 per day (subject to a minimum penalty of Rs.10,000).[97]

The icing on the cake comes in the shape of prosecutive implications as the law stipulates that "Any person who, without reasonable excuse, fails to…comply with the

[93]Section 164(1) of ibid.
[94]Section 165(1) of ibid.
[95]Section 161(1) of ibid.
[96]Section 161(1B) of ibid.
[97]Section 182(1)(Table Sl.1A) of ibid.

obligation…to collect or deduct tax and pay the tax to the Commissioner,…shall commit an offense punishable on conviction with a fine or imprisonment for a term not exceeding one year, or both."[98] Yet another highly penalising implication for withholders comes in the form of a stipulation that "no deduction shall be allowed in computing the income of a person…for…any expenditure from which the person is required to deduct or collect tax…, unless the person has paid or deducted and paid the tax as required by" law.[99] The imposition of penalty for non-filing of withholding statements has of late become a major preoccupation of the revenue administration. Illustratively, only during May and June, 2017, DC, IRS, Cantonments, Rawalpindi, imposed a penalty of Rs. 1.3 billion for non-filing of monthly withholding statements. Likewise, AC, IRS, exercising jurisdiction over Rawalpindi City, levied a penalty of over Rs. 2 billion on non-filers of monthly withholding statements. The amount of penalty so imposed far outweighed the total tax imposed under the normal law by the entire Regional Tax Office, Rawalpindi. Accordingly, pending appellate cases at given point in time resulting from the imposition of penalty for default of withholding taxes far outnumber those under the normal regime.

4.12. Resource Allocation for Withholding Regime

Betraying the polity's pronounced preference for withholdingisation of economic system at the expense of capacitation of the tax system, a corresponding historical shift in resource allocation from the latter to the former can be spotted—particularly since 1991. The narrative used for the purpose was "effective monitoring" of withholding taxes. During 1990s, the focus of tax administration increasingly shifted from normal taxation to withholding taxation as revenue numbers began to avail primacy over how they were being generated. In this sense of the matter, the polity reflected the society and its mores to look at private wealth and its means. A specialised Directorate General (Withholding Taxes) was created in 2001, which intensified the process of withholdingisation. About two dozen specialised Commissionerates (Withholding Taxes) were established in February 2013 all over the country—with maximum resources—both in men and means—being placed at their disposal. In fact, withholdingisation of the system has occurred at such a rattling pace that FBR in routine has started to pick up sundry procurement and tender notices published in various newspapers, caption them as "Real Time Proactive Monitoring of Withholding Taxes," and circulate them to field formations prospectively stipulating "that all due taxes, in these procurements, as and when became due, are properly withheld (as per law) and timely deposited (as per procedure)."[100] One wonders if FBR also ever collects information on massive money laundering ploys, illegal remittances, beneficial transactions and cases of mega tax evasion and shares it with field collectors for proper adjudication. Since bulk of the revenue comes from withholding, understandably maximum resources in each tax organisation tend to be allocated for monitoring and collection of withholding taxes leaving normal taxation to backburner, sapped, and stunted. Thus, it is not astonishing that the best human resource and maximum means get allocated for withholding function at the expense of normal taxation.

[98]Section 191(1)(c) of ibid.
[99]Section 21(c) of ibid.
[100]FBR's Memorandum No.7(73)C(WHTM-)/2017/5983-R, dated June 15, 2017.

Since the premise is that withholdingisation is essentially an elitist enterprise, it would be an interesting question to pose as to how do elites then wriggle out of its concomitant adverse fallouts—for instance, excessive-deductions. The paper posits that elites have both pre- and post-withholding escape clauses kept available to themselves. In the pre-withholding domain the elites have exemptisation that they resort to as and when required, which is of two types i.e. general exemptisation and specific exemptisation. General exemptisation refers to exempting provisions that are brought to bear down on the tax system through both legislative and bureaucratic processes e.g. Statutory Relief Orders (SROs). Specific exemptions are issued by Commissioners on request. In the post-withholdingisation scenario, elites resort to exercise of political muscle to get their refunds cleared.[101] In case of non-sanctioning of exemption requests and refunds, elites resort to invoking writ jurisdiction under Article 199 of the Constitution with substantial degree of receptivity. Elites Ltd has also put in place Federal Tax Ombudsman (FTO)—an institution that is effectively utilised to get their refunds of all shades and hues processed. It can be argued that excessive deductions also serve some other purposes. First, the government gets free funds to finance its operations. Second, "getting a tax refund fosters the notion that the government is benevolent."[102] Many a times over the recent past, at especially arranged functions, Prime Minister, Finance Minister, and Chairman, FBR, have been seen bestowing upon citizens refund cheques that anyway legitimately belonged to them. Thirdly, the elitist state uses excessive deductions as bargaining chip while negotiating settlements with various interest groups. Lastly, excessive deduction creates opportunities for convenient rent-seeking. In a withholdingised economic system, elites also resort to amnestisation as an effective tool of advancing their economic agenda. In addition to the above strands which converge on the point that Pakistan's polity, under the preponderant impress of the pleasure principle, systemically withholdingised the tax system which steadily took the entire economic system into its shackles.

The oppressive implication of withholdingisation was further accentuated by other unconnected but related measures e.g. a robust withholding regime being put in place under sales tax in 2007.[103] Likewise, in early 2010s, when provinces established their own independent revenue agencies in the wake of 18th amendment to the Constitution, withholding of sales tax was enforced as the central pivot of the provincial revenue systems. Similarly, an upfront Infrastructure Cess on all imports and exports by land or sea was imposed by Sindh with other provinces constantly looking to tap new sources of easy and quick revenues. If all that was not enough, the state opted to fix some of its other malaise (that had nothing to do with taxation or tax system per se) through withholdingisation e.g. T.V. Surcharge, Neelam Jehlum Surcharge, and compulsive contributions from employees' salaries at the time of natural calamities.[104]

[101]Ahmed, "Pakistan: Extraction, elites and state autonomy: A theoretical configuration."

[102]Lawrence M. Vance, "The Curse of Withholding Taxes," Mises institute: Mises daily articles (2005), https://mises.org/library/curse-withholding-tax.

[103]The Sales Tax (Special Procedure) Rules, 2007, enforced vide SRO, 660, of 2007.

[104]See, for a detailed analysis, Ahmed, "Pakistan: Extraction, elites and state autonomy: A theoretical configuration."

5. WITHHOLDINGISATION & NATIONAL TAX COLLECTION COST

Withholdingisation, inter alia, achieves a couple of distinct objectives of the elitist state. One, it helps underfinance the revenue administration, which as a result thereof gets incapacitated over time and weak enough to pose taxing questions. It has been argued that Elites Ltd's control "on the revenue function helps the former keep the latter under-financed and, thus stunted, and constrained on its operations."[105] It thus is not astonishing that against the world-average of 2.5 percent, Pakistan's tax collection cost is 0.73 percent, which when further divided between IRS and PCS works out at 0.23 percent for the former—the agency which is exclusively responsible to conduct state's inland extractive operations and collect good about 90 percent of its total tax revenues.[106] It has also been observed that "such was not the scenario at the time of independence when the colonial state allocated full required amount of resources to its extractive arm so as to undertake optimal revenue generation," as there is evidence to suggest that it was only after independence that "post-colonial elitist state had started to cut on its revenue function's expenditure."[107] Vakil, as far back as 1950, had commented that "the cost of collection of various taxes," in "proportion to total revenue in India is higher than that in Pakistan."[108] Likewise, TEC had observed in 1960 that for "the Central Government the cost of collection of taxes is roughly 3 percent," and as a "proportion of total expenditure, the cost of collection of taxes has declined from 3.77 percent in 1949-50 to 3.12 percent in 1957-58,"[109] to adequately establish that "corrosive degenerative process that had seemingly taken roots by then—finally bringing it down to such ridiculously low levels as at present."[110] NTRC after observing that "the cost of collection of taxes has been kept below one percent of the total revenue collected which compares favourably with the cost of collection not only in the developing countries but also with the developed world," harangued that "this has been achieved at the cost of ignoring certain basic elements necessary in a sophisticated taxation system.[111] It is not that a sane voice has never been raised; there have been, but those were completely ignored. CTR noting that the "cost of collection (in respect of Sales Tax) went down from 0.71 percent in 1986-87 to 0.62 percent during 1988-89,"[112] argued "that expenditure of CBR should be treated as development expenditure, and that it be allowed to spend a fixed percentage of revenues collected."[113] Similarly, it was suggested that the present level of CBR's expenditure should be raised by 0.5 percent of revenue collected and also that it should be given complete financial autonomy.[114] The elitist state's response, however, has been more and more withholdingisation thereby keeping the revenue system incapacitated and cost of collection transferred to citizens.

[105]See Ahmed, "Pakistan's Governance goliath: The case of non-professional Chairman, F.B.R," 30.

[106]These estimates are based on the actual budgetary allocations made by the Goverment of Pakistan to FBR and its various departments.

[107]Ahmed, "Pakistan's Governance Goliath: The Case of Non-Professional Chairman, F.B.R," 30.

[108]C. N. Vakil, *Economic consequences of divided India; a study of the economy of India and Pakistan* (Bombay: Vora, 1950).

[109]GOP, "The taxation enquiry committee report (Volume 1) " 24.

[110]Ahmed, "Pakistan's Governance goliath: The case of non-professional Chairman, F.B.R," 30.

[111]GOP, "The national taxation reform commission report (Part 1)," 325.

[112]GOP, "The committee on tax reforms report," D2.

[113]Ibid., B46.

[114]Ibid.

Two, the elitist state conveniently shifts (outsources) its fiscal function to private entrepreneurs—by directly cutting on the cost of collection of taxes. But is it really so? Probably, it cannot be; and it is not. In 2016-17, Pakistan saw its position sliding down to 85th in terms of "effects of taxation on incentives to invest" from 66th in 2015-16.[115] Moreover, Pakistani entrepreneurs pick exceptionally higher compliance costs vis-à-vis tax administration. Is it just because of the standard tax filing of routine nature? Perhaps not; much of it is because of withholdingisation of economic system and what it means to an entrepreneur being a withholder. No doubt, sparse grievances are aired by various economic agents suggesting that cost of withholding taxes was becoming unbearable for the private business. But it is yet to be systematically posited that, in fact, what the state had done was, it had tactfully contracted out its extractive function, and that if the official cost of collection was on lower side, it was due to the deft cost shifting by the state to the entrepreneur. In Pakistan's context official cost of collection was markedly different from the national cost of collection, which, in addition to the official cost of collection, also included the cost of withholding—borne by private entrepreneurs. Thus, Pakistan's tax collection cost may be notationally written as under:

$$X = W + Y$$
$$X = Z$$

While X represents standard tax collection cost; W represents *official* tax collection cost (picked by the state); Y represents withholding tax collection cost (picked by the entrepreneur); and Z represents *national* tax collection cost (picked both by the state and the society); hence dubbed as national tax collection cost. An empirically-based approximation of national tax collection cost being outside the purview of the present study, yet what can hypothetically be stated is that, all put together, Pakistan's national tax collection may be between 3.5-4 percent—probably highest in the world. Now if the developing countries average of 2 percent is taken as an acceptable measure of tax collection cost, the excess being spent by Pakistani society between 1.5-2.0 percent could be dubbed as national deadweight loss. This amount, if saved through capacitation of the tax system, could easily be diverted to better the service delivery and improve state's performance in other functions like coercive, regulative, and distributive, apart from arresting withholdingisation-induced anarchy, and neutralising its Dutch Disease effects on the economy.

5.1. Taxflation

Now, the exaggerated cost of collection as worked out above that both the economy and the society are compulsively made to suffer on account of withholdingisation can be analysed within the context of how it actually plays out with prices of goods and services transacted in the market. It is stipulated that withholdingisation being applicable at each meeting-point in the transaction chain cumulatively enhances the end-price of goods and services being produced in the economy—triggering a process that could operationally be dubbed as taxflation—inflation (increase in prices) due to taxation[116]—much of which is neither due, nor

[115]http://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport 2016-2017.pdf

[116]"Taxflation" has been used in the paper in a sense slightly different from the one that is generally associated with it whereby an inflation-related increase in income pushes its recipent into higher applicable tax brackets off-setting the impact of increase in income - something also known as "bracket-creep."

adjusted nor refunded.[117] While on the one hand, such aggressive extortionist taxation contributes to taxflation owning to its inherent ability to get passed on, on the other, it tinkers with equity and efficiency principles, and adds to social anarchy and chaos. Taxflation, when disaggregated, can be notationally written as under:

$$TF = CC + WHT^1 + WHT^2 + WHT^3 + LL + VAT$$

In the equation, while TF denotes taxflation; CC exaggerated compliance cost in a withholdingised economic system; WHT^1 withholding tax deducted on intermediary inputs stuck in the final output prices; WHT^2 withholding tax applied in CAS mode and likely to be added to the price; WHT^3 fixed cost paddings like withholding tax on building rent, and utilities e.g. electricity, gas and telephone that the supplier has to pass on; LL line-losses like withholding tax on banking and other transactions; and VAT represents the federal and provincial sales tax or its variants, which are an inevitable additionality to the final price of goods and services transacted and produced in the economy.

5.2. Perverse Quid Pro Quo

This tax collection cost sharing arrangement between the contractor (state) and the contractee (withholder) may have under-grid a larger perverse quid pro quo in the economy. Entrepreneurs, as withholdingisation expanded its tentacles on the economic system, made adjustments to their business systems, in the process internalising the withholding tax collection costs into their pricing structure—both upstream and downstream. The entrepreneurs picking up these additional withholding collection costs were duly compensated and rewarded by the state in the form of recurrent amnestisation, general and specific exemptisation, generous audit waivers, deterrence-free self-assessment regimes, relaxation in information declarations, and diluted regulatory and oversight frameworks—even bordering on keeping the tax collectors at bay. In fact, Pakistani entrepreneurs may have quite happily picked up the withholding tax collection cost. This lowly, perverse, and degenerative arrangement between the state and the society realises a tax system that effectively undertakes undifferentiated, extortionist, and unequal extraction in a society wherein economic resources are already highly unevenly dispersed. In this sense of the matter, withholdingisation may have operated as an effective pull-back factor on the forward march of the society, the state, and a bonding between the two that continues to be thread-thin at any rate.[118]

6. WITHHOLDINGISATION OUTCOMES

While the preceding sections argued and established that Pakistan tax system had been thoroughly withholdingised as evidenced by a dozen of its underlying prongs, this section ventures to normatively analyse, in the succeeding three sub-parts, if its output—collection of easy bucks—has had a wholesome outcomes and impacts on the polity; if it caused or contributed towards an ever-increasing disruption in the society; and if it generated an adverse impact on the economy closer to that of Dutch Disease? What could

[117]This is because, theoretically speaking, all direct taxes are supposed to be borne by the payer of the tax himself.

[118]Ahmed, "Pakistan: State-building, extraction, and (misplaced) societal preferences."

be predicted upfront is that the state's blindly pursuing the pleasure principle at the expense of the reality principle was bound to have consequences; and looks like chickens have come home to roost.

6.1. Source of Revenue?

It is abundantly clear, as also depicted in Figure 7, that withholding taxes' contribution which was about 45 percent of total direct tax revenue starts to shoot up at the start of 1990s; this was due to the introduction of PTR. The contribution of withholding taxes consistently kept climbing up till it touched its historic highest in 1996-97;[119] then steadied at around 60 percent. The curve again starts to get steeper at the start of 2010s and touches 70 percent mark before again slightly declining at around 2014-15, which decline is really difficult to explain.[120] Is it fatigue of the withholder with the coercive outsourcing of the extractive function or fudging of facts on part of the state to make the numbers look acceptable enough to form a reasonable basis for further international extraction? It is reiterated that the exaggerated contribution of a withholdingised extractive system is unwholesome with far-reaching adverse fallouts for the state to extract from other sources. In the succeeding paragraphs some of the systemic fallouts will be explained.

Firstly, tax system's uprooting from its normative foundations may be one of the most carcinogenic effects that withholdingisation has had on the state and its extractive operations.[121] Adam Smith normatively desired to base a tax system on (a) equity—fairness in regard to relative tax burden borne by various segments of society; (b) certainty—assurances against arbitrariness in regard to the procedure of working out of tax liability and the timing of its discharge; (c) convenience—with regard to the mode, manner and the timing of tax defrayment; and (d) efficiency—deriving maximum output from the input supplied, that is, cost of collection, and with minimum negative externalities.[122] Although, this classical prescriptive model of a tax system has ruled the roost for centuries, yet a couple of more attributes may also be desirably added, namely, is the tax system good enough to extract at a sufficiently required level, and if the tax system, in overall terms, adds to the process of state-building or undermines it? A compulsive cynic may, however, retort that if a given tax system has all four Smithsonian attributes, should it not be assumed that it also has inbuilt the two aforementioned

[119]This can, inter alia, be explained in terms of the prevailing political uncertainity that brought the nromal revenue operations to a perceptible slow down.

[120]It may be pertinent to point out that if at-source deduction of sales tax is also added to the equation, the impact of withholdingisation on the eocnomy would appear even intenser.

[121]Mahnaz Fatima and Q. Masood Ahmed, "Political economy of fiscal reforms in the 1990s," *The Pakistan Development Review* 40, no. 4 (2001); Ahmed, "Pakistan's governance goliath: The case of non-professional Chairman, F.B.R."; Mahnaz Fatima and Q. Masood Ahmed, "Pakistan: State-building, extraction, and (misplaced) societal preferences."; Mahnaz Fatima and Q. Masood Ahmed, "Pakistan: Extraction, elites and state autonomy: A theoretical configuration."; Pasha, "Political economy of tax reforms: The Pakistan experience."; Hafiz A. Pasha & Aisha Ghaus-Pasha, "The future path of tax reforms in Pakistan," in *Pakistan: Moving the Economy Forward*, ed. Rashid Amjad & Shahid Javed Burki (New Delhi: Cambridge University Press, 2015); Musharraf R. Cyan and Jorge Martinez-Vazquez, "Pakistan's enduring agenda for tax reforms," in *The role of taxation in Pakistan's revival*, ed. Jorge Martinez-Vazquez and Musharraf R. Cyan (Karachi: Oxford University Press, 2015).

[122]Adam Smith, *The wealth of nations*, ed. C. J. Bullock, vol. X, The Harvard Classics (New York: P.F. Collier & Son, 1909-14).

additional traits. "Yes" and "no." The paper stipulates that a tax system howsoever utopian in its outlook, if it does not collect revenues enough to maintain the state, it is not a good tax system as the state under compulsion would have to resort to other sources of extraction with adverse implications in the long-run, which scenario reinforces the sufficiency and state-building attributes into the equation.

Like the debate on equity is central to the debate on a tax system, the debate on tax incidence is central to a debate on equity. Equity is of two types i.e. horizontal equity and vertical equity. While horizontal equity asserts that there ought to be "equal treatment of equals," that is, individuals enjoying identical wealth, or in identical income brackets, must suffer equal tax impact, vertical equity canon stipulates that wealthier persons and those in possession of larger economic resources must pick larger tax incidence. David Elkins argues that "violation of horizontal equity, while not necessarily fatal, is nevertheless considered a fatal flaw in any…tax arrangement."[123] Tax rates that underlie equity principle can be of three types, namely, progressive, regressive or proportional. In case, the effective tax rate increases as income increases, the overall tax system would be considered as progressive; in case, the tax rate decreases with income, the tax system would be regressive; and finally, if it remains constant, it is a proportional tax system. The most important concept inside equity debate may be that of tax incidence, which is of two types i.e. statutory incidence and economic incidence. While statutory incidence of tax indicates who is legally responsible for the tax, economic incidence of a tax is the change in the distribution of private real income induced by a tax. The mechanism through which statutory incidence of a tax is transferred from those who are legally responsible to collect to those who actually bear the economic burden is dubbed as "tax shifting." In case, the tax is shifted to consumers through higher prices of goods and services, the tax is said to be "shifted forward;" if the tax is borne instead by workers or other input suppliers, then the tax is said to be "shifted backward." Wahid & Wallace undertook an enlightened empirical study on Pakistan, which despite limitations and shaky assumptions, held that "two most important sources of horizontal inequities are the unequal treatment of different taxpayers through exemptions and tax evasions."[124] Without touching upon vertical equity, which may perhaps be a bigger bane in Pakistan's context, they go on to controversially hold that "while all households bear part of the burden of taxes in Pakistan, the higher income households bear a larger share of the burden than low-income households."[125] They also adjudge that "direct taxes have a much more progressive distributions," which may be "due to the high threshold for the individual income tax and the concentration of capital income in the higher income groups."[126] They end up making highly provocative statement that "the system of direct taxes in Pakistan is very progressive at the top income end."[127]

[123]David Elkins, "Horizontal equity as a principle of tax theory," *Yale Law & Policy Review* 24, no. 1 (2006).

[124]Umar Wahid and Sally Wallace, "The equity debate in tax policy," in *The Role of Taxation in Pakistan's Revival*, ed. Jorge Martinez-Vazquez and Musharraf Rasool Cyan (Oxford University Press: Karachi, 2015), 313.

[125]Ibid., 319.

[126]Ibid.

[127]Ibid.

These rather positive summations come against the general perception that Pakistan tax system having been excessively withholdingised is highly lopsided. Theoretically speaking, progressivity—the ability to extract from people according to per their capacity, becomes the first casualty of withholdingisation. Tax system's surreptitious indirectisation through withholdingisation, as already also pointed out, has been done and achieved on purpose. Haq pertinently remarked that "determination of a tax base capable of measuring an individual's ability-to-pay is a major problem of our tax system," since elsewhere "this rule is achieved by adopting progressive rate schedule for personal income tax and property tax," but "we have moved from this policy to unequal sacrificial rule where the mighty…political elite are paying meager taxes and actual incidence is shifted to the less-privileged."[128] He goes on to state that "businessmen are offered presumptive tax regime, even under income tax law, to pass on burden on the customers," whereas "masses are overburdened with oppressive indirect taxes, ever rising costs of public utilities and petroleum products."[129]

Secondly, sustained ruthless withholdingisation has effectively neutralised and disengaged the tax system from the overall macroeconomic framework. Government's role in the economic domain has broadly been seen in terms of (a) overcoming inefficiencies of market system and allocation of economic resources; (b) reordering of distribution of income and wealth in the society along "just" and "equitable" lines; and (c) smoothing out of cyclical economic fluctuations with a view to ensuring employment and inflation rates at desired levels.[130] One of the prime harms that withholdingisation may have done is neutralisation of tax policy as an effective tool of macroeconomic management. A standard Keynesian stipulation is that through an effective utilisation of fiscal policy, aggregate demand levels can be increased or decreased while balancing the act between unemployment and inflation. In Pakistan's case withholdingisation has defanged tax policy as a mechanism of tinkering with macroeconomic management. In a withholdingised economic system the standard tool of reduction in tax rates cannot be expected to increase output through raising the aggregate demand, as the actual tax rate is diluted into hundreds of tax rates applicable to sectors, sub-sectors and even single business lines.[131] Withholdingisation may have also neutralised taxation as a reliable tool of conducting social policy. Historically, taxation has been used to encourage home ownership, investment, family formation, and even environmental protection. In Pakistan, of late, tax policy has become synonymous with and confined to fine-tuning of withholding tax provisions, rates, and operational mechanisms. Likewise, withholdingisation may have also negatively impacted economic development in not

[128]Ikramul Haq, "Undoing unjust tax system," *Daily Times*, June 4, 2017.

[129]Ibid.

[130]R. A. Musgrave, *The theory of public finance* (London: McGraw-Hill, 1959); Ahmed, "Pakistan: state-building, extraction, and (misplaced) societal preferences."; Ahmed, "Pakistan's governance goliath: The case of non-professional Chairman, F.B.R."; Wahid and Wallace, "The equity debate in tax policy."; Jorge Martinez-Vazquez and Kaspar Richter, "Pakistan's short and medium term reform options," in *The role of taxation in Pakistan's revival*, ed. Jorge Martinez-Vazquez and Musharraf Rasool Cyan (Karachi: Oxford University Press, 2015).

[131]Excessive withholdingisation, it has been argued, can also cause, incentivise and increase sumuggling.

too-well-known but important ways. It was observed that imposition of withholding tax on banking transactions "resulted in the slowdown of bank deposit growth, and forced medium- and small-sized banks to offer returns above the market rates to raise deposits."[132] In Pakistan where rates of savings and investment are already much below the desired threshold, such negative latent policy biases are bound to adversely affect economic growth and development.

