SUGAR INDUSTRY , WATER COOPERATION & FINANCIAL INCLUSION Volume X

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LOCAL RESEARCH LOCAL SOLUTIONS

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SUGAR INDUSTRY , WATER COOPERATION & FINANCIAL INCLUSION

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Pakistan Institute of Development Economics

Edited by Nadeem Ul Haque and Faheem Jehangir Khan

RASTA: LOCAL RESEARCH LOCAL SOLUTIONS

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(Volume X)

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Research for Social Transformation & Advancement
Pakistan Institute of Development Economics, Islamabad

Published by Research for Social Transformation & Advancement (RASTA),

Competitive Grants Programme for Policy-oriented Research

at the Pakistan Institute of Development Economics (PIDE),

Islamabad, PAKISTAN.

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March 2024

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THE ONGOING CRISIS IN THE SUGAR INDUSTRY: THE IMPLICATIONS OF LEGISLATION AND THE NEED FOR DEREGULATION

Ahsan J. Pirzada, Barrister Naima Shahid, and Roha Tahir Ghauri

ABSTRACT

This paper adopts a multidisciplinary approach to analyse the law governing the sugar industry in Pakistan and its implications. Focusing on the current market operation within Pakistan, the paper critically contrasted this with models implemented within different jurisdictions for the effective market operation of their respective sugar industries. It further highlighted the inefficaciousness and longstanding practices of the market players, how these are supported by existing legal structures, and the way they undermine competition. Faced with the apparent lack of success of the allegedly stringent legislative regulation of the sugar industry, this paper focused on unveiling the adverse implications of these rules and regulations and analysing a more viable model for effective market operation.

1. INTRODUCTION

Sugar as a commodity (from sugarcane farming to sugar manufacturing) is vital to the country's economy. In attempts to safeguard and streamline the sugar industry, government(s), through the promulgation of various legislations, rules, and regulations, have transformed the industry into a highly regulated, inefficient, and anti-competitive one. A bare perusal of the regulatory framework highlights key issues, which curtail and circumvent both the quantity and quality of the sugar produced in Pakistan.

This paper, firstly, provides a detailed overview of the pre- and post-partition industrial development and enactment of governing legislation. Secondly, it offers insight into the tribulations that continue to plague the industry, such as sugar hoarding, delayed crushing of sugarcane, artificial and natural shortages of sugar, etc. Most importantly, this paper lays out the regulatory framework and key judgments made through the decades (1947-2021), including the outline of the regulatory landscape, salient judgments, which have impacted it, and key findings of different government agencies. Analysing and unveiling the adversarial consequences resulting from the existing legislative and regulatory landscape, this paper proposes potential reforms that may adequately address the key issues within our existing regulatory regime. A brief description of the recent landmark judgment passed by the Competition Commission of Pakistan (CCP), relevant National Accountability Bureau (NAB) inquiries, and the key findings of the Sugar Inquiry Report 2020 are also provided. This paper includes a legal database encapsulating all the relevant reported judgments compiled from All Pakistan Legal Decisions (PLD), the Supreme Court Monthly Review (SCMR), Yearly Law Reporter (YLR), Annual Law Digest (ALD), Monthly Law Digest (MLD), Pakistan Law Journal (PLJ), and Pakistan Law Site.

Finally, for proposing recommendations and obtaining a comprehensive picture, interviews with key informants in the sugar supply chain and other experts were conducted. The prudency, efficiency, and adequacy of the proposed recommendations were discussed with them to determine the most viable model for Pakistan.

2. PRE-PARTITION

From the late 1800s through the early 1930s, sugar was Indies' most important export commodity. The colony's industrialised sugar factories, all of which were located on the major island of Java, lost nearly all contact with metropolitan markets and European consumers. Around the turn of the century, most of the Island's sugar exports went to the United States, where they compensated for a (temporary) shortfall in Caribbean imports caused by the revolution in Cuba and the ensuing Spanish-American war. However, by the end of the first decade of the twentieth century, these exports had faded and (except for a brief period during the Great War, when it resumed massive exports 'west of Suez,') Java had become the primary supplier of sugar to Asian rather than Western markets, primarily the Indian subcontinent, China, and Japan.[1]

The sugar industry's development and maintenance were just as crucial to the Indian subcontinent's agriculture as sugar beet cultivation was to Europe. The organised efforts that led to the development of the modern sugar industry may be traced back to the commencement of His Majesty King George III's reign. The antiquity of the Indian sugar industry is a matter of common knowledge and there are many reasons for believing that India was the original home of the sugarcane. Dutch traders shipped the Bengal sugar from Masulipatam in 1636 and both fine-grained white sugar and sugar-candy were exported from Surat early in the seventeenth century and from Calcutta in 1659. To bring us to modern times, the report of the House of Commons Select Committee on Sugar and Coffee Planting, published in 1848, shows that India exported 7,184 tons of sugar to England in 1835-36, 26,913 tons in 1839-40, and an average of 59,373 tons from 1839 to 1847. India was said to supply around a quarter of England's entire sugar supply at the time.

[1] Knight, 2010.

In North Bihar, where a European planting population existed, and growing indigo was becoming unprofitable, modern factories began to spring up. With the reorganisation of agricultural departments in 1904 and recognising the economic potential of the cane crop in Northern India, more emphasis was placed on improving cane production.[2]

Table 1: Mean and Coefficient of Variation of Decadal Values of Sugar Area, Production, Yield, and Recovery: 1930-31/1939-40 to 1940-41/1949-50

Decades (% Cane)	Area (Million Hectare)		Production (Million Tons)		Yield (Tons/Hectare)		Recovery	
	Mean	% CV	Mean	% CV	Mean	% CV	Mean	% CV
1930–31/1939–40	1.443	15.29602	51.2889	19.75914	35.36246	7.76582	9.079	3.426276
1940–41/1949–50	1.4308	10.33157	49.2878	10.27937	34.49068	5.411209	9.95	2.024515

Examining the structure of the Indian sugar industry's labour force, which was particularly different from the West Indies. In the West Indies, cattle and ploughs were employed in conjunction with human labour for soil preparation, cane planting, cutting and processing the cane, and boiling the cane juice, while in India the industry relied solely on human labour.[3] Moreover, in the West Indies, while irrigation was done by a combination of human and animal power in regions where it was so required since steam-powered irrigation systems were uncommon at the time,[4] in India, the manufacturers primarily relied on hired labourers known as coolies, particularly for weeding and hoeing. Thus, the contemporaries relayed the inefficacy of coolie labour as opposed to free African labour in the West Indies on the pretext that one free African labourer could do the work of six paid Indian labourers. The manufacturers, therefore, adopted two techniques to address what they saw as a productivity issue, i.e., supervision and task-based payment. In terms of supervision, merchants employed one superintendent for every 20 coolies, who, in turn, was supervised by a factory servant known as lollah. In terms of task-based payments, while some employers paid coolies by the task, others paid them by the day, a daily wage of 1 and ¼ d. per day for hoeing.[5]

Sir James MacKenna, addressing The Royal Society of Arts in 1928, spoke about the future of the Indian sugar business, noting that modern India had consumed the produce of 80,000 acres of sugarcane. In 1930, when the question of fiscal protection for the sugar industry was referred to the Tariff Board, the position was quite similar. The area under cane production in 1929-30 was 2,677,000 acres wherefrom 21,150 tons of sugar was refined from gur, 89,768 tons of sugar was produced directly from cane processed by modern factories, and some 200,000 tons of sugar was manufactured by the indigenous open-pan or khandsari process, allowing setts for planting and cane for chewing, and 1,837,000 tons of gur was produced for consumption. During the sugar-crushing season of 1934-35, it was estimated that the area under cane production was 3,471,000 acres and the gross production of gur was 5,085,000 tons, the production of sugar refined from gur amounted to 40,000 tons, sugar manufactured directly from cane was 580,000 tons, khandsari sugar was 175,000 tons, and gur for direct consumption was 3.5 million tons. By 1935-36, it was estimated that the production of sugar in modern factories would reach 807,000 tons, enabling India to become self-sufficient in supporting its sugar demand. The number of modern factories crushing cane in 1928-29 was 24, in 1930-31 sugar factories increased to 29, and a

[2] Shrivastava et al. 2011.

[3] House of Commons, 1848.

[4] Water for irrigation was taken from deep wells or rivers with the use of oxen or manual labour. *S.C. on East India produce, pp. 54, 86; House of Commons, 1848.*

[5] House of Commons, 1848.

significant increase was witnessed in the 1934-35 season when the number of factories crushing cane reached 142.[6]

Following the establishment of private British and Indian sugar-producing factories in Uttar Pradesh and Bihar, tariffs were imposed in the 1930s. Consequently, even before the Sugar Industry Protection Act was passed, the sugar industry secured tariff protection substantially more than the Tariff Board's recommendations. Simultaneously, a fall in cane and gur prices occurred, which was largely due to the general slump in the price of agricultural produce. Meanwhile, world prices for heavy machinery dropped substantially and openings for profitable industrial investment in India were few. This combination of additional stimuli led to an unexpectedly rapid expansion and development.[7]

By 1930-31, 29 sugar factories were producing just 100,000 MT of sugar and they were competing against Japanese sugar, which dominated the Indian market. The industry petitioned the Tariff Board, and the Indian Legislature passed the Sugar Industry Protection Act in 1932. The indigenous sugar industry was given protection under this Act by imposing a 7.25 per cent customs duty and a 25 per cent surcharge on sugar imports (Nikam, 2006). In case sugar was imported at prices that rendered the domestic sector ineffective, the government could impose additional tariffs on imports.[8]

The Act's principal goal was to set a price for sugarcane destined for use in sugar factories and ensure that sugarcane growers received a fair price for their crops. The impact of such a safeguard on India's sugar sector was remarkable: by protecting the local sugar sector, the Act spurred the construction of new sugar mills. The number of sugar mills increased from 31 in 1931-32 to 111 in 1933-34 producing 0.46 million metric tons of sugar. By 1935-36, the number rose to 135 and production increased from 0.161 to 0.934 million tons. Due to the enactment and implementation of this Act, the country had become self-sufficient in sugar production by 1935.[9] The expansion continued until 1939-40 when sugar production peaked at 1.242 million tons.[10]

However, the All-India Sugar Conference, held in Simla in the summer of 1933, revealed that the progress was at risk of becoming too rapid and fierce internal competition for the Indian sugar market was on the horizon. It was also discovered that sugarcane farmers were not receiving their full portion of the protection advantages. Moreover, booming domestic sugar production caused revenue losses for the government since less custom duty was collected due to fewer imports. In 1934, the Central Government reevaluated the situation and adopted a two-pronged approach:

- excise duty on factory-produced sugar and a tariff on imported sugar, and
- the Union Government passed legislation allowing provincial governments to impose a minimum cane price on cane growers.

Therefore, early in 1934, two important legislative enactments took place, i.e., the Sugar Excise Act of 1934 and the Sugarcane Act of 1934.

The Sugar Excise Act established sugar excise duty for financial reasons, i.e., primarily to account for the money lost owing to the unexpected and drastic fall in sugar imports, and their probable disappearance. By offsetting the customs surcharge, the tariff was set at a level that reduced the quantum of protection to that suggested by the Tariff Board.

Moreover, the Sugarcane Act passed by the Central Legislature was intended "*to govern the price of sugarcane*

[6] Burt, 1935.

[7] Ibid.

[8] Kansal, 1997.

[9] Ibid.

[10] Shrivastava, et al., 2011.

destined for use in sugar plants." The Act was enabling in nature and the provincial governments could decide whether to apply it to the entire province or merely to specific districts. Once the Act was in effect in a province, the minimum sugarcane prices set by the province were to be approved by the Federal Government. Concisely, the Act allowed local governments to set minimum prices for sugarcane ordained for factories, prohibit the purchase of cane from anyone other than the grower or a licensed cane-purchasing agent, and establish rules for weighments and other aspects of the sugarcane industry's administration. Furthermore, factories were barred from buying cane from anyone except the grower or a properly licensed cane-purchasing agent, which was known as the "Zoning System." It was anticipated that by doing so, irresponsible cane contractors plaguing growers and factories alike could be eliminated.

Noel Deerr, speaking at a Sugar Committee meeting in 1933, stated that:

"With the adoption of a zone system, that is to say, with an area given over to the miller to develop in sympathy with the small holder, there should follow at once an association of agriculture and manufacture for the common benefit of both interests. It will be the object of the mill to reduce the price of the raw material and this can best be done by increasing the production per acre, and with an increment in the yield the net income of the small holder will increase even with a decrease in the rate paid per unit of raw material." [11]

However, every farmer in a specified command area had to sell to an associated mill, per a zoning system. These areas were historically set, clearly delineated, and the borders could be deemed arbitrarily assigned. Even though other factors, such as weather, soil quality, institutions, and so on, were constant across the borders, command area boundaries provided a regression discontinuity design because farmers on both sides of the boundary had to sell to mills of different ownership types – cooperative, private, and public. Consequently, any disparities in farmer results would be linked to ownership structure discrepancies directly at the border. The mill's coordination and efficiency affected how much sugar was extracted per ton of crushed cane. To run the facility at full capacity every day, mills had to synchronise cane harvesting. Furthermore, because keeping the rollers rolling was expensive, using the machinery for little amounts of cane was not cost-effective. Machinery breakdowns were also exceedingly costly since the factory's cane began to dry out, forcing the harvesting schedule to be rearranged.[12]

3. POST-PARTITION OVERVIEW

Figure 1: Sugar Supply Chain/Relevant Stakeholders

Note: Federal, Provincial, and Local Governments are also key stakeholders

The British colonisation of India drastically affected the power structures in what is now Pakistan. After the 1857 insurgency against the British East India Company, the colonial period was defined by a retreat of market forces and the ascendancy of traditional agrarian nobility. The vast canal irrigation network in Punjab as well as the land regulations that preceded it, benefitted agrarian landowners while cementing the power of civil and military bureaucratic elites. Apart from inheriting an adverse colonial legacy from British control, the country also faced a

[11] Baru (1990), p 33.

[12] Mullainathan & Sukhtankar, 2014.

huge shock to business development in the form of (a) competent merchants and business entrepreneurs abandoning the country, and (b) inheriting low industrial and manufacturing capacity at the time of the subcontinent's partition. The non-Muslims, who dominated the economy fled to India, had a huge impact on trade growth in Pakistani territories. Although Muslims participated in trade and commerce in British India, the preponderance of trade, industry, and banking was dominated by Hindus, Parsees, Europeans, military officers, and government officials, while landowners tended to be upper-class Muslims.

Prior to the partition, non-Muslims owned over 80 per cent of the industrial enterprises in West Pakistan. For example, they owned 167 of the 215 indigenously held firms in Lahore and dominated the whole finance market.[13,14] Hence, Pakistan only had two sugar mills at the time of partition. However, as a result of the Indian subcontinent's perfervid commitment towards the sugar industry and its reform before the partition, the sugar industry in Pakistan grew to become a major processing sector, second only to textile in terms of sales volume.

The Government laid the groundwork in the 1950s with the establishment of four sugar mills.[15] Industrial growth became a major policy goal. The large-scale manufacturing sector in West Pakistan increased at a rate of 34 per cent per year from 1949 to 1950 and 1954 to 1955, resulting in a significant increase in industrial growth thereby facilitating a significant increase in the rate of capital influx into the country, which rose from around 2.5 per cent of the GNP in the mid-50s to around 7 per cent in the mid-60s. The rate of return on industrial investment was so high in the early 1950s that businessmen were able to recover initial investments within a year or two and, hence, there was a strong incentive to reinvest. Therefore, the industrial sector saw a relatively high pace of expansion in the early 1950s.[16]

Moreover, with the enactment of the Sugar Factories Control Act of 1950, the regulated cane was marketed to mills and each mill was assigned a zone or area from which it was compelled to purchase a certain amount of cane supplies. However, the percentage varied amongst provinces. For instance, in Punjab, it was 80 per cent, in the NWFP, it was 65 per cent, and in Sindh, it was 100 per cent. Mill zone growers were required to sell a similar amount of their cane production to the mill and the Government determined the minimum price at which mills could purchase cane each year. The Act made it illegal for middlemen to be involved in the sale of sugar cane to mills. Mills were expected to keep a grower register, estimate the amount of cane produced by each grower in their respective zones before the start of each crushing season, guarantee regulated supply to the sugar factories, and maintain the declaration of areas to be reserved for the supply of cane to a particular factory. To ensure the execution of the Act, the Provincial Cane Commissioner was appointed.[17]

However, the success or failure of any venture was dependent on businessmen's access to official channels as there was almost no financial infrastructure in place. Projects were limited by the funds accessible to any one family due to the basic nature of the regulated capital market and the willingness of entrepreneurs to pool their interests with other influential families. To fill this funding shortfall, public institutions, such as the Pakistan Industrial Development Corporation (PIDC), were established. These agencies, however, tended to favour larger, more established businesses with a proven track record of profitability and security, jeopardising the entire purpose for which they were established.[18]

Direct economic controls on imports, new investments, and the prices of domestically produced manufactured goods were implemented in the 1950s. These controls were not only ineffective economically but were also a

[13] Until the end of 1955 it is estimated that about 7 million refugees entered West Pakistan and 1.25 million refugees entered East Pakistan, while 5.6 million Hindu and Sikh refugees left Pakistan for India

[14] Ali & Malik, 2009.

[15] Lodhi et al., 1998.

[16] Ali & Malik, 2009.

[17] Op. cit.

[18] Ibid

source of corruption. In the 1960s Pakistan had 8 sugar mills[19] and the Ayub Government removed price limits that were imposed in the 50s, which proved to be economically inefficient and a source of corruption.19 The removal of price limits liberalised commerce and welcomed new investment. The main source of export encouragement was a 1959 export bonus plan, which effectively provided a subsidy for exporters and limited the free market for imports.[20]

In the 1970s, sugar manufacturing capacity continued to expand as different tariff and non-tariff constraints on sugar imports made domestic sugar production profitable and 12 additional mills were built. The majority of these were in the public sector but the government policy switched again in the late 1970s, this time in favour of the private sector.[21]

By 1981, Pakistan had 31 sugar mills,[22] which eventually grew to 45 mills in 1988, with a total refining capacity of 1.26 million tons. During that time, with deregulation, as price and distribution controls on refined sugar were lifted, rationing was abolished, imports were replaced by a regulatory duty on sugar imports, the mill zoning system was discontinued, the extent of government intervention decreased, and price and distribution limits on refined sugar were relaxed. Regulatory duty on sugar imports superseded the government's monopoly on imports and, finally, the sugar sector was removed from the list of specified industries as government approval was no longer required before any new investment or expansion of the existing capacity. [23]

The Government further launched a new sugar policy for the country in May 1987 and the decision to officially remove the zoning system, beginning with the 1987 and 1988 crop years, was a crucial component of this policy. Under the new arrangement, farmers were now free to supply cane to any mill that offered the best price and also empowered to convert any amount of cane into gur. At the same time, the policy also entailed that the cane support price was to be maintained at a minimum and mills were allowed to buy cane from outside the designated zones.[24]

Pakistan has been on a liberalisation path since 1990.[25] The sugar industry became a crucial area of state patronage and politically influenced decision-making resulted in a plethora of underutilised sugar mills.[26] Despite this, sugarcane production had greater protection rates in the 1990s than wheat, rice, or cotton and was. thus, disproportionately grown by farmers. Pakistan was the world's fourth largest sugarcane grower in terms of area under production in 1999 but ranked fifteenth in terms of yield per hectare.[27]

More recently, Pakistan has become a major sugarcane producer, ranking fifth in terms of sugarcane cultivated area, 60th in yield, and 15th in sugar production. The industry employs more than 100,000 labour force, while more than 9 million of the rural population is involved in the production of sugarcane. There were 78 sugar mills in 2003-04. The number of mills increased drastically, reaching an overall 83 sugar mills in 2015. There are 45 sugar mills in Punjab, 8 in Khyber-Pakhtunkhwa, and 30 in Sindh as per the Pakistan Sugar Mills Association.[28]

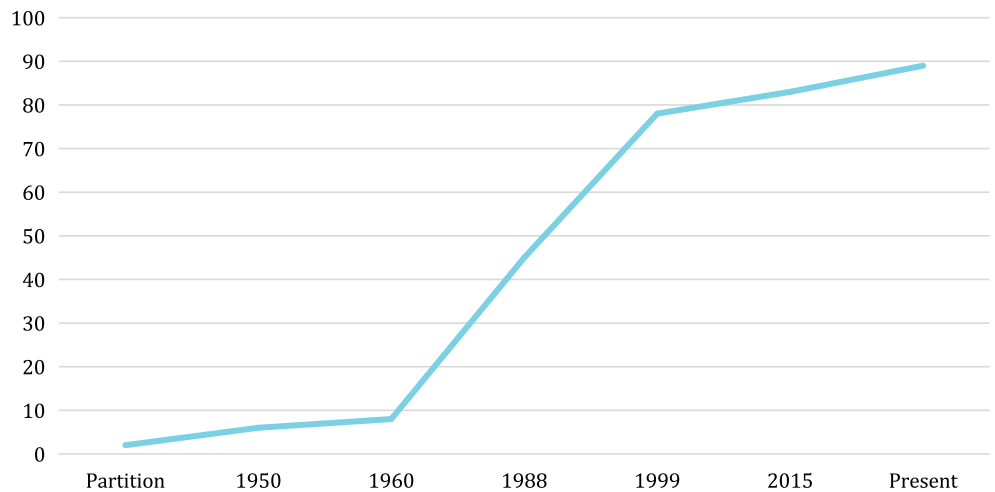
Currently, there are 89 operating sugar mills in Pakistan.[29] Pakistan can develop an area of 13,224 hectares along the main feeder canal from the Indus River in Sindh, utilising 34 per cent of the idle capacity of Pakistani mills,

[19] Safdar et al., 2016.
[20] Ali & Malik, 2009.
[21] Lodhi et al., 1998.
[22] Safdar et al., 2016.
[23] Lodhi et al., 1998.
[24] Ibid.
[25] Ali & Malik, 2009.
[26] Ibid.
[27] Rizvi, 2000.
[28] Safdar et al., 2016.
[29] Sugar Inquiry Commission, 2020.

which is capable of exporting 50,000 tons of sugar to the Arab World in exchange for half a million barrels of crude oil.[30] However, due to greater production costs, increased imports, and deteriorating competitiveness of the native sugar sector, the future of this business in Pakistan is mostly linked to production efficiency. The adoption and development of new production technology can boost productivity and efficiency, which is challenging due to restricted incomes and loans available to growers.

The following graph depicts the gradual increase in the number of sugar mills throughout the decades.

Figure 2: Number of Sugar Mills



Moreover, since the 18th Amendment to the Constitution of the Islamic Republic of Pakistan, 1973, was implemented in 2011, agriculture has been devolved to provinces and sugarcane prices are now controlled by provincial administrations. Sugarcane prices in Pakistan have always been a sensitive issue and it is critical to link sugarcane pricing to its sucrose concentration to improve efficiency in the sugar industry. However, the current pricing system is weight-based, with little respect for the quality of the produce. The sugar sector will continue to be inefficient and uncompetitive, wasting resources, unless provincial governments acquire the competence to solve the myriad difficulties, concerns, and challenges in this setting and balance the conflicting interests of all stakeholders.[31]

There have been numerous issues influencing the sugar sector through the decades. In Pakistan, a shortage of irrigation water, inadequate fertiliser input, improper insecticide and pesticide spraying, etc. has led to lower productivity.[32] The sucrose content of sugarcane plays an important role in boosting sugar output and the government may take steps to ensure that cane growers adopt better sugarcane types with high sucrose content, which are disease and insect resistance.[33]

The continuous rise in consumer prices around the world, particularly in emerging nations like Pakistan, has hampered economic growth and reduced the purchasing power of the common man, resulting in a food crisis

[30] Rizvi, 2000.

[31] Salam, 2019.

[32] Rizvi, 2000.

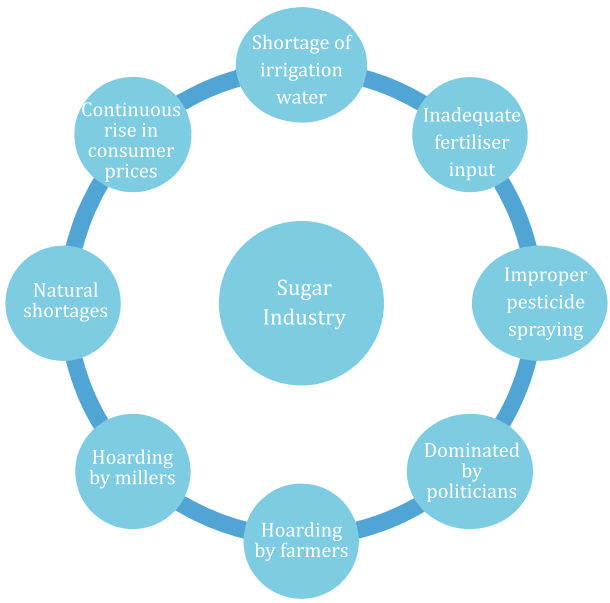
[33] Ibid.

across the country. Pakistan has experienced sugar shortages on multiple occasions due to a variety of issues, leading to a massive increase in food costs and severely limiting consumer purchasing power. Another critical problem plaguing Pakistan's sugar industry is its domination by political figures with a clear majority of sugar mills being built with the assistance of Developmental Financial Institutions (DFIs), which are frequently beset by working capital problems. Therefore, some mills have already closed and it is expected that additional sick units would close as well. It will cause a loss of national assets, a decrease in sales tax revenue, and an increase in unemployment.

Furthermore, cultivators pointed out that the sugar crisis is not a natural disaster; rather, it is a result of mill owners' failure to purchase available sugarcane stock from the market. Another implied conclusion is that the sugar business is not uncompetitive and that the problem has simply two causes. The first is keeping sugarcane prices below the support price and the second is sugar mill owners making excessive profits.[34] Gupta (1998) made a similar statement and he attempted to explain how big farmers had monopolised governmental institutions that mediate between growers and sugar mills as well as how landlords and sugar mill owners engage in corrupt tactics to gain access to more profitable marketing channels.[35] Artificial shortages are caused by deliberate hoarding of items to generate disproportionate profits.[36]

However, the shortage could be natural as well. Unfavourable weather conditions, a market structure that reduces supply over time, and changes in government policy that may affect production are all examples of natural shortages. In a report published in 1988, the National Commission on Agriculture acknowledged that the area under sugarcane cultivation was suffering from water stress and that it would be unrealistic to expect further production growth based solely on area expansion, especially since future irrigation supplies were expected to be limited.

Figure 3: Problems plaguing the sugar industry



[34] Chhapra, et al., 2010.

[35] Ibid.

[36] Ibid.

It is noteworthy that, unfortunately, pricing systems that produce the right incentives necessitate a level of sophistication, which is difficult to legislate and more likely to emerge through cooperative ways. [37]

4. LEGAL REVIEW

This paper aims to lay out the regulatory structure in place to control the sugar industry across the decades (1947-2021) as well as the documented case law relevant to those enactments. The detailed legal review has been appended to Appendix A. The enabling provisions within each document, the legislative intent behind their drafting, which key stakeholders they affect or regulate, any SRO drafted thereunder, the enforcement mechanism put in place as per the legislative document, the imposition of penalties, and the documents' relevance in today's time are reported while examining each legislation. A brief explanation of CCP's recent landmark judgement, the NAB's inquiries into the sugar business, and the important conclusions of the Sugar Inquiry Report delivered to the Prime Minister in 2020 are also provided. It is worth noting that this paper only includes an in-depth analysis of the regulatory environment, major decisions that have influenced the regulatory system, and key results from various government agencies. Within the current regulatory regime, the adversarial implications emerging from the present legislative and regulatory landscape were examined and those potential revisions that might appropriately address the primary issues. The total number of legislations covered in this paper is 34.

In the compilation of our legal review, an emerging pattern was observed, i.e., while there had been proactive attempts to improve the status quo in Punjab through legislation, Sindh appeared to be lacking behind with no apparent amendments after 2009. This may be attributed to the strong political influence of sugar mill owners (see Table 3). As was stated, in 2020, out of 38 sugar mills in Sindh, 18 are owned by Asif Ali Zardari and the Omni Group (owned by a close aide of Asif Ali Zardari).[38] In contrast, the Provincial institutions in Punjab have been relatively proactive in this regard owing to greater public scrutiny and comparatively transparent institutions. Therefore, the current government has continued with the policies of its predecessor with regard to ensuring enforcement in the sugar sector.

5. LEGAL DATABASE

A legal database is appended to Appendix B. It encapsulates all the reported cases pertaining to the legislation compiled from the PLD, SCMR, YLR, ALD, MLD, PLJ, and Pakistan Law Site. With the help of the resources provided by the Office of the Cane Commissioner, access was gained to some of the unreported cases, such as JS Bank v Brother Sugar Mills and M/s Tandlianwala Sugar Mills Ltd. Vs. Province of Punjab and others, which are covered in the legal database. Some of the landmark judgements have also been covered, including Fauji Sugar Mills vs. the Province of Punjab, wherein the Lahore High Court held that the imposition of quality premium through S.16-A was unconstitutional. Also, as per the Army Welfare Sugar Mills vs. the Government of Sindh, the courts cannot question the existence of quality premium in itself; the only point that can be brought into question is whether the quality premium is commensurate with the revisions to the minimum price of cane set by the Government. The total number of cases included is 61.

[37] Larson & Borrell, 2001.

[38] "Of 38 Sugar Mills, 18 belong to Zardari, Omni Group, claims PTI," 2020.

6. KEY INFORMANT INTERVIEWS

The following key informants (KIs) were interviewed to gather information and perspectives of the stakeholders involved in the sugar industry. [39]

1. Former Secretary, Ministry of National Food Security and Research (MoNFS&R) (KI 1)
2. Repressentative of Pakistan Kissan Ittehad (KI 2)
3. Senior official at the Agriculture Policy Institute (KI 3)
4. Representative of cane growers (KI 4)
5. Senior official at the Punjab Food Department (KI 5)
6. Pakistan Sugar Mills Association representative (KI 6)
7. Senior officeholder at All Pakistan Farmer's Association (KI 7)
8. Legal representative of a sugar mill (KI 8).

Based on KIIs, 11 key themes surrounding the sugar industry in Pakistan were identified, which are the following:

- The current status of zoning systems
- The preferred regulatory model
- The reality and impact of quality premium and minimum price
- Government intervention in the sugar industry
- The influence of mills in the sugar industry
- The training/awareness campaigns by the government
- The issues affecting the farmer community
- Sugar is a preferred commodity over Gur
- The lack of implementation of governing laws
- The existence of legal loopholes in the sugar industry

The Current Status of the Zoning System

The current zoning system, according to the KIs, has been abolished as a result of the Sugar Policy 1987-88. Farmers are free to sell their produce to whoever offers them a fair price. Pakistan Sugar Mill Association's representative, on the other hand, believed that this has harmed the relationship between farmers and millers because mills provide loans and technical advice to farmers in exchange for raw materials but with the law having been repealed, farmers sell their produce to whoever they find suitable, wasting the mill's investment. The legal representative of a sugar mill agreed, adding that the price mechanism established by the 1950 Act is

[39] The names of the KIs have been withheld for confidentiality.

outmoded because all the requirements are premised on the existence of a zoning system that no longer exists.

At this stage, concerns regarding the abolishment of the zoning system appear to be contradictory to mills' general preference for deregulation. Furthermore, since its abolishment, mills have reportedly attempted to unilaterally impose the zoning system to force growers to sell to certain mills.[40] It is confounding why there is so much demand for the zoning system from mills given that the perishable nature of sugarcane already limits the options that growers have. The 2021 report by the Sugar Sector Reform Committee also emphasised the need to abolish the legislation itself, which provides for the zoning of crops. [41]

Preferred Regulatory Model

Informants were asked about their opinions of the current regulatory model and the changes they would like to see. Specifically, their perspectives on the potential deregulation were sought, i.e., whether and how such change could be beneficial for the future of the industry. Although the representatives of sugar mills were supportive of deregulating the industry, one of the representatives felt that only partial deregulation was needed. They were of the view that the sugar industry is just like any other business and that sugar ought to be traded freely. Therefore, it makes no sense for it to be governed by a different set of rules. According to the representative of the sugar mills, although it has already been accepted by a federal minister, it is yet to be implemented.

The legal representative of the sugar mills went further and described the changes needed in the regulatory framework. First, the laws should be redrafted and consolidated to rid the system of any ambiguities. For this exercise, all relevant stakeholders including farmers, millers, and the government should be brought to the table to achieve a consensus. There should be an overarching committee acting as an advisory body to the Government and law departments to inform policymaking efforts. He also emphasised that the Government must be barred from price fixations and instead focus on making timely imports before any crisis arises. He found it odd that the FIA only act once prices have already risen. The problem, according to him, was that the Government was more focused on backwards-looking practices of trying to reverse engineer a crisis instead of taking proper measures to prevent it from arising in the first place.

Former Secretary of the Ministry of National Food Security and Research argued that while deregulation, in general, was a good idea, such as the removal of excessive import duties on sugar, there needs to be more effective regulation in areas where it is direly needed, e.g., irrigation. On the other hand, farmers and the official of the Punjab Food Department asserted that the current condition of Pakistan's sugar industry is not ideal for deregulation due to obvious power imbalances. He added that complete deregulation is only possible when a market is perfectly competitive. As this is not the case for Pakistan, deregulation would leave farmers open to the monopolistic abuses of mills. Similarly, the representative of the farmers believed that such change would only be fair once farmers were adequately empowered, e.g., when they have their representative chamber to protect their interests. Furthermore, another key informant felt that the problem is not the regulatory framework but rather its poor implementation. One way to fix this, according to the senior official at the Agriculture Policy Institute, is the simplification of certain processes, e.g., applications for subsidies, which tend to be so complicated that some farmers do not avail of them altogether.

The overarching problems with the current regulatory framework are that it is outdated and the regulations that exist lack implementation.[42] While simply implementing pre-existing provisions could certainly help counter the dominant influence of mills, a great economic benefit can be reaped by implementing deregulation in the long term. It is also established that while the present regulatory regime was put in place in light of the sugarcane crop's perennial and perishable nature, regulations have, more often than not, protected mills' interests,

[40] "Sugar mills' zoning system illegal: Cane commissioner," 2007.

[41] Kiani, 2021.

[42] Safdar, 2015.

sometimes at the expense of farmers' interests.[43] Moreover, it is also demonstrated that the current model for regulation has exacerbated differences between farmers and millers and the resulting conflicts between stakeholders have led to lower efficiency and higher costs for all parties involved.

Minimum Price and Quality Premium

The KIs also explained how the minimum support price (MSP), now known as the indicative price, is determined. The senior official at the Agriculture Policy Institute explained that the minimum support price was previously announced with the Cabinet's assistance. A policy of roughly 100 pages would be created by the API and the Assistant Cane Commissioner would then give their permission, after which the MSP would be announced. Following the repeal of the MSP, the API is consulted regarding an appropriate price. However, the provincial governments are responsible for announcing an indicative price, which is then monitored by the Office of the Cane Commissioner.

The representative of Pakistan Kissan Ittehad believed that the MSP is a valuable policy that only exists for two crops in Pakistan, namely, wheat and sugarcane. He said that the MSP should be extended to other crops as well to compensate for market differences. Furthermore, he added that quality premiums should also exist. However, he believed that only those individuals who have appropriate knowledge or contacts with the government receive these quality premiums.

A quality premium, according to the representative of the farmers, is a means of ripping farmers off and, instead, the minimum amount for their expenses should be set at PKR 330. Former Secretary of the MoNFS&R similarly felt that the minimum price for sugarcane exists solely to benefit mills, who exploit it to trick farmers into feeling that they are getting a decent return on their investment, causing them to continue cultivating for the mills.

According to the senior official at the Punjab Food Department, the Sugarcane Control Board has had numerous meetings concerning the quality premium, but little has been done to address the issue. He also believed that to make quality premium a common practice, core samplers need to be established.

Regarding the millers' perspective, the representative of the sugar mills stated that the government always fixes the minimum price of sugarcane and never the maximum price. However, the government sets a maximum price for sugar and, in addition to that, mills also have to bear federal and provincial taxation.

He stated that:

"According to last year's statistics, sugarcane was sold at a cost of PKR 375 per 40 kg, with a basic minimum price of PKR 200 and the price of sugar was then set by the Government. The Government claimed credit for the farmers' recovery, but where were they when sugarcane was being sold for PKR 375? Sugarcane accounts for 80 per cent of the content in sugar. Thus if sugarcane prices rise, sugar prices will rise as well. The price of sugar is currently PKR 225 but the miller has to pay PKR 250 or more and that is the quality premium."

Moreover, the legal representative of a sugar mill deemed quality premiums to be unfair and an outdated/obsolete concept. He explained that at the time when the quality premium was introduced, the recovery level was at 6.7-7 per cent. Therefore, the quality premium was awarded at achieving a recovery level of 8.5 per cent. However, after the 2000s, the base level was nearly 9 per cent. Thus, it is unfair to continue giving quality premiums at 8.5 per cent recovery. Since they purchase cane in bulk and there is no way for them to determine the recovery level from each source as it is all mixed.

The reality about the minimum price mechanism for sugarcane is that farmers' profitability from the crop is not

[43] Abedullah et al., 2020.

primarily linked to the support price. Unlike wheat, sugarcane is not procured by the Government, so implementing the set price becomes a challenge. As a result, the minimum price for sugarcane is viewed as more of a benchmark for ascertaining its actual price.[44]

More importantly, despite the introduction of quality premiums, the price of cane is still based on weight rather than sucrose content. Such a mechanism leaves no incentive for farmers to focus on the quality of produce and is a major cause of the abysmally low yields of cane in Pakistan.[45] To offset this, quality premiums were introduced but were never implemented.[46] To ensure better quality, laws relating to the installation of core samplers must be actively enforced.

Government Intervention in the Sugar Industry

The KIs were also asked about their thoughts on government intervention and whether they were prepared to deal with it. On this matter, the representative of Pakistan Kissan Ittehad felt that even though the Government's enforcement of the minimum price for cane was lacking, only the government could monitor prices as farmers themselves do not possess the resources to do so. The cane grower and Senior officeholder at All Pakistan Farmer's Association emphasised that, in the past, the Government would provide seed and fertiliser subsidies but these are no longer available to farmers. In contrast, mill representatives felt that the government intervenes excessively in the sugar industry. The representative of sugar mills pointed out that 70 per cent of sugar is used for commercial purposes, such as beverages, industrial use, sweets, and medications. The remaining 30 per cent is the reason why the government over-regulates the industry. In his opinion, no other industry is as regulated as sugar.

He further added that the international marketing mechanism for sugar is designed in such a manner that companies promote increasing sugar prices to reduce demand, but the government wants to make it cheaper and promote its use. If the government wished, they could buy 30 per cent of stocks from mills and sell it. He expressed that mills should have the ability to sell the remainder to commercial establishments at their preferred rates and export/import sugar freely per market demands. The legal representative of a sugar mill added that excessive interference has a detrimental impact on recovery since the government set crushing dates when the crop is too immature to be harvested, resulting in a lower recovery.

It is evident that farmers' and millers' views about government intervention are poles apart. Millers insist that there is excessive government intervention, whereas farmers feel that state institutions are doing too little. This divergence of views can be attributed to the state's incapability to mediate equitably between both stakeholders' interests. To make ends meet and garner wider support, the government ends up subsidising both farmers and millers. For farmers, this takes the form of higher support prices. However, as aforementioned, this has not been proven to be an effective means of providing benefits to farmers. Additionally, as demonstrated by the 2019 inquiry report, the minimum price of sugarcane (per 40 kg) remained stagnant at PKR 180 in Punjab and KP and PKR 182 in Sindh during 2015-2019 despite repeated calls from farmers and their representatives that this did not reflect the true price of sugarcane (there has been an increase in the minimum price since 2019, which, however, is also deemed unsatisfactory).

Mills, on the other hand, have shown to be capable of reaping considerable profits from the present institutional set up. In times of excess production, they are able to benefit from the export of sugar thanks to inland-freight subsidies (as Pakistani sugar is uncompetitive in the international market without it). Conversely, they are also able to take advantage of high market prices in times of low production until the government activates its price

[44] Ibid

[45] Qureshi & Afghan,2020.

[46] Khan & Jamil, 2004.

control mechanisms/imports sugar. [47] It is clear, therefore, that regulatory policies discriminate against sugarcane producers. [48]

Influence of Mills

There were two diverging views regarding the extent of influence exercised by mills and whether a power imbalance exists between farmers and millers. Some informants pointed out that the laws were being made by the same people who owned the mills, referring to the fact that some mills were owned by politicians and government officeholders. Accordingly, it was felt that laws and regulations tend to favour millers. An example of this, as indicated by one of the informants, was the promulgation of the pro-miller Sugar Factories Control Amendment Act of 2021, which was passed under dubious circumstances and reportedly without any debate in the legislature. The cane grower gave the example of how the Cane Purchase Receipt (CPR) has no legal enforceability of its own and suggested that it should be given the status of a cheque instead. He also felt that the Cane Commissioner was powerless against millers and the only reason why late payments have been less of a problem recently is due to reduced cane cultivation and, thus, millers could not afford to delay payments. Additionally, the senior official at the Punjab Food Department stated that the influence of the mills is reflected by how toothless the present regime was, e.g., the definition of 'occupier of the factory' allowing factory owners to escape liability, the inability of the Cane Commissioner to take any action against inappropriate mill closures, and how mills utilise farmers' cane based on deferred payments of up to 15 days (this is unheard of anywhere else in the world). Former Secretary of the MoNFS&R went further, stating that the sugarcane crop is being kept alive artificially via regulations due to the strong political influence of the sugar lobby.

