



The PAKISTAN DEVELOPMENT REVIEW

ARTICLES

Hartmut Elsenhans

Reconstructing Development Economics: Overcoming
Rent for Constructing Capitalism

**Muhammad Zubair Mumtaz, Zachary Alexander Smith,
and Ather Maqsood Ahmed**

An Empirical Analysis of the Implicit Growth Rate for Industrial
IPOs Listed in Pakistan

Rafat Mahmood, Sundus Saleemi, and Sajid Amin

Impact of Climate Change on Electricity Demand: A Case Study of Pakistan

Maryam Tanwir and Azam Chaudhry

Reforming a Broken System: A New Performance Evaluation
System for Pakistan Civil Servants

BOOK REVIEW

Volume 55

Spring 2016

Number 1

www.pide.org.pk



C O N T E N T S

	<i>Pages</i>
ARTICLES	
Hartmut Elsenhans , Reconstructing Development Economics: Overcoming Rent for Constructing Capitalism	1
Muhammad Zubair Mumtaz, Zachary Alexander Smith, and Ather Maqsood Ahmed , An Empirical Analysis of the Implicit Growth Rate for Industrial IPOs Listed in Pakistan	15
Rafat Mahmood, Sundus Saleemi, and Sajid Amin , Impact of Climate Change on Electricity Demand: A Case Study of Pakistan	29
Maryam Tanwir and Azam Chaudhry , Reforming a Broken System: A New Performance Evaluation System for Pakistan Civil Servants	49
BOOK REVIEW	
<i>Oswal</i> de Reviero. The Myth of Development: The Non-Viable Economies of the 21st Century Muhammad Rahim Shah	73
SHORTER NOTICE	77

Reconstructing Development Economics: Overcoming Rent for Constructing Capitalism

HARTMUT ELSENHANS

The purpose of the following article is to show that for its survival capitalism requires expanding mass incomes and that the dominant interpretation of growth relying on ever increasing shares of the rich in national income is misguided. Capitalism is an achievement involuntarily imposed by the poor onto the rich of society. The rich gain wealth by a large variety of means, very often not by the discipline capitalism requires and imposes through competition. The article concentrates on two aspects: the conditions of making expanding mass incomes the basis of capitalist transition in not yet capitalist underdeveloped economies, and the importance of such a transition for maintaining capitalism at the global level where a globalisation of rent against globalisation of profit is the intention of the forces of capital. Therefore many other very relevant aspects of the theoretical model can only be shortly outlined.

1. SOME ASPECTS OF THE THEORETICAL BACKGROUND OF MASS CONSUMPTION BASED CAPITALISM¹

Following Kalecki (1942) and Luxemburg (1923: esp.107–119), profit is based on net spending on investment, but such net spending on investment requires expanding markets. As long as capitalists compete with each other, they cannot arbitrarily increase their own consumption, nor tolerate the increase of the consumption of their directly dependent classes. Accumulation can barely exceed expansion of total production, because otherwise rising capital output ratios ultimately lead to increasing unit costs, which would lead to the current bankers' and Lenin's (1899: 42f.) solution of demand creation by accelerating accumulation failing. The constant capital output ratio in most developed industrial countries for the last 150 years is proof of this argument. Where the ruling class cannot constitute monopolies, the only solution for the necessary expansion of demand consists in expanding mass incomes. This expansion is possible on the one hand by higher levels of employment which lead to productivity-oriented wage increases as described in neoclassical theory or by the increased bargaining power of labour. Both conditions are normally interrelated: rising mass incomes contribute to increasing employment, and increasing employment contributes to better conditions for political organisation of the working class.

Rising mass incomes are a precondition for capitalist growth, such that the absence of empowerment of labour will block capitalism. The typical underdeveloped economy is

Hartmut Elsenhans <helsen@rz.uni-leipzig.de> is Professor Emeritus, Institut für Politikwissenschaft, Universität Leipzig, Leipzig, Germany.

¹For this background Elsenhans (2011, 2014).

characterised by a surplus of labour, which keeps average skilled labour from empowerment regardless of the levels of productivity of some elements of the labour force. Therefore, to achieve the transition to capitalism it cannot be achieved only by increasing market relations but requires the mobilisation of rents for supporting marginal labour, i.e. labour which produces less than it needs to survive, which at any possible wage rate is less productive than its cost of employment. Under the actual conditions of globalisation, i.e. competitiveness of labour in poor economies of the South through their capacity to devalue the currency, the lack of empowerment of labour in the South is having a knock on effect for the disempowerment of labour in the West. We are facing the alternative between a *globalisation of profit* against a *globalisation of rent*.

The contention of so-called capitalists, whom I term “rentiers”, that their accumulation of more and more resources pushes growth has until now gone mostly unchallenged. The difference between capitalist modes of production and non-capitalist ones is that in capitalist ones such interpretations have until now been of little relevance. What the powerful think about the conditions of growth by accumulation has been irrelevant, as long as labour is able to impose increasing mass incomes. In history, the labour movement has not really cared about winning in ideological battles in the West. Mainstream economics is a convincing demonstration of its own irrelevance, especially during crisis. During the recent economic crisis, no major country in the West followed neoclassical theory, which advocated overcoming the crisis by additional savings.

The myopic image of capitalism as increasing exploitation and causing the impoverishment of large masses has been for more than half a century unmindful to economic history, especially related to the early wage increases in Britain and the United States, but also in Japan and Germany. Historical research has established that with the exception of the period of the French wars of the late 18th and early 19th century, and later during the 20th century world wars, real incomes of the masses increased in Britain with the increases in production and productivity [Crafts (1985: 103); Elsenhans (2014: 54)], and more rapidly in terms of purchasing power for non-agricultural products than for agricultural products [Broadberry and Gupta (2006: 4)].

Defining capitalism as being dependent on rising mass incomes does not imply that capitalists contribute to rising mass incomes. The interests as defined by a ruling class are more often the perils of the functioning of a successful economic system than its promotion of one, as shown by Ibn Khaldûn for the Arab city states (1967: 569–577). There is no room here to discuss whether cultural traditions and political arrangements in pre-industrial Europe made the struggle of the poor easier than in the well-ordered ancient empires of Asia, which I term tributary modes of production. As the rise in the poor’s incomes is basically the result of a power relation in their favour, a large variety of factors may have contributed, such as demographic decline, political rivalries within the ruling class, cultural norms favourable to the notion of equality of all human beings, and other factors. They have existed in different parts of the world in different combinations at different times, so that the European case has to be explained on the basis of accidental historical contingencies.

Certainly capitalism implies a restructuring of society, as described in the Marxist idea about primitive accumulation, but to the difference of Marx not in the form of the

misery of the great mass of the population, rather in the form of protecting the masses from impoverishment when traditional mechanisms of solidarity were destroyed by increasing market penetration of society. The “doubly free” proletarian (separated from his means of production and free to sell his labour power), whom Marx (1867: 183, 742) describes as a constitutive element of capitalism, and primary accumulation can only emerge when workers consider it as probable that they may gain employment. Public sector programmes like the Poor Laws in England [Elsenhans (1992)] are not proof of intensified exploitation as Marx had argued, but of redistribution by which the rent on the land owners is reduced by a parish tax used for the support of poor people. The poor spend money mostly on food and simple products so that the market for simple products expands, with some produced by machines. During the whole Industrial Revolution, Britain had comparative advantage in simple machine produced products, even if the engineers organising this production were not conscious of this and instead tried to compete with China in luxuries [Berg (2006: 283f.)]. Britain conquered the world market, not because of quality products but because of cheap products. The improvement of the nutritional state of the great mass of the English population and the increase of per-capita food production has been argued in English agricultural history since the 1930s. The previous position argued that the rural masses had been impoverished by their displacement from agriculture by enclosures [Overton (1996)]. Rising mass incomes are a condition of capitalist growth not the consequence of them [Allen (2009: 14ff.)], although the possibilities for rising mass incomes rises if productivity increases through capitalist growth. The decisive link is that luxury consumption leads less to capitalist growth than mass consumption does.

The actual attempt to avoid rising mass incomes through creating demand by lavish financial policies requires market imperfections in the form of state protection of financial markets; protections which ultimately destroy competitive capitalism and transform financial capitalists into protected rent collectors through financialisation. Keynes’s argument about an active role of money has been hijacked by his opponents: Keynes suggests expansionary monetary policies in order to achieve rapidly high levels of employment. The neoclassical mechanism of the wage drift can show its existence under this circumstance. Defending mass income-based capitalism should therefore be a key strategy for blocking the transition of the global system into an faux capitalist one actually based on state-protected financial markets.

2. UNDERDEVELOPMENT, MARGINALITY AND THE STRUCTURAL BLOCKAGE OF CAPITALISM

Development theory and development policy are like Keynesianism children of the great economic depression of the 1930s: the point of departure is proving wrong the argument of the liberals that capitalism is capable of restoring high-level employment equilibria. Hence, the penetration of capitalist relations of production could no longer be expected to lead to capitalism as the liberals and the historical school in Germany (Werner Sombart) had assumed. The colonial powers realised that developing social crises benefitted the national liberation movement.

Due to the politically threatening impoverishment of the population, it was clear in early development theory that cheap labour would not produce development. The central

problem of development policy was formulated: a surplus of readily available cheap, exploitable labour did not lead to accumulation and growth even if there was wealth, hence the theory of labour surplus [Lewis (1954)] which coexisted with more or less financial surpluses. Since its beginnings, development theory accepted as central the absence of the conditions for the spontaneous emergence of capitalism in backward countries.

Surplus labour is marginal, i.e. labour which produces less income than its subsistence under existing conditions of demand and supply. Low incomes coincide with a high share of agricultural production. Scarcity of land implies a decreasing marginal product of additional workers [Elsenhans (1994: 394–397)]. Population growth will lead to people producing less than their costs of subsistence. Growing employment may increase production, but at least at some level of labour input the additional product value declines enough that it becomes less than the additional requirements for feeding an additional worker and his family [Georgescu-Roegen (1960)]. This level of marginal product can be defined as the *threshold of marginality*, as any additional worker produces less than his cost and can be maintained only by redistributive measures. Pre-capitalist solidarity structures had for long preserved these marginals, but whenever landowners maximise surplus they will shed this labour, transforming marginal workers into marginalised people. Marginals could survive only if there were mechanisms through which private actors like kin, family, public institutions or the well-meaning landlord (the marginal being an asset in powers struggles for him) supported them through a subsidy. Such a subsidy was financed from the surplus and this part of the surplus was appropriated by non-market means, what I term a rent.

Where there is marginal labour which cannot access a sufficient income on the basis of its productivity, all other labour with average skills is weak as it can easily be replaced by workers from the reserve of marginal labour. Marginal labour depends for its survival on the magnanimity of others. In most large families, there are some members who hold labour contracts where they earn more than their costs of reproduction. There are obligations of re-distribution, which allow the marginals amongst the group to reap charity. The unspoken condition is that these economically marginal members of the group will not put into danger the access of the privileged members of the group to their 'above subsistence' work contracts. The simplest requirement for the marginal members in the group is not to rebel against the existing order.

The often criticised submissive attitudes of the poor in relation to the powerful are not the result of cultural tradition but a rational strategy given the economic imperatives. In addition, penny capitalism demonstrates the rationality of the poor of the underdeveloped South and skewers arguments of cultural determinants in economic outcomes [Tax (1964); de Soto (1989)].

Marginality has an important consequence for the dynamics of class formation. In a capitalist economy which tends to full employment, wage rates tend to converge into a hierarchical set where labour effort and physical or psychological burden determine differences. This process is facing opposition in existing capitalist economies by the fact that they no longer tend to full employment under the conditions of globalisation. In Germany, for the last 15 years the difference between the low paid hair dresser and the

highly paid hewer in coal mining was 1:2.² Branch differences only exceptionally exceeded 33 percent, despite very different skill requirements between the best paying branches (e.g. energy supply) and the less lucrative branches (e.g. restaurants) [*Statistisches Jahrbuch* (1984: 380-381)].

Wage differences do not follow branch specific productivity differences; the convergence of sectoral and branch-wise productivities in monetary terms is not the result of any harmonious development of economy-wide increases of physical productivity. Salaries in highly productive branches increase initially when entrepreneurs attract workers with high salaries. If there are high levels of employment this process is accompanied by scarcity of labour in more traditional branches of production. The entrepreneurs of these branches have to reduce output. Customers are ready to pay higher prices. Wage increases follow average and not activity-related productivity increases [Salter (1960): 161]. A branch of production which has not enjoyed any productivity increase will be able to pay higher wages in parallel with the rise in average productivity and hence wages akin to other more dynamic branches. Wherever there is no scarcity of labour, innovation in a specific branch will lead to increasing wages in this branch only if the branch requires workers with rare skills, but not if average skills are needed (assembly line type operations) or in other branches where there has been no productivity increase. Wages will therefore stagnate. As productivities measured in monetary terms will be determined under perfect competition by the cost, with different levels of wages, productivities will diverge between branches such that with respect to branch wise productivities these economies will be structurally heterogeneous [Nohlen (1982: 95–97)]. They will tend to be inflexible as capital is hesitant to flow from high productivity branches to low productivity ones. Small price changes will not necessarily lead to flexible adaptation.

The homogenisation of the economic situation of working people does not take place: the economic basis for the emergence of powerful class organisations does not emerge.

Capitalism in its flexibility and absence of power-based appropriation of surplus is an extremely unstable relation. Capitalism reacts to instabilities with political interventions by “elites” (as in other modes of production). In periods of crises, these elites appropriate surplus by political means and then spend it by political distribution on their consumptive and power interests (military). In capitalism this type of crisis management contradicts its basic set up because it counters the liberating tendencies of capitalism (which do not exist in state-dominated pre-capitalist systems such that interventions by the elites do not upset these systems). Capitalism is not more unstable than other modes of production but more threatened than non-capitalist structures in its maintenance.

Wherever labour becomes disempowered, ruling classes in capitalism shift to rent seeking and political safeguards to secure their access to surplus. The failures and crises

²These processes however only occur if there are high levels of employment. Structural homogeneity and hence economic flexibility in capitalism result from scarcity of labour, which translates as empowerment of labour. Obviously, the more labour is disempowered also in the leading industrialised countries (e.g. USA), the less the prescribed tendency of convergence is operating. Globalisation threatens by disempowerment fundamental elements of capitalism in the “centre”, another element for demonstrating the close link between empowerment of labour and capitalism. Cf. Elsenhans (2014: esp. 166–169).

in the transition to capitalism in European history, as well as the new challenges for maintaining capitalism in the face of the globalisation upheavals, demonstrate that capitalists consistently seek refuge in political measures which promote rent-seeking whenever the social conditions for appropriation of profit weaken because of labour disempowerment (lower wages and higher unemployment). Capitalist reactions to crises are not appropriate for strengthening the basis of capitalism, but may even lead to the further weakening of its basis.

The singularity of the now capitalist countries, in particular Europe and the regions of European settlement, do not constitute a specific European culture which draws its origin from religion, institutions of participation, ideologies, or the equality of humans, but basically from accidental conditions for the empowerment of labour. Such cultural factors as mentioned in the vast literature which allege the uniqueness of the West may be of some value but those characteristics may equally have been present in other cultures. They may have reached in Europe an accidental ‘critical mass’³ for a variety of accidental reasons.

Development politics and economics have to ultimately contribute to the strategically central mechanism for achieving capitalism: increasing mass employment. This can go with eclecticism of types and levels of interventions covering a large variety of issues. It is not the statist form which causes the limits to labour integrating markets and popular participation, but the temptations of self-privileging and concentration of power which are inherent in rents. Much hailed alternative agents, especially non-governmental organisations, have proved not to be immune against self-privilege and forcing measures on uncommitted target groups [Elsenhans (1995: 149–153, 1991, 211)]. It is therefore imperative to detect possibilities to short circuit the opportunities for diversion away from rent-based social structures, and discover settings where the use large resources for development goals in the interest of the masses function as automatic as possible. This will be clarified by dealing with three major programmes for mobilising rents.

3. MOBILISING RENTS IN FAVOURABLE POLITICAL SETTINGS

That modernisation theory in its multiple variants consisted in the mobilisation of a surplus which private entrepreneurs could not appropriate for lack of investment opportunities does not need further discussion. It failed because the planners were not caring for large mass markets, which could be supplied on the basis of (also) locally produced technology, such that there would be a local process of skill creation. Without expanding mass markets, capital-output ratios were high and investment for quality reasons depended on imported technology.

Agrarian reform consists in the redirection of available rents previously wasted by landlords for the upkeep of poor and often marginal people. Endowing each nuclear family with an equal share in total fertile land will not render these people prosperous. They still have very little land and face diminishing returns on their small farms. In order to survive they will mobilise additional labour time, even if additional yields are low, but positive [Elsenhans (1979), Janvry and Ground (1979)]. Rent, which in the English Poor

³A term from nuclear physics when a critical mass is the smallest amount of fissile material needed for a sustained nuclear chain reaction.

Laws accrued to the landlord and was taken afterwards by the parish in order to subsidise the marginals, here goes directly to the small farmers who can survive with this rent if they are ready to provide their labour time. Even if additional incomes are very low total production and total productive work time increase. The demand for industrial products is re-oriented to simple products manufactured in large quantities, possibly with locally produced technology, so that employment in the industrial sector can increase.

On each of these farms there is the problem of decreasing returns. The typical rural family receives large yields with only part of its available labour. As long as these yields do not suffice for survival, labour input into the farm is increased or other activities will be pursued. When the low yielding additional work on the farm yields less than industrial employment, the family provides additional labour to (sometimes) export-oriented small and medium scale industries at below average wages. They can accept wages below the average wage necessary for survival, because they achieve above average incomes from their relatively productive “first” hours of work on their farms. Those people who have no access to the highly remunerative “first” hours on an own family farm have to earn “average wages” in order to survive [Dasgupta and Ray (1987: 177)]. This explains the very low wages in the typical East Asian export-oriented economies for temporarily employed workers, e.g. young female workers before getting married.

The debate on the relation between the size of farms and yields per acre which developed, especially in India, is misplaced [Schaller (2006)]. At the limit, the issue is not whether large farms have higher yields than small farms but whether the incomes generated on large farms (partly rents for better-off landlords) create similarly strong incentives for the production of simple industrial products and local technology promotion as the demand which originates from poor farmers.

The decisive aspect of an egalitarian redistribution of land consists in reducing marginality by transferring a rent to the marginals without large scale administrative intervention, which is always prone to waste, or even, corruption. Giving the land to the poor creates a minimum income. *The recklessness of liberalisation in mainland China with its dire and much criticised consequences for the lower income strata, especially in the urban centres, does not seem to have produced the dire poverty to be found in mainland South Asia. The only reason which can be given is the possibility of resistance of the very poor against such bad conditions on the labour market because they had the possibility to return to their villages and to produce at least for their subsistence.*

An initially simple technology industrial sector, which produces for mass needs and starts developing its own technologies can be called a *popular pole of industry* [Elsenhans (2014: 40f.)]. Such an industry can emerge even under conditions of underdevelopment.

The mobilisation of rent from already productive sectors for supporting diversification of the economy and overcoming underdevelopment is also decisive in the case of export-oriented manufacturing. Those countries which succeeded in this were able to devalue their currencies below purchasing power parity [recently on Pakistan: Ahmed (2010)]. In most cases, real incomes were up to ten times as high as the purchasing power of their local wages in international currency [Chen, *et al.* (1994)]. The priority of the exchange rate in explaining the cheap international cost of labour is glaringly obvious when Western conservatives warn their workers [already described by

Marx (1867: 700)] that there are workers in the rest of the world who work for 1/50 of the cost. As no worker in a Western industrialised country can survive at 1/50 of his salary, the low-cost export workers in the newly exporting countries of the South can only be based on the availability of wage goods at cheaper prices than in the West. A rising working population in the new manufacturing exporters can only survive if local agriculture produces a food surplus for these additional export workers as well as for those workers in industry who have to produce additional wage goods for that same rising number of export sector workers [Elsenhans (2002: 67f.)].

Export-oriented manufacturing will lead to an expansion of the internal market if earnings of the workers in the export sector increase. Multiplier effects of their additional incomes on the rest of the local economy also lead to more employment and, if strong enough, scarcity of labour. If workers have an alternative, even alternative low sources of income, export producers have to attract additional labour by offering better wages. Korean economists saw a turning point when wages no longer only increased in the export sectors but also for those producing for the internal market [Bai (1982:122)]. Through an increase in their numbers and their incomes, increasing demand from workers in the export sector will lead to more local production of mass consumption goods with more multipliers and more employment in the internal market oriented production lines.

More egalitarian societies are able to benefit more from export-oriented manufacturing than in egalitarian ones. Expanding internal markets on the basis of increasing mass incomes has been important for the better growth performance of countries like South Korea, Thailand, China, and Vietnam in comparison to countries like the Philippines, India and Pakistan [even within one country: Lange (2009: 127)]. The successful export-oriented industrialising countries initially had an egalitarian distribution of income and food self-sufficiency.

The requirement of empowerment of labour as a positive component to the success of export-oriented manufacturing is not contradicted by the increasingly unequal income distribution in these countries: this inequality has not precluded rising mass incomes. Partly it is a statistical artefact as the poor predominantly consume products where the prices correspond to the strategy of devaluation and are considerably cheaper than on the world market, whereas the prices of the products consumed by the rich are aligning more or less with world market prices as they are internationally tradable luxuries.

As long as export workers consume mostly local products, the supply of local products in greater quantities does not raise the international price of this labour. This depends ultimately on the capacity of local agriculture to produce a surplus for the emerging market, which is constituted by the additional purchasing power of workers who receive wages in the export sector even if their incomes are so low that they cannot buy the same food from the world market. This surplus would otherwise not have been produced for the market—constituting a rent.

Devaluation is costly. Productivity is not uniformly lower in underdeveloped countries in relation to the technological world leaders. The range of products appropriate for local production increases if rates of devaluation increase. Particularly in the case of goods with low price-elasticity of demand, exports which have been competitive even before further devaluation have to be taxed if losses in foreign-exchange should be avoided. The model example is the blocking of textile machinery imports by South Korea

when their textile exports faced an increasingly price in elastic demand on the world market [Haggard (1983: 83); Mytelka (1986: 258)]. Textile exporters had to order locally produced expensive textile machinery (which were initially expensive) from their spare part suppliers to whom they transferred their technical knowledge. The additional cost of the locally produced machines was charged to the textile exports with limited losses in export earnings given the low price elasticity of demand. The described mechanism is not completely different from the appropriation of rent by an oil country for financing industrialisation programmes.

Under the conditions of globalisation, state intervention and rent appropriation are important instruments for enlarging competitiveness. Export-oriented manufacturing as the centrepiece of liberal development thinking does not imply the dominance of the market, but the intelligent utilisation of the market in order to combine market and state intervention.

The conditions of successful export-oriented industrialisation are very similar to the conditions of self-centred growth and social reform-based growth of the variants of modernisation theory mentioned above or growth based agrarian reform. In all these three variants of interventions the success in overcoming development depends on the impact of the measures on reducing marginality. In all three variants, overcoming underdevelopment requires complementing the market via empowerment of labour and mass demand wherever the market does not lead to high levels of employment.

4. GLOBALISATION AND OVERCOMING UNDERDEVELOPMENT

Underdevelopment is characterised by the simultaneous availability of surplus [Bagchi (1973: 20)] and the absence of economic agents who can transform that surplus into investment via their entitlements on the market. Potentially available surplus may not be produced for various reasons, notably overvalued exchange rates or unemployment. Due to its availability, some agents gain access to the surplus on the basis of market imperfections and state failure. This private nonmarket access to surplus appears to the public as corruption. Even states which defend the interests of their masses cannot avoid the particularistic strategies of regional administrations, enterprises, party sub-organisations etc., which ultimately subvert their lines of communication and their formalised command structures [Elsenhans (1996: 275–301)]. States always can only use top down orders like formal law for guiding their administrations. Democratic participation implies always a problem of delegation with the risk of representatives becoming independent from their constituencies.