Thirdly, withholdingisation may have created more economic distortions than generally ascribed to it. When withholding regime started to expand in Pakistan during 1980s and 1990s, one of the major advantages, at least for public consumption, was reckoned to be data collection about potential taxpayers so they could be roped into tax net. However, the current levels of withholdingisation have started to produce diametrically opposite results. Illustratively, SBP in reference to the imposition of withholding tax on bank deposits, in 2016, observed that "withholding tax on deposits is halting the deepening of the banking services," and that the same was "acting against the goal of achieving financial depth," and further that "for the first time since 2009-10 the monetary expansion came more from currency in circulation than the bank deposit growth," as "private sector deposits increased by Rs.149.4 billion during July-March FY16 — less than half of the rise recorded during the corresponding period of FY15."[133] In the same vein, business community "also tried to find other modes of payment to avoid it," and "particularly retailers and medium-sized businesses, started using dollars to make payments while they kept dollars in their bank lockers."[134] Resultantly, surplus liquid funds either flee the country or get invested in the real estate—a dead sector for all practical purposes.[135] It is also commonly believed that excessive application of withholding taxes on the real estate sector has significantly brought down the number of transactions therein causing a definite dent in the aggregate revenue. Thus, Pakistan's official savings rate staying stagnant around 16 percent may also partly be explained in terms of brute withholdingisation of the economic system.

Fourthly, withholdingisation has rendered much of the fiscal system unreformable. This can be seen from five different standpoints. One, the entire tax administration—IT systems, underlying rules and procedures, the human resource—and even the Parliament, have all adjusted to at-source mode and methodology of revenue-collection within their respective roles. Two, because of the ever-emerging special regimes, the tax statute has gotten more and more complex and complicated with every year passing particularly since 1991 onwards. Three, the case law that has developed over the past three decades having been cast in the same dye, has significantly added to the complexity of the system rendering it more and more unreformable. Four, the state's overdependence on at-source taxation leaves little room for successive governments to undertake any risky and meaningful reforms in

[132]Shahid Iqbal, "Withholding tax slows down bank deposit growth: State bank," *Dawn*, July 2, 2016.

[133]Ibid.

[134]Ibid.

[135]This may be reckoned as dead sector as any investement in real estate, inter alia, does not create jobs; does not generate substantial amount of revenues through taxaton of gains resulting from its appreciation over time, and creates bubble crowding genuine buyers out of the market causing slow down in the construction industry - and directly and indirectly associated industries and sectors.

that no government finds itself in a position to let go of sure easy bucks into the kitty. "The necessary work to address these contortions and the costs of tax revenues likely to be lost during such a transition," it has been averred, "will now need three to four budget cycles to carry out."[136] Last, the system due to relentless retrofitting over the past three decades has gone beyond a repairable condition—an "entrenchment" of sorts; in that withholdingisation operates as the "Superstatue"—an inescapable reality.

Fifthly, withholdingisation has also triggered heightened interest group activity in the country. Elsewhere elaborated also, heightened groupnessisation has taken the entire public policy formulation process into its shackles. In fact, interest group activity has attained such a pace that it is beginning to have a rattling effect on the polity. Trade unionisation of the economy, when above-normal, creates distortions and produces substantial negative externalities. An interest group gets formed and rolled out as soon as another group has gotten its withholding rate or regime favourably adjusted. It goes without saying that an economic group operates as a rational actor readying to optimise on any opportunities to safeguard and promote their particularistic interests. In a withholdingised economy, when the interest groups also contribute to the exchequer substantially, their voice proportionately becomes more vibrant and audible. In fact, in T/Y 2016, while banking sector "paid total taxes of over Rs. 140 billion," it "collected and paid to FBR over Rs. 134 billion as withholding tax."[137] Not surprisingly then the sector got away with significant relaxations on their reporting requirements in quid pro quo from the state.

Lastly, since by their very nature, withholding taxes happen to be indiscriminate in target and impact, they tend to nudge and hurt marginalised segments of society rather seriously. Although "vulnerable groups such as widows, pensioners, retirees, students etc., receive very low compensation or income that falls below the taxable threshold and…are not liable to pay tax," yet "withholding tax is deducted on their savings whenever they make withdrawals, which is unfair as they cannot claim credit for the deducted amount."[138] The state which is already failing on its functions in terms of providing necessary public goods like education and health to its citizens must be doubly cognizant of citizen groups that statutorily are not to be taxed—short of that state-society relations would be as weak as in the present-day Pakistan. Further, such deductive extortions from the impoverished or not well-to-do citizens pushes them away from financial inclusion process effectively barring them from economic mainstreaming.[139]

In all fairness, withholdingisation apparently may have added an element of certainty to the tax system, but it is essentially artificial in that, in the long run, it is not sustainable being unjust, arbitrary, and perverse. Withholdingisation also betrays sham convenience as if both the withholder and the withholdee are over with tax component of doing business, but in reality it has complicated the system as can be seen from the ever-increasing compliance and reporting requirements, and the stringency of the punitive and prosecutive regimes for withholders. There is no doubt

[136]Shahid Kardar, "Amplified policy distortions," *Dawn*, July 4, 2017.

[137]M. Arshad, "F.B.R urged to Amend ITO 2001 provisions to stop tax evasion," *Customs Today*, April 5, 2017.

[138]Ibid.

[139]Ibid.

that in Pakistan an entrepreneur allocates a substantially high number of man-hours to comply with tax system's requirements, which really dislodges both the convenience and efficiency arguments in support of withholdingisation. Summing up, it may, however, be that withholdingisation has done well by maintaining a tax/GDP ratio of under or around 10 percent but in the process, it could have done more harm than good to the economy, the society, and the polity at a deeper and wider level; a better understanding of which would continue to be gained by all three in the years and decades to come.

6.2. Source of Civil Strife?

Ron Cruse's observation that many of the countries that he "visited in the late 1980s were veritable incubators of repression, civil strife, and war," but Pakistan was the place "where violence was a part of daily life," holds water even today.[140] Pakistan historically has been in the throes of civil strife of varying shades and hues starting with the independence-time mass-migration (and its aftermath) to linguistic, ethnic, sectarian, regional, and ideological civil strife. Not that all these causes have been neutralised or that economically-oriented civil strife did not exist earlier but lately economic civil strife appears to have overtaken as the most abundant and powerful source of civil strife in Pakistan. People have, of late, protested on roads and gone violent, killed, pelted stones, burnt private properties, fired, staged sit-ins, splayed deadbodies refusing burials, resorted to hunger strikes, carried-out mock hangings to articulate their demands; express their angst; exhibit their powerlessness. The state has responded to the protests and protestors with killings, *lathi* charges, arrests, lay-offs, tear-gassing, wickedly negotiations, but rarely with robust and solid policy interventions. Protests, in turn, more topically, have sprung against joblessness, unfavourable job conditions, load-shedding,[141] perceived grievances of exclusion (say, under CPEC),[142] unscheduled power failures and outages, drone attacks, ethnically-oriented cleansing, honor-killings, media clamp-down, perceived unfavourable fiscal, agricultural, religious, export and other policies. But at some level, the social anomie has deeper roots and appears stemming from governance structures that produce, sustain and promote massively iniquitous and unjust socio-economic order.

Although economic civil strife started to make manifestations over the past couple of decades, yet it had its seeds sown in the very way the state structure was contrived during initial phase of its establishment. Groupnessisation along pecuniary lines, riot politics, agitational demand articulation, exploitation of violence as a means of pursuing objectives, and commercialisation of politics may be the most important manifestations of economic civil strife. There is hardly any disagreement as to its causes, which include widespread economic injustice, concentration of national economic resources in few

[140]R. Cruse, *Lies, Bribes & Peril: Lessons for the real challenges of international business* (Universe, 2008). 47.

[141]Hassan Farhan, "One dead as protests against loadsheding turn violent in K.P," *Dawn*, May 29, 2017.

[142]Imtiaz Ali Taj, "Thousands protest government's negligence of Gilgit Baltistan under CPEC," *Dawn*, May 15, 2017.

hands, state's structural faultlines that have pro-rich in-built bias, extant political settlement that is out of sync with the operating realities—and, of late, withholdingisation. Withholdingisation breeds groupnessisation in that it creates new economic identities and groups, reactivates the ones gone into hibernation, and resuscitates the dead ones by prompting them an economic threat or splaying before them an economic opportunity vis-à-vis another economic group. A withholdingised economic system is bound to brace for hyper group activity where economic agents get unleashed to haggle with other interest groups. In order to analyse withholdingisation and study its actual oppressive implications for the system, the paper draws upon Colin H. Kahl's theory of Demographic and Environmental Stress (DES), and modifies it to fit the topical, the temporal and the spatial.[143]

The theory of DES stipulates that demographic and environmental stress can bear down significant amount of pressure on societies and polities in the developing world and, over time, test their harmony, robustness and survivability.[144] To Kahl "ecological, economic, and social effects, population and environmental pressures reverberate into politics" and potentially produce two pathways to civil strife i.e. *state failure* and *state exploitation*."[145] It follows that "state failure conflicts occur when DES substantially weakens state authority," whereby the state's conventional monopoly over violence gets diluted and shared with non-state actors "increasing the opportunities and incentives for anti-state and intergroup violence via the logic of the security dilemma."[146] On the other hand "State exploitation conflicts…occur when threatened state elites seize on natural resource scarcities and related social grievances to instigate conflicts that advance their parochial interests."[147] The theory further "contends that two key intervening variables, *groupness* and *institutional inclusivity*, play decisive roles in determining which countries are most prone to state failure and state exploitation conflicts."[148] Kahl believes that "violence is particularly likely in the context of high degrees of groupness (i.e., societies that are sharply cleaved along ethno-cultural, religious, or class-based lines) and low degrees of institutional inclusivity (i.e., countries with highly…and repressive political systems)."[149]

Now, if Kahl's theory is tailored by replacing demographic and environmental stress with economic stress brought about by high degree of economic injustice, extreme concentration of wealth, inequitable tax system, and a withholdingised economic system, it can not only explain the origins and roots of economic civil strife but also the way the state looks at them, repressing every notion to confront them per dictates of the reality principle. Kahl's theory of DES is modified to induct Withholdingisation Induced Economic Stress (WIES) into the analysis as depicted in Figure 9 below.

[143]C.H. Kahl, *States, scarcity, and civil strife in the developing world* (Princeton University Press, 2006).

[144]Ibid., 29.

[145]Ibid.

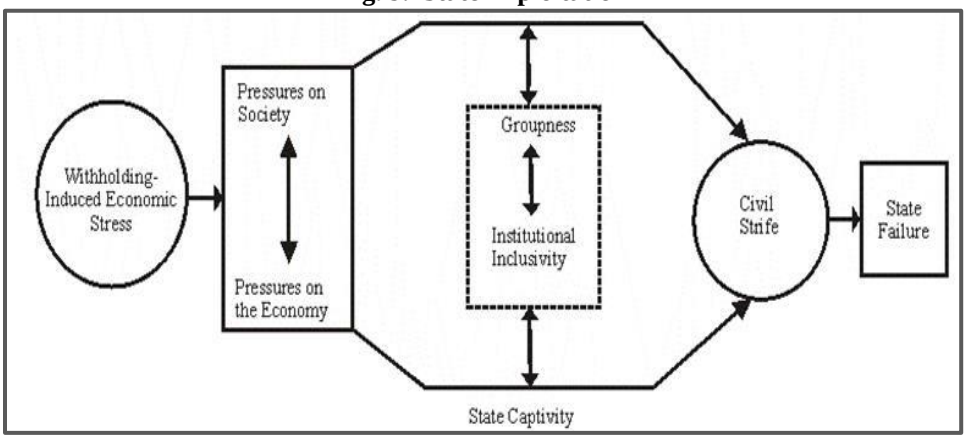
[146]Ibid.

[147]Ibid.

[148]Ibid.

[149]Ibid., 29.

Fig. 9. State Exploitation



What it stipulates is that WIES partly borne by active economic agents (producers) on account of coercive withholding liabilities and higher input costs resulting from state-sponsored *Chinacutting* of economic transactions (a good portion of which gets stuck in the pricing structure), and partly by passive economic agents (consumers) on account of higher prices of final goods and services consumed—operates on the society, the economy, and the polity as a domineering factor cyclically resulting in further taxflation. Groupness and Institutional Inclusivity get into an intense interplay and take either of the routes i.e. State Exploitation or State Captivity leading to civil strife, which, if not arrested anytime at initial stages, can potentially create a specter of Sate Failure. In a scenario of higher groupnessisation, the state is put to direct exploitation and enhancement of economic agenda. In other situations, the state is brought to a captive condition to rig the policy formulation process to achieve economic goals. Predictably, whatever path is taken, it would lead to, and end up preservation and promotion of the extant economic status quo. Over the past three decades, while PML(N)-led coalitions ravished Pakistani state through State Captivity mode, those led by PPP adopted State Exploitation mode. It may be noted that State Captivity mode, since it can involve tinkering with policy formulation in critical areas of statecraft, can have more far-reaching effects as compared with State Exploitation mode.

A la under DES, when WIES starts operating on the people with shared economic interests, they form groups, relate and organise themselves, evolve effective interest-articulation channels, and start behaving like living organisms obsessed with instinctual self-preservation, self-reproduction and growth. In fact, all economic dispensations do help create economic group identities, but withholdingisation, by its very nature, does so at an exorbitant pace—in the process, generating living economic identities, sub-identities, and even mini-sub identities. How does it actually happen? No sooner a withholding provision is brought onto the tax statute, or a withholding tax rate is altered or its attendant filing regime is adjusted, the pre-existing economic environment being essentially zero-sum, the change is definitely going to be a bane for some and boon for some. Immediately, all economic interest groups affected by the change get into gear with their own interests to protect vis-à-vis others. All economic identities then start to

exert pressure on the polity, which since has put no mechanism of interest group articulation in place, gets to entertain them selectively—that is, only those that are connected politically or those that can buy an access bureaucratically or those that can apply a combination of both. This very phenomenon may have politicised commerce and commercialised politics in Pakistan as all interest groups strive to get heard in the state's policy-making structures.[150] It would be seen that withholdingisation has unionised the entire economy with every single economic sector being hit by a single withholding tax rate becoming a group; hence, the greater the level of withholdingisation in the economy the greater the level of economic groupnessisation.[151]

While DES primarily deals and is concerned with *groupnessisation of scarcity*, WIES deals with *groupnessisation of affluence*, *groupnessisation of economic interests*, and *groupnessisation of deprivation.* Firstly, the *groupnessisation of affluence* represents the primordial economic order extant in Pakistan. This groups tries to and does exercise its influence at the strategic level e.g. abolition of taxes on capital gains, wealth, gifts, inheritance and agricultural income etc.[152] Secondly, *groupnessisation of economic interests*—chiefly the product of a withholdingised economic system—represents currently the most wide-spread and most effective factionalisation when weighed in terms of its ability to impact policy formulation at the tactical level e.g. change in withholding regime. In this connection, real life illustrations could be that of traders protesting against imposition of withholding tax on banking transactions; realtors resisting valuations prescribed by the government; young doctors and paramedics demanding job security; teachers and clerks protesting against unjustifiable service conditions having been—all having been indirectly hit by withholdingisation-induced taxflation. Thirdly, *groupnessisation of deprivation*—that represents the dregs and the marginalised of the withholdingised economic order—are the societal residue, who are yet to be organised, get cognition and learn to do interest-articulation. They are the most dangerous set of souls for three reasons. One, they are made to pay tax through taxation of transactions although they are not liable to pay any. Two, they being on the lower rung of the economic stratification, bear the major brunt of taxflation. Three, the state having withholdingised the economic system, is neither able to generate enough revenues to undertake effective distributive engagement with them nor are they able to muster enough capital to enter a highly taxflated economic market.

Given the current state of affairs, Pakistani polity must brace for the time when groupness of deprivation would acquire its cognition. Groupness of deprivation may still be nested in time, but there are definite symptoms that already betray gathering of the clouds. Its real-time exhibition would occur when the marginalised millions of Pakistan having absolutely no stakes in the system would throw in the towel, and take to streets and start articulation their interests in agitational mode at mass level. In fact, that is the

[150]For an extensive discussion on groupness, see S. Bailey, *Legacies of race: Identities, attitudes, and politics in Brazil* (Stanford University Press, 2009).

[151]For instance, withholdingisation treats imports under eight different categories denoted in eight district tax rates thereby creating eight groups who are constantly striving to engage tax policy making circles in Islamabad and out-negotiating one-another for ever-more favourable group taxation regimes.

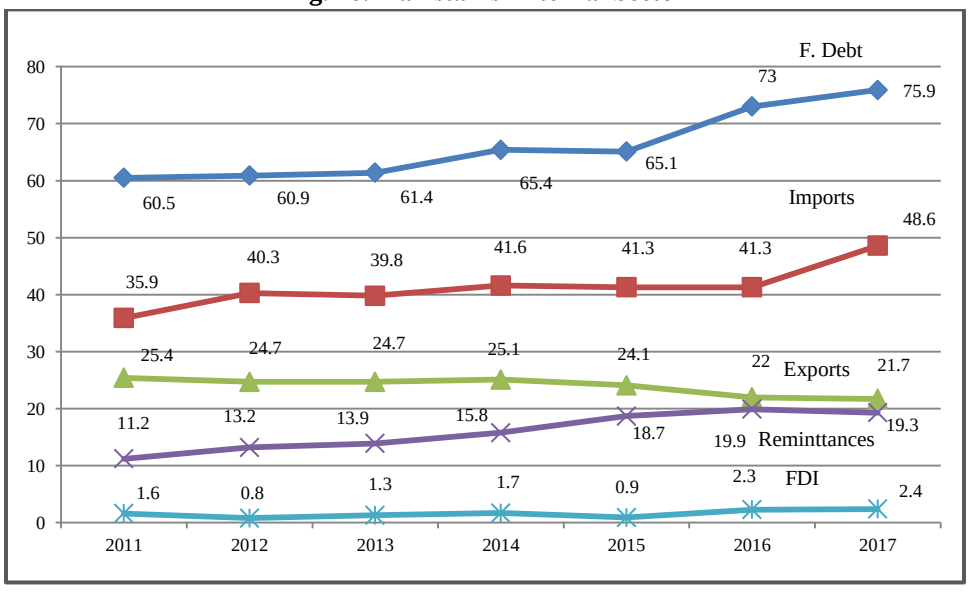
[152]For further and in-depth analysis see Husain, *Pakistan: The economy of an elitist state*; Kochanek, *Interest groups and development: Business and politics in Pakistan*; Ahmed, "Pakistan: Extraction, elites and state autonomy: A theoretical configuration."

specter that could possibly be equated with the scenario of tax war. It is not that a war is necessarily fought between two regular militias pitted against eachother across a clearly demarcated line; it can take multiple manifestations. A tax war could potentially occur when the polity tries to acquire or regain its (relative) autonomy by making a desperate effort to improve its extractive system; the groupness of affluence, and groupness of interest resist the specter resulting in violent protests which is a tested ploy of industrial elite and business elite towards achieving their economic agenda. It could even be reverse of it, that is, when groupness of deprivation—completely excluded and isolated from the system—out of desperation, take the process of economic equalisation in their own hands. Without being monocausal, it is reasonable to believe that WIES can seriously impact and be a determining factor of the forward march of all three, the society, the economy and the polity in the years and decades to come.

6.4. Source of Dutch Disease?

In this part, it would be seen how withholdingisation eats into the very vitals of the economy at the macro level with all the spurious outcomes. Like also shown in Figure 10, somewhere around 2013 and onwards, something curious appears to have happened to the economy. While the similarly-circumstanced nations—particularly those with substantial oil import bills—were having a bonanza in the wake of nose-diving petro-prices in the international market, Pakistani exports started to decline; FDI that, in fact, had never been impressive in good times, did not pick up even in the wake of much-touted CPEC-induced inflows; home remittances began showing signs of stress; and industrial productivity dwindled notwithstanding uninterrupted power supply at the expense of other sectors. Intriguingly, around that very time the process of withholdingisation starts to culminate—coming to full bloom.

Fig. 10. Pakistan's External Sector



Source: SBP.

Simultaneously, however, revenue numbers were claimed to have risen steeply; FBR was painted a champion organisation; and Finance Minister was lionised as "the best" in the business.[153] This, on the very face of it, looked bizarre as tax revenues being a function of economic activity with an unquestionably established direct relationship could not have taken a surge while the rest of the economy was depressed. This paradox though earlier identified, yet has rarely been resolved. Like already posited withholdingisation inflicts the economy with something akin to Dutch Disease.[154] The Dutch Disease could be defined in a variety of ways keeping in view the contextual imperatives, but in its simplest conception, it means an outgrowth of one particular sector or side of the economy in relation to others, say, large hydrocarbons or mineral reserves, inducing substantial sharp inflows of foreign currency causing exchange rate appreciation, and in the process, stunting other sectors and industries, and rendering them less price-competitive in the international export market—thereby having a negative influence on the economy in overall terms.

When broken down Dutch Disease is attended and evidenced by an appreciation in real exchange rate due to abnormal inflows of foreign exchange; decline in exports; surge in imports; resource-shift from the lagging to the booming sectors; and erosion of industrial productivity and competitiveness. All these factors are not only interdependent but mutually reinforcing, too. The paper ascribes the standard role associated with hydrocarbons in the Netherlands' context to withholdingisation in Pakistan's and analyses Dutch Disease effect within this framework.[155]

Pakistan's exchange rate is admittedly overvalued by as much as 22 percent in overall terms, and since 2013, around 27 percent. Interestingly, the exchange rate is overvalued not because of any excessive inflows of foreign exchange into Pakistan but because of (a) non-devaluation of rupee *vis-à-vis* other currencies, and (b) relative devaluation of Pak rupee's rival currencies. Since 2013, while Pakistan rupee devalued by a meager 3 percent, the Malaysian, Indonesian, Indian, and South Korean currencies have devalued by 38, 47, 30, and 7 percent, respectively. In Pakistan, devaluation of currency has traditionally been a function of non-monetary and political factors. The most important factors discouraging the government from devaluation of currency are a consequential sudden jump in debt-stock which is denominated in rupee, and an aggregated national ego overly associated with the value of the currency. While rupee non-devaluation may not be a direct result of withholdingisation, the phenomenon had an identical impact—increased price of exportable goods. This could well be called the Dutch Disease effect with a plus sign in that the currency does not appreciate as there are no exaggerated inflows of foreign exchange, but still cost of production goes up substantially due to withholdingisation. Ahmad & Mohammad have argued that foreign aid inflows also have had a Dutch Disease like effect on the economy.[156]

[153]Shahbaz Rana, "Ishaq Dar declared "Finance Minister of the year," *The Express Tribune*, October 9, 2016.

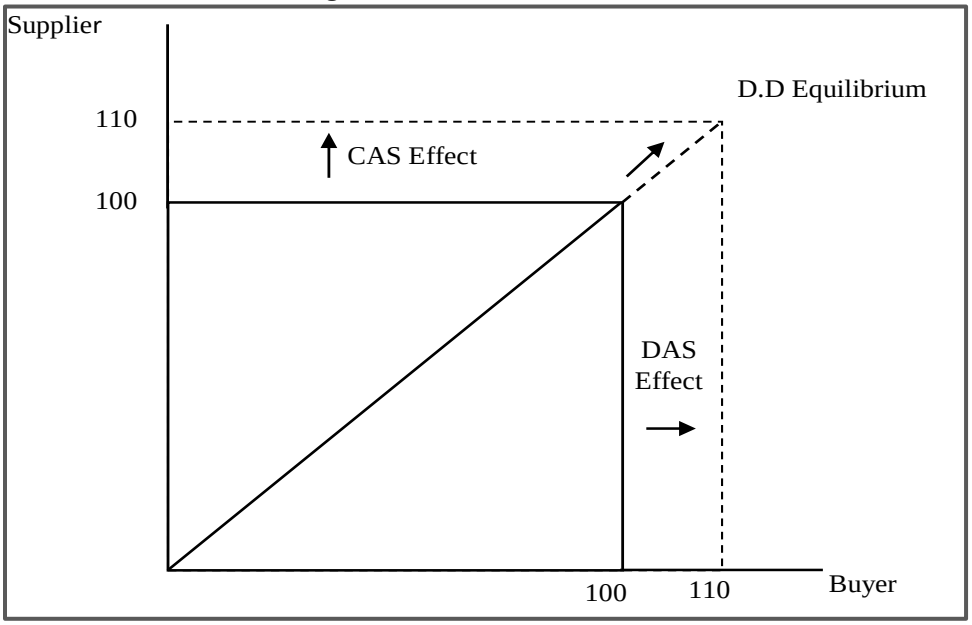
[154]The concept of Dutch Disease was originally developed by W. Max Corden & J. Peter Neary in 1982 in the context of the Netherlands in reference to large discoveries of hydrocarbons in the 1960s and 1970s.

[155]Khaleeq Kiani, "Energy sector contributes over Rs. 1 trillion to national kitty," *Dawn*, September 7, 2017.