On the contrary, the mills' representatives presented a completely different picture. They clarified that late payments are an exception and not the rule, with delays of up to 2-3 years being largely a thing of the past. The legal representative of a sugar mill asserted that by March 2022, 96 per cent of payments had already been made to the farmers, with most of them receiving their money within 2-3 days via bank transfer. The representative of the sugar mills conceded that while there may be a difference in bargaining power between farmers and millers, this is no more than what is standard in every business. He admitted that when there is an excess of sugarcane, the millers possess the advantage. However, whenever there is a shortage, the farmers have the advantage. He asserted that this is part of a 5-year cycle, wherein for 2-3 years, the farmer's supply is depressed due to low recovery and vice versa. The representative of the sugar mills pointed to incidents where farmers themselves would not collect their payments deliberately to exert pressure on mills by holding press conferences and claiming that mills are not paying them. He felt that, apart from some defaulters whose cases ended up going to the Supreme Court, it is in the millers' interests to make timely payments since they would want to continue their operations for the next season as well.

A major emerging theme in this paper and the wider influence is the undeniable existence of the dominant influence of mills in the sugar sector.[49] This is attributable to the evident political ties of mills and the organised nature of factory owners and their representatives. While it is certainly true, not all mills withhold payments and their influence is much more noticeable at an institutional level in the development of the legal regulatory framework.

Training/ Awareness Campaigns

The KIs were questioned about whether the government have been proactive in implementing training and awareness campaigns for stakeholders to improve the quality and management of their produce. The senior

[47] Note: Imports are also heavily impeded due to steep tariffs on sugar imports

[48] Safdar, 2015.

[49] See Sugar Inquiry Report 2019; Safdar, 2015; Raza & Amir, 2021

official at the Agriculture Policy Institute clarified that the Agriculture Extension Department works on this issue every season and their workers' primary responsibility was implementation. Although certain research institutes are working on making, producing, and selling better quality seeds of sugarcane, such as the Ayub Research Institute in Punjab and PARC, Thatta, there is little awareness. Farmers Association representatives, on the other hand, were of the opposite perspective, as the senior official of the All Pakistan Farmers' Association asserted that they did not have access to adequate information or technology. Similarly, the representative of the farmers opined that they have never conducted any training or public awareness initiatives. It seems unlikely that the Government Extension Department would even know their way to the farms. They might even visit a few farms, ask for some names, and report that they were meeting with farmers. If this department is improved, and the availability of suitable training, seeds, and other resources is ensured, the agricultural sector will thrive. Clearly, there are two opposing viewpoints on the reality of training and awareness campaigns. On the one hand, the officials in charge believe that they carry out their responsibilities religiously, whereas the beneficiaries of these trainings believe that such initiatives are limited only to paper and that no real groundwork is being done.

The Issues Affecting the Farmer Community

"We have no rights, no voice, and no law on our side," the representative of the farmers reported while detailing the difficulties the farming community faces. Farmers in India have their little sugar mills, whereas farmers in Pakistan are prohibited by law from establishing their setups to produce Gur. He further highlighted that, at times, sugarcane was grown in areas where it should not be grown due to insufficient water. Therefore, farmers were forced to dig additional tube wells to water the crop with ground water. Shifting the crop can also be a challenge as farmers are illiterate and lack the resources to do so. He felt that, unfortunately, the agriculture sector in Pakistan had not been given equal standing to other industries. He averred that:

"Unless sugarcane is made profitable, our children will gradually leave the industry; a farmer's child will prefer a job over this, and farming will eventually be phased out."

In his district, one of the local mills had withheld farmers' payments for up to two years, forcing farmers to stage several protests and block roads and highways for three days before the Government agreed to sell its sugar inventories. The sugar was auctioned and sold for roughly PKR 55 million, which was used to compensate farmers.

Highlighting another issue, he conveyed the farmers were being provided with flawed seeds, on which significant money, time, and resources were spent only for all of it to get wasted. He conceded that, in this regard, farmers could approach the relevant Seed Office but the procedure for obtaining any recompense was lengthy and cumbersome. When he approached the Punjab Chief Secretary, Additional Chief Secretary, and Secretary of Agriculture regarding this, they revealed that they were helpless to take any action despite being responsible for seed licensing.

Furthermore, the representative of cane growers warned that DAP fertiliser has become quite expensive and if the government wanted this to succeed in the long run, subsidies had to be provided. Secondly, farmers require high-quality seeds, which could be provided by the government or sugar mills but these seeds should be given to growers for free. Thirdly, the road tax subsidised by the sugar mills should be abolished as neither the government nor the sugar mills had provided growers with a separate road for transport. Previously, highways were built using cash raised from sugarcane and the construction of these roads has now come to an end.

The senior official at the Punjab Food Department believed that there are two primary factors negatively affecting farmers, i.e., late crushing and mills' undue deductions. Previously, mills could start crushing whenever they thought appropriate between October 1 and November 30. The motivation for a later date was a ripe crop with more sucrose, resulting in more sugar production. However, this led to delayed sowing of wheat and, thus, a

shortage of wheat. To counter this, the Sugar Factories Control (Amendment) Ordinance of 2020 was passed, granting the government the authority to set the start date. This caused an outcry from the mills, which reported a 300,000 metric tonne shortfall in sugar production but the senior official at the Punjab Food Department deemed this to be an exaggeration as very meticulous calculations are undertaken to prevent any significant losses. Nevertheless, the Sugar Factories Control (Amendment) Act of 2021 was implemented, allowing mills to push the date back up to 30 June.

The representative of the sugar mills, on the other hand, described the relationship between farmers and millers as harmonious. Farmers, being the raw material producers, are treated with love and affection since if the quality of the crop is better, the recovery would be better and mills would benefit as a result. The legal representative of a sugar mill felt that the farmers are doing well since their crop recovery has accelerated in recent years. He further found the farmer's community to be well-organised, with various organisations representing their interests and a proclivity to influence laws and millers.

Despite a slew of problems affecting farmers, the millers appear to be blissfully unaware of them as evidenced by the preceding debate. To break it down, the farmers face two stumbling blocks: one from the government, even though the government has stated that agriculture promotion is its top priority,[50] the farmers strongly disagree with the statement, and the other from the millers, as the farmer community feels heavily discriminated against. The fundamental cause for this is the stark power imbalance that exists between industrial stakeholders as well as the fact that authorities turn a blind eye to communities that are discriminated against.

Sugar: A Preferred Commodity Over Gur

Moreover, the KIs were inquired as to why the manufacturing of sugar is prioritised over that of gur. The representative of Pakistan Kissan Ittehad accorded this to mills belonging to individuals in power, who enact laws to suit their whims and, hence, do not allow Gur to thrive. They even succeeded in enacting this into law and, now, building units to make Gur is illegal. Senior officeholder at All Pakistan Farmer's Association was likewise of the opinion that sugar promotion has been the government's only focus. The senior official at the Agriculture Policy Institute shed some light on the legal side of the matter, disclosing that there was ongoing litigation in the Peshawar High Court over whether the Sugar Factories Control Act of 1950 should bind and govern the Gur Control Order, 1948. The earlier decision had held that the Gur Control Order and its clauses should be overturned, being ultra vires. It was further determined, therein, that the court lacked jurisdiction to regulate sugar pricing since it went beyond the scope of the statute.

The senior official at the Punjab Food Authority, on the other hand, opined that sugar is not given priority over Gur by the Government and that the Government's current goal is to promote Gur. The concern is that the Gur Control Order of 1948 survived due to millers' influence, despite lacking legal standing. He had made recommendations to the government regarding the installation of jaggery plants, namely, that NOCs for jaggery plants should not be required if they are located in a sugar mill district.

The lack of consensus and communication among stakeholders is one of the key causes of the sugar industry's slow advancement. There are opposing viewpoints on almost every issue, with no common ground for them to agree upon. Furthermore, there is a lack of a platform that can actively promote interaction between the parties. Therefore, whether sugar is a prioritised commodity or not is a grey topic. The growers believe it is and the senior official at the Punjab Food Authority disagrees.

The lack of implementation of governing laws

The implementation of sugar-related legislation was another important question put to the informants. According to the senior official at the Agriculture Policy Institute, the factory had to follow the Sugar Factories

[50] "Agriculture is government's first priority, says PM Imran," 2019.

Control Act of 1950 and the Cane Commissioners were in charge of overseeing implementation. Growers complained that mills delay their payments despite excess production. Each location charge farmers a different fee and this occurred despite the presence of committees comprising farmers and local government officials to inspect weighing-bridges. The representative of cane growers, on the other hand, believed that while laws exist for nearly every circumstance, they are not being implemented, which is why the laws appear inadequate. Similarly, the senior official at the Punjab Food Authority attributed the lack of implementation to millers' influence and ineffective government functionaries. The representative of the sugar mills affirmed that this is a consistent issue in Pakistan if one looks at how all other laws are implemented. He asserted the need for according importance to the context in which the law is being applied and determining how applicable the law is. When he was serving as the DC of Bahawalpur, the price of cotton hit rock bottom. He had proposed to the government that an intermediary should be established who could buy cotton from farmers to support them. Having done so, the intermediary bought cotton from the farmers at an economic rate, which rescued them. He suggested a similar approach be taken by the regulators of the sugar industry.

Lack of implementation is a widespread issue and is not limited to the sugar industry. It affects every aspect of our society and there is a dire need to address this issue. The laws exist on paper but they are inadequate and do not ensure enough protection for the stakeholders. The status quo of the sugar industry is no different and no matter how many recommendations and efforts to reform the system are proposed, if the said issue is not addressed, it will all go in vain. To address this issue, we advocate the establishment of a single regulatory body that can ensure genuine implementation of the existing laws and reforms in the industry.

The Existence of Legal Loopholes in the Sugar Industry

The senior official at the Punjab Food Authority pointed out some of the legal loopholes in the sugar sector. Mills frequently misuse Section 2(k) of the Sugar Factories Control Act of 1950, which defines an occupier of a factory. By citing "management agents" as occupiers of the factory in legal proceedings, factory owners remained shielded from legal obligation. Furthermore, he believed that, due to the power imbalance, the Cane Commissioner lacked adequate capacity/authority to bring complaints against millers. He further stated that the Sugar Factories Control (Amendment) Act of 2021, is pro-miller because the offences are non-cognisable or bailable, making this provision obsolete. Similarly, a legal representative of a sugar mill further stated that the Sugar Factories Control (Amendment) Ordinance of 2020's setting of the crushing season in October was unjust because the crop is too immature to be harvested at that time.

Other Valuable Insights

According to the Former Secretary of the MoNFS&R, sugar is not an appropriate crop for Pakistan because Pakistan is a water-scarce country, particularly, in areas where there is no sea, such as Punjab, and there is no appropriate regulatory framework to assure efficient irrigation.

Highlighting another issue of the sugar industry in Pakistan, a representative of the sugar mills specified that the sugar industry is the only industry where any offence is considered a criminal offence. If payment is not made within 15 days, an FIR is filed against the mill even though it is a civil matter. The payment schedule is an agreement between the two parties and they might agree to late payment. Thus, it is a business matter and not a crime.

Discussion

It is apparent from the above breakdown that there are two distinct narratives, i.e., the farmers' and the millers'. In general, farmers feel that there is a power imbalance in the industry, which has led to numerous injustices against them with limited, if any at all, recourse. They feel excluded and vindicated by a system overrun by the

influence of a formidable sugar lobby possessing direct links in the government responsible for protecting the rights of growers. While it was accepted that the situation in terms of delay of payments has improved lately, this was attributed to a shortfall in cane production. Nevertheless, there is an overall perception that whenever mills can, they exploit their dominant position by making undue deductions, delaying payments, and using loopholes to their advantage. Additionally, it was reported that R&D is insufficient with extension programmes being nearly non-existent on the ground. There is also a prevailing perception that the current legal/regulatory regime is framed in favour of the mills, such as the non-enforceable CPR, the provision for a 15-day credit cycle, and the helplessness of the Office of the Cane Commissioner in the face of manipulations by mill owners. It is emphasised that this is because several major mills are owned by politicians and, therefore, the government remains bound to the status quo despite its obvious shortfalls. For this reason, there is strong contention against deregulation as it is felt that it would leave growers vulnerable to the whims of the mills.

From the mills' perspectives, the claims by the farmers' community are largely exaggerated in that there is no widespread mala fide in the way mills conduct their business. Any power imbalance that may exist, is no more than what is normal in the course of any business. It was also strongly felt that the industry is unusually overregulated without any reasonable justification and that sugar ought to be traded just like any other commodity. The contention was that mills are squeezed on both ends by Government regulations in that the minimum price is set for the raw material, i.e., cane and then a maximum price is also determined for sugar. Supposedly, any alleged malpractices, such as grossly delayed payments and undue deductions were regarded as exceptional and not a standard practice. Mills' representatives generally felt that the system was outdated with an unproductive, backwards-looking approach to regulation and, as such, there was much need for deregulation.

From this discussion, it is apparent that there are two diverging perspectives prevailing in the industry with little common ground beyond the fact that the current system needs to change. While there are obvious biases on either end, any effective change that is to be undertaken must address these concerns as far as it is possible. Overall, the findings from the KIIs are also concurrent with the literature reviewed, for instance, the fact that there has been severely deficient R&D and extension work (Raza et al., 2021; Inayatullah et al. 2003) and the unsustainable price control mechanisms.[51]

Largely, the regulatory regime of the sugar sector is contradictory, inefficient, and fails to provide incentives to improve the quality of produce. While there is a great need for vertical cooperation, the present system has evidently served to widen the gap between farmers and millers.[52] Other points raised, also reflected in the existing literature, include the existence of challenges, such as scarcity of water and improper irrigation[53] and the dominance of political figures as millers.[54]

7. PROPOSED RECOMMENDATIONS

Phased-Out Plan for Implementation of Reforms

While issues like water security, politicisation, lacking innovation, etc., have certainly caused the sugar industry to fall short of reaching its full potential, they cannot be the be-all and end-all determinant of the industry's failure in the face of a crisis. Success or failure is determined rather by the governing institutions, the policies and incentives in place, and the effective strategic management of the challenges faced. In Daron Acemoglu and James

[51] Jamal, 2021.

[52] Safdar, 2015.

[53] Rizvi, 2000

[54] Chhapra, et al. (2010).

A Robinson's seminal book, 'Why Nations Fail', a similar argument was set out to explain why some nations succeed. On a smaller scale, the same can perhaps also be extended to the success or failure of industries. As such, if we intend to track the origins of the current sugar crisis, it is critical to look beyond agronomic factors and peer into the realm of the industry's regulatory framework.

Generally, the idea that the governing framework of the sugar industry requires reform is a point of consensus across nearly all stakeholders. However, between vested interests and short-term fixes, there seems to be little effort in the way of establishing a sustainable solution. This is problematic given the significance of the sugar industry in Pakistan and the obvious involvement of political bigwigs. It is understood that any change, whether in favour of millers or growers, at this point will not be politically easy due to the entrenched nature of industry practices and the inevitable costs involved in bringing about such reform. However, the historical recurrence of the sugar crisis necessitates systemic change. To achieve this, three industry models have been considered, namely, partial deregulation (as implemented in India), the single regulatory model (as in the Philippines), and the complete deregulation model (as implemented in Australia).

The Indian Model – Partial Deregulation

Prior to deregulation, the defining feature of the Indian Sugar Industry was the concept of 'Levy Sugar' and a monthly release mechanism.[55] Levy sugar represented the proportion of sugar produced that mills were obligated to supply to the government at a cheaper rate for sale through the public distribution system (PDS), the remainder of which could then be sold in the open market (subject to controls by the government in case of excessive fluctuation). The idea was that this would allow the government to ensure that sugar could be made available at a grassroots level at an affordable price.[56] Furthermore, the monthly release mechanism was established to guarantee a consistent and uninterrupted supply of sugar in the market by controlling the quantities sold in the market every month.[57]

Parallels between the Indian and Pakistani sugar industries can be drawn in that the industry is highly politicised with the government extending its control over a multitude of aspects concerning sugar, including licensing, capacity, cane area, procurement, sugar pricing, distribution, imports, and exports.[58] Generally, since 1967-68, the Indian government adopted a policy of partial decontrol, interspaced with two short periods of complete decontrol in the 1970s.[59] There were also several committees throughout the years, such as the Mahajan Committee, Tuteja Committee, Thorat Committee, and Nanda Kumar's Committee that continued to emphasise partial decontrol, only for their recommendations to be shelved. Then, with the publication of the Rangarajan Committee's Report in 2012, the Government finally relented to partial decontrol in April 2013. This meant that while restrictions on levy sugar and the monthly release system were uplifted, the industry remained subject to certain production controls by state governments, e.g., licencing, cane procurement areas, and cane pricing.[60]

Despite this progress, it was generally regarded as unsatisfactory[61] with some suggesting that the government needs to further and implement complete deregulation instead.[62] Others remain unconvinced, arguing that complete deregulation would leave stakeholders vulnerable. It is argued, for example, that if the Cane Area

[55] Randhawa & Gupta, 2017.

[56] Priyanka et al., 2016.

[57] (n 1) randhawa

[58] (n 1) Randhawa

[59] (n 2) Review

[60] (n 2) Review

[61] Lavanya, 2019.

[62] Kalra, 2012.

Reservation system were done away with, it would mean that mills would have to face uncertainty in the supply of cane leading to the uneconomic operation of the mill. Furthermore, lack of regulation would mean that sugar pricing and availability would be subject to supply and demand conditions in domestic and international markets and there would be no means of protecting consumers from massive price fluctuations. Farmers would also suffer in that cane being a highly perishable good would mean their ability to negotiate a good deal would be restricted.[63]

The Filipino Model – Single Regulator

Philippine's Sugar Regulatory Administration (SRA) was established on 28 May 1986 via Executive Order No. 18. This was the focal regulatory body for the sugar industry, responsible for establishing an orderly system for sugarcane cultivation to ensure a stable, sufficient and balanced sugar production, and carry out relevant research as may be necessary for the formulation of policies and the planning and implementation of programs.[64] It consists of a Sugar Board tasked with the formulation of policies, rules and regulations for the promotion of growth and development of the industry. The administrative wings of the SRA are then charged with overseeing and enforcing the governing laws, policies, procedures, systems, rules, and regulations. The SRA also consists of an internal auditing department to determine the degree of compliance with the SRA's mandate.[65]

The Australian Model – Complete Deregulation

Australia is regarded as among the most prominent producers of sugar in the international market and this success is largely attributable to its adoption of a free market approach for its sugar industry. Contrary to its present appearance, the Australian sugar industry was also once marked by excessive government intervention. However, successive reviews of the industry paved the way for its complete deregulation in 2006. While it was conceded that there were tangible benefits to regulation in how it insulated growers and millers from competitive pressures, providing a degree of stability, this came at a cost to the industry as producers were impeded from responding progressively to market conditions.[66]

Consequently, when deregulation was effective, it allowed growers and mills to set their cane prices and abolish 'assigned areas' so that growers could have more freedom to contract. The result of this was that there was increased innovation and a significant improvement in the trade prospectus across all industry processes i.e., growing, milling, marketing, etc. There was, eventually, a step back to regulation in 2015 due to farmers' fears that their interests would not be sufficiently protected. Nevertheless, this move was heavily criticised[67] as there was no market failure to justify reregulation.[68]

With the aforementioned models in mind, the goal of these proposed recommendations is to set the stage for Pakistan's sugar industry to achieve free and competitive market conditions via complete deregulation as the economic benefit of such conditions cannot be understated. At the same time, it is, nevertheless, understood that this may not be possible at once given the present nature of the industry. For this reason, a five-stage plan is proposed to enable the weaning off of excessive government intervention and the establishment of a coherent and progressive framework to support the industry in reaching its full potential.

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[63] KPMG, 2017.

[64] Tobias, 2020.

[65] Sugar Regulatory Administration, 2019.

[66] Craigie, 2014.

[67] Queensland Productivity Commission, 2015.

[68] ASMC, 2020.

PHASE I – Consolidation & Accessibility of Laws

Significant hurdles were present in researching and accessing relevant legislative instruments. Most laws seemed to be unavailable even on major legal databases, such as the Pakistan Law site, the website for the National Assembly, and the Library of the Law Ministry. Interestingly, most of our key informants, who are experts and key players in the industry, also lacked knowledge regarding the present regulatory framework. Such fragmented understanding of the mechanics of the industry not only increases compliance costs but also opens the door for the exploitation of more vulnerable stakeholders. An example of this can be seen in how the provisions of the Gur Control Order, 1948 were reportedly used to restrict farmers from producing Gur even though there was never any legal force behind the Order since the promulgation of the Sugar Factories Control Act in 1950. This fact was not made apparent until 2021 when a Lahore High Court judgment by Justice Shahid Jameel Khan declared the Order ultra vires.

The following actions are recommended:

- Formulate a working manual (to be made available in local languages) for stakeholders, elucidating the processes, rights, roles, and responsibilities of those involved in the industry.
- Initiate comprehensive education and awareness campaigns with improved availability and access to relevant laws, rules, and regulations so that all stakeholders can be brought onto the same page regarding their rights, roles, and responsibilities, alongside generating an understanding of threats and opportunities within the industry.
- Redraft and consolidate all relevant governing provisions into a single enactment. This should then be made readily accessible in local languages.

PHASE II – Implementation and Enforcement

Despite the existence of obvious legal lacunae, one of the most pervasive complaints across nearly all key informants was the lack of sincere implementation and enforcement of the protectionist measures already in place. The reasons for this mainly revolve around the dominant influence of mills and the lack of political will to challenge the status quo. However, no progress can be made without genuine enforcement of laws, rules, and regulations. Emphasis is placed on the execution of this phase as it would lay bare the vulnerabilities of the existing system, which would, in turn, inform effective policy-making efforts in the future whilst also addressing market inequalities, to a certain extent.

To this end, it may prove useful to formulate strategies to encourage cooperative enforcement. For example, enforcement agents, such as the Cane Commissioner's Office should identify key problem areas (e.g., delay of payments to growers) and consider distinguishing between violations by hardened offenders and the compliance irregularities of individuals.[69] For the latter, a more cooperative and less intrusive approach can be adopted, whereby such groups are subject only to reasonable enforcement with the extension of the benefit of the doubt wherever possible. The former, on the other hand, may need to be pursued more rigorously and be faced with harsher enforcement. Such a distinctive approach carries the benefit of not only a better allocation of resources and reduced enforcement costs but may also serve as an incentive for voluntary compliance as there would be an added utility from compliance.[70]

PHASE III – Review

One of the key driving forces behind the deregulation in both India and Australia has been consistent reviews of

[69] Scholz, 1984.

[70] Kumar, 2019.

the industry in their respective jurisdictions. In India, there were a series of Committees, including the Mahajan Committee, Tuteja Committee, Thorat Committee, Nanda Kumar's Committee, and, finally, the Rangarajan Committee, which, through persistent insistence on decontrol, culminated in the eventual partial deregulation of the industry in 2013. Similarly, in Australia, it took several Federal Government reviews and government/industry task force reviews starting from the 1980s to finally convince the Queensland Government to deregulate the sugar industry in 2006.[71]

This demonstrates the importance of conducting industry reviews of market conditions in effecting radical change within an industry. Even though, based on political readiness, recommendations often end up being disregarded but they contribute materially to driving impetus for change. Additionally, it develops a sense of surveillance among producers, encouraging better commercial practices overall. In light of this, it is strongly encouraged to set up a collaborative task force or committee consisting of both government officials and industry representatives to conduct comprehensive reviews of the industry from time to time to objectively identify impediments to progression and advocate for appropriate reform.

PHASE IV – Amendments to Laws and Other Initiatives to Promote Competition

As evidenced by the results of the Inquiry Commission Report 2020 and the recent CCP judgment, cartelisation and the political influence of mills have been an enduring problem for the industry. Furthermore, there have been repeated calls by academia for R&D initiatives by the Government to combat productivity and yield inefficiencies to boost industry competitiveness.[72]

There are also several concerning gaps already apparent in the existing framework that may be well worth amending at this stage. Obvious shortfalls, among others, include the unsatisfactory definition of the "Occupier of the Factory" per Section 2(k) of the Sugar Factories Control Act of 1950, which allows the actual owners of sugar mills to evade responsibility for violations by pinning the liability onto 'managing agents' who are often not much more than simple employees at the factory; Cane Purchase Receipts, which are not directly legally enforceable; price fixation provisions that cause more problems than they solve in the long term; and criminal violations under the 1950 Act that are non-cognisable and bailable, allowing opportunities to escape proceedings.

Additionally, the management of various aspects of the sugar industry is spread out across several departments and ministries, such as the Office of the Cane Commissioner under the provincial Food Departments, separate Extension Departments responsible for agricultural R&D and training programs, the Agricultural Policy Institute under the Ministry of National Food Security and Research, the Sugar Advisory Board and Controller-General under the Ministry of Industries & Production, and the CCP dealing with competition laws and accountability. Such dispersion of functions comes at the cost of coherence in the system, racking up compliance costs for stakeholders and creating inefficiencies in the running of the regulatory machinery. Consolidation of this network can potentially make all the difference for the Pakistani sugar sector, given the obvious power imbalances and exploitation that exist at various stages.

Finally, there is the problem of outdated agricultural practices, which have prevented sugarcane farmers from overcoming production constraints. This is largely because most farmers tend to be illiterate and lack the knowledge and funds necessary to adopt more scientific cultivation practices. This is reflected in a disappointing yield of 50-57 tonnes per hectare and a recovery of 9-10 per cent compared to the potential for 150-250 tonnes per hectare yield along with a 10-12 per cent recovery.[73] To counter this, Pakistan does have several research institutions, including some mills dedicated to R&D for sugarcane. However, these have been unable to produce results due to poor management and insufficient funding. Reportedly, the Federal Government, via the ECC,

[71] Craigie, 2014.

[72] Khan & Jamil, 2004; Qureshi & Afghan, 2020.

[73] Raza & Amir, 2021.

decided that 15 per cent of the provincial sugarcane development funds were to be allocated for R&D but failed to follow through with its implementation.[74] Even the performance of the Provincial Extension departments has been considered lacklustre with the under-utilisation of the cess fund that was originally envisioned to, among other objectives, generate funds for sugarcane research.[75] Consequently, there has been a great deal of emphasis in the literature on the need for quality R&D and Extension programmes dedicated solely to sugarcane research and designed to help farmers adopt modern agronomic practices.[76]

Based on the above discussion, the following recommendations are made:

- Amendments to the law with a view of overcoming the gaps in the legal framework.
- Establish a single regulator as a focal organisation dedicated to providing support for sugarcane cultivation, monitoring and managing all dealings about the production, marketing, import/export of sugar, formulating and implementing strategic development plans for the furtherance of the interests of all stakeholders, and ensuring the long-term sustainability of the industry. The mandate of this body should be focused on providing preemptive support, such as training programs for farmers and timely enforcement of laws rather than being another vessel for government intervention in times of crisis.
- Remove unnecessary barriers to entry into the industry, such as regulatory prerequisites for the setting up and running of sugar mills. Further research may be required for this.
- Increased focus on the robust enforcement of competition and antitrust laws.
- Revitalisation of and increased funding for R&D and Extension programmes.

PHASE V – Deregulation

To understand what deregulation looks like and how it can be successfully implemented, there are many lessons to be learned from the Australian experience. As already stated, the Australian sugar industry was also heavily regulated with price controls, marketing restrictions, and assigned areas. Successive reviews continued to push for an economic rationalist argument favouring deregulation but the fear that this would leave farmers vulnerable to the monopolistic abuses of mills caused the government to remain hesitant. However, it was deregulation that allowed the industry to become one of the most prominent sugar producers in the world. Nevertheless, it is important to understand that this success was neither achieved overnight nor in isolation from other considerations.

Deregulation is the removal or simplification of government rules and regulations that constrain the operation of market forces. Yet, this does not mean that all regulations need to be abolished, especially those required as a part of services or support to the rural communities, for instance, the setting of food safety standards, natural resource protection, chemical use safety, etc. Whenever a government is considering radical deregulation, it is very important to identify the most vulnerable stakeholders and provide proactive adjustment support and risk management tools to counter the negative impacts of such change. The Australian example shows that, with the right support, farmers and other stakeholders can prove to be more resilient than expected and what is needed is the generation of a paradigm shift from viewing it as a 'special' industry that would be unable to sustain itself without intervention, to viewing agriculture same as any other industry and its farm operations the same as any other business. Ultimately, it is important to reflect on the fact regulations inevitably lead to lower efficiency in agriculture as it disincentivises risk-taking and innovation that would allow the industry to achieve its full

[74] Craigie, 2014.

[75] Khan & Jamil, 2004; Qureshi & Afghan, 2020.

[76] Raza & Amir, 2021.

potential,[77] resulting in an overall loss of national welfare.

To ensure successful deregulation, the following considerations must be taken into account:

- Significant power imbalances between stakeholders must be corrected, e.g., farmers must have a unified representative association, with a functioning and reliable mode of recourse in case of abuses of power.
- Eradication of monopolistic abuses of mills and effective mechanisms to prevent future cartelisation/collusion.
- The process of deregulation must be transparent and stakeholders must be made aware of what to expect in a deregulated market.
- Availability of appropriate adjustment programmes to ameliorate the negative impact of change on those most vulnerable to it.

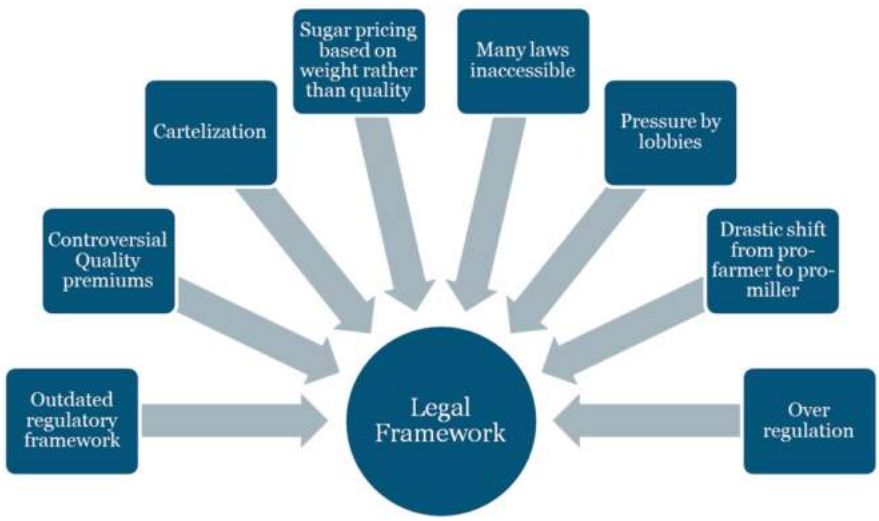
[77] Boies, 1986.

APPENDIX A

Legal Review

A plethora of regulations have been enacted throughout the decades to govern the industry and address its inadequacies. The total number of laws, rules, orders and ordinances promulgated from 1947 to 2021 is 34 with 59 reported cases filed and decided under them. This Appendix aims to set out their enabling provisions, legislative intent, relevant stakeholders, the enforcement mechanism within it along with the enlisted penalties and the relevance of the respective legislative instrument.

Figure 4: Shortfalls of the Legal Framework Regulating the Sugar Industry



1940s

- **Sugar (Temporary Excise Duty) Act of 1947:** This Act levies an excise duty on sugar mills, which consequently results in a price increase for the wholesaler, retailer and lastly, the consumers.

- **Sugar and Sugar Products Control Order 1948:** It specifies that no producer may sell or distribute sugar unless it is to or through a certified dealer or a person specially authorized in this role by the Controller44 to purchase sugar on behalf of the Pakistani government, provincial government, or a state. It also addressed the issue of maximum price fixation, stating that no ex-factory price or maximum price should be exceeded and that no person shall sell, purchase, or agree to sell or purchase the commodity at a price higher than the fixed price.

  *Reported case: 1*963 PLD 551 DHAKA-HIGH-COURT

- **The Gur Control Order 1948:** The Order was issued by the Government of Pakistan's Ministry of Food, Agriculture, and Health, and it applies to all of Pakistan's provinces. With the prior consent of the Federal

Government, this Order empowered the Controller[78] to allot quotas of Gur for the requirements of any specified province or area in any specified market, fix the maximum price at which Gur may be sold or delivered, and fix different rates of prices for different areas or different types or grades of Gur. Every producer or dealer is under a liability to comply with the directions of the Controller. Moreover, no Gur shall be transported, offered, or accepted for transportation, whether by rail, road, or water, or by a railway servant, common carrier, or any other person, from a location within a province of Pakistan to a location outside the province, unless the Controller has issued a permit. The purpose of this Order, as enacted by the legislature, is to control the production of Gur and its transportation.

Over the years, the Order has drawn a lot of criticism. In fact, as recently as June 2006, farmers and civil society activists were reported to be demanding the repeal of the Order. Their contention was that due to the unchecked rise in the price of various agricultural inputs, they were already under considerable pressure. As a result, the banning of transportation of gur to neighbouring countries under the order has only served to strengthen the sugar industry's monopoly over gur and other sweeteners. It was further asserted that the Government ought to announce incentives to support small farmers (involved in gur-making) and not yield to the pressure from the formidable sugar lobby.[79]

On the other hand, sugar millers were seen to be insisting that instead, the Government ought to seriously enforce the Order and, additionally, impose a 15% regulatory duty on the export of gur. Nevertheless, it is averred that this would only protect the interests of the millers at the cost of curtailing the operation and limiting the market for farmers and gur producers. Furthermore, according to Dawn News, since the abolishment of the sugarcane Zoning System in 1972, the Order had lost force, however, millers (allegedly) collude with officials to circumvent this loophole.[80]

Of crucial importance to the Order is a judgment passed by the Honorable Lahore High Court on 3rd October 2021. There were two main rulings laid out in this judgment:

1. Sugar pricing was not the concern of the courts and the matter of sugar mills potentially manipulating the price of sugar had already been referred to the appropriate appellate authority under the law. However, emphasis was laid on the importance of maintaining a balanced approach to imposing price controls.

2. The Gur Control Order 1948 is ultra vires and is, therefore, set aside.

According to the Petitioners, they had been barred from producing gur for their consumption and are forced to supply cane to factories under the guise of the Order. Moreover, they contended that even when they did make gur, they were often harassed by provincial administration using the Order as an excuse.

On this matter, it was noted that the Order had no existing force of law behind it. Furthermore, Justice Shahid Jameel Khan added that *"Even if exists, it appears to be in violation of Article 18 of the Constitution, particularly when no support price is fixed for [the] purchase of sugarcane by the government to protect the growers' interest. The Order of 1948 is held ultra vires hence void, being in violation of fundamental rights guaranteed by the Constitution."*

Accordingly, the court ordered that all enforcement agencies be henceforth restrained from taking action against farmers on the matter of the manufacture of gur.[81]

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[78] Sugar and Sugar Products Control Order 1948, s.2(a); "Controller" means the person appointed as the Sugar Controller for Pakistan by the Government of Pakistan.

[79] Gur Control Order 1948, s 2(a); 'Controller' means the person appointed as Gur Controller for Pakistan by the Government of Pakistan

[80] "Farmers seek abolition of gur control law," 2006.

[81] Riaz, 2021.

1950s

- **Sugar Factories Control Act of 1950:** Pakistan inherited only two sugar mills at the time of independence. The main policy concern at the time was promoting the industry and attracting all involved stakeholders towards a safe investment, foremostly, the agriculturalists. To accommodate the fact that the sugar industry is functional only for a limited period but the consumption needs to be met throughout the year and to ensure timely payments to the growers, the government was buying entire stocks of sugar and making it available to consumers at subsidised rates.[82]

  The main purpose of this Act was to ensure a regulated supply to the sugar factories, at a price at which it may be purchased. This objective is met by establishing a Sugarcane Control Board and a Cane Commissioner who may require the occupier of any factory to submit to him an estimate of the quantity of cane required during the crushing season, declare areas to be reserved or assigned area for the supply of cane to a particular factory, and binding cane growers to particular factories etc.

  Markedly, under s. 13 and 14, the Cane Commissioner is to allocate specific growing areas to specific sugar manufacturers to ensure a constant supply for the mills. S. 13 delegates reserved areas. These areas are completely reserved for the sole manufacturer and other purchasing units are forbidden from purchasing the cane from that area. Assigned areas under s. 14 provide for more flexibility. In the event of failure to supply the requisite amount of cane to the factory, the factory may purchase the balance from an outside assigned area.

  Concerning price regulation, the Act grants the Provincial Government the power to determine a minimum price to procure sugar cane, to protect growers from manipulation.

  To guarantee cane price fairness by ensuring that the growers get paid price based on the sucrose content, and not just the sole ornamental factor of weight, a quality premium[83] was introduced in the early 1980s, via a series of amendments,[84] to encourage farmers to use better quality cane varieties to increase the sucrose content of their crops. Sugar mills of Sindh and south Punjab are recovering up to 11.5-12 per cent sucrose against the base level content of 8.7per cent.[85]

  This requirement, arguably, still goes against the profit interests of millers who have consistently fought against having to pay such premiums. From their perspective, they are having to pay for the same stock twice[86] when in reality, the premiums provide an incentive for growers to invest in growing varieties with higher sucrose content allowing these millers to make a lot more sugar than competitors who are recovering base-level content.[87] Instead, perhaps the better argument to be made is of the absurdity that Pakistan remains the only country to have sugarcane pricing that is not based on recovery and the inefficiency of this model is demonstrated by Pakistan's low sugarcane productivity of 54.6 tonnes per acre compared to Egypt's 120 tonnes per acre.[88] After all, if the intention is to encourage farmers to cultivate better sugarcane, then the pricing model should allow for proportionate compensation and more regular reviews of the minimum support price must be undertaken to this end.

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[82] Rizvi, 2020.

[83] A quality premium is the additional price given to the farmers for higher sucrose content.

[84] N.W.F.P Sugar Factories Control (Amendment) Act of 1988, s 2; Sugar Factories Control (Amendment) Ordinance of 1985, s 2;

[85] Jamal, 2020.

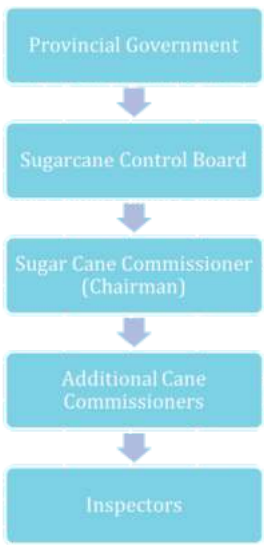
[86] Fauji Sugar Mills vs The Province of Punjab 1996 CLC 592 LAHORE-HIGH-COURT-LAHORE

[87] Jamal, 2020.

[88] Ahmad, 2020.

Other accusations levelled against the provisions of this Act by millers include that this allows the Provincial Governments to 'arbitrarily' or 'unilaterally' set the minimum procurement price for cane.[89] However, the process for determining the minimum support price has always been fairly comprehensive and inclusive. It starts with the Agricultural Policy Institute (API) sending provincial governments non-binding recommendations regarding the support price after using an elaborate system of calculation for its determination. Then, the Sugarcane Control Board is established in each province (under the 1950 Act), which includes representatives of all stakeholders to determine the final support price.[90] Furthermore, mill owners point out that in the regulation of this minimum support price, the Government tends to increase it, while the price of sugar, which is largely unregulated, remains the same.[91] In contrast, according to the Inquiry Commission's report, the support price has remained constant from 2015 to 2019 despite an outcry from farmers' associations that this did not take into account the substantial increase, since 2015, in the cost of real inputs such as fertiliser, labour, etc.[92] Admittedly, however, it appears that in recent times millers themselves conceded that there should be a 10 per cent increase in the minimum price for 2021-22 and, apparently, both growers and millers seemed to finally be coming onto the same page as opposed to locking horns as usual.[93]

Figure 5: Establishment and Composition of Sugarcane Control Board[94]



Nevertheless, it should not also be forgotten that despite all these restrictions, the Sindh Abadgar Board notes that millers appear to consistently make profits and sugar mills remain a lucrative business, something that cannot be said of cane farming.[95] In fact, a sugar commission report shed light on the

[89] "Profiting from delay in cane crushing," 2014.

[90] Sugar Inquiry Commission, 2020.

[91] "Profiting from delay in cane crushing," 2014.

[92] Sugar Inquiry Commission, 2020.

[93] Khan, 2021.

[94] Sugar Factories Control Act of 1950, ss.3, 4, 6-A, 7

[95] "Profiting from delay in cane crushing," 2014.

grave reality of how the sugar lobby has not only continuously coerced governments - past and present - to line its own pockets but also violated the Sugar Factories Control Act with impunity. It was shown, through a forensic analysis of the sugar mills, that the actual sugar output had been largely under-reported[96] and, consequently, there have been accounts of massive income tax evasion that go entirely unchecked by the Federal Board of Revenue[97].