An early inception of the capitalist mechanism would strengthen less personalised channels of command and communication and thus help to successfully channel inevitably emerging rents into overcoming underdevelopment: expansion of mass incomes will trigger market oriented investment to the detriment of those rents the state cannot appropriate for investment. The demand of small and medium industries for locally produced investment goods does not only create the technical capabilities for further technical development, but additional demand from which profit can emerge. Reconstructing development theory brings together the basis of development theory with a Keynesian theory of capitalism. On the basis of such theories of overcoming underdevelopment, strategies can be formulated which combine the elements of

expanding mass demand, promotion of industries through state subsidies, and the disempowerment of traditional rentiers. In formulating such policies for different economies, the political dialogue can be re-constituted in many countries where the political impact of the Washington consensus liberalisation and, in parallel, rent-based private enrichment has led to political polarisation.

Globalisation presents opportunities for such strategies. It can create expanding markets for all underdeveloped economies capable of devaluation. It discharges the state apparatuses from some major tasks in economic regulation, especially reducing, albeit not abolishing, the state's role in investment in the manufacturing sector while subverting those that have fallen prey to systemic corruption. Although state intervention may accelerate the achievement of international competitiveness by state-financed manipulation of comparative advantage, the steps towards export orientation can start without such state intervention. State intervention can be introduced long after the growth of manufacturing production, when safeguards against self-privileging and corruption in the newly emergent state apparatus have already been installed.

Export orientation based on the employment of the large mass of unskilled labour causes a shift in political power. The struggle for participation in economic growth and wider economic and political enfranchisement becomes easier for the large mass of unskilled workers. It allows for gradualism in the upgrading process as new industries do not have to adjust to always limited internal demand but can avail themselves of the whole world market in case of appropriate exchange rates.

Export-oriented industrialisation goes with the displacement of high income jobs in the former industrialised world by relatively poorly paid jobs in the catching up world, which in addition are 'sold' on the world market at an undervalued exchange rate. The implied under consumption threats could be overcome if the industrial world proceeded to rapid structural adjustment by deliberately increasing its own mass consumption and developing new branches of production to create new jobs, for example in energy saving technologies. Business in the West has often argued that the loss of jobs in the leading industrialised countries is less due to relocation of production to the South, but to sluggish growth in the West. In states of under consumption, productivity growth outstrips production growth [Erber (2012: 3); Hsieh (1973: 16)]. This is the usual hallmark of under consumption [Woytinsky (1935:165)] and indicates that industrial countries have not managed to engage in accelerating growth in order to achieve structural adjustment.

Reasons include the increasing heterogeneity of industrial countries' working classes, the increasing importance of non-material needs, and the shift of even the lower income strata to saving for the future. Increased savings for a myriad of reasons and increasing blockages for increasing mass incomes all contribute to decelerating demand.⁴

The new competitiveness of the South through devaluation intensifies these problems in the West, but the solution does not lie in limiting export orientation in the South but in simultaneous expansion of demand in the West and in the South.

Accelerating growth in the South by rapidly overcoming underdevelopment would contribute to maintaining capitalism at the global level. It would create legitimacy for

⁴The reasons are multiple and cannot be discussed at length here [Elsenhans (2014:214f.)], but all these tendencies are reinforced by the competition between the West and the South for growth-promoting demand.

purposeful redistribution and state intervention in the underdeveloped economies. Such an approach could appear to the sceptics of Washington consensus visions of capitalism as a pragmatic and non-dogmatic approach. It could act as a discussion platform for critical forces in the Global South.

One form of increasing consumption is the production of goods through environmentally safer methods. Preserving capitalism by increasing this type of qualitatively 'better' consumption fits with the environmentalist critiques of capitalism and does not jeopardise profit. More environmentally-minded production leads to substantial investment and hence to more profit as profit is not residual, rather is the result of spending on investment.

Where state-led attempts at overcoming underdevelopment have failed, the political and moral discredit of the old, mostly secular, state classes has led to the rise of new cultural identitarian movements which present their own versions of capitalism through moral economy [Elsenhans (2012); Elsenhans, Ouaisa, Schwecke, and Tétreault (2015)]. The arguments of these movements may vary, but they uniformly set limits against the accumulation of wealth, the (over-)exploitation of labour, and the discretionary power of the owners of property. By insisting on the conditions of capitalist growth with mass demand a similar scenario emerges as a condition for the maintenance of capitalism.

It would therefore be worthwhile to establish whether those interested in maintaining the progressive elements of capitalism against rent seeking/rent-based structures and the followers of moral economy from whatever cultural background can establish a fruitful dialogue on how to re-orientate the world economy in order to avoid the globalisation of rent. For Keynesians, this may allow the globalisation of profit while for others, such as new cultural identitarian movements, this will be the successful defence of moral principles in society. Inevitable divergences on the interpretation of these outcomes should not block dialogue on possible agreements on pragmatic regulations. The alternative would be the continued committal to a non-realistic interpretation of capitalism, which in reality defends rent while destroying capitalism. Mainstream opinion still creates the illusion of being capable of organising a feasible worldwide cooperation between social forces for managing the world economy. Keynesians and new cultural identitarian political movements share their opposition to this view for different reasons, but should seek to find a common plausible understanding on practical issues and pragmatically converging strategies in order to compete against the current Washington-type consensus.

REFERENCES

- Ahmed, Meekal (2010) An Export-led Growth Strategy. *Criterion Quarterly* 5:4 (October-December), 97–106.
- Allen, Robert C. (2009) *British Industrial Revolution in Global Perspective*. Cambridge: Cambridge University Press.
- Bagchi, Amiya Kumar (1973) Some Implications of Unemployment in Rural Areas. *Economic and Political Weekly* 8: 31/33, 1501–1509.
- Bai, Moo-Ki (1982) The Turning Point in the Korean Economy. *Developing Economies* 20:2, 117–140.

- Berg, Maxine (2006) Britain, Industry and Perceptions of China: Matthew Boulton, 'Useful Knowledge' and the Macartney Embassy to China 1792–94. *Journal of Global History* 1:2, 269–288.
- Broadberry, Stephen N. and Bishnupriya Gupta (2006) The Early Modern Great Divergence: Wages, Prices and Economic Development in Europe and Asia, 1500–1800. *Economic History Review* 59: 1, 2–31.
- Chen, Haichun, M. J. Gordon, and Yan Zhiming (1994) The Real Income and Consumption of an Urban Chinese Family. *Journal of Development Studies* 31:1, 201–213.
- Crafts, Nicholas F. R. (1985) English Workers' Real Wages during the Industrial Revolution: Some Remaining Problems. *Journal of Economic History* 45: 1, 139–144.
- Dasgupta, Partha and Debraj Ray (1987) Inequality as a Determinant of Malnutrition and Unemployment. *Economic Journal* 97:385, 176–188.
- Elsenhans, Hartmut (1997) The Relevance of the Principles of Keynesian Economics for the Transition to Capitalism in Today's Underdeveloped World. In Paul Davidson and Jan A. Kregel (eds.) *Improving the Global Economy. Keynesianism and the Growth in Output and Employment*. Cheltenham: Edward Elgar. pp. 283–303.
- Elsenhans, Hartmut (1979) Agrarverfassung, Akkumulationsprozeß, Demokratisierung. In Hartmut Elsenhans (ed.) *Agrarreform in der Dritten Welt*. Frankfurt on the Main; New York: Campus, pp. 505–652.
- Elsenhans, Hartmut (1991) Political Obstacles to Private Sector Development. In James G. Bennett (ed.) *Private Sector Development in Bangladesh*. Cologne: Oase, pp. 205–245.
- Elsenhans, Hartmut (1992) English Poor Law and Egalitarian Agrarian Reform in the Third World. In Hartmut Elsenhans *Equality and Development*. Dhaka: Centre for Social Studies, pp. 130–162.
- Elsenhans, Hartmut (1994) Rent, State and the Market: The Political Economy of the Transition to Self-sustained Capitalism. *The Pakistan Development Review* 33: 4, 393–428.
- Elsenhans, Hartmut (1995) Marginality, Rent and Non-Governmental Organizations. *Indian Journal of Public Administration* 41: 2, 139–159.
- Elsenhans, Hartmut (1996) *State, Class and Development*. New Delhi; London; Columbia, Mo.: Radiant; Sangam; South Asia Books.
- Elsenhans, Hartmut (2002) Macroeconomics in Globalisation: Productivity, Wages, Profits, and Exchange Rates in an Era of Globalisation. *Brazilian Journal of Political Economy* 22:85, 53–78.
- Elsenhans, Hartmut (2011) *The Rise and Demise of the Capitalist World System*. Leipzig: Leipziger Universitätsverlag.
- Elsenhans, Hartmut (2012) The Rise of New Cultural Identitarian Movements in Africa and Asia in the Emerging Multipolar System. *Comparative Studies of South Asia, Africa and the Middle East* 32: 3, 642–661.
- Elsenhans, Hartmut (2014) *Saving Capitalism from the Capitalists. A Contribution to Global and Historical Keynesianism*. Beverly Hills, Cal.; London; New Delhi: Sage.

- Elsenhans, Hartmut, Rachid Ouaiassa, Sebastian Schwecke, and Mary Ann Tétreault (2015) *The Transformation of Politised Religion: Zealots Turned into Leaders*. Aldershot: Ashgate.
- Erber, Georg and Harald Hagemann (2012) *Zur Produktivitätsentwicklung Deutschlands im internationalen Vergleich. Wiso Diskurs*. Bonn-Bad-Godesberg: Friedrich- Ebert-Stiftung.
- Georgescu-Roegen, Nicholas (1960) Economic Theory and Agrarian Economics. *Oxford Economic Papers* 12: 1, 1–40.
- Haggard, Stephan Mark (1983) *Pathways from the Periphery: The Newly Industrialising Countries in the International System*. Berkeley, Cal.: Dissertation.
- Hsieh, Chang-Tai (1973) Measuring the Effects of Trade Expansion on Employment. A Review of Some Research. *International Labour Review* 107: 1, 1–29.
- Ibn Khaldûn, Abd-al-Rahman (1967) *Discours sur l'Histoire universelle. Al-Muqaddima. Traduction nouvelle, préface et notes par Vincent Monteil*. Paris: Sindbad.
- Janvry, Alain de and Lynn Ground (1979) Types and Consequences of Land Reform in Latin America. *Latin American Perspectives* 5: 4, 90–112.
- Kalecki, Michal (1942) A Theory of Profits. *Economic Journal* 52:206–207, 258–267.
- Lange, Andreas (2009) *Inselreich im Umbruch. Die Entwicklungswege der philippinischen Provinzen in Cebu und Leyte*. Hamburg: Abera.
- Lenin, Wladimir Iljitsch (1972) *Die Entwicklung des Kapitalismus in Rußland. Der Prozeß der Bildung des inneren Marktes für die Großindustrie [1899]. Lenin Werke* 3. Berlin: Dietz.
- Lewis, William Arthur (1954) Economic Development with Unlimited Supply of Labour. *Manchester School of Economic and Social Studies* 22: 4, 139–191.
- Luxemburg, Rosa (1923) *Die Akkumulation des Kapitals. Ein Beitrag zur ökonomischen Erklärung des Imperialismus [1912]*. Berlin: Vereinigung internationaler Verlagsanstalten.
- Marx, Karl (1972) *Das Kapital: Kritik der politischen Ökonomie (1): Der Produktionsprozeß des Kapitals[1867]. MEW* 23. Berlin: Dietz.
- Mytelka, Lynn Krieger (1986) The Transfer of Technology: Myth or Reality? In Carol Cosgrove and J. Jamar (eds.) *The European Community's Development Policy: The Strategies Ahead. Conference organised at the College of Europe, Bruges, 4-6 July 1985*. Brugge: De Tempel. pp. 243–281.
- Nohlen, Dieter; and Roland Sturm (1982) Über das Konzept der strukturellen Heterogenität. In Dieter Nohlen and Franz Nuscheler (eds.) *Handbuch der Dritten Welt (1): Unterentwicklung und Entwicklung —Theorien, Strategien, Indikatoren*. Hamburg: Hoffmann & Campe, pp. 92–116.
- Salter, Wilfried E. G. (1960) *Productivity and Technical Change*. Cambridge: Cambridge University Press.
- Schaller, Sven (2006) Marginalität und Agrarreform in Peru. Eine Kritik der Size-Yield-Inverse und der politischen Implikationen. Leipzig. (PhD. Dissertation).
- Soto, Hernando de (1989) *El otro sendero: La revolución informal*. Lima: Editorial Ausonia.
- Tax, Sol (1964) *El capitalismo del Centavo. Un economía indigena de Guatemala*. Guatemala: Centro Editorial José de Pineda Ibaria.

- Westphal, Larry E. (2015) *Statistisches Jahrbuch für die Bundesrepublik Deutschland 2014*. Wiesbaden: Statistisches Bundesamt.
- Woytinsky, Wladimir (1935) *Drei Ursachen der Arbeitslosigkeit*. Geneva: International Labour Office.
- Wunder, Heide (1975) 'Old Law' and 'Divine Law' in the German Peasant War. *Journal of Peasant Studies* 3: 1, 54–62.

An Empirical Analysis of the Implicit Growth Rate for Industrial IPOs Listed in Pakistan

MUHAMMAD ZUBAIR MUMTAZ, ZACHARY ALEXANDER SMITH,
and ATHER MAQSOOD AHMED

This study examines the cash flow growth rate implicit by offer prices of industrial IPOs using a reverse engineering DCF model. In addition, this study also investigates the bias of implicit growth relative to the realised growth rate by considering 19 IPOs listed on Karachi Stock Exchange during the period from 1995 to 2008. We find that the estimated growth in cash flows is slightly higher than realised growth rate, which indicates that the median IPO firm is overvalued by 61.5 percent at the offering. It is observed that estimation errors increase as a result of higher underpricing and diversified ownership. In addition, post-IPO returns are smaller for issues whose implicit growth rates are biased upward. We also find that IPOs underperform in long-run employing a buy-and-hold investment strategy. The policy implication of the study is to evolve a price discovery mechanism by the Securities and Exchange Commission of Pakistan which may help to reduce the overvaluation of IPOs upto some extent.

JEL Classification: G00, G30

Keywords: Initial Public Offerings, Reverse Engineering DCF Model, Valuation, Growth Rate

I. INTRODUCTION

The decision of when and at what price to take a company public is one of the most important decisions that the owners of the firm have to contend with over the indefinite life of the firm. Since the unseasoned equity shares do not have a publicly traded track record firms and investors alike are sometime left with a very non-descript portrayal of what the company should be priced at; however, the money at stake, for investors investing in the new issue and for owners attempting to exit the firm or trim their exposure to the issue is substantial. As companies issue new shares there will be winners and losers, but question pertaining to who wins and who loses is typically found out in the aftermarket. Analysts, investors, researchers, institutions, and companies have devoted many thousands of hours to study and examine how new issues should be priced

Muhammad Zubair Mumtaz <zubair@s3h.nust.edu.pk> is Assistant Professor, School of Social Sciences and Humanities, National University of Sciences and Technology, Islamabad. Zachary Alexander Smith <zacharyasmith@gmail.com> is Adjunct Professor, Donald R. Tapia School of Business, Saint Leo University, USA. Ather Maqsood Ahmed <ather.ahmed@s3h.nust.edu.pk> is Professor, School of Social Sciences and Humanities, National University of Sciences and Technology, Islamabad.

and the techniques practitioners and academics should use to price these issues; this paper extends this analysis focusing on a unique data set and the application of two unique methodologies to explore both the determinates and the magnitude of underpricing of Industrial IPOs issued on the Pakistani Markets.

Investors, practitioners, and academics have applied different valuation methods to attempt to gain a better understanding of the value locked within the newly issued IPOs (e.g. dividend discount, discounted cash flow (DCF), earnings capitalisation and residual income). Although countless studies [Ritter and Welch (2002); Sohail and Nasr (2007); Song, Tan and Li (2014)] have concluded that statistically and economically significant abnormal performance, on average, can be obtained over the short-run by investing in IPOs, identifying which IPOs to invest in is still a somewhat mysterious and seemingly unfruitful endeavor. Kojima (2007) and Chemmanur, *et al.* (2009) argued that private information is used to determine the value of the newly issued IPOs and this private information segregates the firms into groups that are performing well and those that are not performing well. The main difference between institutional and individual investors is how they interpret the readily available public information [Barber and Odean (2008)]. All investors would rather participate in the newly issued shares of IPOs that perform the best—institutional investors seem to have a better record obtaining higher returns. Individual investors have the same access to public information that the institutional investors have access to, but they misinterpret the available information related to firm value. Field and Lowry (2009) argued that institutional investors leverage their wealth and size to do detailed analyses of IPOs to determine the intrinsic value of the firm and individuals have limited resources and attempt to value the new issues on their own.

Empirically, there are two methods that have been used to value newly issued IPO shares: (i) direct valuation, which is based on an assessment of the fundamentals of the firm, and (ii) relative valuation, which is focused on estimates based on the prices of comparable firms. Even if the best technique to value the IPOs is chosen valuing the IPOs are difficult due to the IPO timing decisions that firms make based upon the “windows of opportunity” hypothesis. According to Loughran and Ritter (1995), the companies in same industry that issue their shares in a period of market buoyance tend to be overvalued. This implies that investors receive higher compensation for their shares relative to the risk that they take on when the relative valuation approach is employed. These firms float their unseasoned shares and posit that the growth possibilities along with optimistic valuations will lead to outperformance. As a result, managers manipulate their accounting numbers to provide an optimistic depiction of their firm’s financial position, which leads to overvaluation of the IPO.

To estimate the value of IPOs, Kaplan and Ruback (1995) suggested that the DCF model provides the best results when compared against other methods. According to Cassia, *et al.* (2004), investment banks utilise different approaches to determine where to price IPOs (i.e. relative valuation is used 87 percent of the time and the DCF method 80 percent of the time). Purnanadam and Swaminathan (2004) argued that overvalued IPOs may earn excessive initial returns, but underperform in long-run. This implies that they use optimistic growth forecasts and focus less on the firm’s profitability when underwriters attempt to value the IPO. When examining US IPOs, researchers have found that the median firm is overvalued by 50 percent relative to their industry peers

[Purnanadam and Swaminathan (2004)]. Further, Deloof, *et al.* (2009) suggested that the discounted Firm Free Cash Flow (FFCF) approach to valuation, a commonly used method, creates an unbiased value estimate. Rossenboom (2012) proposed that the use of different methods generates a positive bias relative to the equilibrium market value because the underwriters deliberately discount the fair prices.

Cogliati, *et al.* (2011) developed a reverse engineering DCF model to investigate the growth rate implicit in IPO prices. They considered 184 IPOs from 1995 to 2001 and reported that the cash flow of IPO firms grew at an average rate of 33.8 percent, annually, over a 5-year period. The estimated cash flow growth rate is higher than the realised rate (i.e. median estimated vs. realised: 21.5 percent vs. 1.8 percent). Additionally, the estimates of the short-term implied growth rates have been shown to be inversely related to long-run IPO performance [Cogliati, *et al.* (2011)]. They also contend that long-term IPO underperformance is caused by underpricing and book-to-market inflating estimation errors which occurs due to underpricing, leverage, book-to-market, size and age of the firm.

The objectives of this study are to: (a) investigate whether or not the growth rate implied in the offer prices of industrial IPOs are accurate, and (b) identify the determinants of long-run IPO performance and estimation errors over 3- and 5-year periods using the Extreme Bounds Analysis (EBA) technique. Earlier studies that have attempted to identify the implicit growth rate assumptions embedded in IPO prices have segmented their initial sample into two general categories (i.e. financial and non-financial IPOs), because financial firms and non-financial firms record and classify their financial information in different ways. The non-financial firms are then included in the sample and the financial firms are at times discarded. Next, at times, they have classified the remaining firms as either 'service firms' or 'industrial firms'. The reason that the present study focuses explicitly on industrial IPOs in this analysis is because the industrial firm is considered the backbone of an emerging market's economy. Because industrial firms act as a catalyst in the development of any country we focus this study on identifying the implicit growth rate of these firms. This study adds to the existing literature as it is the first attempt in the emerging markets to examine the growth rate embedded in industrial IPO offer prices.

II. IPOs IN PAKISTAN

In the Pakistani market, the issuance of unseasoned IPO shares is not a new proposition for firms that desire to raise the capital. M/s Hussain Industries, a company limited in shares, took the initiative to become the first to issue its prospectus in 1953 inviting subscription from the general public. From 1953 to 1990, the pace of IPO issuance remained sluggish throughout the country. As a result of liberalisation, deregulation, and the privatisation process, there were various reforms that the government undertook in 1991 to strengthen the efficiency and transparency of the capital market. To improve the financial market, the Securities and Exchange Commission of Pakistan (SECP) was established in 1997. The SECP began its operational functions on January 1, 1999 which were to execute the reforms in the capital market to make the process of going public more efficient. These changes created a more robust environment for private companies introduce their shares to the public.

According to SECP, 137 IPOs were issued from January 1995 to December 2008 with a paid-up capital of Rs 156.668 billion. In Pakistan, firms used two methods namely; (a) Fixed price method, and (b) Book building mechanism, to issue unseasoned IPO to the general public.

Table 1
IPOs in Pakistan (1995 – 2008)

Year	IPOs	Amount of Capital Raised (Billion PKR)	IPOs	
			Industrial	Non-industrial
1995	41	17.895	16	25
1996	30	12.041	13	17
1997	4	2.270	2	2
1998	1	0.221	0	1
1999	0	–	–	–
2000	3	2.035	1	2
2001	4	3.005	1	3
2002	4	6.318	1	3
2003	4	1.858	1	3
2004	9	55.654	2	7
2005	14	22.635	5	9
2006	3	3.961	0	3
2007	11	14.563	4	7
2008	9	14.232	3	6
Total	137	156.688	49	88

Source: Securities and Exchange Commission of Pakistan.

The Karachi Stock Exchange (“KSE”) was established on 18th September 1947 with the paid-up capital of Rs 108 million. The activity on the KSE was very slow but with the passage of time, number of listed companies as well as paid-up capital increased. Initially, there were 90 members and 13 listed companies which later on rose to 291 over the next 10 year period. This increase was, among other things, the result of the process of industrialisation throughout the country. As a result of attractive policies, the stock market expanded enabling the government to attract more investments in 1992. The stock market, however, crashed in 1995 owing to political crises but an improvement was shown by the KSE over the next few years (i.e.1997 and 1998). The KSE was the best performing stock market in the world in 2002. As of mid-March, 2005, the KSE-100 index reached a high of 10,303 points due to improving economic fundamentals. This performance was attributed to a government privatisation process which attracted investment in PTCL and National Refinery. The market then maintained its strong performance in 2006 crossing the index level of 12,000 points. In April 2008, the KSE crossed 15,000 points showing a substantial growth but collapsed in that same year in August—the index fell to 5,000 points due to overall global economic slowdown. The KSE index, however, slowly but persistently rose thereafter. In June 2015, the KSE reached the height of more than 35,456 points repossessing the confidence and interest in the investors.

III. ANALYTICAL FRAMEWORK

Earlier research argued that underwriters consider different methodologies for estimating new issues [Cogliati, *et al.* (2011)]. The DCF or comparable multiples are traditionally used to price IPOs. The total cost of the capital is a blend of equity and debt measured by Weighted Average Cost of Capital (WACC), presuming that financial capital remained constant. Hence, capital cost does not change and WACC is the same throughout the specified period.