[156]Ehtisham Ahmad & Azizali Mohammed, "Pakistan, the United States and the I.M.F: Great game or a curious case of dutch disease without the oil?," in *Working Papers* (London: Asia Research Centre, 2012).

The goods and services produced in a Dutch Diseased economy are not price-competitive in the international market. This is exactly what happens in a withholdingised economy. It is argued that withholdingisation negatively impacts the economic system by pushing up the transaction cost thereby causing taxflation of sorts. Wahid & Wallace point out that in Pakistan, while "most taxes are passed forward, taxes on inputs will ultimately rest in the prices of final goods,"[157] Dissecting Pakistan tax system, they go on to posit that "if goods produced in the corporate sector were largely sold on the world market, it would be difficult to shift the tax burden onto the price of the good," and since "Pakistani goods would simply not be competitive and in the medium term, industries would suffer and eventually die off without government intervention."[158] On the basis of industrial output data for the F/Y 2006-07, they also argued that "the manufacturing sector was projected to account for approximately 36 per cent of the income tax," whereby "the ability to shift the corporate tax forward into output prices is hindered to some extent by the competition in the world market."[159] Figure 11 is the simplest illustration of withholdingisation-induced Dutch Disease effect. The picture exhibits the economic market at an equilibrium point where supplier is ready to sell his product at 100, and buyer is ready to buy it at 100. Now, the government imposes a withholding tax of 10 on buyer to be collected by supplier, and since the tax has a near-full potential of being passed on, the price jumps to 110. Likewise, when government also imposes a tax of 10 on the supplier to be collected by the buyer—his price also goes up to 110; hence, the new Dutch Disease Equilibrium, which is taxflated and expensive not by 10 but by 20.

Fig. 11. CAS Effect-DAS Effect



[157]Wahid and Wallace, "The equity debate in tax policy," 297.
[158]Ibid., 281.
[159]Ibid.

The withholdingised economy is essentially an import economy as an overvalued exchange rate renders exports less competitive externally and imports more competitive internally resulting in even daily consumables cheaper in the domestic market. This is particularly true of Chinese products flooding Pakistani markets unfavourably sustained by Pak-China FTA and CPEC-sentiment. When an overvalued exchange rate spurred imports, instead of fixing the fundamentals of the economy—the tax system or the exchange rate—purely under political considerations, SBP ended up enforcing cash margins @ 100 percent, and FBR imposing a regulatory duty on so-called non-essential imports. The resultant unabated import onslaught has triggered a process of deindustrialisation whereby not only that industry is being shut down but it is also being relocated to China, Bangladesh and the Middle East for production of export goods as well as for import and consumption back in Pakistan.

Without being monocausal withholdingisation may be at the roots of fast-waning competitiveness of Pakistani industrial sector. Energy costs have gone up for the industry chiefly because of upfront load of withholding taxes, making industrial energy most expensive in the region as an industrial input. It was reported that energy sector along contributed a hefty sum of Rs. 650 billion during F/Y 2017 mainly on account of upfront withholding taxes.[160] Likewise, gas as an industrial input is 37 percent cheaper in Europe as compared to Pakistan majorly because of tax-padding at production and distribution stages. Transportation costs are about 25 percent higher in Pakistan vis-à-vis the regional countries—due majorly to upfront withholdingisation. A wide-going withholdingisation occurring over the past three decades may have "distorted incentive structures in Pakistan, and weakened the desire for self-reliance."[161] Pakistani tariff levels are above par and serve "as a major impediment to integration in global supply chains, hampering the diversification of exports."[162] Kardar, amplifying this point, posits that "Policies, transactional processes and import tariff structures are critical in enabling firms to participate effectively in global value chains based on core competencies—manufacturing of different components and services like design, logistics, marketing and distribution,"[163] but withholdingisation is inimical to all these.

In a Dutch Diseased economy market forces drive resources from the lagging to the booming sectors reinforcing the fundamental malaise and reproducing its negative effects. This is what also occurs in a withholdingised economy and could be explicated from three different perspectives. One, resource-shift from industry to import, real estate and other non-productive sectors as in Pakistan. Two, resources travel from formal to informal sectors because of price competition between goods and services produced in the formal and informal sectors. Further, "if more substitutes that exist in the informal sector, the more difficult it would be for firms in the legal, tax-paying, formal corporate sector to pass off the corporate tax in the form of higher output prices."[164] It is believed that Pakistan's black economy, at any given time, may be equal to the size of the formal

[160]Kiani, "Energy sector contributes over Rs. 1 trillion to national kitty."

[161]Mohammed, "Pakistan, the United States and the I.M.F: Great game or a curious case of dutch disease without the oil?."

[162]Kardar, "Amplified policy distortions."

[163]Ibid.

[164]Wahid and Wallace, "The equity debate in tax policy," 281.

economy. Three, intra-institutional resource-shift also takes place as more and more resources are diverted to withholdingisation (booming sector) at the expense of the traditional tax system (lagging sector) reinforcing all of its negative fallouts.

Moreover, high taxes and duties in a withholdingised economic system compulsively induce complicated regulations and procedures to manage trade," whereby regulatory burden further raises "the cost of steering trade, besides incentivising smuggling."[165] However, excess deduction or collection is attendant fallout of withholdingisation. Since government is constantly striving for revenues, it chooses to withhold refunds so desperately needed by the exporters. The exporters then compulsively have to approach banks for working and export finance capital. While mark-up paid by industrialists gets added to product cost, the government successfully propagates loans so taken as industrial credit off-take to score points in media and the parliament and paint halcyon picture of the economy. All said over-deduction further holds back exporters' potential to compete internationally.

To sum up, the ultimate disturbing consequence of withholdingisation "is a polarised, dichotomous economic edifice," which "is characterised by heavily protected sub-segments of industry, that essentially serve the domestic market enjoying relatively high profit levels while those operating in global markets find survival difficult," whereby "the pattern of industrialisation is fast changing for the worst; it is one which is not viable without high walls sheltering it from competitors."[166] To make things worse, withholdingisation comes down hard with its blunt blade of *Chinacutting* of transactions and taxflation completely sapping competitiveness of the industrial sector. It is in this context that Pakistan's sluggish economy, deindustrialisation, sprawling black economy, sickly revenue generation, receding exports, FDI and home remittance may be seen, analysed and framed in for policy refinement. The foregoing debate as regards the paradox of plenty created by brute withholdingisation by generating easy and unhealthy revenues for the elitist state, and the way it eats into the very vitals of the economy, opens new vistas for future research particularly as to how it would affect the societal processes—social cohesion.

7. CONCLUSION

One can draw curtains on the withholdingisation debate and its fallouts by posing, and if possible, answering, five inter-related and mutually interdependent questions, namely, is the system really fettered enough to justify the epithet of withholdingisation with all its hard-sounding connotations; if the system is effectively withholdingised, is it generating revenues *sufficient enough* for the state in quantitative terms and *healthy enough* in qualitative terms; is withholdingisation constructive or destructive to the citizen-state relations—so very important a dimension of statecraft in yet evolving states; is withholdingised system supportive or disruptive to the aspirations of economic development and prosperity of the nation; and, if a withholdingised system—with all its down- and upsides—sustain itself and hold the state and society together—futuristically.

[165]Kardar, "Amplified policy distortions."
[166]Ibid.

The first question being relatively less subjective is perhaps the easiest one to answer. What one knows now is that the elitist state has increasingly shifted its extractive liability onto the withholding machine; added more and more withholding provisions to the tax code brining in increasingly larger tracts of gross economic activity and greater number of economic agents into its fold; innovated to optimally scavenge on tools like FTR and MTR regimes, CAS mode and DAS mode, and transaction-taxing to earn easy bucks; improvised the coercive (punitive and prosecutive) diktats to deal with delinquents—defaulting withholders. All these insights—as empirically explicated in section 3, lead one to an unmistakable conclusion that it is not only the extractive system but the economic system that has now been effectively withholdingised. There is a complex preponderance operating on the entire economy at any level generating vast amounts of dissonance amongst both its passive and active agents repelling any potential new entrants.

Turning to the next question, that is, if the withholdingised system capable of generating revenues *sufficient enough* for the state in quantitative terms and *healthy enough* in qualitative terms, the plain answer would be in a trite negative. What one already knows is that the system is generating under 10 percent of GDP in tax revenues and the state has to compulsively borrow roughly the same amount every year to sustain itself with all the adverse fallouts for the economy and its long-term sustainability. If the entire body of scholarship created so far on the fiscal function of the state has any relevance or meaning for Pakistan, brutally withholdingised system renders it completely irrelevant as it defies all logic and commonsense, in that, it is completely uprooted from standard normative foundations; disengaged and extricated from the macroeconomic framework; has created mega economic distortions, and sapped self-healing (corrective) ability of the system apparently beyond recuperation.

The third question—if withholdingisation's role towards the building of state-citizen relation in Pakistan is constructive or destructive has to be reckoned destructive. Heightened groupnessisation triggered by withholdingisation constantly reproducing new economic identities, which then ferociously hover and converge on the embittered state for exercise of favourable policy choices, can hardly ever induce a halcyon influence for the bonding between the citizen and the state. This deduction gets further strength from the fact that about half of the total tax generated from withholdingisation remains unclaimed, and still almost 90 percent of claimed excess deductions are never refunded; hence extortion; hence unjust; and therefore, can no way be taken to contribute positively to the processes of state-building. This factor operates in addition to the wide-spread taxflation for both the producer and the consumer. The penultimate question—is withholdingisation good for the economy in overall terms—can only elicit an immediate negative response. The fragility of the macroeconomic indicators when coupled with external sector's downward slide—if not a plunge—and viewed from the prism of taxflation-induced incompetitiveness of the economy vis-à-vis the rest of world leaves no room to doubt there is a trade-off between withholdingisation and competitiveness.

Lastly, the question if a withholdingised economic system, in general and extractive system, in particular, can undergrid the state and hold it together futuristically. This subjective stipulation though empirically intractable yet can be best understood through circumstantial evidence to prove that a withholdingised system being

anachronistic in nature does not belong to the present times, at least. The political settlement underlying the institutional configuration of the state—perhaps any state or any institutional framework for that matter—cannot be expected to have design capacity enough to manage negative externalities of the magnitude that as brutally withholdingised a system as that of Pakistan is currently producing. Withholdingisation, with time, may have *entrenched* too wide and too deep into the system attaining the status of a *Superstatute* of sorts. This is further evident from the fact that over a dozen reform efforts that have been made to improve the revenue system have miserably failed producing counter-results—as having been sponsored and steered by Elites Ltd—counter-results being more withholdingisation; more (extractive) system incapacitation; more debt accumulation.

In a nutshell, the paper first gleans and then hammers home the point that there is absolutely no escape from having a capacitated and functional revenue system in place to operate the state's extractive function—capacitated enough to generate both *healthy* and *sufficient* revenues for the state. This is simply because the cost of running the state has to be picked up by the underlying society itself. This cost can be preponed, paid at par and time, or postponed (for a time), but a permanent deferral is not possible—not even theoretically. The cost of maintaining the state could, however, be internally shifted; that is, transferred from those who ought to bear it to those who ought not to bear it or bear it only marginally; the latter scenario can occur when the state falls captive as in Pakistan.[167] It is further driven home that consistently meeting the cost of maintaining the state operating under the pleasure principle—brute withholdingisation, incessant borrowing, and endless harvesting of rents at the international level—has a certain price-tag for the society and the state perpetuating both intra- and intergenerational distortions and inequities. Likewise, perverse internal transference of tax burden by power-wielding oligarchs (including via withholdingisation) to the not-so-lucky, yet un- and disorganised, and unrepresented marginalised millions, has its implications for the economy like legitimation of extortion, extension and expansion of inequitable taxing structures, inducing of the Dutch Disease into effect, creation of macro-economic distortions, and uprooting of the tax system from its normative foundations.

This is because states even when in adolescence cannot afford to shun on the reality principle. Pakistani state having operated on the pleasure principle for too leisurely and too long has now gone into a state of double jeopardy in that it is bearing even above-par *national* cost of tax collection and yet does not have an effective and functional revenue administration in place—the one capable of generating both *sufficient* and *healthy* revenues. Thus, the choice eventually rests with the state as to whether it intends continuing with its leisurely ways by out-contracting its extractive function to private collectors—withholders, or corrects the wrong done—to itself and its people—by putting in place a capacitated, functional and effective extractive system. This may be added that some facade of a tax system has to be there—as part of the state structure. If not a properly functional tax system—capable and capacitated enough to undertake across-the-board, rule-based, comprehensive, and differentiated taxation; it would

[167]See, for a detailed analysis, Ahmed, "Pakistan: Extraction, elites and state autonomy: A theoretical configuration."

undertake undifferentiated, perverse, and pro-elite taxation as done so far—with respective outcomes of both taxation types ostensible, it is up to the society to decide as to what kind of revenue system it wants in place. The prognosis, however, is that capacitation of extractive system would continue to hover on the conscience of the polity as an unfinished agenda of state-formation keeping the economy under duress, the society under stress and the state on sedatives. In the final analysis, Withholdingisation is not, and must not be taken as some paltry sub-subsystem of some system of the state; it has, in fact, over time, grown into an economic system unto itself as much as Slavery was the economic system of the American South, Mercantilism the economic system of the Colonial Europe, and Hydrocarbons the economic system of the Middle East, and needs to be approached and understood in that very context.

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The Tariff Tripod of Pakistan: Protection, Export Promotion, and Revenue Generation

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This paper gives an overview of tariff structure of Pakistan. The protection of local industry, export promotion and revenue generation constitute the triangular tripod of Pakistan tariff. The said three objectives are achieved mainly through imposition of high tariffs on output goods (protection of local industry), duty- exemption schemes and SROs for exporters (export promotion), and multiple levies at import stage on tariff-inclusive price (revenue generation). About half of the revenue of FBR is collected from imports. Protection to sectors like auto and textile is high and consumer welfare is totally missing from the entire scheme of tariff. Despite high protection and multiple export promotion schemes, local manufacturing is weak and exports are stagnant. The revenue has, however, increased manifold over the years and interestingly revenue witnessed big upward jump when MFN rates of tariff fell. Revenue generation is the major consideration in tariff setting. Tariffs are set as an exercise in accounting with the assumption that rates and revenue have got a positive linear relationship. Income effect, substitution effect and volume effect hardly enter into the mental calculations of tariff setters. Due to high incidence of taxes at import stage, incentives for smuggling, under- invoicing, misdeclaration, and evasion are high. Smuggling is rampant and hard to control due to peculiar geographic situation of Pakistan. Under-invoicing is clear from the trade gap between China and Pakistan. As regards misdeclaration, evasion and corruption at ports, I calculate a hypothetical value of CD based on TWA and CEF for the period 1997-98 to 2018-19. These calculations provide interesting policy insights. First, evasion through misdeclaration is high when tariff rates are high and evasion goes down in percentage terms with reduction in tariff rates. Second, CEF increases as a result of reforms in Customs like simplification and automation of clearance processes and procedures. After detailed discussion, paper suggests that protection provided to the local industry should be time-bound with clear sunset date and accountability against rent -seeking. Based on cap-cape equation, paper further suggests that exemptions and concessions in import duties should preferably be provided through tariff code and not through SROs and difficult-to-use export-oriented schemes. In order to put the country on the trajectory of long term growth, import tariffs on input goods and machinery should be phased out in the short to medium term and instead of relying on increase in tariff rates and imposition of additional levies on imports, better policy option is to enhance CEF through reforms aimed at risk based automated clearances.

Keywords: Tariff Structure, Protection, Under-invoicing, Misdeclaration, Smuggling, Input goods, Output goods, Collection Efficiency Factor

1. INTRODUCTION

Tariffs are an important policy tool for economic growth, protection of domestic industry, revenue generation, productivity, and consumer welfare. Tariffs give price advantage to locally produced goods over imported goods of similar nature and create a wedge between domestic and world prices. The rise in domestic prices spurs domestic production of the imported goods but at the same time depresses demand due to price

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effect. Thus tariffs influence production, consumption and trade. Tariffs are undeniably a reality of international trade and are used for variety of purposes by the countries but if applied excessively, they erode competitiveness of the industry by increasing cost of inputs, cause de-industrialisation by making industrial investment less viable due to eroded competitiveness, impose costs on consumers by making imported products expensive, and create anti-export bias by making domestic market more attractive than exports as local producers find a captive domestic market for their products where they have every possibility to compromise on quality and variety. Tariffs encourage trade deflection to inefficient producers through protection against competition and encourage smuggling to evade import duties.[1] The standard economic argument thus runs that tariffs create deadweight loss and distortions, and reduce welfare.

There is, however, huge divergence between theory and practice of tariffs. Almost all countries make use of tariffs for variety of reasons like import substitution, fixing balance of payments issue, revenue generation, or for retaliation.[2] Practically, tariff setting is a complex phenomenon and involves several policy trade-offs. There is trade-off between employment generation through protection to domestic industry and consumer gains through channels of less price, better quality and more variety of products. Trade-off between revenue generation and economic growth is also important at least in case of developing countries which still have heavy reliance on revenue generation through import tariffs. Moreover, the impacts of tariffs are not uniform. The benefits and costs tariffs generate differ between groups in an economy. They create both 'losers' and 'winners'. The redistributions associated with tariffs tend to generate rents which are hard to tax especially in developing countries where tax enforcement is generally weak. As tariffs provide shield to the local producers against foreign competition, so there is lobbying, pull and push and political economy factors are at play in tariff setting. Tariffs impact households as consumers, producers and wage earners etc. depending on the pass-through effect.[3] There may be substantial gains from tariff liberalisation but there is huge heterogeneity in the gains both across countries and across households within the countries (Erhan, Porto, & Rijkers, 2019).

[1]The situation of Pakistan is bit peculiar with regard to smuggling. Pakistan shares long porous border and provides transit trade facility to Afghanistan. The goods imported under Afghanistan under Afghan Transit Trade Agreement (ATTA) are smuggled back to Pakistan. The common perception that goods do not reach Afghan border and enter Pakistani market through pilferage en route to Afghanistan may not necessarily be true as Pakistan Customs took steps like installation of trackers to ensure that goods imported under ATTA cross border but it is also undeniably a fact that goods are smuggled back due to tariff differential and porous border between the two countries. Tariff rates in Pakistan are in a sense linked to the volume of tra nsit trade. If Pakistan sets high import tariff for a commodity, the import volume of that commodity is likely to increase under Afghan transit. So not only weak anti-smuggling paraphernalia but high tariffs are also a big contributory factor to smuggling.

[2]The trade war between US and China is a case in point. There has been tit-for-tat tariff increases from both sides since over one and half year before reaching 'phase one agreement' to start de-escalating their trade war. The US wants the Chinese authorities to end currency manipulation, cease intellectual property theft and stop giving subsidies to state-owned enterprises etc. (Why the US-China Trade War could Re-escalate by Anne O.Krueger, Project Syndicate, Dec. 20,2019).

[3]The impact of tariff reduction or elimination on trading prices is called tariff pass-through or simply it means who captures the tariff rents. The full impact of tariff increase or reduction may not pass on from the border to the consumer. Imperfecti ons in the market partially isolate households from the effects of tariff. See for detailed discussion (Hayakawa, & ITO, 2015).

Tariffs are generally divided into three categories i.e. MFN, preferential, and bound tariffs. MFN tariffs normally do not discriminate among trading partners. Article 1 of GATT stipulates that no discrimination can be made under MFN principle between the trading countries and any advantage, favour, privilege, or immunity granted by any country to any other country or product of some other country shall automatically become available to other counties or same product originating in other countries. Simply put, MFN principle means 'favour one, favour all'.

Bound tariffs are specific commitments made by individual WTO member governments while negotiating entry into WTO. The bound tariff is the maximum MFN tariff level for a given commodity line which a country can apply. Bound tariffs are not necessarily the rate which WTO members apply in practice to other WTO members' products.[4] Members have the flexibility to increase or decrease their tariffs, on a non-discriminatory basis, so long as they do not raise them above their bound levels. The applied tariff is less than or may be equal to the bound tariff in practice for any particular product. The gap between the bound and applied MFN rates is called 'binding overhang'**.** Trade economists argue that a large binding overhang makes a country's trade policies less predictable.[5] Article XXIV of GATT, however, provides an exception to MFN principle in the form of preferential trade agreements where countries entering into PTA commit to give to partner country's products lower tariffs than MFN rate. These agreements are reciprocal and partner countries commit to reduce certain percentage from the MFN tariff,[6] but not necessarily zero tariffs. Preferences, therefore, differ between partners and the nature of agreement i.e. PTA, FTA or Customs Union.[7] In the hierarchy of these three types of tariffs, bound rates are the highest, preferential rates lowest whereas MFN tariffs lie somewhere in between bound tariff rates and preferential tariffs.

Majority of the economists support free trade and argue in favour of liberalisation but when it comes to practice, tariffs and non-tariff barriers are applied both by developing and developed countries. The old belief in mercantilism that 'exports are good and imports are bad' still persists and manifests itself in the trade policies. The mercantilist belief is evident from the very fact that tariffs are imposed on imports in particular by the developing countries whereas exports are normally not subject to tariff. The developing countries have used tariffs for multiple purposes including revenue generation, improving balance of payments, and providing protection to its industry. The consensus, however, does not exist on the salubrious effects of tariffs on local industry or otherwise. Both role and rates of tariffs are matter of much controversy among the policy makers.

[4]Pakistan's bound tariff rates are up to 100 percent.

[5]less predictability simply means negative implications for trading and investment.

[6]For example RBD palm oil (PCT 1511.9020) has specific CD @ Rs.10800/MT while in case of import from Malaysia and Indonesia CD is chargeable @ Rs. 9180 /MT as Pakistan has entered into preferential/free trade agreements with both countries.

[7]The PTAs, FTAs and Customs unions are various forms of regional economic integration. The preferential trade arrangements provide lower barriers on trade among participating partners than on trade with non-member nations. A free trade area is a form of economic integration where all barriers are removed on trade among members but each nation retains its own barriers to trade with non-members. A customs union allows no tariffs or other barriers on trade among members and in addition to harmonising trade policies such as setting of common tariff rates towards the rest of the world. see SAFTA: Potential, Prospects and limitations (2007) by Jamil Nasir.

In 1950s and 1960s infant industry argument held sway in developing countries and tariffs were kept high to promote import substitution industrialisation (ISI). Pakistan was not an exception to the zeitgeist and used tariffs to provide protection to manufacturing sector like other countries of the region. Two sectors i.e. automotive sector and textile in particular merit mention where protection through tariff is very much visible. In auto sector, the incidence of import taxes on CBUs is as high as 250 percent and in textile it is around 60 percent for garments. The textile sector's contribution in terms of percentage share to GDP and employment is almost stagnant and in auto sector, consumer welfare is altogether missing as evident from high prices, less variety and low quality of vehicles being assembled in Pakistan.[8] As a local captive market was available to the manufacturing sector, so it was least incentivised to move to the high value chain especially in textile. The existing manufacturing sector of Pakistan can at best be characterised by low adaptation of advanced technology, low competitiveness, low value added, and low quality product segments in exports.[9] Tariff structure is sometimes an easy prey for shifting the blame for such deficiencies of industrial sector. Recently, Pakistan has come up with a 'National Tariff Policy' with objectives of simplification, strategic protection of industry, imports substitution and pro-growth tariff structure.[10]

Pakistan's export growth is almost stagnant since last many years. GDP growth is not keeping pace with the growing population. The industrial production has become less competitive with the passage of time and despite protection to several sectors of manufacturing through tariff and exemptions to their inputs from import levies, Pakistan has not been able to put itself on the trajectory of sustainable growth. The economic growth is not function of tariffs in the true sense[11] but there is need to analyse tariff structure with a view to identify tariff-related factors inhibiting growth and competitiveness. This paper is an attempt to critically study the broad contours of the existing tariff structure of Pakistan and identify areas for policy intervention to make tariff pro-growth.

The paper is structured as follows. The introductory section shall follow literature review in Section II. The broad contours of existing tariff structure shall be delineated in Section III. The next Section (Section IV) is devoted to analysis and discussion on protection, exemptions, and revenue generation functions of Pakistan's Tariff with a view to draw lessons. Section V shall give conclusion and policy options.

[8]Pakistani automotive industry is dominated by three Japanese assemblers since last thirty years. Due to currency depreciation in the last two years, there is price increase ranging between 40 to 55 percent pointing towards lack of localisation by these assemblers. Competition from new entrants can, however, disrupt the industry as it happened in motorbike manufacturing (Cars and Competition disruption by Ali Khizar, *Business Recorder*, Feb 23, 2020).

[9]Due to high rates of protection on output goods domestic value added of many industries has historically remained very low.