Reported Cases: 2018 SCMR 727 SUPREME-COURT, 1993 M L D 650, 1987 C L C 1647, 2018 CLD 626 LAHORE-HIGH-COURT-LAHORE, 2003 M L D 1940 KARACHI-HIGH-COURT-SINDH, 1987 MLD 2417 KARACHI-HIGH-COURT-SINDH, 1986 MLD 649 LAHORE-HIGH-COURT-LAHORE, 1984 CLC 1943 LAHORE-HIGH-COURT-LAHORE, 1980 CLC 804 KARACHI-HIGH-COURT-SINDH, 1993 SCMR 920 SUPREME-COURT, 2013 PLD 81 LAHORE-HIGH-COURT-LAHORE, 2006 YLR 2271 LAHORE-HIGH-COURT-LAHORE, 2005 YLR 2127 KARACHI-HIGH-COURT-SINDH, 2002 CLD 1183 LAHORE-HIGH-COURT-LAHORE, 2016 PLD 85 LAHORE-HIGH-COURT-LAHORE.

Despite the importance of quality premiums, in Fauji Sugar Mills Vs Province of the Punjab [1996] CLC 592 LHC, the court held that the imposition of a quality premium is unconstitutional, an invalid piece of legislation, and not a 'reasonable restriction'[98] as per Art 18[99] of the Constitution of Pakistan 1973. However, later, in *Army Welfare Sugar Mills v Government of Sindh* [2018] SCMR 727 it was held that the courts cannot question the imposition of the quality premium as it was the farmers' due compensation for providing better quality cane (this effectively overrules the previous decision due to the doctrine of precedent).

- **Sugar Factories Control Rules of 1950:** As per the rules, the Cane Commissioner was to facilitate the mills in the supply of sugarcane by receiving an estimation of the cane which is required by the miller. Moreover, the Commissioner had to consult the Board about the areas reserved for factories, analysing the relevant particulars, such as the distance between the reserved area and the manufacturing unit, transport facilities, etc. The Rules also stipulate the clauses about arbitration and its subject.

- **Punjab Factories Rules of 1950:** These Rules laid down a manner and form requirement for the quantity estimation notification and renewals of purchasing against licenses. Reported Case: 2021 MLD 77 LAHORE-HIGH-COURT-LAHORE.

- **NWFP Sugar Factories Control Act of 1950:** The purpose of this Act's formulation was to regulate the supply of sugarcane to industries and the price at which it is purchased. Furthermore, the enactment also stipulates the powers granted to the Cane Commissioner and empowers the Provincial Government to set a minimum price for cane thereby mandating and accordingly binding the millers or purchasing agents to pay a prefixed price for the cane. Moreover, they are also empowered to direct the millers to pay a quality premium after the crushing season at a specified rate. Hence, this Act essentially establishes a set of rules for the millers, wholesalers, and distributors in their dealings with the cane growers.

  Reported Cases: 2021 MLD 77 LAHORE-HIGH-COURT-LAHORE, 1989 PLD 449 SUPREME-COURT, 1983 PLD 1 KARACHI-HIGH-COURT-SINDH, 2012 CLD 1405 LAHORE-HIGH-COURT-LAHORE, 1987 PLD 225 KARACHI-HIGH-COURT-SINDH, 1993 PLD 1 KARACHI-HIGH-COURT-SINDH.

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[96] Jaferii, 2020.

[97] Ahmad, 2020.

[98] Reasonable restriction' refers to legislation which does not arbitrarily or excessively invade the rights unless it strikes a proper balance. A law or order which confers arbitrary and uncontrolled power upon an executive in the matter of regulating trade or business in normally available commodities cannot be held to be reasonable.

[99] Article 18: Freedom of trade, business or profession. (c) the carrying on, by the Federal Government or a Provincial Government, or by a corporation controlled by any such Government, of any trade, business, industry or service, to the exclusion, complete or partial, of other persons.

- **Sindh Sugar Factories Control Act of 1950:** This Act primarily focused on the language complexities of the law and it redefined the terms such as "inspector," "occupier of the factory," and "purchasing agent,". Furthermore, this Act established the slicing season, which begins on April 15th and ends on July 31st.

- *Reported Case*: 2020 CLC 232 KARACHI-HIGH-COURT-SINDH.

- **The West Pakistan Foodstuffs (Control) Act of 1958:** The legislative intent behind the enactment of this Act was to ensure that authorities control the supply, distribution, trade and commerce of foodstuffs. This Act vested with the government the jurisdiction to regulate or prohibit the holding, storage, transportation, transit, supply distribution, disposal, acquisition, use, or consumption of any foodstuff, as well as trade and commerce, by issuing a notified order.

- **The Punjab Foodstuff (Control) Act of 1958:** The legislative intent behind the enactment of this Act was to ensure that authorities control the supply, distribution, trade and commerce of foodstuffs. It applied to the entire province of Punjab, except tribal territories. To ensure the efficacy of this Act, tribunals have been established which are vested with the exclusive jurisdiction to try matters falling within the ambit of this Act. Moreover, the offences under this Act are cognisable and nonbailable. This Act establishes a legal and regulatory framework for the sugar industry's entire supply chain, including farmers, millers, wholesalers/distributors, retailers, and, lastly, the customers.

- **The Sindh Foodstuff (Control) Act of 1958:** (The West Pakistan Foodstuffs (Control) (Sindh Amendment) Act 1973): This Act inserted a new Section 9-A to the parent Act, which stated that the sentence of imprisonment for violations connected to ration documents shall not be less than one month.

  Reported Cases: 1984 CLC 2687 KARACHI-HIGH-COURT-SINDH1960's

- **Sugar Distribution Order of 1960:** The Act is aimed at retail distributors, none of which are authorised to hold any sugar storage without a ration document. Each document entails a certain quantity limit, and no more than one document is issued under a name for the distribution of sugar.

- **West Pakistan Sugarcane Control Act of 1963:**

  Reported case: 1998 SCMR 2492

- **Sugarcane Control Order of 1961:** The Governor of the province redefined the term "sugar" in this order, stating that no person shall export sugarcane from, or manufacture sugar from sugarcane from, any area designated as a reserved area under section 10 of the Sugar Factories Control Act 1950 unless the Cane Commissioner or any Officer authorised by him in this regard has previously granted permission in writing.

- **Punjab Sugarcane (Development) Cess Rules of 1964:** According to these Rules the portion of the cess payable by the seller shall be worked out based on actual weighment made at the weighbridge, maintained or used at the premises of the Sugar Mills or its purchasing centres and shall be recovered by the mills' management from the seller by deducting the same from his bill for the cane supplied by him. The Sugarcane Development Fund, managed by the District Coordination Officer and whose proceeds are to be used for the improvement, maintenance, and development of roads and bridges in the district, as well as sugarcane research and development, was established by these Rules for each District.

- **West Pakistan Sugarcane (Development) Cess Rules of 1964:** Devised under the Finance Act of 1964. The food department of the Provincial Government collects cess, which is contributed equally by growers and millers. The deduction is meant to cover the expenditure incurred on the development of the

sugar-cane crop and the provision of infrastructure like the construction of farm-to-market roads and bridges. The amount is also meant to be spent on research so that better sugarcane varieties are developed, with a high yield of cane and sucrose content.

The cess is shared by both the seller and purchaser of sugarcane. Irrespective of the recovery by the seller of his share, millers are obligated to pay the cess, fortnightly, and unpaid dues are recovered as land revenue. A copy of the receipted challan along with a return is forwarded to the Cane Commissioner within seven days of the date of deposit of the cess. Each mill is obligated to maintain a register recording specifics such as; the amount of cess recoverable from each seller, the date of recovery of the amount, the quantity supplied, etc.

If a sugar mill does not deposit by the prescribed date, the Cane Commissioner, in pursuance of s. 14 of the Act, can impose on the management a penalty not exceeding the amount of the tax, provided that the penalty shall not be imposed without giving the mill management an opportunity of being heard.

At present, the industry pays 11 different taxes, five levied by the federal and six by the provincial government, which comes to about Rs. 3,500/ tonne. The two levies, i.e., market committee fee and sugarcane/road cess are highly undesirable. The very purpose of collecting these taxes has been exhausted over the years. The amounts collected in the past were spent on 'unknown' heads of expenditure.[100]

Unfortunately, the whole collected fund does not reach the treasury and is often held by the sugar mills. This happens due to procedural flaws in the collection process, which requires sugar mills to deposit the amount of the fund with the provincial government. They hardly do so voluntarily. The absence of efficient audit further aggravates the problem.[101]

Reported Cases: 2008 SCMR 178 SUPREME-COURT, 2006 YLR 1169 LAHORE-HIGH-COURT-LAHORE, 2005 PLD 571 LAHORE-HIGH-COURT-LAHORE, 1998 CLC 1912 LAHORE-HIGH-COURT-LAHORE.

- **Excise Duty on Production Capacity (Sugar) Rules of 1966:**

  Reported Cases: 1971 PLD 210 PESHAWAR-HIGH-COURT

- **West Pakistan Wheat, Wheat Atta, Maize, Rice and Sugar Distribution Order 1967:**

  Reported Cases: 1984 CLC 1453 LAHORE-HIGH-COURT-LAHORE, 1982 CLC 538 LAHORE-HIGH-COURT-LAHORE, 1979 CLC 486 LAHORE-HIGH-COURT-LAHORE, 1978 PLD 76 LAHORE-HIGH-COURT-LAHORE,1976 PLD 919 LAHORE-HIGH-COURT-LAHORE, 1975 PLD 25 KARACHI-HIGH-COURT-SINDH.

  Under 1977 PLD 212 LAHORE-HIGH COURT- LAHORE, Ishaque Hussain vs. Shahzad Hassan Pervaiz Additional District Commissioner (General) Rawalpindi, it was held that the power to revoke the license to distribute wheat, wheat flour, maize, rice, and sugar vests only with the District Magistrate and not the Additional District Magistrate.

1970s

- **Sugar Export Subsidy Fund Ordinance of 1970:** The Ordinance established a fund called the Sugar Export Subsidy Fund, a collection of sales tax from the sugar cane sellers plus an excise on the mills. The

[100] Khushk et al., 2010.

[101] "Misuse of sugar-cane cess fund," 2003.

fund would be utilised to subsidise the export of sugar as and when directed by the Federal Government. Any person on behalf of the Federal Government or by the Central Board of Revenue may, at all reasonable times, enter any sugar factory or premises where sugar is manufactured, stored, or kept for sale, and may require the production for his inspection of any paper kept therein and ask for any information relating to the crushing of sugarcane and production of sugar. An infringement of the Act can impose imprisonment of up to 3 years. In the case where a company is held liable, every member is subject to a penalty.

- **Excise Duty of Production Capacity (Sugar Rules) 1972:** The legislative objective behind these laws was to impose and collect duty on the output capacity of sugar factory plants and machinery. According to these Rules, duty shall be levied at the rate of PKR 14 per hundred tonnes on annual production capacity and for a financial year. The yearly amount of duty imposed shall be paid in eight equal monthly instalments. Moreover, the rules also stipulate the time of payment and the percentage of the payment due. The previous document, The Excise Duty on Production Capacity 1972, was repealed by these Rules.

  Reported Cases: 1992 S C M R 986, 1991 C L C 1167, 1990 CLC 752, 1988 PLD 344, 1987 MLD 505, 1982 PLD 1, 1981 PLD 357, 1978 SCMR 428, 1978 PLD 864, 1976 PLD 370

- **Price Control and Prevention of Profiteering and Hoarding Act of 1977:** This Act came into force on 25 May 1977 to control the prices and prevent the profiteering and hoarding of specific essential commodities. An exhaustive list of these has been provided in the Schedule to this Act. Crucially, 'white sugar' and 'gur' have also been listed here (though many other commodities have also been listed) so the provisions of this Act, and any legal principles that follow from it, are relevant for present purposes. Provisions of note include s.3, which empowers the Federal Government (or any authority delegated by it[102]) to control/regulate, through notification, prices, production, movement, supply, etc. of any essential commodity to ensure equitable distribution and fair prices. Under s. 6, no person shall dispose of an essential commodity at a price higher than the maximum price as fixed by the Controller-General of Prices and Supplies (as appointed by the Federal Government) and s. 7 makes it a criminal offence to contravene any order made under ss. 3 and 6.

  To date, this Act has remained extremely relevant for legal purposes. As recently as this year, the Price Control and Prevention of Profiteering and Hoarding Order 2021 (under the 1977 Act) came into force. This has been subject to much public criticism for simply being an attempt to put a band-aid over the pervasive issue of surging prices due to inflation and shortages.[103] It has been argued that such knee-jerk measures unnaturally disrupt the supply-demand equilibrium causing shortages and other widespread adverse effects for the consumers – the very group that such provisions are enacted to protect. Furthermore, according to experts, price controls provide incentives for hoarding, black marketing, production cuts, etc., causing consumers to eventually pay a lot more than they would have otherwise.[104]

  Reported Cases: 1985 PCRLJ 1828 KARACHI-HIGH-COURT-SINDH, 1979 PCRLJ 912 LAHORE-HIGH-COURT-LAHORE, 1983 CLC 464 KARACHI-HIGH-COURT-SINDH, 1983 CLC 26 LAHORE-HIGH-COURT-LAHORE, 1985 MLD 576 KARACHI-HIGH-COURT-SINDH, 1985 CLC 2026 LAHORE-HIGH-COURT-LAHORE, 1994 PLD 101 QUETTA-HIGH-COURT-BALOCHISTAN 1980 PCRLJ, 2007 YLR 268 LAHORE-HIGH-COURT-LAHORE, 1982 PCRLJ 228 KARACHI-HIGH-COURT-SINDH

- **Central Excise Duty on Sugar (Validation) Ordinance of 1979:** The purpose of this Ordinance was to legitimise the charge and collection of excise duty on enhanced rate sugar stocks held by sugar mills.

  Reported Case: 2005 PTD 1928 KARACHI-HIGH-COURT-SINDH

[102] Price Control and Prevention of Profiteering and Hoarding Act of 1977, s 4.

[103] Jamal, 2021.

[104] Ibid.

1980s

- **Sugar Factories Control (Sindh Amendment) Ordinance of 1985:** It introduced subsection (v) to section 16 of the Sugar Factories Control Act of 1950, which gave the Provincial Government the authority to direct the factories to pay a quality premium at the end of the crushing season.

- **Sugar Policy for 1987-1988:** In conclusion to a summary submitted by the Ministry, the Cabinet held a meeting on 20th May 1987 and came to a decision stating several terms. The first objective was about the zoning system and its modifications. This consisted of various details:

a) The removal of restriction on making Gur in mills;

b) the removal of the restriction on sugarcane growers for supplying sugarcane within their zone and approval of the grower's free will of selling sugarcane to any mill;

c) The enforcement of the said support price as the minimum support price followed by more cost details of buying and selling sugarcane;

d) Encouraging the mills and growers to enter into voluntary contracts benefitting both parties. Mills were required to articulate and instigate development programmes for cane production in their specified zone.

- The amendment of the Sugar Factories Control Act of 1950 followed by observing its implementation. Furthermore, regular reviewing of the import price of sugar by the ECC was to be instituted. Awareness by the Provincial Government towards the sugarcane growers of forming cooperatives for raising productivity and marketing their products. The continuation of existing policies in the NWFP is to be upheld. It also included the confinement of the crushing period to be left at the discretion of the Provincial Government, the implementation of the non-price measures followed by the mobilisation of the existing supervisory mechanism to a higher level of efficiency.

1990s

- **Sugar Factories Control (Sindh Amendment) Ordinance of 1993:** The amendment aims to eliminate the role of purchasing agents who act on behalf of millers making the system more linear, with a cane grower serving as the single vendor for a factory. Furthermore, the Ordinance concentrates on linguistic adjustments to the Sugar Factories Control Act of 1950, noting that factory occupiers can engage in agreements with farmers concerning the cane amount and terms and conditions for cane delivery from regions reserved.

- **Sugar Factories Control (Sindh Amendment) Ordinance of 1995:** Every factory is required by the Ordinance to install a core sampler that meets the specifications and is installed in the manner specified. A Core Sampler is deployed to take representative samples of cane from the cane load, delivered to the sugar mill to assess the sucrose recovery levels, which are the most important determining factor in the procurement price and quality premium.

2000s

- **Sugar Factories Control (Amendment) Ordinance of 2001:** The purpose of this Ordinance was to make linguistic amendments to the Sugar Factories Control Act of 1950 as applicable in Punjab.

- **Sugar Factories Control (Sindh Amendment) Ordinance of 2002:** This Ordinance was enacted to bring linguistic amendments to the Sugar Factories Control Act 1950 as applicable to Sindh. It substitutes

the word "Collector" with "Executive District Officer" (Agriculture) throughout the 1950 Act.

- **Punjab Sugarcane (Development) Cess (Amendment) Rules of 2004:** The amendment of 2004 addressed linguistic changes in the 1964 Rules and established a Provincial Sugarcane (Development) Cess Committee to oversee the sub-apportionment of Sugarcane (Development) Cess among the districts, its release, and the selection and implementation of development programmes. The suggestions of the District Committee must be submitted to the Provincial Committee for final approval.

- **Sugar Factories Control (Sindh Amendment) Act of 2009:** This Act was enacted to amend the Sugar Factories Control Act 1950 for its application to Sindh. It substitutes various provisions of the 1950 Act, namely, section 6-A, section 14-A, section 15, section 16, section 17-A, and section 22 (iii).

2010s

- **Punjab Registration of Godowns Act of 2014:** This Act ensures expeditious registration of godowns in Punjab. It is necessary to register godowns to establish a comprehensive system for consistent supply and availability of essential items. The Act stipulates that essential commodities must be stored in a godown that has been registered under the Act. It establishes the requirements for registering a godown with the Registration Authority.

2020s

- **Punjab Prevention of Hoarding Act of 2020:** This was enacted on 11 August 2021 as a response to the Coronavirus outbreak to prevent the hoarding of scheduled articles since "Events of hoarding contribute to adversities, in geometric progression, to the people at large, especially in circumstances of partial or complete lock-down." Scheduled articles include white sugar and gur.

  Foremostly, it establishes the offence of hoarding any of the articles listed in the Schedule for which a person found guilty could be imprisoned for up to 3 years plus fined up to 50 per cent of the value of the articles hoarded. For effective enforcement, it empowers any officer with reasonable suspicion of the violation of the provisions of this Act, to enter and search the premises of the dealer and seize the articles possessed in contravention. To further expedite the whole process, (given the Act was brought into force to deal with an emergent situation) there is also a 30-day time limit set for the conclusion of any trial brought under this Act. It goes even further to establish a provision for rewarding informers who shall be entitled to up to 10 per cent of the value of the amount released to the Government Exchequer.

  Recently, the Prime Minister, presiding over a meeting on price control, ordered the implementation of this Act (among others including the Sugar Factories Control (Amendment) Act 2021) and strongly called upon relevant authorities to take action against the sugar mafia and hoarders.[105]

- **Price Control and Prevention of Profiteering and Hoarding Order of 2021:** This Order was promulgated on 24 August 2021 under the Price Control and Prevention of Profiteering and Hoarding Act of 1977. It establishes the office of the Controller-General of Prices and Supplies. Per the order, a Secretary of the Division, who is allocated the business of that commodity, may act as the Controller-General for this Order. Examples of the powers and functions the Controller-General possesses for the exercise of the provisions of the 1977 Act and this Order include the authority to seek the record of timely reports from producers/dealers/importers, search the premises of registered trade associations, etc.[106]

[105] "Profiteering, hoarding not to be tolerated: PM," 2021.

[106] Price Control and Prevention of Profiteering and Hoarding Order 2021, s 4.

Of special note is the power to fix the price of an essential commodity suo moto in case of a "national emergency" i.e., a 'situation of uncontrolled price hike with average increase of not less than thirty-three per cent in price from the immediately preceding year and also includes a situation of war, famine or natural calamity'. This equation of a price hike with situations of war, famine or a natural calamity has been criticized as an attempt to justify sudden price curbs when and if imposed.[107]

The idea behind giving the executive such powers to flexibly impose price caps is to provide immediate subsidies for consumers. However, it is asserted that it not only removes incentives for farmers but adversely impacts them, leading to suppressed supplies, an inferior quality product, artificial shortages, etc., culminating in higher prices.[108]

Despite this, producers of sugar are expected to thrive as the vague policies and the employment of a 'cost-plus' method of determining the prices to be fixed means that the higher costs of doing business can simply be passed on to the consumer. It appears that there is now an incentive to inflate costs unnecessarily as producers can simply demand higher prices while their margins remain constant.[109]

Essentially, the argument is that free market prices are indicators of scarcity which can only be resolved once it is identified. However, such artificial distortions can confuse market forces precipitating more serious problems in the long term.[110]

Also, note that SRO 1065(I)/2021 was simultaneously brought into force to substitute the Schedule to the 1977 Act. This adds 13 new 'essential commodities' to the Schedule such as face masks, oxygen cylinders, hand sanitisers, wheat etc.

- **The Sugar Factories (Control) (Amendment) Ordinance of 2020:** The amendment of this Act was necessary to ensure payments to the cane growers in a timely and transparent manner and to make provisions for the ancillary matters. Due to the existing circumstances, the Governor of Punjab rendered it necessary to take immediate action by exercising the powers conferred under (1) of Article 128 of the Constitution and promulgating the following Ordinance. Firstly, the Ordinance was to be cited as the Sugar Factories (Control) (Amendment) Ordinance of 2020 and came into force at once. An addition of clause (ff) after clause (f) in section 2 signified the meaning of the Cane Purchase Receipt (CPR). Subsection (2) of S.13 of the Act was amended stating that an occupier of a factory shall purchase cane from a cane grower or the cane grower's cooperative society at the rate notified under S.16 and payment shall be made directly into the bank account to the cane grower through a bank, whereas subsection (5) was to be omitted. Moving on, there was an insertion of section 13-A which included powers of the cane commissioner to determine the liability of the occupier of a factory for payment of cane price. S.14 clause (ii) included the purchase process authorised by the cane commissioner and clause (iii) substituted the agreement terms between an occupier of a factory and a purchasing agent for cane purchases. Furthermore, the amendment of S.21 focused on the violation of any said provision, stating the imprisonment term along with the fine charged, while clause (b) substituted that the offences under this Act would be cognisable and non-bailable. Clauses (i) and (ii) were omitted under S.22, whereas the expression 'Magistrate S.30' shall be substituted under clause (iii).

[107] Jamal, 2021.

[108] Mahmood, 2021.

[109] Ibid.

[110] Ibid.

- **Sugar Supply Chain Management Order 2021:** As per this Order, an occupier of a factory, a broker, a dealer, or a wholesaler shall apply to the Deputy Commissioner[111] for registration of a godown. In case of rejection, an appeal can be filed before the Cane Commissioner. This Order limited the amount of sugar stored to two and a half metric tonnes. In the event of storage exceeding the limit, the Deputy Commissioner must be notified. As per the Order, a miller shall sell sugar only to a registered wholesaler or broker.

  This Order moved on to laying down the powers of the Cane Commissioners and Deputy Cane Commissioners. They can direct the millers, brokers, or wholesalers regarding the maintenance of stocks, storage - including inter-provincial movement - sale, the disposal of sugar, and in the event of a shortage of sugar in the market, they can either issue directions to sell a specified quantity of sugar at a notified ex-mill price or they may take possession of the stored sugar and sell as they may deem necessary. They also possess the right to inspect documents or stocks of sugar belonging to a miller, broker, dealer, wholesaler, or bulk consumer.

  The Sugar Supply-Chain Management Order 2021 was put in place to prohibit mills and other entities involved in the supply of sugar from hoarding sugar. Sugarcane growers would be able to figure out their alternate options if the market was deregulated. Sugar producers would also be enticed to improve their productive, technical, and allocative efficiencies if sugar prices were competitive.[112]

  The Sugar Supply Chain Management Order of 2021 and the Prevention of Speculation in Essential Commodities Ordinance of 2021, according to the then Chief Minister of Punjab, are key initiatives made by the government to assist the people. Furthermore, he stated that the regulation will prohibit price increases in edible commodities.[113]

  Moreover, after manufacturers refused to reduce the price of sugar, the Punjab Government, acting on the said Order, seized stock from sugar mills to sell in the market at notified rates. The seized stock was to be sold through dealers at a maximum of PKR 85 per kg, down from the previously high rate of PKR 115 per kg.[114]

- **Sugar Factories Control (Amendment) Act of 2021:** Originally, when the sugar crisis hit Punjab in the preceding year, the Sugar Factories Control (Amendment) Ordinance of 2020 was promulgated in September 2020 to quickly respond to the situation because bringing a whole Act into force would be a time-consuming task.[115] This Ordinance was largely pro-farmer and included provisions such as giving the Government the authority to decide the date for crushing, making the delay of payment of dues to growers or any illegal deduction punishable up to 3 years imprisonment and a fine of PKR 5 million. The delay in the start of crushing was made similarly punishable. Moreover, mill owners were required to present formal receipts, and if dues to farmers were not paid, the mill owner could be arrested and the mill could be forfeited.[116] This was a welcome change as it allowed the Punjab Government to get the crushing started by early November, force the compliance of millers, and ensure payments to farmers.[117]

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[111] Sugar Supply Chain Management Order 2021; "Deputy Commissioner" means the Deputy Commissioner of the district concerned and includes the Additional Deputy Commissioner

[112] Khan, 2021.

[113] Fareedi 2021.

[114] "Punjab Govt raid sugar mills after manufacturers refuse to take down price," 2021.

[115] Khan, 2021.

[116] Baig 2021.

[117] Khan, 2021.

Later, following the expiry of the Ordinance, the Sugar Factories Control (Amendment) Act of 2021 was brought into force. This unusually was a complete U-turn by reversing all the pro-farmer provisions of the preceding year. This Act took away the power of the Government to decide the date of commencement for the crushing season, resuming the relaxation of commencing it at any time before November 30.[118] Critically, the millers were previously receiving cane on a 15-day credit but this Act extends this to an 8-month credit cycle by fixing the deadline for payment as June 30, following the crushing season.

This immediately drew the condemnation of nearly all stakeholders involved except, of course, the millers. The Act has been described as "a black law which legalizes exploitation and is designed to hurt farmers" and all farmers' bodies are now threatening protests and sit-ins.[119]

[118] Note how this was criticised for being too rigid and ignoring varietal changes over time.

[119] Khan, 2021.

APPENDIX B: LEGAL DATABASE

1940s

Sugar and Sugar Products Control Order of 1948

Serial No.	Citation	Name	Summary	Judgement
1	1963 PLD 551 DHAKA-HIGH-COURT	ABDUR RASHID BHUIYA VS. E. A. HASHIM, SPECIAL MAGISTRATE AND ANOTHER	The Petitioner was a sugar candy manufacturer that acquired one hundred maunds of sugar per month per order from the Subdivisional Controller of Food. An FIR was filed by an Assistant Inspector of Police alleging that the Petitioner had illegally sold some sugar for which he had not gotten the aforementioned authorisation. The Petitioner's office was investigated, and it was discovered that the Petitioner did not keep accurate records of the sugar candy sold, as required by the order. The Petitioner was tried under s.6 East Pakistan Control of Essential Commodities Act of 1956 for contravening clause 5 of the 1948 Order. The Petitioner contended that the violation of the order had been accidental however, the argument was rejected. In the present case, the Petitioner asserted that they cannot be convicted under s.6 for contravention of clause 5 as there is no nexus between s.6 and clause 5 of the Order.	Petition dismissed. The Petitioner's argument lacked substance as the Order was enacted under ss. 3 and 4 of the Essential Supplies (Temporary Powers) Act, 1946 (Act XXIV of 1946) and the Order had subsequently been kept alive by later Ordinances and Enactments including East Pakistan Control of Essential Commodities Act of 1956 (by virtue of s.3 of the Act)

1950s

Sugar Factories Control Act of 1950

#	Citation	Name	Summary	Judgment
1.	2018 SCMR 727 SUPREME-COURT	ARMY WELFARE SUGAR MILLS VS GOVERNMENT OF SINDH	The appellants were appealing against the judgement issued by the Sindh High Court, dated 27 Mar 2003 involving Section 16(v) of the Sugar Factories Control Act of 1950 which protected the right of quality premium owed to the growers, statutorily. Per this provision, if farmers produced crops with a higher sucrose content than the base level (8.7% for Sindh), then they are entitled to a premium. The appellants contended that the base content level should be variable rather than fixed at 8.7%.	Appeal dismissed. The only situation which would put quality premium in question would be if the increase in the rate of the premium did not commensurate with the revision in the minimum procurement price, there is no reason to deny growers of their due share in facilitating the mills to secure higher than the base sucrose level, which in turn increases them in higher sugar production. The judgment further imposed on the Provincial Government, the duty of resuming the practice of issuing notification of the quality premium along with that of fixation of minimum procurement price two months before the crushing season.
2.	1996 CLC 592 LAHORE-HIGH-COURT-LAHORE	FAUJI SUGAR MILLS VS PROVINCE OF THE PUNJAB	Concerned the insertion of s. 16-A by Sugar Factories Control (Punjab Amendment) Act of1991 (II of 1991). The Petitioners were served notifications, dated 14 Jan 1986 and 6 Aug 1991, on behalf of the Governor that asked for the millers to pay the growers a quality premium that they owed. The Petitioners contested; the former is void and without jurisdiction as it was issued before the Amendment came into force, and; the latter is unconstitutional. The Petitioners were of the view	Petition accepted. While s. 16(iv) empowers the Government to ask Petitioners to pay an additional price in case of a special variety of cane, a notification of the nature of the one presently in question was not envisaged by s. 16(iv). Referring to taxing legislation, it is a rule that no tax can be levied twice on the same goods – this is strictly applicable to the present case so Petitioners cannot be asked to pay the extra

			that s. 16, on its own, lacks the concept of quality premium altogether. The Petitioners stated that the price for the procurement of sugarcane has been paid as per s. 16(1) and a quality premium would act as if the same stock was paid for twice. Therefore, claimed that the notification was an attack upon their constitutional right enlisted in Art. 18 which rendered the demand to be arbitrary, illegal, and unconstitutional.	price. The Amendment inserting s. 16-A is an unconstitutional and invalid piece of legislation. The impugned amendment directing the petitioners to pay extra illegal demand is like a clog on their business activity and cannot be regarded as a 'reasonable restriction'[120] per the exception laid out for Art 18 of the Constitution of Pakistan 1973 as it requires the Petitioners to pay for the cane at two separate stages; when they had purchased the cane and then, when they had obtained higher sucrose levels.
3.	1993 MLD 650	BAWANY SUGAR MILLS LTD. VS THE CANE COMMISSIONER AND DIRECTOR OF AGRICULTURE, EXTENSION, HYDERABAD SINDH and another	The Petitioner was bringing an action against an order passed by the Cane Commissioner (Respondent 1), dated 20 Sep 1983, which entitled Respondent 2 to a grievance of Rs.77,500 under Rule no.17 of the Sugar Factories Control Rules of 1950. Respondent 2's area of cultivation was reserved for the Petitioner. However, on 23 Oct 1982 an order was passed by Respondent 1 which made certain modifications to the current setting, Respondent 2's area continued to stay reserved for the Petitioner. By March 1983 a hundred of Respondent 2's trucks remained unlifted so they filed a prayer for compensation. Respondent 1 decided in favour of Respondent 2, relying on Messrs Mirpurkhas	The petition was accepted, and Respondent 1 is required for a decision afresh after affording both parties an opportunity for a hearing. The court contrasted with the first 2 contentions. They laid that the notification fell well within the ambit of ss. 10 and 14 of the Sugar Factories Control Act of 1950, in conjunction with Rules 7(1)(2) and 10(1). The impugned order derives its authority from Rules 17(1) and 9(6). Secondly, post notification the area of Respondent 2 continued to be "reserved", not merely "assigned" for the Petitioner, thus the need for agreement relied upon by the Petitioner

[120] 'Reasonable restriction' refers to legislation which does not arbitrarily or excessively invade the rights unless it strikes a proper balance. A law or order which confers arbitrary and uncontrolled power upon an executive in the matter of regulating trade or business in normally available commodities cannot be held to be reasonable.

			Sugar Mills -A Limited v Consolidated Sugar Mills Ltd PLD 1987 Kar 225. The Petitioner contended that since the crushing season begins on the 1st of October, the order circulated by Respondent 1 on the 23rd of October is void. Secondly, they contended that as per Rule 17 of the Sugar Factories Control Act of 1950, no agreement was decided by the parties, thus no arbitration can take place. Thirdly, the Petitioner complained that he was denied the right of hearing, going against natural justice. On every date that the Petitioner attended the office of Respondent 1, the case was adjourned.	falls within the scope of Rule 9(2) which requires an agreement of the quantity of cane that is to be sold since the area was reserved for the Petitioner, the argument stays unimpressive. As the Petitioner was offered no right of defence, the notice of 20 Sep 1983 was quashed.
4.	1987 C L C 1647	SHAKARGANJ SUGAR MILLS LTD. JHANG VS CANE COMMISSIONER, PUNJAB, LAHORE and another	The meeting held by Sugarcane Control Board concluded, on the recommendation of the Petitioner, that area 28 Chaks be eliminated from the free zone and added to the reserved area for the Petitioner. The Cane Commissioner took no such step. Aggrieved, the Petitioner contests on 2 grounds; first, on a linguistic drift that the word "may" ought to be read as "shall" in s. 10 and 14 of the Sugar Factories Control Act of 1950 i.e., relating to the Cane Commissioner's responsibility in adhering to the advice by the Board. While one characterizes a consultative role for the Board the other imposes an obligation on the Commissioner.	Petition dismissed. The courts found that since the word "may" has been used in conjunction with the word "consulting" as to the role of the Board's suggestions, the Board's capacity is merely recommendatory. The words "may" and "shall are not interchangeable. Secondly, the court found that there was no need to add the area in question to the reserved area since while the crushing capacity of the mill remained the same, the amount of cane crushed has increased from 250,000 to 640,000 maunds in a decade i.e., the yield of

			Secondly, on the facts, the Petitioner's area had been reduced in terms of acreage and so, 28 Chaks should have been reserved for the Petitioner.	crop per year had escalated. This demonstrated that the petitioner was in fact, not being underfed as the determining factor is not acreage but the yield and quantum of cane available and crushed.
5.	2018 CLD 626 LAHORE-HIGH-COURT-LAHORE	AL-BARAKA BANK (PAKISTAN)LTD. VS PROVINCE OF PUNJAB through Secretary of Food	Petitioners; cane growers and Banks Respondents; Cane Commissioner, Punjab and 3 sugar mills. There were 2 broad issues; priorities of rights between the statutory rights of cane growers and contractual rights of the Bank, and; the role of the Cane Commissioner i.e. whether they had the authority to sell bags of sugar which were pledged to Banks, for the cane growers, upon the default of sugar mills. The banks had lent financial assistance to the sugar mills to pay for the sugar cane procured, in turn, the banks had taken constructive possession of the sugar bags. While the banks were defending a contractual right and argued that secured creditors are[121] over unsecured creditors and government dues, the cane growers were protected by a statutory right as per the Act, to receive the price of the sugar cane within 15 days, the issuance of CPR[122]	Petition for cane growers allowed; petition for banks dismissed. The court held that while the security interests of the banks were intact, the right of the cane growers was superior to all other rights. The Cane Commissioner was held the relevant competent authority to recover the dues for the cane growers.

[121] Cane Purchase Receipt.

[122] Cane Purchase Receipt.

			acknowledges it. The cane growers were also seeking recovery as the owners of the property, as they retained the title to the sugar cane until the payment was made.	
6.	2003 M L D 1940 KARACHI-HIGH -COURT-SINDH	Messrs AL-NOOR SUGAR MILLS LTD. VS PROVINCE OF SINDH and others	The Petitioner assailed the notification circulated determining the crushing season and minimum price for the sugar cane to be paid to the growers for the season of 2002 -2003, under s. 16 of the Act. Previously, as compensation for regulating sugarcane, the Government would lift the entire sugar manufactured at a uniform ex-factory price fixed in advance, ensuring at least minimum profit for the mills. However, subsequently, deregulation left the prices at the stake of market forces. Now, with the surplus of the sugar stock of the previous season due to excessive imports and lack of subsidies for the opportunity of exports, the market forces have decided on a low price for the end product to the point that the plaintiff would not be able to break even. The Respondent contended that due to a shortage of irrigation, the yield has been affected adversely and with the consolation of the Economic Co-ordination Committee, the prices have been set to train a balance. The original price demanded was not set due to objections by the mills.	Application dismissed. While the plaintiffs appeared to have an arguable case, prima facie, the application was dismissed on the grounds that suspending the impugned notification would have grave consequences. Since the sugar cane has been harvested and the delay in crushing is causing the canes to lose their sucrose content entailing an irreparable loss upon the growers.

7.	1987 MLD 2417 KARACHI-HIGH -COURT-SINDH	Messrs AL-NOOR SUGAR MILLS LTD. VS PROVINCE OF SINDH and others	The case mainly tackled the confusion in the jurisdictional dates of a notification that could reserve an area for a sugarcane factory. The Petitioner owns a Sugar Factory, and Respondent No.1 is another sugar factory owner while Respondent No.2 is the sugarcane grower, and Respondent No. 3 is the Government of Sindh. The dispute was that the plaintiff wanted Respondent 2's area to be reserved for him as per Section 10 of the Act by the Cane Commissioner, Respondent 2 was already a client of Respondent 3. Since no date was referred to in the Act or Rules, provisions regarding the Sugarcane Factory estimating its requirements and submitting the same to the Cane Commissioner before May following the ensuing crushing season were interpreted,[123] and the back date was settled by the Judge to be 1st October. The appeal was opposed on behalf of Respondent 1.	Application dismissed. Reservation of area for sugar factories for procurement of sugarcane should be made by or before the start of the crushing season. Reservations made much beyond the time of crushing season would not be in accordance with relevant law.
8.	1986 MLD 649 LAHORE-HIGH-COURT-LAHOR E	FECTO SUGAR MILLS, DARYA KHAN VS COMMISSIONER, DERA GHAZI KHAN	Cane Commissioner, Punjab in exercise of powers vested in him under s. 10 in a notification allocated various chaks, declaring them to be reserved areas for the supply of cane to the Petitioner company for the crushing seasons 1982-83, 1983-84 and 1984-85. It is the case of the Petitioner company that	Petition accepted. The order by Respondent 1 was declared without lawful authority.

[123] Sugarcane Factory Rules, r 6.

			purchase centres with the provision of weighbridges, etc., were established within the reserved area and agreements for the purchase of sugarcane were entered into with the cane-growers etc., after making advance payments to them. Later, Respondent 1 in a letter to the Cane Commissioner dated 2 Oct 1983, assigned 79 villages under the Petitioner to Respondent 3. After hearing both the Petitioner and Respondent 3, the Cane Commissioner (Respondent 2) refused to remove the area from Petitioner's zone since the allocation of this area to the Petitioner was mutually agreed upon by both parties and no valid ground existed to change this arrangement. Respondent 3 then filed an appeal against this with Respondent 1 who upon accepting the appeal, declared the 79 chaks in question an unassigned area. This order has now been assailed in this constitutional petition on the ground (i) that no appeal lies against an order refusing to withdraw any area from the reserved area already notified and that the appeal filed was barred by time; (ii) that Respondent 2 was neither conscious that the appeal filed was barred by time nor the delay was condoned by him and that the delay could not be condoned as the appeal was not accompanied with an application for condonation of delay; (iii) that Respondent 2, having earlier directed to	

			the Cane Commissioner to withdraw the said 79 Chaks from the reserved area could not hear the appeal himself against the order of refusal passed by the Cane Commissioner per principles of natural justice (iv) that the impugned order is illegal as it was based on extraneous considerations; and (v) that the propriety demanded that the arrangements entered into by the parties be not disturbed towards the end of the period fixed as any such disturbance at that late stage would cause immense financial loss to the petitioner company.	
9.	1984 CLC 1943 LAHORE-HIGH-COURT-LAHOR E	BABA FARID SUGAR MILLS LTD., OKARA VS COMMISSIONER, LAHORE DIVISION, LA-HORE	After the allotment of the reserved Chaks, the Petitioner entered into an agreement with the cane growers of the areas. Advance to the growers was paid in the two areas. A letter was then issued relocating some Chaks and assigning new ones. The impugned letter was deemed without lawful authority by the Petitioner because it was issued without consulting the Sugarcane Control Board which was an essential legal formality as required by s. 10. Learned counsel also raised a few other contentions, for instance, that the Cane Commissioner overlooked an important legal and factual aspect which was that after the allotment of the areas, the Petitioner incurred heavy expenditure in entering into agreements with the cane-growers for the supply of sugar-cane, in connection	Application dismissed. While the plaintiffs appeared to have an arguable case, prima facie, the application was dismissed on the grounds that suspending the impugned notification would have grave consequences. Since the sugar cane has been harvested and the delay in crushing is causing the canes to lose their sucrose content entailing an irreparable loss upon the growers.

			attention was drawn to rule 9 (3) of the Sugar Factories Control Rules of 1950. Learned counsel submitted that this aspect was completely ignored, and this is bound to cause irreparable loss to the Petitioner. The learned Assistant Advocate-General took up the position that no final order has yet been passed, the impugned letter was a mere proposal-"tentative zones have been demarcated. These proposals are yet to be confirmed by the Sugarcane Control, Board, Punjab.".	
10.	1980 CLC 804 KARACHI-HIGH -COURT-SINDH	CONSOLIDATED SUGAR MILLS LTD., KARACHI VS UNITED SUGAR MILLS LTD., KARA-CHI	Cultivating areas were, in a notification by the Cane Commissioner (Defendant 2), assigned and reserved for the plaintiffs, under s. 14 and 10 respectively, in October 1978. The contracts were carried out between the cane growers and the mills ensuring the supply of the cane. Defendant 1 (another mill) then infringed the right of the plaintiffs and lifted the cane from the "assigned area" of the plaintiff, allegedly by offering attractive prices. However, the order issued by Defendant 2 was unlawful in lieu of not following procedure following Defendant 1's accepted petition dated 2 January 1979. It is further asserted that Defendant 1 had paid advance to the cane growers and unless sugarcane was allowed to be lifted, at least to the corresponding extent, the money paid to the growers will be lost. Moreover, while s.	Application dismissed. Under s.14, there is no restriction for the purchase of cane in respect of an assigned area and since the order merely designated the Sukkur District as an assigned area, there was no restriction for purchase by the outsiders. Since there was a contract of purchase with the cane growers in the area, the cane growers are under both a statutory as well as contractual obligation to supply cane per s. 14. It is, therefore, open to the Plaintiff to take necessary action in case of a breach against the cane growers themselves. Injunction refused.