Following the DCF model, the Enterprise Value at time t (EV_t) is estimated as the present value of expected FFCF (i.e. $E_t[FFCF_{t+i}]$) based on the available information and subsequently discounted based upon the firm's business risk. Outstanding debt at time t (D_t) is deducted from the firm's value and then the expected equity value (E_t) is obtained. To terminate the ongoing concern, the values of future cash flows are determined over an infinite period. Like other direct valuations, the DCF model segregates the future into two periods. Penman (2007) suggested that valuations are generally equal to indefinite forecasting periods. The estimation of the going concern is based on indefinite time period whereas in practice it transacts over finite horizons. Initially, the firm is projected to grow at a 'non-constant' growth rate but eventually as the firm matures; they will reach a growth of 'steady state'.

$$EV_t = \sum_{i=1}^{\infty} \frac{E_t[FFCF_{t+i}]}{(1+WACC)^i} = \sum_{i=1}^T \frac{E_t[FFCF_{t+i}]}{(1+WACC)^i} + \sum_{i=T+1}^{\infty} \frac{E_t[FFCF_{t+i}]}{(1+WACC)^i} \quad \dots \quad (1)$$

Let

$$E_t[FFCF_{t+i}] = E_t[FFCF_{t+T}] \cdot (1+g_2)^{i-T} \quad \forall i = T+1, \dots \dots \dots \infty$$

$$EV_t = \sum_{i=1}^T \frac{E_t[FFCF_{t+i}]}{(1+WACC)^i} + \sum_{i=T+1}^{\infty} \frac{E_t[FFCF_{t+T}] \cdot (1+g_2)^{i-T}}{(1+WACC)^i} \quad \dots \quad \dots \quad \dots \quad (2)$$

It is classified as two-stage because the growth rates of the cash flows before and after the event may be different. The extra growth (g_1) is supposed to grow annually at a constant rate. EV_t is combination of five elements: (i) $FFCF_t$, (ii) T = length of first stage growth, (iii) g_1 = first stage growth, (iv) g_2 = second stage growth, and (v) WACC. Referring Equation 2:

$$E_t[FFCF_{t+i}] = FFCF_t \cdot (1+g_1)^i \quad \forall i = 1, \dots \dots \dots T$$

$$EV_t = \sum_{i=1}^T \frac{FFCF_t \cdot (1+g_1)^i}{(1+WACC)^i} + \sum_{i=T+1}^{\infty} \frac{FFCF_t \cdot (1+g_1)^T \cdot (1+g_2)^{i-T}}{(1+WACC)^i} \quad \dots \quad \dots \quad (3)$$

$$EV_t = FFCF_t \left[\sum_{i=1}^T \left(\frac{1+g_1}{1+WACC} \right)^i + \left(\frac{1+g_1}{1+WACC} \right)^T \sum_{i=1}^{\infty} \left(\frac{1+g_2}{1+WACC} \right)^i \right] \quad \dots \quad (4)$$

Using DCF model to price IPO ($t = IPO$), actual FFCF at IPO ($FFCF_t \equiv FFCF_{IPO}$) is used to find cash flows after IPO. To apply the DCF model, g_1 and g_2 are applied to cash flows before IPO for calculating FFCFs. Considering the assumptions, EV_{IPO}^1 is estimated by adding DCF expectations expressing as a function of the cash flow at the IPO. Referring Equation (4), $t = IPO$

¹ $EV_{IPO} = E_{IPO} + D_{IPO} - CI_{IPO}$ where $CI_{IPO} = \rho_{IPO} \cdot NSH_{new}$ and $\rho_{IPO} = (EV_{IPO} - D_{IPO}) / NSH_{pre}$

$$EV_{IPO} = FFCF_{IPO} \left[\sum_{i=1}^T \left(\frac{1+g_1}{1+WACC} \right)^i + \left(\frac{1+g_1}{1+WACC} \right)^T \sum_{i=1}^{\infty} \left(\frac{1+g_2}{1+WACC} \right)^i \right] \quad \dots \quad (5)$$

Equation (5) estimates the current value of the IPO through firm related variables. However, it is not suitable to use this estimation technique to value high-tech business with no earnings. To resolve this problem, Cogliati, *et al.* (2011) developed the reverse engineering DCF model to find the growth rate that is implicit in offer price upon the availability of public information from each investor:

$$\rho_{IPO} = \frac{FFCF_{IPO}}{WACC \cdot NSH_{pre}} \left[\frac{(1+g_1)[(1+WACC)^T - 1 + (1+g_2)(1+g_1)^{T-1}]}{(1+WACC)^T} \right] - \frac{D_{IPO}}{NSH_{pre}} \quad \dots \quad \dots \quad (6)$$

Where ρ_{IPO} = offer price

NSH_{pre} = number of existing shares prior to the IPO

D_{IPO} = outstanding debt,

$FFCF_{IPO}$ = firm free cash flow before IPO²

$WACC$ = weighted average cost of capital³

g_1 = an undefined estimator of first stage growth where T is presumed 5 years for all firms

g_2 = a stable constant growth after the end of first stage⁴

These parameters are estimated from the IPO prospectuses and financial statements. Ex-ante expectations are compared by actual ex-post value using Estimation Errors ($EE_{i,j}$).

$$E_{IPO} [FFCF_{i,j}] = FFCF_{IPO,j} \cdot (1 + g_1)^i$$

$$EE_{i,j} = \frac{FFCF_{IPO,j} \cdot (1+g_1)^i - FFCF_{i,j}}{FFCF_{IPO,j} \cdot (1+g_1)^i} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (7)$$

Extending the analysis, the researchers contrasted offer prices (P_{IPO}) to fair value estimates. Cogliati, *et al.* (2011) argued that the fair value at the IPO (v_{IPO}) depends upon actual ex-post realisations of cash flows over a 5-year period rather than pre-IPO cash flows. This indicates that the actual ex-post realisation of cash flows is determined by underwriters' at the IPO may have been perfectly fair depending on the information relating to growth prospects of the firm at that time. Hence, Over Valuation Index (OVI)⁵ is expressed in the following equation:

$$\text{Over Valuation Index} = \frac{P_{IPO} - v_{IPO}}{P_{IPO}} \quad \dots \quad \dots \quad \dots \quad \dots \quad (8)$$

²FFCF is calculated as: Cash flow from operating activities + Interest (1 – tax rate) – Capital expenditures.

³ $WACC = \frac{E_{IPO}}{D_{IPO} + E_{IPO}} \cdot K_E + \frac{D_{IPO}}{D_{IPO} + E_{IPO}} \cdot K_D$ where E_{IPO} = market values of equity, D_{IPO} = outstanding debt, K_E = cost of equity capital through CAPM: $K_E = r_f + \beta_E(r_m - r_f)$ where r_f = risk-free rate, r_m = market return, β_E = firm's levered beta and $K_D = t_c \cdot (1 - t_c)$, where t_c = corporate income tax rate.

⁴Estimated using historical growth of real GDP in Pakistan—a nominal long-term growth rate for all firms assumed as constant equals 4 percent.

$$P_{IPO} = \frac{EV_{IPO} - D_{IPO}}{NSH_{pre}} = \frac{EV_{IPO}^{actual} - D_{IPO}}{NSH_{pre}}$$

Estimated growth in cash flows is higher than actual realisation reflecting that this bias may specify an opportunity to make profit for investors (e.g. to examine the underperformers' ex-ante). This study extends this analysis to determine whether estimation errors and implied growth are correlated with post-IPO returns. Long-run IPO performance is investigated using buy-and-hold abnormal return (BHAR) methodology employed by Loughran and Ritter (1995).

$$BHAR = \frac{1}{n} \sum_{i=1}^n [\prod_{t=1}^T (1 + R_{i,t}) - \prod_{t=1}^T (1 + R_{m,t})] \quad \dots \quad \dots \quad (9)$$

Where

$$\begin{aligned} R_{i,t} &= \text{return of stock } i \text{ at time } t \\ R_{m,t} &= \text{return on KSE-100 index} \\ n &= \text{Number of IPOs} \end{aligned}$$

Aftermarket performance is measured over 3- and 5-year period excluding first 21-trading days after IPO issuance to avoid potential bias from the price stabilisation period. It is, therefore, hypothesised that mean BHAR is equal to zero.

Researchers have identified various explanatory variables that affect long-run IPO performance using different techniques, for instance, Bayesian models, general to specific model, etc. To examine the sensitivity and robustness of explanatory variables of long-run IPO performance and estimation errors, the EBA technique [Leamer (1983)] is used. The model identifies variables that 'truly' influence the dependent variable and minimises the chances of model uncertainty upon choosing control variables. The model is described as:

$$BHAR_i = \alpha_0 + \sum_{j=1}^n \delta_j X_{ji} + \beta Q_i + \sum_{j=1}^m \gamma_j Z_{ji} + \varepsilon_i \quad \dots \quad \dots \quad \dots \quad (10)$$

where X = important variable(s) used in each regression, Q = variable of interest of which robustness is tested, and Z = a potentially important variable. Under EBA, a large of regressions is required to run and if a variable maintains a same sign being significant, it is treated as a robust variable.

To examine the growth implicit in industrial IPO offer prices, this study covers the period from 1995 to 2008. The following filters are used as: (1) The pre-IPO *FFCF* was positive (losing 8 IPOs), and (2) Cash flows are available for 5 years after the IPO (losing 10 IPOs). Out of 49 industrial IPOs, 18 were eliminated due to imposition of filters whereas 12 IPOs were extracted from the sample due to non-availability of information with regard to share prices as well as IPO prospectus. Hence, the final sample covers 19 industrial IPOs for which inverse the DCF model is used. The data is collected from the IPO prospectus and share prices and market index are gathered from the KSE database.

IV. EMPIRICAL FINDINGS

(a) Implied Growth Rates and Forecast Errors

Table 2 depicts that, on average, IPO firms are expected to grow by 38.0 percent annually over the five-year period after listing (Median: 16.6 percent). This finding implies that the growth rate embedded in offer prices are more than the realised growth rates, which reflects over-optimistic tendencies employed by the underwriters. This finding is in line with Cogliati, *et al.* (2011) reporting that, on average, IPO firms are expected to grow by 33.8 percent annually over five-year (Median: 21.5 percent). The median CAGR₁ of FFCF is reported at -208.3 percent representing that most of IPO firms faced a negative cash flow in the first year after listing. This indicates the sign of either intense investment behaviour or signal jamming behaviour because there is significant uncertainty embedded in these estimates. Signal jamming [Stein (1989)] represents negative FFCF illustrating capital expenditures made by the firm after listing. Therefore, the analysts' expectations are inaccurate resulting upward biased estimate. Over the 5-year period, cash flows of IPO firms increases leading median CAGR₅ into positive at 14.4 percent. Median estimation errors (EE₃) are 52.0 percent over 3-year and 38.3 percent over 5-year. This finding posits that the estimation errors occurred due to the difference between estimated and realised growth rate. Over a 3-year period, estimation errors are higher but realised growth might adjust over the 5-year period reducing the gap between estimated and realised growth rates. Aggregate EE₃ and EE₅ are reported at 78.2 percent and 67.2 percent respectively illustrating that IPO investment in long-run is not a viable strategy for Pakistani investors.

Table 2

Implied Growth Rates and Forecast Errors

	Average	StdDev	Median	Aggregate	Skewness	Kurtosis	JB	p-value
g ₁	38.0	56.7	16.6		1.28	0.70	31.67	0.00
CAGR ₁	n.s.	820.3	-208.3	-590.4	-0.48	-0.16	4.30	0.12
CAGR ₃	-4.0	91.3	1.7	-17.0	-1.09	2.29	26.86	0.00
CAGR ₅	-29.8	125.6	14.4	10.4	-1.32	0.49	33.27	0.00
EE ₃	24.2	106.6	52.0	78.2	-1.73	5.11	77.69	0.00
EE ₅	33.2	197.2	38.3	67.2	0.22	0.70	1.26	0.52
O.V.I.	65.2	69.0	61.5		0.62	-0.69	7.74	0.02

This table shows finding of 19 Industrial IPOs which was listed on KSE from 1995–2008. g₁ = short-term implied growth rate, CAGR = actual post-IPO cash flows, EE = estimation error and O.V.I. = overvaluation indices. The result of CAGR₁ is not reported due to negative FFCF₁ after IPO. The aggregate CAGR is obtained by adding the cash flows of event firms. Aggregate estimation errors are determined by difference between sum of estimated and actual cash flows scaled with sum of estimated cash flows. All values are in percentages.

The results presented in Table 2 for the OVI variable illustrates that at the offering the median firm is overvalued by 61.5 percent relative to its ex-post value, which indicates that ex-post realised cash flows are rightly skewed. The difference between

short-term implied growth rates (g_1) and the $CAGR_5$ is small (16.6 percent vs. 14.4 percent) which confirms the robustness of the model. Sensitivity and robustness of the model is tested by varying g_2 and T (results are presented at appendix). It is, thus, suggested that the reverse engineering DCF model effectively determines short-term implied growth in offer prices. The sensitivity analysis using various assumptions is examined to test the robustness of the results and found similar results. By applying the model, it predicts that short-term implied growth (g_1) strongly influences long-term growth rate (g_2) and T .

(b) Aftermarket Pricing Performance of IPOs

Aftermarket price performance of IPOs are examined over 3- and 5-year periods using BHAR adjusted benchmark return excluding first 21-trading days. The significance of long-run returns is determined by a skewness adjusted t -statistic [Lyon, Barber, and Tsai (1999)]. The results confirm that IPOs underperform by 36.8 percent (t -statistic: -2.46) and 74.6 percent (t -statistic: 3.19) over three- and five-year period respectively explaining that market index performs better than IPOs. To find the determinants of long-run underperformance and estimation errors, EBA technique is employed.

(c) Determinants of Long-run IPO Performance and Estimation Errors

Table 3 reports the estimation results without Z -variables. Panel A exhibits the determinants of long-run IPO performance over 3- and 5-year periods using eleven explanatory variables. X -variables are fixed variables to be included in each regression which are identified on the basis of prior studies [Leamer (1983)] significantly affecting long-run performance. X -variables includes short term implied growth rate (g_1) and Momentum while the robustness of the Q -variable is tested by considering three Z -variables in each regression using the Newey-West procedure. From the X -variables, g_1 is statistically significant variable in regression I and II that influence long-run performance. The negative affect of g_1 explains that higher growth is implicit in offer prices thereby reducing underperformance. Market momentum is only significant in regression II. The positive sign of Momentum indicates that the higher market returns relative to event firms inflates underperformance.

In both regressions I and II, Size is significant from the Q -variables illustrating that higher sales of event firms ultimately creates more demand reducing the level of underperformance. The magnitude of underpricing is significantly and positively affecting long-run performance in regression I and II describing that higher the level of underpricing more be the underperformance. Leverage is another important factor from the Q -variables which significantly and negative affect on long-run IPO performance. This implies that higher levered firms have more resources to perform efficiently thereby less underperform in long-run. In regression I, B2M is significantly affecting long-run IPO returns. B2M negatively relates to underperformance, depicting that the higher the book-to-market ratio the greater the chances of IPO underperformance as market index return increases, this evidence is contrary to earlier finding [Cogliati, *et al.* (2011)]. P/E is positively associated to underperformance but insignificant.

Table 3

Estimation Results of Benchmark Models

	Panel A: Long-run Performance		Panel B: Estimation Errors		
	BHAR year IPO + 3 (I)	BHAR year IPO + 5 (II)	EE ₃ (III)	EE ₅ (IV)	
X-variables			X-variable		
g1	-0.8557 (-3.82) ^{***}	-1.7059 (-3.27) ^{***}	Participation	6.6408 (2.09) [*]	2.4573 (0.72)
Momentum	0.9262 (1.42)	2.4106 (3.12) ^{***}			
Q-variables			Q-variables		
Size	-0.1046 (-1.86) [*]	-0.1028 (-2.82) ^{**}	Size	-0.0668 (-1.04)	-
Underpricing	0.2129 (1.84) [*]	0.5390 (2.51) ^{**}	Momentum	-1.5230 (-0.97)	-
Leverage	-0.2249 (-4.26) ^{***}	-0.2253 (-1.58)	Underpricing	0.3193 (3.18) ^{***}	-
P/E	0.1676 (1.20)	0.2950 (1.58)	B2M	-	-0.0797 (-0.20)
B2M	-0.3012 (-3.29) ^{***}	-			
Constant	0.5531 (2.05) [*]	-0.0907 (-0.51)	Constant	0.1983 (1.77) [*]	0.3126 (0.52)
Adj. R ²	0.2350	0.4728	Adj. R ²	-0.0703	-0.1150
F-value	9.84 ^{***}	7.65 ^{***}	F-value	3.97 ^{**}	0.39

The table demonstrates the estimation results of benchmark model without Z-variable.

Panel A (I and II) identifies the model by considering different determinants of long-run IPO performance over 3- and 5-year period considering $BHAR_i = a_0 + a_1g_1 + a_2Momentum_i + a_3EE_i + a_4Leverage_i + a_5Underpricing_i + a_6Dilution_i + a_7Participation_i + a_8Age_i + a_9B2M_i + a_{10}Size_i + a_{11}P/E_i + \epsilon_i$.

Panel B (III and IV) considers various determinants of estimation errors over 3- and 5-year period considering $EE_i = a_0 + a_1P/E_i + a_2Participation_i + a_3B2M_i + a_4Momentum_i + a_5Age_i + a_6Dilution_i + a_7Leverage_i + a_8Underpricing_i + a_9Size_i + \epsilon_i$.

Independent variables covers: g₁ = short-term implied growth rate, Momentum = market momentum, EE = estimation errors, Leverage = financial leverage prior to IPO, Underpricing = stock return on the first day of trading, Dilution = the ratio between newly issued shares and number of pre-IPO shares, Participation = the ratio of exiting shares to pre-IPO shares, Age = age of the firm, B2M = book to market ratio, Size = pre-IPO sales and P/E = price/ earnings ratio. Using EBA technique, those variables pass the sensitivity and robustness test are reported above. The *t*-statistics are based on Newey-West HAC standard errors. ^{***}, ^{**} and ^{*} denote significance level at the 1, 5 and 10 percent respectively.

Panel B reports the determinants of estimation errors over 3- and 5-year periods. In regression III and IV, Participation is considered as the X-variable. This implies that a higher participation in IPOs over a broader population may lead to agency problems, which inflates estimation errors. The effect of Participation is significant in equation III but not in IV. Among Q-variables, underpricing is positive and significant in regression III indicating that higher underpricing may generate more estimation errors whereas Size and Momentum are not significant. In regression IV, B2M is negatively related to EE_5 but insignificant depicting that the difference between market and book value of equity at the IPO are priced on the basis of growth prospects and therefore create low estimation errors. The estimation results including all Z-variables are not presented for the sake of brevity.

(d) Comparison of the EBA Technique with other Traditional Methods

This section compares the results of the traditional econometric methods and the EBA technique to inquire about the general model of long-run performance over five years is stable across comparable econometric techniques. The traditional methods comprised: (a) the Akaike's information criterion (AIC), (b) the Schwarz's Bayesian information criterion (SBIC), (c) the Hannan-Quinn information criterion (HQIC), and (d) the general to specific (GTS) methodology. Using AIC, SBIC and HQIC techniques, the objective of the researchers is to select model having lower value of information criteria which reduces standard errors. When GTS methodology is used, a number of variables selected are trimmed accordingly to reach at a parsimonious model thereby ignoring those variables having the lowest explanatory power. Table 4 presents the comparison of the EBA technique vis-à-vis other traditional methods employed to selecting the explanatory variables of long-run IPO performance over the period of five years.

Table 4

Comparison of the EBA Technique with other Traditional Econometric Methods

Regression	AIC	SBIC	HQIC	GTS	EBA
Constant	-0.2080 (-0.69)	-0.2080 (-0.69)	-0.0907 (-0.51)	-0.0907 (-0.51)	-0.0907 (-0.51)
g_1	-1.6641 (-2.62)**	-1.6641 (-2.62)**	-1.7059 (-3.27)***	-1.7059 (-3.27)***	-1.7059 (-3.27)***
Momentum	2.3956 (2.03)***	2.3956 (2.03)***	2.4106 (3.12)***	2.4106 (3.12)***	2.4106 (3.12)***
Size	-0.1160 (-1.89)*	-0.1160 (-1.89)*	-0.1028 (-2.82)**	-0.1028 (-2.82)**	-0.1028 (-2.82)**
Underpricing	0.3974 (1.53)	0.3974 (1.53)	0.5390 (2.51)**	0.5390 (2.51)**	0.5390 (2.51)**
P/E	0.3035 (1.37)	0.3035 (1.37)	0.2950 (1.58)	0.2950 (1.58)	0.2950 (1.58)
Leverage	-	-	-0.2253 (-1.58)	-0.2253 (-1.58)	-0.2253 (-1.58)
Adj. R^2	0.4764	0.4764	0.4728	0.4728	0.4728
F-value	5.60***	5.60***	7.65***	7.65***	7.65***

The table depicts the comparison of estimation results between traditional methods and EBA technique derived from the OLS over the period of five years using buy-and-hold abnormal returns. AIC = Akaike's Information Criterion, SBIC = Schwarz's Bayesian Information Criterion, HQIC = Hannan-Quinn Information Criterion, GTS = General to Specific methodology and EBA = Extreme Bounds Analysis. Dependent variable includes: BHAR = buy-and-hold abnormal returns over five year period whereas independent variables comprise g_1 = short-term implied growth rate, Momentum = market momentum, Size = size of the firm, Underpricing = initial return on listing day, P/E = price-earnings ratio and Leverage = leverage of the firm. ***, ** and * denote statistical significance at 1, 5 and 10 percent level respectively. *t*-values are shown in parentheses.

The finding of the results using traditional econometric methods and EBA suggest that all the techniques are providing almost the same result, when one method is used over the other. The AIC and SBIC identified five variables while the other methods selected six variables that are affecting long-run performance. The short-term implied growth rate (g_1), market momentum and size of the firm are statistically significant across all econometric techniques. Underpricing of IPO is also significant variable using HQIC, GTS and EBA techniques. P/E is not a statistically significant variable identified by all the methodologies. Leverage is identified by HQIC, GTS and EBA methods but insignificant on the long-run performance of IPOs.

According to Davidson and MacKinnon (2004), the AIC does not suggest the parsimonious model due to the fact that is based on log likelihood function but Stock and Watson (2007) argued that AIC provides better results relative to SBIC. Hurrich and Tsai (1989) pointed out using SBIC and HQIC techniques for model specifications are order consistent and not appropriate like the AIC. With regard to GTS methodology, Lovel (1983) posited that there is no assurance that the particular specification relates to true specification due to unknown distributional properties with multiple testing. The EBA technique is considered more appropriate as it robustly identifies a variable which passes the sensitivity test after running thousands or millions of regression. Though it has some flaws but its criterion for identifying the variables is so rigorous actually affecting the long-run performance.

We conclude that every econometric method has its own build-in features to select the model specification but interestingly their results are almost the same. We may emphasise that EBA technique reduces the ambiguity for selecting the true variables that affect dependent variable.