[10]The National Tariff Policy 2019-24 has now formally been approved by the Cabinet. The said policy talks of principles and objectives already followed or at least said to be pursued officially but the point is whether the revenue imperative of tariff may recede in the short to medium term in view of low tax compliance, weak tax capacity to collect inland taxes and conditionality of IMF to meet revenue targets.

[11]Capital, labour and total factor productivity (TFP) are basically the ingredients of economic growth. Institutions are also considered deeper determinants of economic growth but lower tariffs are also a factor of competiveness. It is in this context that WEF Global Competitiveness Report compares nations on the ladder of competitiveness against host of factors including tax rates.

2. LITERATURE REVIEW

The story of tariffs starts with 'infant industry argument' which is based on the proposition that developing countries, being late comer in the industrialisation process, need to protect their nascent industries from foreign competition. And if not protected, their industries shall be at disadvantage in the market due to uneven competition as activities of new firms are mostly costly compared to established firms. Higher cost of production for new firms creates a situation in which they cannot set prices of their goods high in free trade environment to recoup initial investment. Connected to the infant industry argument is the idea that there is lack of reciprocity in trade relations between developed and developing countries as developed industrial countries selectively implement the idea of comparative advantage. Rich countries advocate for a broad- based reduction in tariffs in less developed countries but they simultaneously employ protectionist policies against the import of primary products from the periphery. So there is unequal dynamics in 'core –peripheral relations' and in order to correct this imbalance, there is a valid case for policy of import substitution through tariff protection to local industry (Prebisch, 1959).

Economic history of industrialised countries is also brought in aid of infant industry argument. It is argued that today's developed countries practised significant degrees of protectionism for long periods and tariffs were used as part of 'selective industrial policy'. Professor Chang in one of his papers (Chang, 2009) writes: *"Britain and the US-the supposed homes of free trade- had the world's highest level of tariff protection during their respective catch-up periods (45-55 percent). This was no coincidence. Robert Walpole, the so- called first British Prime Minister, is credited to have been the first person to launch a comprehensive infant industry programme in 1721, strongly influencing Alexander Hamilton, the first Treasury Secretary of the US, who first developed the theory of infant industry protection. The targeted protection that Germany and Sweden provided to their nascent heavy industries in the late 19th and early 20th centuries are well-known, but even Belgium, one of the less protected economies, provided targeted protection. In the mid -19th century, when the country's average industrial tariff was around 10 percent, the textile industries had tariff rates of 30-60 percent and the iron industry 85 percent".*

The reason for rapid economic development of East Asian countries is also at least partially attributed to liberal use of industrial policy and application of tariffs for protection of local industry. This argument finds mention in the work of some leading economists of today. For example, Greenwald and Stiglitz are of the view that widespread presumption that free trade is good for growth is not vindicated by the development experience of successful countries as most of the successful countries like East Asian countries and USA used trade restrictions as explicit part of their growth strategies. They support use of tariffs as an instrument of trade policy but suggest that tariffs should be broadly and uniformly applied to industrial products instead of 'picking winners' by supporting particular industries as policy of picking winners is susceptible to creation of special interest groups vying for sustaining particular tariffs beyond their natural economic life (Greenwald, 2006).

Some economists,[12] considered staunch supporters of free trade, however, do not subscribe to the infant industry argument in case of development of East Asian countries

[12]Paul Krugman, Jagdish Bhagwati and Arvind Panagariya are few names to mention in this regard.

on the ground that their development strategy was basically 'breakaway from the infant industry model'. According to them 'free trade' rather than 'protection and use of industrial policy' must be credited with boosting economic development of East Asian Tigers. Improved export incentives like duty-free inputs used in exports, exemption from indirect taxes, and elimination of overvalued exchange rates enhanced the profitability of not only existing export products but also potential export products in these countries. For example, initially wigs and human hair were entirely absent from South Korea's export basket but by 1970, they came to account for 10.1 percent of its total exports (Panagariya, 2019).

The success of Asian Tigers is primarily attributed to three key principals of industrial policy (Cherif et al, 2019). These principles were: (1) state intervention to fix market failures; (2) export orientation; and (3) the fierce pursuit of competition both foreign and local with strict accountability. Their success was not merely due to ISI rather export orientated policies of 1970s actually made the difference. In order to make their point, Cherif et al draw comparison of growth of Proton and Hyundai. The Malaysian government established proton with the objective to create local supplier cluster but Proton did not manage to export substantial number of cars in comparison with Hyundai as business model of Hyundai was export-oriented. So their point is that export orientated policies rather than ISI do explain miraculous success of Asian Tigers. The literature also suggests (Nathan, 2019) that shift of South Korea's economy to higher value added was due to 'investment incentives' and 'availability of imported intermediaries' rather than 'overt protection of domestic market of finished goods'.

The literature on tariff has also explored nexus between tariffs and economic growth. Most tariffs reduce growth both in the short-run as well as long-run (Osang & Pereira, 1996). Trade reforms which significantly reduce tariffs have a positive impact on economic growth, though effect is heterogeneous across countries (Irwin, 2019). For example, importing certain intermediate goods was outrightly banned under India's import substitution policy before liberalisation in 1990s whereas for number of input goods either licencing requirements were in place or import tariffs were high. In a bid to liberalise, India reduced average tariff rate from 90 percent to 30 percent during 1991 to 1997. This drastic reduction contributed to imports of input goods which more than doubled between 1987 and 2000. Resultantly, product space of firms increased and it is estimated that 30 percent of growth in new products was due to lower tariffs on input goods (Goldberg, et al. 2008). The Indian experience thus provides support to economic growth through 'variety in, variety out model'.

Domestic firms benefit from lower tariffs through access to cheaper, more sophisticated and new types of inputs goods from aboard (Rivera-Batiz & Romer, 1991; Romer, 1994). All types of tariff reductions, however, should not be expected to increase economic growth at the same rate and level. For example, reducing tariffs on final consumption goods is more welfare-enhancing for consumers but may not necessarily increase a country's potential growth in the same way as reduction in tariffs on capital and input goods may do by augmenting capital stock and improvement in technology. The countries which reduced tariffs on input and capital goods witnessed high growth accelerations compared to countries that reduced tariffs on consumption goods or the overall average tariff. The estimates of a study (Estevadeordal & Taylor, 2013) based on aggregate data of over 70 countries suggest that 25 percent reduction in the tariff on

capital and input goods increased economic growth for 'liberalisers' in the range of 0.75 to 1 percent compared to 'non-liberalisers' and there was clear divergence in the trajectory of growth of liberalisers and non-liberalisers.

The literature has also explored link between 'imported inputs' and 'productivity'. A study based on product-level data of Hungarian manufacturing firms for the period 1992-2003 has found that imported inputs have large productivity effects (Halpern et al, 2015). The said study hypothetically estimates that increasing the share of imported inputs from 0 to 100 percent increases productivity by 11 percent. Effects of tariff reduction on import of inputs and final goods in case of Indonesia, a comparable country with Pakistan, have also been documented ((Amiti &Konings, 2007). Results show that largest gains in productivity are associated with reduction in tariffs on imported raw materials or input goods. A 10 percentage point reduction in tariffs on final goods increases productivity by about 1 percent whereas an equivalent decrease in tariff on input goods leads to 3 percent productivity gain to for all domestic firms and an 11 percent productivity gain for importing firms. So at least there is a case of elimination/ reduction of tariffs on input goods. Reduction in tariffs at least improves productivity in following two ways. One, competition forces firms to become more efficient and reduce their costs to compete in the same market. Second, reduction/removal of tariffs on input goods gives domestic firms access to array of less expensive raw materials for producing output goods and help improve efficiency through the channels of lower prices, increased quality and increased variety of inputs. Reduction in input tariffs is also associated with better export performance. Access to cheaper and more varied inputs makes exporting firms more competitive. Evidence suggests positive impact of input tariff reduction on export market diversification, export survival, and export value (Cruz & Busolo, 2015). Evidence also suggests that firms in industries with greater input tariff reductions have higher probability to become exporters (Bas, 2012). Results of a paper in the context of Pakistan also suggest that input tariff reductions could boost Pakistani exports. On average 1 percent increase in the import of input goods increases the value of exports by 0.625 percent (Nida & Rabia, 2019).

Another strand of literature on tariffs has explored relationship between tariff reduction and consumer welfare. In this regard, a study done to examine effects of tariff reduction on import of vehicles in Colombia is worth mention. Prior to 1990, the automotive industry of Colombia was dominated by just three firms who were just assemblers.[13] They imported CKD kits which represented about 70 percent of the assembled car. In 1991, the Colombian government authorised entry of new assemblers and reduced tariffs both for CKD and CBU vehicles. The firms were allowed to assemble as many models as they could. Due to tariff reduction and liberalisation, new entrants entered into Colombian market. The new entrants acted just as importers of ready- to-sell vehicles in the market. As tariffs were reduced, previously unavailable cars entered into the market and prices dropped. As a result, consumer welfare increased to the tune of US$ 3000 but gains were mostly due to increase in variety of vehicles (Tovar, 2012).

The impact of gradual elimination of 20 percent tariff on 'printers' in India has also been documented and results suggest that out of low prices, higher quality, and

[13]Their case seems very similar to that of Pakistan where assembling of vehicles is dominated by three Japanese assemblers.

greater variety, more gains were from higher quality of printers while contribution of price was slightly smaller (Sheu, 2014). So reduction in tariffs on cars by Colombia and printers in India suggest that liberalising imports increases consumer welfare not only through the channel of price but also through channels of variety and quality which in some cases are more important than the price channel.

Tariffs have also got macroeconomic consequences. Using a panel of annual data of 151 countries spanning over 1963-2014, IMF economists (Furceri, et al. 2019) suggest that tariff increases have adverse domestic macroeconomic and distributional consequences. They find empirically that increases in tariff reduce output and productivity, increase unemployment and inequality, and real exchange rate tends to appreciate as a result.

So the story of tariffs which started with the 'infant industry argument' tilts towards the opposite in the light of empirical studies which view tariffs not less than a sin and suggest salubrious effects of tariff reduction on industrial growth, productivity, exports, and consumer welfare. The trade revenues which are an integral part of the story in developing countries like Pakistan are generally missed in such studies while making a case for tariff reduction or elimination. Reduced use of tariffs means decreased usage of one of the administratively easy-to- collect taxes (Emran & Stiglitz, 2005). Tax revenues from personal income taxation are correlated with urbanisation, implying that in countries with large population residing in rural areas, revenue from domestic taxes cannot be that high (Tanzi, 1987). Moreover, it is not easy for developing countries to collect revenue from personal income tax due to slippages, non-documented economy, exemptions of certain sources of income like agriculture due to political economy issues, and weak tax machinery.

Further, any economic reform involving immediate loss in current revenue entails political and financial risks (Gordon, 2009). The VAT (sales tax in case of Pakistan) may not be an efficient tax and can lower growth and increase unemployment. VAT is regressive in nature but through import tariffs, a type of progressivity can be introduced by imposing higher tariffs on luxury goods consumed by the rich (Stiglitz, 2009). The recovery or replacement of lost trade tax revenue is hard to recoup in poor and developing countries as compared to middle and high income countries (Baunsgaard & Keen, 2010). In a nutshell, we can say that theoretically there is a good case for tariff elimination/ reduction at least on input goods due to massive benefits in the shape of productivity, export promotion, and economic growth but overall tax structure and revenue considerations cannot be altogether ignored while undertaking tariff rationalisation in a developing country like Pakistan.

3. OVERVIEW OF TARIFF STRUCTURE

3.1 General Overview

Pakistan Customs Tariff is based on Harmonised Commodity Description and Coding System i.e. Harmonised System (HS) 2017 comprising of 21 Sections and 97 Chapters. Chapter 98 pertains to Services (federal excise rates) and Chapter 99 is for special classification provisions.[14] The existing tariff structure has 5 slabs of 0 percent, 3

[14]Chapter 99 of Pakistan Customs Tariff provides tariff concessions for variety of purposes like educational, research, health, diplomatic, and export processing zones etc.

percent, 11 percent, 16 percent and 20 percent slabs.[15] A new slab of 0 percent was introduced in 2019-20. Rates of CD of 30 percent and above are special rates generally for auto sector and alcoholic beverages. Edible oil, gold, silver and mobile phones are subject to specific rates of customs duty. Pakistan Customs tariff has total 7356 tariff lines. Above one third tariff lines fall under 0 percent and 3 percent slabs and one third tariff lines under the slab of 20 percent. (Table I).

Table I

Coverage of Tariff Lines Under Various Tariff Slabs

Sr.#	Tariff Slab	No. of Tariff Lines	No. of Tariff Lines (%)
1.	0%	1639	22%
2.	3%	1132	15%
3.	11%	1064	14%
4.	16%	566	8%
5.	20%	2448	33%
6.	30%	33	0%
7.	35%	280	4%
8.	50%	41	1%
9.	55%	16	0%
10.	60%	25	0%
11.	75%	14	0%
12.	90%	17	0%
13.	100%	31	0%
14.	Specific	48	1%
	Total	7356	

Source: Pakistan Customs Tariff (2019-20).

The number of tariff slabs, lowest rate of CD (floor) and highest rate (ceiling) have almost changed every year reflecting elements of inconsistency and uncertainly in tariff policy. The number of slabs, floor (minimum tariff rate) and ceiling (maximum tariff rate) for the last five years have changed as follows (Table II).

Table II

Change in Number of Tariff Slabs over Years

FY	No. of slabs	Floor	Ceiling
2012-13	8 to 7	0%	35% to 30%
2014-15	7 to 6	0% to 1%	30% to 25%
2015-16	6 to 5	2%	25% to 20%
2016-17	4 to 5	3%	20%
2019-20	4 to 5	0%	20%

Source: Various issues of Pakistan Customs Tariff 2012-13 to 2019-20.

[15] In total, there are 14 tariff slabs but more than 95 percent of imports are covered under 5 slabs.

The tariff is based on the principle of 'cascading' which means that import duty on raw materials/input goods shall be charged at lower rates whereas output or final goods should be subject to higher slab of duty. In the present scheme of things of Pakistan Customs Tariff, tariff slabs of 0 percent and 3 percent cover 2771 tariff lines of primary raw materials whereas tariff slabs of 11 percent and 16 percent generally cover semi-finished goods which are input goods for some producers while for some other producers, they may be output goods. For example, yarn is output good produced by spinning units of textile while for garment producers yarn is an input good. Similarly, HRC steel coils are input goods for the manufacturers of CRC while HRC manufacturers can use it as output good in line pipe manufacturing. In cases where a product is input for one sector while output for another, deviations from the cascading principle occur while setting tariff for such goods. Generally, cascading principle is the basis of tariff setting but deviations from this principle exist in tariff. The roots for such deviations can be traced in protectionism, political economy factors, or rent-seeking. The existing tariff of Pakistan broadly aims at protection of local industry through high tariff on output goods, concessions and exemptions for import substitution and export promotion, and revenue generation.

3.2. Protection Through High Tariff Rates

Pakistan followed protectionist policies from the very beginning on the strength of infant industry argument which was in fashion in 1950s. Effective rates of tariff were kept high to protect local industry. In 1963 effective rate of tariff protection to manufacturing sector was 271 percent, higher than many developing countries (Table-III).

Table III

Protection in Some Selected Countries in 1960s

Year	Country	Effective rate of protection
1960	Mexico	26
1965	Philippines	61
1966	Brazil	113
1961	Chile	182
1963	Pakistan	271

Source: Bela Balassa, 1971.

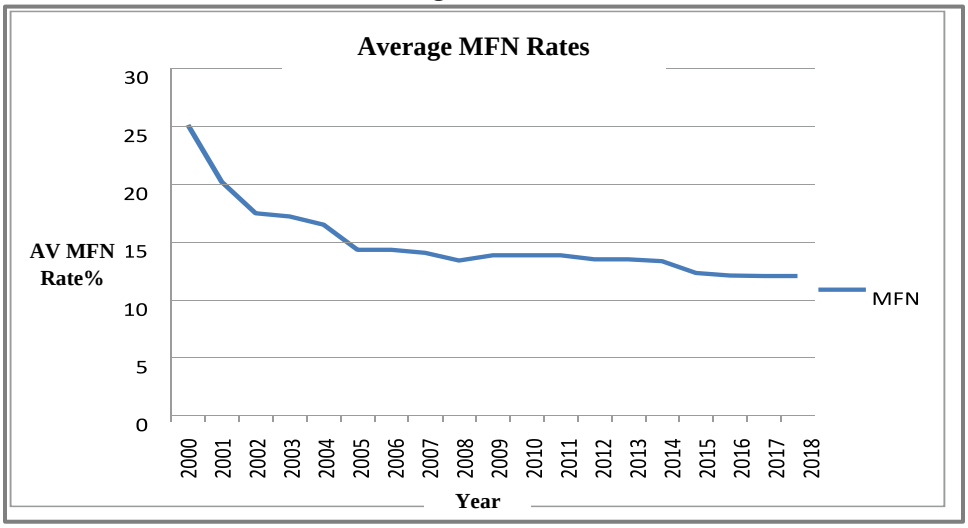
About 50 years ago, Nyrop wrote about the situation of industry in Pakistan as follows:

> "Industry is thin, overprotected, undertaxed and largely concentrated in the hands of a very restricted group. Because profits were, and continue to be high and opportunities were sufficient, private enterprise had ,at least until recently little incentive to venture beyond the areas of commerce, banking ,and import-substitution industry" (Nyrop,1971).

Manufacturing in particular remained heavily protected though it registered decline in effective protection rates since 1980s but compared to agriculture and services sectors, manufacturing import competing sectors still enjoy higher protection. A clear bias is visible

for manufacturing sector over agricultural and services sectors (Nadeem & Siddique, 2017). Pakistan, however, embarked on liberalisation programme since 1990s and gradually made drastic reductions in tariff rates. In year 2000, average MFN rate was around 25 percent which in year 2018-19 is 12 percent, so a reduction of over 100 percent occurred in MFN rates during this period. During 1990s, both international trade and government revenues were stagnant. Around 70 percent of government revenue was import-related. With the reduction in rates, both trade and revenue witnessed a quantum jump.

Decrease in Average Tariff Rates Over Years



Source: Indexmundi (https://www.indexmundi.com) and WTO Tariff Profiles for various years.

Despite huge reduction in average MFN rates, the fact is that the tariff slab of 20 percent still covers the highest number of tariff lines. The tariff slab of 20 percent or higher generally apply to the goods 'manufactured locally' and high rate of tariff is meant to protect these industries from foreign competition. In total 2448 tariff lines fall under this slab implying that revenue generation and protection of local industry are important objectives of existing tariff structure and perhaps consumer welfare is not assigned much weightage in tariff setting process. Slabs higher than 20 percent are specifically meant to protect the auto industry where completely built units (CBUs) /vehicles attract maximum rate of customs duty to protect local assemblers of vehicles and their vendors.

Besides customs duty, additional customs duty (ACD) and Regulatory duty (RD) are also charged at the import stage in numerous cases. These duties basically serve three purposes i.e. protection of local industry, import compression to fix balance of payments issue and revenue generation.ACD was increased in the budget for FY 2019-20 as a 'revenue measure' from flat rate of 2 percent to 2 to 7 percent. CD slabs of 0-11 percent were subjected to ACD @ 2 percent, whereas slab of 16 percent and 20 percent were subjected to ACD @ 4 percent and 7 percent respectively. ACD is, however, not levied on imports under several exemption SROs and schedules.[16]

[16]For example imports under 5th schedule to the Customs Act, 1969 which provides concessionary rate of CD to various goods and industrial inputs is not subject to ACD.

RD has also traditionally remained an important tool of protection and import compression. In 2017, 08 various SROs of RD covering 1194 tariff Lines were merged into a single SRO 1035(I)/2017 dated 16.10.2017. This SRO subjected 1505 tariff lines to RD. In FY 2018-19, RD regime was extensively reviewed and new SRO 640(I)/2018 dated 24.05.2018 covering 1691 tariff lines was issued and finally at the time of budget for the FY 2019-20, RD regime was again reviewed and SRO 680(I)/2019 dated 28.06.2019 imposing RD on 2075 tariff lines was issued. Officially, it is claimed that focus of RD is not revenue generation and RD is meant to fix balance of payments issue by reducing import of luxury goods but for all practical purpose RD serves the motive of revenue generation at least in the short to medium term (Pursell et al, 2011) but imposition of RD rather than increasing revenue generally proves counterproductive as overall customs revenue falls due to decrease in legal imports. The increasing scope and coverage of RD and ACD with each passing year points towards the fact that they are now being used not only as protectionist tools of tariff policy but for revenue generation at import stage, though overall revenue of customs may fall in the medium to long-term due to said levies. Since 2015-16, over 5000 tariff lines are subject to ACD whereas 1309 tariff lines were subject to RD in 2015-16 which increased to 2075 tariff lines in 2019-20 (Table -IV).

Table IV

Expanding Coverage of ACD & RD

Year	No. of Tariff lines where ACD charged	No. of Tariff lines where RD Charged
2015-16	5535	1309
2016-17	5741	1505
2017-18	5996	1682
2018-19	5888	1994
2019-20	5521	2075

Source: SROs of RD and ACD and PRAL data.

There is lobbying from local manufacturers through their Associations and concerned Ministries for levy of these duties on imports. Pressures are applied by protectionists and political economy considerations are at play for imposition of RD to provide shield to the local industry against foreign competition. The liberal use of ACD and RD are aberrations from the normal tariff structure and tariff policy applying such tools of protectionism does not necessarily reflect the interests of the consumers and general public. Lobbying and pressures by special interest groups reminds of 'protection is for sale model' (Grossman & Helpman, 1992) where interest groups bid for protection and influence the government to use trade policy to transfer income though protection.

3.3. Revenue Imperative

Over the years, Pakistan has developed a system of collection of direct taxes in the mode of indirect taxes. Withholding tax (WHT) , which is income tax for all theoretical and parctical purposes , is collected at import stage @ 6 percent[17] which simply means that it is not being charged against income but against 'imported goods' from which the importer has not yet earned any income. Similarly sales tax is also collected at import stage @ 17 percent with some exemptions and in certain cases reduced rates. The

[17]In case of non-filers existing rate is double i.e. 12 percent.

multiplicity of taxation at import stage points towards not only high incidence of taxation but complexity of the taxation structure of Pakistan. On average, 45 to 50 percent of total revenue of FBR is customs-dependent. Out of this collection major chunk is of sales tax and withholding tax as amply clear from the data tabulated below (Table V).

Table V

Revenue Collection of Import Stage

Year	Total FBR Revenue Collection of FBR	Revenue Collection at Import Stage	Revenue Collection at Import Stage (%age)	*Part of CD in Revenue Collection	Part of CD in Revenue Collection (%age)
2014-15	2059	1023	50	306	15
2015-16	3112	1273	41	405	13
2016-17	3361	1371	41	497	15
2017-18	3844	1651	43	608	16
2018-19	3828	1732	45	686	18

Source: Various issues of Pakistan Year Book.

* It includes amount of ACD & RD as well.

Thus customs import duties are not solely responsible for high tax burden at import stage. High incidence of taxes at import stage motivates firms to underdeclare, misdeclare, misinvoice, and smuggle. Two perennial problems of Pakistan Customs i.e. under- invoicing and smuggling are largely due to high incidence of taxes on imports. The literature suggests that tariff rates have positive effect on import tax evasion (Mishra, et al. 2007). A one percentage point increase in tariff rate tends to increase trade gap by 0.6 percent and in case of differentiated goods increase in trade gap is around 2.1 percent (Javorcik & Narciso, 2007). Findings of another study suggest that one- percentage-point increase in the tax rate is associated with a three-percentage-increase in evasion (Fisman & Wei, 2004).

In case of Pakistan, estimates suggest losses of more than $92.7 billion due to misinvoicing during 1972 to 2013 for 52 major traded commodities. The gross revenue loss to the national exchequer is estimated at $21.1 billion during said period. The annual average net revenue loss is estimated around 11.2 percent of revenue from tariffs (Qureshi & Mahmood, 2016). Pakistan Business Council (PBC, 2014) estimates losses of Rs.150 billion each year due to under-invoicing whereas total loss due to under-invoicing, smuggling, and misuse of concessionary regime is estimated at Rs.600 billion per annum. There are guesstimates that under invoicing through Chinese border is causing loss of revenue in the range of US$ 4 to 6 billion per annum.[18]

Increase in tax rates or additional levies have been used as tools of tariff policy under the assumption that increase in tariff rate or additional levy shall increase revenue in a simple linear relationship. This premise is fundamentally a fallacious assumption. Increase in import tariffs not only reduces competitiveness of businesses but also promotes tariff evasion through misdeclaration, under- invoicing, smuggling, and corruption.

[18]Refer to 'Pakistan asks China to provide real-time data to avoid under-invoicing' , *The News* , Dec. 12, 2019.