			13 provides that other than the factory no purchaser is to buy from the reserved area, there was no such premise regarding assigned areas. An interim injunction was granted to the Plaintiffs on 28 Dec 1978. This application concerned whether, on the fact alleged, the Plaintiffs are entitled to the confirmation of the injunction already passed.	
11.	1993 SCMR 920 SUPREME-COURT	MIRPUR KHAS SUGAR MILLS LIMITED VS GOVERNMENT OF SINDH	The case revolved around the balance shared by the Sugar Factories Control Act of 1950 and The Agricultural Produce Markets Act of 1939. The appellant contended that the two Acts were in conflict.	Appeal dismissed. While the former ensures the supply and regulates the price of a specific product the other provides for the better regulation of the purchase and sale of agricultural produce in the Province and for that purpose establishes markets and makes rules for their proper administration. The contention of the appellant that both laws mentioned above are repugnant to or in conflict with each other was denied.
12.	2013 PLD 81 LAHORE-HIGH-COURT-LAHORE	Haji BASHIR AHMAD VS CANE COMMISSIONER, PUNJAB	The Petitioners were growers who had remained unpaid by the mills. The grievance was addressed to the Cane Commissioner who failed to redress it – Respondent felt that they were not the competent authority	Petition allowed. While the Respondent is of the opinion that they were not the competent authority, the Court found otherwise. Relying upon Rule 17 of the Punjab Sugar Factories 1950 along with Section 6 which compares the role of the Commissioner to that of

				Collector, ensuing responsibilities confirmed that the Commissioner was in fact the competent authority.
13.	2006 YLR 2271 LAHORE-HIGH-COURT-LAHOR E	ADAM SUGAR MILLS LTD. through Director VS SECRETARY FOOD, GOVERNMENT OF PUNJAB	The Petitioner had purchased the quantity of sugar cane by growers worth PKR 8,625,338, however, only part of the price was paid. Respondent 2 then reached Respondent 1 -the Cane Commissioner, who levied a penalty of PKR 2,000,000 despite the Petitioner's appeal regarding consideration of their tight financial position during the crushing season of cane being the primary reason for the delayed payment was ignored. The appellant petitioned that since all the amount to the grower is paid, the fine should be waived since it is not only unauthorized but also excessive and exorbitant.	Petition accepted. The Court was of the same view since the Respondent had proceeded to decide on appeal through a mechanical and non-speaking order. The Petitioner shall be deemed to be pending before the Secretary of Food, Government of Punjab.
14.	2005 YLR 2127 KARACHI-HIGH -COURT-SINDH	State VS GENERAL MANAGER, PINGRIO SUGAR MILLS	The complaint was initiated by the Cane Commissioner due to the lack of compliance with S. 2(h) and 8 of the Act, which dictates the crushing season and noncompliance is punishable under 21(a). This was dismissed by the learned Civil Judge and Judicial Magistrate. The state contended that Direct Complaint could not be dismissed in the absence of the complainant, therefore, the impugned order was	Application dismissed. The application was dismissed on the account that powers under S. 561-A, Cr. P. C.[124] were to be used sparingly and only when there appeared to be an abuse of the process of law.

[124] CrPC, s 561-A; "Nothing in this code shall be deemed to limit or effect the inherent powers of the High Court to make such orders as may be necessary to give effect to any order under the code, or to prevent abuse of the process of any court or otherwise to secure the ends of justice."

			illegal on the face of it and Additional Sessions Judge erred in law while dismissing the revision application.	
15.	2002 CLD 1183 LAHORE-HIGH-COURT-LAHORE	FECTO SUGAR MILLS LTD. through Director VS GOVERNMENT OF PAKISTAN through Secretary, Ministry of Finance and Economic	The judgement consists of three writ petitions. In Category I, the writ petitioners were involved in the manufacture of cane sugar and had produced sugar in excess of the previous three years average and thus were eligible for the said benefit i.e., the payment of duty at a rate 50% less than payable on the normal production, requested for clearance of the excess stocks on payment of duty prescribed in the said Notification. After processing and allowing clearance, it was withdrawn. This was because the petitioners' mills had not operated for not less than 150 working days in the three preceding financial years hence it cannot be cleared on the said concessionary rates. However, the writ petitioners had denied the factual allegations of the mills not operating for 150 days during the relevant three years. In Category II the cases were dealt with according to the reference to the Army Welfare Sugar Mills Ltd. and decided in terms of para. 55 of the said case. In CATEGORY III the crushing season was defined as 160 days qua the Province of the Punjab. In this case, it was determined that the crushing period would be initiated from the 30th of November and end on the 30th of June of the following	Petition falling under Category I – Allowed. The petition was allowed subject to the fulfilment of the conditions laid down in para.55 of the judgement of the Honorable Supreme Court of Pakistan in Messrs Army Welfare Sugar Mills Ltd. and others v. Federation of Pakistan 1992 which was reaffirmed in Collector of Customs and Central Excise, Government of Pakistan v. Bawany Sugar Mills Ltd. and others 2000. The petitioners were approved to clear the excess stocks on payment of duty. Petition falling under Category II – Allowed. The petition was allowed in terms of para. 55 of the judgement in Messrs Army Welfare Sugar Mills Ltd. and others v. Federation of Pakistan 1992 SCMR 1652. Petition falling under Category III – Dismissed. The petition is dismissed due to the concerns related to the crushing season controversy.

			year. In this category the respondents considered the crushing period to be of 160 days which otherwise was less than the normal period hence they were entitled to the benefit of the departmental interpretation.	
16.	2016 PLD 85 LAHORE-HIGH-COURT-LAHORE	MUHAMMAD AFZAL WARRAICH VS MUHAMMAD RAMZAN	The Respondents had made an application to the Sessions Judge/ Chairman Human Rights as they had not been paid by the Petitioners for the sugar cane delivered. The sessions judge then provided an order recognizing that a cognisable offence had been made out against the respondents (i.e., Petitioners, presently) and directed the S.H.O. to inquire into whether the sugar mills establishment had money in the bank at the time and were not paying the price to the cane growers – in which case it would be a fraud. Learned counsel for the Petitioners submitted that the learned Sessions Judge committed material illegality and irregularity while passing the impugned order and that the relationship between the parties is to be regulated under the Punjab Sugar Factories Control Act of 1950.	Petition allowed. None other than the Cane Commissioner was competent to adjudicate upon the claim of sugarcane owners. The Punjab Sugar Factories Control Act of 1950, was a special enactment legislated for the resolution of such disputes and special law had an overriding effect over general law. Sugarcane owners instead of following the procedure laid down in this special enactment chose the wrong forum for the redressal of their grievance
17.	2020 SCMR	JS Bank Vs Brother Sugar Mills	Cane growers approached the High Court through Writ Petitions for the payment of the sugarcane supplied to the Occupier of a factory (as defined in Section 2-k of the Punjab Sugar Factories Control Act of 1950). The banks also approached the	The appeal was dismissed by the High Court based on it not being maintainable. Supreme Court held that the Occupier cannot be allowed to use statutory protections unilaterally. Moreover, the title of

			High Court under Art.199 of the 1973 Constitution challenging the actions and order of the Cane Commissioner whereby the refined sugar was pledged with the banks against the "Running Finance" facility extended to the Sugar Mills (Occupier) and under the possession of the "Muqaddam" of the Bank was attached and sold for the payment to the cane growers and claimed that the banks have a first charge being secured creditors upon the refined sugar. It was reported that all other mills have cleared their liability of payment of sugarcane prices to the cane growers except the Brother Sugar Mills.	white sugar to the extent of unpaid amount remains with the growers, there arises no occasion for the lien of the creditor Banks to the "pledged stock". A valid pledge could only be created against the goods owned by the occupier and not the third party. The Petitioners have failed to make out a case for grant of leave and the petition stands dismissed.
18.	Lahore High Court	*M/s Tandlianwala Sugar Mills Ltd.* *V* *Province of Punjab and others*	The mentioned petitioners had challenged the respondents who had referred the cases to the Station House Officers of different police stations for registration of FIRS. Section 13 A was enacted by an amendment made on 22.06.21 addressing the powers of the cane commissioner to determine the liability of an occupier of a factory. The Pakistan Sugar Factories Control Act of 1950 has provided a mechanism to determine the liability of an occupier of a factory for payment of cane price to a cane grower no later than forty-five days before the end of the crushing season. The registration of a criminal case can only be permissible on two grounds; the respondents	Petition allowed. The Cane Commissioner was allowed to proceed under Section 13-A of the Act for any existing determination of liability against the mentioned petitioners and this was to be subject to the procedure provided under law

			are obliged to follow the statutory provisions regarding the determination of the liability and in case the liability is not paid in the ordinary course or by the normal procedure provided under the Act and Rules of 1950	

Punjab Factories Rules of 1950:

Case law:

#	Citation	Name	Summary	Judgment
1.	2021 MLD 77 LAHORE-HIGH-COURT-LAHORE	SHAHTAJ SUGAR MILLS LIMITED VS PROVINCE OF THE PUNJAB	The Cane Commissioner, on perusal of data provided by the sugar mills, came to know of the malpractice of not paying the interest at the rate of 11% to the sugarcane growers on account of delayed payments beyond 15 days. Since it was a violation of the mandatory provisions of Rule 14(2) of the Punjab Factories (Control) Rules of1950, the Cane Commissioner in the exercise of powers conferred under Rule 16(10) directed the Occupiers/General Managers of all the sugar mills in Punjab to provide information about the payment of cane grower's dues. This information was required to ascertain how much of the interest amount had been paid to the growers on account of delayed payments. The Petitioners contravened it on the ground being Cane Commissioner without having any complaint from any grower cannot undertake any investigation thus his exercise has no backing of law.	Petition dismissed. The Court held the law does not make it a condition precedent that before embarking upon any investigation to check malpractice the Cane Commissioner must receive a complaint

NWFP Sugar Factories Control Act of 1950

#	Citation	Name	Summary	Judgment
1.	1989 PLD 449 SUPREME-COUR T	NOOR SUGAR MILLS LTD. VS MARKET COMMITTEE	The appellants are in the business of producing sugar and possess sugar mills in various parts of Punjab. They buy sugarcane from specified locations designated for them by the Sugar Factories Control Act. The relevant Market Committees have requested that they pay market fees per the Punjab Agricultural Produce Markets Act of 1939. In these appeals, the appellants argue that they are not liable to pay the charge.	No merits were found in these appeals which were hereby dismissed with costs.
2.	1983 PLD 1 KARACHI-HIGH-COURT-SINDH	BAWANY SUGAR MILLS LTD. VS MARKET COMMITTEE, BADIN	It has been prayed that the levying of market fees on sugar and sugarcane by market committees constituted under the foregoing notifications be ruled illegal, or that market fees cannot be imposed on both sugarcane and sugar.	The petition is dismissed except to the extent of the relief that the market fee cannot be recovered both on sugarcane and sugar.
3.	2012 CLD 1405 LAHORE-HIGH-COURT-LAHORE	SHAUKAT MEHMOOD VS GOVERNMENT OF PUNJAB through Secretary of Agriculture	The Petitioners' objections in these writ petitions are that, as sugarcane cultivators and growers, they supplied sugarcane to several Sugar Mill owners, including the respondents, for the 2009-2010 season. The Petitioners were duly issued sugarcane purchase receipts in which the outstanding amounts were duly mentioned about their supplies as given in their writ petitions. The Petitioners stated that they approached the Cane Commissioner, Punjab, Lahore for redress of their grievances due to the	The petition was allowed as the Learned Additional AG states there is no justification for the non-payment by the mill owners.

			non-payment by the respondents/mill owners. The Cane Commissioner, Punjab, Lahore is under a legal obligation to ensure that the respondents make payment of the price of the sugarcane within 15 days from its purchase under Rule 14(2) of the Punjab Sugar Factories Control Act of1950 as well as under the Punjab Sugar Factories Control Act of 1950 but he failed to do so.	
4.	1987 PLD 225 KARACHI-HIGH-COURT-SINDH	MIRPURKHAS SUGAR MILLS LTD. VS CONSOLIDATED SUGAR MILLS LTD.	Mirpurkhas Sugar Mills Limited, the plaintiff, owns and operates a sugar mill in Baluchabad Mirpurkhas, District Tharparker. Consolidated Sugar Mills Limited, Defendant No. I, operates a sugar mill in Ranipur, District Tharparker. Syed Qurban Ali Shah, Defendant No. 2, is a Zamindar and a purchasing agent, according to the plaint. The Cane Commissioner and Director of Agriculture, as well as the Chairman of the Sugarcane Control Board, are Defendants Nos. 3 and 4, respectively. Plaintiff claims that during the 1986-87 crushing season, the Cane Commissioner issued orders declaring "reserved areas" to supply cane to the various sugar factories under the Act and the Rules enacted thereunder known as Sugar Factories Control Rules of 1950 and that under the Act and the Rules, cane grown in a reserved area cannot be purchased by a purchasing agent or by anyone other than the occupier of the factory for which such area has been	The plaintiff has failed to establish a prima facie case because the Zoning Order in question was passed about two months after the start of the crushing season in 1986-87 and was not published in the official Gazette. As a result, the application is dismissed, and the interim order issued before is revoked.

			reservated. The plaintiff's complaint is that defendants Nos. 1 and 2 are violating the Act and the Rules because sugarcane cultivated in the plaintiff's mill's reserved area is provided to and purchased by defendant No. 1.	
5.	1993 PLD 1 KARACHI-HIGH-COURT-SINDH	SHAHID MUHAMMAD KHAN VS THE STATE	Abdul Ghani Dars, the second respondent, is a member of the Sugar Control Board and the Zamindar of Taluka Tando Allahyar, District Hyderabad. He made a direct complaint against M/s Mehran Sugar Mills Ltd's administration. The applicants are accused of deducting transport expenses without the approval of respondent No. 2 and without the permission of the Cane Commissioner of Sindh, in contravention of Rule 13(2) of the Sugar Factories Control Rules of 1950. Respondent No.2 also claims that the applicants increased transportation prices in 1987-88 without the authorisation of the Cane Commissioner of Sindh, in contravention of Rule 14(7) of the Sugar Factories Act.	The application filed under section 561-A of the Cr.P.C. was accepted, and the above proceedings pending E against the applicants at the Court of Civil Judge and F.C.M. Tando Allahyar were ordered to be dismissed.

Sindh Sugar Factories Control Act of 1950:Sindh Sugar Factories Control Act of 1950:

#	Citation	Name	Summary	Judgment
1.	2020 CLC 232 KARACHI-HIGH-COURT-SINDH	MIRPUR KHAS SUGAR MILLS LIMITED VS PROVINCE OF SINDH through Chief Secretary	These three petitions concern the Government of Sindh Agriculture Supply and Prices Department's notice dated 07.12.2019 ("Impugned Notification"), in which, among other things, the minimum price of sugarcane	These petitions were disposed of vide the aforementioned short order.

			for the crushing season 2018-19 was set at Rs.182 per 40 kg. According to Section 16 of the Sugar Factories Control Act of 1950 ("Act"), the Government of Sindh is required to issue a notification each crushing season determining the minimum price of sugarcane payable to growers in the province. The petitioners in CP D-8591 and CP D-8592 of 2018 are challenging the Impugned Notification on the grounds that the determinants for price fixation were not taken into account, and they want it overturned, whilst the petitioner in CP D-8624 of 2018 wants the Impugned Notification to be enforced.	

The Sindh Foodstuff (Control) Act of 1958: (The West Pakistan Foodstuffs (Control) (Sindh Amendment) Act of 1973)

#	Citation	Name	Summary	Judgment
1.	1984 CLC 2687 KARACHI-HIGH-COURT-SINDH	PAKISTAN BEVERAGE LTD. VS DEPUTY DIRECTOR (FOOD)	The petitioner opposes the department's claim for Rs.5,90,000 on account of the price of sugar supplied by the government to the petitioner in this case. The petitioner is a beverage and soft drink company with a factory in S.I.T.E., Karachi. Sugar is one of the raw materials for the petitioner's products, and the respondents have control over its distribution and sale under the Sind Food Stuffs (Control) Act of 1958. (West Pakistan Act XX of 1958).	This case is partially granted to the degree that the department's demand of Rs.2,60,000 against the petitioner, based on an unnotified notification dated June 26, 1981, is determined to be without lawful authority and of no legal consequence. There will be no costing order.

			Respondents had assigned the petitioner an annual quota of 1,200 tonnes of sugar, which was lowered to 960 tonnes in 1979, and the monthly distribution of this annual quota of 960 tonnes came to 80 tonnes, according to the petitioner. According to the petitioner, each month the petitioner would submit an application to the Office of the Deputy Director (Food) for the release of its monthly quota, after which a permit was issued and the price of sugar was deposited in the State Bank of Pakistan via a treasury challan, after which the Food Department issued a release order/delivery order based on which the petitioner took delivery of the sugar from the Government. Before June 28, 1980, the petitioner had taken receipt of his whole quota for the period ending June 30, 1980, as well as 300 tonnes of sugar in advance, i.e. against the quota for the year beginning July 1, 1980. This advance quota was withdrawn after filing a formal application with the 1 Department, which was approved, and payment of the advance quota was made at the then-current rate of Rs.6.90 per kg. For industrial consumers, the price of sugar was hiked to Rs.9.00 per kg on June 28, 1980. The department then demanded an additional sum from the petitioner for a 300-ton advance quota at a differential price of Rs.2.10 per kg.	

1960s

The West Pakistan Sugarcane (Development) Cess Rules of1964

#	Citation	Name	Summary	Judgment
1.	2008 SCMR 178 SUPREME COURT	FACTOR SUGAR MILLS LTD VS SECRETARY FOOD	Show-cause notices were issued to Petitioner showed the allegation that sugarcane cess had not been correctly worked out by the Petitioner. Consequently, the amount of cess paid by the Petitioner was much less than the amount due. As per rules 4(1) and 5(1) of the Punjab Sugarcane (Development) Cess Rules of 1964, the Cane Commissioner had levied a penalty. The Petitioner took up the position that it had paid the Cess to the N.-W.F.P. Government since the mill is situated on the border of N.-W.F.P.-Punjab Province and that cane had been purchased from the N.-W.F.P. Province, which has been a long-standing practice, at a loss of law.	Petitions were redirected to Cane Commissioner as appeals. Relying upon the case of Koh-i-Noor Sugar Mills Ltd., where the penalty levied was 33% and the adjustment of the Cess which was paid to the N.-W.F.P. Government had been allowed, whereas no such concession was offered to the Petitioner.
2.	2006 YLR 1169 LAHORE-HIGH-COURT-LAHORE	FECTO SUGAR MILLS LTD. through Director VS SECRETARY FOOD	The Petitioners were contesting against an order by the Cane Commissioner which had imposed upon the mills a penalty for not fulfilling the dues under the Act. The plea of the Petitioners was that sugarcane had been purchased from N.-W.F.P. on account of the non-availability of enough sugarcane to meet the crushing capacity of the mills. All the Petitioners claimed that they had been depositing the Cess (growers' share) in	Petitions dismissed. The Court held that s. 12 of the Punjab Finance Act of 1964, dictates, sugarcane bought from whatever place the Cess is payable on actual sugarcane crushed by the sugar mills and not on the sugarcane purchased/collected or brought to the mills. Due to the big disparity between the rates observed in the 2 provinces, undue

			N.-W.F.P as per instructions of the Cane Commissioner, N.-W.F.P.	advantage was being taken. The Petitioners were found to be liable for the penalty.
3.	2005 PLD 571 LAHORE-HIGH COURT-LAHORE	NATIONAL SUGAR INDUSTRIES LTD. VS GOVERNMENT OF PUNJAB	Concerned default in payment of sugarcane cess by the petitioners (Sugar Mills) The Provincial Government had allowed the Petitioners to clear their default in payment of Sugarcane Cess through monthly instalments. All the Petitioners had faithfully given their instalments per the agreement. However, after the bulk of the overdue cess had been cleared by the Petitioners, each of them received a notice from the Cane Commissioner demanding payment of the penalty for committing default. Note, the instalment agreement between the parties did not contain any term that waived the charge of penalty claimed.	Petition allowed. There are 2 issues; (1) Whether the liability to pay the penalty exists; yes, since the agreement contained no waiver – the Petitioner was simply relying on the omission of the Respondents to collect a penalty at any stage prior (2) Quantum; the stand taken by the Respondents is neither justified by the facts of the case nor by the terms of policy relied by them. The existence of an agreement demonstrated 'unavoidable circumstances' which would make the maximum penalty unreasonable.
4.	1998 CLC 1912 LAHORE-HIGH-COURT-LAHORE	SHAHTAJ SUGAR MILLS LTD. VS PROVINCE OF PUNJAB	The Petitioners argued that the Ordinances of 1978 and 1983 were invalid and ultra vires. Martial Law was proclaimed in 1977 which held the Constitution of Pakistan in abeyance. The Ordinance-making power of the Governor under Article 128 of the Constitution was no longer exercisable since they were never placed before the Provincial Assembly for	Petitions dismissed. The Court held by virtue of Article 279, all the taxes and fees levied under any law in force would continue to be levied notwithstanding anything contained in the Constitution. A similar view has been taken in the cases of Messrs Mirpur Khas

			approval after the revival of the Constitution.	Sugar Mills Ltd. v. Consolidated Sugar Mills Ltd. and 3 others PLD 1987 Kar. 225. The sort also decided against the Petitioner's contention that the abolition of Mill Zones does not consequently result in the abolition of the cess.

Excise Duty on Production Capacity (Sugar) Rules of 1966:

#	Citation	Name	Summary	Judgment
1.	1971 PLD 210 PESHAWAR-HIGH-COURT	CHARSADDA SUGAR MILLS LTD. VS GOVERNMENT OF PAKISTAN	The petitioner has prayed for the following reliefs: (a) To declare that the Excise Duty on Production Capacity (Sugar) Rules of 1966 were not good law and (b) To declare that the notification directing the assessment of duty based on production capacity could not be given effect to and in terms of the express provisions of section 3 (l) and section 3 (7), Central Excises and Salt Act of 1944, the only method of levying excise duty legally available to the respondents was based on the actual production of sugar. (c) To direct the respondents that any determination of the production capacity of the petitioner could only be done after inviting/permitting the petitioner to lead evidence relevant to the matter and that respondent No. 2 could not determine the production capacity of the petitioner's	Declare that the petitioner's assessment under the regulations was issued without legal authority and had no legal effect, and that no recovery could be taken from the petitioner based on the assessment. The petitioner's costs are to be paid by the respondents. The petition was allowed.

			Sugar Mill otherwise than by giving the petitioner an opportunity of being heard and that the law contemplated their passing a speaking order in this behalf. (d) To declare and order for the reasons explained in paras. 18, 19, 20 and 21 of the writ that respondent No. 2 was bound to allow the petitioner rebate from payment of excise duty for 41 days as against 32 days allowed by respondent No. 2. (e) To declare the order of respondent No. 2 fixing the production capacity of the petitioner at 30,000 tons for the year 1966 67 and 26,000 tonnes for the year 1967 68 as illegal and that as such no action could be taken on its basis. (f) To declare that the amendments introduced by the Finance Act of 1966 in section 3 of the Central Excises and Salt Act of 1944 were ultra vires. (g) To direct the respondents to levy and realize from the petitioner excise duty on the production of sugar based on sugar actually produced by it in any year. (h) To direct the respondents to refund to the petitioner any amount realized from it in excess of its legal liability.	

West Pakistan Wheat, Wheat Atta, Maize, Rice and Sugar Distribution Order 1967

#	Citation	Name	Summary	Judgment
1.	1984 CLC 1453 LAHORE-HIGH-COURT-LAHORE	MUHAMMAD ASGHAR VS SECRETARY, GOVERNMENT OF PUNJAB FOOD DEPARTMENT, LAHORE	Respondents Nos. 4 and 5 are the two depot owners who were sued by the Petitioner. Following an investigation, the District Controller of Sargodha issued an order cancelling their authorisation. The Deputy Director of Food, Sargodha Region, Sargodha, dismissed their appeal. Following their amendment, the Secretary to the Punjab Government, Food Department, Lahore, issued the following order: I believe that the harsh penalty of terminating depot authorisation/nomination was unnecessary in the circumstances of the case, especially when the involvement of a political faction, as noted in the Assistant Commissioner's Inquiry Report, cannot be ruled out. I believe that forfeiture of the entire monetary security deposited by the depot holders will satisfy the legal requirements. I place my order accordingly." This was challenged by the Petitioner on the grounds that according to s. 6 of the Act, cancellation of authorisation and forfeiture of security go together.	Petition dismissed. Subsection (3) of the same section quoted states the Government may pass any order as it may think fit. Therefore, Petitioner's contention is without merit.
2.	1982 CLC 538 LAHORE-HIGH-COURT-LAHORE	MUHAMMAD SADIQ VS DISTRICT FOOD CONTROLLER, SAHIWAL	The Petitioner is a retail distributor for Basti Rehmatpura in Okara, and the District Magistrate granted him authorisation. A case was filed against him based on a written complaint filed by	Petition allowed. Petitioner had, in fact, also availed the legal remedy of appeal under clause 6(2) Wheat, Wheat-Atta, Maize, Rice and Sugar Distribution

			Magistrate Section 30, Okara, alleging that during a raid conducted by him, a bag of sugar was discovered in the home of one Abdul Latif, who had reportedly purchased it for his hotel on the black market from the Petitioner. It was also determined that the Petitioner had forged the record by obtaining false thumbprints. The Petitioner challenged the suspension of the authorisation order on the grounds that he was not served with a show-cause notice or given the opportunity to defend his case before the order was made. According to them, there is no legal justification for suspension just because a criminal case was registered against them. Respondent 3, contested on grounds that the present writ is not legally competent as Petitioner had not exhausted other remedies and has not come with clean hands. Secondly, since the impugned order is not a final order as the authorisation of the Petitioner has not been cancelled so far and, therefore, they cannot challenge it. Petitioner should only approach this Court if authorisation had been cancelled.	Order, 1967 before filing the present petition. Regardless, on the facts, since the Petitioner had been condemned and unheard and the suspension order was made in utter disregard of the principle of natural justice, audi alteram partem, the Petitioner was not bound to file a revision petition against the appellate order before coming to the Court. Well-settled rule of law: "In case of excess of jurisdiction, an aggrieved person can invoke the writ jurisdiction of the High Court without resorting to other remedies". Secondly, suspension of authorisation is also a penalty thus, the impugned order being penal in nature has been rightly challenged by the Petitioner.
3.	1979 CLC 486 LAHORE-HIGH-COURT-LAHORE	ZAFAR ASIF VS PROVINCE OF PUNJAB	Petitioners were allocated depots regularly but were later served with notices of cancellation. The sanctioned authorisations that were in	All revisional applications were dismissed EXCEPT that of Zafar Asif. Claim to the injunction was turned down because they did not have a fair

			breach of the law were subjected to inspection by a Committee after the declaration of martial law. Rationing Controller revoked then numerous authorisations. 49 people who were harmed by the Rationing Controller's order filed lawsuits in front of the learned Additional Administrative Judge, seeking declaratory judgments that the orders cancelling their authorisations were void, illegal, unwarranted in law and in excess of jurisdiction. Injunctions were sought. The learned trial Judge held that the Petitioners failed to make a prima facie case and Petitioners would not suffer irreparably if the injunction were refused. Applications were turned down. Appeals were also unsuccessful. The contention in the present case is that Rationing Controller was not competent to pass the impugned order. He had acted in a mechanical way which merely gave effect to the recommendation made by the District Allotment Board and, finally that District Magistrate alone was empowered to withdraw authorisations sanctioned in favour of the petitioners.	question to raise at the trial as to the existence of a legal right. In the circumstances, the question of whether the Rationing Controller was not competent to cancel the authorisation in favour of the Petitioners, is not significant. The assertion that the order was passed behind the back of the Petitioners is factually incorrect. However, while some Petitioners did have a good prima facie case to challenge the legality of the order, they were still declined temporary injunction because they were ineligible ex facie for sanction of the depot and had a relative who had been sanctioned authorisations. The Court granted an exception for Zafar Asif who was distinguished from the above with nothing to show that he was ineligible for sanction.
4.	1977 PLD 212 LAHORE-HIGH-COURT-LAHORE	ISHAQUE HUSSAIN VS SHAHZAD HASSAN PERVAIZ ADDITIONAL DISTRICT COMMISSIONER	The District Magistrate of Rawalpindi granted the petitioners permission to distribute wheat, wheat atta, maize, rice, and sugar under the West Pakistan Wheat, Wheat Atta, Maize, Rice, and	Petition accepted. Although there is no express prohibition for the Additional District Commissioner, it can be read into the provisions

		(GENERAL) RAWALPINDI	Sugar Distribution Order, 1967. By a separate order, the Additional District Commissioner (General), Rawalpindi, revoked these authorisations. This was because they lacked licences under the Punjab Sugar Licensing Control Order, 1972, and the West Pakistan Foodgrains (Licensing Control) Order, 1957, and they had committed various violations. Appeals made were also dismissed. Three contentions were raised by the Petitioner; 1) The authorisations could legally only be cancelled by the District Magistrate – not the Additional District Commissioner 2) Since the authorisations were granted under the 1967 Order, there was no need for a sugar licence or foodgrain license 3) The order passed suffers from malafides	of the 1967 Order by necessary implication. The 1967 Order empowers the District Magistrate alone to exercise the relevant power.
5.	1976 PLD 919 LAHORE-HIGH-COURT-LAHORE	KHUDA BAKHSH KHADIM HUSSAIN VS SYED ANWAR HUSSAIN, M.I.C. KASUR	The Petitioners were depot owners who were granted permission to operate under the West Pakistan Wheat, Wheat Atta, Maize, Rice, and Sugar Distribution Order, 1967. Raids were carried out by Magistrates who inspected the Ration Depots and discovered grave anomalies. Based on their reports, criminal proceedings were filed against the petitioners under the West Pakistan Foodstuffs	Petition dismissed. The quoted provision makes express provisions for the District Magistrate to appoint any other official to act as Inspector and therefore, the order appointing the Magistrates who conducted the raid was within the meaning of the 1967 Order. Thus,

			(Control) Act of 1958. Meanwhile, the District Food Controller has placed a hold on their licences pending final action on the termination of the licences. The Petitioners mainly challenge the suspension of their authorisations on the grounds that only an "Inspector" within the meaning of para 2, clause (k) of the 1967 Order could enter the premises of the Petitioners to carry out a search. The Magistrates who conducted the search could not be "Inspectors" and so, the suspension was without lawful authority.	the only contention raised is without force.
6.	1975 PLD 25 KARACHI-HIGH-COURT-SINDH	RAEES AHMAD VS RATIONING CONTROLLER	The petition was brought to overturn a decision issued by the Food Department of the Government of Sind on October 11, 1973, in which the petitioner's licence was revoked, the shop was sealed, and the petitioner's security deposit of Rs. 250 was forfeited. Inspectors from the Food Department paid a visit to the petitioner's ration shop and inspected the records on June 10, 1973. It appears that several anomalies have been discovered. As a result, a report was produced, and the petitioner's store was sealed and his licence was revoked based on that report. The learned counsel for the petitioner's lone argument before us is that because the action of cancelling the licence and forfeiting the security deposit was taken without notice to the petitioner, the principles of natural justice were breached, and the action was thus without jurisdiction.	Petition dismissed. The petitioner has the option of approaching the licencing authorities to request a renewal of the licence or a new licence. As a result, the petition is dismissed with no decision as to costs.

1970s

Excise Duty on Production Capacity (Sugar) Rules of 1972

#	Citation	Name	Summary	Judgment
1.	1992 S C M R 986	CRESCENT SUGAR MILLS AND DISTILLERY LTD. VS ASSISTANT COLLECTOR OF CEN-TRAL EXCISES AND LAND CUSTOMS	The appellant failed to pay the monthly instalments of Central Excise Duty based on production capacity. The Assistant Collector of Central Excise issued notice to the appellant to show cause why additional excise duty should not be recovered from him under rule 10 of the Central Excise Rules of 1944. The appellant replied to the show-cause notice. The Assistant Collector held that the appellant is liable to pay anyway, under rule 5(3) of the Production Capacity (Sugar) Rules of 1972. This order was maintained up to the Central Board of Revenue and the Petitioner's Constitutional petition was dismissed by the High Court. The learned counsel contended that the demand made by the Respondent is a penalty and unless it is adjudicated upon by a competent authority authorised under s. 33 of the Act, no demand could be made from the appellant.	Appeal dismissed. The learned counsel's argument holds no force. The provision is self-executing. Liability has already been determined by the Rule. It clearly lays down that in case of default, an additional duty shall be paid. This is not a penalty.
2.	1991 C L C 1167	COMMITTEE OF ADMINISTRATIO N FAUJI FOUNDATION, RAWALPINDI CANTT. VS CENTRAL BOARD OF REVENUE,	The Petitioner had requested for abatement of Excise Duty under rule 4 of the Excise Duty on Production Capacity (Sugar) Rules of 1972, on the shortfall of sugar production during the crushing season. Respondent No.1 granted abatement accordingly by	Petition dismissed. Since the pleas of reasons leading to the shortfall of the production were supported with no evidence the Court held in favour of the Respondent.

		ISLAMABAD	order dated 5 Jul 1975. The Petitioner challenged the aforesaid order before this Court. The order was set aside by this Court and the case was remanded to the Respondent with direction to decide the Petitioner's claim for abatement in terms of Rule 4 of the aforesaid Rules. The Petitioner by letter dated 23 Feb 1981 requested the Respondent to grant abatement of duty on the entire shortfall as prayed earlier in the application.	
3.	1990 CLC 752	ALNOOR SUGAR MILLS LTD. VS ISLAMIC REPUBLIC OF PAKISTAN	The Petitioner had filed for relief in the penalty levied upon him and demanded a refund for the amount already paid by him since the Central Board of Revenue had provided a waiver upon 2 conditions, which the explanation for default satisfied. The Collector made the relevant recommendation to the Central Board of Revenue which was not accepted without justifiable grounds.	Petition dismissed. The case was remanded to the Central Board of Revenue.
4.	1988 PLD 344	BAHAWALNAGAR SUGAR MILLS VS PAKISTAN	Rule 4 of the Excise Duty on Production Capacity (Sugar) Rules of 1972 enables the manufacturer to claim abatement of duty, where the shortfall in production has been beyond its control and is substantial (not minor). The Petitioner claimed abatement because of a shortfall, during three tenures.	While the court accepted the lack of sugar cane throughout the season which consequently raised the prices of other substitutional raw materials to be reasons out of the miller's control and decreased the number of days the mill worked for, for the shortfall of years 1972-1973. However, the same reasons were held against the mills as the facts suggested differently for the years 1973-1975.

5.	1987 MLD 505	PAKISTAN INDUSTRIAL DEVELOPMENT CORPORATION (Pvt.) Ltd. VS CENTRAL BOARD OF REVENUE	In pursuit of Rule 4 of the Excise Duty on Production Capacity (Sugar) Rules of 1972, the Petitioner had requested abatement, part of which was allowed. The Petitioner had provided reasons for the paucity of sugarcane, irregularity in supplies, damage to cane crop caused by severe frost and diversion of cane supplies to our making. The CBR had taken the stand that the Mills crushed sugar for more days than in the preceding crushing season but failed to capitalise and instead of increasing their production, further declined. As most of the other factors had remained the same a plausible explanation for this further shortfall was warranted which the applicants failed to put forth. The Petitioner then applied for a review putting forth no new ground and thus, the application was disallowed by CBR under the impugned order.	Appeal dismissed. The order was not open for review by the CBR, especially since the application was filed after one year and four months and no new ground had come up. They had had sufficient opportunity to make their case before CBR before the order was passed. They then proceeded to accept the resultant partial abatement. If they were unsatisfied, they should have sought relief in any other manner possible. Even though the review application was disallowed without hearing the Petitioners, no justification was provided as to why the Petitioner was entitled to be heard again when there was no new ground to be discussed. Furthermore, the very fact of the delay works against the Petitioner's bona fide intent.
6.	1982 PLD 1	CRESCENT SUGAR MILLS & DISTILLERY LTD., FAISALABAD VS CENTRAL BOARD OF REVENUE, ISLAMABAD	Appellant-Company applied for exemption of payment of excise duty on the shortfall of the quantity of sugar and claimed that the Board of Revenue had heard the representative of the company twice, but the order was passed a year later by another member of the Board.	Appeal accepted. Principles of Natural Justice demand that a right of fair hearing be read into the provisions of the Rules if not expressly provided. The appellant was held to not have been given a fair opportunity for a hearing,

				because the Officer hearing had not decided it himself and also because a year had elapsed between the hearing and the date of order. It was held that if the judgement was reserved and not written within three to four months, a fresh hearing should be granted.
7.	1981 PLD 357	TREASURER OF CHARITABLE ENDOWMENTS FOR PAKISTAN VS CENTRAL BOARD OF REVENUE, ISLAMABAD	The Petitioners, per Rule 4, were allowed abatement and the proposed amount by the CBR was accepted by the Petitioner, subject to the 10% deduction in the total figure. Later, the initial consent of the company was used by the Respondent as an estoppel against challenging the proposed abatement.	Petition accepted. The Court took notice that the CBR had evolved a formula for granting abatement under rule 4 of the Rules, whereby they were to disallow 10% abatement in all cases relying upon a Supreme Court judgement, irrespective of the facts of each case. Relying upon Rule 3 of the Rules "...at' such rate and to such extent as it may consider proper." the Court remanded the case to the Respondent and held that consent cannot be used as an estoppel against lawful provisions.
8.	1981 PLD 357	TREASURER OF CHARITABLE ENDOWMENTS FOR PAKISTAN VS CENTRAL BOARD OF REVENUE, ISLAMABAD	In pursuance of Rule 4 allowing for abatement, the Respondent mill had applied to the CBR for relief, providing the reasons for the growers' strike, the loss of sucrose content due to mismanagement of sugarcane and shortage of cane due to adverse growing conditions. The Board was stringent upon its formulae of a 10% deduction with no respect to the factors contributing to the shortfall.	Petition dismissed. The petitioner was directed by the Court to assess fairly.

9.	1978 PLD 864	CRESCENT SUGAR MILLS & DISTILLERY LTD. VS PAKISTAN	Consequent to the floods of 1973, the Federal Government levied additional taxes to provide relief. The taxes were contested on the ground that the excise duty is calculated based on the production capacity of the plant or machinery employed to manufacture them. Moreover, the said taxation does not come under the authority of the Federal Legislature. It was argued that while taxation was a part of the Federal Legislative List, flood relief and consequently, this Flood Relief Surcharge was not.	It was held that since the Parliament has chosen the word "surcharge" to attribute the tax and not Flood Relief Tax, it identifies itself as an independent, unrelated imposition, in the premise of the Federal Government.
10.	1976 PLD 370	TREASURER OF CHARITABLE ENDOWMENTS FOR PAKISTAN VS CENTRAL BOARD OF REVENUE ISLAMABAD	The determination of production capacity by the Central Board of Revenue did not take into consideration factors enumerated in the Excise Duty on Production Capacity (Sugar) Rules of 1972, which is a must and set the production capacity lower than what was proposed by the Petitioners.	Petition accepted. The case was remanded to the CBR and directed to be decided on merits.

Price Control and Prevention of Profiteering and Hoarding Act of 1977:

#	Citation	Name	Summary	Judgment
1.	1985 PCRLJ 1828 KARACHI-HIGH-COURT-SINDH	ABDUL RASHID V STATE[125]	The Applicant was convicted and sentenced by a First-Class Magistrate under s.7 of the Act for selling Kinno at a price higher than that which was fixed by the government. The	Application allowed. The conviction is bad in the present case. The revision application is allowed. The conviction

[125] NOTE: Though this case does not relate to the sugar industry, the legal principles applied here set a precedent for the court of law and are applicable to sugar as it is also an 'essential commodity' under the Schedule of this Act.

			Applicant appealed against this, but it was dismissed by the IVth Additional Sessions Judge, Karachi by his order, dated 8 Sep 1982. The Applicant challenged this order in this revision application on the grounds that Kinno/Malta/Mattar are not 'essential commodities' [126] as set out in the Schedule of the Act and therefore, the provision under s.6(2)[127] does not apply.	and sentence are set aside and the Applicant stands acquitted of the offence he has been charged with. The fine, if recovered from the Applicant, shall be refunded to him.
2.	1979 PCRLJ 912 LAHORE-HIGH-COURT-LAHORE	MIAN NAZIR AHMAD VS SUMMARY MILITARY COURT, JHELUM[128] KHALID	Petitioner, a contractor for M.E.S., was arrested under ss. 3 & 7 of the Act on suspicion that he may be storing cement bags - issued for the construction work entrusted to him – for sale in the black market. The case was eventually submitted before the Summary Military Court No.20, Jhelum where it was pending adjudication and presently, the Petitioner seeks a transfer of this case to the ordinary competent Court to try and dispose of the same.	Petition accepted. The circumstances of the case show that the case is not of an extraordinary nature, legal necessity nor involving public interest and as such, it should be tried by a competent Civil Court and not the Military Court.
3.	1983 CLC 464 KARACHI-HIGH-COURT-SINDH	MEAT MERCHANTS WELFARE ASSOCIATION, KARACHI VS GOVERNMENT OF SIND[129]	In this petition, Petitioner No. 1 is a Meat Merchants Welfare Association, whereas Petitioner No. 2 is a meat seller. This case concerns ss. 3 & 6 of	Petition accepted. A plain reading of the two sections together clearly indicates that a control price should be a fair price, which cannot

[126] An 'essential commodity' for the purposes of the Price Control and Prevention of Profiteering and Hoarding Act of 1977 are specifically those commodities listed in the Schedule to the Act.