V. CONCLUSIONS

To value unseasoned issues, various methodologies have been developed. Among others, DCF is found the most popular method. We employ the reverse engineering DCF model [Cogliati, *et al.* (2011)] to determine that the growth rate is implicit in offer prices of Industrial IPOs having positive FFCF issued on KSE from 1995 to 2008. Applying this technique, we found that the cash flow of the average IPO firms is expected to grow by 38.0 percent annually over five-year period showing that actual CAGR of cash flow is less than expected. It is also found that median IPO firm is overvalued by 61.5 percent which is consistent with prior studies [e.g. Colgiati, *et al.* (2011) and Purnanadam and Swaminathan (2004)]. The biasedness in the results of the estimated and realised growth rate leads to estimation errors which suggest higher underpricing [i.e. abnormal excess returns of 25.6 percent—this finding corroborates the earlier studies on Pakistani IPOs [Sohail and Nasr (2007); Sohail and Rehman (2010); Kayani and Amjad (2001)] and broad class of investors' participation. Thus, overestimation may deteriorate in the aftermarket performance of IPOs. Moreover, the robust predictors that caused long-run IPO performance include: (a) higher short-term implied growth rates, which lead to smaller post-IPO returns, (b) market momentum is positively associated with aftermarket performance, (c) IPOs that have lower book-to-market ratios perform better, (d) firms that have high sales volumes tend to have low levels of

underperformance, and (e) low level of leverage posit that IPO firms less underperform. This study will act as a catalyst for the policy-makers, researchers, investors and firms to reduce the overvaluation of unseasoned issues. By overcoming the overvaluation and the factors affecting long-run performance, unseasoned issues may become more attractive in Pakistani market. The policy implication is that SECP has to adopt those measures which may improve the price discovery mechanism. This may help to minimise the overvaluation made by the underwriters. However, the selection process of underwriter should be more rigorous to ensure that they should arrive at a price which may be market competitive to have a fair competition after its listing.

REFERENCES

- Barber, B. and T. Odean (2008) All that Glitters: The Effect of Attention on the Buying Behaviour of Individual and Institutional Investors. *Review of Financial Studies* 21, 785–818.
- Cassia L., S. Palcari, and S. Vismara (2004) The Valuation of Firms Listing on the Nuovomereato: The Peer Comparables Approach. *Advances in Financial Economics* 10, 113–129.
- Cogliati, M. G. and S. Paleari (2011) IPO Pricing: Growth Rates Implied in Offer Prices. *Annals of Finance* 7:1, 53–82.
- Davidson, R. and J. G. MacKinnon (2004) *Econometric Theory and Methods*. Oxford University Press.
- Deloof, M. W. De Maeseneire, and K. Inghelbrecht (2009) How do Investment Banks Value IPOs? *Journal of Business Finance and Accounting* 36:1 and 2, 130–160.
- Field, L. C. and M. Lowry (2009) Institutional versus Individual Investment in IPOs: The importance of Firm Fundamentals. *Journal of Financial and Quantitative Analysis* 44, 489–516.
- Hurrieh, C. M. and C. L. Tsai (1989) Regression and Time Series Model Selection in Small Samples. *Biometrika* 57, 297–307.
- Kaplan, S. N. and R. S. Ruback (1995) The Valuation of Cash Flow Forecasts: An Empirical Analysis. *Journal of Finance* 50, 1059–1093.
- Kayani, S. and S. Amjad (2011) Investor Interest, Underpricing and Trading Volume in Pakistan Secondary Market. *Business and Economics Journal* 39, 1–15.
- Kojima, N. (2007) IPO Share Allocation and Conflicts of Interest. *Annals of Finance* 3, 369–387.
- Leamer, E. E. (1983) Let's Take the Con Out of Econometrics. *American Economic Review* 73, 31–43.
- Loughran, T. and J. R. Ritter (1995) The New Issue Puzzle. *Journal of Finance* 50, 23–51.
- Lovell, Michael C. (1983) Data Mining. *The Review of Economics and Statistics* 65:1, 1–12.
- Lyon, J. D., B. M. Barber, and C.-L. Tsai (1999) Improved Methods for Tests of Long-Run Abnormal Stock Returns. *Journal of Finance* 54:1, 165–201.
- Purnanandam, A. K. and B. Swaminathan (2004) Are IPOs Really Underpriced? *Review of Financial Studies* 17:3, 811–848.

- Sohail, M. K. and A. Rehman (2010) Examining the Short-Run IPOs Performance in State of Economy: Normal, Boom and Recession. *International Research Journal of Finance and Economics* 35, 173–186.
- Sohail, M. K. and M. Nasr (2007) Performance of Initial Public Offerings in Pakistan. *International Review of Business Research Papers* 3:2, 420– 441.
- Stein, J. (1989) Efficient Capital Markets, Inefficient Firms: A Model of Myopic Corporate Behaviour. *Quarterly Journal of Economics* 104, 655–669.
- Stock, J. H. and M. W. Watson (2007) *Introduction to Econometrics*. (Third edition). Pearson Publication.

Impact of Climate Change on Electricity Demand: A Case Study of Pakistan

RAFAT MAHMOOD, SUNDUS SALEEMI, and SAJID AMIN

The energy sector is sensitive to changing weather patterns and Pakistan is one of those countries where temperature rise induced by climate change is expected to be above the world average. In this backdrop the present study aims at finding the impact of climate change on electricity demand in Pakistan at the regional and national level. Using monthly data on temperatures to find heating and cooling degree days, the relationship between monthly electricity demand and temperature is explored which is then used to find the impact of projected climate change on electricity demand. The results suggest surging peak loads in summer season due to climatic effect which calls for capacity instalments over and above that needed to cater to rise in electricity demand attributable to economic growth.

JEL Classification: Q47, Q54

Keywords: Energy, Climate Change, Electricity Demand, Degree Days, Pakistan

1. INTRODUCTION

The energy sector is one of those sectors which are sensitive to changing weather patterns; the latter affecting both the electricity supply and demand. Supply side concerns can be more pronounced in areas dependent upon hydropower plants whereas floods and other natural disasters can endanger the established generation plants as well. On the other hand, changing weathers have been found to be the most significant cause of short-term variation in electricity usage [Zachariadis (2010)]. Households and businesses use electricity for heating and air-conditioning and thus the express effect of changes in temperature is the change in the heating and cooling requirements. A long-term change in the weather pattern, such as that induced by the global climate change, therefore, may contribute to a shift in the electricity usage, which, if not foreseen in time, can cause imbalances in supply and demand of electricity.

Pakistan has been going through a severe energy crisis in the form of an acute shortage of electricity. Huge gaps between electricity demand and supply exist; during the year 2011 the electricity shortfall ranged between 5000MW to 7000MW [Malik (2012)]. On top of it, Pakistan lies in the world region where temperature rise induced by climate change is expected to be above the world average which, coupled by an overall warm climate, renders the country vulnerable to various impacts of global climate change [Rasul and Ahmad (2012)].¹ The rise in surface temperatures of South Asia region by the end of the century is projected around 3.3°C average annually (IPCC);² not only are the average temperatures rising but the range of extreme temperatures is also widening.

Rafat Mahmood <rafat@pide.org.pk> is Staff Economist, Pakistan Institute of Development Economics, Islamabad. Sundus Saleemi <sundus.saleemi@pide.org.pk> is Staff Economist, Pakistan Institute of Development Economics, Islamabad. Sajid Amin <sajidamin78@sdpi.org> is Research Fellow, Sustainable Development Institute (SDPI), Islamabad.

¹ Pakistan Meteorological Department.

² Intergovernmental Panel on Climate Change.

With both the average and extreme temperatures rising across the globe, it is expected that cooling requirements of people will increase and heating requirements will decrease [Howden and Crimp (2001)]. These effects contribute in changing demand for electricity as the need for air-conditioning, refrigeration, and water temperature regulation change [Amato, *et al.* (2005); Rosenthal, *et al.* (1995)]. Though, reckoning the importance of this issue, a number of studies have been conducted analysing future demand conditions of different countries [e.g. Rosenthal, *et al.* (1995); Parkpoom and Harrison (2008); Howden and Crimp (2001), etc.] yet literature in Pakistan largely lacks in this dimension. Most of the studies estimating energy demand equation [Chaudhary (2010); Nasir, *et al.* (2008); Khan and Qayyum (2009)] do not take temperature as an explanatory variable and in case the relationship has been recognised [Jamil and Ahmed (2011)] further exploration of the subject, in terms of analysis of impact of climatic changes, has not been undertaken. A recent study [Ali, *et al.* (2013)] looks at impact of climate change on electricity demand considering the whole of Pakistan altogether. The nature of the problem, however, requires a more disaggregated analysis.

The estimation of such changes in electricity demand is imperative as they can have important consequences for electricity generation capacity building because meaningful planning to avoid supply bottlenecks in this sector hinges upon proper estimates of prospective demand. Given the electricity crisis that has, and continues to hit Pakistan economy, the study becomes even more relevant as it goes beyond the current demand conditions of the country and looks into the long run needs of the economy in the event of expected climatic changes and thus adds further insight into calculating prospective demand. As there is a protracted time lag between recognition of demand needs for electricity and its capacity building, the study will prove helpful for government regarding design of energy policy.

Increase in temperatures can affect human lives at every front but the present study focusses on examining the impact of climate change on demand for electricity in Pakistan. The broader objective of the study is the estimation of the impact of temperature changes on electricity demand in Pakistan and on the demand in residential and commercial sectors on regional level. This work also provides the projections of the changes in demand for electricity under different temperature rise scenarios expected as a result of climate change.³ Rest of the study is structured as follows. Section 2 reviews the literature while Section 3 discusses data and variables used in the analysis. Section 4 details methodology and estimation technique while results and accompanied discussion is presented in Section 5 followed by sensitivity analysis in Section 6. Section 7 concludes the paper.

2. LITERATURE REVIEW

Relationship between energy demand and climate change became the area of interest for researchers mainly in the late 1980s. Bhartendu and Cohen (1987) predicted the changes in residential electricity consumption in Ontario, Canada under the scenario of doubling up of carbon emissions. Using regression analysis by incorporating population weighted heating and cooling degree days, the study found carbon emissions

³A temperature rise scenario refers to the plausible rise in temperature as a result of climate change as predicted by various Global and Regional Climate Models.

to be positively related to cooling requirements of household while negatively related to per capita heating requirements.

United States of America has been a focus of much of research done in this area. Baxter and Calandri (1992) conducted a partial equilibrium analysis on California. Considering both the high and low climate change scenarios substantial rise both in the total electricity consumption and in peak demand for electricity were found. However, Rosenthal, *et al.* (1995) found a decrease in US heating and cooling energy requirements for residential and commercial sectors under global warming.

Use of two step method to estimate the impact of climate change in electricity demand is commonly found in literature. In the first step the sensitivity of electricity demand by household and commercial users to temperature changes is estimated and then these estimated sensitivities are used along with climate change projections to forecast future electricity demand. Sailor and Munoz (1997) addressed the effects of climate change on consumption of energy sources. Electricity consumption was regressed on temperature, in raw form as well as by first calculating the heating degree days (HDDs) and cooling degree days (CDDs). Least square estimates pointed towards a rise in electricity demand at higher temperatures. Amato, *et al.* (2005) estimated the impact of climate change on the Commonwealth of Massachusetts. Monthly per capita electricity consumption was regressed on annual trend, HDD, CDD, trends in HDD and CDD, price of electricity and hours of daylight and the results were suggestive of positive and significant impact of HDD and CDD on the demand for electricity. These results held for residential as well as commercial users of electricity. Using the calculated temperature sensitivities to electricity demand and the climate projections, future demand was also projected.

Hadley, *et al.* (2006) studied the fluctuations in energy demand in the US in response to climate change and the impact of changing energy needs on carbon emissions both under the low and high temperature rise scenarios from General Circulation Climate Models. The study suggest that irrespective of whether decrease in heating requirements outweigh the increase in cooling requirements or otherwise, the carbon emissions through electricity generation are likely to increase in response to climate change. Using the relationship between hourly electricity load and average daily temperatures for California over a year, Franco and Sandstad (2008) employed climate projections from three General Circulation Models (GCMs) to predict annual and peak rise in electricity demand from 2005 to 2099. The study found an expected annual increase in electricity demand to the tune of 3.1 percent in the period 2005 to 2034, 8.1 percent in 2035 to 2064 and 1.8 percent in 2065 to 2099 under worst case scenario. Miller, *et al.* (2008) use climate projections from General Circulation Models and predicts electricity shortfall of as high as 17 percent in California in peak demand conditions with the prevailing generation capacity.

In addition to United States, the climate change-energy demand nexus has been studied for other parts of the world as well. Conducting analysis on Hong Kong, both Lam (1998) and Yan (1998) found a strong correlation between electricity consumption and temperature wherein the temperature was introduced in the form of CDDs and mean temperatures respectively in the two studies. Howden and Crimp (2001) studied the impact of climate change in four regions of Australia using the climate change

projections and showed that in case of 1^o C increase in average temperatures, average demand would rise in two of the four regions they studied and decrease in the other two, while an increase of 7^o C would cause increased demand in all regions. Pardo, *et al.* (2002) estimated the influence of seasonality and temperature on electricity load of Spain using the degree day method and found that current and past HDDs influenced Spanish electricity consumption. Christenson, *et al.* (2006) found a decreasing trend in heating degree days in Switzerland from 1901 to 2003 and projected a further decline for future years whereas opposite trend was found for cooling degree days. Hor, *et al.* (2005) and Parkpoom and Harrison (2008) estimate the expected changes in Thailand's demand for electricity under different climate change scenarios. Both the studies concluded that increasing temperatures significantly increased the demand for electricity with the most profound impact on summer time peak demand thus calling for increased electricity generation and transmission capacity.

Pilli-Sihvola, *et al.* (2010) studied the impact of temperature on electricity demand of a panel of fifteen European countries using the degree day method, the HDDs in the said panel turned out to be significantly affecting the electricity consumption. Zachariadis (2010) and Zachariadis and Hadjinicolaou (2012) estimated the impact of climate change on electricity requirement of Cyprus by incorporating total annual degree days (Average of total annual degree days of two largest cities) along with income and price variables in the electricity demand equation. To estimate the elasticity of electricity demand to changes in the explanatory variables ARDL has been applied on annual time series of the period 1960–2007 of all the included variables. Furthermore, using the climate projections for Cyprus, the study forecasts the future electricity demand both under a no climate change scenario and in case of mean and peak temperature changes in the future, the difference between these projections gives the additional electricity requirement.

For Pakistan, however, the relationship between electricity demand and climate change remains an area yet to be explored; temperature has appeared as an explanatory variable in a few studies estimating the electricity demand functions [Jamil and Ahmed (2011)] but Ali, *et al.* (2013) is the only study which attempts to assess the impact of climate change on electricity demand. Ali, *et al.* (2013) has estimated the linear relationship between mean monthly maximum temperature and electricity generation to project changes in electricity demand for the country in response to change in future temperatures forecasted through ARIMA. The study finds that electricity demand owing to changes in temperatures may increase by 1.7 percent at maximum by the year 2020 while it may also show a decline in some months of the year.

Since Pakistan is a climatically diverse country the issue calls for a more disaggregated approach and the present study attempts to bridge this gap by analysing the historical relationship between electricity demand and temperature for Pakistan and for various regions of the country and then projecting the changes in demand in response to expected temperature changes as a result of climate change. In this respect based on the nature and scope of the analysis, the results of our study are more reliable and efficient in that not only potential non-linear relationship between temperature and electricity demand has been accounted for but some control variables are also added to arrive at a representative estimate of response of electricity demand to temperature change.

3. DATA DESCRIPTION AND VARIABLES

For country-level analysis, monthly data⁴ on electricity generation in Pakistan has been obtained from Pakistan Bureau of Statistics (PBS).⁵ The data refer to total electricity generated in Pakistan in each month spanning the period from June 1980 to June 2013. As electricity cannot be stored and the fraction of line losses has not changed substantially in this period, the data on electricity generation is used as a proxy for electricity demand [Ali, *et al.* (2013)].⁶

For regional analysis, monthly data on electricity consumption of residential and commercial sectors⁷ have been used as a proxy for electricity demand. The data were requested from all the distribution companies in Pakistan⁸ and provision of data by Karachi Electric Supply Corporation (KESC), Sukkur Electric Power Company (SEPCO), Gujranwala Electric Power Company (GEPCO), and Islamabad Electric Supply Company (IESCO) has allowed us to conduct analysis on the regions served by these companies.⁹

The data on average monthly temperatures¹⁰ for this time period have been taken from Pakistan Meteorological Department (PMD)¹¹ while the record of district wise population is obtained from PBS. The data on electricity prices per kilowatt hour have been obtained from Water and Power Development Authority (WAPDA).¹²

A look at the data for Pakistan (Figure 1) shows that electricity generation has considerable seasonal fluctuations and an observable trend.¹³

⁴As a starting point the analysis was conducted on annual data on electricity consumption obtained from Pakistan Energy Yearbook (various issues). Because the order of integration was not the same for all the variables, bounds test was applied to check for long-term relationship and subsequent application of ARDL. However, bounds test rejected the presence of long-run relationship between annual electricity consumption and temperature plausibly because of dampening of seasonal effects in annual data. Thus, monthly data were found to be more suitable for analysing the response of electricity demand to changes in temperature.

⁵The authors are especially thankful to Mr. Haseebul Rehman, PBS for his co-operation in this regard.

⁶Use of electricity generation also helps us to account for the units of electricity that are illegally consumed and so do not appear in consumption figures e.g. theft etc. However, non-availability of sector-wise monthly data does not allow us to analyse residential and commercial sectors separately.

⁷These sectors have been found in literature to be the most sensitive to changes in temperature as opposed to agriculture and industrial sectors [Rosenthal, *et al.* (1995)].

⁸We are especially thankful to Saad Hasan Latif, KESC, Waheed Akram, IESCO and Chief Executive Officers of SEPCO and GEPCO for their co-operation.

⁹The data from KESC span the period from July 1998 to June 2013 (180 observations), that from SEPCO and GEPCO span from July 2010 to June 2013 (36 observations), while the data obtained from IESCO range from July 2007 to June 2013 (72 observations).

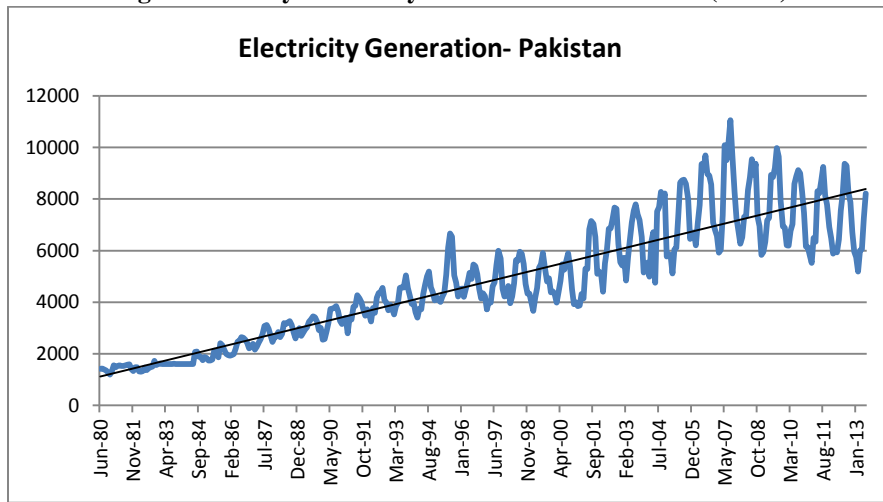
¹⁰Temperature stands out among the meteorological factors that affect electricity demands reported by Parkpoom and Harrison (2008), Al-Hamadi and Soliman (2005), Hor, *et al.* (2005), Engle, *et al.* (1986), Filippini (1995), Henley and Peirson (1997,1998), Considine (2000), Johnsen (2001), Valor, *et al.* (2001) and Pardo, *et al.* (2002), among others.

¹¹We owe gratitude to Numerical Modelling group of Research and Development Division, Pakistan Meteorological Department (PMD), Islamabad, International Development Research Centre (IDRC), Dr Munir Ahmed, PIDE, and Muhammad Nawaz and Hasan Siftain, PIDE for co-operating with us in this regard.

¹²Data on electricity prices is available in annual frequency which has been transformed in a rather crude way on monthly frequency by supposing that change in electricity price occurred on 1st January in each month.

¹³To substantiate the point that fluctuations in electricity demand are in a large part dependent on temperature variations, Hodrick-Prescott filter is used to separate growth in electricity consumption from fluctuations in electricity consumption and the latter is regressed on temperature variables. It is found that temperature variables significantly influence fluctuations in electricity consumption. For estimation output see Appendix A.

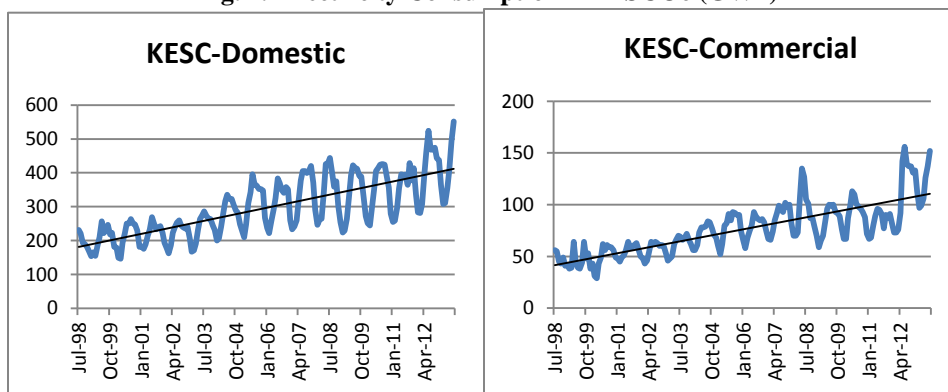
Fig. 1. Monthly Electricity Generation for Pakistan (GWh)

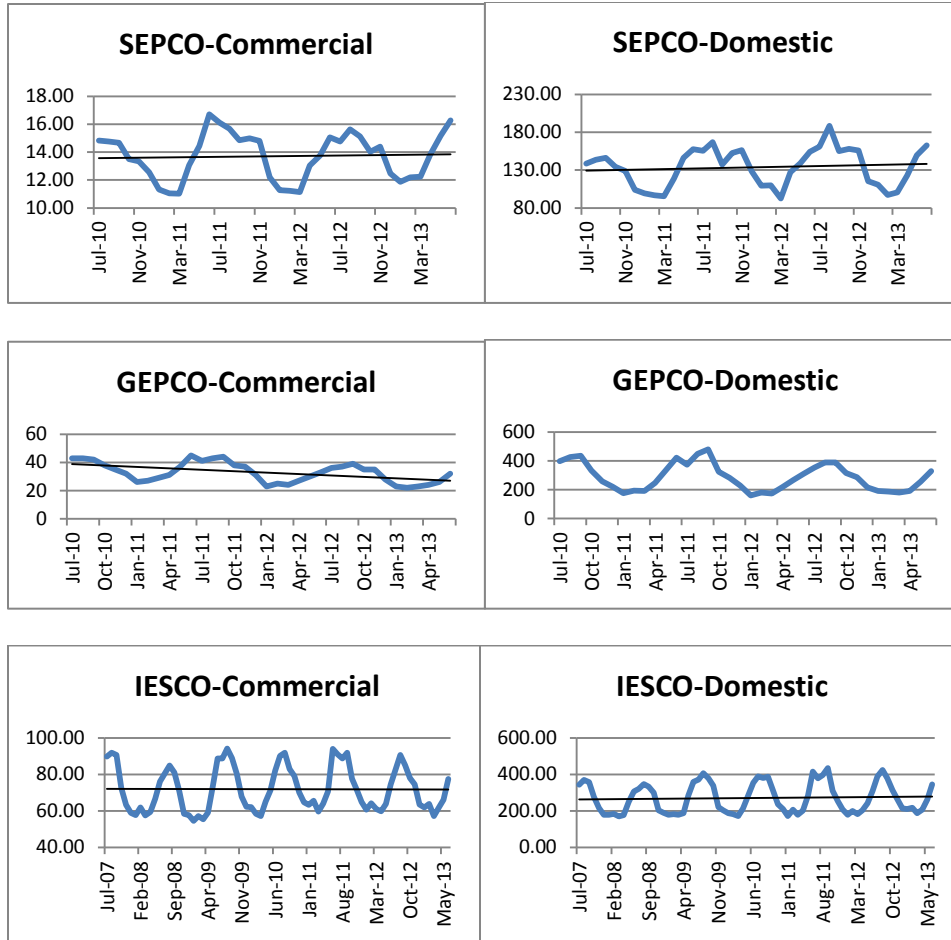


Sector-wise analysis on regional data (Figure 2) also suggests that electricity consumption has generally followed an increasing trend overtime. Fluctuations nonetheless are readily observable. The largest average consumption of electricity in residential sector is observed for Karachi district in the obtained data series followed by the regions served by GEPCO and IESCO while regions served by SEPCO show the lowest average residential electricity consumption in the period considered.