3.4. Concessions and Exemptions

The concessions and exemptions may broadly be divided into three categories. First category of concessions is meant for import substitution through encouraging local manufacturing protection to various sectors of economy. The firms are allowed to import input goods on concessionary rate i.e. below statutory rate. These concessions/ exemptions are available to auto sector, CRC manufacturers, fan manufacturer, assemblers of home appliances, manufacturers of fertilisers, pharmaceuticals, textile sector, plastic product manufactures, leather and tanning, manufacturers of diapers, mobile phone manufacturers, and manufactures of optical fiber etc. under various SROs[19] and 5th schedule of the Customs Act, 1969. These concessions are generally available subject to certain conditions like quota determination by IOCO or certification by some Department/Agency.

Second category of exemptions relates to general exemptions under chapter 99 of Pakistan Customs Tariff. These exemptions are available to foreign dignitaries and foreign organisations, imports by charitable, educational and scientific institutions, hospitals, export processing zones and special economic zones etc. These exemptions are available on fulfillment of certain conditions like certification from relevant regulatory departments and Ministries to the effect that goods shall be used for the purposes they have been imported for.

There are several schemes for exporters which allow duty-free import of inputs used in output goods meant for exports. These schemes facilitate main export sectors like textile, leather goods, sports goods, surgical goods, carpets, footwear, engineering goods, metal products etc, in particular. In all these schemes, duties and taxes on imported goods which are used in output goods meant for subsequent exports enjoy exemption from payment of duties and taxes against certain conditions. The existing schemes which provide concessionary tariff for export promotion are briefly as follows.

The manufacturing bonds (MBCO) scheme allows manufacturer-cum-exporters to import duty-free inputs for subsequent export of value added products. The firm is required to obtain a licence for availing this scheme which is granted subject to fulfillment of certain conditions laid down in the customs rules. The firm is also required to obtain a certificate called "analysis certificate" from IOCO which allows importing firm to import duty- free inputs as per analysis certificate. The firm is required to give complete accountal of the input goods, output goods, and the quantum of wastage occurred during the production process. This accountal is required under the law to be furnished to the regulatory authorities in the form of regular statements/ returns. The firm is also subject to yearly audit by the Customs authorities wherein compliance of the firm to the rules and conditions of the licence, input-output ratios laid down in the analysis certificate, adherence to time period of consumption of input goods, and export of output goods is invariably checked. In case of big firms, import and export record is voluminous and audit may practically take months.

Another scheme is EOU scheme which operates under Export Oriented Units (EOU) and Small and Medium Enterprises Rules. This scheme not only allows import of

[19]For example SROs 656 (I)/2006 and 655(I)/2006 respectively provide exemption from CD to OEMs of automotive manufacturers and their vendors while SRO 565 (I)/2006 provides exemption from customs duty on raw materials, sub- components, sub-assemblies, and assemblies for local industries.

duty and tax free input materials but also allows duty and tax free import of plant, machinery, equipment, apparatus, including capital goods. Besides raw materials, accessories, sub-components, components, assemblies, sub-assemblies, this scheme also allows duty and tax free import of coal, diesel, gas, furnace oil, and coke of coal used in the manufacture of output goods for export. Though scheme operates under EOU and SME Rules but rules do not define a SME and scheme is hardly availed by small and medium enterprises. The firms have to obtain licence to operate under this scheme and post-exportation audit is conducted at the close of every financial year where record of input goods, exported goods and their matching with input-output ratios is essentially checked.

The Duty & Tax Remission for Exports (DTRE) Scheme is another scheme meant for export promotion. Besides imported inputs, DTRE-holder can purchase local inputs without payment of duty and taxes. This scheme can be availed by Sales Tax registered exporters, commercial exporters, contracted vendors of foreign manufacturers and persons engaged in value-addition in export goods. This scheme also covers supplies made against international tenders, EPZs, projects entitled to duty and tax-free inputs and supplies made by indirect to direct exporters. Each DTRE approval is per se an entity and audit is conducted on utilisation of each DTRE. The bank guarantee[20] is obtained at the time of granting DTRE approval to secure the amount of taxes which is released on completion of satisfactory audit.

The scheme of temporary importation is also available to exporters. This scheme entails suspension/exemption of duties and taxes for import of accessories used for manufacture of exportable goods. This facility can be availed for duty-free imports of components, sub-components for assembly of machinery, electrical and electronic equipment, bicycles, aluminum ware, steel ware, kitchen utensils, surgical instruments, toys, decorative items, stationery items, etc. meant for exports. This scheme is easier to use compared to other export facilitation schemes. No licence is required to operate under this scheme. At the import stage post dated cheque (PDC) is secured for suspended amount of duty and taxes which is released after exports. This scheme is seemingly an easier scheme to use as it neither requires licence to operate nor bank guarantee etc.as security like that DTRE scheme. As the scheme is not importer-specific rather goods-specific, so GD is the basic unit to ascertain the level of utilisation etc. of this scheme. So while analysing utilisation level in the next section, this scheme shall not become part of discussion.

In addition to above mentioned schemes, there are schemes of export processing zones and special economic zones etc. for promotion of exports and industrialisation in the country. The scheme of export processing zone is the oldest scheme for promotion of exports but the quantum of exports under this scheme has stagnated around $ US 250 to 300 million per annum since last many years.

Despite multiple duty-free schemes, the general perception among the exporters is that they are not-easy-to-use. Elaborate documentation is required for availing them. These schemes are generally utilised by established firms, whereas

[20]The type of financial instrument has got implications from the perspective of cost for business. In case of bank guarantee, the exporter has to bear financial costs as he has to pay charges for the trust reposed in him by the bank. In case of PDC, no such cost is involved.

small and medium enterprises and entrepreneurs find them difficult to use.[21] They buy raw materials and industrial inputs from open market through commercial importers. It increases their cost of production, thus rendering them at disadvantageous position in comparison to large firms which besides benefitting from such schemes have also got an inbuilt advantage over small firms in the form of economies of scale.

3.5. Where does Pakistan Stand in the Region?

Pakistan followed policy of protectionism but in the regional scenario especially compared to India and Bangladesh, Pakistan fares well in terms of tariff rates. In 2018, average MFN rate of Pakistan is 12.1 whereas for India and Bangladesh these rates respectively are 17.1 and 14 though MFN rates of China, Indonesia, Malaysia are much below than Pakistan (Table VI).

Table VI

Average Tariff Rate of Selected Countries

Country	Avg MFN Rate (2018)
Pakistan	12.1
India	17.1
China	9.8
Sri Lanka	9.3
Bangladesh	14.0
Indonesia	8.1
Malaysia	5.6

Source: Indexmundi (https://www.indexmundi.com) and WTO Tariff Profiles for various years.

Similarly when we analyse average MFN rates with respect to product groups in the region, Pakistan fares better than India and Bangladesh. Textile sector enjoys more protection in India and Bangladesh compared to Pakistan. Similarly MFN rate for machinery upon which entire edifice of industrial development is built is lower in Pakistan compared to Bangladesh and India (Table VII).

[21]For example SRO 565 (I)/2006 provides exemption of CD on 'non-grain oriented electrical steel sheet' (PCT 7225.1900) to fan manufacturers subject to quota determination by IOCO. There is a reasonable number of fan manufacturers in the country but only two to three big manufacturers avail this exemption and small and medium sized manufacturers purchase this input good from local market. In this way, exemptions or concessions provided through SROs in a sense favour the big and established concerns while new entrants and SMEs are at disadvantage.

Table VII

Average Tariff Rates of Various Product Groups

Product Group	Pakistan	India	China	Indonesia	Sri Lanka	Bangladesh	Malaysia
Minerals & Metal	11.2	11.0	7.8	7.1	8.0	12.8	7.1
Chemicals	7.9	10.1	6.7	5.3	3.0	9.7	2.5
Textiles	15.3	20.7	9.6	11.5	2.0	19.5	8.8
Clothing	19.8	20.5	16.0	23.9	0.0	24.4	0.2
Leather, Footwear etc	14.0	12.1	13.2	9.9	15.0	14.3	10.3
Non-electrical machinery	7.2	7.8	8.1	5.4	2.7	4.0	3.2
Electrical machinery	13.0	8.8	8.4	6.0	6.2	13.5	3.9
Manufactures n.e.s.	11.2	11.1	11.6	7.5	10.0	12.8	4.5

Source: WTO (2018). n.e.s. = not elsewhere specified.

If we trace the pace of liberalisation since 2000 taking average MFN rate as the proxy variable for liberalisation, Pakistan has liberalised comparatively faster than India and Bangladesh. In year 2000, the average MFN rates for Pakistan, India, and Bangladesh were respectively 25.16, 35.56, and 21.64 which in year 2018 respectively stand at 12.1, 17.1 and 14. Implication simply is that Pakistan has liberalised more compared to India and Bangladesh in last two decades. The MFN rates of other regional countries like China, Malaysia, and Indonesia were much low compared to Pakistan in 2000.Their MFN rates are lower compared to Pakistan, India and Bangladesh in 2018 as well (Table VIII).

Table VIII

Comparison of Most Favoured Nation, Simple Mean, All Products (%)

Year	Pakistan	Bangladesh	China	India	Malaysia	Indonesia	Sri Lanka
2000	25.16	21.64	16.99	36.56	9.84	8.43	9.96
2001	20.24	20.61	15.88	34.91	9.2	6.9	9.88
2002	17.53	20.67	13.11	30.59	8.33	6.91	9.88
2003	17.26	19.52	11.36	26.92	9.46	6.91	9.36
2004	16.54	18.43	10.52	29.51	13.53	6.96	10.43
2005	14.37	15.31	9.81	19.02	7.32	6.96	11.71
2006	14.37	15.3	9.87	16.8	7.67	6.96	11.5
2007	14.11	14.57	10.01	17.2	8.19	6.91	11.4
2008	13.45	14.74	9.7	12.81	8.15	6.9	11.28
2009	13.91	14.44	9.62	13.06	8.59	6.8	11.31
2010	13.91	14.43	9.74	12.51	6.67	7.39	10.41
2011	13.91	14.42	9.8	13.36	6.25	7.42	10.3
2012	13.56	14.58	N/A	14.04	6.25	7.36	10.47
2013	13.55	13.93	N/A	13.93	6.26	7.22	N/A
2014	13.39	13.88	9.67	13.16	5.12	N/A	9.65
2015	12.38	13.88	11.04	13.72	N/A	N/A	8.29
2016	12.16	13.9	10.93	13.75	5.78	7.88	10.26
2017	12.1	13.9	11.01	N/A	5.8	8.1	8.1
2018	12.1	14	9.8	17.1	5.6	8.1	9.3

Source: Indexmundi (https://www.indexmundi.com) and WTO Tariff Profiles for various years.

So the point emerges that Pakistan provided protection through tariff, devised several schemes of exemption of duty and taxes for export promotion and its average MFN rates are lower at least compared to two regional comparators i.e. India and Bangladesh but its exports have stagnated. The pace of industrial growth is slow and competitiveness is eroding in the international market. Manufacturing industries are lagging behind in terms of technological advancement and adaptation causing low value added and low quality export products

(Mahmood, et al. 2009). Part of explanation lies in protectionism itself as due to lack of competition from abroad firms were least incentivised to upgrade their processes as happened in case of textile sector. Factors like lack of skilled workforce, electricity and gas shortages etc. are also partly responsible for low productivity of manufacturing sector but role of import substitution policies and tariffs also cannot be ruled out (Mahmood et al, 2007). The trade liberalisation proxied by import duties has positive though negligible effect on the TFP (Ahmed, et al. 2017). The tariffs have aimed at short-term gains of revenue at the expense of sustainable economic growth and the complexity of tariff structure and not-easy-to-use export promotion schemes are certainly responsible for slow industrial growth and exports.

4. ANALYSIS AND DISCUSSION

4.1. Protection

Traditionally, broad objectives of Tariff in Pakistan have remained import substitution, export promotion through protection by keeping high rates of tariff on output goods, reduced rates or exemptions of import duties on raw materials/input goods, and revenue generation. The current tariff structure places finished goods, generally manufactured locally, under the highest slab of 20 percent. This slab is also subject to highest rate of additional customs duty (ACD) of 7 percent and numerous output goods falling under this slab are also subject to regulatory duty (RD). Protection of locally manufactured goods is a clear objective of tariff policy. CGO 2/2017 provides a list of 1106 locally manufactured goods, which even if otherwise eligible for exemption or concession through some SRO, are not entitled for such concession or exemption in import duties. Two sectors i.e. textile and auto in particular have enjoyed and still enjoy heavy protection.

Yarn, fabrics and garments have high incidence of duty and taxes at import stage to protect local manufacturers. Yarn is currently subjected to 5 percent[22] CD, 2 percent ACD, 5 percent RD, 17 percent sales tax at import stage and 1 percent WHT, so the total incidence of duty and taxes at import stage comes to 30 percent. In case of cotton fabrics incidence is around 55 percent (CD 20 percent, ACD 7 percent, RD 10 percent, ST 17 percent and WHT 1 percent). The readymade garments classifiable under chapter 62 and 63 of Pakistan Customs Tariff are subject to 20 percent Customs Duty, 7 percent Additional Customs duty and 10 percent regulatory duty in addition to 17 percent Sales tax and 6 percent withholding tax. The total impact of duty and taxes is thus around 60 percent. Even the garments imported in old and used condition are subject to 3 percent CD, 2 percent ACD, 10 percent RD, 5 percent sales tax and 6 percent WHT, thus bringing the aggregate incidence to 26 percent which is to be paid by the poorest of the poor. The output goods are subject to high incidence to give protection while input goods are either duty-free or enjoy concessionary rate of duty and taxes. Several schemes mentioned in the previous section are also available to this sector which allow duty-free import of input goods and machinery.

Despite all protection, textile sector's share in the GDP and exports is almost stagnant and this sector has not been able to increase its share in value addition, diversify product range or boost exports despite having preferential access to European market through GSP+ etc. So problems are basically of supply-side. Shield from foreign

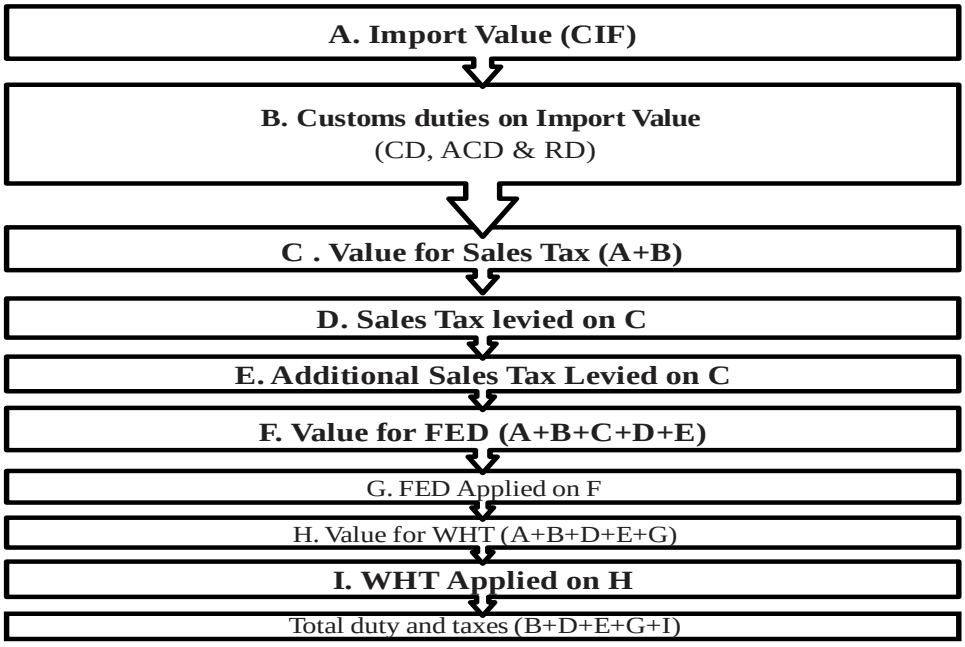
[22]Statutory rate is 11 percent but 5th Schedule provides concessionary rate of 5 percent.

competition to this sector has provided a captive local market with little incentive to improve quality, upgrade technology and invest in R&D. The protectionism based on infant industry argument, without an exit strategy and sunset date, hardly guarantees success in the long-run as vindicated by textile sector of Pakistan. The beneficiaries of protectionism get accustomed to reaping windfall profits and Protectionism as strategy of industrialisation, if left open, may turn out to be counterproductive for long-term economic growth.

The other significant example is of auto sector where protection has been provided through tariff on import of new vehicles in CBU condition. Custom duties range from 50 percent to 100 percent, ACD 7 percent, RD from 15 percent to 90 percent , Sales tax 17 percent, WHT 6 percent in addition to federal excise duty ranging between 2.5 percent to 30 percent. The total incidence of duty and taxes in the maximum slab of vehicle if imported in CBU condition comes to around 250 percent.

4.2. Import Levies on Tariff - Inclusive Price

Withholding taxes, sales tax and federal excise taxes etc. are calculated on the tariff-inclusive price[23] which means that incidence of import taxes and protection are implicitly higher than visible from tariff rates given in the code. A flow chart showing calculation of various import levies is as follows:



[23]The Customs Value is determined in accordance with provisions of Section 25 and 25 of the Customs Act,1969. The provisions of section 2 (46-d) of Sales Tax Act,1990 provide that value for sales tax purposes would be the value determined under Section 25 or 25 A of the Customs Act,1969 plus the CD of all species. Section 148(9) of the Income Tax Ordinance, 2001 provides that value of goods for the purposes of WHT means the value of goods as determined under the Customs Act,1969 as if the goods were subject to ad valorem duty increased by the Customs-duty, federal excise duty and sales tax if any payable in respect of the imported goods.

Let us do little math to understand the intricacies of tax assessment at import stage on tariff- inclusive price to draw inferences. Let us take example of a luxury vehicle of over 30000 CC having hypothetical import price of US $ 40,000. The calculation of different duties and taxes at import stage is as follows (Table IX).

Table IX

PCT 8703.2340 (Cars & Jeeps above 3000 CC)

	Head	Rate of Duty	Amount (Rs)
A	Import Value US $	US $	40,000
B	Insurance	1%	400
C	Import Value + Insurance		40,400
D	Freight	1%	404
E	CIF Value (A+B+D) US $		40,804
F	Import Value in Pak Rupees (@155)		6,324,620
G	CD	100%	6,324,620
H	ACD	7%	442,723
I	RD	70%	4,427,234
J	Value for ST (F+G+H+I)		17,519,197
K	ST	17%	2,978,264
L	AST	3%	525,576
M	Value for FED (J+K+L)		21,023,037
N	FED	30%	6,306,911
O	Value for WHT (M+N)		27,329,948
P	WHT	12%	3,279,594
Q	Total duty & taxes		24,284,922
R	Share of import duties in total taxes		46% (approx)
S	Share of other taxes at import stage		54% (approx)
T	Taxes other than import duties on tariff-inclusive price (ST, AST, FED, & WHT)		13,090,344
U	Other taxes on tariff-exclusive price	62% of import value	3,921,264
V	Difference (T-U)		9,169,080

Total duty and taxes come to Rs.24.3 million based on calculation of taxes like sales tax, FED and withholding tax on the basis of tariff-inclusive price out of which Rs.13 million are approximately other than customs duties leviable at import stage. If calculations are made on tariff-exclusive price, then quantum of other taxes is just around Rs.3.9 million. The difference in calculation method gives difference of over Rs.9.2 million. Tax assessment on the basis of tariff-inclusive price has, however, been given legal cover under the relevant statutes and this method is in line with other countries where revenue from import stage is a major consideration**.**

In case of import of a small car of 800CC to 1000CC having hypothetical price of US $ 5,000 (around 0.8 million in Pak rupees), duty and taxes calculated on tariff-inclusive price are over Rs.1.1 million out of which share of customs duties is

approximately 54 percent while of other taxes is 46 percent . The amount of import levies other than customs duties is Rs. 0.6 million and if calculation is made on the basis of tariff-exclusive price, the amount of taxes (other than customs duties) comes to Rs. 0.27 million. Detailed calculation is given at Annexure-A1.

Let us do some math for textile sector as well. Let us assume hypothetical import price for a container of cotton T-shirts is Rs.2 million. Total duty and taxes based on tariff-inclusive price come to Rs. 1.4 million approximately out of which taxes at import stage other than customs-duties are Rs.0.66 million. Tax assessment on the basis of tariff-exclusive price is Rs. 0.46 million. Detail is at Annexure A-2. Results are similar in case of import of a container of old clothing meant for poorest of the poor segment of the society. Let us assume hypothetical import price of a container of old and used clothing is Rs. 0.93 million. The total amount of duty and taxes comes to Rs. 0.4 million approximately out of which taxes other than import duties constitute 65 percent share (Rs. 0.26 million) on the basis of tariff-inclusive price assessment. If hypothetically these taxes are calculated on tariff-exclusive price, then the amount of taxes other than customs duties comes to Rs. 0.21 million. The detailed calculation is given at Annexure A-3.

Following points become very much visible from above exercise in math. *First*, protection in actual is high compared to the rates visible to the naked eye in the tariff code. *Second*, valuation of imported goods is closely linked to tariff structure. *Third*, incidence of duty and taxes is high at import stage with all incentive of undervaluation and misdeclaration. *Fourth*, calculation of other import levies on tariff- inclusive price shows that tariff is being used to maximise revenue collection from other taxes like sales tax, withholding tax, and federal excise duty as well.

Protection has not been provided only through tariff, protection through non-tariff barriers (NTBs) is also very much visible. A large number of tariff lines are subject to some type of condition or licence under Import Policy Order (IPO). The protection though NTBs is not subject matter of this paper, so I shall not delve into it but to make the point only reference is made to a change in IPO regarding import of old and used vehicles. Import of old and used vehicles is not allowed under the law except for expatriate Pakistanis under baggage, TR, and gift schemes. Prior to the MoC notification that remittance for payment of duties and taxes should come from the account of Pakistani national sending the vehicle from abroad, said schemes provided a little bit competition to the auto assemblers though circumvention of legal provisions. The old and used vehicles were imported by the investors on the passports of expatriate Pakistanis and then sold in the local market which filled the gap between local production of cars and demand in the market. A comparison shows that 3797 vehicles were imported under said schemes during July to December 2019 compared to corresponding period of 2018 during which 28000 vehicles were imported, thus registering a decrease of more than 86 percent in quantity terms[24] (Table XIII).

[24]SRO52 (I)/2019 was issued on 15th of January, 2019 by the MoC. So in the period July to December, 2019, condition of the remittance originating from the account of the sender of the vehicle was not there, so comparison between July-December 2018 with the corresponding period of 2019 gives a fair idea of the impact of said SRO on import of vehicles through schemes for expatriate Pakistanis.

Table X

Import of Vehicles (PCT 87.03) under Baggage TR and Gift Schemes (July to December)

(Rs. in Million)

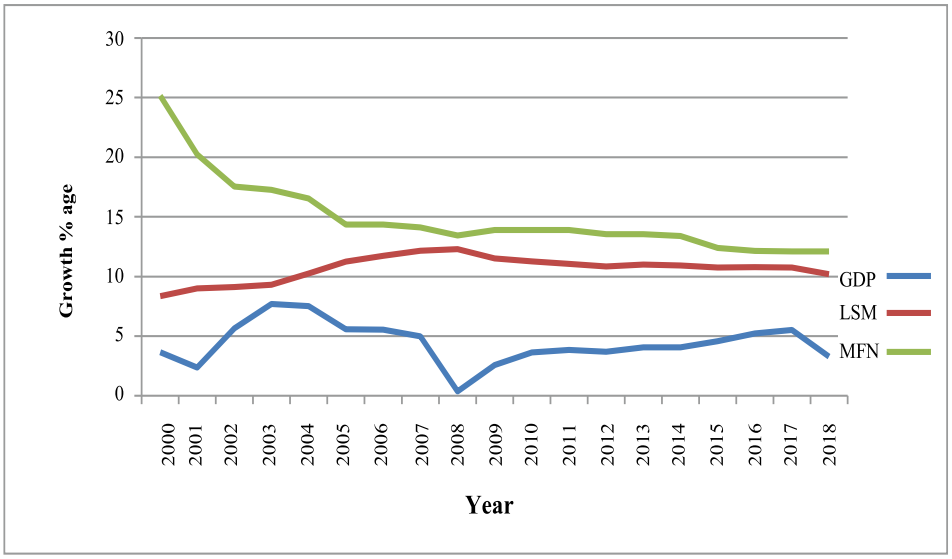
Year	2018	2019	%Growth
Quantity (in numbers)	27986	3797	-86.4
Import Value	19812	3326	-83.2
Duty and Taxes	22657	3670	-83.8

Source: FBR/ PRAL data base.