[127] Price Control and Prevention of Profiteering and Hoarding Act of 1977, s 6(2); No person shall sell or re-sell any essential commodity at a, price higher than the maximum price so fixed.

[128] NOTE: Though this case does not relate to the sugar industry, the legal principles applied here set a precedent for the court of law and are applicable to sugar as it is also an 'essential commodity' under the Schedule of this Act.

[129] NOTE: Though this case does not relate to the sugar industry, the legal principles applied here set a precedent for the court of law and are applicable to sugar as it is also an 'essential commodity' under the Schedule of this Act.

			the Act (fixation of price of essential commodities) The Petitioners have sought the following relief; (a) declare that the retail prices of meat fixed by the respondents are unjust, unreasonable, discriminatory, arbitrary and without lawful authority and hence unenforceable in law. (b) declare that without regulating and ensuring the supply of animals and meat at fixed rates the respondents or any other authority have no power, authority or right to fist retail prices of meat at the rate whereby a reasonable margin of profit is not left. (c) Restrain the respondents from enforcing the impugned notification and/or conducting raids based on impugned notifications. (d) quash the notifications issued by the respondents fixing the retail prices as well as convictions awarded in consequence thereof. (e) quash the order of respondent No. 3 dated 13-3-1980 convicting Petitioner No. 2 and others. (f) grant any other relief deemed fit in the circumstances of the case. (g) grant compensatory costs. The Petitioners have averred that the retail control prices of the meat have not been fixed with reference to the	be fixed in respect of the subject matters of the petition without having the data on the latest prices of the animals. Though the costs were originally fixed based on a price analysis conducted a month before the issuance of the notification, the prices of animals are variable so, a notification issued in May 1980 cannot hold the ground for two years without having a fresh price analysis. Accordingly, the Controller-General should review the control prices at reasonable intervals to ensure that they are realistic and workable. Secondly, the notifications were also observed to not have been strictly enforced as mutton & beef were commonly not being sold at control prices. For these reasons, the notifications were held to be without lawful authority and of no legal effect.

			cost of the meat. The respondents have filed a counter-affidavit in which it has been averred that the control prices have been fixed based on the price analysis carried out. However, it is indicated that the price analysis of mutton was carried out based on the cost of meat prevalent in July 1979 and there is no date given on the working of cost in respect of beef.	
4.	1983 CLC 26 LAHORE-HIGH-COURT-LAHORE	ISRAR HUSSAIN SHAH VS DEPUTY COMMISSIONER, LAHORE[130]	The Deputy Commissioner fixed the prices of various kinds of soft drinks under s. 3 of the Act in their respective district. The Appellants, who are contractors for selling aerated water in cinema houses, filed a writ petition against this which was dismissed by the Single Judge in Chambers dated 14 Sep 1982. The Appellants submit that the prices fixed are not fair as the actual calculated service charges amount to Rs. 8.40/crate whereas the Single Judge indicated that the margin of profit is Rs. 8/crate. This has caused the Appellant to suffer losses and is, thus, appealing against the directed order of the Single Judge. The other plea is that the fixation of fair price should take into consideration the cost and sale price of a commodity leaving some margin of profit to the contractors.	Appeal accepted. 'Fair price' has two prerequisites; (i) there should be a reasonable margin of profit and, (ii) for the determination of this, a hearing must be provided to the persons affected. Even if the statute does not expressly provide for a hearing, the maxim audi alteram partem has to be read into the statute. The order of the Single Judge is set aside and District Magistrate is directed to hear the Appellants before fixing the price.

[130] NOTE: Though this case does not relate to the sugar industry, the legal principles applied here set a precedent for the court of law and are applicable to sugar as it is also an 'essential commodity' under the Schedule of this Act.

5.	1985 MLD 576 KARACHI-HIGH-COURT-SINDH	COKE AND OIL PRODUCTS LTD. VS GOVERNMENT OF PAKISTAN[131]	Parties: Coke and Oil Products Ltd. (Petitioner), Government of Pakistan through Secretary, Ministry of Industries, Islamabad and 2 others (Respondents). The Petitioner Company is engaged in the manufacturing of cooking oil marketing it under the Brand name 'Bella Cooking Oil' and extracting cottonseed oil for which purpose the Petitioner set up a solvent Extracting Plant with a Cooking Oil Refinery at Nawabshah Sind. On 2 Sep 1973, the Government nationalized the ghee industry and accordingly, began taking measures to acquire cotton seed oil. Vide notification dated 5 Aug 1974, the entire control of the procurement and distribution of cotton seed oil was given to Respondent No. 3. A second notification dated 18 Apr 1980, directed that no producer shall consume or dispose of any quantity of cotton seed oil except the Hydrogenated Vegetable Oil Factory designated for the purpose by the Ghee Corporation of Pakistan and their nominee. The Petitioner challenged both these notifications on the grounds that the Government was not empowered to acquire the cotton seed from persons using it in their own Solvent	Petition dismissed. Petition dismissed on point of laches. However, even on merits, the Petitioner had no case.

[131] NOTE: Though this case does not relate to the sugar industry, the legal principles applied here set a precedent for the court of law and are applicable to sugar as it is also an 'essential commodity' under the Schedule of this Act.

			Extraction Plant. Secondly, it was argued that the Federal Government had not delegated the power to the Joint Controller General, Prices and Supplies to issue notification impugned in this petition.	
6.	1985 CLC 2026 LAHORE-HIGH-COURT-LAHORE	HAFIZ BROTHERS LTD. VS GOVERNMENT OF PAKISTAN[132]	Parties: Hafiz Brothers Ltd. (Petitioner), Government of Pakistan and 3 others (Respondents) The Petitioner company manufactures cooking oil and was using cotton-seed oil for the manufacture of cooking oil in their plant. They were restrained from doing so due to the notification dated 18 Apr 1980[133] and the Petitioner has filed a constitutional petition for the issuance of a direction to permit the petitioner company to use their cotton-seed oil for the preparation of the cooking oil and not to force it to sell their cotton-seed oil to a third party. The Petitioner contended that the Incharge Minister had granted an exemption to the Petitioner company from supplying oil to the GCP by the order dated 20 Jun 1983.	Petition dismissed. 1. The Minister had not passed a final order 2. It was for the department to grant/refuse an exemption 3. There is no law which gives the Minister the authority to pass an order in contravention of the notification issued by the department under ss. 3 & 6 of the Act. 4. The petitioner does not suffer irreparable loss
7.	1994 PLD 101 QUETTA-HIGH-COURT-BALOCHISTAN	MUHAMMAD SHAFI VS PRICE CONTROL BOARD.[134]	Parties: Sheikh Muhammad Shafi and 24 others (Petitioners), Price Control Board through Chairman and	Petition dismissed. Merely arguing that prices cannot be fixed

[132] NOTE: Though this case does not relate to the sugar industry, the legal principles applied here set a precedent for the court of law and are applicable to sugar as it is also an 'essential commodity' under the Schedule of this Act.

[133] Notification No. S.R.O 355(1)/80, dated 18-3-1980; producers of cotton seed oil were restrained not only from from selling their oil except to the Ghee Corporation of Pakistan and their nominee, but were also restrained from consuming the cotton seed oil themselves.

[134] NOTE: Though this case does not relate to the sugar industry, the legal principles applied here set a precedent for the court of law and are applicable to sugar as it is also an 'essential commodity' under the Schedule of this Act.

			another (Respondents). Petitioners deal in the business of selling chicken, broilers, eggs and fish etc. It is their grievance that while fixing prices of poultry etc. local administration and District Price Committee has ignored the original purchase value including expenses incurred by them for receiving said commodities for sale in Quetta Town. They mainly argued that since poultry etc. was prone to fluctuations in rate due to public demand, Pakistan Poultry Association alone was competent to fix rates or make changes for increase, due to fluctuation of rates in the market. Secondly, that under the provisions of the Act, District Magistrate was not empowered to fix prices for poultry items.	because a particular commodity faces fluctuation of rates is not acceptable as this can lead to arbitrary price hikes leading to unjust and adverse effects for the general public. Secondly, not only are fish, mutton, beef, eggs poultry feed etc. included in the Schedule to the Act but representatives of the Petitioners were also heard before the current fixation so any grievances should have been resolved then. Also, the District Magistrate apart from authority prescribed under Balochistan Safety Regulation, 1947 enjoys inherent powers to check unreasonable or arbitrary increase of rates as an agent of the State.
8.	1980 PCRLJ	ALLAUDDIN VS THE STATE	Applicants were apprehended on 28 May 1979 for carrying 130 bags of sugar in a truck or van when the movement of sugar in the province of Sind was banned except on permit by the Provincial Government. It was contended that the sugar being transported was a part of the grower's quota on which there is no restriction of movement. The Applicants are thus seeking the quashment of proceedings pending against	Proceedings quashed. The sugar bags were part of the grower's quota so there was no restriction on their movement and the sugar bags were also found to have been duly covered by permits.

			them under ss. 7 & 10 of the 1977 Act and s. 6 West Pakistan Foodstuffs (Control) Act.	
9.	2007 YLR 268 LAHORE-HIGH-COURT-LAHORE	MUHAMMAD GULZAR VS DEPUTY DISTRICT OFFICER (REVENUE)/SPECIAL MAGISTRATE 1ST CLASS, MULTAN[135]	The petitioners were retail fruit sellers and authorities imposed a fine on them under s. 7 of the Act. Petitioners asserted that fruit is not an 'essential commodity' in the Schedule to the Act. Respondents contended that item (vii) (fruit juices) covers fruits as well.	Petition allowed. Upon a plain reading of the said item as also a reading of the entire schedule, it cannot at all be said that fruit has been declared as an essential commodity within the meaning of said law. Therefore, the Respondents have no lawful authority to impose and recover the penalty.
10.	1982 PCRLJ 228 KARACHI-HIGH-COURT-SINDH	FRUIT HAWKERS WELFARE ASSOCIATION, KARACHI VS THE GOVERNMENT OF SIND[136]	The Petitioner is an association of fruit merchants registered under the Societies Act. The Petitioners assert that fruits are not included in the Schedule to the Act and therefore, the price of fruits cannot be fixed. Secondly, in any case, no notification for the fixation of price was gazetted per s. 6. On the other hand, the Respondents contend that the Schedule was amended under s. 12 to include fruits through a notification issued in the official Gazette. Also, the prices were, in fact, fixed in accordance with s. 6.	Petition allowed. Respondents failed to produce any Gazette notification to show that the Schedule was amended under s. 12 or that prices were fixed in terms of s. 6. Therefore, relying on the Petitioner's averment on oath, it is held that there is no such Gazette notification or amendment.

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11.	2000 YLR 1772 KARACHI-HIGH-COURT-SINDH	ZULFIQAR AHMAD VS THE STATE		Overcharging is only an offence under the Price Control and Prevention of Profiteering and Hoarding Act of 1977 for items listed under it and not the Pakistan Penal Code.
12.	2014 S C M R 329	*REGARDING ENORMOUS INCREASE IN THE PRICE OF FLOUR: In the matter of Constitutional Petition No. 52 of 2013* [137]	These proceedings were initiated upon a letter dated 19 Oct 2013 addressed to the Chief Justice of Pakistan by Mr Liaquat Baloch, Secretary General, Jamat-e-Islami. Subsequently, notices were issued to the Ministry of Industries and Production and the Ministry of National Food Security, the Government of Pakistan. Response by the Ministry of Industries and Production; the flour mills are a part of the private sector and wheat is supplied to these mills by the provincial government so the recent price hike cannot be attributed to this Ministry. Response by the Ministry of National Food Security and Research Division: the Ministry had already announced a support price of PKR 1,200 per 40kg (PKR 30/kg) in a decision dated 26 Nov 2012. The Advocate-General asserted that the Government had already introduced an incentive price but due to inflation, the rates of flour continued to increase day by	Petition allowed. It was held that; • The Government had made windfall profits at the cost of the poor as a result of frequent price hikes • The government has failed to adopt a mechanism for Art. 38 of the Constitution wherein, it is the responsibility of the State to ensure the social and economic well-being of the people by preventing the concentration of wealth and providing the necessities of life • Ensuring supply and appropriate price controls for the purposes of s. 3 of the Foodstuffs Control Act of 1958 and the 1977 Act is the responsibility of both Federal and Provincial governments

[137] NOTE: Though this case does not relate to the sugar industry, the legal principles applied here set a precedent for the court of law and are applicable to sugar as it is also an 'essential commodity' under the Schedule of this Act.hedule of this Act.

			day. Furthermore, price controls (under the 1977 Act read with the Foodstuffs Control Act of 1958) were the responsibility of provincial governments. Counsel for the Petitioner pointed out that, in fact, in the past year, the price of flour had increased by 50% to Rs.48/kg.	

LANDMARK JUDGEMENT BY COMPETITION COMMISSION OF PAKISTAN

Another significant legal development regarding the regulation of the sugar industry is the recent historic judgement of the CCP. The **CCP** had issued show cause notices to the Pakistan Sugar Mills Association (PSMA) and its 84 member mills for alleged prima facie cartelisation in violation of Section 4 of the Competition Act of 2010.

The show cause notices were issued after the CCP decided to file a complaint under Section 30 of the Act based on the findings of an investigation into anti-competitive practices in the sugar industry. The Pakistan Sugar Mills Association (PSMA) has been identified as a front-runner for cartelisation in the sugar industry, according to the CCP's investigation. Evidence acquired during searches and inspections of PSMA and JDW Sugar Mills' facilities appears to indicate that these anti-competitive practices have continued since 2010. Exchanges of emails between a senior official of one of the Sugar Mills (a PSMA member) and PSMA Punjab zone office bearers regarding sensitive commercial information such as mill- and district-level sugar stock positions, as well as the quantity of cane crushed, sugar produced, recovery percentage, carry forward old/raw sugar, total sugar, quantity sold, balance, and sold percentage, were among the impounded data.

Furthermore, member sugar mills used the PSMA's platform to make commercially sensitive decisions like reducing domestic sugar stocks/supplies, which resulted in an increase in or maintenance of desirable price levels in the relevant market.

PSMA and its members were given the option to present their case in court with regard to the ostensibly specific infractions listed therein. PSMA and all 84 sugar mills allegedly breached the Act by collectively deciding to export sugar and, as a result, determining the amount of sugar to be supplied in Pakistan. Similarly, they violated the Act by lowering sugar supplies through exports, so collectively raising and maintaining sugar prices in Pakistan.

Furthermore, during the 2019-20 crushing season, 15 sugar mills in Punjab chose to collectively delay sugarcane crushing under the auspices of PSMA, resulting in a reduction in the quantity supplied in the market. Moreover, in Punjab, 45 sugar mills used PSMA's platform to share confidential business information.

Finally, in several tenders issued by USC, PSMA and sugar mills divided sugar quantities. The CCP found 19 mills in Punjab in violation of the Act in relation to a tender dated 2019, while 30 mills from across Pakistan were ordered to show cause in relation to an earlier offer.

PSMA and its members were engaged in price fixing and collusion in the acquisition of sugarcane, production of

sugar, and sale or trade of sugar, according to the findings of CCP's earlier sugar investigation report in 2009. In this case, it appears that PSMA and its member mills attempted to keep prices consistent by restricting the supply of sugar accessible on the domestic market, among other things.

The matter was heard by a full bench of the CCP, which includes Chairperson Ms Rahat Kaunain Hassan and Members Ms Shaista Bano, Ms Bushra Naz Malik, and Mr Mujtaba Lodhi. Based on calculations of 55 mills' 2019 turnover data, including consolidated turnover figures for same group mills, accessible with the commission, the penalty levied by the Commission, which is the highest to date, is about Rs44 billion or $265 million.

NAB INQUIRIES

See Table 2 below.

#	Case Title	Name of Accused	Name of Complainant	Gist of Allegation	Date of Complaint Received	Date of Auth			DOC	Date of Filing of Ref	Amount involved	Current Status
						CV	Inquiry	Investigation				
1.	Inquiry against Ghazi Akhter Khan and others of M/s Tandlianwala Sugar Mills Pvt Ltd	Ghazi Akhtar Khan Haroon Akhtar Khan Sabah Haroon Akhtar	FMU – SBP	Suspicious Transactions	30-04-2011	Inquiry directly authorized	15-06-2015	N/A	N/A	N/A	700 million	Inquiry closed on dated 4-10-2017
2.	Inquiry against Officers/ Officials of PEPCO/ PESCO, Owners of Al-Moiez Sugar Mill, D.I. Khan and Others	Officers/ Officials of PEPCO/ PESCO, Owners of Al-Moiez Sugar Mill, D.I. Khan and Others	Source Information	Misuse of Authority/ Corruption in Illegal Sale and Purchase of Electricity	09-01-2013	17-01-2013	2-09-2014 (Re-authorized on 12-10-2015)	26-07-2017	N/A	28-06-2018	270 million	Investigation completed and reference signed in EBM dated 16-05-2018
3.	ACR No. 53/2017 State V/s Riaz Qadeer Butt, etc Directors / Owners of M/s Haq Bahu Sugar Mills Pvt Ltd and others	Directors / Owners of M/s Haq Bahu Sugar Mills Pvt Ltd	Ministry of Commerce Govt of Pakistan	Non-delivery of Sugar to Trading Corporation Pakistan. Loss to the Govt Exchequer	25-11-2014	2-12-2014	28-07-2015	18-08-2016	N/A	28-08-2017	Rs. 1.4 billion	Acquitted

REPORT BY THE INQUIRY COMMITTEE CONSTITUTED BY THE PRIME MINISTER OF PAKISTAN REGARDING THE INCREASE IN SUGAR PRICES IN 2020

On 20 February 2020, the Inquiry Committee was constituted by the Prime Minister to probe into the ongoing sugar crisis in Pakistan. The objective of this was to identify the role of various stakeholders, including Government institutions (such as the Ministry of National Food Security, Ministry of Industries & Production, Federal Board of Revenue etc) and the private sector in the increase of sugar prices, particularly, from December 2018 to June 2019 wherein retail prices increased from Rs 55/kg to Rs 74/kg. It was also intended to identify any malafide on the part of any stakeholders and to make recommendations on any preventative or remedial measures which can be taken. This is a comprehensive report including inputs from all key stakeholders including various Government agencies, Pakistan Sugar Mills Association (PSMA) and representative bodies for farmers from all over the country.

The report identifies five key factors which form the basis for the determination of the retail price of sugar: ex-mill price, commission of agent, transportation costs, profit margins of wholesaler/broker and the profit margins of retailers. It also debunks the pervading misconception that the massive hike in prices was due to low production of sugarcane when, in reality, despite a decrease in cultivation area, production had been up 1 per cent from the preceding year. This misplaced perception then had the carry-on effect of causing farmers to demand up to 15 per cent higher than the Minimum Support Price as set by the Sugarcane Control Board (in consultation with all stakeholders) under the Sugar Factories Control Act of 1950.

It was also shown that there are some concerning gaps in the overseeing of the sector by Federal and Provincial Governments at various stages of the production and selling of sugar. For example, Governments are completely unaware as to how ex-mill prices (which are a foremost determinant in the price of sugar) are calculated and formulas provided by the CCP and the PSMA are notably nonconcurrent with one another. It appears that the Governments are completely dependent on the mills for crucial information such as the pricing of sugarcane, amount of cane crushed, recovery ratio, sugar produced, sugar sold etc. There is the menace of Satta, which despite being illegal, has been neglected and strict legal action is needed to rectify the situation. Furthermore, despite the availability of relevant laws (Registration of Godowns Acts in Punjab and Sindh), no data on the stocking of sugar is being maintained raising concerns about hoarding at the mills.

There were also obvious signs of malafide on the part of the sugar mills. According to the report, 51 per cent of the industry is controlled by 6 groups, most of which possess a political background meaning they also possess a strong influence on policy and administration. Furthermore, in 2009, the CCP took suo moto notice of the possibility of collusive behaviour of the mills and despite finding substantial evidence of cartelisation, no serious action was taken on this. The report notes notwithstanding that the CCP is the main regulator for the industry, it has remained a silent spectator since its inquiry in 2009.

[138] Sugar Inquiry Commission, 2020

Table 3: Percentage Share of Big Groups in National Production in 2018-2019[138]

#	Name of Group	No. of Mills	Production (Tonnes)	Recovery Ratio (%)	Per Cent of Total National Production
1	JDW Group[139]	6	1,040,382	11.15%	19.97%
2	RYK Group[140]	5	637,691	10.67%	12.24%
3	Al Moiz Group	5	354,231	10.26%	6.80%
4	Tandlianwala Group[141]	3	255,375	9.43%	4.90%
5	Omni Group[142]	10	86,394	10.50%	1.66%
6	Sharif Family Mills[143]	9	236,717	9.64%	4.54%
7	All Other	51	2,599,960	10.39%	49.90%
	Grand Total	**89**	**5,210,750**	**10.47%**	**100%**

Also, there are not only real concerns of hoarding in the mills to artificially create demand to drive up prices but also, unjustified export of sugar in 2018-2019 which was shown to materially cause market prices to go up. As a result, the report concluded that malpractice in the industry is used to cover up real production and possible off-record sale and hence, there is a dire need for a forensic audit and physical stocktaking of the mills to take place.

It is pertinent to mention that in 2020, there was an attempt by millers to have this Inquiry Report declared illegal and an order to this effect was granted by the Sindh High Court on 17 August 2020, as it was held that the Inquiry Commission was not properly constituted as per the law[144] however this was soon overturned, on 2 September 2020, by the Supreme Court.[145]

[139] Owned by Jahangir Tareen- Ex General Secretary of Pakistan Tehreek-e-Insaf

[140] Owned by Monis Elahi(Member Pakistan Muslim League (Q) and son of Chaudhry Pervaiz Elahi)

[141] Owned by Humayun Akhtar Khan, Ex-MNA Pakistan Tehreek-e-Insaf

[142] Owned by a close aide of Asif Ali Zardari – Ex-President of Pakistan and Member of Pakistan People's Party

[143] Owned by Sharif Family of Pakistan Muslim League (N), Established by Muhammad Mian Sharif

[144] Mirpurkhas Sugar Mills Limited v Federation of Pakistan [2021] PLD 418 KHC (Sindh)

[145] "Supreme Court suspends SHC order declaring Sugar Inquiry Commission report 'illegal'', 2020.

APPENDIX C:

Literature Review

***"The Late Colonial State and Economic Expansion, 1900- 1930s"* by Thomas J. Lindblad:**

This article looks at how Southeast Asia's rubber and tin industries supported US demands, as well as the position in the Netherlands Indies (modern-day Indonesia) more than half a century before WWII, and how sugar became the country's most important export commodity.

"The Indian Sugar Industry" by B.C.Burt:

The focus of this essay is on sugarcane breeding in the Indian Subcontinent. It includes a statistical study as well as the historical background of sugar production in the Indian subcontinent. It elucidates the mechanisation and industrialisation of the sugar business, in addition to the legislation enacted to safeguard it, for example, The Sugarcane Act of 1934.

"**The Late Colonial State and Economic Expansion, 1900- 1930s" by Thomas J. Lindblad:**

This article looks at how Southeast Asia's rubber and tin industries supported US demands, as well as the position in the Netherlands Indies (modern-day Indonesia) more than half a century before WWII, and how sugar became the country's most important export commodity.

"Exogenous Colonialism: Java Sugar between Nippon and Taikoo before and during the Interwar Depression, c. 1920-1940" by G. Roger Knight:

This article covers the course of sugar production and its import and export from the 1800s to the 1930s, in the era when sugar was the most valuable export commodity in the Netherlands Indies. The majority of sugar production took place on the large island of Java, which aided US demands and made up for a shortfall in Caribbean imports caused by the Spanish-American War.

"Sugarcane Cultivation and Sugar Industry in India: Historical Perspectives" by A. K. Shrivastava, A. K. Srivastava, S. Solomon, A. Sawnani, S. P. Shukla:

This paper examines the coefficient variation of decadal sugarcane area, production, yield, and recovery in the Indian subcontinent from 1930 to 1950. It also observes the goals and safeguards established by The Sugar Industry Protection Act of 1932.

First Report of S.C. on sugar and coffee:

This report stipulates a thorough examination of how the sugar industry in the Indian Subcontinent was power-driven by humans. It further discusses the irrigation system, the participants in the sugar production chain, and its comparative analysis to free African labour in the West Indies.

"Ownership Structure and Economic Outcomes: The Case of Sugarcane Mills in India" by Sendhil Mullainathan & Sandip Sukhtankar:

This paper highlights the onset of industrialisation in North Bihar, as well as the reorganisation of agricultural departments that focused on enhancing cane production and recognizing the cane crop's economic potential. It also addresses the establishment of British and Indian private sugar factories.

"Factors Determining Indian Sugar Production and Its Comparative Advantage" by Mr Satish Kansal:

The dominance of Japanese sugar in the Indian market is discussed in this study report. It also explains why the Sugar Industry Protection Act of 1932 was adopted, as well as its key provisions, and evaluates the Act's impact on the Indian market.

"A Brief Overview of the Sugarcane Act of 1934" by Ayush Verma:

The Sugarcane Act of 1934 is explained in its entirety in this research article, including why it was passed by the Central Legislature. It covers the key aspects, such as the "zoning system", and "command area," as well as the penalties that are to be imposed in case of breaches and infringements.

"The Adaptation Policy Paradox: The Implementation Deficit of Policies Framed as Climate Change Adaptation" by J Dupuis and P Knoepfel:

This article seeks to address the answer to one of the most recurring questions in the sugar industry, i.e., why do public policies time and again fail to achieve their claimed goals and why their implementation is confined to bureaucratic file rooms?

"Sugar Policy and Reform" by Larson, D. and Borrell, B., n.d:

This paper entails the regulatory policy in the Indian Subcontinent which may be traced back to the Defence of India Act of 1939, intended to prevent speculation and stockpiling during World War II. The paper also covers the ramifications faced in the sugar industry of the Indian subcontinent as a result of the catastrophic Bengal famine of 1942 which claimed the lives of nearly three (03) million people.

"Legal Control over the Sugar Industry"

This article sheds light on the government's purpose for enacting a plethora of laws, rules and regulations to regulate the sugar market and the rationale behind ensuring and accordingly implementing stringent controls by law.

"Analysis of Sugar Industry and Shortfall of Sugar" by Syed Asim Habib:

It highlights those difficulties which are faced by farmers in the processing of sugarcane, such as underweighting. It also covers the challenges that are faced by the farmers and how millers have built a monopoly that exerts an adversarial influence on the same.

"Sugar and Political Power III" by Adeel Malik:

This paper discusses the pro et contra of "zoning systems" and "command areas".

"Sugar Industry of Pakistan"

This article examines the sugar crisis prevalent in Pakistan as a result of institutional deficiencies, policy failures, massive budget deficits, and an inability to fulfil expanding sugar demand and understand the notion of economies of scale.

"A STUDY ON IMPACT OF GOVERNMENT REGULATIONS ON SUGAR INDUSTRY IN INDIA" by Goswami, N. and Sharma, K:

This research paper focuses on the reforms which have been brought about in Australia's sugar industry. The

paper focuses on the establishment of free zones and how they empower mill areas. It also emphasises critical elements which have led to significant reforms, such as the development of a single regulatory authority and the entire or partial deregulation of the sugar industry.

"The Adaptation Policy Paradox: the Implementation Deficit of Policies Framed as Climate Change Adaptation":

This research paper is an examination of the sugar industry's failure to implement public policy and why the laws remain on paper.

"Daily Jang Reports":

This report contains a statistical analysis of Pakistan's annual sugar consumption.

"The Pakistan Sugar Industry: An Economic and Policy Analysis" by Kamil Lodhi:

The establishment of sugar mills after partition laid the framework for commercial development in the 1950s, according to this study article. It also explored the post-de-zoning framework and its implications for the industry's market structure.

"What Does Matter? Liquidity or Profitability: A Case of Sugar Industry in Pakistan" by Muhammad Zulqarnain Safdar, Muhammad Zahid Awan, Zeeshan Ahmed, Muhammad Imran Qureshi, Tafakhar Hasnain:

This research study examines the gradual expansion in the number of sugar mills over the decades, as well as the statistics on yield, sugar production, and the sugar industry's labour force.

"Sugar Industry in Pakistan, Problems, Potentials" by Syed Jamil Ahmed Rizvi, FCMA:

This research article discusses the impact of sugar mill closures, as well as a comparison of Pakistan's production per hectare with that of Sudan and Zambia. It also goes through the causes behind Pakistan's decreased sugar productivity.

"The Political Economy of Industrial Development in Pakistan: A Long-Term Perspective" by Imran Ali and Adeel Malik:

The workings of Development Finance Institutions (DFIs) are discussed in this research study as how they were utilised to shift credit flows to sugar production, exacerbating the problem of sugar overcapacity.

"Analysis of Sugar Industry and Shortfall of Sugar" by Syed Asim Habib:

The latest statistics regarding sugarcane yield, GDP, and the number of sugar mills in Pakistan were presented in this research study.

Coelli, 2005:

The components to boost sugarcane productivity were highlighted by this author.

"Distortions in Producer Incentives of Cash Crops in Pakistan" by Abdul Salam, Pakistan Economic and Social Review 2019:

The devolution of agriculture following the 18th Amendment to the Pakistani Constitution is highlighted in this research paper, and how sugarcane prices are now controlled by the Provincial Administrations. It also goes

through the elements that influence the price of sugar in Pakistan.

Pakistan Sugar Mills Association (Government of Pakistan, 2020:

From 1985 to 2000, this survey provided a statistical analysis of the continuous increase in sugarcane output, yield per hectare, number of mills, sugar mill utilisation, sugar production, and recovery.

Friedman, 2011:

The relevance of sugarcane and its utilisation in other businesses that create consumable goods is highlighted by this author.

Gupta, 1998:

He argued that food crises are not always natural and are frequently caused by factory owners, as well as how powerful farmers have monopolized government agencies that serve as a conduit between farmers and sugar mills.

M. Ravallion, M. Lokshin (2000) and Haq et al (2008):

They discussed how sugar has become a rare commodity due to sugar mill owners' deliberate establishment of a high profit margin, not because of an artificial shortage.

"Changing Sugar Consumption Pattern in Pakistan and Increasing Sugar Industry's Profitability" by Imran Umer Chhapra, Asim Mashkoor & Nadeem A. Syed, Journal of Management and Social Sciences 2010:

The sugar situation in Pakistan was explored in this research report, and how mill owners and wholesalers raise sugar prices for unjust advantages during Ramadan.

"A History of Dismal Sugar Policies", Dawn Newspaper, 2006:

This article examined a report produced in 1988 by the National Commission on Agriculture, which stated that the region under cultivation was suffering from water stress, and how this affected sugar production.

"Sugar Policy and Reform" by Donald F. Larson and Brent Borrell:

In Mauritius, the Philippines, and South Africa, the sugar income is shared at a predetermined rate, according to this research paper. It emphasizes that legislating pricing systems that provide the correct incentives requires a high level of complexity.

"Farmers seek abolition of Gur Control Law", Dawn Newspaper, 2006:

This article provided a timeline of events that led to a decrease in gur consumption and an increase in the country's reliance on sugar and sugar products. It also explored how the government should repeal the Gur Control Order of 1948 and provide farmers with incentives.

"Sugar millers for re-enactment of Gur Act", Dawn Newspaper, 2006:

The politicisation of Pakistan's sugar and gur industries was discussed in this article.

"Sugar Pricing Technical Matter, Can't Interfere: LHC", Amir Riaz for The News, 2021:

This article discussed a recent ruling by Justice Shahid Jameel Khan of the Lahore High Court, who stated that price control and competition laws are not effectively enforced in Pakistan and ordered the provincial administration to ensure that all basic commodities are sold at controlled and fixed prices at retail outlets throughout the province, as required by the Constitution.

"Proposed Sugar Factories Act 1950 amendments jeopardise growers' interests" PSMA, Jawaad Rizvi, 2020:

The history of the Sugar Factories Control Act of 1950 is outlined in this article.

"Millers denying billions to cane growers producing high sucrose content crop", Nasir Jamal, Dawn, October 2020:

This article discusses the sucrose recovery in Sindh and South Punjab, as well as how growers are being pushed to invest in sucrose-rich varieties for increased output.

"Sugar Industry: A Case of Policy and Institutional Failure", Business Recorder by Dr Mahmood Ahmad, May 2020:

This article discusses how Pakistan is the only country where sugarcane pricing is not determined by the amount of sugar recovered.

"Profiting from delay in cane crushing", by Ashfak Bokhari, Dawn, December 2014:

The Sugar Factories Control Act is thought to permit the provincial government to establish the minimum procurement price unilaterally and arbitrarily, according to this article.

"Growers, millers inch closer to deal on cane rate" by Mohammad Hussain Khan, Dawn, September 2021:

The viewpoints of millers and farmers on the establishment of a minimum sugar price are similar, according to this article.

"Sugar inquiry report: a damning indictment of regulators" by Abdul Moiz Jaferii, Dawn, June 2020:

The sugar lobby has forced governments into violating the Sugar Factories Control Act of 1950, according to this report.

"Political Economy of Sugar Industry in Pakistan" by Ali Muhammad Khushk Aslam Memon M. Ibrahim Lashari, 2010:

This study examines the sugar industry's taxation, including the market committee fee and sugarcane/road cess, as well as how these revenues are spent.

"Misuse of sugar-cane cess fund" 2003:

This article focuses on corruption in the sugar sector, as collected revenues rarely make it to the government due to loopholes in the collecting process.

"A knee-jerk reaction of price controls", by Nasir Jamal, Dawn, 2021:

This article covers how the Price Control and Prevention of Profiteering and Hoarding Act of 1977 is still legally

relevant today, and how it has been widely criticized for merely being a band-aid solution to the widespread problem of rising prices due to inflation and shortages.

"14 ACs, magistrates deputed to check commodities' prices", International The News, 2021:

According to the Price Control and Prevention of Profiteering and Hoarding Act of 1977, businesses were required to show a price list, and 25 mobile stores were established to give needed commodities to citizens at reduced prices.

"Cost of Sugar Industry Regulations" by Dr Karim Khan, 2021:

According to Dr Karim Khan, the Sugar Supply-Chain Management Order 2021 was adopted to prevent mills and other entities involved in the supply of sugar from hoarding sugar. If the market was deregulated, sugarcane growers would be able to figure out their other possibilities. If sugar prices were competitive, sugar producers would be incentivized to enhance their productive, technical, and allocative efficiencies.

"Punjab Govt Vows to Rein in Sugar Sector", The Express Tribune, 2021:

The Punjab Sugar Supply Chain Management Order and the Prevention of Speculation in Essential Commodities Ordinance of 2021 were created to help people, according to this article.

"Punjab Govt Raid Sugar Mills After Manufacturers Refuse to Take Down Price", Geo News, 2021:

The Punjab Sugar Supply Chain Management Order of 2021 was used by the government to confiscate stocks from sugar mills and sell them in the market at declared pricing, according to this report.

"An exercise in self-defeat" by Ahmad Faraz Khan, Dawn, May 2021:

The Sugar Factories Control (Amendment) Ordinance of 2020 was enacted to respond rapidly to the sugar crisis, and it permitted the Punjab government to begin crushing operations in early November.

"Key Indicators of Sugar Industry: A Comparative Study of Punjab" by Randhawa, G. and Gupta, A

This article mainly examines the present status of the sugar mills in Punjab, India and performs a comparative analysis of cooperative and private sugar mills in the region based on key indicators. The paper also proposes various measures for the betterment of the sugar sector in Punjab.

"Review of Committee Reports on Indian Sugar Industry and Partial Decontrol" by P Asha Priyanka, M Chandrasekaran and E Nandakumar

This article reviews various committee reports on the Indian Sugar Industry from 1947 to 2013 and specifically traces their relevance to the 2013 partial decontrol and liberalisation of the industry.

"Sugar sector: speed up the process of deregulation" by Lavanya BT (Deccan Herald)

This article traces the historical development and deregulation of India's sugar industry and pushes for further deregulation of the industry as the author feels that partial decontrol has proven to be insufficient.

"STUDY ON INDIAN SUGAR INDUSTRY & ESTIMATION OF THE PRODUCTION OF SUGARCANE & WHITE SUGAR IN THE COUNTRY USING SPSS THROUGH COBB DOUGLAS MODEL" by Gaurav Kalra

The objective of this paper is to provide future estimates of sugar production in India using the Statistical Package for Social Science (SPSS) which is a widely used statistical package for linear and non-linear regression analysis.

Since the behaviour of production is generally non-linear, it can be analysed using the Cobb-Douglas function consisting of two independent variables, i.e., labour and capital.

"The Indian Sugar Industry Roadmap 2017" by KPMG

In light of global shifts in sugar trade and the emergence of sugarcane as a renewable energy source, this report was sponsored by the Indian Sugar Exim Corporation (ISEC), Indian Sugar Mills Association (ISMA) and National Federation of Co-operative Sugar Factories (NFCSF) to formulate a roadmap for the industry to research opportunities, assess potential for India and to develop a comprehensive and actionable roadmap to enable the industry to take its place as a food and energy producer for on of the world's leading economies.

"Initiatives and Implications of Philippine Sugar Liberalisation (FFTC Agricultural Policy Platform, 23 March 2020)" by Annette M Tobias

This article reviews the development of the policies and regulations governing the Filipino Sugar industry and documents the impact of sugar liberalisation. It further provides recommendations for the strengthening of the industry.

"Regulation and Reform of the Queensland Sugar Industry (ASMC 2014)" by JM Craigie

This paper provides a comprehensive roadmap of the Queensland Sugar Industry's regulatory journey from being over-regulated to the complete deregulation of the industry in 2006. It goes deep into the policy reasons and reports of the numerous committees that pushed for the change and the impact these have had.

"Regulation Overload: Review of Government Regulations Impacting the Australian Sugar Industry and their Implications for Industry Revitalisation and Long-Term Sustainability" by ASMC

In this paper, the Australian Sugar Mills Council (ASMC) pitches a Revitalisation plan to promote the long-term financial security, resilient regional communities and environmental sustainability of the industry. In doing so, the regulatory development of the Australian Sugar Industry is outlined, and a case is made for complete deregulation by emphasising the positive impact of the 2006 reforms for the industry and demonstrating how the subsequent re-regulation has done more harm than good.

"Rethinking on the growth mechanism of the Indian sugar industry" by Sheetal and Rajiv Kumar

This paper attempts to revisit the growth mechanism of the Indian sugar industry by deploying quantitative and qualitative metaphors.

"Decision Regulatory Impact Statement: Sugar Industry (Real Choice in Marketing) Bill 2015" by Queensland Productivity Commission

This paper reviewed the proposed provisions Sugar Industry (Real Choice in Marketing) Bill 2015 and upon analysis makes the case that there is no justification for the re-regulation of the Queensland sugar industry.

"Voluntary Compliance and Regulatory Enforcement" by John T Scholz

This article focuses on advocating for enforcement strategies that encourage voluntary compliance which can improve regulatory efficiency by reducing unnecessary enforcement and compliance costs associated with legal confrontation.

“Sugar Crops and Sugar Policy of Pakistan” by Inayatullah Khan and Muhammad Jamil

This is a review article documenting the production, processing and other agronomic and policy-related matters affecting sugarcane and sugar production in Pakistan.

“The Pakistan Sugar Industry, its Current Status and Future Needs” by Muhammad Awais Qureshi and Shahid Afghan

Given the importance of the sugarcane crop for Pakistan, this paper documents the progress of R&D for cane and the various agronomic and policy-related challenges faced in sugarcane cultivation. The paper then goes on to present recommendations laying down what needs to be done for the crop to reach its full potential.

“Analysis of Sugarcane Production in Punjab, Pakistan: Constraints and Yield Nexus” by Hafiz Ali Raza and Muhammad Amir

In light of the crisis faced by the sugarcane crop in Pakistan, this study endeavours to explore the reasons impeding the potential production of sugarcane in the Rahim Yar Khan district of Punjab, Pakistan.

“Sugarcane Production, Economics and Industry in Pakistan” by Muhammad Aamir Iqbal

This article is a study on sugarcane cultivation in Pakistan. It reviews the economic and agronomic factors affecting cane production and identifies impediments faced by the sector. Finally, the author emphasises the need for effective extension programs and raising awareness among farmers about the latest cultivation technology/practices.

“Deregulation in Practice” by David Boies

This article examines how regulation and deregulation affect strategic business decisions and what impact litigating in either of those contexts has on regulatory results.

“Developing Successful Agriculture: An Australian Case Study” by Zhang-Yue Zhou

In finding that the agri-food sector in many countries tends to suffer from excessive and poorly focused intervention and unsustainable practices, the author demonstrates how to achieve accountability and transparency in decision-making, outlines means of avoiding capture by vested interests in the drafting of public policy and illustrates what a sustainable and efficient agri-food sector looks like by way of the Australian example.