For commercial sector, the trend is a little different in that though area served by KESC registers highest electricity consumption on average, commercial sector in IESCO region shows larger consumption of electricity than that of GEPCO, SEPCO still remaining behind other regions in electricity consumption. In all the four regions served by their respective distribution companies, domestic consumption of electricity is significantly larger than commercial sector e.g. maximum electricity consumed in KESC and SEPCO domestic sector is 552 GWh and 189 GWh respectively as compared to that of commercial sectors of these regions which is just 156 GWh and 16.7 GWh in that order.

Fig. 2. Electricity Consumption in DISCOc (GWh)





Following Munoz and Sailor (1998), the present study employs the Degree Day method for incorporating temperature variations.¹⁴ Degree days are a useful method to study energy requirements associated with different temperature conditions as it enables us to quantify the severity and duration of weather using a single index [Zachariadis (2010)]. A degree day is defined relative to a base temperature—the base being considered a comfortable temperature where neither heating nor cooling is required by individuals. A heating degree day (HDD) refers to a day when temperature is lower than the base by 1°C and heating is required to reach the base temperature and vice versa. Thus, at the temperature equivalent to base temperature, electricity demand is considered to reach the lowest level as the atmosphere itself facilitates the achievement of desired comfort level for individuals, suggesting a u-shaped relationship between electricity demand and temperature. Further following Yuan and Qian (2004), the study uses the definition of degree days as given below.

¹⁴The degree day method has been employed in literature to capture the non-linear relationship between temperature and electricity demand [Amato, *et al.* (2005); Ruth and Lin (2006)].

$$HDD_r = \gamma(T_b - T_r)m \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

$$CDD_r = (1 - \gamma)(T_r - T_b)m \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

Where HDD_r and CDD_r are monthly heating degree days and cooling degree days respectively for region r . As we have conducted the analysis both at the regional level and at the national level the regions are defined accordingly; the region in the national level analysis is the country and at sub-national level, regions are defined as the areas served by the said distribution company. T_r is the monthly average temperature of region r calculated as a weighted average of temperatures of the districts being analysed where population share of the districts are used as weights [Bhartendu and Cohen (1987)], T_b is the base temperature, m is the number of days in the month under consideration, γ is a binary variable that equals 1 if $T_r < T_b$ and 0 otherwise.¹⁵ The base temperature is taken at 26°C.¹⁶

4. METHODOLOGY AND ESTIMATION

The dependent variable in our model is the monthly demand for electricity¹⁷ in Pakistan which is regressed on both the heating and cooling degree days to estimate relationship between the two. As electricity demand does not depend on temperature variables alone, control variables should also be included in the analysis such as GDP growth, population and price per unit of electricity [Jamil and Ahmed (2011)]. Thus, price index for electricity has been used as one of the explanatory variables¹⁸ while due to unavailability of monthly data for the rest of the variables, the effect of time-varying variables is captured by using trend in the regression [Pilli-Sihvola, *et al.* (2010); Amato, *et al.* (2005)].

It is argued in literature that the relationship between electricity demand and temperature reflects two-way causality [Lee and Chiu (2011), Climate and Electricity Annual (2011)]. On one hand increase in temperature leads to rise in demand for electricity while on the other hand upsurge in power generation from thermal sources to satisfy increased demand may cause climatic effects such as higher average temperatures through Green House Gas Emissions [Climate and Electricity Annual 2011)]. In case of analysis on Pakistan as a whole, 33 years data on monthly electricity generation are used which is a period long enough to merit consideration of the climatic effect of electricity generation.¹⁹ Thus, while regressing electricity generation data on temperature variables, we accounted for the problem of potential endogeneity by using Generalised Method of Moments (GMM) with internal instrumentation.²⁰ Initially to get a feel about the

¹⁵Ideally degree days should be calculated using daily data on temperature. However due to lack of access to such data we have used monthly temperatures in our analysis.

¹⁶In summers optimal room temperature is set at 26°C by Water and Power Development Authority (WAPDA), Pakistan.

¹⁷Proxied by electricity generation.

¹⁸Price index is used as a control variable in electricity demand equation because increase in prices of electricity can cause a change in demand for electricity by the consumers [Nasir, *et al.* (2008); Alter and Shabib (2011)].

¹⁹Engle-Granger test also pointed towards the existence of two-way causality.

²⁰Lagged values of HDD and CDD have been used as instruments i.e. $HDD(-12)$ and $CDD(-12)$ which are justified because last year's temperature in a certain month have strong correlation with next year's temperature of that month but last year's temperature is not correlated with current year's electricity generation.

relationship between electricity demand and average monthly temperature, the following model is analysed.

$$E_t = \gamma_1 + \gamma_2 Temp_t + \gamma_3 Price_t + \gamma_4 trend + \zeta_t \quad \dots \quad \dots \quad \dots \quad (3)$$

Where

- E_t : Monthly electricity demand in GWh in period t in Pakistan,
 $Temp_t$: Monthly average temperature (weighted by population shares²¹) of Pakistan,
 $Price_t$: Price of electricity in period t ,
 $trend$: Trend variable used to capture the impact of all the time-varying factors, and
 ζ_t : Residual term.

Next, to take non-linearity of the relationship between temperature and electricity demand into account, the following equation has been employed.²²

$$E_t = \beta_1 + \beta_2 HDD_t + \beta_3 CDD_t + \beta_4 Price_t + \beta_5 trend + \varepsilon_t \quad \dots \quad \dots \quad (4)$$

where

- HDD_t : Monthly heating degree days in period t ,
 CDD_t : Monthly cooling degree days in period t , and
 ε_t : Residual term.

Once we have quantified how electricity demand responds to changes in HDDs and CDDs, the next step is to project the changes in demand for electricity under different climate change scenarios, ranging from the one that predicts a 1°C rise in world average temperature by 2050 to the one that projects a grave 4°C rise in world average temperatures due to climate change [World Bank (2010)]. Following Parkpoom, *et al.* (2008), year 2012-13 is taken as a baseline scenario while projections are done for a rise in temperature by 1°C, 2°C, 3°C, and 4°C respectively to arrive at the estimates of change in electricity demand expected as a result of climate change.

In case of regional analysis, the dependent variable in our model is the monthly demand for electricity²³ in residential and commercial sectors of different distribution companies which is regressed on temperature variables, sector-wise prices and time trend. As the available data at regional level spans a shorter period of time (from 3-15 years), the problem of reverse causality in the relationship between electricity demand and temperature does not seem to be likely and temperature can be treated as exogenous variable. In addition upon testing with Granger Causality test, one way causality is found between temperature variables and electricity demand. The study uses Ordinary Least Squares (OLS) estimation procedure for regional analysis because if the assumptions required for proper functioning of OLS method hold, the estimators thus obtained have

²¹The temperatures are weighted by population shares because the focus of interest is electricity demand. If a relatively hot area is overly populated, the temperature of that region should be given more weightage than a relatively less hot area and vice versa.

²²In contrast to the convention of using squared terms to capture non-linear relationships between variables, CDD and HDD are used that, by their construction, take non-linearity of relationship between temperature and electricity demand into account.

²³Proxied by electricity consumption.

been proved to possess some ideal properties.²⁴ The estimators are linear and unbiased, and are efficient estimators in that they have minimum variance amongst a class of linear unbiased estimators. Given the desirability of properties of OLS estimators, the decisive factor in opting for OLS turns out to be whether or not the required assumptions for the procedure hold. In the present analysis, the underlying relationship between electricity demand and degree days calls for a linear model.²⁵ All the individual variables are tested for stationarity and are found to be stationary at I(0).²⁶ The problem of autocorrelation was observed which is dealt with by adding AR and MA terms in the regression after observing the correlogram [Prais and Winsten (1954); Pilli-Sihvola, *et al.* (2010)] while White Heteroscedasticity-consistent standard errors and covariances [White (1980)] were obtained to correct the issue of heteroscedasticity in the data. In addition, as the number of explanatory variables in our model is not large and the degrees of freedom are satisfactory, the application of OLS technique to the model is justified. Finally the obtained residuals from the regressions have been tested for stationarity and are found to be stationary reinforcing the appropriateness of the estimation technique used in our analysis [Box and Jenkins (1970)].

5. RESULTS AND DISCUSSION

As a first step towards establishing a relationship between electricity demand and changes in temperatures, monthly electricity demand for Pakistan has been regressed on monthly mean temperature, price of electricity and trend [Pilli-Sihvola, *et al.* (2010)]. Results are provided in Table 1.

Table 1
*Regression of Electricity Demand (GWh) on Temperature (⁰C)
for Pakistan (GMM Estimation)*

Dependent Variable	Coefficients				Adjusted R ²	J-Statistic (Prob.)
	Average Monthly Temperature (S.E)	Trend (S.E.)	Price of Electricity (S.E.)	Constant (S.E.)		
Electricity Demand (GWh)	76.87*** (8.83)	18.55*** (0.85)	-20.10*** (6.50)	-807.62*** (258.91)	0.864	0.0001 (0.992)
	75.80*** (15.18)	63.94*** (15.50)		-3502.58*** (1165.83)	0.578	0.187 (0.673)

***Significant at 1 percent.

The coefficient of temperature turns out significant at 1 percent and is positive corroborating the claims that demand for electricity increases with increase in temperatures.^{27,28} Significantly negative co-efficient of price points towards the decrease

²⁴ Gauss-Markov Theorem attributed to Gauss (1821) and Markov (1900).

²⁵ Bartholomew, *et al.* (2002).

²⁶ In order to test for seasonal unit roots in monthly data, Osborn-Chui-Smith-Birchenhall (OCSB) and Canova-Hansen (CH) tests have been applied in R software.

²⁷ Findings are in corroboration with earlier literature, for example, Zachariadis (2010); Parkpoom and Harrison (2008); Amato, *et al.* (2005); Rosenthal, *et al.* (1995).

²⁸ It is possible that the electricity generation data may not be reflecting the true demand for electricity since the city experiences load-shedding due to electricity shortages.

in demand for electricity due to increase in its price. The positive and significant coefficient of trend means that electricity consumption surges with surges in its time varying determinants other than temperature.

In the next step the electricity demand was regressed on the monthly HDDs and CDDs and the results are reported in Table 2. A significant positive coefficient of the CDD variable implies that electricity consumption inflates as temperatures intensify; when temperatures rise above the threshold temperature of 26°C more electricity is used through the use of fans, air-conditioners etc. to bring temperatures at comfortable level. The significant but negative coefficient of the HDD entails that with declining temperatures, necessitating a need for heating to bring it to comfortable levels, electricity use declines.²⁹ One plausible explanation for this behaviour could be that space heating requirements are being fulfilled by the use of other energy sources like gas, firewood, coal etc. The price and trend coefficients enter again significantly negative and positive respectively suggesting that electricity usage decreases with rise in prices but generally increases over the time. As a sensitivity check, all the four models were also estimated using OLS technique and the coefficients maintained their signs and significance.³⁰

Table 2
*Regression of Electricity Demand (GWh) on CDDs and HDDs
for Pakistan (GMM Estimation)*

Dependent Variable	Coefficients					Adjusted R ²	J-Statistic (Prob.)
	CDD (S.E.)	HDD (S.E.)	Trend (S.E.)	Price (S.E.)	Constant (S.E.)		
Electricity Demand (GWh)	3.02*** (0.75)	-2.22*** (0.39)	18.54*** (0.85)	-5.02*** (0.89)	1112.10*** (144.81)	0.863	0.032 (0.984)
	3.08*** (0.68)	-2.17*** (3.60)	28.94*** (1.99)		625.14*** (164.59)	0.895	0.053 (0.973)

***Significant at 1 percent.

Regional Analysis

In case of regional analysis, electricity demand responds significantly positively to changes in temperatures in all the four DISCOs considered (Table 3) reinforcing our earlier findings. However, prices turn out to be insignificant in case of SEPCO while trend seems insignificant in explaining variations in electricity demand in GEPCO region. This insignificance of both the prices and trend may owe itself to the very short time span of data for these two regions which may not give us sufficiently representative results. The domestic sector in all of the DISCOs is found more responsive to temperature than commercial sector. A more detailed analysis at regional level incorporating HDD and CDD in the model suggests that generally electricity consumption rises with increase in cooling degree days and falls with increase in heating degree days (Table 4).

²⁹Results are in corroboration with earlier literature [see Amato, *et al.* (2005)].

³⁰Results are reported in Appendix B.

Table 3
*Regression of Electricity Demand (GWh) on Temperature ($^{\circ}$ C)
 for given DISCOs (OLS Estimation)*

DISCO	Sector	Coefficients			Adjusted R ²	F-Statistic (Prob.)	PP-test Statistic for residuals (Prob.)
		Temp (S.E.)	Price (S.E.)	Trend (S.E.)			
KESC	Domestic	2.89*** (1.01)	-0.08 (0.10)	1.53*** (0.26)	0.909	345.11 (0.00)	-16.08 (0.00)
	Commercial	0.83*** (0.26)	-0.01 (0.02)	0.45*** (0.08)			
SEPCO	Domestic	1.72*** (0.41)	-0.60*** (0.12)	4.64*** (0.95)	0.510	13.16 (0.00)	-4.94 (0.00)
	Commercial	0.14*** (0.03)	-0.02*** (0.005)	0.27*** (0.06)			
GEPCO	Domestic	4.17** (1.97)	-0.83* (0.43)	3.92 (3.71)	0.698	17.20 (0.00)	-5.26 (0.00)
	Commercial	0.22** (0.11)	-0.06** (0.02)	0.42 (0.28)			
IESCO	Domestic	4.29*** (1.03)	-0.65*** (0.20)	4.57*** (1.43)	0.713	45.18 (0.00)	-6.90 (0.00)
	Commercial	0.57*** (0.16)	-0.06*** (0.02)	0.67** (0.26)			

*** ** and * show significance at 1 percent, 5 percent and 10 percent respectively.

It must be noted, however, that the time span covered in this analysis is particularly shorter for the three DISCOs viz. SEPCO, GEPCO and IESCO where the whole period of analysis for these DISCOs consists of the years when electricity shortfall was particularly massive. Electricity shed is recorded around 36 percent of total energy sales in 2010 (NTDC, 2011) while the load shedding pattern marked significantly longer hours of power cuts in summers as compared to that in winter season. Given that we are using electricity consumption as a proxy for electricity demand in this analysis, energy shed may be the reason not only for smaller and in some cases, insignificant co-efficient of CDD but also for negative co-efficient of CDD in one case (GEPCO) which shows that people of the region actually consumed lesser electricity when the temperature got high. The coefficients, wherever significant, are found larger in case of domestic sector as compared to commercial sector corroborating our earlier findings in this regard.

Table 4
*Regression of Electricity Demand (GWh) on CDD and HDD
 for given DISCOs (OLS Estimation)*

DISCO	Sector	Coefficients				Adjusted R ²	F-Statistic (Prob.)	PP-test Stat for Residuals (Prob.)
		CDD (S.E.)	HDD (S.E.)	Price (S.E.)	Trend (S.E.)			
KESC	Dom	0.25*** (0.04)	-0.15*** (0.03)	-0.26*** (0.10)	2.06*** (0.33)	0.893	300.37 (0.00)	-10.49 (0.00)
	Com	0.059*** (0.01)	-0.27*** (0.01)	-0.28 (0.02)	0.52*** (0.09)	0.884	273.85 (0.00)	-11.02 (0.00)
SEPCO	Dom	0.07** (0.12)	-0.04 (0.03)	-0.61*** (0.124)	4.72*** (0.97)	0.500	9.751 (0.00)	-4.92 (0.00)
	Com	0.005** (0.002)	-0.004** (0.002)	-0.02*** (0.005)	0.27*** (0.06)	0.538	11.22 (0.00)	-4.55 (0.00)
GEPCO	Dom	-0.44*** (0.14)	-0.23*** (0.04)	-1.64*** (0.36)	10.46*** (2.81)	0.702	21.66 (0.00)	-4.78 (0.00)
	Com	-0.01 (0.10)	-0.003* (0.002)	-0.03** (0.02)	0.18 (0.26)	0.795	22.44 (0.00)	-6.82 (0.00)
IESCO	Dom	0.06 (0.06)	-0.12*** (0.06)	-0.12 (0.29)	1.4 (2.16)	0.755	36.97 (0.00)	-7.82 (0.00)
	Com	0.003 (0.01)	-0.02* (0.009)	-0.005 (0.02)	0.12 (0.31)	0.726	31.93 (0.00)	-7.80 (0.00)

*** ** and * show significance at 1 percent, 5 percent and 10 percent respectively.

A comparison of regional results with country-level analysis shows that though relationships among the key variables have generally maintained their signs, the coefficients are exceptionally larger in case of country wide analysis as compared to that of the DISCOs. This makes sense because, say, a unit increase in temperature is going to increase the units of electricity consumed for Pakistan much more than increase in consumption for any of the DISCOs given that number of consumers in any of the DISCOs is smaller than that in the country.³¹ The last columns of Table 3 and 4 show that residuals were found stationary in all the estimations.

6. SENSITIVITY ANALYSIS³²

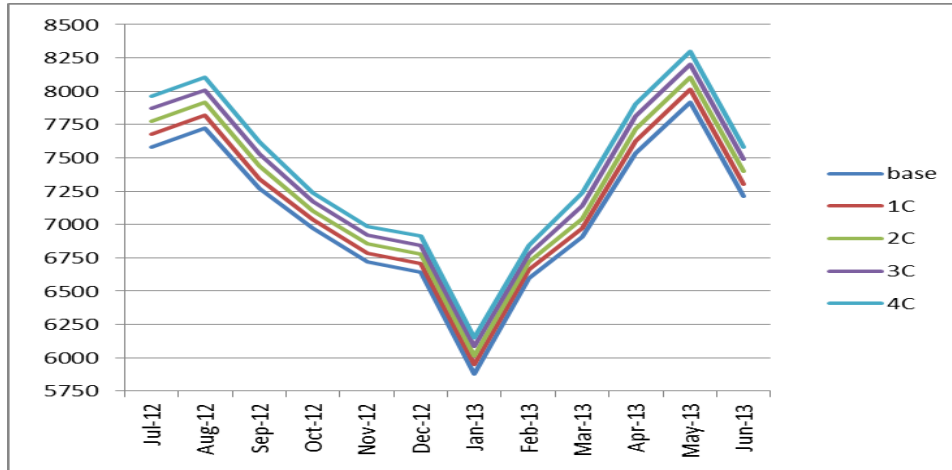
Based on the strength of the model in forecasting electricity demand, Equation 4 is chosen for projecting the changes in electricity demand under different climate scenarios. Results of the projection are presented in Figure 3 under 1⁰C, 2⁰C, 3⁰C and 4⁰C rise in temperature as compared to base year (2012-13).³³

³¹To ensure that results sustain alternate specifications, log-linear specification is also estimated and the results are found generally consistent. Estimation outputs are available with the authors and can be provided on request.

³²The name of the section has been adopted from conventional approaches towards the issue [Rosenthal, *et al.* (1995), Palmer and Burtraw (2004)] because the section deals with analysing sensitivity of electricity demand to temperatures under different climate scenarios. Specifically the analysis tells us that in case climatic changes cause temperatures to rise on average by a certain degree, by what percentage electricity demand will rise compared to the base year.

³³Projections are being reported at national level rather than regional level because of the shorter span of data given by DISCOs and the consequent problems with their analysis. Only KESC had a relatively longer time-series (15 years) and projections for the corresponding region are presented in Appendix D.

Fig. 3. Projections of Electricity Demand for Pakistan under Different Climate Scenarios



It is found that generally the rise in electricity demand is more pronounced in the relatively hot months of the years as compared to relatively cold ones suggesting surging peak loads in summer season.

Under 1°C rise in temperature scenario, residential electricity consumption is expected to rise in the range of 0.92 percent to 1.8 percent, for a 2°C rise in temperature, the range is found to be 1.8 percent to 2.6 percent, for 3°C rise it lies between 2.7 percent to 3.8 percent while if the temperature increases by 4°C electricity demand may rise by 5.1 percent to 3.7 percent. The greater sensitivity of peak demand to temperatures suggest the need for capacity instalments over and above that needed to cater to rise in electricity demand attributable to economic growth.³⁴

7. CONCLUSION

The study examines the impact of climate change reflected in rising global temperatures, on electricity demand in Pakistan. Employing heating and cooling degree days to capture the influence of temperature and controlling for other factors that affect electricity demand, regression analysis is used to arrive at estimates of relationship between temperature changes and electricity demand. The analysis suggests a significant positive response of electricity demand to rise in temperature and thus points towards increase in electricity demand in the country and its respective regions in future owing to climatic variations. The percentage increase in electricity demand as projected in this analysis (5.1 percent at most) should be carefully interpreted and two points should be given special attention while drawing any inferences in this regard. Firstly, the percentage increase in electricity demand found in the present study is the rise in demand attributable only to escalating temperatures disregarding changes in trends of all the other factors that affect increase in demand. It is expected that with growth in GDP and population as well as mechanisation, adaptation and other socio-economic factors, electricity demand will

³⁴The results are found in line with literature available in this regard e.g., Howden and Crimp (2001).

increase in future over and above that which is induced by temperature [NTDC (2011)]. Secondly, electricity consumption or generation understates true demand for electricity owing to excessive load shedding in Pakistan which has grown more severe in recent years. If both of these factors are taken into account, the rise in electricity demand in response to climate change is expected to become more pronounced in magnitude and thus calls for more careful planning by the relevant authorities regarding capacity building and load management. In the end, given all the data limitations particularly that data on relevant control variables was not available on required frequency, analysis could be conducted only on a few regions where long time series could not be obtained at regional level, degree days could not be computed using daily temperatures and that monthly data on prices were constructed in a rather crude way, the study should be viewed as an effort to arrive at some meaningful estimates but there is ample room for more advanced and extensive research in this area. With all the caveats mentioned above, results of the study should be generalised carefully.