Due to protectionist policies, the auto assemblers bloated the prices of cars unnaturally and compromised on quality and safety features such as dual air bags or side impact bars etc. The deletion program was not implemented fully and even now 60 percent parts of these vehicles are being imported. In the last two years or so, protectionism of auto industry has, however, led to entry of 18 new assemblers in the market. Very few have started production yet. It is, however, premature to comment whether protection to auto sector and entry of new entrants shall increase consumer welfare through reduction in prices and increase in variety.

Can we observe any relationship in tariff rates reduction and industrial growth? Let us take large scale manufacturing growth as proxy for industrial growth and draw a graph showing average MFN rates, LSM growth rates and overall GDP growth rates. A negative correlation can be observed between reduction in MFN rates and growth rates of LSM starting from year 2000 till 2008 but after 2008 this relationship becomes bit tenuous. Eroding competitiveness due to power crisis may be a plausible explanation for weakening of negative relationship between the two variables. Interestingly, relationship between economic growth rate and MFN tariff rate reduction is, however, noisy and any pattern between tariff reduction rate and GDP growth rate is difficult to figure out.

MFN, GDP, LSM Growth Over Years



4.3. Zero Tariffs versus Exemptions

Several exemption schemes exist for export promotion Input goods are either exempt from import tariffs or attract lowest slab of customs duty but despite all this, exports of Pakistan have almost stagnated. Industrial productivity is low and competiveness of Pakistani firms is eroding. Tariff structure cannot be seen in isolation. Factors like total incidence of duty and taxes at import stage, valuation method, time taken for customs clearance, informal costs, and degree of ease in utilisation of exemption schemes are directly connected to tariff structure. The complexity of exemption schemes increases burden on firms. Low utilisation of duty exemption schemes is indicative of the fact that they are not easy to use especially for small and medium exporters. A comparison of four major export oriented schemes (MBCO, DTRE, EOUs and EPZ) shows that around 5 percent exporters, making 31 percent exports, availed these schemes in 2017-18. This number increased to around 6 percent in 2018-19 and volume of exports to 37 percent. Out of total 15000 exporters, around 5600 exporters make just up to Rs. 5 million exports per annum and if we increase export limit to Rs. 10 million , then number is above 7000 (about 50 percent) of total exporters though their volume of exports is just around 1 percent of total exports (Table-XIV, XV and XVI).

Table XI

Utilisation of Export Oriented Schemes

(Rs. In Million)

	No. of Units	Total Value of Import	Total Value of Export	No. of Units	Total Value of Import	Total Value of Export
Export Schemes		FY (2018-19)			FY (2017-18)	
Duty & Tax Remission for Export (DTRE) Scheme	242	82,520	203,996	231	67,819	171,038
Manufacturing Bond	237	106,307	262,493	214	95,933	174,303
Export Oriented Units (EOUs)	132	34,882	598,862	124	75,055	373,034
Export Processing Zones (EPZ)	210	53,226	80,727	209	43,711	71,090
Total	821	276,935	1,146,078	778	282,518	789,465
Total No. of Exporters		14,925			14,564	
%age of Exporters		6%			5%	
Total Export Value of Pakistan		3,139,462			2,562,299	
%age of Export Value		37%			31%	

Source: FBR/PRAL data base.

Table XII

Categorisation of Exporters in Terms of Export GDs FY(2018-19)

Slab	Total No. of Exporters	Count of GDs	Total Export Value (Rs. Million)
Upto 12 GDs	8,966	37,361	120,818
13 to 24 GDs	2,051	36,159	157,865
25 to 50 GDs	1,691	59,200	262,733
Above 50 GDs	2,217	660,931	2,598,046
Grand Total	**14,925**	**793,651**	**3,139,462**

Source: FBR/ PRAL data base.

Table XIII

Categorisation of Exporters in Terms of Export Value FY(2018-19)

Slab	Total No. of Exporters	Count of GDs	Total Export Value (Rs. Million)
Up to 5 Million	5,617	19,569	11,052
5 to 10 Million	1,657	14,697	12,884
10 to 30 Million	2,589	39,528	48,092
Above 30 Million	5,062	719,857	3,067,434
Grand Total	14,925	793,651	3,139,462

Source: FBR/ PRAL data base.

Presence of reasonable number of exporters, though having small contribution in total exports, has an important policy insight. These exporters are exposed to dynamics of international trade, can handle export-related documentation, and are able to search buyers in the international market. They may be credit-constrained or wary of using concessionary/ exemption schemes meant for exports. Presently, there is no separate duty and tax incentive scheme for small and medium enterprises and exporters. The EOU rules have been named as Small and Medium Enterprises Rules but hardly EOU scheme is utilised by small and medium exporters. If small and medium enterprises/ exporters become focus of policy, there is strong possibility to enhance export growth of Pakistan. Huge potential lies in small and medium enterprises which need to be tapped through SME-friendly policies and initiatives.

4.4. Cap—Cape Relation

Why does availing import-duty exemption schemes become costly? To illustrate the point, let us assume an importing-cum-exporting firm which imports input goods duty-free under a scheme of exemption. It incurs some formal and informal costs at port. Formal costs may include ground handling charges/ labour charges for stuffing and destuffing a container for examination and port charges etc. while informal expenses i.e. out of pocket expenses may include informal payments paid at the port. Let us call these formal and informal charges 'Cost at Port (CAP)'. Additionally, the firm availing an exemption scheme like manufacturing bond, EOU or DTRE has to operate under a licence. It incurs costs in terms of time and money related to issuance of licence and analysis card, record keeping, and providing monthly or quarterly statements to the regulator for audit. So under the exemption scheme, it has to incur costs additional to port costs. Let us name these expenses CAPE (Costs Additional To Port Expenses). So the cost incurred by the firm in case it avails exemption under some exemption scheme can be described by following equation.

Cost = 0 due to exemption of duties+ CAP+CAPE

Let us now assume that import duties on the input goods imported by the firm are zero by tariff, then cost will be:

Cost= 0 + CAP+ CAPE (0)

No additional costs shall be involved as the firm is not required to get any licence or quota or analysis card etc.

So the point is that making import duty zero through tariff reduces cost of business for the importing firms compared with import under some exemption scheme as all sorts of duty- exemption regimes require conditionality of using an input good in exported goods by the firm itself, monitoring of its consumption and production, and administrative economic costs. Under zero duty through tariff, the firms can better use their resources and focus on their activities rather than visiting office of the regulator for audit and reconciliation of record of imports, production, and exports.

Simply, policy implication is that special schemes for industries should either be made easy to use especially for SMEs or input goods and machinery exempted through SROs or Fifth Schedule of the Customs Act, 1969 should be shifted to the First schedule of Tariff where all importers, manufacturer or commercial, should have zero or minimal import tariffs without any other import conditions. The input goods imported either by a manufacturer or commercial importer shall finally be used for production of output goods. Same is the case with industrial machinery. It shall be used in manufacturing/ industrial process and it is perhaps not much relevant whether it is imported by the firm itself or through commercial importer. Doing so, simply reduces cost of business for importing firms and shall help entrepreneurs and SMEs grow which may be reluctant to avail exemption schemes due to regulatory burden.

4.5. RevenueThrough Rates and Additional Levies

At least three factors differentiate the tax structures of developing countries from the developed ones (Gordon, 2009). First, the developing countries have large informal sectors which are hard to tax. Second, taxing especially small and medium enterprises may have negative implications for employment and economic growth. Third, capacity of tax machinery is low and low capacity coupled with weak political will makes it difficult to tap the potential of tax revenue especially from sales tax and income tax. Moreover, import tariffs are considered to create fewer distortions compared to VAT type taxes in developing countries due to prevalence of huge informality of businesses (Stiglitz, 2009). WTO also recognises significance of customs duty as a legitimate source of Government revenues. The significance of import stage taxes in a developing country like Pakistan cannot be overemphasised where still about 50 percent revenue is collected from levies at import stage.

Change in tariff rates and additional levies are two important tools used to increase revenue at import stage. For example, in the budget 2014-15, the tariff slab of 30 percent (ceiling) was brought down to 25 percent but floor was raised from 0 percent to 1 percent to compensate for the revenue impact resulting from reduction in ceiling. In the budget 2015-2016, the maximum tariff slab was reduced from 25 percent to 20 percent but the floor was raised from 1 percent to 2 percent. In the budget of FY 2016-17, the tariff slabs of 2 percent and 5 percent were merged into a new slab of 3 percent and the rates of slabs of 10 percent and 15 percent were respectively enhanced to 11 percent and 16 percent. In the budget for the FY 2019-20, slab of 0 percent was again introduced and 1639 tariff lines were subjected to this new slab of 0 percent but rates of additional customs duty were enhanced and scope and coverage of RD increased. ACD and RD constituted around 15 percent part of total CD collection in 2015-16 which increased to 26 percent in 2018-19 (Table XVII).

Table XIV

Increasing Trend of ACD & RD

(Rs. In Million)

Year	Import Value	ACD	RD	CD	Total Duty	ACD in Total Duty (%)	RD in Total Duty (%)	ACD & RD in Total Duty (%)
1	2	3	4	5	6	7	8	9
2015-16	4,658,749	12,858	47,546	344,168	404,572	3.2	11.8	14.93
2016-17	5,539,721	24,150	61,429	411,193	496,772	4.9	12.4	17.23
2017-18	6,694,897	34,302	102,720	471,303	608,325	5.6	16.9	22.52
2018-19	7,499,468	68,823	111,255	503,921	684,000	10.1	16.3	26.33

Source: PRAL/FBR data.

4.6. Effective Rate (ER), Tariff Weighted Average (TWA) and CEF

Is due amount of customs duty, which ought to be collected as per statutory rates, being collected? Let us conduct a brief analysis to answer this question. There are two rates of duty collection. One is effective rate (ER)[25] which is simply total value of imports during a certain period, say month or year divided by amount of custom duty collected during that period. The other rate is tariff weighted average (TWA) which Pritchett and Sethi call 'official rate'. The effective rates of CD can be calculated since 1990s as figures of both 'value of imports' and amount of 'CD collection' are available. TWA of each year is available with WTO and for some years with WITS data repository. TWAs are available since 1997-1998. So I take 1997-98 as base year for my analysis. The TWAs for 2017-18 and 2018-19 are not yet available in WTO data or WITS repository. I assume it should be approximately equal to TWA of 2016-17 i.e.10.90 for said years as well as no substantial changes were made in statutory rates of CD in said years.

The hypothesis is that if there are no leakages of customs duty through misdeclaration i.e. declaring high-duty items in low duty category slabs, evasion and corruption, then ER and TWA should hypothetically be equal. The leakages through smuggling and under- invoicing are not captured in this relationship as quantum of smuggling and under-invoicing are not captured in the official data of Customs. There is marked divergence between ER and TWA. Detailed working is given at Column 2 of Annexure B shows import value reported in Economic Survey of Pakistan. Column 3 and 4 respectively show the amount of ACD and RD. The figures of RD are available since 2007-08 whereas ACD regime is in vogue since 2015-16. Column 6 contains amount of CD collection. For calculating ER column 2 and column 6 are relevant. Column 7 gives ER of CD. Column 9 gives TWAs for different years obtained from WTO record and WITS. Column 10 gives hypothetical value of CD calculated on the basis of TWA, which if no leakages through misdeclaration and corruption had taken place, should have been collected. Column 11 gives difference of CD actually collected and what should have hypothetically been collected in absolute numbers while Column 12 gives the figure of evaded CD in percentage terms.

[25]ER calculated in three ways. (1) import value/CD collected (2). import value/ CD+ACD+RD collected (3) Dutiable imports/ CD collected.

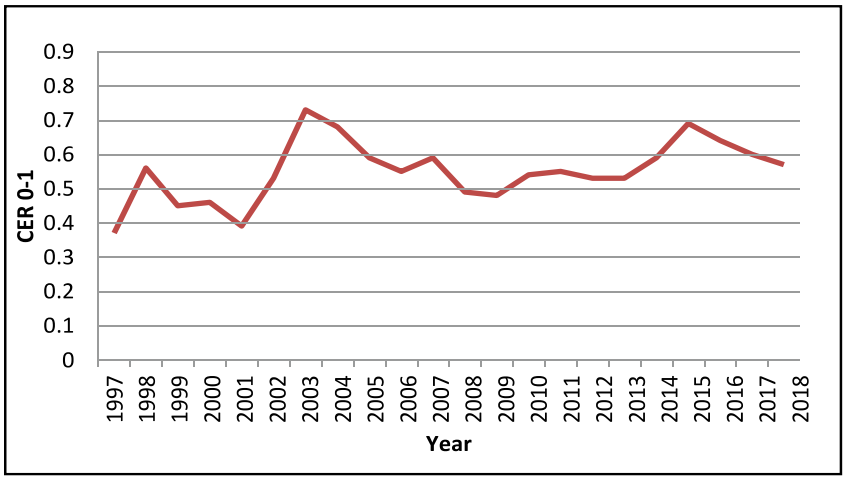
I take the analysis bit further. There may be concessions and exemptions of CD through SROs and schedules. These concessions and exemptions may be on various accounts like preferential rates of CD due to reciprocity in PTAs or FTAs, concessions to industries through reduced rates or special exemptions of chapter 99. The Economic survey of Pakistan reports cost of exemption (CoE) of CD and other taxes since 2000-2001.Column 13 and 14 give CoE respectively in absolute value and percentage terms. After deducting CoE from hypothetical value not collected (column 11), column 15 gives the hypothetical value of CD which was not collected due to mis-declaration, evasion and corruption at ports. The ER of CD was 17.07 percent in 1997-98 while TWA was 40.69 percent when import tariffs were very high. The unexplained amount of CD in percentage terms was around 138 percent for said year, which means that even half of the due amount of CD was not collected. But as tariff rates went down, CD collection improved which simply means that high tariffs increase burden on businesses and they have high incentive to misdeclare and evade duty and taxes.

The figures of CoE for the years 1997-98 to 1999-2000 are not available in the Economic Survey Pakistan. The TWA is based on statutory rate of CD given in the code. So to ward off bias, it should at best be compared with ER which includes only CD collection based on tariff rates given in the tariff code and should not include ACD and RD. Till the year 2006-07, there is no issue as ACD and RD were not levied. But after said year, the scope of RD and ACD has increased and FBR is reporting collection from all species of customs duties under the head of CD collection. When ER is calculated by including CD,ACD, and RD, it jumps at least two pints on average in the years 2013-14 to 2018-19. So to keep the analysis uniform and simple, I extract out the amount of ACD and RD from the reported collection of CD and use ER calculated on the basis of just CD collection with the TWA. The figures of total CD i.e. CD, ACD, and RD and ER based thereon, as being reported officially, has, however, been mentioned in the tabulated data for the sake of transparency. What does emerge from above analysis?

First, there is no correlation or linear relationship between ER and TWA. In the year 1997-98, ER was in the range of 17 percent. In 2007-08, there is discernible fall in the rate to 5.99 percent . It stays in the range of 5 to 5.5 percent and then witnesses increase in year 2014-15 and exceeds 7 percent with the exception of year 2018-19 when it is 6.72 percent. Second, since 2014-15 a clear reduction in hypothetical unexplained/ evaded amount of CD may be observed which is either due to phasing out of exemptions, or better controls due to automated clearances under WeBOC or combination of both.

I construct another simple matrix called ‘collection efficiency factor (CEF)’ which is ER divided by TWA. Both the ratios are in percentage terms, so after division we obtain an absolute number Annexure C. Theoretically, its value should range between 0 to 1. In case no CD is collected, both ER and TWA should be zero. Conversely, if there are no leakages through misdeclaration, exemptions (through SROs), evasion and corruption in the CD collection at the ports, ER and TWA should be equal which means what is collected in duties ought to have been ideally collected. Practically, this figure can neither be zero nor one and may attain value somewhere above zero and below one.

Collection Efficiency Factor (CEF)



In the year 1997-98, CEF was 0.41 and remains below 0.6 till year 2003. It jumps to 0.77 in 2003-04 and remains above 0.6 till 2007-2008 and then there is fall. In the year 2014-15, CEF again rises, crosses 0.6 and is above that figure till 2018-19. So, since 1997-98 till 2018-19, there are two time intervals i.e.2003-04 to 2007-08 (5 years) and again 2014-15 to 2018-19 (5 years) when CEF witnesses an appreciable increase and consistently remains above 0.6.

What does explain the improvement in CEF in said two periods? Some possible candidates for improvement in CEF may be improvement in customs enforcement due to better monetary incentives[26] or better training of customs officials,[27] or recruitment of new inspectors or appraisers on merit, or enhanced penalties for misdeclaration and evasion and imposition of such penalties religiously, or reforms in Customs for better risk assessment etc. The penalties for misdeclaration etc. did not change much during this period.[28] The incentives for customs inspectors and collectors also did not change substantially and no new recruitments of customs appraisers and inspectors were made during this period. The reforms process was, however, initiated in 1998. The express lane facility was introduced in 1998. In year 2000, the electronic assessment system started assessing duties and taxes on the basis of risk profiling of importers. As part of structural adjustment programme, several reforms were introduced. With few exceptions, customs tariff was brought down from 45 percent in 1998-99 to 25 percent in 2002-02.

[26]No substantial increase in remuneration was made during this period. Nor any change in the reward structure made. The literature on corruption guides us that small incremental changes in salaries do not help reduce corruption. The salaries need to be increased several times to have an impact on corruption as employees may not indulge in corrupt acts for the fear of losing hefty remuneration/ job which means besides increasing salaries substantially, a strong mechanism of accountability should also be there.

[27]Traditionally, senior management has remained focus of training in Customs. The employees like inspectors and appraisers who do the basic work of inspections and assessment of duty and taxes are hardly the focus of training programmes.

[28]Section 156 of the Customs Act, 1969 prescribes penalties for misdeclaration etc. and there was no substantial change in the penalties for misdeclaration.

Procedural notifications were reviewed and simplified. In year 2001, a single goods declaration (GD) was introduced. In 2002, risk-indicated selective examination started assessing risks in examination procedures and in 2004 automated clearance procedure was introduced. Under PaCCS, one simple electronic declaration was required. Prior to PaCCS, in the manual environment, 26 clearance steps requiring 34 signatures and 62 verifications were involved.[29] These reforms coupled with reduction in tariff rates started showing clear impact on collection of revenue at import stage in 2003-04 and resulted in rise of CEF.

What happened after the year 2007-08? The automated clearance system of PaCCS became controversial. The issues regarding the ownership of its software arose and resistance to reforms started increasing. PaCCS which had been launched as pilot project at Karachi was not rolled out to other customs ports. The risk parameters were not updated/ changed on an ongoing basis, thus enhancing potential of misuse of the system. The reforms process initiated in 1998 had started showing its impact since 2002. Its impact continued till 2007-08 after which CEF again started falling due to slowdown of reform process and change in government.

In 2013-14, WeBOC was rolled out initially covering 60 percent imports but within two years its coverage increased almost to 90 percent. The 2019 Doing Business Report of the World Bank ranked Pakistan at 142 out of 190 economies on indicator for trading across borders. A significant jump on this indicator was primarily due to WeBOC. Now over 90 percent of imports and exports are processed under automated clearance system. Around 80 percent exports and 44 percent imports are cleared under green channel of WeBOC system where no interaction takes place between the customs officials and importers or their agents. Thus improvement in CEF since 2013-14 owes itself to the process of reforms in Customs initiated under the umbrella of WeBOC.

Following points emerge from the above discussion on collection of revenue at import stage. First, as tariff rates go down, revenue from imports increases, so the premise that reduction in tariff rates reduces revenue collection does not hold in the long-run as vindicated by Pakistan's experience of tariff reforms. In 1990s when tariff rates were high, revenue collection was low but as MFN rates deceased, revenue at import stage increased manifold. Second, if tariff rates are high, there is more incentive to evade import duties through under-invoicing, misdeclaration and corruption. In 1997-98, the unexplained hypothetical CD amount not collected was around 138 percent, it was 99 percent in year 2000-2001 and in 2018-19, it is around 46 percent and if compared with ER calculated based on all three species of duties (CD,ACD and RD), the unexplained amount is just 11.8 percent. Third, evasion of import duty through misdeclaration is an important issue to reckon with for which process of reforms in Customs should continue. Improvement in duty collection at ports is directly linked to reforms process and robust risk assessment system.

5. CONCLUSIONAND POLICY OPTIONS

The infant industry argument has been peddled with full fanfare in Pakistan. For example, high Protection was given to car assemblers but localisation programme was neither implemented fully by the assemblers nor the government held them accountable for not

[29]See "Investment Climate in Practice—Reforming Customs Clearance in Pakistan" By Dr. Manzoor Ahmad, World Bank Note No. 59823.

following the said programme. Strategic protection may be required for some sectors but such protection should be time-bound with clear sunset date. A strong accountability mechanism should be in place for protected sectors as protection generates rents, which if not taxed by the government, accentuate distortions in the economy and society.

Pakistan has strong dependency on customs-collected revenue as almost half of FBR's revenue is collected at import stage. Undoubtedly, revenue is administratively easy to collect at ports than inside the country in developing countries like Pakistan due to weak tax culture, huge informal economy, and ineffective tax administration. The high incidence of taxes at import stage, however, has severe negative implications for trade facilitation, business environment, economic growth, and even for revenue itself as due to high incidence of import stage taxes, incentive for under-invoicing, misdeclaration, evasion, and smuggling is high. So there is a case for rationalisation of tariff structure.

The import duties on input goods are low following the cascading principle and number of concessionary/ exemption schemes are also available for import substitution and export promotion. Pakistan has exercised Protectionist policies especially for sectors like textile and auto. Despite all this, economic growth is low and exports are almost stagnant. Where does then lie the problem? The issue lies in details and complexity of the tariff structure and export-oriented schemes. The input goods which are importable @ 0 percent as per tariff code may be subject to other import-stage levies like ACD, RD, ST or WHT. The utilisation rate of export promotion schemes is low especially by small and medium-sized importers, implying thereby that these schemes are not-easy-to-use. So there is need to reduce complexity of the tariff structure and export promotion schemes.

In the medium to short run, Pakistan may not afford drastic reduction in import duties especially for output goods due to balance of payments problems and revenue imperative but in order to put the country on the trajectory of long-term sustainable growth, at least all types of duties and taxes i.e. CD, ACD, RD, Sales Tax and WHT need to be abolished on import of input goods and machinery. Discrimination between commercial importers and manufacturers regarding import of input goods, finally to be used in production of output goods, serves no purpose except the point that doing so makes the availability of input goods difficult for SMEs. The exemption of all types of duties on input goods should be through 'tariff code' and not through difficult-to-use exemption schemes or SROs.

Statutory customs duty is not the only culprit for high burden of taxation at import stage. In the last couple of years, ACD and RD have been applied extensively. There is need to rationalise these duties. They are currently being used as tools of revenue and import compression but may not serve the purpose of long-term growth and even revenue. Reduction/ removal of RD and ACD may not necessarily reduce tariff revenue due to volume effect. There is also need to reduce reliance of inland revenue on import stage. There is at least no justification of colleting income tax at import stage as doing so just creates distortions and disincentives. Furthermore, there is lot of room for enhancing CER and revenue through better enforcement and robust risk assessment. For doing so, more reliance needs to be placed on automated computerised clearance system rather than on physical inspections. The coverage of green channel of WeBOC should gradually be increased. Revenue leakages can be best minimised through simplification of customs procedures and robust risk assessment system.