“Functional Statements of Sugar Regulatory Administration” by the Sugar Regulatory Administration (Philippines)

Outlines the roles and responsibilities of the various departments and limbs of the Sugar Regulatory Administration.

"Sugar mills’ zoning system illegal: cane commissioner" Dawn News, 12 December 2007

This article reports how the cane commissioner of Sindh stressed that sugar mills were not authorized to impose a self-created zoning system on growers and force the growers to sell their crops only to the mills in their area.

"Ministerial body proposes major reforms in sugar sector" Dawn News, 16 December 2021

A ministerial panel called for major reform in the sugar sector, suggesting a shift in sugarcane pricing based on sucrose content without any government role, the committee recommended the abolition of legislation by

provincial governments on the zoning of crops and leaving the choice of what to grow to farmers and market forces.

"Sugarcane and Punjab, Pakistan: Production, Processing and Challenges" by Muhammad Tayyab Safdar

This paper analyses the sugarcane production and processing system in Punjab and highlights some problems with the system, it tells us the importance of public and private in fighting these challenges. It talks about sugarcane cultivation and the low growth of downstream milling sucrose recovery rates.

'Supreme Court suspends SHC order declaring Sugar Inquiry Commission report 'illegal'' The Nation, 2 September 2020

This article reports how the Supreme Court of Pakistan suspended the Sindh High Court Judgment declaring the Sugar Inquiry Report 2020 illegal.

"The Sugar Industry of Pakistan – Understanding Structural and Regulatory Underpinnings of the Current Sugar Crisis" by Abedullah, Madeeha Gohar Qureshi, Omer Siddique and Uzma Zia

This brief analyses the extent to which various factors have contributed to the sugar crisis e.g. import tariffs, export subsidies, support price and cartelisation.

"Of 38 sugar mills in Sindh, 18 belong to Zardari, Omni Group, claims PTI" by The News International

This article reports that PTI leaders urged Prime Minister Imran Khan to form a special sugar inquiry committee for Sindh and impose a financial emergency in the province as the PM did not give any subsidy to the sugar mills.

List of Cases

Abdur Rashid Bhuiya vs A Hashim, Special Magistrate and Another [1963] PLD 551 Dhaka High Court

Army Welfare Sugar Mills vs Government of Sindh [2018] SCMR 727 Supreme Court

Fauji Sugar Mills vs Province of Punjab [1996] CLC 592 Lahore High Court

Bawany Sugar Mills vs The Cane Commissioner of Agriculture, Extension, Hyderabad Sindh and Another [1993] MLD 650

Shakarganj Sugar Mills Ltd Jhang vs Cane Commissioner, Lahore Punjab and Another [1987] CLC 1647

Al Baraka Bank (Pakistan) Ltd vs Province of Punjab [2018] CLD 626 Lahore High Court

Messrs Al Noor Sugar Mills Ltd vs Province of Punjab [2003] MLD 1940 Karachi High Court

Messrs Mirpurkhas Sugar Mills Ltd vs Consolidated Sugar Mills Ltd [1987] MLD 2417 Karachi High Court

Fecto Sugar Mills, Darya Khan vs Commissioner, Dera Ghazi Khan [1986] MLD 649 Lahore High Court

Baba Farid Sugar Mills Ltd, Okara vs Commissioner, Lahore Division [1984] CLC 1943 Lahore High Court

Consolidated Sugar Mills Ltd, Karachi vs United Sugar Mills Ltd, Karachi [1980] CLC 804 Karachi High Court

Mirpurkhas Sugar Mills Ltd vs Government of Sindh [1993] SCMR 920 Supreme Court

Haji Bashir Ahmad vs Cane Commissioner, Punjab [2013] PLD 81 Lahore High Court

Adam Sugar Mills Ltd vs Secretary of Food, Government of Punjab [2006] YLR 2271 Lahore High Court

State vs General Manager, Pingrio Sugar Mills [2005] YLR 2127 Karachi High Cour

Fecto Sugar Mills Ltd vs Government of Pakistan[2002] CLD 1183

Muhammad Afzal Warraich vs Muhammad Ramzan [2016] PLD 85 Lahore High Court

Shahtaj Sugar Mills Ltd vs Province of Punjab [2021] MLD 77 Lahore High Court

Noor Sugar Mills Ltd vs Market Committee [1989] PLD 449 Supreme Court

Bawany Sugar Mills Ltd vs Market Committee, Badin [1983] PLD 1 Karachi High Court

Shaukat Mehmood vs Government of Punjab [2012] CLD 1405

Mirpurkhas Sugar Mills Ltd vs Consolidated Sugar Mills Ltd [1987] PLD 225

Shahid Muhammad Khan vs The State [1993] Karachi High Court

Mirpurkhas Sugar Mills Ltd vs Province of Sindh [2020] CLC 232 Karachi High Court

Pakistan Beverage Ltd vs Deputy Director (Food) [1984] CLC 2687

Shahtaj Sugar Mills Ltd vs Province of Punjab [1998] SCMR 2492

Factor Sugar Mills Ltd vs Secretary Food [2008] 178 Supreme Court

Fecto Sugar Mills Ltd vs Secretary Food [2006] YLR 1169 Lahore High Court

National Sugar Industries Ltd vs Government of Punjab [2005] PLD 571 Lahore High Court

Shahtaj Sugar Mills Ltd vs Province of Punjab [1998] CLC 1912 Lahore High Court

Charsadda Sugar Mills Ltd vs Government of Pakistan [1971] PLD 210 Peshawar High Court

Muhammad Asghar vs Secretary, Government of Punjab Food Department, Lahore [1984] CLC 1453 Lahore High Court

Muhammad Sadiq vs District Food Controller, Sahiwal [1982] CLC 538 Lahore High Court

Zafar Asif vs Province of Punjab [1979] CLC 486 Lahore High Court

Ishaque Hussain vs Shahzad Hassan Pervaiz Additional District Commissioner (General) Rawalpindi [1977] PLD 212 Lahore High Court

Khuda Baksh Khadim Hussain vs Syed Anwar Hussain, MIC Kasur [1976] PLD 919 Lahore High Court

Raees Ahmad vs Rationing Controller [1975] PLD 25 Karachi High Court

Crescent Sugar Mills and Distillery Ltd vs Assistant Collector of Central Excises and Land Customs [1992] SCMR 986

Committee of Administration Fauji Foundation, Rawalpindi Cantt vs Central Board of Revenue, Islamabad [1991] CLC 1167

Al Noor Sugar Mills Ltd vs Islamic Republic of Pakistan [1990] CLC 752

Bahawalnagar Sugar Mills vs Pakistan [1988] PLD 344

Pakistan Industrial Development Corporation Pvt Ltd vs Central Board of Revenue [1987] MLD 505

Crescent Sugar Mills and Distillery Ltd, Faisalabad vs Central Board of Revenue [1982] PLD 1

Treasurer of Charitable Endowments for Pakistan vs Central Board of Revenue, Islamabad [1981] PLD 357

Federation of Pakistan vs Charsadda Sugar Mills Ltd [1978] SCMR 428

Crescent Sugar Mills and Distillery Ltd vs Pakistan [1978] PLD 864

Treasurer of Charitable Endowments for Pakistan vs Central Board of Revenue, Islamabad [1976] PLD 370

Abdul Rashid vs the State [1985] PCRLJ 1828 Karachi High Court

Mian Nazir Ahmad vs Summary Military Court, Jhelum [1979] PCRLJ 912 Lahore High Court

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List Of Legislation

Sugar Factories Control (Amendment) Act of 2021

Sugar Supply Chain Management Order of 2021

Price Control and Prevention of Profiteering and Hoarding Order of 2021

Punjab Prevention of Hoarding Act of 2020

Punjab Registration of Godowns Act of 2014

Sugar Factories Control (Sindh Amendment) Act of 2009

Sugar Factories Control (Sindh Amendment) Ordinance of 2002

Sugar Factories Control (Amendment) Ordinance of 2001

Sugar Factories Control (Sindh Amendment) Ordinance of 1995

Sugar Factories Control (Sindh Amendment) Ordinance of 1993

Sugar Factories Control (Sindh Amendment) Ordinance of 1985

Central Excise Duty on Sugar (Validation) Ordinance of 1979

Price Control and Prevention of Profiteering and Hoarding Act of 1977

Excise Duty on Production Capacity (Sugar) Rules of 1972

West Pakistan Foodstuffs (Control) (Sindh Amendment) Act of 1973

Sugar Export Subsidy Fund Ordinance of 1970

West Pakistan Wheat, Wheat Atta, Maize, Rice and Sugar Distribution Order of 1967

Excise Duty on Production Capacity (Sugar) Rules of 1966

West Pakistan Sugarcane (Development) Cess Rules of 1964

Punjab Sugarcane (Development) Cess Rules of 1964

Sugarcane Control Order of 1961

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Sugar Distribution Order of 1960

Sindh Foodstuff (Control) Act of 1958

Punjab Foodstuff (Control) Act of 1958

West Pakistan Foodstuffs (Control) Act of 1958

Sindh Sugar Factories Control Act of 1950

NWFP Sugar Factories Control Act of 1950

Punjab Factories Rules of 1950

Sugar Factories Control Rules of 1950

Sugar Factories Control Act of 1950

Gur Control Order of 1948

Sugar and Sugar Products Control Order of 1948

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Enhancing Transboundary Water Cooperation through Economic Valuation of Biodiversity & Ecosystem Services in the Kabul River Basin

Hameed Jamali, Shakeel Hayat and Muhammad Rafiq

ABSTRACT

The ongoing transboundary water conflicts in the Kabul River Basin (KRB) are narrowly conceptualised in terms of quantitative water distributions leading to win-lose situations, which are exacerbated due to ongoing insurgencies, climate change, growing industrialisation, and urbanisation. The existing transboundary water mechanisms are state-centric, bilateral, exclude other actors, and disregard the broader biodiversity and ecosystem services (BESS) of the river basin for enhancing human well-being. In the current study, we tried to explore a novel idea of using the BESS concept to bring together multiple stakeholders across the KRB and transform the water-sharing conflicts by redefining the water management problem in the context of a green water economy and evidence of shared environmental benefits. For the said purpose we used a market-based valuation method to estimate the provisioning services of KRB on the Pakistani side. The analysis was based on 403 randomly selected households. The result of the study reveals that the total economic value of the provisions of the ESS of Kabul River was PKR 616,000 per year (USD 3,080) per household. The study shows that ESS provided by the Kabul River are vital for the livelihood of the residents as the ESS provided is the main source of income for the localities. The results on the Pakistani side of the KRB suggest that the natural flow of water is a win-win situation for both Afghanistan and Pakistan, and certain ways and means should be explored for cooperation between the people of both countries for the mutual welfare of this region. The study recommends PES schemes and designing a GCF project for the sustainability and shared prosperity of the region.

1. INTRODUCTION

Biodiversity and the ESS is a complex but significant area, which influences the well-being of humans in diverse ways. The ESS can provide provisioning services as well as regulate services. The literature shows different approaches to the of provisioning ESS (Häyhä, Tiina, & Franzese, 2014). Placing an economic value on nature can be a powerful tool as it makes the invisible benefits identifiable. ESS represent outcomes of a natural system which benefits the people. The significance of water as a natural resource and ecosystem provides a wide range of services and various functions as the use of water for drinking, irrigation, or livestock (Bujnovský, 2018).

River water services provide numerous benefits in terms of social and ecological facilities, which benefit the people and contribute to the well-being of the area. Globally, in 150 countries, there are a total of approximately 310 transboundary rivers. Water-related conflicts are not only frequent but are increasing due to the current worsening situation of water globally. Several water treaties are in place between various countries, yet the conflicts emerge frequently (Wang, et al., 2021). The water politics of transboundary rivers are emerging as a compelling research field in social hydrology. Many international basins are governed by multi-level institutions. Besides, the valuation of the benefits of river systems can positively contribute to efficient river-water management and reduce water-related conflicts and problems (Khan & Zhao, 2019). However, this is not the case with managing the Kabul River Basin (KRB).

The KRB between Afghanistan and Pakistan is not governed by an international agreement and boundary problems, that is, the contested Durand Line, affect the relationship (Yousaf, 2017). Water conflicts in the KRB between Afghanistan and Pakistan have intensified since 2000, coupled with security issues due to the ongoing insurgencies in the region. Growing industrialisation, urbanisation, and climate change which affect the continuity of snow-fed rivers, environmental hazards, and the geo-strategic importance of the area further exacerbate these disputes. The existing transboundary water mechanisms are state-centric and bilateral, exclude other relevant actors, and emphasise water quantity as the basis for water sharing (Yousaf, 2017). These agreements disregard the broader biodiversity and ecosystem services (BESS) of the river basin and what these services could imply in terms of enhancing human well-being. The BESS of water includes biodiversity, provisioning (e.g., food production), regulating (e.g., climate & water regulation), supporting (e.g., nutrient cycling), and cultural services (recreational, spiritual) (Sukhdev et al., 2014). The value of global BESS was estimated at $145 trillion in 2011 at a time when global GDP was $73.3 trillion[1] (Costanza, et al., 2014). Extrapolating to the river basin between the two countries, one can argue that understanding the value of the BESS in the region could lead to a different problem framing and enable integrative multi-level bargaining leading to win-win solutions. While the BESS values the interdependence of humans and nature, it also offers conceptual and empirical tools to communicate with a wide-ranging audience (Costanza, et al., 2014) and reveals the cost of damage, it may lead to the commoditisation or privatisation of such resources (Sullivan 2013). Therefore, an analysis is required for a better understanding of the water BESS (it may still avoid such commoditisation) to evaluate if a change in the behaviour of relevant and powerful actors can be pursued while addressing socio-relational (dispute resolution, capacity building, and inter-generational equity) and ecological (pollution prevention, and the protection of BESS) goals and, thereby, contribute towards the Sustainable Development Goals (SDGs). By embracing economic, ecological, and social-relational mechanisms, the BESS concept connects the environmental system with politics and decision-making as well as fosters interdisciplinary science (Schröter, et al). It enables integrated trans-disciplinary approaches to solve such complex issues by building bridges between science and practice (Hoppe, 2011). The water conflict arising due to transboundary river basins can be analysed using an ecological valuation. Hence, the focus of this study is on estimating the provisioning ecosystem services on Pakistan's side of the KRB. An objective of the study is to develop an understanding of transforming a win-lose situation into a win-win situation for both parties.

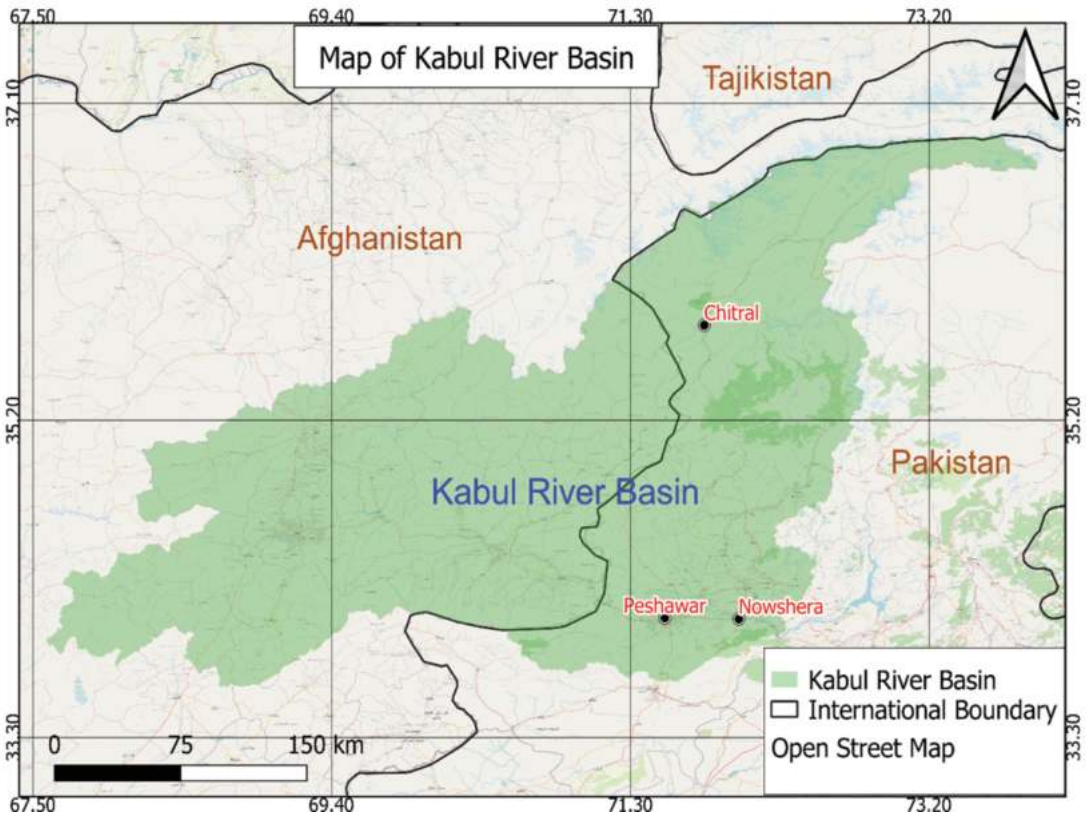
[1] This is because GDP measurement is based on market pricing, whereas BESS considers several market and nonmarket ecosystem services.

2. MATERIALS AND METHODS

Study Area

The present study carried out an ESS valuation of the KRB in the upstream and downstream areas. The data was collected in two phases. In the first phase, the data was gathered and analysed from district Chitral (upstream). Later, data from Warsak, Charsada, and Nowshera districts (downstream areas) were also combined. Chitral is in northern Khyber Pakhtunkhwa and is considered one of the highest-altitude areas globally. The district has Gilgit-Baltistan in the east, Afghanistan on its northern and western sides, and on the southern side, it is connected with the Swat and Dir districts of Khyber-Pakhtunkhwa (Ali et al., 2009). The geographical coordinates of this area are 350 15´ 06" to 360 55´32" North and 710 11´ 32" to 730 51´ 34" East. The size of the area is 14,850 sq. km area and it is inhabited by 447,824 dwellers (Government of Pakistan, 2017). The population of the area is heterogeneous and ethnically diverse. There are eleven distinct ethnic groups who speak almost eleven different languages or dialects. More recently, the area has been further divided up into two districts, namely, Upper Chitral and Lower Chitral.

Figure 1: Map of Kabul River Basin



The Kabul River enters the downstream of Pakistan through the mountains of Mohmand in the Warsak areas of Peshawar.[2] The Kabul River goes through Nowshera and converges into the Indus River at Attock (Khattak, et al., 2016).

For Afghanistan, the Kabul River is also the fourth largest basin which is mainly utilised for irrigation purposes on both sides. The river is fed by the Chitral River, which has its origin in Chitral - the northernmost part of Pakistan. Out of the total 700 km length of the Kabul River, 560 km flows in Afghanistan and remaining in Pakistan (Yousaf, 2017).

The downstream of the Kabul River Basin on the Pakistani side is a lifeline for the people of Peshawar Valley and the Nowshera district. These areas grow fruits, vegetables, and other cash crops. These areas also have different industries which provide livelihood to the local community. The Peshawar Valley is 7,176 km² (2,771 sq. mi) in area and is traversed by the Kabul River (Yousaf, 2017). The people of this area constitute Pashtuns and Non-Pashtuns who live along the Kabul River. The Kabul River irrigates areas of Khalsa, Douaba, Daudzai, and other regions of the Peshawar Valley. Some of these areas have fruit orchards in which locals earn millions of rupees annually. In its lower reaches in Pakistan, the Kabul River crosses a region with a desert climate where maximum daily temperatures in early summer often exceed 104 °F (40 °C) and mean monthly temperatures in winter remain above 50 °F (10 °C).

With the increase in the population residing along the Kabul River Basin, the need for drinking and non-drinking water has also increased. Both Pakistan and Afghanistan are heavily dependent on the Kabul River Basin (Yousaf, 2017). For most people, the mainstay of the local economy is agriculture, while other sources of income include fuel woods, medicinal plants, livestock, fishery, mines, minerals, etc.

Conceptual Framework

There are various techniques available for estimating Biodiversity and Ecosystem Services of rivers and other types of ecosystems. Three main approaches are cost-based, revealed preference approach, and stated preference approach. The cost-based approach considers the cost of provisioning of these services (Grizzetti et al. 2016). The revealed preference approach is based on actual behaviour, but it only considers the use-values of the resources. Moreover, this can be measured either using direct benefits (such as timber, fruits, water, or other uses) or indirect methods (such as travel cost methods, housing prices, and allied methods).[3] Stated preferences are based on hypothetical scenarios and are usually based on choice experiments or contingent valuation (CV) methods. Additionally, in case of non-availability of site-specific BESS values, the benefit transfer approach is also utilised. Table 1 summarises BESS valuation methods.

Table 1: BESS Valuation Methods

Ecosystem services	Category	Value type	Valuation method		Examples of economic goods provided
1-Fisheries and aquaculture	Provisioning	Direct	MP, RC		fish catch
2-Water for drinking	Provisioning	Direct	MP, CV		water for domestic uses
3-Raw (biotic) materials	Provisioning	Direct	MP, RC		algae as fertilizers

[2] There is also a historic hydroelectricity dam in this area-Warsak Dam

[3] For a full exposition of the types of valuation methods, see Freeman (1993) and Reynaud and Lanzanova (2015)

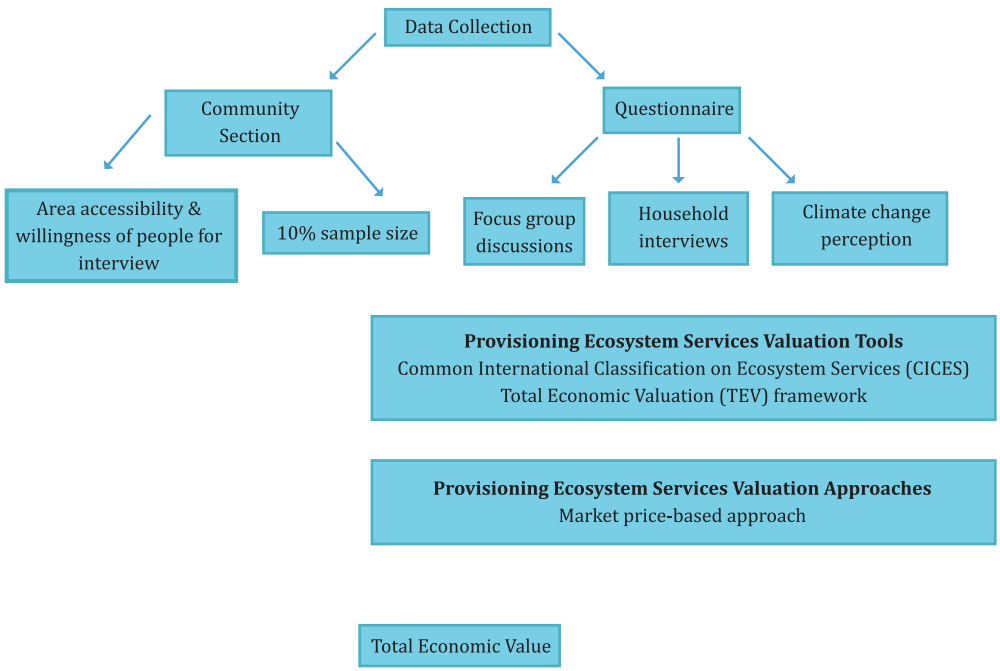
4-Water for non-drinking purposes	Provisioning	Direct	MP, PF			water for industrial or agricultural uses
5-Raw materials for energy	Provisioning	Direct	RC			wood from riparian zones
6-Water purification	Regulation	Indirect	RC,	CV		excess nitrogen removal by microorganisms
7-Air quality regulation	Regulation	Indirect	RC			deposition of NOx on vegetal leaves
8-Erosion prevention	Regulation	Indirect	RC			vegetation controlling soil erosion
9-Flood protection	Regulation	Indirect	RC,	CV		vegetation acting as a barrier to the water flow
10-Maintaining populations and habitats	Regulation	Indirect	RC			habitats use as a nursery
11-Pest and disease control	Regulation	Indirect	RC,	CV		natural predation of diseases and parasites
12-Soil formation and composition	Regulation	Indirect	RC			rich soil formation in flood plains
13-Carbon sequestration	Regulation	Indirect	RC,	MP		carbon accumulation in sediments
14-Local climate regulation	Regulation	Indirect	RC,	MP		maintenance of humidity patterns
15-Recreation	Cultural	Direct	CV,	TC,	DC, HP	swimming, recreational fishing, sightseeing
16-Intellectual and aesthetic appreciation	Cultural	Non-use	CV,	DC		matter for research, artistic representations
17- Spiritual and symbolic appreciation	Cultural	Non-use	CV,	TC,	DC	existence of emblematic species
18-Raw abiotic materials	Extra abiotic	Direct	PF,	MP		extraction of sand gravel
19-Abiotic energy sources	Extra abiotic	Direct	PF,	MP		hydropower generation

Source: (Reynaud and Lanzanova, 2015)

Contingent valuation (CV), Hedonic price (HP), Market price (MP), Production function (PF), Replacement cost (RC), travel costs (TC).

Given the enormous scale of the KRB, the present study relied on the market price-based approach[4] for the valuation of the ESS of the KRB and employed the total economic valuation (TEV) framework suggested by The Economics of Ecosystems & Biodiversity (TEEB, 2010[5]) to value the ESS. However, our estimates of the ESS only include the provisioning and cultural services of KRB. Figure 2 summarises the complete methodology adopted for this study.

Figure 2: Conceptual Framework



ESS Identification and Economic Valuation

For the economic valuation, the interview responses were collected and compared to each provisioning and cultural ESS typology. These were assigned codes based on the Common International Classification of Ecosystem Services (CICES) (Haines-Young et al., 2018). The TEV framework is a well-known instrument for economic appraisals of the ESS (Emerton, 2016). The framework is a well-organized way of outlining all the benefits provided by an ecosystem. It reflects the value in economic or other market-based units that can be compared across ESS types. The provisioning ESS is evaluated using this paradigm by applying direct and indirect use values. We used the market pricing method to calculate ESS values. This approach has also been used in previous investigations, such as Murali et al., (2020), Thapa et al. (2020), and Grizzetti et al. (2016). Besides, the variables used in this study are in total conformity with the framework. Therefore, this study used the same framework to measure the ecosystem services provided by the Kabul River in its basin.

[4] This is based on the revealed preference approach and only measures the direct values of BESS.

[5] It is a global initiative to make visible the values provided by the nature.

Total Economic Value (TEV)

The overall economic benefit was calculated by allocating the economic value for each provisioning ESS to each home and adding the means and standard errors for each household service (Andersson-Sköld, et al., 2018). Household earning values were computed from all sources of income, including employment, agricultural production, animals and medicinal herbs sold. These values were then summed up to determine the Gurez Valley's average income (Saeed et al., 2022). The total economic value of the ecosystem services can be included as a separate section in the GDP as earnings from the ecosystem because the data generated shows that rivers contribute significantly to the economy in different ways, and if there is proper planning and thought process, the income generation from the ecosystem can be increased.

ESS Valuation Based on Market Price

To determine the value of ESS, the market price-based technique was employed. Because provisioning ESS is frequently sold, market pricing is thought to provide meaningful information on value (Pomfret, 2019). The same technique was also employed to calculate ESS of the Gurez Valley (Saeed, et al., 2022).

The economic values of the ESS were calculated for the following CICES classes: (i) agriculture crops (e.g., beans and potatoes tomatoes, pulses, onion, barley, wheat, maize, and perennial crops), (ii) livestock, (iii) fuel wood (iv) medicinal plants, and (v) water (drinking and non-drinking uses).

Crop economic values were calculated by taking all the crops harvested each year and multiplying them by their market values. To calculate the ESS value of the agricultural yield, the value of all external inputs, such as chemical fertilisers, labour utilized, and tractor charges were subtracted from the value of the products produced. The economic value of milk was calculated by multiplying the per-litre market value of milk by the number of litres consumed per family per day multiplied by the number of days in a year. The cost of animal husbandry was calculated as the cost of their annual feed. The economic worth of meat was calculated by multiplying the market price of an animal per family by the number of animals sold annually. The annual collection of medicinal plants per family was multiplied by local market prices to evaluate the economic value of medicinal plants. The economic worth of the fuel wood was calculated by multiplying the per-household annual consumption by the local price of the fuel wood.

Data Collection

Community Description and Selection

The entire area of the KRB comprises upstream (Upper and Lower Chitral) and downstream areas from Warsak to Nowshera areas. Therefore, for the present study, 400[6] in-person household interviews were conducted using a pretested questionnaire.[7] The entire sample was then proportionally prearranged as 200 random[8] interviews in the upstream areas and the same number of interviews in the downstream areas.

In the upstream areas, further stratification includes the Upper and Lower Chitral area. Upper areas include Boni, Mustuj, Yarkun, and Bragoal Pass, while the Lower Chitral areas consist of Aram Chasma, Darosh, and Ayun-Kalash areas. These specific locations were identified during key informant sessions.[9] The data

[6] S=(Z)2*(p)(q)/(e)2

[7] Questionnaire is discussed in detail in the next section.

[8] Even for random selection, local referencing was mandatory. We held key informant interviews to get to know local clans, production types, hamlets, small groups, etc. This is a cultural thing, but still, the randomness element was maintained.

[9] KIIs or key informant interviews were unstructured interviews with the well know local inhabitants. They provided useful information about the local production, household, clans,etc.

collection scheme was grounded on the provisioning and cultural ecosystem services of the KBR. Subsequently, a pilot study[10] was completed in the lower Chitral area. The results of the pilot study were utilised to strategise the data collection in the upstream and downstream regions.

In the downstream areas, 200 in-person interviews were conducted based on the same data collection tool. The data were randomly collected in Warsak, the Sardaryab area of the Kabul Riverbank in the district Peshawar, the Jahangira district, and other adjoining areas[11].

To have a complete sense of the ecosystem services corresponding to cultivated crops, animal feed, vegetables, and the kind and quantity of natural resource harvesting, like wild animal feed, medicinal plants, fuel wood, and wild vegetables, focus group discussions were held with the local representatives.

Data were collected from households and communities based on a structured questionnaire.[12] The details of the collected data in the upstream are given in table 2.

Table 2 Data Collection in the Upstream Region

Area	Number of Questionnaires
Upper Chitral-Garam Chashma	33
Darosh	33
Ayun-Kalash	34
Lower Chitral-Boni	25
Mastuj	25
Yarkun	25
Barogal Pass	25

[10] We sent our trained enumerators to selected sites in the lower Chitral areas to assess the viability of the data collection method and the initial response to assess the validity and reliability of the questionnaire. Although no major revision of the questionnaire was required, still the feedback from the team was important for us to start the full survey.

[11] These specific locations included Shaghala Payan, Wazir Kalay, Jahangir Pura, Mehmood Abad, Shaghala Bala, Sardaryab, Khan Aala, Sheikh, Jahangira, Mian Issa, Nandrak, Ali Muhammad Kale, Mishak, Akbar Pura, Kheshko Bala, Kheshko Payan, Nizam Pura, Hussain Abad, and Pir Payan.

[12] For this reason, a one-day training session was held for the enumerators to train them about how to approach the respondents, technical aspects of data, moral and cultural issues, and other important protocols of primary data collection. types, hamlets, small groups, etc. This is a cultural thing, but still, the randomness element was maintained.

The number of questionnaires filled in the downstream areas is summarised in table 3.

Table 3Data Collection in the Downstream Region

Area	Number of Questionnaires
Shaghala Payan, Wazir Kalay, Jahangir Pura, Mehmood Abad, Shaghala Bala	45
Sardaryab, Khan Qala, Sheikh, and other villages	55
Jahangira, Mian Issa, Nandrak, Ali Muhammad Kale, Mishak	50
Akbar Pura, Kheshko Bala, Kheshko Payan, Nizam Pura, Hussain Abad, Piry Payan	50

The respondents were randomly selected depending on the population of the village/area. Separate male and female enumeration teams were dispatched to these areas owing to cultural sensitivity and local norms. The respondents were adults, above the age of 18 years, including males and females. The number of questionnaires in each sub-strata was based on the proportion of the population of each sub-strata.

Questionnaire

To complement the data collection process, we also analysed secondary data. The analysis revealed that the most common agricultural products in these areas include wheat, tomatoes, potatoes, beans, maize, barely pulses, onion, rice, and different other vegetables. The inhabitants of the area collect medicinal plants, wild grass, and fuel wood from the non-agricultural land and nearby forests. Some amount of the agricultural product is used for household use, while the rest is sold in the market for income generation. Those households who deal in livestock, mostly use wild grass from the forest, and the non-agricultural land is used as pastures. Nevertheless, to further acquire the information at the household level, a questionnaire was prepared based on the toolkit for ecosystem service assessment (Murata, N., 2016).[13] The questionnaire consisted of four different aspects of ecosystem services, i.e., cultivated goods, the extraction of natural goods, water use, and recreation. The details are discussed in the following section.

Data on the perceived implications of climate change on the ESS, such as the cultivation of crops, animal rearing, the availability of water, etc. were also collected.

Types of Ecosystem Services

For the present study, we only considered the cultural and provisioning ecosystem services, which have been further classified into four subcategories, i.e., cultivated/agricultural goods, natural goods, water provision, and recreation services. Each of these is discussed below.

Cultivated Goods

Cultivated goods include agricultural goods and perennial crops that are cultivated by farmers on river basins.

[13] Toolkit for Ecosystem Service Assessment (TESSA).

Cultivated goods in this study include fruits, vegetables, pulses, wheat, sugarcane, maize, and other perennial crops in the KRB. The values were obtained by multiplying market prices with the unit minus the cost.[14,15]

Natural Goods

Natural goods include all those goods which are not cultivated by farmers or local residents. In this study, natural goods include gym stones, wood for domestic use and sale, fish from the river, medicinal plants, and other important products.

Water

Ecosystem provisioning services include water for agriculture and domestic use of the households in the river basin. However, we have only considered water for drinking and other domestic uses. The skirting of the irrigation part (directly) is deliberate to evade the double counting problem as this value is already captured in the market prices of the products. The per-capita household water consumption is based on World Health Organization (WHO) standards.[16] The values have been calculated as under:

(The gross annual amount of water used from the site, e.g., tonnes/year) x (the unit price of water from an alternative source) – (the unit cost for current water use).

Recreation

Recreation services along rivers include tourism and other activities that people undertake during their leisure time. Recreation activities include tourism, boating, water skiing, swimming, fishing, and canoeing. However, we could not access the number of tourists that visit the KRB area.

3. RESULTS AND DISCUSSION

Identified Ecosystem Services in Upstream & Downstream Areas

The study identified a range of ecosystem services that are provided in the district of Chitral, Pakistan. During the survey, the communities provided information about a list of the ESSES that they use for household use and monetary benefits. The forests of Chitral are a source of fuel wood for local communities, safe habitat for many medicinal plants, wild animals, and fodder for the livestock of nearby villages (Zeb et al., 2019). All the respondents of the survey were using one or more of the ESS for household purposes and also as a source of finance. The cultivation of different crops, medicinal plants, fodder for livestock, getting fuel wood for household use and selling in markets, the use of surface water for drinking and non-drinking purposes, and fishing were identified as the major ESS used by local communities. The ESS provided by the Kabul River is the main source of livelihood for the local communities in the district of Chitral. The importance of the ESS provided by the Kabul River for the localities of the district of Chitral can be identified by the monetary benefits obtained by the local communities (Saeed et al., 2022).

River Kabul is an important source of various kinds of ecosystem services for the communities living nearby it.

[14] These prices were obtained from the growers.

[15] See Appendix 1.

[16] According to WHO, a normal individual consumes 15 litre of water per day.

Some of the ESS are of more importance in terms of monetary benefits and some are of less importance to the localities (Najmuddin, Omaid, Deng, & Siqi, 2017). This study's results show a high monetary contribution in provisioning ESS to the communities living nearby the Kabul River.

The study identified a list of ESS along the downstream of the River Kabul Basin, i.e., the main services include agriculture, animal fodder, and water.

Provisioning ESS in Upstream Areas

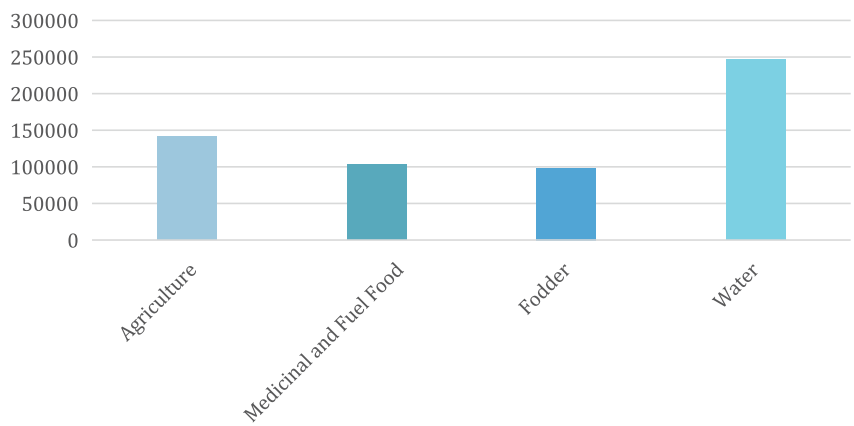
The ESS is a boon for the inhabitants of the district of Chitral. The most common use of ESS is in agriculture and livestock, i.e., the cultivation of different crops, surface water for drinking and non-drinking purposes, medicinal plants, minerals, fuel wood, animal fodder, fishing, and surface water for non-drinking uses.

Table 4: Population Benefiting from ESS of KRB (Percent)

% of Population Benefiting					
Region	Agriculture	Fuel wood for Business	Medical Plants	Fodder for Animals	Water
Upper Chitral	100%	94%	64%	100%	100%
Lower Chitral	100%	95%	62%	100%	100%
Overall	100%	94.5%	63%	100%	100%

Table 4 shows the percentage of the population benefiting from the ESS provision in the upper stream (Chitral). In the upper Chitral areas, one hundred per cent of the sampled population were the beneficiaries of agriculture, whereas 94 per cent benefited from the fuel wood business, another 64 per cent profited from medicinal plants, 100 per cent received some portion or all of the fodder needed for their livestock, and 100 per cent of the respondents used water provided by the Kabul River for drinking and non-drinking purposes. The trend was similar for Lower Chitral.

Figure 3: Annual ESS Per Household Upstream



Economic Values

Upstream Areas of Chitral

The best ESS in terms of monetary value was drinking and non-drinking water use, which had a value of 246,118[17] ± 753 PKR/household/year ($1,231) [18] based on the sample data collected from respondents. The second-best ESS in terms of monetary value was crop yield, which had a value of 141,979 ± 4,132 PKR/household/year ($710). The third-best income-generating ESS was medicinal plant cultivation and fuel wood. The data shows that the average income generated from medicinal plants and fuel wood was 103,433 ± 1,679 PKR/household/year ($517). Animal fodder was the fourth leading ESS in terms of monetary value. This ESS generate a value of 98,976 ± 2,330 PKR/household/year ($1,012).

Table 5: ESS Valuation of KRB Upstream Areas

ESS Types in Upstream Area (Values)	Agriculture	Medicinal Plants and Fuel Food	Fodder	Water
Per Household	141,979.0094±753	103,433.35±1679	98,475.05±2,330	246,117.5±753

Downstream Areas- Peshawar & Nowshera

Table 6: ESS Valuation of KRB in Downstream Area

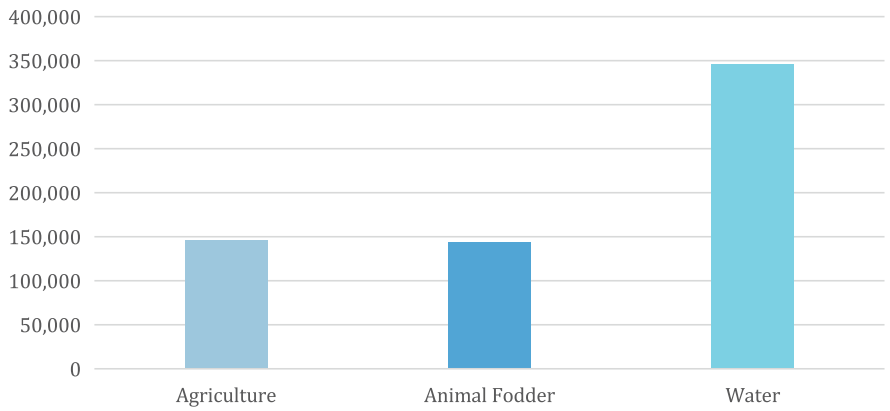
ESS Types in Downstream Areas (Values)	Agriculture	Animal Fodder	Water
Per Household	143,061.85±3057	143,176.91±1,277	346,030.8±1,120

The survey data reveals the economic value of the ESS from the Kabul River in the lower stream was 641,753 ± 407 PKR/household/year ($3,209). Water was a major part of the provisioning services, followed by animal fodder and agriculture proceeds. The provisioning services of the KRB in the downstream areas were found to be higher than in the upstream area. This is because the income level in the lower stream of the KRB is higher than the income level of the upper stream of the KRB (based on economic activities used by Hassan & Beyer, 2021). The higher income level in the downstream area is due to business spread over a wider area, more employment and income generation opportunities because of easy access to a relatively bigger market in comparison to Chitral, and the more developed industrial sector.