APPENDIX A

ANALYSIS OF FLUCTUATIONS IN ELECTRICITY DEMAND

Table A.1

Regression of Fluctuations in Electricity Demand (GWh) filtered through Hodrick-Prescott on CDDs and HDDs for Pakistan (GMM Estimation)

Estimation Technique	Coefficients		Adjusted R ²	Diagnostics
	CDD (S.E.)	HDD (S.E.)		
OLS Estimation	2.61*** (0.45)	-1.52*** (0.22)	0.653	F-Statistic (Prob.) 249.12 (0.00)
GMM Estimation	2.78*** (0.65)	-2.27*** (0.36)	0.395	J-Statistic (Prob.) 0.019 (0.990)

***Significant at 1 percent.

APPENDIX B

RESULTS OF OLS ESTIMATION ON MONTHLY DATA OF PAKISTAN

Table B.1

Regression of Electricity Demand (GWh) on Temperature (°C) for Pakistan (OLS Estimation)

Dependent Variable	Coefficients			Adjusted R ²	F-Statistic (Prob.)
	Average Monthly Temperature (S.E.)	Trend (S.E.)	Price of Electricity (S.E.)		
Electricity Demand (GWh)	58.20*** (6.17)	18.34*** (1.02)		0.952	2640.40 (0.00)
	58.50*** (6.01)	25.82*** (2.17)	-3.73*** (1.01)	0.954	2035.2 (0.00)

***Significant at 1 percent.

Table B.2
*Regression of Electricity Demand (GWh) on CDDs and HDDs
 for Pakistan (OLS Estimation)*

Dependent Variable	Coefficients				Adjusted R ²	F-Statistic (Prob.)
	CDD (S.E.)	HDD (S.E.)	Trend (S.E.)	Price (S.E.)		
Electricity Demand (GWh)	2.61*** (0.38)	-1.40*** (0.26)	18.35*** (1.04)		0.952	1969.66 (0.00)
	2.61*** (0.39)	-1.42*** (0.26)	25.89*** (0.21)	-3.76*** (1.02)	0.953	1619.12 (0.00)

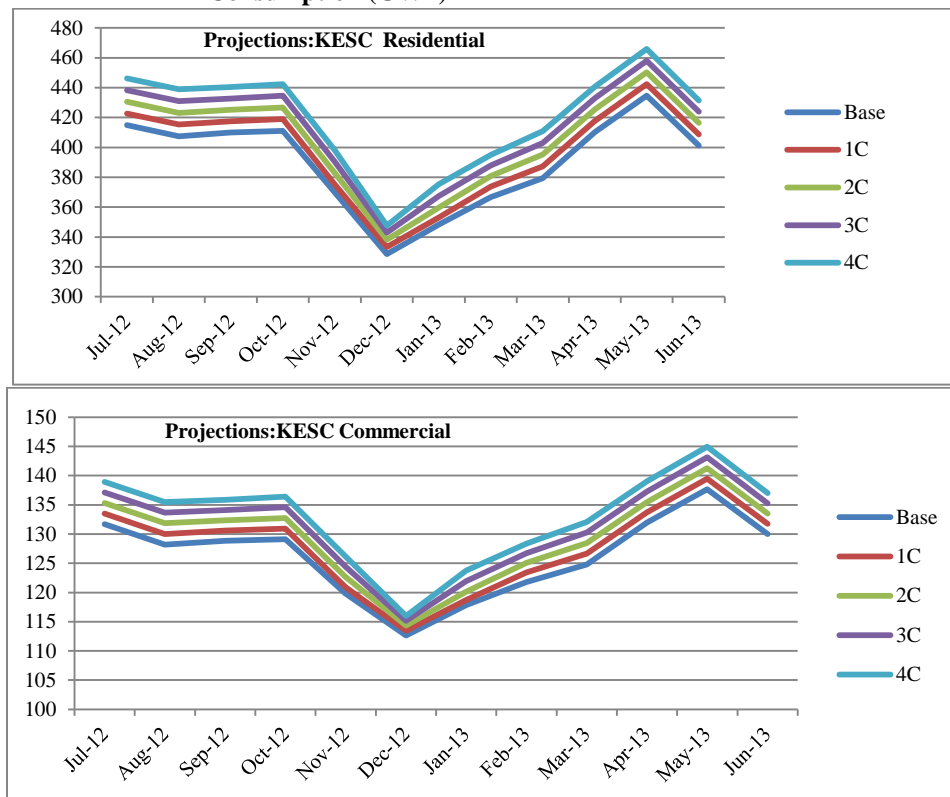
***Significant at 1 percent.

APPENDIX C

SENSITIVITY ANALYSIS FOR REGIONS SERVED BY KESC

In case of residential sector served by KESC, increase in temperature by 1°C increases electricity consumption in the range of 1.3 percent to 2 percent, a 2°C rise in temperature induces 2.8 percent to 4 percent increase, a 3°C increase in temperature causes 4.3 percent to 6.2 percent rise while in case temperature increases by 4°C, increase in electricity consumption is expected in the range of 5.8 percent to 8.3 percent.

Fig. D.1. Projections for KESC Residential and Commercial Sectors Consumption (GWh)



The surge in electricity consumption in commercial sector is relatively less pronounced ranging from 0.7 percent to 1.4 percent in case of 1°C rise to 3 to 5.8 percent under 4°C rise scenario. The results for Karachi region shows a higher percentage response to temperature changes in the projected electricity consumption as compared to the case of country-wide projections; the latter may be dampened because of region-wise and sector-wise aggregation of data.

REFERENCES

- Al-Hamadi, H. M. and S. A. Soliman (2005) Long-term/Mid-term Electric Load Forecasting Based on Short-Term Correlation and Annual Growth. *Electric Power Systems Research* 74:3, 353–361.
- Ali, M., M. J. Iqbal, and M. Sharif (2013) Relationship between Extreme Temperature and Electricity Demand in Pakistan. *International Journal of Energy and Environmental Engineering* 4:1, 36.
- Alter, N. and S. H. Syed (2011) An Empirical Analysis of Electricity Demand in Pakistan. *International Journal of Energy Economics and Policy* 1:4, 116–139.
- Amato, A., M. Ruth, P. Kirshen, and J. Horwitz (2005) Regional Energy Demand Responses to Climate Change: Methodology and Application to the Commonwealth of Massachusetts. *Climatic Change* 71, 175–201.
- Bartholomew, E. S., R. Buskirk, and C. Marnay (2002) Conservation in California during the Summer of 2001. LBNL-51477, 22 pp.
- Box, George and Gwilym Jenkins (1970) *Time Series Analysis: Forecasting and Control*. San Francisco: Holden-Day.
- Chaudhry, A. (2001) A Panel Data Analysis of Electricity Demand in Pakistan. *Lahore Journal of Economics* 15:(Special Edition), 75–106.
- Climate and Electricity Annual (2011) International Energy Agency.
- Considine, J. T. (2000) The Impacts of Weather Variations on Energy Demand and Carbon Emissions. *Resource and Energy Economics* 22, 295–314.
- Engle, Robert F., C. W. Granger, John Rice, and A. Weiss (1986) Semiparametric Estimates of the Relation between Weather and Electricity Sale. *Journal of the American Statistical Association* 81:394, 310 – 320.
- Filippini, M. (1995) Swiss Residential Demand for Electricity by Time-of-use. *Resource and Energy Economics* 17:3, 28–290.
- Gauss, C. F. (1821) *Theoria Combinationis Observationum Erroribus Minimis Obnoxiae (Pars Prior)*. Presented 15.2.1821. *Commentationes Societatis Regiae Scientiarum Gottingensis Recentiores, Werke, Vol. 4, Dieterichsche Universitäts-Druckerei, 1880, pp. 1–108.*
- Henley, A. and J. Peirson, (1997) Non-linearities in Electricity Demand and Temperature: Parametric Versus Non Parametric Methods. *Oxford Bulletin of Economics and Statistics* 59, 1.149–1.162.
- Henley, A., and J. Peirson (1998) Residential Energy Demand and the Interaction of Price and Temperature: British Experimental Evidence. *Energy Economics* 20, 157 – 171
- Hor, C. L., S. J. Watson, and S. Majithia (2005) Analysing the Impact of Weather Variables on Monthly Electricity Demand. *Power Systems, IEEE Transactions on*. 20:4, 2078–2085.

- Howden, S. M. and S. Crimp (2001) Effect of Climate and Climate Change on Electricity Demand in Australia. In *Integrating Models for Natural Resources Management Across Disciplines, Issues and Scales*. Proceedings of the International Congress on Modelling and Simulation (pp. 655–660).
- Jamil, F. and E. Ahmad (2011) Income and Price Elasticities of Electricity Demand: Aggregate and Sector-Wise Analyses. *Energy Policy* 39:9, 5519–5527.
- Khan, M. A. and A. Qayyum (2009) The Demand for Electricity in Pakistan. *OPEC Energy Review* 33:1.
- Lee, Chien-Chiang, and Yi-Bin Chiu (2011) Electricity Demand Elasticities and Temperature: Evidence from Panel Smooth Transition Regression with Instrumental Variable Approach. *Energy Economics* 33:5, 896–902.
- Malik, Afia (2012) *Power Crisis in Pakistan: A Crisis in Governance*. Pakistan Institute of Development Economics.
- Markov, A. A. (1900) *Wahrscheinlichkeitsrechnung*. Telner, Leipzig.
- Muñoz, J. R. and D. J. Sailor (1998) A Modelling Methodology for Assessing the Impact of Climate Variability and Climatic Change on Hydroelectric Generation. *Energy Conversion and Management* 39:14, 1459–1469.
- Nasir, M., M. S. Tariq, and A. Arif (2008) Residential Demand for Electricity in Pakistan. *The Pakistan Development Review* 457–467.
- NTDC (2011) *Electricity Demand Forecast based on Multiple Regression Analysis*. Planning Power NTDC, Feb 2011.
- Palmer, K. L. and D. Burtraw (2004) *Electricity, Renewables, and Climate Change: Searching for a Cost-Effective Policy*. (p. 3). Resources for the Future.
- Pardo, A., M. Vicente and E. Valor (2002) Temperature and Seasonality Influences on Spanish Electricity Load. *Energy Economics* 24:1, 55–70.
- Parkpoom, S. J. and G. P. Harrison (2008) Analysing the Impact of Climate Change on Future Electricity Demand in Thailand. *IEEE Transactions on Power Systems* 23: 3, 1441–1448.
- Parkpoom, S., G. Harrison, and J. Bialek (2008) *Climate Change Impacts on Electricity Demands*. Edinburgh, UK: Institute for Energy Systems.
- Phillips, P. C. and P. Perron (1988) Testing for a Unit Root in Time Series Regression. *Biometrika* 75:2, 335–346.
- Pilli-Sihvola, K., P. Aatola, M. Ollikainen, and H. Tuomenvirta (2010) Climate Change and Electricity Consumption—Witnessing Increasing or Decreasing Use and Costs? *Energy Policy* 38:5, 2409–2419.
- Prais, S. J., and C. B. Winsten (1954) *Trend Estimators and Serial Correlation*. Vol. 383. Cowles Commission Discussion Paper.
- Rasul, Ghulam, and Bashir Ahmad (2012) *Climate Change in Pakistan*. Pakistan Meteorological Department.
- Rosenthal, D., H. Gruenspecht, and E. Moran (1995) Effects of Global Warming on Energy Use for Space Heating and Cooling in the United States. *The Energy Journal* 16, 77–96.
- Ruth, M. and A. C. Lin (2006) Regional Energy Demand and Adaptations to Climate Change: Methodology and Application to the State of Maryland, USA. *Energy Policy* 34, 2820–33.

- Sailor, D., and A. Pavlova (2003) Air Conditioning Market Saturation and Long-term Response of Residential Cooling Energy Demand to Climate Change. *Energy* 28, 941–951.
- Valor, E., V. Meneu, and V. Caselles (2001) Daily Air Temperature and Electricity Load in Spain. *Journal of Applied Meteorology* 40, 1413 – 1421.
- WAPDA (2014) *Power System Statistics*.
- White, H. (1980) A Heteroskedasticity—Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. *Econometrica: Journal of the Econometric Society* 817–838.
- World Bank Report (2010) *Turn Down the Heat: Why a 4°C World must be Avoided*. Postdam Institute for Climate Impact Research and Climate Analytics.
- Yuan, S. Q. and H. S. Qian (2004) Indices and Models Assessing Climatic Impacts on Energy Consumption. *Resource Science* 26, 125–130.
- Zachariadis, T. (2010) Forecast of Electricity Consumption in Cyprus up to the Year 2030: The Potential Impact of Climate Change. *Energy Policy* 38:2, 744–750.

Reforming a Broken System: A New Performance Evaluation System for Pakistan Civil Servants

MARYAM TANWIR and AZAM CHAUDHRY

Extant literature informs that the modern state requires a civil service whose performance is accurately measured, evaluated and subsequently rewarded (or punished). In this paper we use Pakistan as a case study of a country in which the performance evaluation system is obsolete and resistant to change. After analysing literature on the importance of performance management systems in bureaucracies, we evaluate the present structure of the Pakistani performance evaluation system of civil servants and identify its major weaknesses. We then present the results of a unique survey of senior civil servants which informs on how they viewed potential reforms of the current system. Based on this, we present a revised instrument to more accurately measure the performance of Pakistani civil servants, which both adapts the existing instrument while being cognizant of the international best practices. Finally we look at some of the significant political economy factors that could hinder the introduction of a new performance management system.

Keywords: Performance Evaluation, Political Manipulation, SMART, Political Alignment Performance Management, Civil Service

I. INTRODUCTION

Although there is exists debate about the role and importance of the nation-state there is no question that at an efficient and meritocratic civil service is a key arm of the state [Micklethwait and Wooldridge (2014)] “The importance of the bureaus and the critical position of their heads in the line of command need no demonstration” [Macmahon and Millet (1939: 307)].

Also, there has been a strong move recently to move from a civil service that is blindly trusted to maximise societal welfare to a civil service whose performance is accurately measured, evaluated and rewarded (or punished). Though this approach is intuitively appealing, there are significant problems in adopting such a system for many reasons: first, there is always a fluid definition of performance and this definition is highly subject to interpretation. Second, there is a tendency to delay change in developing countries especially since the civil service is viewed as a relatively stable force in turbulent times (even in the case where the civil service is viewed as flawed). And third, there is always significant resistance to

Maryam Tanwir <Mt383@cam.ac.uk> is Lecturer, Centre of Development Studies, University of Cambridge, United Kingdom. Azam Chaudhry <Azam@Lahoreschool.edu.pk> is Professor, Department of Economics, Lahore School of Economics, Lahore.

Authors' Note: Financial support was received from the research Competitive Grants Programme, a joint initiative of the Planning Commission of Pakistan and Pakistan Strategy Support Programme, International Food Policy Research Institute (IFPRI), funded by USAID.

changing the system of rewards and punishments for the civil service and those that tend to resist these changes most are the civil servants themselves as well as the politicians and other stakeholders. But in a rapidly changing world, a civil service in which performance is not measured, evaluated and rewarded accurately will become obsolete.

This research is focused on the Pakistani performance evaluation system and the reason for this is multi-fold: First, the Pakistani case is a perfect example of a bureaucratic performance management system that is in need of significant reform, not only because of the significant increase in the scale of responsibilities of the bureaucrats but also because the present system has effectively broken down which makes it a enlightening case study in the developing country context. Second, the system has now come to the point where the various powerful stakeholders (such as the political elite and the business community) have effectively dismantled the bureaucratic system to suit their own needs which has led to bureaucratic decisions being made for the benefit of a few as opposed to benefit of all the stakeholders in society. Finally, the bureaucrats themselves recognise that the system is broken which means that if reforms are not begun the system could effectively collapse. The objective of the research therefore is to understand the many different ways the performance evaluation system in Pakistan has broken down and the best way forward, within the current political economy constraints to fix it.

The structure of the paper is as follows: In Section II we look at the literature on the importance of performance management systems in bureaucracies and then focus on the experiences of developing countries in reforming the performance management systems of their bureaucracies. In Section III we discuss the present structure of the present performance evaluation system of bureaucrats and identify its major weaknesses. In Section IV we present a revised instrument to measure the performance of Pakistani civil servants which adapts the existing instrument keeping in mind international best practices. In Section V we present some of the results of a unique survey of senior bureaucrats (from the Pakistan civil service) which looked at how they viewed potential reforms of the current system. In Section VI we discuss some of the significant political economy issues that could occur while trying to introduce a new performance management system for bureaucrats.

II. LITERATURE REVIEW

Though one cannot deny the importance of markets, literature confirms that the state still has an important role to play in the ensuring development of countries, especially in developing countries. The state and the way it governs has significant implications in the developing country context. The modern state is issued with the responsibility of providing governance and directing development. “As world economic integration proceeds, state capabilities will matter more rather than less in fostering social well-being and wealth creation” [Weiss (1998)]. State and Effective government performance and management are quintessential for state development [Hilderbrand and Grindle (1997)]. States which are unable to deliver efficient governance and public service provision will fade as the new globalised era belongs to the competent states [Micklethwait and Wooldridge (2014)] Subsequently the importance an effective public administration, which is the primary vehicle through which the state ensures public service delivery and economic development, cannot be over emphasised.

The major causes of economic growth in the third world, investigated by Reynolds (1983) based on the historical experience of 41 countries since mid-nineteenth century; show that administrative competence is of paramount importance for economic growth of a country:

“My hypothesis is that the single most important explanatory variable is political organisation and the administrative competence of government” [Reynolds (1983:976)].

Literature informs that “The vitality of a country’s development depends on the rejuvenation of public administration even in the darkness of insufficient knowledge and experience [Rizos (1965: 47)]. And a modern competent state requires efficient and committed bureaucracies [Weiss (1998)]. Recent development literature emphasises the importance of a competent and professional bureaucrat, and informs that efficient performance of the civil servant has a direct correlation with development [Kohli (2006)]. Evans (1995) confirms that the primary instrument of the developmental states remains a competent and a professional bureaucracy. The miracle of the East Asian developmental state has largely been attributed to the role of the professional and autonomous bureaucracy, which closely approximate the Weberian model [Chang (2006)]. There are now both case studies and cross-country empirical analyses that affirm that bureaucratic performance is essential for development performance [Kaufmann, *et al.* (2000); Evans and Rauch (1999, 2000); World Bank (1997)].

After establishing the importance of the bureaucracy, the following section inspects the reasons why performance management systems are essential for the development of an effective bureaucracy. It is because the ability of the bureaucrat to transform the tenets of policy into the reality of development is dependent on the capability and capacity of the bureaucracy as an organisation to ensure successful delivery of programmes and projects. The quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, the incentives offered to the bureaucracy, and the credibility of the bureaucrat’s commitment to policies all impact on the quality of governance.

Underlining the significance of the efficiently performing bureaucrat and the close correlation to positive development outcomes, governments and practitioners have turned their attention towards augmenting the capacity of the bureaucrat [Organisation for Economic Cooperation and Development (OECD) (1996); Pollitt and Bouckaert (2000); Ayee (2008)]. This is more important than ever before, as with the 21st century, the forces of globalisation, and increasing volatility and irregularity within the social and economic environment, has called for the civil service, particularly the senior civil service to realign and reinvent itself to cope with the evolving strategic challenges. In this process of reinvention and modernisation of the senior bureaucracy, modernising the evaluation and performance management of the civil servants is vital.

A sound performance management system is essential to the civil service remains efficient and motivated. Bana and McCourt (2006) examine Tanzania’s civil service and report excessive political appointments and promotions. They inform that depolarisation of the bureaucracy and its reform, especially of its performance appraisal will translate it good governance. This has been corroborated by Rugumyambeto (2004) who inspects

public service reform in Tanzania and informs that the importance of political leadership and commitment for successful reform cannot be overemphasised to ensure governance and development.

The performance must be assessed accurately, as Garvin (1993) informs that “if you cannot measure it, you cannot manage it”. And it is important to measure accurately and objectively, as Daniels (1987) apprises “anything can be measured and if it can be measured it can be improved”. Accurate performance measurement tools would indicate whether the work rendered is satisfactory or provide warnings if the work is inadequate. Accurate and objective performance measurement would also lend clarity when examining the cause of the success or failure of development programmes performance management can also provide indications to what may be the problem, whether it is the performance of the bureaucrats or other extraneous factors which need consideration. Accurate measurement can also isolate the officers which need to improve performance and would also help strengthen accountability, transparency, improve quality of service, and culminate more successful outcomes [Cook, *et al.* (1995)]. Performance management system which has incentives that motivate and influence public sector performance are vital for poverty reduction and economic growth [UNDP (2006a)].¹

III. THE DEVELOPING COUNTRY EXPERIENCE OF REFORM

Literature informs that developing countries are now overhauling their public administration and performance management systems to keep up with the challenges of the modern global economy.

The following section examines the CSR initiatives in Africa. The Economic Commission for Africa report apprises on the reform initiatives undertaken in Africa regarding the civil service. It examines four Case studies: Ghana, Kenya, Nigeria and South Africa. The report informs that in these countries the civil service reform efforts started in the late 1980s, and the reforms were ushered by the onset of the Structural Adjustment Programmes (SAPs), and the New Public Management (NPM).² The emphasis of the reform was to augment the efficiency and performance of the civil servant. Some of the principle strategies deployed by the civil service reform were restructuring of the organisation, improving human resource management, reinventing the relationships between ministers and civil servants, and augmenting capacity of the civil service through training of staff and retaining them. There was a focus on incentivising performance of the officers. The report informs that some progress was noted the four countries in terms of innovations and best practices in civil service reforms (CSRs). And some of these were “performance management agreements with senior civil servants; and annual civil service monitoring and evaluation”.

Court, Kristen, and Weder (1999) examine the results of a survey on incentives and bureaucratic structures in Africa. Their research suggests that incentive structures

¹An incentive implies a positive motivation to perform efficiently, and give the best performance possible. Mathauer and Imhoff (2006:3) understand the term motivation as “the willingness to exert and maintain an effort towards organisational goals”.

²For detailed information on the case studies please see Economic Commission for Africa (ECA): Innovations and Best Practices in Public Sector Reforms: The Case of Civil Service in Ghana, Kenya, Nigeria and South Africa, December 2010.

play comparable roles in African countries and improved performance of the officers remains linked to organisational autonomy and good career opportunities. Their research endorses that incentives play a significant role in augmenting civil service performance.

Mugerwa (2003) examines five case studies (French-speaking West Africa, Malawi, Kenya, Nigeria and Mozambique) regarding the civil service reform efforts, the contents and the impact. They find that both the incentives and the structures prevalent were inadequate. In their research they inform that an efficient, productive and accountable civil service remains premised on competitive compensation and performance-based promotion.

Mengesha and Common (2007) assess the outcomes of the Public Sector Capacity reform, based on a small-scale survey conducted in two ministries. The results of the survey informs that there was notable transformation in the quality of service delivery in the ministries. A significant improvement in performance was observed. The reform was gradual but eventually translated into significant improvements in Ethiopia's system of public administration. The research suggests that to ensure the positive sustainable impact of the reform, there should be permanent incentive schemes and a proper monitoring system. It informs that even though many public sector reforms fail in African countries, there are cases where reforms have translated into positive outcomes.

There have been similar initiatives in other countries: There have been efforts to reform the civil service in China since the 1980s. Burns (2007) informs that since 1993 the Chinese government has prioritised on the reform of the country's civil service system, where "performance appraisals focus mostly on merit-related criteria which seek to evaluate behaviour on the job. China's performance management policy seeks to link performance with rewards and stipulates the payment of bonuses to those who have performed well. It also mandates that bonuses should be linked to those officers who receive outstanding appraisals [Burns (2007: 15)]" The reforms improve the monitoring and supervision systems. The incentives were instrumental in ensuring augmented performance. The research confirms that the reforms augmented the performance of the civil servants; however the full impact of the reforms was weakened by a failure to redress impediments present in the organisation culture in china.

Civil service reforms do translate into efficient performance. However developing countries lack the mechanisms required to implement and sustain the civil service reforms. Literature informs that even though incentives play a determining role in boosting performance of the public officials, however developing countries lack the mechanisms that ensure that the incentives successfully motivate the public service officials. [Lopes and Theisohn (2004:99)]. However in their research Lopes and Theisohn (2004) examine various countries case studies to examine if incentives have indeed translated into capacity development, and they find that in the case of India the use of better management evaluation and assessments translated into enhanced performance of the civil servants. They report similar success full results of CSR in Philippines.

IV. AN ANALYSIS OF THE PAKISTAN'S PRESENT PERFORMANCE MANAGEMENT SYSTEM

Before presenting a revised version of the PER, the following section offers some insights in to the current PER prevalent in Pakistan. At present, Pakistan does not have a

performance management system. It only has one performance evaluation report (PER). The PER (previously termed as the annual confidential report (ACR)) is filled out annually by the senior/boss of the officer being assessed and is one of the most important criteria for assessing whether the officer is worthy of being promoted to a higher grade or not.