Annexures

ANNEXURE-A1

PCT 8703.2199 (Cars & Jeeps 800CC-1000 CC)

	Head	Rate of Duty	Amount (Rs)
A	Import Value US $	US $	5,000
B	Insurance	1%	50
C	Import Value + Insurance		5,050
D	Freight	1%	5.05
E	CIF Value (A+B+D) US $		5,101
F	Import Value in Pak Rupees (@155)		790,578
G	CD	55%	434,818
H	ACD	7%	55,340
I	RD	15%	118,587
J	Value for ST (F+G+H+I)		1,399,322
K	ST	17%	237,885
L	AST	3%	41,980
M	Value for FED (J+K+L)		1,679,187
N	FED	2.5%	41,980
O	Value for WHT (M+N)		1,721,166
P	WHT	12%	206,540
Q	Total duty & taxes		1,137,129
R	Share of import duties in total taxes		54% (approx)
S	Share of other taxes at import stage		46% (approx)
T	Taxes other than import duties on tariff-inclusive price (ST, AST, FED, & WHT)		528,385
U	Other taxes on tariff-exclusive price	34.5% of import value	272,749
V	Difference (T-U)		255,636

ANNEXURE-A2

PCT 6109.1000 (Cotton T Shirt)

	Head	Rate of Duty	Amount(Rs)
A	CIF Value		2,000,000
B	CD	20%	400,000
C	ACD	7%	140,000
D	RD	10%	200,000
E	Value for ST (A+B+C+D)		2,740,000
F	ST	17%	465,800
G	Value for WHT (E+F)		3,205,800
H	WHT	6%	192,348
I	Total duty & taxes (B+C+D+F+H)		1,398,148
J	Share of import duties in total taxes		53% (approx)
K	Share of other taxes at import stage		47% (approx)
L	Taxes other than import duties on tariff-inclusive price (ST, AST, FED, & WHT)		658,148
M	Other taxes on tariff-exclusive price	23% of import value	460,000
N	Difference (L-M)		198,148

ANNEXURE-A3

PCT 6309.0000 Old and Used Clothing

	Head	Rate of Duty	Amount (Rs)
A	CIF Value		930,000
B	CD	3%	27,900
C	ACD	2%	18,600
D	RD	10%	93,000
E	Value for ST (A+B+C+D)		1,069,500
F	ST	17%	181,815
G	Value for WHT (E+F)		1,251,315
H	WHT	6%	75,079
I	Total duty & taxes (B+C+D+F+H)		396,394
J	Share of import duties in total taxes		35% (approx)
K	Share of other taxes at import stage		65% (approx)
L	Taxes other than import duties on tariff-inclusive price (ST, AST, FED, & WHT)		256,894
M	Other taxes on tariff-exclusive price	23% of import value	213,900
N	Difference (L-M)		42,994

ANNEXURE-B

YEAR	Import Value	ACD	RD	CD	Total duty (3+4+5)	ER (CD)	ER (CD+A CD+RD)	TWA	CD in terms of TWA	DIFF. (10-5)	Diff (%)	(CoE)	COE in terms of total duty (6) (%)	Un-explained (11-13)	Un-explained (15) in terms of total duty (6) (%)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1997-98	436338	-	-	74496	74496	17.07	17.07	40.69	177546	103050	138				
1998-99	465964	-	-	65292	65292	14.01	14.01	23.13	107777	42485	65				
1999-00	533792	-	-	61659	61659	11.55	11.55	23.12	123413	61754	100				
2000-01	627000	-	-	65047	65047	10.37	10.37	20.62	129287	64240	99	6200	9.5	58040	89.2
2001-02	634630	-	-	47818	47818	7.53	7.53	17.39	110362	62544	131	5422	11.3	57122	119.5
2002-03	714372	-	-	68836	68,836	9.64	9.64	16.71	119372	50536	73	5603	8.1	44933	65.3
2003-04	897825	-	-	91045	91045	10.14	10.14	13.02	116897	25852	28	4397	4.8	21455	23.6
2004-05	1223079	-	-	115374	115374	9.43	9.43	13.00	159000	43626	38	12384	10.7	31242	27.1
2005-06	1711158	-	-	138384	138384	8.09	8.09	12.71	217488	79104	57	33050	23.9	46054	33.3
2006-07	1851806	-	-	132299	132299	7.14	7.14	12.11	224254	91955	70	50520	38.2	41435	31.3
2007-08	2512072	-	203	150460	150663	5.99	6.00	9.50	238647	88187	59	41397	27.5	46790	31.1
2008-09	2723570	-	3361	145042	148403	5.33	5.45	9.88	269089	124047	86	61282	41.3	62765	42.3
2009-10	2910975	-	4002	156271	160273	5.37	5.51	10.20	296919	140648	90	76348	47.6	64300	40.1
2010-11	3455287	-	3912	180941	184853	5.24	5.35	9.02	311667	130726	72	94941	51.4	35785	19.4
2011-12	4009093	-	2706	214200	216906	5.34	5.41	9.02	361620	147420	69	112012	51.6	35408	16.3
2012-13	4349880	-	3678	235781	239459	5.42	5.50	9.41	409324	173542	74	119706	50.0	53836	22.5
2013-14	4630521	-	3756	239055	242811	5.16	5.24	8.92	413042	173988	73	131451	54.1	42537	17.5
2014-15	4644152	-	23632	282588	306220	6.08	6.59	9.58	444910	162322	57	103046	33.7	59276	19.4
2015-16	4658749	12858	47546	344168	404572	7.39	8.68	10.09	470068	125900	37	119993	29.7	5907	1.5
2016-17	5539721	24150	61429	411193	496772	7.42	8.97	10.90	603830	192637	47	151686	30.5	40951	8.2
2017-18	6694897	34302	102720	471303	608325	7.04	9.09	10.90	729744	258441	55	198151	32.6	60290	9.9
2018-19	7499468	68823	111255	503921	684000	6.72	9.12	10.90	817442	313521	62	233134	34.1	80387	11.8

Note:

(a) The import value in column 2 has been taken from various issues of Economic survey of Pakistan.

(b) The figures in colum3 and 4 have been taken from FRB/ PRAL record; FBR officially reports allthe three species of duties i.e. CD, RD and ACD under the head of CD. The rates of ACD and RD are not mentioned in the First schedule of the Customs Act, 1969 (tariff code).The said levies are imposed through SROs. The TWA is based on statutory rates mentioned in the tariff code, so for ER based on CD collection on statutory rates makes the true comparison with TWA. (c) TWA in column 9 comes from WTO tariff profiles of Pakistan.

(d) CoE in column 13 is reported in various issues of Economic surveys of Pakistan; Prior to 2000-2001 the cost of exemption has not been reported in Economic Surveys pointing towards low transparency regarding exemptions and rent-se.

ANNEXURE-C

Collection Efficiency Factor

Year	Import Value (Rs. In Million)	Effective Rate of CD	TWA*	CEF **
1	2	3	5	6
1997-98	436,338	17.07	40.69	0.42
1998-99	465,964	14.01	23.13	0.61
1999-00	533,792	11.55	23.12	0.50
2000-01	627,000	10.37	20.62	0.50
2001-02	634,630	7.53	17.39	0.43
2002-03	714,372	9.64	16.71	0.58
2003-04	897,825	10.14	13.02	0.78
2004-05	1,223,079	9.43	13.00	0.73
2005-06	1,711,158	8.09	12.71	0.64
2006-07	1,851,806	7.14	12.11	0.59
2007-08	2,512,072	5.99	9.50	0.63
2008-09	2,723,570	5.33	9.88	0.54
2009-10	2,910,975	5.37	10.20	0.53
2010-11	3,455,287	5.24	9.02	0.58
2011-12	4,009,093	5.34	9.02	0.59
2012-13	4,349,880	5.42	9.41	0.58
2013-14	4,630,521	5.16	8.92	0.58
2014-15	4,644,152	6.08	9.58	0.64
2015-16	4,658,749	7.39	10.09	0.73
2016-17	5,539,721	7.42	10.90	0.68
2017-18	6,694,897	7.04	10.90	0.65
2018-19	7,499,468	6.72	10.90	0.62

* TWA= Tariff Weighted Average.

**CEF: Collection Efficiency Factor (Effective Rate / Tariff Weighted Average).

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RASTA—
BACKGROUND PAPER

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Developing Research and a Research Culture: Results from a Pilot Project in Pakistan

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This paper argues that successful public policy requires engaged research developing ideas and evidence from diverse vantage points. Pakistan's social science research remains fragmented, under-resourced and dependent on external agendas. We describe a five-year pilot programme to enhance Pakistan's research culture. Seventy-two crowd-sourced and competitively-selected projects at 46 geographically dispersed institutions were supported. Provincial universities were empowered and networking with the better-placed metropolitan institutions proved mutually beneficial to scholarship. Substantial research outputs were completed in important areas of policy. We conclude that such multi-year commitments to review and network engagement are vital to strengthening policy capacity.

Keywords: Pakistan; Research Community; Social Sciences; Networking; Competitive Grants

1. INTRODUCTION

Human resource capacity building has been a central issue in development for decades. Numerous donor agencies have devoted large sums of money to institutions of higher education, scholarships, technical assistance training, and creation of NGOs and on-ground projects. Years later problems persist and the primary response donor-funded policy circles have has been more of the same. Yet in countries like Pakistan, well-trained university professors are short in supply, policy oriented research is undertaken mainly by donors, and government supplies little research-based information on important socio-economic problems.

This paper examines the research culture and environment in Pakistan to assess some of its limitations and why there is little indigenous economic and other social science research being undertaken to affect public policy. We depict the interface of ideas, research and policymaking that characterise well-developed networked systems. We then report on a five-year pilot competitive grants programme conducted with some success to stimulate social science research and debate across Pakistan, and draw some

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implications from this experiment. The objective of this pilot programme was to build a network to stimulate internally defined and produced policy-relevant research within a context of crowd-sourced ideas, competitive project selection, extended discussion among researchers, and intensive peer review.

Among the concerns that arise in Pakistan and similar contexts is that despite substantial donor investment in higher education essential government positions do not draw applications of requisite quality. Positions such as Chief Economist at the Planning Commission have sometimes remained unfilled for many years despite repeated announcements. Key public agencies such as regulatory bodies and public sector enterprises continue to remain in search of skilled staff. Pakistan now has 180 universities compared to just one when it gained independence. Yet in few cases is there a sufficient cadre of experienced full professors to provide needed leadership. Policy for building up universities has concentrated on dispensing land grants and construction of new facilities, but once built they rely mainly on a young inexperienced faculty and part-time teachers with a variety of qualifications.

Dependence on donors for project development and policy change has raised several additional concerns. To an extent this system has suited post-independence governments that mostly desired to bypass domestic policy assessments. The policy mindset in Pakistan and other recipient countries has been preoccupied with looking for aid rather than nurturing domestic processes to unlock productivity and growth. The result is that fiscal and balance of payments difficulties have persisted over the years, reinforcing the mindset of looking for more external assistance. Both dictators and democratic leaders have as a result become increasingly reliant on the policies and conditionality that comes with aid. Evaluation of policy implementation is often done by donors in support of their own programmes—an obvious moral hazard.

The dependence on externally developed policies has made the relationship between the government and domestic thinkers and the social science research community tenuous in Pakistan. Announced policies and projects are frequently treated with surprise and suspicion which often turn into hostile debate between government and civil society. A case in point is the ongoing project on the China-Pakistan Economic Corridor—an initiative of the One Belt One Road policy of China—that was launched three years ago. Even today, as Pakistan opinion writers seek details to understand the project, the government reaction is often one of hostility (Husain, 2017a, b; Kardar, 2017). Universities and think tanks have undertaken little research on the subject. This lack of information leads to speculation which in turn invites government acrimony and ultimately affects the implementation process and weakens possible benefits to society.

Experience has shown that effective policy must be both based on detailed and reliable evidence while also being widely understood and owned. The experience of development in other countries suggests social science and public policy research in universities, think tanks and other institutions is fully engaged throughout the policy process (Fischer, et al. 2007). This makes for a better investigation of issues, a clearer determination of policy responses, and finally a wider ownership of the changes required in implementation. In poor countries like Pakistan, the social science and public policy research community is seldom engaged in developing either evidence or debate over policy issues. Instead, donor-funded consultants conduct policy research and play the role

of policy advisers. The focus is on international best practice regardless of local context and cultural variations. This is often not enough for constructive policy development.

Policymaking and implementation in Pakistan would be improved if its own universities and social science research were engaged in all stages.

2. THE RESEARCH SYSTEM IN PAKISTAN

The research system in Pakistan is comprised of universities, some government sponsored institutes, and a number of donor-funded, and some less-well-resourced domestic, NGOs and institutes. Researchers in the universities and government sponsored institutes are poorly paid and have hardly any research funding. The best of those in metropolitan areas are employed on a regular basis to work on agendas provided by aid agencies, while longer-term funding is lacking. Srivastava (2013) characterises this as a situation where research in Pakistan fails to serve society at large.

Policy to promote university education and research has most recently been developed by the Higher Education Commission of Pakistan (HEC). Founded in 2001, the HEC has undertaken a significant effort to build universities and academic programmes in the country. A rapid expansion of university campuses has been undertaken with land grants and facilities provided by the government—a huge emphasis on 'bricks and mortar.' What remains lacking, however, is a strong cadre of professors and teaching staff. The Lahore University of Management Sciences, one of Pakistan's best universities, has only about 15 full professors on its faculty. Other universities have even less than this number. Most universities are relying on part-time staff or relatively young faculty freshly returned from a scholarship education overseas or graduated from a Pakistani university. Research networking, mentoring and outreach are lacking. A snapshot of the characteristics of Pakistan's universities is shown in Table 1.

Table 1

Pakistan's Universities—A Snapshot

Ranking in the world	Best university in Pakistan ranked at 500+ on various reputable global rankings
Number of full professors	A major problem of Pakistani universities remains the lack of reputable, internationally-established professors engaged in research
Research	Limited independent research agendas or funding available; little funding for long-term efforts; best faculty involved in donor consulting
Teaching	Mostly through adjunct or part-time staff or junior staff and graduate students
Working papers	Only a few departments show working papers on their websites
Seminars and conferences	Few departments hosts regular seminar series; public events few and far between with limited academic content
Policy ideas associated with universities	Few are known for policy research or advocacy
Specialised centres	Mostly funded by donors
Professional associations	Few and limited activities; dependent on donor funding

To stimulate research, HEC has employed quantitative measures—essentially, number of papers produced—for promotions in universities.[1] While these have increased as intended the volume of papers, it has also resulted in gaming of the system by compromising on quality and has revealed a fair amount of plagiarism.[2] Original research and research leaders remain in short supply while few universities are becoming research centres or generating clear theses, hypotheses or debates. Largely they remain teaching-oriented. Pakistani universities have not yet attained a placement in the top 500 universities of the world in reputable general rankings.[3] Other research institutions remain similarly globally uncompetitive.

2.1. Sources of the Problem

Leading thinkers have debated the issue of what inhibits research in Pakistan for a number of years. Broadly, the themes that emerge from this discussion include the following:[4]

(1) Universities are seen essentially as teaching institutions only.
(2) The governing bodies of universities are dominated by government officials and politicians, with few intellectuals or educationists included.
(3) Private universities are oriented to profit from student enrolments and see research as a luxury.
(4) Most of the public-sector universities have rules of hiring similar to government departments, with limited flexibility in terms of incentives they can offer.
(5) Joint appointments are not possible making it difficult to hire diaspora professors who are doing well.
(6) Universities are also run like government departments—centralised and bureaucratic. Professors and departments having little autonomy makes innovation and improvisation difficult.
(7) While research may be an individual effort, it is always a part of a larger dynamic and requires considerable interaction. In Pakistan, researchers with scant funding have few means for developing their disciplinary conversations. With little or no funding available, professional associations and networks are few and far between.[5] Without such networks, research camaraderie is not developed, creativity of the research enterprise is

[1]This approach is based on the old ideas of Taylorism (Taylor, 1903), which Derksen (2014) describes as a mechanistic science largely devoid of human psychology and humanism.

[2]The HEC was recently forced to take note of the plagiarism, false refereeing and other means for quick publications that have developed and even to close down some Ph.D. programmes.

[3]We refer to two well-known rankings: Times Higher Education rankings https://www.timeshighereducation.com/world-university-rankings and U.S. News and World Report https://www.usnews.com/education/best-global-universities/search?country=pakistan. There are other niche rankings that are sometimes used in Pakistan to make quality of institution claims but they do not provide as wide a scope as these two well-known sources.

[4]See, *inter alia*, Hoodbhoy (2009), Haque (2005, 2013, 2015), Naveed (2013), Usman (2014), and Naveed and Suleri (2015) for an idea of how this debate has evolved.

[5]The main exception is the Pakistan Society of Development Economists (PSDE), established in 1984, with its journal *The Pakistan Development Review*.

stymied, and peer review and assessment is difficult. Policing of professional standards declines and people distinguish themselves not through discourse but by closeness to people in power or donor funding. Ideas and research quality suffer. Teaching also suffers from not being research-based.

(8) While several generations of students have been sent overseas on Ph.D. scholarships this has not achieved well-staffed departments in Pakistan. Among the reasons are that completion of the advanced degree has been treated as a culmination, not recognising that this is merely an entry into a profession. Candidates chose, and the hosting supervisors and universities offered, an easy approach as it was not expected that the candidates would become a part of the host-country professorial system.

(9) The university system in Pakistan does not favour 'enfant terribles' as in more advanced well-established systems. The promotion criteria have not made room for exceptional performance and quality of research and research leadership. There is little competition among universities for talent or to develop a reputation for some area or innovation.

(10) New PhDs are most productive in vibrant clusters around research leaders. Without renewal of research, knowledge of university professors depreciates while the subject in advanced centres moves forward. The best faculty leave the country. Hence, students from Pakistan when they go abroad often complain of how distant they are from the global knowledge pool, perpetuating a vicious cycle. In this milieu, research is never likely to be at the cutting edge.

Not surprisingly, under these circumstances social science research has played little role in public policy in Pakistan. There are few policy debates or local theses or hypotheses being discussed. There is little demand for public policy research by policymakers as evidenced by the lack of funding for such work. Policymakers rely on donors to provide them with ideas and research. While donors are collectively seeking broad development of the country, individually they pursue areas that are in line with their lending needs or priorities determined by their own governments. The system of research funding that prevails has inadvertently led to some glaring gaps in the country's policy research agenda. Funding for research has been directed toward certain important topics, including agriculture, poverty, social indicators, social safety nets, MDGs, regional trade, and project related sector-specific work. Equally important areas such as institutional and governance deficits and reform, law and economics, energy policy, challenges of growing urbanisation, and entrepreneurship and innovation have neither been adequately researched nor debated.

Despite these limitations, Pakistan like many other developing countries has produced innovative thinkers and writers who have provided ideas and research of value. Mahbub ul Haq was perhaps Pakistan's best-known economist. He developed a thesis on basic needs which he took to the international arena when he joined the World Bank (Haq, 1976), and later the famous Human Development Index of the United Nations. Significant other scholars have followed though none has attained the stature of Haq. Given the size of Pakistan (by population the 5th largest country in the world) the

numbers of researchers and scholars are not large enough and its research communities are unable to offer a deep body of analysis on key subjects. There is a corresponding lack of public intellectuals to contribute to policy debate and development.

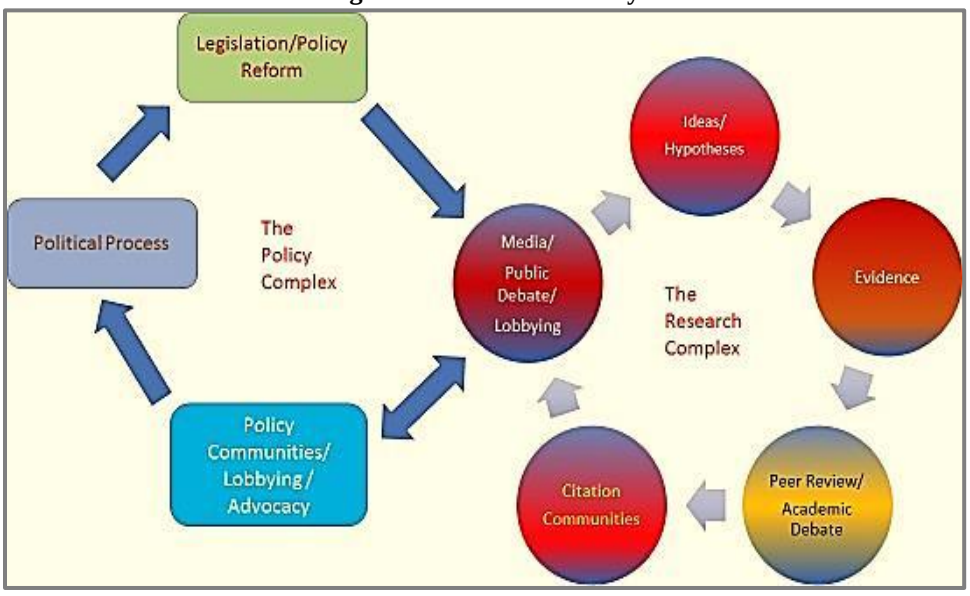
Without research and thought leaders, it is hard for the public to distinguish between evidence, informed opinions and mere proselytising.

3. IS RESEARCH NECESSARY FOR GOOD POLICY?

Evidence from around the world has shown that successful economic and social reform efforts have been locally owned and implemented often through local ingenuity and problem solving (Dunning, et al. 2017). Moreover, as Easterly (2006) has argued, development problems are complex and diverse often requiring investigation of local circumstances where the best information is held by those involved. This requires moving away from 'top-down' approaches to policy making where donors and, in the Pakistan case, policy elite in Islamabad, Lahore or Karachi think that only they have both the knowledge and expertise to solve the problems of a large and divergent country. In this long-running debate, Haque (2017) recently revives the argument for 'bottom-up' locally driven solutions leading to better policies when the central government watches these locally developing solutions and nudges them only when monitoring and evaluation through research clearly shows a need.

From a positive perspective, public policy literature suggests that there is a process of the sort encapsulated in Figure 1. Ideas for policy and reform are developed in different areas of society but most often in the research complex. This complex will not only provide fresh ideas, it will examine, on the basis of systematic evidence gathering and analysis, new policy proposals as well as policies that are in place. Academia should be the best laboratory for developing policy and reform ideas and then keeping them under review and continuous evaluation.

Fig. 1. Research and Policy



The academic filter operates well when there is vigorous peer review and debate which leads to articulated analytic theses, hypotheses and in-depth analysis. There are well-known vehicles for developing a continuous research conversation that will allow carefully crafted and well-honed ideas to emerge. Research funding, followed by grants competition, seminars, conferences and ultimately peer review and the resulting publications are the fora for this conversation.

From this process, key theses and ideas, citation communities and public intellectuals emerge that can feed into the media and the public dialogue. A point to note is that popular debate as well as policymakers are informed by academic assessments and evaluations. Over time, well-cited ideas will be debated more widely to be picked up first by advocacy and lobbying groups. When they reach wide ownership, the political process will recognise the advantage of taking up such ideas for policy action. Ownership in this case means there must be local leadership and understanding of visions and ideas for policy change. But for this leadership and understanding to develop, there must be local debate as well as some form of crowd- sourcing or bottom-up development of policy and reform.

Analysts and commentators in Pakistan where this process is stymied lament the lack of effective policy formulation and implementation. With research underfunded and scattered, academic debate remains sporadic and citations few. It seems that good policy making requires a dense research complex with vibrant debates and citation communities to inform policy and create ownership for change. In a Pakistani context, Naveed and Suleri (2015) highlight the need for community and autonomy in research and emphasise that "external donors need to move away from the tradition of funding short-term projects with narrowly defined agendas towards long-term research programmes respecting the autonomy of research providers and encouraging them to develop linkages."

4. A PILOT NETWORK: THE PAKISTAN RESEARCH COMPETITIVE GRANTS PROGRAMME (CGP)

Recognising the concerns described above, we engaged in a five-year opportunity during 2011-2016 to establish a pilot programme for economic and other social science research that has mostly been lacking in Pakistan. Starting from our perceptions of the way advanced research systems operate, we sought to explore how a process to invigorate the nascent research community could be set in motion and be better linked to public debate and policy.

The resulting programme went under the title of the research Competitive Grants Programme (CGP), which was established under the auspices of the Planning Commission of Pakistan. In this context, we endeavoured to emulate the important dimensions of scholarly knowledge- building networks as they have developed elsewhere. In particular, facing the prevailing limited supply capacity and lack of public or private-sector demand for policy-oriented social science research in Pakistan our experiment was to create a network for developing local research over the widest possible space, to arrange debates within this network, and in doing so to crowd source policy agendas and build academic policy leadership.

Launched under the government of the Pakistan Peoples Party (PPP), the opportunity to undertake this initiative arose through the enhanced civilian governance support provided to Pakistan by the United States through the Kerry-Lugar-Berman Act (U.S. Congress, 2009). The CGP was part of a larger USAID-supported Pakistan Strategy Support Programme

(PSSP) under the Planning Commission.[6] Initial PSSP plans called for most of the research capacity-building to be through training a limited number of Pakistani graduate students abroad, with a much smaller budget for research and travel grants for faculty already located at Pakistani universities. The CGP turned this traditional funding plan on its head. Under its design, the preponderance of grant funding went to existing faculty members in order to create networking activities and a greater body of scholarship projects at Pakistani institutions. Substantial discussion went into convincing the involved agencies that this more diverse networking approach would be a better means of developing Pakistan's research capacity. To its credit, USAID eventually endorsed this shift of emphasis. Subsequently, an indicator of the internal recognition the CGP received as a way to fostered innovation within policy-oriented research was its continuation under the government of the Pakistan Muslim League-Nawaz (PML-N) elected in September 2013.