[17] (15 litres per person) x (times the number of of household/day) x (365 days) x (6.5 PKR/litre)

[18] 1 USD = 200 PKR

Figure 4: Annual ESS Per Household Downstream



The following section delineates information about a particular type of ESS in the upstream and downstream areas.

Ecosystem Services Categories and Values

Medicinal Plants

Medicinal plants obtained from Chitral are more important because of their contribution to curing major diseases. Some of the major medicinal plants cultivated or gathered from the forests of Chitral are Artemisia maritima, Artemisia, Brevifolia, and Rosa webbiana are the dominant species, while Ephedragerardiana and Ferula narthex are also important medicinal plants found in Chitral. The average monetary benefit obtained from the cultivation/harvesting from forests of medicinal plants was 10,136 PKR/household/year. Some of the medicinal plants harvested are used by households, while the rest are sold in the local markets. Some of the medicinal plants are of extremely high value and are sold to bigger herbal markets in other cities.

Fuel Wood

Fuel wood is another important ESS provisioning of the Kabul River to the communities living nearby. The total monetary value of fuel wood recorded amounted to 91,228 PKR/household/year ($456). The value of ESS provisioning of the Kabul River exceeded the economic value of fuel wood estimated by Murali, et al. (2020) for the arid regions of the Indian Trans-Himalayan Spiti valley. The estimated economic values for fuel wood were 432 USD/household/year with 11.7 per cent of the total economic value produced by the Qurumber National Park. In the KRB, the fuel wood collection varies from valley to valley.

Agricultural Crops

Agricultural production is the most important ESS of the Kabul River. The survey shows that the river supports the agriculture sector in its basin. The study shows that Kabul River provided providing ESS worth 141,979.0094±753 PKR/household/year along the upstream, while along the downstream, the river provided

ESS worth 143,061.85±3,057 PKR/household/year, amounting to a total agriculture ESS of 56,869,441 PKR/year. River Kabul plays a vital role in providing food security to the localities in its basin by providing irrigation water for agricultural production (Nafees et al., 2018). The availability of water for irrigation purposes is, therefore, pertinent for food security and the sustainable agriculture sector in South Asia. Climate change brings a new dimension to agriculture and food safety in South Asia. Studies suggest that the relationship of climate change with crop production in South Asia could be inverse and may be as high as 18.2–22.1 per cent/year (Najmuddin, Omaid, Deng, & Siqi, 2017).

Animal Fodder

River Kabul is also a major source of provision of fodder for livestock. The survey shows that the provisioning of fodder ESS was worth 98,475.05± 2,330 PKR/household/year in the upstream area and 143,176.91±1,277 PKR/household/year in the downstream area. The average of these values is $604. The monetary amount of the ESS in the dry area of the Trans-Himalayan Spiti Valley was 523 46.2 USD/household/year, with a total economic share of 13.2 per cent, 3,881±360 USD/household/year and 2.6% of the total economic value in Tost Nature Reserve, Mongolia, 929±67 USD/household/year and 6.2 per cent of the total economic value for nomadic communities in Changtang area, India, and 1,182 ± 177 USD/household and 4.6 per cent of the total economic value in Sarychat region, Kyrgyzstan.

Water Consumption

Water was found to be the most important and highest valued ESS provided by the Kabul River in the district of Chitral with a monetary value of 246,117.5±753 PKR/household. In the downstream areas, it was 346,030.8±1,120 PKR/household. The average value of the ESS provided in both upstream and downstream areas was $1,480. Water consumption includes both drinking and non-drinking consumption use.

These results are in line with past studies. Begenas watershed in Nepal contributes a major portion of the water used for irrigation and household (drinking and non-drinking) used by the localities (Thapa, B, Mainali, Schwank, & Acharya, 2020). The study shows that the Indian Trans-Himalaya is a vital source of the existing as well as prospective livestock in Central Asia and South Asia as it contributes 100 per cent of water used for livestock purposes.

Per-Capita Total Economics Value (TEV)

The River Kabul makes a significant contribution in terms of the ESS in its upstream and downstream basins as the results indicate. The total economic value of the provision of ESS of the Kabul River upstream and downstream is significantly high, with an average economic benefit per household of 590,000±340 PKR/household/year ($2,950) in the upstream areas and 641,753.61±407 PKR/household ($ 3,209) in the downstream areas, averaging $ 3,080/household/year in both the areas. Our results are comparable to other regional estimates, for example, Din et. al., 2020 and Saeed et al., 2022. However, our estimates do not include estimates of other services such as hydroelectricity generation, minerals, and tourism. We could not obtain these values due to various issues, such as accessing tourists during survey time and secondary data.

4. CONCLUSIONS

This study was undertaken to assess the idea of the BESS concept to contribute to understanding water-sharing conflict and present an economic valuation of the ESS provisioning of the KRB to redefine the water management problem in the context of green water economy and evidence of shared environmental benefits. The results of this study suggest that the ecosystem services provided by the Kabul River to the localities living nearby are vital and serve as a source of economic protection for the residents of the districts Chitral and Nowshera. The majority of the residents of the KRB are engaged in agriculture and livestock, which are the direct ESS provided by the Kabul River. The river also plays a key role in maintaining the greenery of the forests in the district of Chitral, which are safe habitats for wild animals, some medicinal plants, fuel wood, and fodder for livestock. The study shows that ESS provided by the Kabul River are vital for the livelihood of the residents as the ESS provided are the main source of income for the local population. The ESS values on the Pakistani side of the KRB suggest that merely the provisioning ESS related to the natural flow of water are enormously advantageous for the people living in the KRB area. This study covered only THE Pakistan side of the KRB due to limitations.

5. RECOMMENDATIONS & POLICY IMPLICATIONS

This study has contributed to evidence of a broad range of shared ESS services and other benefits that the population on both sides of the boundary use. However, the conventional understanding of water sharing is based on water quantities which can obscure a wide range of ESS of the KRB that people depend on. This evidence and knowledge can also bring into discussion other international environmental agreements that both Afghanistan and Pakistan have signed such, as the SDGs 6, 13, and 15 on water, climate change, and biodiversity, respectively as well as other conventions on climate change and biodiversity. Looking at the benefits and environmental degradation from this lens can also create avenues for dialogue and cooperation for fulfilling the environmental commitments of both riparian countries.

In terms of policy implications based on the results, it suggests that the natural flow of water is a solution from which where both Afghanistan and Pakistan can benefit. Based on the evidence of shared benefits of ESS as a result of water flows, dialogue and cooperation between different stakeholders and beneficiaries in both countries can be initiated. These results can be converted into a policy brief by consulting a wide range of stakeholders, especially government officials involved in water management and related sectors. The Kabul River facilitates Pakistan and Afghanistan and the ESS provided by the river are of significant importance to each country as it is the basis for agriculture production and livestock rearing as well as related value chain by creating jobs indirectly. Therefore, both countries need to use the available water sustainably so that both can benefit from it sustainably. We recommend that a Payment for Ecosystem Services (PES) scheme may be designed for the sustainable use of these resources. Since the KRB is also a natural sink of Carbon, we highly recommend that the relevant stakeholder from both sides should also design a mechanism by upholding the natural flow of the river rather than non-cooperation (construction of dams on both sides). The sustainable use of water can enhance the ESS provided by the Kabul River in both countries in all aspects. There is a need for joint research collaboration on these aspects from both sides of the KRB to generate more evidence on shared benefits due to the natural flow of water.

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FIRMS FINANCIAL INCLUSION AND EXPORT PERFORMANCE: EVIDENCE FROM MANUFACTURING SECTOR FIRMS IN PAKISTAN

Fareeha Adil and Rabia Nazir

ABSTRACT

Financial inclusion of firms is crucial for creating jobs, boosting economic growth, and promoting sustainable development. The Sustainable Development Goals require a holistic approach to financial requirements and constraints at all levels. Financial services enable organisations to invest in new technologies, increasing productivity and competitiveness. Promoting equitable and accessible financial services is essential for attaining the SDGs and a sustainable future. The study examined how financial inclusion affects enterprise export performance based on access to finance ratios. The study analysed the effects of firms' financial inclusion determinants and macro environment factors on firms' export values. The study used data from Pakistan's manufacturing sector, comprising 8,400 annual balance sheets of 400 firms listed on the Pakistan Stock Exchange from 1999-2021. Driven by the nature of the data, the method of moment quantile regression was employed to assess the below and above mean regression estimations, and a two-step system GMM approach was used to address endogeneity concerns. The study came up with four key findings along with relevant policy implications. First, the study found that assets positively affected a firm's export performance from lower to higher quantiles across all sub-samples. The finding emphasizes the need for asset investment to help firms compete in foreign markets and export. Second, our sample firms' export performance was negatively impacted by asset tangibility, except for low-gearing corporations. Export performance suffers when fixed assets dominate. The study emphasises the necessity of a balanced asset mix because fixed assets might hurt export performance. To improve exports, firms must examine and proactively manage their asset composition. Third, our research showed that debt-to-equity ratios, except for high-gearing firms, boosted export performance. Thus, domestic firms with leverage ratios above a certain threshold are more likely to fail. Thus, firms must balance debt and equity to avoid the risks of excessive leverage. Diversifying the asset mix to include liquid and intellectual property can boost export success. By carefully controlling their asset composition, firms can enhance their global competitiveness and avoid vulnerabilities from overreliance on fixed assets or excessive debt. Fourth, gearing was negative and inconsequential in high-gearing enterprises but positive and significant in low-gearing firms. The finding implies that gearing affects export performance differently depending on the firm's debt levels. Low-geared enterprises might strategically leverage assets and debt to boost exports. However, high-geared enterprises may already be financially constrained, and excessive debt may hinder their global investment and expansion. Therefore, enterprises must carefully examine their gearing levels and make informed judgments on optimizing their asset composition for optimal export performance. In addition, the study opened an area for further research on the role of exchange rates and firms' investment in line with firms' export performance.

1. INTRODUCTION

The post-1990s literature, both theoretical and empirical, shows a positive association of financial development with economic growth and firms' performance through innovative and productivity-enhancing investment and by minimising transaction costs, better allocation of resources, and risk management. (King & Levine, 1993). Better financial intermediation positively influences aggregate income and productivity (Ginie & Townsend, 2004; Jeong & Townsend, 2007, 2008; Amaral & Quintin, 2010; Buera et al., 2011). Financial indicators, such as credit to GDP ratio and financial access of firms, enhance economic growth, innovation, and job creation as well as help reduce poverty and income inequality (Beck et al., 2005; Ayyagari et al., 2008; Beck et al., 2007; Clarke et al., 2006). The empiricists claim that improved financial access by the firms enables them to address medium-plus long-term financial constraints and enhance their profitability and production in developing countries. (Allen et al., 2020; Triki & Gaj Igo, 2014).

The greater financial deepening removes frictions and barriers and influences profitability via two channels. First, it encourages fund allocation more efficiently among entrepreneurs. It increases output as funds are channelised to more capable entrepreneurs, increasing their output more compared to the output of less talented entrepreneurs. Secondly, efficient financial contracts curb losses from financial frictions, e.g., monitoring and credit participation costs, leading to better performance (Allen et al., 2020).

After the Great Recession of 2009 and the financial crises, the focus of the investigation has been on the non-linear relationship between financial development and economic activities, especially in developed economies where there is a greater likelihood of the financial sector experiencing high diminishing returns (Philippon & Reshef, 2013), diversion of financial resources from more productive sectors (Deidda, 2006), or large economic fluctuations which possibly induce financial crises (Easterly, Islam, and Stiglitz, 2001; Loayza & Ranciere, 2006).

As far as developing countries are concerned, it is imperative to investigate and determine the impact of "not enough finance" in the less developed financial sector where usually the banking sector plays little or an insignificant role in the development of the financial sector and economic growth (Henderson, Papageorgiou, & Parmeter, 2013; M'eon & Weill, 2010; Deidda & Fattouh, 2002), particularly in the economies with low financial development and credit-to-GDP ratio lower than 14 per cent, financial development plays little role in determining economic growth (Rioja & Valev, 2004). Several studies have highlighted specific issues that undermine economic growth both at the national and micro levels in developing economies. For instance, studies have looked at the performance of institutions, which is largely poor (Demetriades & Hook Law, 2006), limited financial competition due to political deadlock (Rajan & Zingales, 2003), high inflation due to supply shocks (Rousseau & Wachtel, 2002), etc., which undermine finance-growth correlation and causation. Some studies recommend country-specific policies as per their requirements and the level of financial development rather than relying on one-size-fits-all policies.

In developing countries, where financial depth or size (credit or liquidity/GDP) may not be large enough to yield its expected economic benefits, a question of interest may be whether accounting for the quality of financial development adds to the story beyond the large size of the informal sector (Gu'erineau & Jacolin, 2014).

The finance literature provides limited empirical evidence on developing economies' financial depth and growth nexus. For example, Chauvet and Jacoline (2015) investigated the effect of financial development and inclusion on firms' performances in economies with low financial development. Based on firm-level data from 26 countries, they concluded that the level of access to external credit explains the difference between firms' performance operating in developing economies where financial inclusion is limited and developed countries where financial inclusion is almost universal. In addition, they further argued that financial inclusion, on average, is positively associated with a firm's growth if financial development does not impact a firm's growth. The study concluded

that financial development plays a significant role in a firm's economic growth conditioned to high financial inclusion. Similarly, Chauvet and Jacoline (2017) analysed the effect of financial inclusion and bank concentration on a firm's growth in developing countries. Using firm-level data for a sample of 55,596 firms in 79 countries, they reported that a firm's access to formal finance is positively associated with its performance and growth.

A firm's financial inclusion also has a serious implication on the firm's export potential. Studies have investigated the role of different financial factors that affect a firm's export orientation, performance, and survival of exporter firms (Pinto et al., 2017; Vu et al., 2020; Federici & Parisi, 2012; Peluffo, 2016; Greenaway et al., 2007; Shivaswamy et al., 1993; Salchenberger et al., 1992). Aam and Khatoon (2021) analysed the nexus between financial inclusion and export market penetration for 31 developing countries They argued that financial inclusion has positive implications for export market penetration and that export market penetration alters economic growth in developing Asian and African countries.

There is limited available empirical literature on firms' export performance in Pakistan. The studies include Memon et al. (2012), Awan & Bashir (2016), Ullah et al. (2017), Safer et al. (2019), and Ahmad & Siddiqui (2019). These studies have investigated the association between a firm's capital structure and growth performance and have established a positive link. Higher exports show a country's global competitiveness, gear up resource allocation more efficiently, enhance foreign exchange reserves, improve competition, and increase employment and domestic innovation (Malik et al., 2017). However, Pakistan's export performance has remained low and unimpressive despite employing several remedial measures. Moreover, export statistics show that Pakistan's exports persistently lag behind other regional and developing countries. The imbalance in the trade deficit and the decline in export performance have been areas of concern over time. According to the World Bank report (2021), the limited and restricted availability of external financing, especially long-term financing for business enterprises that increase a firm's export capacity, is one of the key impediments to the country's export performance.

Motivation

In the existing literature, especially finance literature, researchers document the vital importance of the financial inclusion of individuals. However, there is limited but significant importance given to the financial inclusion of firms. According to The World Bank, financial inclusion "means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit, and insurance – delivered responsibly and sustainably."

In the context of a firm's financial inclusion, it implies that acquiring a loan from commercial banks can boost the firm's production and exports. Many studies show that financial inclusion is an important factor and plays a major role in firms' performance and exports. Similarly, some studies show that small and medium-sized firms perform below their potential due to a lack of access to formal financial resources. The financial inclusion of SMEs enables them to exploit formal financial resources to finance their economic activities, which eventually increases their performance in terms of production and export (Aam & Khatoon, 2021). Furthermore, it is believed that the financial inclusion of individuals and business enterprises plays a significant role in achieving Sustainable Development Goals.

In addition, the financial inclusion of firms in developed and developing economies is different. For instance, in the case of developed countries where the financial development level is high, firms use intangible assets, such as property rights, to secure external loans for better firm performance. On the other hand, in developing economies where the financial development level is low, firms rely more on tangible assets to access external finance, which eventually improves the firm's economic activities (Hur, Manoj, & Riyanto, 2006).

Given the context, it is plausible and well-established that the financial inclusion of a firm is an important determinant of its performance and exports. However, it may not be the only solution to firms' lacklustre export

performance and it may be a myth that financial inclusion is a one-size-fits-all solution to every enterprise problem.

Both literature and recent debate on financial inclusion in the context of SDGs motivated the present study to treat the financial inclusion of firms as a significant determinant of a firm's performance, especially export. The study attempts to assess whether financial inclusion plays a significant role in determining the export performance of manufacturing firms in Pakistan in the context of developing economies.

Significance of the Study

The study attempts to evaluate and quantify the impact of a firm's financial inclusion on the export performance of Pakistan's manufacturing sector. To the best of our knowledge, there is scant literature concerning firm export performance and financial inclusion with a focus on Pakistan. Prior studies have used limited financial variables and observations to investigate firms' export performance. The present study is unique in the sense that its empirics are based on a rich panel data set of 8,400 balance sheets and around 6,000 observations from more than 400 firms in Pakistan's manufacturing sector for the period 1999-2020 to assess the export performance of Pakistan's manufacturing sector conditioned on access to finance.

The study employs different financial ratios to measure firms' financial inclusion indicators, specific variables, and macro determinants that affect firms' export performance. Importantly, the study employs robust econometrics techniques to quantify the impact of firms' financial health and export performance. In addition, under different and alternate specifications, the study further analyses the nexus sector-wise, size-wise, leveraged-based, and equity-based.

The study has important implications for policymaking. A firm's greater access to formal financial institution loans has important implications for a firm's better economic performance and higher exports. Larger financial resources lead to better export performance, which, eventually, improves the current account balance and export-led economic growth of a country.

Purpose and Scope of the Study

- To investigate the relationship between the financial inclusion of large-scale manufacturing sector firms and their export performance.
- To investigate the impact of firm financial determinants and macro environment on a firm's export values.
- To quantify the association between a firm's financial inclusion and export performances in terms of the firm's size, sector, and capital structure.

Firms' internal and external factors, including financial inclusion indicators, determine the firm's performance and growth sustainability level. These determinants are extensively investigated to theorise an enterprise's sustainability and economic growth. A firm's access to external finance is noted as a key determinant of a firm's sustainable growth, which, eventually, contributes to economic growth at the macro level. However, empirical evidence regarding the interplay between a firm's financial inclusion and export performance at a larger scale in Pakistan is limited so far.

Pakistan's exports for years, and during the COVID-19 pandemic, have delivered far lower export earnings than its regional counterparts. An inefficient export performance not only deteriorates the current account balance of the country but also results in poor economic performance (Malik, Ghani, & Din, 2017). The existing literature on firm performance in Pakistan has highlighted the impact of firm capital structure on a firm's performance (see Memon et al., 2012; Awan, 2016; Ullah et al., 2017; Safer et al., 2019; Ahmad & Siddiqui, 2019). However, this

literature has investigated only a small number of firms from the manufacturing sub-sector, with none exploring a firm's export performance as an outcome variable and financial ratios of firms as an indicator of a firm's financial inclusion

Research Questions

Motivated by the existing gap in the literature, this study is designed empirically aims to address the following questions:

Question 1: What is the impact of financial inclusion indicators on the export performance of the manufacturing sector of Pakistan?

Question 2: Whether the nexus remains the same or changes subject to the firms' size, sector, or capital structure (leveraged vs. equity).

Public Policy Relevance

The public policy relevance of the study is pertinent as it investigates the unimpressive export performance of Pakistan's manufacturing/industrial sector. The interest of the study is manufacturing sector firms, as these firms comprise the real sector of the economy and cause a sporadic impact on the industrialisation of economies (Efobi et al., 2018). Since Pakistan's financial system has passed through several developmental phases, the proposed study is relevant and contributes at the policy level. The study highlights the impediments to Pakistan's larger manufacturing sector's exports. The performance of Pakistan's manufacturing sector in terms of exports and the overall export performance of Pakistan have been below potential for years if not decades. Therefore, highlighting and thoroughly analysing the export performance of Pakistan's manufacturing sector under financial constraints is critical. The manufacturing sector has further linkages with other sectors and has greater implications for the overall macroeconomic indicators. Hence, due consideration and evidence-based policy is required to address the 'haves not' of firm operating in the manufacturing sector of Pakistan.

Secondly, another contribution of the study at the policy level is that the entire focus of the ongoing National Financial Inclusion Strategy initiated by the State Banks of Pakistan in 2014 mainly targets individual financial inclusion. The strategy does not consider firms' financial inclusion (SBP, 2015). Given the significance of financial inclusion, the study highlights the importance of firms' access to finance and export at the policy level.

2. LITERATURE REVIEW

Export and firm performance literature depicts several factors determining firms' export performance in general and particularly in developing economies. The determinants of firms exporting are categorised under different themes. The themes are such that they cover different aspects of firms' export experience, for instance, firms' supply-side factors and firms' demand-side determinants. At the same time, some studies have accounted for both the supply and demand sides of firms' export experience. In addition, other studies have investigated internal and external factors affecting firms' exporting behaviour.

Notwithstanding a firm's financial health, access to finance and firm exporting orientation in developing economies have emerged as important debates in the literature on finance. The following is a brief review of the existing related literature which conceptualises the relationship between a firm's financial health and export. It also covers recent empirical debates on the topic in the context of Pakistan.

Factors determining the demand side of a firm's export include real effective exchange rate, nominal exchange rate, production capacity, and relative export price. The determinants that impact a firm's export supply side, as employed in different studies, are domestic investment, gross capital formation, domestic production, foreign direct investment, and relative price (Gul & Rehman, 2014).

In investigating Indonesia's export performance, Rahmaddi and Ichihashi (2012) found that a firm's demand and supply sides played a significant role in determining a firm's export. However, they found the elasticities of the supply side were higher than the demand side elasticities as the Indonesian exports are supply-driven. Similarly, Jongwanich (2010) concluded that supply-side determinants were vital to firms' export performance. Roy (2007) documented that both the demand and supply sides of the equation played a significant role in the determination of export performance in the case of India.

Considering both the demand and supply aspects of a firm's export performance, Funke and Holly (1992) highlighted the importance of both the demand and supply side of export performance. They employed variables related to export on the demand side of the equation and another variable that determines the supply side of the equation. The reported results indicated that both the demand and supply side elasticities significantly determined firms' exports.

Importantly, the internal and external factors affecting firms' export performance are broadly categorised as resource-based paradigms and contingency paradigms (see Carlos M.P. Sousa, Francisco J. Martínez-López & Filipe Coelho, 2008). The internal factors are based on resource-based theory, suggesting that a firm's export performance is based on a firm's internal factors, such as firm size, firm experience, international experience of the firm, competence, such as resource commitment, customer relationship, product uniqueness, product quality, resilience to respond to the market shocks and changes, and managerial characteristics, such as the level of education, international experience, and innovativeness (see Aaby & Slater 1989; Zou & Stan, 1998; Moen, 1999).

On the other hand, the external factors are based on the contingency theory. The theory suggests that foreign market instincts, such as cultural similarities, government regulations, market competitiveness, and local business impact firms' export performance. Many studies have cited and employed broad environmental instincts, political factors, and cultural factors as the determinants of export performance (see Erramilli & Rao, 1993; Styles & Ambler, 1994). Factors other than internal and external or demand and supply side impacting a firm's export performance including financial constraints, exporting tendency, competitiveness, foreign market penetration, and export incentives have been thoroughly investigated globally.

In international trade literature, sunk costs (financial constraint) and other vital factors are noted as factors affecting firms' export decisions. Firms bear sunk costs to obtain foreign market information, develop the foreign market channel, and innovate the cost of goods quality in line with international standards. Thus, financially constrained firms are less likely to bear the sunk cost. Qasim, Rizov, and Zhang (2020) empirically analysed the response of financial constraints to the export decisions of Pakistani firms, employing the Whited-Wu index and assets tangibility as a measure of financial constraints using a sample of Pakistan's listed manufacturing firms. The study found that exporters were less financially constrained as compared to non-exporters. In addition, the study noted that financial constraint was a significant factor affecting the exporting decisions of Pakistan's firms. Along with the significant impact on export and exporting decisions, it has an impact on the exporting tendency of firms.

Kazmi, Imran, and Khan (2020) investigated the impact of financial constraints on a firm's exporting tendency of firms in Pakistan, using the World Enterprises Data. They employed the logistic regression to highlight a firm's exporting probability. The study reported that financial constraints lower the exporting tendency of firms. In addition, the study showed that the manufacturing sector was affected more by financial constraints than the service sector in terms of export performance. Along with financial constraints, other factors, such as international market competitiveness and comparative advantage, were used as a firm's export determinants.

Comparative advantage and competitiveness are significant in international trade and export literature. As per the global competitiveness ranking (2017-18), out of 13 7 countries Pakistan ranked 115, Bangladesh 99, and India 40. Safeer et al. (2019), using primary data and employing Porter's Diamond Theory to investigate the challenges of Pakistan's export competitiveness, found a lack of internal factors, i.e., innovation, energy, and own brand, of vital importance in terms of the firm's export performance. Export market penetration shows the share of export of a specific product/service in a particular market out of the total target market for that product/service. Ayesha and Khatoon (2021) studied the effect of financial inclusion on export market penetration using quantitative data from 31 developing countries and employing pooled OLS and GMM techniques. The study found that financial inclusion has a considerable impact on export market penetration.

To offset barriers that impede enterprise's international trade, governments in developing countries introduce several incentives that induce trade across countries, regions, and continents. Emerging economies seek policies that encourage and promote exports as they are considered a linchpin of sustainable economic growth. For this purpose, incumbent governments extend the range of export incentives to encourage the export performance of enterprises. The range of export incentives varies across countries, including lower income tax, export finance incentives, zero rating sale tax, exemption from customs duties, etc. Ahmad, et al., (2015) investigated the textile sector and compared the government's tax incentives in Bangladesh, India, and Pakistan. The study documented that Bangladesh's textile sector is the most export-oriented comparatively and has the highest export incentive among the three countries.

Investment, specifically foreign direct investment, is noted to be a vital player in the game. Aam and Khatoon (2021) argued that countries attracting significant foreign direct investment prosper faster than others with less significant foreign investment. The rationale, as noted, is that high investment induces high production, fulfilling domestic consumption and creating space for higher exports. In the case of developing economies, comparatively, exporter experiences insignificant export-led investment by both domestic and foreign investors and, thus, rely on financial services to finance export-oriented production.

Therefore, firms' access to formal financial institutions, i.e., financial inclusion, becomes a pivotal factor in a firm's export-led production. The impact of financial inclusion on firms' growth and export performance is thoroughly investigated. Studies have employed several different financial factors that affect firms' performance, export orientation, and survival of exporter firms.

Scores of studies have documented the impact – direct and indirect – of a firm's financial inclusion on a firm's growth and firm's export performance. Chauvet and Jaclin (2015) analysed the impact of access to external finance on a firm's economic growth, productivity, and export performance in countries with low financial development. The study used firm-level data from World Bank Enterprises for 26 countries. The findings of the study showed that financial inclusion had a positive association with a firm's economic growth in a country where financial development is less developed and has little or no impact on a firm's growth and export performance on average. In addition, the study noted that where financial inclusion was high financial deepening enhanced firms' growth. Likewise, Harrison, Lin, and Xu (2013) addressed key factors explaining Africa's economic performance, using World Bank Enterprise data for African countries. The study reported that along with other key factors, such as lack of infrastructure and political competition, firms' access to finance, define firms' growth and performance. Efobi, Orkoh, and Atata (2018), using World Bank Enterprise data for Nigerian manufacturing firms, found through a quasi-experimental approach that using formal financial services increase firms' export. In addition, the study argued that access to traditional loan grow firms' export capacity, though the result differed according to firms' location.

Most of the studies have documented the linkages between financial constraints and the international trade of enterprises. Some studies have specifically reported that financial constraints impede firms' international trade. Interestingly, Silva (2011) analysed the effect of international trade on firms' financial health. The study used a sample of Portuguese manufacturing firms and employed the difference-indifference methodology. The reported

results indicated that international trade is a smooth path for exporting firms to enhance their financial health compared to non-exporter firms.

Kumarasamy and Singh (2018) assessed the impact of access to finance and financial development on firms' ability to export using World Bank Enterprises Survey data for the Asia-Pacific region. The study indicated that access to formal finance enables enterprises to enter the international market. It further indicated that financial development enables firms that operate in remote areas to enter international business easily.

Greenaway, Guariglia, & Kneller (2007) analysed the link between firms' financial factors and their exporting decision using a sample size of 9,292 UK manufacturing firms from 1993-2003. The study employed liquidity and financial leverage ratios as firms' financial health variables and the causal effect runs from export to financial health rather than the usual direction from financial health to export. The study reported that firms engaged in international trade had better financial health than non-exporter ones. In addition, the study reported that participation in the international market improved firms' financial health significantly. On a similar note, using micro-level French manufacturing firms' data, Stiebale (2011) assessed whether financial constraints matter for firms entering the export market. The study reported no evidence that financial constraint mattered for a firm's exporting decision. It indicated another unobservable factor that enabled firms to initiate exports and gain financial strength. In line with former studies, Bridges and Guariglia (2008) studied the impact of financial indicators on the survival probability of firms that were domestically and internationally engaged. The evidence was based on 61,496 UK companies over the period 1997-2003. The study employed collateral ratio and leverage ratio to account for financial variables. The results showed that increasing the leverage ratio of a firm increased the failure probability of a domestic firm by a greater extent. At the same time, financial indicators either did not have a significant or a minimal impact on internationally engaged firms.

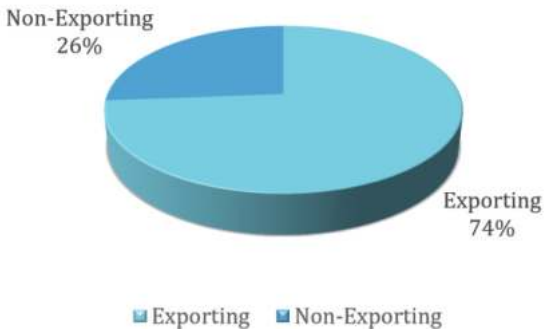
The documented literature pertinent to the linkages between firms' financial health and export performance exhibits contrasting results and conclusions. Studies that have used firm-level data for developed countries report either a significant or insignificant impact on a firm's financial health variables, such as liquidity ratio, leverage ratio, and collateral ratio on their export performance (for details, see Greenaway, Guariglia, Kneller, 2007; Bridges and Guariglia, 2008); Stiebale, 2011, etc.). On the other hand, the literature emerging from developing economies regarding access to finance and financial constraint has been documented as factors that have a significant impact on a firm's economic growth and performance, in general, and a firm's export performance specifically. For details, see Chauvet and Jaclin (2015), Harrison, Lin and Xu (2013), Silva (2011), Kumarasamy and Singh (2017), and Kazmi, Imran, and Khan (2020).

3. DATA

Data Description

The section presents the essential features of the data. We initially digitalised data of 427 firms from 1999 to 2020. Out of 427 firms, 319 firms had positive export sales. Therefore, we picked the firms exporting in any of the years for our analysis.

Figure 1: Export-wise Firm's Frequency



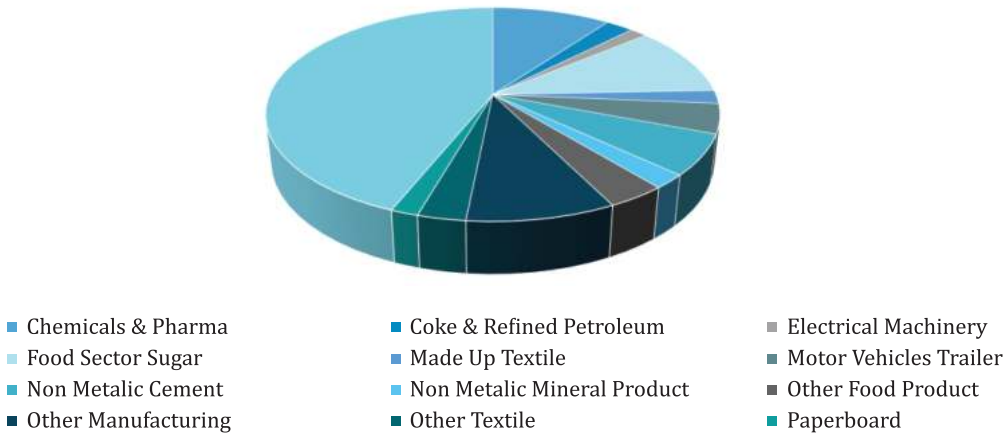
Source: Authors' calculations.

Table 1: Sector-Wise Distribution of Firms

Sector	Per Cent
Chemicals and Pharma	10.06
Coke and Refined Petroleum	2.36
Electrical Machinery	1.46
Food Sector - Sugar	10.46
Made-up Textile	2.01
Motor Vehicles - Trailers	4.48
No-Metalic- Cement	6.12
Non-Metalic -Mineral Products	2.09
Other Food Products	3.57
Other Manufacturing	8.96
Other Textiles	2.9
Paper- Paperboard	1.66
Textile Sector	43.87
Total	100

Source: Authors' calculations.

Figure 2: Sector-Wise Distribution of Firm



Source: Authors' calculations.

Table 1 and Figure 2 present the sector-wise distribution of our dataset. The 315 firms broadly belonged to 15 sectors. Textile was the largest sector with almost 44 per cent of the firms belonging to this sector. Chemical and pharma was the second largest sector with 10 per cent firms, and the food sector - sugar was the third largest. On the other hand, electrical machinery was the smallest sector with only 1.46 per cent of firms in this sector. We used the log of export sales of the firms measured in Pak Rupees as our dependent variable in the study. The export sales revenue of the firms depicted their export performance in the studied period.

The study's primary objective is to measure the impact of financial inclusion indicators on the export performance of the firms. The description of variables is given in Table 2. We used four proxies for financial inclusion, of which two are related to the firm's assets and two depict the debt burden, access, and availability of loans to the firms. The first indicator of financial inclusion is the firm's total assets taken from the firm's balance sheets measured in Pak Rupees. The second indicator of financial inclusion is asset tangibility, which is the ratio of tangible assets to the firm's total assets.

The third indicator of financial inclusion is the debt-to-equity ratio, the ratio of total debt to total equity. It is the debt-to-equity ratio for companies using debt financing. The fourth and final indicator of financial inclusion is gearing, a measurement of the entity's financial leverage, demonstrating the degree to which a firm's activities are funded by owner funds versus creditor funds. It is measured by dividing the sum of current and total fixed liabilities by total capital employed. This specified gearing pattern helps in determining the financial inclusion of a firm.

Two firm-level variables were used as control variables in the model. The first control is RETA, measured as a retained earnings to total assets ratio. Retained earnings are equal to a sum of reserve accounts and retained profit. For RETA, the firm's age is implicitly considered as this ratio gauges accumulative profit over some time. It is worth mentioning that this ratio exhibits biases as it is inclined towards classifying young firms as distressed as firms require time to attain cumulative profits. However, the literature shows extensive use of RETA.

The next variable is OINS, which is the operating income to net sales ratio. Operating income considers COGS (cost of goods sold) and fixed expenses. Interest and taxes are not deducted from net operating income. Net sales refer

to the total amount of sales the business makes after allowing for deductions for damaged products, returns, and discounts.

Further, we used three macro-level controls in the study. Since we measure the export performance of the firms, the overall trade dynamics of the country may significantly affect the firm export performance. Therefore, the first control is trade openness, which is the ratio of the sum of exports and imports to GDP. Next, our model used the risk premium as a control variable. The risk premium is measured as the difference between low-grade government bond returns and long-term government bond returns.

The third macro-level control is the quantum index, which is the industrial production growth that may also affect the firm performance from a macro aspect. industrial production growth rate is measured by the following formula: dipt= ipt- ipt-1, where DIP is the growth rate of industrial production, IP t is the industrial production flow in year t, and its lagged value is Ipt-1.

Table 2: Description of Variables

Variable	Role	Measurement	Source
Export Sales	Dependent	Log of export sales measured in Pak Rupees	Balance Sheets
Assets	Financial Inclusion Indicators	Log of total assets of the firm measured in Pak rupees	Balance Sheets
Asset Tangibility		Fixed Assets/Total Assets	Balance Sheets
Debt to Equity Ratio		Total Debt/Total Equity	Balance Sheets
Gearing		Gearing is the Total Debt to Total Capital Employed ratio	Balance Sheets
RETA	Micro Controls	Retained Earnings to Total Assets	Balance Sheets
OINS		Operating Income to Net Sales ratio	Balance Sheets
Trade Openness	Macro Controls	Exports-imports/ GDP	WDI, World Bank
Risk Premium		Low-grade Govt bond return – long-term Govt bond return	State Bank of Pakistan
Quantum Index		Industrial production growth rate	State Bank of Pakistan

Note: Financial leverage variable divides firms into leveraged and non-leveraged for in-depth analysis.

The construction of variables, their description, and the data source are given in Table 3.

Table 3: Variable Construction

DETERMINANTS OF FIRM'S FINANCIAL INCLUSION			
VARIABLES	**CONSTRUCTION**	**DESCRIPTION**	**SOURCE**
Firms' Export	Log of firms' export values		SBP: Financial Statement Analysis of PSE listed non-financial companies(1999-2020)
Total Assets Total Assets Growth **Total Assets Growth/ GNP price deflator**	TA=B+A3 TAG=DLOG(TAM) **SIZE= TAG/GNP DF 1974**	Log of total assets of a firm divided by the GDP deflator	SBP: Financial Statement Analysis of PSE listed non-financial companies(1999-2020)
ASSET TANGIBILITY Fixed Assets/Total Assets	FIX.A/TA=A3/B+A3 **ATNG = FIX.A/TA**	This indicator shows the volume of tangible assets that the firm possesses.	SBP: Financial Statement Analysis of PSE listed non-financial companies(1999-2020)
DEBT TO EQUITY RATIO Total Debt/Total Equity Current Lib+Total Fixed Lib/Shareholder's Equity	CL+TFL/SH.HLDR. EQ=C+D/E **DBERM= CL+TFL/SH.EQ**	It is *the debt-to-equity ratio* for companies using debt financing. It is a commonly used variable to calculate debt burden.	SBP: Financial Statement Analysis of PSE listed non-financial companies(1999-2020)
GEARING Current Liabilities+Total Fixed Liabilities/Total Capital Employed	CL+TFL/TCAP EMP=C1+C2+D1+D3/E+D **GEAR = CL+TFL/TCAP EMP**	It measures the firm's financial leverage. And measure the level of finance provided by the owner and creditor	SBP: Financial Statement Analysis of PSE listed non-financial companies(1999-2020)

DUMMY VARIABLES			
GEAR% Dummy Variable	**One if GEARING > 20-40%** (High Gearing) **0 otherwise** (Low Gearing)	This specified gearing pattern helps in determining the Financial Inclusion of the firm.	
EQUITY% Dummy Variable	**One is EQ.FINAN > 40%** (High Equity Fin) **0 otherwise** (Low Equity Fin)		
SPECIFIC DETERMINANTS FOR FIRMS: CAMEL CATEGORY			
***RETA (Assets)** Retained Earningotal Asset ratio	SURPLUS/TA= E3/B2+A3 **RETA= SURPLUS/TA**	*Retained earnings are equal to* *reserve accounts+retained profit* For RETA, the firm's age is implicitly considered as this ratio gauges accumulative profit over some time. It is worth mentioning that this ratio exhibits biases as it is inclined towards classifying young firms as distressed, as firms require time to attain cumulative profits. Yet the literature shows extensive use of RETA	SBP: Financial Statement Analysis of PSE listed non-financial companies(1999-2020)
***OINS (Management & Earnings)** Operating Income to Net Sales ratio	GR.PROF-EXP/SALES= F3-F8/F1 **OINS = GR.PROF-EXP/SALES**	Operating income considers COGS (cost of goods sold) and fixed expenses. *Interest and taxes are not deducted from net operating income.* Net sales refer to the total amount of sales the business makes after allowing for deductions for damaged products, returns, and discounts	SBP: Financial Statement Analysis of PSE listed non-financial companies(1999-2020)

CONSTRUCTION OF MACRO VARIABLES			
IP DIP = DLOG (IP)	Industrial Production Growth rate $DIP_t = \log IP_t - \log I$ Industrial Production: *Industrial Production Growth rate*	We use an annual rate of industrial production, which is calculated, based on financial literature, by taking the first difference in natural logs: *DIP* is the annual growth rate of industrial production, IP_t is the flow of industrial production in year *t* and IP_{t-1} is its lagged value.	SBP: Handbook of Statistics
Trade Openness:	**Export-Import/Gdp** $INFT_t = \log CPI_t - \log$		WB indicators
Risk Premium **Low-Grade Govt Bond Return – Long-Term Govt Bond Return**	***Risk Premium*: RP$_t$ = LOW GB$_t$ – LGB$_t$**	$LOWGB_t$ *is* the return on low-grade bonds, and LGB_t is the return on long-term government bonds. Low-grade bonds are long-term assets that are less liquid than government bonds. Redemption of these bonds before the maturity date is subject to a penalty. Thus they are more risky for investors than the government bonds for which a market exists. Since both types of bonds are long-term, the difference in return on the two gives an estimate of risk premium outside the stock market.	SBP: Handbook of Statistics

4. METHODOLOGY

To choose the best estimation technique, the study started by testing the data properties. Descriptive statistics of the variables used in the analysis were used in the first step. This study calculated each variable's mean, median, and range. Additionally, the standard deviation of values was computed to duplicate variable volatility and measure the variance of each observation concerning the mean. The study used skewness and Kurtosis to check for data normality as a logical first step. A thorough normality test was developed by Jarque & Bera in 1987. This test determines whether data are normally distributed by looking at skewness and excess Kurtosis. The equation that follows yields normality statistics.

$$JB = \frac{N}{6}\left(S^2 + \frac{(K-3)^2}{4}\right) \quad (5)$$

The null hypothesis of Jarque-Normality Bera's test is that the data are normally distributed, which may be challenged by statistically significant estimates.