This performance assessment document according to Weber (1968) should be based on merit and performance. According to Weberian Tradition the PER should be an objective and fair assessment of the officer concerned, and it should recommend a promotion to a higher grade if the performance warrants it. If promotion is lacking, or further capacity building of the officer is required then it should report these facts accurately also. However it is reported that the Pakistani ACR reports “rarely contain adverse remarks since there are doubts about their confidentiality”; the report does not have tangible, performance-oriented criteria and is premised heavily on subjective evaluations of officers’ characters [Tanwir (2010)]. Moreover, the comments are very general and simplistic and completely devoid of performance-related targets [Tanwir (2010)]. The National Commission for governance reforms in Pakistan informs that the performance evaluation reports in Pakistan are subjective and are frequently used as punishment by superiors to ensure submissiveness.

Recent research focusing on the civil service of Pakistan, offers an in depth analyses of the structure and functioning (or the lack of) of Pakistan’s bureaucracy and one of the critical issues brought to light is the lack of objective performance assessing standards for the officers. Its key recommendation to the government of Pakistan is to reinvent the current PER reports by using objective performance-oriented criteria, and doing away with the current subjective evaluation. The report informs that the current system remains non-meritocratic and the transfers and the promotions are based on political alignment and not on merit and performance.

This is a demotivating factor for the officers. Research on the general performance appraisal systems in Pakistan by Usman, *et al.* (2014) finds that fairness perception and grievance mechanism are the most important predictors of performance appraisal satisfaction. And fulfilment of training and development needs and feedback were important predictors of work motivation. The research highlights the importance of an effective performance management system. Similar research in the telecom industry by Malik and Aslam (2013) in Pakistan confirms that perceived fairness is found as critically important dimension of performance appraisal for employee motivation. These ingredients remain missing in the performance evaluation report of the bureaucrats in the Pakistani context.

The World Bank civil services reform document (1998) also reflects the disconnection between performance and promotion in the Pakistani bureaucracy. The system appears to have been degenerated into one of promotion purely on the basis of seniority, which is a source of significant staff de-motivation there does not exist a connection between performance and career advancement.

The inadequacy of the ACR in gauging performance is confirmed by Cheema and Sayeed (2006) who report that the ACR emphasises the personal qualities of the officer rather than to setting objective and measurable targets against which performance can be assessed. It appears that performance and ACR have little correlation. India and Pakistan

both inherited the same British Weberian model, and have the same ACR system to gauge promotion and performance. Kashikar (2012) on evaluating the performance appraisal system in the Indian bureaucracy, informs that the system of performance appraisal in India, the PER, remains a tool of control, a legacy of the British rule. It does not have a developmental orientation, and suffers from similar ailments as the Pakistani PER, and has no quantifiable targets and objective standards, and remains susceptible to political manipulation. To add further strength to the argument, the quantitative study by Pakistan Institute of Development Economics [Haque (2007)], elaborates on the perceptions of the bureaucrats, that their postings and transfers are not done on the basis of who is the most pertinent and able for the position but on other grounds. It seems that transfers are certainly not being made for efficiency reasons. In keeping with the observations of several authors, it seems that rationale for these decisions is a combination of political pressure and rent sharing. [Haque (2007)].

Additionally the concept of promotion on merit and performance is difficult to quantify in the Pakistani bureaucracy as the bureaucrats are not usually given any goals or deadlines to meet. As elaborated in the Haque (2007) report, that the need for a clear job description is mandatory for effective management and performance. And without a job description, the performance cannot be effectively assessed and hence merit and reward system cannot be established. Haque (2007) reports that only 60 percent of the civil servants have their job descriptions clearly articulated to them. The remaining 40 percent reiterate they do not have a written job description. Without a proper job description accurate performance assessment cannot be ascertained.

The Pakistani PER in Detail

Unlike the best practices observed in International performance management systems the PER in Pakistan does not contain any explicit quantifiable targets. There is only an annual review, no review of agreement of targets beforehand, and no review of the attainment of targets/deliverables. The Pakistani PER in its present form contains three particular sections: First, there is a section that asks the evaluator the basic information regarding the civil servant. Second there is a section that asks the evaluator about the basic job description of the civil servant as well as an account of his or her performance on the job. Third there is a section that asks for an evaluation of the civil servant's performance in their job as well as an evaluation of their strengths and weaknesses. It is useful to look at a detailed breakdown of each section in order to determine how the document can be improved upon. The Pakistani performance evaluation report is given in the Appendix.

In Section 1, the Pakistani performance evaluation system asks for the basic information of the civil servant like the name and date of birth of the civil servant, the ministry, division and department in which the civil servant is presently employed, the period under review, the date of entry into the civil service, the various jobs held during the period, the academic qualifications of the civil servant, the languages the civil servant knows, the training received by the civil servant and the period the civil servant served in their present job. As a whole, most of this information is made up of basic facts which do not tend to be subject to manipulation or political interference. But a few things should be noted: First, knowledge of languages may be more important for some services than

others. So while noting it can be of some use in determining future jobs, it should not be used to limit the job opportunities of civil servants. Also it is important to realise relevant technical skills can be just as important as the knowledge of certain languages in some jobs (such as computer skills, programming skills, finance skills, etc.) and should also be included in the evaluation.

In Section 2, a very brief job description is asked for as well as a brief account of the performance of the civil servant, which can be supported by giving targets and performance measures. This is the first place where significant changes need to be made to the performance review. First, the simple job description has to be replaced by a set of clear, concise and concrete job objectives and the estimated timelines associated with each objective. This first step is the critical step needed to change the nature of the Pakistani performance review. The performance appraisal that follows in this section is the most important aspect of the performance evaluation. It should list next to each of the objectives and timelines mentioned above how much progress has been made in meeting these clear objectives in the planned timelines. It is critical that this be clearly done on an objective scale (either numerical or otherwise).

At this stage it is important to note that a true performance evaluation review can only come after a discussion has been had between a civil servant and their superior before the review period begins on what are the clear and measureable objectives during the review period. So, Section 1 and Section 2 should be combined also completed at the beginning of the review period and should list a clear set of concrete and measureable objectives and the timelines associated with each objective.

In Section 3, the evaluator comments on the performance of the civil servant in this particular position as well as their level of integrity as well as a picture of their strengths and weaknesses. Though the heart of the present performance evaluation system, this is also the weakest part for a number of reasons: First, in the present evaluation report there is no link between evaluating performance and how well the civil servant has met the objectives decided up earlier. Second, measuring the integrity, emotional stability, and interpersonal skills of a civil servant are extremely subjective and highly susceptible to personal interpretation as well as manipulation. In this case it would be far better to measure how specific related skills (such as management skills, communication skills, financial skills, etc.) have impacted the success or failure of a civil servant in meeting the objectives defined above. Also, the questions on civil servant expertise and the training and development needs of the civil servant should be directly related to the ratings given above. So if a civil servant lacks certain language or technical skills then the training and development needs should be focused on developing these skills. Also, any discussion of technical expertise and suggestions for future postings should be based on the strengths of the civil servants as clearly illuminated in the sections above.

V. WHAT BUREAUCRATS PERCEIVE AS THE ROAD AHEAD

To determine the true efficacy of the Pakistan performance evaluation system, and evaluate the extent to which it accurately captures the performance of the bureaucrats we also conducted a survey in which senior civil servants were asked about their perceptions regarding the present system.

The performance of the bureaucrats has often been examined and berated by not only academics but by politicians, civilians and the international development agencies. There has been little research done which asks the bureaucrats about what the primary impediment is to their effective performance. Their own perceptions are valuable, because they are the true judges of what motivates their performance and what demoralises them and proves to be an impediment to their performance. And a research and a system based on their own personal feedback would have a much greater chance of success, than any other system imposed on them externally.

In order to determine the perceptions of senior Civil Servants in Punjab regarding the present performance evaluation system we developed and administered a detailed questionnaire for senior civil servants. The questionnaire was informed by the comparison and contrasts of the British and Pakistani performance evaluation system. More than 100 senior civil servants were surveyed to determine their perceptions regarding the efficacy of the present system as well as their recommendations for restructuring the present system. The survey was carried out in at the National Institute of Public Administration (NIPA), Lahore with a group of senior civil servants who were attending training courses at the institute. The survey was unique as it was conducted for civil servants from a variety of services.

The survey inquired about the strength and weakness of the system. It also asked about international best practices that could be included in the future performance evaluation system. The survey also gathered the perceptions of the bureaucrats about what they thought the PER should contain for it to be a motivator and incentive for their bureaucratic performance. It asked about the nature of the targets set in the system, the possibility of a link between efficiency and postings, and the link between performance, training and pay structures.

The first set of results from the survey found an extremely negative perception of the current performance evaluation system. In particular a extremely high percentage of civil servants found the current PER to be extremely inaccurate in measuring performance, extremely susceptible to political manipulation and completely delinked from key motivational issues such as training opportunities, better positions, better salaries and overall motivation. Finally the results showed that the civil servants found that the structure of the present PER lacked any objective criteria or targets. Some of the key results of the survey were:

- (1) 78 percent of the civil servants agreed that there was no link between efficient performance and the present performance evaluation system.
- (2) 70 percent of the civil servants confirmed that there was no link between efficient performance and training opportunities.
- (3) 84 percent of the civil servants confirmed that there was no link between efficient performance and better/plum postings.
- (4) 70 percent of the civil servants said there was no link between efficient performance and pay.
- (5) 70 percent of the civil servants thought the PER was subjective and lacked tangible objective criteria.
- (6) 99 percent of the civil servants confirmed that no targets were agreed between the officer and the senior manager for public service delivery.

- (7) 70 percent of civil servants confirmed that the current PER was highly susceptible to political manipulation.
- (8) 85 percent of the civil servants perceived the current performance evaluation report (PER) to be inaccurate in assessing their performance.
- (9) 81 percent of the civil servants perceived that the PER was not a motivator for their performance.

The second set of results of the survey showed that the civil servants were strongly in favour of a new performance management system that has quantifiable targets, that cannot be politically manipulated, that has SMART (specific, measurable, achievable, relevant, timed) objectives, that looks at what targets were achieved and how they were achieved, that is performed at least biannually and should be based on the evaluations of both people directly above and below the civil servant. Some of the key results from this section of the survey were:

- (1) 71 percent of officers concurred that Pakistan should have an umbrella PMS that links the PER (which is now in isolation) to the overall management of the bureaucrats and the organisation.
- (2) 90 percent of the civil servants said that there should be quantifiable targets in the PER.
- (3) 95 percent of the civil servants confirmed that there can be objective criteria in the PER which cannot be politically manipulated.
- (4) 75 percent of the CS want to have an objective PER (which is not susceptible to political manipulation)
- (5) 90 percent of the officers confirmed that the objectives in the PER should be SMART? (Specific, measurable, achievable, relevant, timed)
- (6) 75 percent concurred that there should be an assessment of the performance of job holders which takes into account of both what they have achieved and how they have achieved it.
- (7) 70 percent of the officers concurred that the assessment should be biannually atleast.
- (8) 80 percent of the officers said that only the direct superior should determine the work targets.
- (9) 65 percent of the officers confirmed that there should there be an evaluation from the lower management level also.

The third set of results looked at how civil servants perceive the road forward in terms of civil service reforms. The fascinating aspect of these survey results is that the civil servants were strongly in favour of a new performance evaluation system that links better performance to better jobs, but were very strongly convinced that politicians would oppose such a system. Some of the key results from this section of the survey were:

- (1) 61 percent of the officers confirmed that there must be a link between performance and better postings.
- (2) 71 percent of the civil servants wanted such a system.
- (3) 80 percent of the officers said that the politicians would not want such a system.

On the whole the result of the survey suggests some important conclusions: First, civil servants are extremely well aware of the failures of the present performance management system. In particular they are cognizant of what are the specific problems in the system, what failures these problems have led to and what are the solutions that are required to reform the system. The second important conclusion is that the civil servants are overwhelmingly in favour of changing the system to make it a fairer and more accurate method of evaluating and rewarding performance. But the third key conclusion tempers these results in that they show that even though the civil servants are keen on reform, they recognise that pushing through reform in the present, highly politicised environment will be extremely difficult. So the greatest obstacles may not come from the civil servants themselves but rather the politicians who benefit from the highly political system that exists presently that is both highly subjective and highly subject to manipulation.

VI. THE STRUCTURE OF A REVISED PERFORMANCE EVALUATION

This section examines the current PER and for the purpose of the new revised PER, attempts to identify the areas in the current PER, (based on the analysis of the survey and international best practices discussed earlier) which tend to dilute its efficacy and make it susceptible to political manipulation. Part 1 of the current PER asks wide-ranging questions, and focus on the background of the officer. And hence this section does not require any alterations. Part 2 of the PER contains questions which require alteration. The question in Section 11:

- (1) “Brief account of performance on the job during the period supported by statistical data where possible. Targets given and actual performance against such targets should be highlighted. Reasons for shortfall, if any, may also be stated.”**

This question needs to be reinvented as firstly: The part 2 in the form initiates the assessment of performance which has not been earlier agreed on by the reporting and reported party. Hence before this section, in the revised PER we add a section which includes a detailed timetable of events where the officer and the senior agree on targets, deadlines, budgets, time and cost overruns. This would be referred to in the proceeding section which will evaluate the agreed targets. Secondly the revised PER does not ask the above stated question, where the account of performance is descriptive, and use of statistical targets are optional and not mandatory. The question has been replaced by tangible, analytical and statistical analysis. Since the targets mentioned are not agreed beforehand, in objective analytical terms, it renders the above question inappropriate for accurate assessment of performance. Hence the revised PER (presented in the Appendix) has replaced this question which is subjective and susceptible to political manipulation. The revised PER will ask questioned which will require analytical and statistical analysis.

Part 111 of the current PER contains questions which require alteration, these are:

Part 111, Q1: “Please comment on the officer’s performance on the job as given in Part II (2) with special reference to his knowledge of work, ability to plan, organise and supervise, analytical skills, competence to take decisions

and quality and quantity of output. How far was the officer able to achieve the targets? Comment on the officer's contribution, with the help of statistical data, if any, in the overall performance of the organisation, do you agree with what has been stated in Part II (2)?"

This question again is not based on any pre-agreed commitment on targets, and the answers are not based on any numerical numbering, but on general comments. If the targets are not agreed at the start, how can the achievement be analysed. The queries regarding knowledge, and planning and organisational skills and competence need to be structured and objective manner. The revised PER has altered this question and replaced it with a more objective and analytical query.

- (2) **"Integrity (Morality, uprightness and honesty)**
- (3) **Pen picture including the officer's strengths and weakness with focus on emotional stability, ability to work under pressure, communication skills and interpersonal effectiveness (weakness will not be considered as adverse entry unless intended to be treated as adverse)"**

These two questions are subjective and non-analytical and have been has been deleted, and been replaced by more objective and quantifiable questions in the new PER.

Part 111,

Q 6. Overall grading.

Fitness for promotion

Q7. Comment on the officer's potential for holding a higher position and additional responsibilities.

All three questions are currently ambiguous, and susceptible to manipulation. They need to be addressed from a more objective lens, where the answers need to be based on the achievement of targets and deadlines, and the quality of performance rendered. The analysis should also address areas where performance was unsatisfactory, and punitive measures in case of missed targets and time and cost overruns can be called for.

The last section of the current PER calls for an assessment by any countersigning officer, who may or may not have adequate knowledge of the officer's work rendered. This is again open to manipulation. The new PER now asks the immediate junior to comment on the seniors work and performance. This would ensure that the senior involve the juniors in the organisation strategic goals and targets, it would ensure team work. It would also ensure that the senior remains accountable and does not excessively abuse the power given to him (although this might also allow for collusion of corruption).

Hence the revised PER now asks assessments on the basis of objective, tangible, verifiable targets and timelines. It contains two separate parts. The first calls for an agreement between the superior and the officer on the targets, and deliverables, the budget involved and possible time and cost overruns. All the questions require answers in statistical detail. The performance evaluation in Part II of the PER is based on the agreement made in Part I between the officer and his senior. The targets are also shared with the junior below. The second part to be viewed after 6 months of the agreement in

the first part) is the review of the target agreed in the first part. The use of objective, analytical terminology limits the susceptibility of the document to political manipulation. This makes the whole process of assessment more methodical, transparent, and communicative. The targets discussed and finalised are also shared with the junior below. This further adds to the communication and accountability chapter. The revised PER also contains a section where the junior officers comments on the senior performance, this will go a long way in streamlining the performance of the seniors. The revised PER is devoid of subjective assessments which can be easily manipulative. It also contains most of the best international practices that the Pakistani civil service officers perceived to be instrumental in their revised PER. Some questions in the new PER:

- 9.1 Targets to achieve: (Description of the target in objective, analytical and quantifiable terms).**
- 9.2 Value of the target: (The total costs and benefits of the target).**
- 9.3 Budget: (the budget and resources under the authority of the officer).**
- 9.4 Headcount responsibilities (Number of staff and their grade that reports to the officer).**
- 9.3 Timeline to achieve target:**
- 9.4 Objective: what is the primary objective of the target?**
- 9.5 Deliverable? What will the verifiable deliverable at the time of completion?**

The expected outcome that can be measured/assessed objectively?

- 9.6 how and by whom will the deliverable be measured? How will the performance of achieving the target be measured?**
- 9.7 how and who will ensure that cost and time overruns don't alter the efficiency of the target.**
- 9.8 will the target and deliverables decided be shared with the staff reporting to the officer?**

VII. THE POLITICAL ECONOMY ASPECTS

In the previous sections we have looked at the shortcomings of the present civil servant performance evaluation system in Pakistan and have recommended ways of reforming the system. But one glaring issue that has been ignored is the political economy aspects of implementing potential reform. Based on the analysis above we have found that the present system has significant gaps and that these gaps are recognised by a majority of civil servants. But these civil servants also realise that one of the main reasons for the perpetuation of the present, highly subjective system is that it can be easily manipulated to serve the needs of politicians or other powerful stakeholders. The reasoning is simply: if there exists a purely objective system of evaluating civil service performance then powerful stakeholders will have less discretion in appointing people based on preferences (or through the complicated system of relationships that exist in Pakistan such as biradari or kinship) and will be forced to appoint civil servants based on merit and skill. Also, an objective system of evaluating performance makes it difficult for stakeholders to use the threat of dismissal or transfers to force civil servants to follow their will, which has become commonplace now.

Other than these obvious obstacles to reforming the system, there are a number of more subtle (though no less powerful) reasons that reforming the system will be an uphill task:

First, after the passage of the 18th amendment, many of the administrative and financial responsibilities have been shifted to the provinces (and there is a strong push towards devolution of power to local governments) which means much of the major decisions which were once taken at the federal level (and potentially less susceptible to corruption not because of greater honesty but because of significantly less access) are now taken at the provincial level and subject to greater pressure from affected stakeholders. This means that civil service reform will be resisted by a larger constituency of stakeholders that benefit from the present system.

Second, politicians have slowly mastered the skill of choosing 'loyal' bureaucrats and punishing 'disloyal' or independent bureaucrats because of the significant expansion in the number of bureaucrats (which used to mean that the pool was smaller and thus exerted more power and unity) as well as because of the ability of politicians to go above the head of bureaucrats to higher level politicians or bureaucrats which has effectively reduced their power. This manipulation of the system becomes much more difficult in a system of evaluation based on objective criteria.

Third, due to the nature of politics in Pakistan, most politicians, business elites and other powerful stakeholders have significantly reduced timelines to accomplish their specific objectives. This means that even if one made that argument that a fair performance management system for bureaucrats which effectively rewards bureaucrats (in terms of jobs, financial remuneration and training) is better for long run growth, most decision makers would ignore this argument since they believe that short run gains are far more important than long run results. So even if stakeholders are rational enough to realise that reforming the system will result in greater long run gains for everyone, they will avoid changing the system because the present system maximises their short run benefits.

Fourth, there is a strong belief in society that bureaucrats are flawed: Either they are corrupt, or they are too powerful, or they are getting significantly more benefits than the rest of society, or they are not fulfilling their responsibilities. In this environment, there is either an explicit or implicit process of deliberately weakening bureaucrats, who are viewed as deserving of weakening or punishment. In such an atmosphere there is little appetite for significant reforms in the civil service performance management systems since people feel that it will only strengthen bureaucratic power. Also, there is no movement in civil society towards reward bureaucrats for good performance because members of civil society either have a significantly opinion of bureaucrats or feel that they must adjust their objectives to suit those of the powerful elites as opposed to society as a whole. In this environment, the present system is viewed as a way of weakening, controlling and punishing civil servants is viewed as optimal.

Finally, the biggest issue is a lack of clarity amongst the bureaucrats and the elites about what should be the targets for bureaucrats and what constitutes good performance. This in turn makes it effectively impossible to quantify targets: So some bureaucrats may believe that good performance is defined by their own beliefs of what is best for society. Others may believe that good performance is simply obeying the instructions of elected

officials. There may be a section that believes that good performance is simply actions that lead to better and more influential positions. Similarly, politicians may believe that good performing bureaucrats are those that simply obey instructions without any objections while business elites may believe that the best bureaucrats are those that simply do not interfere with the day to day running of the system. In a situation where there is no agreement on what is good performance, there can be little progress in determining how to measure good performance. So the first step must be a clear definition of the role and objectives of bureaucrats and then after this is decided how to measure if they have fulfilled these objectives.

All of these factors reinforce the idea that civil service reform is critical yet challenging. The lack of a good performance management appraisal lowers bureaucratic capacity. The low bureaucratic capacity tends to create a vicious circle.³ The relationship between the bureaucracy and politicians remains complex. However the relationship between the political and bureaucratic sphere remains critical for successful reform [Schneider (2003)] therefore all initiatives that works towards promoting the civil service reform need to be cognizant that ensuring meritocratic appointments and providing incentives for performance for bureaucrats will essential for their improved performance, yet difficult for the politicians to abide by as it would require the political elite to relinquish their power.

VIII. CONCLUSION

The paper shows that the current performance evaluation system used to measure the performance of Pakistani bureaucrats is inadequate and obsolete. The system not only fails in establishing an objective criteria for assessment and promotion but also gives incentives for political alignment.

The implications of this research is that there needs to be an immediate re-evaluation of the present performance management systems of Pakistani bureaucrats which makes it an objective measure of bureaucratic performance which is not susceptible to political interference.

We conducted a novel survey of senior civil servants which informs of a significant disconnect between the present performance evaluation system and the actual performance of civil servants. This in turn has led to significantly negative perceptions of the present performance evaluation system, a lack of incentive for efficient performance and an increase in incentives for political alignment for the civil servants. But perhaps most importantly the survey shows that the majority of civil servants would like significant changes in the present performance management system to make it a more accurate representation of actual civil service performance outcomes. This paper offers an alternative, an objective document which is can be a motivator for performance and is also less susceptible to political manipulation.

But these recommendations must be tempered with the realisation that the present system has been established not to optimise bureaucratic performance (or for that matter for furthering development outcomes) but rather to sustain the present system of

³It weakens incentives for bureaucrats to comply with legislation, and furthermore makes it more difficult for politicians to persuade bureaucrats to take actions that politician's desire [Huber and McCarty (2004)].

patronage and power. So these performance evaluation system reforms have to be accompanied by an effort to convince the political elites that an independent and motivated bureaucracy will lead to more winners than losers.