In its overall design, the CGP was to engage and empower members of the teaching and research faculty at Pakistani academic and research institutions to provide independent, policy-relevant studies that would bring specificity and analysis to the development objectives and strategies articulated in broad terms by the Planning Commission. The design was that within these broad themes around which research would be solicited, the choice of topics and research design were left to the individual researcher in keeping with the philosophy of a bottom-up research agenda. The themes were broad enough to allow for large individual initiative.

In a country where academic systems are nascent and subject to bureaucratic capture, and where policy-oriented academic endeavours have been fledgling, we also wanted to ensure that the CGP had an open and transparent process with as little bureaucracy-based involvement as possible. A steering group comprised of 15 prominent Pakistani and international scholars formed the programme's Research Advisory Committee (RAC, 2016). The RAC was the independent planning and decision-making body for strategic decisions about the CGP, while a small external secretariat managed the programme's operation.

4.1. Diversity of Participants

The design of the CGP was to include all geographic areas of Pakistan for two reasons. First, the RAC believed that local questions and local knowledge would best come out of the diverse communities through inquisitive researchers. This would run directly against the prevalent situation where a small group of those sitting in metropolitan centres and the federal capital presumed they know what is best for distant locations. Second, we also intended to crowd source a research and policy agenda and not impose it according to the presumptions of the programme designers. To understand a large country's problems and needs this bottom-up approach was preferred to the usual top-down.

An early learning experience demonstrated the risks associated with the planned diverse participation. A reasonable number of applications from outside of the major cosmopolitan centres were received for the first round of award selections. Initial reviews were divided among RAC members, each of whom recommended a top-ranked group for additional consideration.

[6]The international agency through which the PSSP was funded was the International Food Policy Research Institute (IFPRI). A five-year budget of approximately $3 million was available for the capacity building component of the PSSP which became the CGP.

With this uncoordinated, merit-based selection process, nearly all of the non-major metropolitan projects disappeared from the pool under review. This led the RAC to adopt a differentiated selection process, with selections remaining competitive among the subsets of applicants. A few international proposals would be considered and vetted at an international level. The preponderance of proposals would be divided into two domestic groups: those from metropolitan centres or the better universities would be reviewed to higher standards than those coming from backward regions. We were clear we wanted to include participants from the lesser universities with wide geographic dispersion and were prepared to spend resources to build their capacity as necessary. The payoff would be that participants from backward regions might have more knowledge of those areas and might have research questions of local concern, with the expectation that expertise they developed would remain in the region on a longer-term basis.

Open peer review and networking came together in the CGP in the manner in which proposals were selected and vetted and projects subsequently mentored through dialogue and review. The RAC devoting substantial effort to its multi-step award selection process and to discussion in public forums of the reports prepared by the funded projects. Under three annual calls for proposals, from January 2012 through June 2014, the CGP received over 700 applications, as shown in Table 2. Through its competitive section process, the programme made 72 awards averaging $22,000 per project. Thirteen of the awards had female principal investigators. A modal target for the CGP grants was young Pakistani researchers at the assistant and early associate professor levels who would be enabled to build on their Ph.D. training instead of lapsing into a research-deficient environment. With only the top 10 percent of applications selected for funding, the programme was highly-competitive from the perspective of those submitting proposals. Nevertheless, interest and application numbers grew markedly after the first two rounds of awards.

Table 2

CGP Applications, Reviews and Awards

Call for Applications	Proposals Submitted	Second Stage Evaluation	Invited for Oral Presentation	Awards Offered	Projects Initiated
Round 1 (May 2012)	187	50	29	22	18
Round 2 (Feb. 2013)	190	55	33	20	19
Round 3 (June 2014)	323	80	42	35	35
Total	700	185	104	77	72

It was important to the design of the CGP that its reach extended beyond the applicants who were selected for projects. For each round, the multi-step review and selection process involved ten or more RAC members and was completed within a three-month period. Through these reviews, the CGP network incorporated all applicants in a learning and interaction process. Each of the submissions was assigned an overall initial score which was conveyed back to unsuccessful applicants to provide feedback on their proposals. The highest-ranked proposals, 185 in total, were nominated for additional scoring, with written evaluations of these proposals prepared by two RAC members. Subsequently, the RAC met for review of the evaluations and over the three award rounds selected 104 proposals to invite for oral presentation. Final selection for funding was based on the written proposals and oral performance from these short-lists, resulting in 77 offers of awards and the final 72 projects undertaken.

Table 3 summarises the institutions that received awards and their provincial locations.[7] Within its tiered competitive framework, the RAC sought to provide research support across a wide range of institutions by academic ranking, location, size, and subject focus. Awards were granted to investigators at 46 institutions. The subset of international awards provided partial funding of the research of six Pakistani Ph.D. students and three Pakistani professors abroad.

Table 3

Institutions of CGP Awardees

Institution	Round 1 (May 2012)	Round 2 (Feb 2013)	Round 3 (June 2014)
Punjab (24 Institutions, 40 Awards)			
Allama Iqbal Open University			1
Center for Policy Management		1	
College of Veterinary and Agricultural Science, Jhang	1		
Competition Commission of Pakistan		1	
COMSATS, Islamabad			1
COMSATS, Lahore			2
Fatima Jinnah Women University			1
Forman Christian College (FCC)	1	1	
Gift University, Gujranwala			1
Governance Institute Network International (GINI)	1		1
International Islamic University			1
Lahore University of Management Sciences (LUMS)		1	2
National University of Computer and Engineering Sciences			1
National University of Sciences and Technology (NUST)			1
Pakistan Agricultural Research Council (PARC)		1	
Pakistan Institute for Env-Dev Action Research (PIEDAR)		1	
Pakistan Institute of Development Economics (PIDE)		1	3
Planning Commission			1
Quaid-i-Azam University		1	
Sustainable Development Policy Institute (SDPI)	1		
Synergistic Financial Advisors		1	1
University of Agriculture Faisalabad (UAF)	3	1	4
University of Central Punjab	1		
University of Gujrat	1		
Sindh (5 Institutions, 9 Awards)			
Applied Econ Research Centre, Karachi University (AERC)	1	1	1
Bahria University, Karachi			1
Institute of Business Administration, Karachi		1	2
Iqra University, Karachi			1
Mehran University of Engineering and Technology			1
Other Pakistan (8 Institutions, 12 Awards)			
Abdul Wali Khan University			1
Islamia University, Bahawalpur			1
Lasbella University	1		
University of Agriculture, Peshawar	1	1	1
University of Azad Jammu and Kashmir			1
University of Malakand		1	
University of Peshawar	1	1	
University of Swat	1		1
International (9 Institutions, 11 Awards)			
American University	1		
Embassy of Pakistan, Kazakhstan			1
George Mason University	1		
Georgia State University		1	
University of British Columbia			1
University of California, Riverside	1		1
University of Cambridge		1	
University of Illinois, Chicago		1	
University of Oxford	1	1	
Total (46 Institutions, 72 Awards)	18	19	35

[7]In contrast Naveed (2013) shows that policy research remains concentrated in donor funded organisations in Islamabad, Lahore and Karachi. He also shows that this research is predominantly conducted mainly by international NGOs and consulting firms. Local universities, especially the smaller ones, play little role.

4.2. Breadth of Research Topics

The breadth of research called for and supported by the CGP reflects the multiple dimensions of economic and social development necessary to raise incomes and achieve modernisation in Pakistan. The first two award rounds (June 2012 and February 2013) were organised around themes of the *Framework for Economic Growth* (2011), the planning document of the PPP government (2011-2013). The third round (June 2014) was organised around themes of *Pakistan 2025* (2014) adopted by the PML-N government. These two planning agendas highlighted similar broad themes centred on promoting growth by achieving improved governance and ensuring the competitiveness and vitality of markets. Themes of the former included governance, vibrant market, creative cities and regions, and strengthened youth and communities. Themes of the latter included institutional and governance reforms, indigenous resource mobilisation and value addition, improved competitiveness, private-sector-led growth, modernisation of infrastructure, and development of social capital. The key aspect of the CGP design, to reiterate, was that within these thematic areas broadly defined, the research project ideas, which together would begin to constitute a crowd-sourced national research agenda, would percolate up from the applications.

The distribution of the awarded projects by topics is summarised in Table 4. The largest number of projects fall under the topic of vibrant markets, including a focus on value addition in the agricultural sector as well as studies of diverse other sectors. Improved governance and monetary and fiscal policies were the focus of quite a few of the projects, with smaller numbers in the areas of urban and regional development, energy and water. With the funded projects selected through the bottom-up process, topics included both national and local focus. Among the innovative topics were studies of religious shrines and literacy in Punjab, social repair after disaster in northern Pakistan, smuggling in Pakistan-Afghanistan trade, assessment of public transportation investments in Lahore, design of open public urban spaces for female adolescents, skill gaps and educational needs in the Gujrat-Sialkot-Gurjanwala industrial cluster, the

Table 4

Summary of CGP Projects by Topic

Topic	Projects	Topic	Projects
Monetary and fiscal policy	**10**	Urban and regional development	**5**
Assessment of public investment	5		
Macroeconomic data	3	Vibrant markets	**32**
Tax policy	2	Entrepreneurship	4
		Financial markets	2
Improved governance	**15**	International trade	2
Institutional context	3	Labour markets	5
Project evaluations	12	Management	6
Disaster relief	2	Value added in agriculture	13
Education and health	7		
Public service administration	2	Energy supply and demand	**4**
Transportation	1	Water systems and utilisation	**6**

Batkhela bazar as a catalyst for regional socio-economic change, safety of milk for human consumption in Jhang City, medicinal plants as a source of rural income, and many others (see RAC (2106) for a complete list of the awarded projects). This breadth of coverage added substantially to the scope of typically-funded research reported by Naveed (2013).

4.3. Networking, Review and Research Outputs

To build greater connections between researchers and evolve professional and research networks, the CGP set up a rolling process for each project where all three stages—proposal (as described above), interim draft report, and final report and its revision—had an open review and researchers participated in an interactive manner. All of the interim reports from projects, and many of the final reports, were presented orally. This strengthened network linkages, knowledge of each other's work, and presentation skills. In addition, it allowed for a debate and citation culture to develop. In total, five national conferences and numerous smaller workshops and seminars were held. At a typical conference, one group would be presenting proposals and other groups would be presenting project reports.

Under RAC guidance the interim and final reports were also subject to written reviews. The approach chosen was to solicit external reviews that would provide specialised feedback on each project. The external reviews would complement internal reviews, for which consistency and continuity would be provided by the CGP secretariat. Thus, a process of internal and reviews and guidance to the projects was undertaken. More than 50 external reviewers participated in the programme (RAC, 2016).

Over the five years of its operation, a number of lessons were learned about making the CGP's review process, networking and build up of the research community effective. Although articulated as one-year efforts, the projects generally took 18-30 months for completion. The length to completion reflected the intensity of the networking interactive process. Participants undertook initial work on the projects over a period of 6-9 months, then open public conferences were held for oral presentations of the interim reports. Written interim reports were either returned to awardees (about 20 percent) for revision or sent to external reviewers. The externally-reviewed interim reports were not revised; instead the reviews contributed to development of the final reports, which the participants anticipated being re-examined by the same reviewers. Work proceeded on draft final reports for an additional 6-9 months. These draft reports were also pre-reviewed and either returned for further development or sent to the external reviewer, mostly for re-examination as planned. The final steps involved revision of the draft final report in response to the review comments. The objective was to finalise the report as a working paper or academic journal submission, a process that involved additional review and revision iterations. In terms of project administration and fiduciary accountability, final project payments were made upon acceptance of the final reports.

The ultimate purpose of this extensive review process was to build research community capacity by placing emphasis on the completion from the funded projects of papers that entered the public domain and thus could contribute to policy debate. With a strong review process for the applications and adequate networking in the project selection phase, many of the initially- proposed ideas turned into good research projects.

With additional commitment to project reviews and further networking, much more was possible. Participants demonstrated sustained determination in seeing their projects through that was somewhat beyond our initial expectations. Only five of the 72 projects were terminated without completion—lower than we had anticipated given the purposefully diverse participation. While it may be hard to separate from the financial incentive for project completion, many participants indicated they strongly valued their engagement in the review and rewriting process and completion of published output in their own right. Review and revision interactions often extended well beyond issuance of final project payments.

An overall indication of the success of the CGP is that by the time of its closure, the projects had resulted in publication of 19 peer-reviewed academic journal articles and circulation of 23 working papers meeting the standard for website posting. Five Ph.D. dissertations at international universities had been competed along with a larger number of master's theses and Ph.D. dissertations funded by the projects at Pakistani universities.[8] Synopses of four illustrative projects are presented in Table 5 and the full set of outputs are given in RAC (2016).

Effectiveness of the CGP's networking, engagement and review approach is evident in the outcomes from the first round of awards. The 18 projects resulted in nine academic journal articles and 12 working papers. The second round was moving toward a similar level of success, with four articles and eight working papers completed when the CGP came to closure in mid- 2016. The closure constraint is further evident for the third round. As of November 2016, the third round had resulted in fewer published outputs. In part this simply reflects the length of time needed for project completions, but it also is suggestive of the benefit of the interactive review process and associated research network building that was entailed in the longer periods of the first two rounds.

5. LESSONS FROM THE CGP

This paper has examined the limitations facing economic and other social science research in Pakistan and described a five-year pilot programme undertaken to further develop research and a research culture to contribute to public policy. Learning from the flexible structures that underpin research in advanced systems, and to counter the rigidity of some previous attempts to establish research institutes in Pakistan, we sought a flexible networking approach. The CGP deliberately did not have its own core staff or fixed-location activity in Pakistan. Instead, we developed an adaptive approach to build a flexible research network across universities, institutes and NGOs in all regions that would grow knowledge and eventually foster a broader research community. The process was designed to crowd source agendas and questions and use peer review and active debate to develop quality and research citation and policy communities. In our view such networks and their conversation are critical to the long-term development of research capacity and human capital in Pakistan.

[8]The participants also produced various other outputs from their CGP projects including seminars, outreach workshops, short policy briefs and newspaper columns, academic conference presentations, and related journal articles. Other than the papers being prepared under its review process, the CGP made only limited efforts to systematically track the additional outputs and graduate degrees from the projects, an error in retrospect.

Table 5

Synopses of Four Illustrative CGP Projects

The Size and Nature of Informal Entrepreneurship in Pakistan, Muhammad S. Shahid, Lahore University of Management Sciences Publication: Williams, Colin, Muhammad S. Shahid and Alvaro Martinez. 2015. "**Determinants of the Level of Informality of Informal Micro-Enterprises: Some Evidence from the City of Lahore, Pakistan**." *World Development* 84(August): 312-325. Recognising that enterprises operate at varying levels of informality, this paper evaluates the determinants of their degree of informality. Reporting a 2012 survey of 300 informal microenterprises in the city of Lahore in Pakistan, the finding is that the key predictors of their level of informality are the characteristics of the entrepreneur and enterprise, rather than their motives or the wider formal and informal institutional compliance environment. Lower degrees of informality are associated with women, older, educated, and higher income entrepreneurs and older enterprises with employees in the manufacturing sector. The paper concludes by discussing the theoretical and policy implications.
Urban Open Spaces for Adolescent Girls, Ayub Qutub, Pakistan Institute for Environmental Action Research, and Nomana Anjum, Allama Iqbal Open Univerity Publication: Qutub, Ayub, Nomana Anjum, Nazia Iftikharm, Mehnaz Mehmood and Nighat Bibi. 2015. "**Choices of Adolescent Girls for Schoolyard Activities in Rawalpindi-Islamabad, Pakistan**." *Children, Youth and Environments* 25(3): 40-61. Adolescent girls in Pakistan are restricted from outdoor physical activities due to the risks of crime and teasing, and by "cultural norms." Schoolyards are potentially key recreational places. However, there is little space for recreation at most low-fee private schools, and state-run schools have little incentive or resources to support outdoor activities. In this interdisciplinary study, focus group discussions, participant observation, interviews and group work elicited the outdoor space preferences of parents and schoolgirls. The girls display considerable ingenuity for outdoor play in constrained environments, and aspire for more vigorous physical activity and quality recreation. Policy reforms, changes to schools' approaches to the use of outdoor space, and societal efforts are required to make adolescent-girl-friendly spaces more widely available.
The Political Economic Consequences of Pakistan's Linguistically Fractured Educational System, Zehra Aftab, Ph.D. candidate, American University, Washington D.C. Publication: Zehra Aftab **Experimental Evidence on Public Good Behaviour across Pakistan's Fractured Educational System.** PSSP Working Paper 033, December 2015. Using the design of a public goods game, this study investigates behaviour of Pakistani university students: 1) does cooperative behaviour differ across identity groups and class lines, 2) does the propensity to punish vary across gender and class, and 3) does the behaviour vary *within* groups. Three types of universities form the identity groups: elite English-medium universities, public and private sector universities catering to middle and lower middle-income students, and madrassas. Students from these three groups differ in their socio-economic background, the language of instruction, the religious content of their curriculum, and their exposure to print and electronic media. The experimental results illuminate cultural characteristics. Both male and female madrassa students are the most generous. Male madrassa students penalise female more than other male students, while elite male students penalise female students less than male students in the other two groups, suggesting hostility towards women diminishes with higher incomes. Male elite students, penalising madrassa students more heavily than fellow elite students, suggesting the presence of spite among the elite boys towards high contributors.
Exploring Determinants of Entrepreneurial Behavoiur, Ali Muhammad Mohmand, University of Peshawar Publication: Mohmand, Ali Muhammad and Muhammad Junaid. **Determinants of Entrepreneurial Behaviour in FATA Pakistan**. PSSP Working Paper 038, February 2016. This study investigates entrepreneurial behaviour in the impoverished Federally Administered Tribal Areas (FATA), examining the relative strength of selected entrepreneurial determinant in the Pashtun tribal culture. Persistent wars, economic downturn, and strong cultural adherence have turned the Pashtun tribesmen into necessity entrepreneurs. Based on primary data from 462 respondents, entrepreneurial behaviour measured by self-reported views toward risk-taking and innovativeness are related to economic, institutional, and cultural constructs using logistic regression models. Limited support is found for several of the hypothesised determinants of entrepreneurial behaviour, with different sets of predictors emerged for risk-taking and innovativeness. The results inform academics as to how entrepreneurial behaviour of Pashtuns can be enhanced, set up hypotheses for future research exploration, and can guide policy to stimulate underlying factors that will promote entrepreneurship in FATA.

In a number of respects, the CGP pilot programme exceeded our initial expectations. The completed papers provide a body of knowledge from the CGP's five-year duration. In achieving this outcome, the programme dynamised Pakistan social science research in several ways. Perhaps the most important of these was that through the CGP process local talent was identified, nurtured and connected to colleagues across the country. In keeping with expectations, the crowd-sourced research agenda included many more local issues than research agendas elites and experts from Islamabad, Lahore and Karachi would set. Faculty at the provincial smaller universities were empowered and the networking among them and participants from the better-placed metropolitan institutions was mutually beneficial for scholarly development and broadening research themes.

The open process which allowed international scholars to compete for funding and included them fully in the review process proved to be important for vitalising competition as well as for maintaining a transparent process. In an environment of mistrust, the CGP sought to remain above innuendo and retain widespread confidence in its decisions. Creating a global competition prevented the feeling of a protected infant industry and forced all to seek to come up to a global standard.

The CGP conferences and workshops proved to be important for a transparent process since all decisions were taken openly. In addition, the conferences trained researchers in presentation and debating skills. This was particularly important because these researchers especially in the provincial universities have few opportunities for seminars and conferences.

We also learned the necessity of a multi-year commitment to research review and development of the network and its projects. Without this length of engagement, the goal of quality reports that circulated in the public arena would not have been achieved. With this commitment, even within the limited five-year CGP pilot effort we began to see groups emerging (in areas such as macroeconomics, urban and local issues, and entrepreneurship) that with more time could have deepened their networking and perhaps spun off into specialisations with deeper interactions in important areas of public policy.

5.1. A Way Forward

In a large developing country like Pakistan the diversity of issues as well as talent in provincial areas and many institutions is often ignored, leaving policy debate and decisions in the hands of the elite in a few large metropolises. Creating research networks and a research culture remains a perennial issue as competent researchers nurtured through expensive overseas training find that their human capital depreciates over time with isolation and a scarcity of research funding. Funding for research that is made available by donors and the government too often comes with many centrally determined constraints and only mobilises the best-known researchers.

Facing these obstacles, the fullest long-term hope was and remains that a research network as piloted in the CGP when scaled up could allow several different citation and policy communities to develop as research grew and specialised. Networking and citations among researchers and the development of specialisations according to emerging interests would allow competition to grow. In turn citation communities would convey information on evolving research and the knowledge being developed. As networks formed and split into specialisations they would develop policy ideas which

could be picked up by concerned media, political actors and civil society groups to be taken into the policy process.

Over time this process would also reveal public intellectuals and their theses and hypothesis which could inform society on issues and guide debates in the popular media. In addition, the current approach where knowledge appears to be clustered in the big cities with their assumptions about the disadvantaged areas would face some serious pushback from work emanating from those areas.

A truly bottom-up and decentralised approach to social science research would develop in this manner. Policy would be informed by crowd-sourced ideas emanating from all areas of Pakistan and not be restricted to the suppositions of the capital—a critique that is often made. One has to wonder what the research environment might look like were a pilot programme like the CGP to operate for an extended period of 10 or 20 years. One can envision a steadily rising level of quality of the applications and research produced, and strengthening and deepening of networks that would vitalise the research interface with public policy.

As a pilot project, an objective of the CGP was to lay the seed of and test out funding arrangements as well as credible processes for ensuring a high research quality through networking and engagement. A limitation recognised from the outset was the dependence on external funds, viewed as a disadvantage in building a scholarly network with deep-rooted local ownership. In concluding meetings, a strong consensus among the RAC members was that CGP-type competitive research funding and network development are necessary for furthering of economic and other social science and public policy research and thinking in Pakistan. The most important innovation of this pilot programme was that it set up a system of cooperation for research initiatives among investigators across multiple institutions and created networking that facilitated peer review and decentralised knowledge development. But no adequate foundation for continuation of the programme had been set in motion.

Perhaps the critical flaw of our pilot was that the initial design did not build in from the outset plans for a follow-through. The reliance on a small functional secretariat for the CGP located externally was pragmatic at the beginning to avoid addressing complex internal institutional arrangements. It should however, have been tasked with developing domestic administrative arrangements to take over the CGP's operation as the programme evolved. The RAC and both the secretariats could at that time have pushed for funding of an ongoing programme built on the CGP development.[9]

A large challenge thus remains for which the pilot CGP provides some experience that can be drawn upon. Research capacity building for local policy and development continues to be a key challenge and donor agencies continue to struggle with it. Our pilot suggests that an approach along lines of the CGP can be an important aspect of building a research culture. The CGP research network maximised participation and interaction, allowed a diverse range of local issues to percolate up, and fostered quality conversation, debate and outputs to emerge. It did all this while not imposing a fixed research agenda.

Our view from the CGP experience is that there should be more experimentation with this model. The CGP processes and outcomes convince us that with longer-term funding it would have been possible to grow the network and further develop high-

[9]Regrettably, aid-funding arrangements are no too friendly to allow domestic agencies alone to undertake such arrangements.

quality research. Shorter term, the CGP has informed the limited existing HEC research grant programmes and those of several other research initiatives, including the Centres of Advanced Studies established since 2015 with USAID support.

While many challenges remain to further scale up the CGP model, we do not see any better way to build research capacity and foster informed policy debate. Without the opportunity to develop their acquired human capital the best educated will continue to leave the country, frustrating university progress and research contributions to policy, as noted by Haque (2005).

With networking opportunities, Pakistani university and other research appointments would become more attractive and research undertaken could better keep pace. This balanced development would grow human capital and offers incentives for the human capital to stay in place across the geography of Pakistan.

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RESEARCH FOR SOCIAL TRANSFORMATION AND ADVANCEMENT

2021 RASTA Competitive Grants Programme for Policy-oriented Research

The Pakistan Institute of Development Economics (PIDE) has launched a multi-year competitive grants programme for policy-oriented research in Pakistan titled **'*Research for Social Transformation and Advancement*'** (RASTA) under the Public Sector Development Programme (PSDP) of the Ministry of Planning, Development and Special Initiatives, the Government of Pakistan. RASTA's mission is to develop a research network of academia, think tanks, policymakers, practitioners and other stakeholders across Pakistan producing high-quality, evidence-based policy research to inform Pakistan's public policy process.

There will be six rounds of the Call for Research Proposals. The first call was in October, 2020, and the second one would be announced in the first quarter of 2021. All updates will be published on PIDE/RASTA website from time to time. In pre-submission engagements webinars and workshops are scheduled to guide potential applicants. For more details and guidelines related to RASTA programme, eligibility, application process and updates, please visit PIDE/RASTA website and follow us on Twitter.

Call for the second round coming soon.

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ARTICLE 5

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