APPENDIX 1

Pakistani PER (The Original)

FOR OFFICERS IN BPS 19 & 20

S-121-G(i)

۱۹ اور ۲۰ اسکیل کے افسران کیلئے

CONFIDENTIAL

GOVERNMENT OF PAKISTAN

حکومت پاکستان

Ministry / Division /

Service / Group

Department / Office

گروپ / سروس

وزارت / ڈویژن / محکمہ / دفتر

PERFORMANCE EVALUATION REPORT

کارکردگی رپورٹ

FOR THE PERIOD

Department / Office

برائے عرصہ ۲۰۰۶ تا ۲۰۰۶

PART – I

اول حصہ

(TO BE FILLED IN BY THE OFFICER REPORTED UPON)

(متعلقہ افسر خود پر کریں)

1. Name (in block Letters)

نام (واضح حروف میں)

2. Personal Number

انفرادی نمبر

3. Date of Birth

تاریخ پیدائش

4. Date of Entry in Service

ملازمت اختیار کرنے کی تاریخ

5. Post held during the period (with BPS)

پیش نظر عرصہ میں عہدہ (مع اسکیل)

6. Academic Qualifications

تعلیم

7. Knowledge of Languages

(بولنے (ب)، پڑھنے (پ) اور لکھنے (ل) کی صلاحیت) (Please indicate proficiency in speaking (S), reading (R) and writing (W)) زبانوں کا علم

8. Training received during the evaluation period

متعلقہ عرصہ کے دوران حاصل کی گئی تربیت

Name of Course attended

کورس کا نام

Duration with dates

تاریخوں کے ساتھ دورانیہ

Name of Institution and Country

ادارے اور ملک کا نام

9. Period served

عرصہ ملازمت

(i) In present post

موجودہ عہدہ پر

(ii) Under the reporting officer

رپورٹنگ افسر کے ماتحت

PART – II

دوم حصہ

(TO BE FILLED IN BY THE OFFICER REPORTED UPON)

(متعلقہ افسر خود پُر کریں)

1. Job description

ذمہ داریوں کی تفصیل

2. Brief account of performance on the job during the period supported by statistical data where possible. Targets given and actual performance against such targets should be highlighted. Reasons for shortfall, if any, may also be stated.

پیش نظر عرصہ میں کارکردگی کو اعداد و شمار کے ساتھ مختصر بیان کریں۔ دیئے گئے اہداف اور کارکردگی کو نمایاں طور پر لکھیں۔
اہداف نامکمل رہ جانے کی وجہ بھی بیان کریں۔

PART – III

سوم حصہ

(EVALUATION BY THE REPORTING OFFICER)

(رپورٹنگ افسر کا جائزہ)

1. Please comment on the officer's performance on the job as given in Part II (2) with special reference to his knowledge of work, ability to plan, organise and supervise, analytical skills, competence to take decisions and quality and quantity of output. How far was the officer able to achieve the targets? Comment on the officer's contribution, with the help of statistical data, if any, in the overall performance of the organisation, Do you agree with what has been stated in Part II (2)?

حصہ دوم (۲) میں بیان کی گئی کارکردگی کا جائزہ لیں۔ افسر کے علم تنظیمی، اور نگرانی کرنے کی صلاحیت، تجزیات مہارت اور فیصلہ کرنے کی صلاحیت کے متعلق رائے دیں۔ کارکردگی کے معیار و مقدار کے حوالے سے بھی رائے دیں۔ اہداف کو پورا کرنے میں افسر کس حد تک کامیاب رہا/ رہی۔ ادارے کی مجموعی کارکردگی میں افسر کے کردار کی اعداد و شمار کے حوالے سے نشاندہی کریں۔ کیا آپ حصہ دوم (۲) میں دی گئی معلومات سے متفق ہیں؟

2. Integrity (Morality, uprightness and honesty)

دیانت (راست بازی، ایمانداری)

3. Pen picture including the officer's strengths and weakness with focus on emotional stability, ability to work under pressure, communication skills and interpersonal effectiveness (weakness will not be considered as adverse entry unless intended to be treated as adverse)

قلمی خاکہ: افسر کی خوبیوں اور کمزوریوں کا جائزہ لیں، خصوصاً جذباتی ٹھہراؤ، دباؤ کی حالت میں کام کرنے کی صلاحیت، رابطہ اور باہمی افہام و تفہیم پیدا کرنے کی صلاحیت، بیان کریں (کو تباہی کو اس وقت تک منفی تصور نہ کیا جائے جب تک رپورٹنگ افسر ضروری نہ سمجھے)

4. Area and level of Professional expressional expertise with suggestions for future posting

پیشہ ورانہ مہارت اور آئندہ تعیناتی کی نشاندہی

5. Training and development needs

مزید تربیت کے لئے تجاویز

6. Overall grading

مجموعی درجہ

Fitness for promotion

ترقی کے لئے مناسب

7. Comment on the officer's potential for holding a higher position and additional responsibilities

(افسر کی اعلیٰ عہدہ پر کام کرنے اور اضافی ذمہ داریاں سنبھالنے کی صلاحیت کے بارے میں رائے دیں۔)

Name of the reporting officer

(Capital Letters)

رپورٹنگ افسر کا نام (واضح حروف میں)

Designation _____

عہدہ

Signature _____

دستخط

Date _____

تاریخ

PART – IV

حصہ چہارم

(REMARKS OF THE COUNTERSIGNING OFFICER)

(کاؤنٹرسائینگ افسر کی رائے)

1. How often have you seen the work of the officer reported upon?

افسر کا کام کس حد تک آپ کی نظر سے گزرتا رہا ہے؟

2. How well do you know the officer? If you disagree with the assessment of the reposting officer, please give reasons

آپ افسر کو کس حد تک جانتے ہیں؟ اگر آپ رپورٹنگ افسر کی رائے سے متفق نہیں تو اس کی وجہ بیان کریں۔

3. Overall grading

مجموعی درجہ

Recommendation for promotion

ترقی کے لئے سفارش

4. (Comment on the officer's potential for holding a higher position and additional responsibilities)

(افسر کی اعلیٰ عہدہ پر کام کرنے اور اضافی ذمہ داریاں سنبھالنے کی صلاحیت کے بارے میں رائے دیں۔)

5. Evaluation of the quality of assessment made by the reporting officer

رپورٹنگ افسر کے جائزہ کے معیار کے بارے میں کاؤنٹرسائینگ افسر کی رائے

Name of the reporting officer
(Capital Letters)

رپورٹنگ افسر کا نام (واضح حروف میں)

Designation _____

عہدہ

Signature

دستخط

Date _____

تاریخ

PART – V

حصہ پنجم

(REMARKS OF THE SECOND COUNTERSIGNING OFFICER (IF ANY))

دوسرے کاؤنٹرسائینگ افسر (بشرط موجودگی) کی رائے

Name of the reporting officer
(Capital Letters)

رپورٹنگ افسر کا نام (واضح حروف میں)

Designation _____

عہدہ

Signature

دستخط

Date _____

تاریخ

Pakistani Performance Agreement and Evaluation Form. (The revised PER)

FOR OFFICERS IN BPS 19 & 20

CONFIDENTIAL

GOVERNMENT OF PAKISTAN

Ministry / Division /
Department / Office

Service / Group

Performance Agreement and Evaluation Report.

FOR THE PERIOD

Department / Office

1. Name (in block Letters)
2. Personal Number
3. Date of Birth
4. Date of Entry in Service
5. Post held during the period (with BPS)
6. Academic Qualifications

PART – III

(EVALUATION BY THE REPORTING OFFICER)

1. Please comment on the officer's performance on the job as given in Part II (2) with special reference to his competence to take effective decisions regarding the targets achieved?
2. Did the officers meet all his expected targets?
3. Comment on the officer's contribution, only with the help of statistical data, in the overall performance of the organisation?
4. Could the officer have performed more efficiently? How?
5. What training would be most appropriate to the officer's skill sets?
6. The officer is best suited for posting in which department?
7. Is the officer ready for the next grade?
8. If yes, why?
9. If no, why?

Name of the reporting officer
(Capital Letters)

Designation _____

Signature _____

Date _____

PART – IV

(To be filled by immediate junior, who reports to the officer)

1. How often have you seen the work of the officer reported upon?
2. Did you work with your senior in completing the target/deliverables assigned to him?
3. What have you learnt during the time you worked with your officer?
4. How well do you know the officer? If you agree/disagree with the assessment of the reporting officer, please give reasons.
5. Recommendation for promotion, (Comment on the officer's potential for holding a higher position and additional responsibilities).
6. Evaluation of the quality of assessment made by the reporting officer.

Name of the reporting officer
(Capital Letters)

Designation _____

Signature _____

Date _____

PART – V

(REMARKS OF THE SECOND COUNTERSIGNING OFFICER (IF ANY))
(the remarks should be used as much as statistical and analytical language as possible,
please refer to Part I, and comment on the target and deliverables only)

Name of the reporting officer
 (Capital Letters)

Designation _____

Signature _____

Date _____

REFERENCES

- Ayee, Joseph R. A. (2008) *Reforming the African Public Sector: Retrospect and Prospects*. Dakar: CODESRIA.
- Bana, B. and W. McCourt (2006) *Institutions and Governance: Public Staff Management in Tanzania*. *Public Administration and Development* 26, 395–407.
- Burns (2007) *Civil Service Reform in China*. *OECD Journal on Budgeting* 7:1.
- Burns, John P. and Xiaoqi Wang (2003) *The Impact of Civil Service Reform on Bureau Performance in China: Evidence from Beijing, Ningbo, and Changchun Environmental Protection and Education Bureaus*. Unpublished paper prepared for the Seventh International Research Symposium on Public Management, 2-4 October, Hong Kong, China.
- Chang, H. (2006) *Understanding the Relationship between Institutions and Economic Development*. United Nations University (Discussion Paper No. 2006/05).
- Cheema, Ali and Asad Sayeed (2006) *Bureaucracy and Pro-poor Change*. Pakistan Institute of Development Economics, Islamabad. (PIDE Working Papers No. 3).
- Cook, *et al.* (1995) *Performance Measurement: Lessons Learned for Development Management*. *World Development* 23:8, 1303–1315.
- Court, Kristen, and Weder (1999) *Bureaucratic Structure and Performance: First Africa Survey Results*. Tokyo: United Nations University.
- Daniels, A. (1987) *Invisible Work, Social Problems*. 34:5.
- Evans, P. (1995) *Embedded Autonomy: States and Industrial Transformation Princeton*. Princeton University Press.
- Evans, P. and E. Rauch (1999) *Bureaucracy and Growth: A Cross-national Analysis of the Effects of Weberian State Structures on Economic Growth*. *American Sociological Review* 748–765.
- Evans, P. and E. Rauch (2000) *Bureaucratic Structure and Bureaucratic Performance in Less Developed Countries*. *Journal of Public Economics* 75, 49–71.

- Haque, Nadeem Ul (2007) Why Civil Service Reforms Do Not Work. Pakistan Institute of Development Economics, Islamabad. (PIDE Working Papers No. 24)
- Hilderbrand, Mary E. and Merilee S. Grindle (1997) Building Sustainable Capacity in the Public Sector: What Can be Done? In Merilee S. Grindle (ed.) *Getting Good Government: Capacity Building in the Public Sectors of Developing Countries*. Harvard University Press, Boston, Massachusetts, United States.
- Huber, J. D. and N. McCarty (2004) Bureaucratic Capacity, Delegation, and Political Reform. *The American Political Sciences Review* 98:3, 481–494.
- Kaufmann, Kraay, and Pablo Zoido-Lobaton (2000) Governance Matters: From Measurement to Action. *Finance and Development* 37:2.
- Kohli, A. (2006) *State-Directed Development: Political Power and Industrialisation in the Global Periphery*. Cambridge University Press.
- Lopes, C. and T. Theisohn (2004) From Perverse to Positive Incentives (Chapter 3) and Re-examining the Layers of Capacity Development (Chapter 4). In *Ownership, Leadership and Transformation: Can we do Better for Capacity Development?* London: Earthscan Publications.
- Macmahon and Millet (1939) *Federal Administrators: A Biographical Approach to the Problem of Department Management*. New York: Columbia University Press.
- Malik and Aslam (2013) Performance Appraisal and Employee's Motivation: A Comparative Analysis of Telecom Industry of Pakistan. *Pakistan Journal of Social Sciences (PJSS)* 33: 1, 179–189.
- Mathauer and Imhoff (2006) Health Worker Motivation in Africa: The Role of Non-financial Incentives and Human Resource Management Tools. *Human Resources for Health* 4:24.
- Mengesha, G. H. and R. Common (2007) Public Sector Capacity Reform in Ethiopia: A Tale of Success in Two Ministries? *Public Administration and Development* 27: 5, 367–380.
- Micklethwait and Wooldridge (2014) *The Fourth Revolution: The Global Race to Reinvent the State*. The Penguin Press.
- Mugerwa (2003) *Reforming Africa's Institutions: Ownership, Incentives and Capabilities*. The United Nations University.
- OECD (1996) Study on the Political Involvement in Senior Staffing and on the Delineation of Responsibilities between Ministers and Senior Civil Servants.
- Pollitt and Bouckaert (2000) *Public Management Reform: A Comparative Analysis*. Oxford University Press.
- Reynolds, G. (1983) The Spread of Economic Growth in the Third World: 1850-1980. *Journal of Economic Literature* 21:3.
- Rizos, E. J. (1965) Country Development: The New Ethic of Public Administration. *International Review of Administrative Sciences* 31:1 (January), 279–288.
- Rugumyambeto, J. A. (2004) *Innovative Approaches to Reforming Public Services in Tanzania*.
- Schneider, B. R. and Heredia B. (eds) (2003) *Reinventing Leviathan: The Politics of Administrative Reform in Developing Countries*. Miami: North-South Centre Press, University of Miami.

- Tanwir, M. (2010) Bureaucratic Perception of Merit, Gender and Politics. PhD Dissertation University of Cambridge.
- UNDP (2006) Monitoring Guidelines of Capacity Development in GEF Operations.
- Usman, *et al.* (2014) Outcomes of Employees' Reactions towards the Characteristics of Performance Appraisal System: A Case of a Commercial Bank in Pakistan. *European Journal of Business and Management* 6:5.
- Weber, M. (1968) *Economy and Society, an Outline of Interpretive Sociology*. Edited by G. Roth and Wittich. New York: Bedminster Press.
- Weiss, C. (1998) *Evaluation: Methods for Studying Programmes and Policies* (2nd edition). Prentice Hall.
- World Bank (1997) *World Development Report*. The State in a Changing World. Oxford University Press.

Book Review

Oswaldo de Reviero. *The Myth of Development: The Non-Viable Economies of the 21st Century.* London, U.K.: Zed Books. 2001. 224 pages. £20.99.

Since the early 1990s, a new stream of developmental thinking started getting momentum, questioning and refuting the supposedly undisputed developmental counseling, pursued by all nations and practiced for more than four decades. This critique of development, usually referred to as 'post-structuralism' or 'post-development', assesses the genesis of the developmental ideas in post-war era and also questions the desirability and prospects of the development in the contemporary world.

In the era of intellectual combat of developmental ideas, Oswaldo De Reviero's "The Myth of Development" is significant and thought provoking addition to the Post-Structuralist literature. De Riviero has tended to deconstruct the developmental ideas and identify the factors that the developmental thinking and practices entail and have been contributing to the impoverishment of the countries.

One factor that the author has attributed the prevailing poverty to and stressed upon more than any other is what he calls 'the unstoppable process of globalisation', and which he believes is beyond human control. For De Reviero, globalisation is a mean for multinationals and transnationals to make, what he referred to as, 'inroad into the sovereignty of nation states', which consequently has marginalised the national capitalism—a fundamental ingredient used by the now developed countries for their progress.

Another factor that De Reviero believes requires the attention of development intellectuals is the advancement in technology, coupled with intellectual property rights, which hinders the transfer of technology that helped western nations in their developmental process. This advancement in technology, especially in telecommunication technology, has sharply reduced the raw material needed per unit of output. Hence, the author argues that technological advancement in the name of increased efficiency has resulted in decreasing need of jobs and steady fall in the prices of the raw materials, which are among the very few assets developing nations possess.

Materialism and high consumption—the corner stone of the development quest—are other factors that De Reviero asserts are the cause of poverty in the developing and underdeveloped world. The prosperous economies have attained a certain level of consumption that defines their social status and prestige and is maintained at the cost of relinquished investment in poor countries. Since the rich are not willing to forgo their desire for materialism and poor do not have the economic power to influence the decisions of corporations, therefore the new economic order has placed the corporation as the pivotal center of global economy and manufacturer of its future. Since the corporations as center of global power, De Reviero argues, have no international responsibilities, therefore paradoxically economic and political power over the past few

decades have been centered in those who are not accountable to the citizens of any country for the negative consequences of their operations.

The Myth of Development has received huge applause among intellectuals and academic scholars for its brave and outspoken critique of the developmental ideas and practices. The reviewers of the book have mutual consent that De Reviero, although a diplomat by profession not an economist has correctly identified the gap between the development theory and the reality. For example, Haynes (2002) seconds De Reviero's conjecture that focus on comparative advantage has neither attracted foreign investment, as the theory suggests it should have, nor has been instrumental in helping achieved greater gains for the countries with comparative advantage in labour-intensive production. Haynes (2002) believes that the author correctly asserts that the pre-requisite for the comparative advantage to work in the light of theory is the prevalence of the perfect competition with minimal intervention in the market. Since no country during their developmental phase came close to the theoretical requisites of perfect competition, as public strategic initiatives were coupled with market activity to foster growth of industrialisation, therefore it should not come as surprise if the development counseling with focus on comparative advantage without its pre-requisites did not work for the countries around the world.

The distinctive writing style of the De Reviero has made the book rich in allegorical and analogical portrayal of the present day economic and political situation, thereby making the book easy to grasp for readership from diverse fields of expertise. For example, De Reviero associates the present economic situation with *ancien régime*, where nation-states are depicted as ageing aristocracies desperately clinging to power, receiving consistently failed social and economic policies from modern day 'supernatural clergy. The author depicts the IMF and World Bank, and transnational corporations as new bourgeoisie determined to overthrow the old order. Similarly, De Reviero compares the present economic order with Darwinism, wherein globalisation is turning world economy into brutal global jungle with the winners and losers completely polarised and losers are considered as different species and thereby denying their common humanity.

While the author has been up-front with portrayal of the realities of the development philosophy and practices in failure to achieve the aspired results in the underdeveloped part of the world, however, the reviewers of the book are surprised to see that the book of this nature has failed to take into account some of the very important aspects that could have further enriched the post-development discussion. For example, Ahmadu (2003) is unsatisfied with the analysis of the historical evolution of the nation state, as he argues that the book traces the history of evolution only to the point of the origin of western political thought. Consequently, what escapes from the attention of the author is the fact that strong economically viable nation-states, like, Aztec, Inca, Songhai, Timbuktu, Andalusia, to name a few, have existed before. With strong standing armies, effective administrations and judiciaries, these nation-states were involved in global trade of goods and services. To understand the underdevelopment objectively and offer long-term solutions for the present times, therefore, would require a comparative inquiry.

Another analytical fault that Ahmadu (2003) sheds light on is the ambiguity with regards to what the author conceives of development. While comprehending the issues of underdevelopment the authors has portrayed a development gap between countries by

using indicators like GNP, GDP and HDI, which have their genesis to the western economic thought and do not measure the multi-faceted developmental concept, embodying both material and non-material aspects. As a result, the author makes the readers confused if he is talking about economic growth or development. Furthermore, Ahmadu (2003) argues that although the desire to create unidirectional and one sided global hegemonic power has its genesis to the 1940s in the then President Truman's speech, and which spurred the developmental concept. As a result, the quest for the development has been incoherent with the classical and neo-classical economic thoughts, which were manufactured to serve some other purpose but development. In reality, neither science nor development philosophy has any ethnocentric appellations and each can be fine-tuned to serve humanity and therefore the failure of post-war developmental thinking should not be used as a rationale to discard the future development prospects for the nation-states around the world.

Given these insuperable challenges De Reviero sees a bleak future for developing nation-states, and suggests them to give up the quest for development and prosperity. He recommends to the poor nations a feasible response of 'pursuit of survival' to the prevailing crisis of poverty and underdevelopment. This alternative pursuit, as suggested by author, would be manifested by a coalition of the political leaders in each poor country for adequate supply of food, water and energy. This concluding part of the book has received significant negative feedback from the reviewers. For example, Haynes (2002) believes the author is presenting depressing message to the poor with little hopes and prospects to come out of their atrocious situations. Vakil (2002), similar to Haynes (2002), believes that the author brings the path breaking discussion of the book to a depressing conclusion, and hence making his case weak. Manchanda (2002) argues that the author is polemical of classical and neo-classical economic thought and with insufficient analysis uses sweeping generalisation to assert his point. Ahmadu (2003) argues that while presenting a bleak future to the poor the author has failed to see that the countries which have achieved higher economic growth did it so at the expense of gradual 'institutional social breakdown', which are not structurally visible now, but such subterranean social dysfunction pose significant threat to these societies.

Muhammad Rahim Shah

Pakistan Institute of Development Economics,
Islamabad.

REFERENCES

- Ahmadu, L. M. (2003) Review of the Myth of Development by Oswaldo De Reviero. *Journal of South Pacific Law* 7.
- Haynes, C. B. (2002) Book Review: The Myth of Development: The Non-Viable Economies of the 21st Century. *Journal of Microfinance* 4.
- Manchanda, R. (2002) The Myth of Development: The Non-Viable Economies of the 21st Century by Oswaldo De Reviero. *Development in Practice* 12.
- Vakil, C. A. (2002) Review: The Myth of Development: The Non-Viable Economies of the 21st Century. *Canadian Journal of Urban Research* 11.

Shorter Notice

Fiona Flintan and Shibru Tedla (Eds.). *Natural Resource Management: The Impact of Gender and Social Issues.* Kampala, Uganda: Fountain Publishers. 2010. 262 pages.

The book, “Natural Resource Management: The Impact of Gender and Social Issues” is related to natural resource management (NRM) that involves dealing with the interaction between humans and nature and in this regard the relevant research issues about natural resource management (NRM) are identified. It is the outcome of the research projects funded by the International Development Research Centre (IDRC) and sponsored by (OSSREA). There are five broad objectives of the books, namely capacity building among NRM researchers with more emphasis on land and integrated water resource management; developing new appropriate tools for social/gender analysis; building capacity in the organisations with more focus on gender in NRM research activities; creating awareness about collaborative networking among NRM researchers in the sub-regions; and documenting the best practices of researchers and to keep a record of their research results which will help further in rural poverty reduction. In addition to the introductory and concluding chapters, which are written by the editors of the book, there are six chapters in the book. The concluding chapter also includes recommendations. A major contribution of this volume is to fill the gap by highlighting the responsibilities of men and women in NRM and also emphasising different roles, access, controls, and contributions. The main six chapters of this edited volume are contributed by researchers with various backgrounds. These chapters highlight the role and importance of gender in various activities related to the natural resources. The book draws on research carried out in different countries of eastern and southern Africa, including Uganda, Kenya, Malawi, and Ethiopia. The analyses show how different gender groups can be integrated into the sustainable management of natural resources, based on their needs, relations, and their roles. Previously it was very difficult to ensure the participation of women in the research projects but the research presented in this volume shows ways how this problem can be solved with special efforts to encourage women, such as by creating environments where women feel comfortable enough to contribute by including the female-related questions asked in the questionnaire. The book shows how innovation in NRM can contribute to rural poverty reduction. Although the book draws on research carried out in southern and eastern Africa, the results may be useful for policy formulation in other developing regions of the world where rural poverty is a problem. One of the main contributions of the book is that it shows which of various multi-stakeholder approaches work the best and why. The book makes a very important contribution to the study of rural poverty as the contributors to the book analyse the outcomes and impacts of development projects, and present comparative insights on methodological, technological, policy, and institutional innovations. The book is an attempt to overcome the challenges through the interlinked set of studies and dealings particularly with those activities that could degrade the environment. The book will indeed be useful for researchers, academics, development professionals and practitioners alike in agriculture, natural resource management, social sciences, and related disciplines. (*Hanzla Jalil*).