Slop Heterogeneity and Cross-Sectional Dependence

The current study employed panel cross-section dependence and slope heterogeneity after examining variable regularity and irregularity. The general macroeconomic environment may have different effects on each firm. Firms may become dependent on one another due to various macroeconomic factors. For instance, any modification to laws or macroeconomic policies may impact all businesses and lead to cross-sectional dependence. As a result, businesses may share and differ from others. Panel data's slope homogeneity and cross-section dependence may cause problems in econometric analysis (Bao, 2020). This study employed the Pesaran and Yamagata (2008) slope coefficient homogeneity (SCH) test and the Pesaran (2021) cross-sectional dependence test to determine whether a phenomenon is homogeneous or heterogeneous. The SCH formula is:

$$\Delta_{SCH} = \sqrt{N(2k)^{-1}}\,(N^{-1}S - K) \quad (6)$$

Additionally, the above test provides estimated results for the adjusted SCH, which are as follows:

$$\Delta_{SCH} = \sqrt{N}.\sqrt{\frac{T+1}{2K.(T-K-1)}}.(N^{-1}S - 2K) \quad (7)$$

When significant estimates are established, the alternative hypothesis, which contradicts the null hypothesis, indicates heterogeneous slope coefficients. The recent study conducted the Pesaran (2021) cross-section dependence test between firms after estimating slope coefficients. If this issue is ignored, estimation bias may result (Campello, Galvao, & Juhl, 2019). The following is the formula used to evaluate cross-sectional dependency:

$$CD_{Test} = \frac{\sqrt{2T}}{[N.(N-1)]^{\frac{1}{2}}} \sum_{i=1}^{N-1}\sum_{K=1+i}^{N} T_{ik} \quad (8)$$

The null hypothesis of the test implied the independence of firm cross-sections. An alternate cross-sectional dependence hypothesis can be accepted once significant estimates have been established. The variables in the dataset did not exhibit any cross-sectional dependence by the null hypothesis. Also supported by the alternative hypothesis is the cross-sectional dependence of the variables in the data set.

Unit Root Tests

This study used the Fisher test after confirming heterogeneous slope coefficients and cross-sectional

dependency. The benefit of this test is that, unlike the IPS test, it does not call for a balanced panel. Different lag lengths can also be used in the individual ADF regression. The Fisher test has the additional benefit of applying to any unit root test that has been derived. The Levin-Lin and Im-Pesaran-Shin (IPS) panel data unit root tests and the Fisher test, proposed over 60 years ago by R. A. Fisher and has an illustrious history in the statistical literature, were contrasted by Maddala and Wu (1999). The Fisher test is simple and easy to use.

Method of Moment Quantile Regression

First, a panel quantile estimation approach that assesses the dependent variance and conditional mean statistics was put forth by Koenker and Bassett Jr. (1978). Even with irregularly distributed variables, quantile regression produces reliable results. The current study used Machado and Silva's (2019) moment's quantile regression, which followed the properties of quantile regression. This approach evaluates distributional and heterogeneous quantile effects (Sarkodie & Strezov, 2019). Location-scale estimates typically take the following form:

$$Y_{it} + \vartheta X_{it} + (\delta_i + \rho \acute{Z}_{it}) . \mu_{it} \quad (12)$$

The preceding equation shows $P.(\delta_i + \rho Z'_{it}>0)=1$, where p is the probability (.). Moreover, θ,ϑ,δ,and ρ are parameters to be estimated. The subscript I shows the fixed impact of θ_i and δ_i, i= 1, 2, 3…n and Z exhibits the k-vector of predictable X elements that are variation conversions ∼ as follows:

$$Z_{\sim} = Z_{\sim}(X), \sim = 1, 2, 3 \ldots . k \quad (13)$$

According to Machado and Silva (2019), in Equation (13), X is distributed independently for each l and t. l is orthogonal to X and can be distributed over fixed cross-sections and time, stabilising the other components and preventing excessive exogenic behaviour. Equations (2-4) then become:

$$Q_y (\tau X_{it}) = (\theta_i + \delta_i q(\tau)) + \vartheta X_{it} + p\acute{Z}_{it} q(\tau) \quad (14)$$

X is the vector of the independent variables, financial inclusion indicators, and micro and macro controls, as determined by Equation (14). The quantile distribution is also shown in the equation above. The dependent variable is export sales and its estimate depends on where those variables are located. Moreover, $-Q_y (\tau) \equiv \theta_i+\delta_i q.(\tau)$ is a scalar coefficient of quantile τ for each cross-section (i). Individual effects do not control intercept shift, unlike least square fixed effects. Due to variables' time-invariance, heterogeneous influence can shift across quantiles. Q (τ) also shows the τ-*th* quantile sample: the 25th, 50th, 7^{5th}, and 90th. Each quantile's equation is as follows:

$$min_q \sum_i \sum_t \gamma_t (R_{it} - (\delta_i + \rho \acute{Z}_{it}) q) \quad (15)$$

Where

$$\gamma_t(A) = (\tau - 1). AI \{A \leq 0\} + TAI\{A > 0\} \quad (16)$$

Specifies check function.

To determine the impact of financial inclusion variables on the export value of the firms, we specify the following model:

$$Export\ Value_{it} = \alpha + \beta\ Financial\ Inclusion\ Indicators_{it} + \gamma Firm\ Level\ Controls_{it} + \delta\ Macro\ Level\ Controls_t + \epsilon_{it} \quad (1)$$

Here, Export Valueit stands for a log of export sales. Financial Inclusion indicators include total assets, asset tangibility, debt-to-equity ratio, gearing, and Firm-Level Controlsit includee RETA and OINS. Macro Level Controlsit include industrial production growth rate, trade openness, and risk premium.

The estimations were done on the full sample and then by disaggregating the sample by leverage structure, gearing, equity, size, and sectors. The firms were divided according to their leverage capital structure. We grouped firms based on their financial leverage ratio. Category 1 is for firms with more than a 40 per cent leverage ratio and Category 2 includes firms with less than 40 per cent leverage. We grouped firms based on their gearing ratio with a 40 per cent cut-off and termed them high-gearing and low-gearing firms. Then, firms were grouped based on their equity ratio, with an equity ratio of more than 40 per cent in one group and less than 40 per cent in the second group.

Next, we have divided firms into four groups based on their size. The assets of the firms measured in million rupees were used for this breakdown. The State Bank of Pakistan specifies firms as medium-sized if they have assets worth PKR 300 million or less, while firms with more than PKR 300 million assets are termed large-sized firms. In our dataset, the majority of the firms were large-sized, with 86 per cent of them having assets of more than PKR 300 million. Therefore, we further categorised large-sized firms into three categories to dig deeper into the dynamics of firm size.

In sum, we had four categories of firms in terms of size. The first category consisted of firms having assets worth PKR 300 million or less. The next category was large firms with assets from PKR 300 million to PKR 1,625.6 million (the 50th percentile). The third category included firms from the 50th to 75th percentile having assets between PKR 1,625.7 to 5,318.8 million. Moreover, the fourth category included firms above the 75th percentile in terms of assets.

Next, we created subsamples of firms based on sectors. The first sub-sector is textile, which comprises almost 43 per cent of the firms and the second is the other manufacturing consisting of 10 per cent of firms in the dataset. The third subgroup is the food sector and sugar, with 10 per cent of firms, and the fourth is chemical and pharma, which comprises 8 per cent of firms in our data set. The fifth group consists of all other firms.

Endogeneity Concern and Proposed Methodology:

Endogeneity is a major methodological concern for many business and management research areas that rely on regression analysis to draw causal inferences. Roberts and Whited (2013, p. 493) define endogeneity as a correlation between the explanatory variables and the error term in a regression. Endogeneity may arise due to the omission of explanatory variables in the regression, resulting in the error term correlated with the explanatory variables, thereby violating a basic assumption of ordinary least squares (OLS) regression analysis. It may also be caused by the dependent variable being influenced by one or several explanatory variables. Such endogeneity may be of the simultaneous type in which contemporaneous realisations of both the dependent and explanatory variables in question affect each other. Or it may be of the dynamic type in which past realisations of the dependent variable influence current realisations of one or more of the explanatory variables (Abdallah et al., 2015).

We employed a two-step system GMM approach to address this issue to minimise endogeneity issues. This approach has at least two main advantages. First, it controls for industry-specific effects, which cannot be controlled with industry-specific dummies owing to the dynamic structure of the model and, second, it controls for simultaneity bias arising from the endogenous regressors (Khan et al., 2020). To determine the impact of financial inclusion variables on the export value of the firms, we specified the following GMM model:

$$Export\ Value_{it} = \alpha + \beta_0\ Export\ Value_{it-1} + \beta\ Financial\ Inclusion\ Indicators_{it} + \gamma Firm\ Level\ Controls_{it} + \delta\ Macro\ Level\ Controls_t + \epsilon_{it} \quad (2)$$

Here Export Valueit stands for a log of export sales. Financial Inclusion indicators include total assets, asset tangibility, debt-to-equity ratio, gearing, and Firm-Level Controlsit include RETA and OINS. Macro Level Controlsit include industrial production growth rate, trade openness, and risk premium.

4. RESULTS AND DISCUSSION

Results

This section presents the study findings starting from descriptive statistics and data diagnostics to determine the correct type of estimation technique for our data. In descriptive statistics (Table 4), the mean values of all variables except OINS, risk premium, and trade openness are positive.

Skewness and Kurtosis tests were used further to confirm the normality of each variable in this study. The empirical findings of the normality test are shown in Table 5. The joint test of skewness and Kurtosis and Jarque and Bera (1987) provide significant estimates for all variables. This test takes into account excess Kurtosis and skewness. This test takes into account excess Kurtosis and skewness. The sample data came from a normally distributed population according to the null hypothesis. The alternative theory contends that the data are not drawn from a population with a normal distribution. Since all of the variables' prob> chi (2) values are less than 0.05, the null hypothesis indicates that the variables were not normally distributed, rejecting the null hypothesis since according to the null hypothesis, the variable might be normally distributed.

Table 4: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Log of Export Sales	6,025	8.358	6.291	0	17.686
Log of Assets	6,025	14.321	1.988	-0.415	19.92
Financial Leverage	6,025	8.455	181.407	0.001	5,689.05
Asset Tangibility	6,025	0.519	0.239	0	3.658
Debt to Equity Ratio	6,025	0.895	39.256	-1649.8	1043.09
Gearing	6,025	2.407	92.761	-428.32	6,593.23
RETA	6,025	0.163	0.857	-5.467	35.954
OINS	6,025	-1.167	13.613	-572.21	3.902
Quantum Index	6,025	123.865	17.628	100	173
Trade Openness	6,025	-0.093	0.025	-0.133	-0.048
Risk Premium	6,025	-0.952	1.143	-4.067	1.82

Source: Authors' calculations

Table 5: Normality Test

	Skewness	Kurtosis	Jarque-Bera Test	
Variable	Prob>chi2	Prob>chi2	chi2(2)	Prob>chi2
Log of Export Sales	0	0	7.83.7	0
Log of Assets	0	0	42,000	0
Asset Tangibility	0	0	8,529	0
Debt to Equity Ratio	0	0	190,000,000	0
Gearing	0	0	4,700,000,000	0
RETA	0	0	250,000,000	0
OINS	0	0	240,000,000	0
Quantum Index	0	0	903	0
Trade Openness	0.0025	0.002	406	0
Risk Premium	0	0	710	0

Source: Authors' calculations

As mentioned previously, a firm depends on other firms for economic and non-economic reasons, leading to specific similarities and differences. The results of the Pesaran and Yamagata (2008) SCH test are presented in Table 6. Neglecting slope heterogeneity or homogeneity may lead to inefficient estimation. An analysis of slope heterogeneity is required. Both SCH (delta) and adjusted SCH (delta adjusted) satisfy the homogeneous slope null hypothesis and are statistically significant. This demonstrates the possibility of rejecting the null hypothesis and the heterogeneity of slope coefficients.

Table 6: Testing for Slope Heterogeneity

Slope Heterogeneity Test	**Statistics**
Delta	2.639.487***
Delta Adjusted	5.060***

*Note: *** p<0.01, ** p<0.05, * p<0.1*

Source: Authors' calculations

Next, as Campello et al. (2019) claimed, estimation bias in panel data results from cross-sectional dependency. The Pesaran (2021) CD test was used (Table 7). The null hypothesis of cross-sectional independence was rejected because all variables had high statistical significance. These variables depend on one another cross-sectionally, demonstrating how one firm's variables impact another's variables.

Table 7: Cross-sectional Dependence

Variable	Statistics
Log of Export Sales	37.76***
Log of Assets	343.913***
Asset Tangibility	7.428***
Debt to Equity Ratio	19.314***
Gearing	34.865***
RETA	21.484***
OINS	364.86***
Quantum Index	866.449***
Trade Openness	869.256***
Risk Premium	873.565***

*Note: "*** p<0.01, ** p<0.05, * p<0.1"*

Source: Authors' calculations

Only the Fischer-type Dickey-Fuller and Phillip Perron unit root tests could be used to check for the presence of unit roots in the data because the data set was unbalanced. Table 8 presents the test results. Under mixed-order integration, all variables were found to be stationary.

Table 8: Unit Root Testing (Fischer-Type Phillips Perron Panel Unit Root Test)

Order of Integration	**Level**				**First Difference**			
Variables	Inverse chi-squared P	Inverse normal Z	Inverse logit t) L*	Modified inv. chi-squared-Pm	Inverse chi-squared P	Inverse normal Z	Inverse logit t) L*	Modified inv. chi-squared-Pm
Log of Export Sales	1,033.6	-1.14	-6.08	11.59	2,820.56***	-34.3***	-45.1***	62.49***
Log of Assets	858.397**	5.3899	2.1881	6.235***	2,571.2***	-31.9***	-39.6***	54.4***
Asset Tangibility	1,280.7***	-6.9	-11.1***	18.1	3,537.9***	-42.6***	-56.1***	81.6***
Debt to Equity Ratio	2,328.5***	-20.0	-31.0***	47.5***	4,494.4***	-49.2***	-71.4***	108.4***
Gearing	1,935.8***	-16.9***	-24.1***	36.4***	4,092.0***	-46.4***	-64.9***	97.1***
RETA	1,165.7***	-2.0	-7.5	14.9***	2,749.4***	-35.4***	-44.0***	59.4***
OINS	1,483.4***	-12.3***	-17.1***	23.7***	7,351.9***	-70.6***	-113.4***	188.3***
Quantum Index	1,571.5***	-18.5***	-17.6***	26.1***	6,226.4***	-63.3***	-94.6***	156.7***
Trade Openness	704.54***	-5.94***	-5.27***	1.86	3,575.2***	-46.5***	-54.9***	82.4***
Risk Premium	2,717.13***	-32.24***	-40.55***	58.20***	11,900.0***	-96.1***	-182.5***	314.4***

*Note: "*** p<0.01, ** p<0.05, * p<0.1"*

Source: Authors' calculations

The Jarque and Bera (1987) test found that the variables were not normally distributed. Therefore, we used the method of moment quantile regression (MMQREG), which handles non-normal variables. Table 8 shows the approach's estimated results.

Now, we present the results from the method of moment quantile regressions. Table 9 presents our full sample estimates. The results show that assets positively impacted export sales, with the impact getting stronger as we move from lower to higher quantiles. On the other hand, asset tangibility hurt export sales, but the impact weakens as we move from lower to higher quintiles. Equity debt was insignificant for lower quantiles but positive and significant for upper quantiles. Gearing has overall positive signs and the impact gets stronger moving from lower to higher quantiles.

Table 9: Quantile Regression Estimates (Full Sample)

VARIABLES	Qtile_25	Qtile_50	Qtile_75	Qtile_90
Log of Assets	0.826***	0.979***	1.017***	1.032***
	(0.061)	(0.028)	(0.023)	(0.022)
Asset Tangibility	-4.142***	-1.623***	-0.991***	-0.742***
	(0.559)	(0.253)	(0.210)	(0.203)
Debt to Equity Ratio	-0.000	0.001	0.002	0.002*
	(0.003)	(0.001)	(0.001)	(0.001)
Gearing	0.009	0.015*	0.016**	0.017***
	(0.018)	(0.008)	(0.007)	(0.006)
RETA	-0.167*	-0.306***	-0.340***	-0.354***
	(0.087)	(0.039)	(0.033)	(0.031)
OINS	0.018***	0.027***	0.029***	0.030***
	(0.006)	(0.003)	(0.002)	(0.002)
Quantum Index	-0.007	-0.012***	-0.014***	-0.014***
	(0.008)	(0.003)	(0.003)	(0.003)
Trade Openness	21.714***	12.869***	10.646***	9.773***
	(5.527)	(2.495)	(2.080)	(2.012)
Risk Premium	-0.037	-0.112**	-0.131***	-0.138***
	(0.120)	(0.054)	(0.045)	(0.044)
Constant	0.992	7.239***	8.808***	9.425***
	(1.345)	(0.608)	(0.506)	(0.490)
Observations	6024	6024	6024	6024

*Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Source: Authors' calculations

Table 10 presents results for leveraged versus non-leveraged firms. Assets positively impacted exports in all quantiles of the leveraged and non-leveraged firms and impact got stronger from low to top quantiles. Furthermore, the coefficients are larger in all the quantiles of the non-leveraged firms. The assets had a greater impact on the firms' exports if they were less leveraged. Asset tangibility harmed leveraged and non-leveraged firms, with the effect weakening from lower to higher quantiles. Furthermore, the negative impact was stronger for all the quantiles of leveraged firms.

The debt-to-equity ratio was significant and positive only for the upper quantiles of the leveraged firms. Gearing positively impacted export sales and the effect is more pronounced for non-leveraged firms.

Table 10: Quantile Regression Estimates

	Leveraged Firms				Non-Leveraged Firms			
VARIABLES	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**
Log of Assets	0.821***	0.965***	1.000***	1.012***	0.890***	1.015***	1.047***	1.065***
	(0.071)	(0.031)	(0.026)	(0.025)	(0.125)	(0.063)	(0.054)	(0.052)
Asset Tangibility	-4.273***	-1.566***	-0.924***	-0.69***	-3.46***	-2.28***	-1.97***	-1.81***
	(0.665)	(0.292)	(0.244)	(0.237)	(1.063)	(0.535)	(0.461)	(0.444)
Debt to Equity Ratio	-0.001	0.001	0.002*	0.002*	0.089	0.108	0.112	0.115
	(0.003)	(0.001)	(0.001)	(0.001)	(0.275)	(0.138)	(0.119)	(0.115)
Gearing	0.007	0.012	0.014**	0.014**	2.317**	2.215***	2.189***	2.174***
	(0.018)	(0.008)	(0.007)	(0.006)	(1.048)	(0.527)	(0.454)	(0.437)
Constant	3.719**	8.214***	9.281***	9.662***	-8.62***	2.792**	5.719***	7.380***
	(1.548)	(0.678)	(0.569)	(0.553)	(2.637)	(1.349)	(1.148)	(1.101)
Observations	4698	4698	4698	4698	1326	1326	1326	1326

*Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Source: Authors' calculations

Table 11 presents the same finding for assets positively impacting sales, with the effect being strong in the firms' low gearing and upper quintiles. Asset tangibility harmed sales for all quantiles of the high and low-gearing firms, with the effect getting weaker from lower to higher quintiles. Gearing had a strong negative impact on the export sales of high-gearing firms. If firms already used more than 40 per cent gearing, further increases in gearing impacted their exports negatively.

Table 11: Quantile Regression Estimates

	High Gearing Firms				Low Gearing Firms			
VARIABLES	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**
Log of Assets	0.702***	0.883***	0.922***	0.935***	0.729***	0.961***	1.083***	1.145***
	(0.086)	(0.033)	(0.026)	(0.025)	(0.068)	(0.061)	(0.059)	(0.062)
Asset Tangibility	-4.48***	-2.83***	-2.47***	-2.35***	-3.14***	-0.121	1.466**	2.275***
	(0.731)	(0.280)	(0.224)	(0.21)	(0.687)	(0.638)	(0.601)	(0.630)
Debt to Equity Ratio	-0.002	0.001	0.001	0.002*	0.022**	0.031***	0.036***	0.039***
	(0.003)	(0.001)	(0.001)	(0.001)	(0.009)	(0.008)	(0.008)	(0.009)
Gearing	-0.120**	-0.09***	-0.09***	-0.08***	-0.002	0.004	0.008	0.010
	(0.049)	(0.019)	(0.015)	(0.015)	(0.014)	(0.011)	(0.012)	(0.012)
Constant	4.390***	9.304***	10.352***	10.716***	-7.01***	0.044	3.750**	5.640***
	(1.695)	(0.650)	(0.522)	(0.501)	(1.819)	(1.625)	(1.591)	(1.668)
Observations	4,842	4,842	4,842	4,842	1,182	1,182	1,182	1,182

*Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Source: Authors' calculations

Table 12 presents the results for low-equity and high-equity firms. Assets had a very stable positive impact on export sales of the firms and the impact slightly increased from lower to higher quintiles of the equity-based firms while decreasing for low equity firms.

Assets tangibility was mostly negative in this specification. The debt-to-equity ratio had a positive and significant impact on the export sales of high-equity firms, but the impact was insignificant on low-equity firms. Gearing was positive and significant for high-equity firms. Gearing significantly increased export sales of equity-based firms. At the same time, the impact was negative on low-equity firms. The equity-based firms gained more from debt and gearing than non-equity-based firms.

Table 12: Quantile Regression Estimates

	High EquityFirms				LowEquity Firms			
VARIABLES	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**
Log of Assets	0.788***	0.970***	1.011***	1.027***	0.885	0.819**	0.791***	0.780***
	(0.068)	(0.027)	(0.022)	(0.022)	(1.093)	(0.330)	(0.135)	(0.206)
Asset Tangibility	-2.92***	-0.72***	-0.213	-0.014	-5.558	-3.210	-2.224**	-1.829
	(0.658)	(0.265)	(0.215)	(0.208)	(8.412)	(2.550)	(1.039)	(1.590)
Debt to Equity Ratio	0.041*	0.041***	0.040***	0.040***	-0.002	0.000	0.001	0.001
	(0.023)	(0.009)	(0.008)	(0.007)	(0.013)	(0.004)	(0.002)	(0.002)
Gearing	0.029	0.026***	0.025***	0.024***	-0.003	-0.039	-0.054**	-0.060*
	(0.024)	(0.010)	(0.008)	(0.008)	(0.176)	(0.053)	(0.022)	(0.033)
Constant	0.305	7.017***	8.550***	9.156***	4.130	10.065*	12.557***	13.555***
	(1.526)	(0.614)	(0.501)	(0.483)	(18.613)	(5.634)	(2.295)	(3.515)
Observations	5,185	5,185	5,185	5,185	839	839	839	839

*Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Source: Authors' calculations

Tables 13 and 14 below, present the results for firms segregated according to their size. Assets significantly and positively impacted the export sales of firms of all sizes, with the effect being greater for the firms within the 25th to 75th quintiles of the size variable. Asset tangibility decreased export sales of medium-sized and large-sized firms up to the 75th quantile. Asset tangibility was positive and significant for large firms above the 75th quantile in all the firms included in the study. The debt-to-equity ratio was mostly insignificant in this specification. Gearing positively impacted the export sales of the bottom and top firms in terms of size and negatively impacted the firms in the 50-75th quantiles.

Table 13: Quantile Regression Estimates

	Medium-sized firms with assets less than 300 million Rs				Large-sized Firms in 25- 50% quintiles			
Variables	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**
Log of Assets	0.177**	0.144*	-0.082	-0.151	2.404***	2.182***	2.093***	2.062***
	(0.069)	(0.075)	(0.127)	(0.147)	(0.365)	(0.229)	(0.201)	(0.197)
Asset Tangibility	-1.24***	-1.220**	-1.082	-1.040	-3.97***	-3.54***	-3.36***	-3.30***
	(0.474)	(0.506)	(0.873)	(1.011)	(0.744)	(0.467)	(0.410)	(0.403)
Debt to Equity Ratios	0.006	0.004	-0.004	-0.007	-0.001	0.001	0.002*	0.003**
	(0.008)	(0.009)	(0.015)	(0.017)	(0.002)	(0.001)	(0.001)	(0.001)
Gearing	0.026**	0.030**	0.058***	0.067***	0.017	0.010	0.007	0.006
	(0.011)	(0.012)	(0.020)	(0.024)	(0.028)	(0.018)	(0.015)	(0.015)
Constant	1.594	3.434*	16.068***	19.965***	-12.8***	-0.158	4.916***	6.672***
	(1.529)	(1.822)	(2.837)	(3.271)	(3.094)	(1.968)	(1.702)	(1.671)
Observations	867	867	867	867	2,145	2,145	2,145	2,145

*Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Source: Authors' calculations

Table 14: Quantile Regression Estimates

	Large-sized Firms in 50-75% quintiles				Large-sized Firms in Above 75% quintiles			
Variables	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**
Log of Assets	1.667**	1.288***	1.184***	1.141***	-0.554*	0.174	0.528***	0.670***
	(0.738)	(0.282)	(0.212)	(0.206)	(0.330)	(0.133)	(0.092)	(0.093)
Asset Tangibility	-8.06***	-4.05***	-2.951***	-2.492***	1.538	0.439	-0.095	-0.308
	(1.387)	(0.514)	(0.380)	(0.367)	(0.991)	(0.448)	(0.312)	(0.317)
Debt to Equity Ratio	0.003	-0.000	-0.001	-0.002	-0.003	-0.002	-0.001	-0.000
	(0.010)	(0.004)	(0.003)	(0.003)	(0.007)	(0.003)	(0.002)	(0.002)
Gearing	-0.066	-0.06***	-0.059***	-0.058***	0.136	0.126***	0.121***	0.119***
	(0.045)	(0.017)	(0.013)	(0.013)	(0.084)	(0.039)	(0.027)	(0.028)

Constant	7.858	9.968***	10.547***	10.788***	14.348***	12.311***	11.322***	10.926***
	(6.248)	(2.386)	(1.795)	(1.744)	(3.242)	(1.492)	(1.041)	(1.059)
Observations	1,506	1,506	1,506	1,506	1,506	1,506	1,506	1,506

*Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Source: Authors' calculations

Tables 15 and 16 present results for sectoral analysis. Assets positively and significantly impacted the export sales of all the firms except for chemical and pharma firms. Asset tangibility affected export sales of the other small sectors positively, while it negatively affected all other sectors. The debt-to-equity ratio had mostly an insignificant effect in the sectoral analysis. Gearing had a positive impact on the majority of sectors, but the coefficient was insignificant in most specifications.

Table 15: Quantile Regression Estimates

	Textile Sector				**Other small sectors**			
Variables	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**
Log of Assets	1.975***	1.509***	1.376***	1.302***	0.956***	1.117***	1.153***	1.179***
	(0.107)	(0.043)	(0.034)	(0.034)	(0.112)	(0.074)	(0.076)	(0.079)
Asset Tangibility	-9.39***	-6.05***	-5.10***	-4.56***	3.084***	1.249**	0.835	0.543
	(0.850)	(0.347)	(0.275)	(0.271)	(0.926)	(0.616)	(0.627)	(0.657)
Debt to Equity Ratio	0.001	0.001	0.002	0.002*	0.015***	0.004	0.002	-0.000
	(0.003)	(0.001)	(0.001)	(0.001)	(0.004)	(0.003)	(0.003)	(0.003)
Gearing	-0.017	0.002	0.007	0.011*	0.020	0.031	0.033	0.035
	(0.017)	(0.007)	(0.006)	(0.006)	(0.035)	(0.024)	(0.024)	(0.025)
Constant	3.291*	7.982***	9.322***	10.073***	-4.228*	5.260***	7.404***	8.914***
	(1.718)	(0.715)	(0.571)	(0.566)	(2.260)	(1.506)	(1.527)	(1.601)
Observations	2,642	2,642	2,642	2,642	1,606	1,606	1,606	1,606

*Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Source: Authors' calculations

Table 17 presents the results of the system GMM. Lagged export sales were positive and significant in all the equations. The assets-related financial inclusion proxies positively and significantly impacted the firms' exports. A one per cent increase in assets brought 176 (e1.013*log(1.01) = 1.76) per cent increase in the export sales of the firms. It implies that firms with larger resources/assets tend to export more. Asset tangibility had a negative and significant impact on export sales. One per cent increase in tangible assets brought a 99 per cent decrease in sales. From debt-related proxies of financial inclusion, gearing had a negative and significant impact on export sales.

The reported gearing results indicate that a per cent increase in the proportion of creditor funds compared with a firm's owner fund to finance firm activities was more likely to decrease a firm's export performance by 10 per cent. The high gearing ratio implies that the creditors largely financed the firm's activities more than the owner.

The debt-to-equity ratio is measured as total debt to total shareholder equity. The indicator is used as a variable indicating the financial inclusion of the firm. The debt-to-equity ratio had a positive and significant impact on the export sales of the firms. One unit increase in the debt-to-equity ratio brought a 1.40 (exponential 0.014=1.014)[1] per cent increase in the export sales of the firms. The variable debt-to-equity ratio in the full sample estimation reports unique results.

[1] Linear Regression Models with Logarithmic Transformations Kenneth Benoit* Methodology Institute London School of Economics kbenoit@lse.ac.uk March 17, 2011

Table 16: Quantile Regression Estimates

	Other Manufacturing				Food Sector and Sugar				Chemical and Pharma			
Variables	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**	**Qtile_25**	**Qtile_50**	**Qtile_75**	**Qtile_90**
Log of Assets	0.162	0.803***	0.962***	1.041***	1.546***	0.812***	0.548**	0.418*	-0.68***	-0.42***	-0.32***	-0.27***
	(0.209)	(0.095)	(0.077)	(0.072)	(0.336)	(0.252)	(0.230)	(0.230)	(0.135)	(0.089)	(0.080)	(0.081)
Asset Tangibility	-5.8***	-5.96***	-5.98***	-5.99***	-9.58***	-8.23***	-7.7***	-7.5***	-8.25***	-4.66***	-3.29***	-2.65***
	(1.722)	(0.791)	(0.654)	(0.622)	(1.717)	(1.241)	(1.178)	(1.180)	(1.400)	(0.955)	(0.829)	(0.836)
Debt to Equity	0.023	-0.004	-0.011	-0.015	0.002	0.006	0.008	0.009	-0.005	-0.008	-0.009*	-0.009**
	(0.042)	(0.019)	(0.016)	(0.015)	(0.013)	(0.009)	(0.009)	(0.009)	(0.008)	(0.005)	(0.005)	(0.005)
Gearing	0.032	0.046**	0.050***	0.051***	-0.046	-0.033	-0.028	-0.026	0.002	0.031	0.042	0.047*
	(0.046)	(0.021)	(0.018)	(0.017)	(0.071)	(0.051)	(0.049)	(0.049)	(0.044)	(0.028)	(0.026)	(0.026)
Constant	-1.384	6.169***	8.056***	8.987***	-16.8***	1.238	7.763***	10.957***	17.069***	18.978***	19.709***	20.047***
	(3.937)	(1.806)	(1.488)	(1.412)	(3.560)	(2.993)	(2.421)	(2.407)	(3.142)	(2.023)	(1.874)	(1.882)
Observations	540	540	540	540	630	630	630	630	606	606	606	606

*Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Source: Authors' calculations

As far as the control variables are concerned, all positively impacted the export sales of the firms. RETA indicates retained earnings to total assets ratio and is termed a 'self-financing ratio.' The reported results in Table 8 depict that a one per cent increase in a firm's self-financing ratio tended to enhance a firm's export performance by 2 per cent. It signifies the previous results While the external financing indicators were less likely to improve export performance, a self-financing ratio inspired more export orientation in the case of Pakistan's manufacturing sector. A higher RETA ratio implies that the firm has the potential to self-finance its capital expenditure rather than relying on external sources of finance. Similarly, OINS¬ (operating income to net sale ratio) measures a firm's operational efficiency. The OINS, as reported, indicates that a one per cent increase in a firm's operational efficiency was associated with a one per cent increase in a firm's export performance.

The quantum index shows national industrial production potentials and is used as a macro variable to quantify the impact of industrial production and its nexus on a firm's export performance. As expected, the reported results of the IP Quantum Index indicate that a unit change in industrial production Quantum Index brought about a 12-unit positive change in the firm's export performance. Bangladesh's manufacturing sector shows similar evidence. A 1.01% increase in exports was associated with a 1 per cent increase in industrial production in Bangladesh (Rehman, 2017).

Table 17: GMM Estimates

Explanatory Variables	**Full Sample**
Lagged Export Sales	0.388***
	(0.005)
Log of Assets	1.013***
	(0.032)
Asset Tangibility	-7.897***
	(0.094)
Debt to Equity Ratio	0.014***
	(0.001)
Gearing	-0.103***
	(0.005)
RETA	-0.071
	(0.047)
OINS	0.009***
	(0.002)
Quantum Index	0.146***

	(0.008)
Trade Openness	15.179***
	(4.086)
Risk Premium	1.110***
	(0.310)
Observations	5,370
Number of IDs	319
Year Dummies	Yes
F test	5036.6***
AR1/prob.	-0.10.06/0.00

*Note: i) Robust standard errors are reported in parenthesis; ii) *** denotes p<0.01, ** p<0.05, and * p<0.1, respectively; iii) F is a Wald test of the joint significance of the reported coefficients; iv) AR(1) and AR(2) are serial correlation tests of order 1 and 2 using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, the p-value is given after /; vi) all equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

In Table 18, the firms are divided according to their leverage capital structure. In Columns 2 and 3, we have grouped firms based on their financial leverage ratio. In Column 2, results for the firms with more than 40 per cent leverage ratio are presented and In Column 3, the firms with less than 40 per cent leverage are presented. Similarly, we have grouped firms based on their gearing ratio with a 40% cut-off and findings are presented in Columns 4 and 5.

Assets positively impacted export sales for all types of firms, leveraged or non-leveraged, low gearing or high gearing, While Asset tangibility negatively impacted export sales of all types of firms. Gearing hurt the exports of highly leveraged and high-gearing firms, while it positively impacted low-leveraged and low-gearing firms. The debt-to-equity ratio had a positive impact on all types of firms.

Table 18: GMM Estimates for Leveraged versus Non-Leveraged Firms

Explanatory Variables	Leveraged Firms	Non-Leveraged Firms	Gearing 40% and Above	Gearing less than 40%
Lagged Export Sales	0.353***	0.169***	0.316***	0.260***
	(0.004)	(0.002)	(0.003)	(0.003)
Log of Assets	0.736***	0.919***	1.209***	0.814***
	(0.022)	(0.013)	(0.024)	(0.012)
Asset Tangibility	-6.295***	-8.096***	-3.924***	-0.835***
	(0.109)	(0.128)	(0.092)	(0.075)
Debt to Equity Ratio	0.016***	0.143***	0.014***	0.013***
	(0.001)	(0.016)	(0.001)	(0.001)
Gearing	-0.101***	0.503***	-0.131***	0.006***
	(0.003)	(0.018)	(0.005)	(0.002)
Observations	4136	1234	4264	1106
Number of IDs	311	197	311	187
Year Dummies	Yes	Yes	Yes	Yes
F test	7305***	310006***	4877***	577014***
AR1/prob.	-8.4/0.00	-5.20/0.00	-7.06/0.00	-5.01/0.00
AR2/prob.	1.23/.22	0.75/0.45	1.11/.26	1.49/0.13
Sargan/prob.	242.65/0.08	142.67/0.99	225.92/0.275	138.67/0.99
Hansen/prob.	243.49/0.08	160.78/0.99	255.5/0.029	155.7/0.99
Controls	Yes	Yes	Yes	Yes

*Note: i) Robust standard errors are reported in parentheses; ii) *** denotes p<0.01, ** p<0.05 and * p<0.1, respectively; iii) F is a Wald test of the joint significance of the reported coefficients; iv) AR(1) and AR(2) are serial correlation tests of order 1 and 2 using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, the p-value is given after /; vi) all equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Table 19 captures the capital structure of the firms in terms of equity. The firms are grouped based on their equity ratio, with an equity ratio of more than 40 per cent in one group and less than 40 per cent in the second group. The majority of the coefficients were significant with previous signs. Gearing was negative for high-equity firms.

Table 19: GMM Estimates Equity versus non-equity based

Explanatory Variables	Equity More than 40%	Equity Less Than 40%
Lagged Export Sales	0.414***	0.009
	(0.004)	(0.011)
Log of Assets	0.781***	2.621***
	(0.029)	(0.075)
Asset Tangibility	-5.440***	-3.690***
	(0.075)	(0.336)
Debt to Equity Ratio	0.018***	0.004***
	(0.002)	(0.000)
Gearing	-0.123***	-0.010
	(0.005)	(0.006)
Observations	4,667	703
Number of IDs	314	154
Year Dummies	Yes	Yes
F test	7657***	988067***
AR1/prob.	-9.26/0.00	-3.18/0.00
AR2/prob.	1.13/0.25	0.01/0.92
Sargan/prob.	230.28/0.21	77.68/0.99
Hansen/prob.	251.02/0.042	108.4/0.99
Controls	Yes	Yes

*Note: i) Robust standard errors are reported in parentheses; ii) *** denotes p<0.01, ** p<0.05 and * p<0.1, respectively; iii) F is a Wald test of the joint significance of the reported coefficients; iv) AR(1) and AR(2) are serial correlation tests of order 1 and 2 using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, the p-value is given after /; vi) all equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

In Table 20, we have divided firms into four groups based on their size. The firms' assets measured in million PKR were used for this breakdown. The State Bank of Pakistan specifies firms as medium-sized if they have assets worth PKR 300 million or less, while firms with more than PKR 300 million assets are termed large-sized firms. In our dataset, the majority of the firms were large-sized, with 86 per cent of them having assets of more than PKR 300 million. Therefore, we further categorised large-sized firms into three categories to dig deeper into the dynamics of firm size. The first category consisted of firms having assets worth PKR 300 million or less. The next category was large firms with assets from PKR 300 million to PKR 1,625.6 million (the 50th percentile). The third category included firms from the 50th to 75th percentile having assets between PKR 1,625.7 to 5,318.8 million. Moreover, the fourth category included firms above the 75th percentile in terms of assets.

Assets had a positive impact on export sales of all-sized firms. At the same time, asset tangibility was negative for the first three categories and positive for the top firms. The debt-to-equity ratio had a positive impact on sales of firms of all sizes. Gearing harmed the sales of firms medium-sized firms and had a positive impact on the bottom and top firms but it turned positive for the top quantile. This result coincides with the financial leverage result. Moreover, similar logic may be proposed for this finding as well.

Table 20: GMM Estimates (Size-Wise)

Explanatory Variables	Medium-sized Firms with assets less than 300 million Rs	Large-sized Firms in 25-50% quintiles	Large-sized Firms in 50-75% quintiles	Large-sized Firms in Above 75% quintiles
Lagged Export Sales	0.253***	0.087***	0.241***	0.262***
	(0.019)	(0.004)	(0.001)	(0.004)
Log of Assets	0.172***	1.809***	0.315***	0.396***
	(0.056)	(0.036)	(0.029)	(0.044)
Asset Tangibility	-0.658***	-3.210***	-10.417***	2.294***
	(0.184)	(0.185)	(0.099)	(0.208)
Debt to Equity Ratio	0.007***	0.004***	0.016***	0.002***
	(0.002)	(0.000)	(0.001)	(0.000)
Gearing	0.021**	-0.017***	-0.020***	0.047***
	(0.010)	(0.004)	(0.002)	(0.008)
Observations	701	1,799	1,412	1,458
Number of IDs	110	217	194	143
Year Dummies	Yes	Yes	Yes	Yes

F test	297423***	218777***	220006***	329109***
AR1/prob.	-3.35/0.00	-6.78/0.00	-5.19/0.00	-4.38/0.00
AR2/prob.	1.24/0.21	1.59/0.11	0.55/0.58	0.70/0.84
Sargan/prob.	100.73/0.99	139.5/0.99	211.19/0.54	167.7/0.99
Hansen/prob.	72.19/0.99	159.5/0.99	157.5/0.99	121.69/0.99
Controls	Yes	Yes	Yes	Yes

*Note: i) Robust standard errors are reported in parentheses; ii) *** denotes p<0.01, ** p<0.05 and * p<0.1, respectively; iii) F is a Wald test of the joint significance of the reported coefficients; iv) AR(1) and AR(2) are serial correlation tests of order 1 and 2 using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, the p-value is given after /; vi) all equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Next, we created sub-samples of firms based on sectors the results of which are given in Table 21. The first sub-sector is textile, which comprised almost 43 per cent of the firms, and the second is the other manufacturing consisting of 10 per cent of firms in the dataset. The third sub-group is the food sector and sugar, with 10 per cent of firms, and the fourth is chemical and pharma, which comprised 8 per cent of firms in our dataset. The fifth group consists of all other firms. The results remain consistent with the previous results for the first two sectors. However, the financial inclusion indicators became insignificant in the next three sectors.

Table 21: Sector-Wise GMM Estimates

Explanatory Variables	Textile	Other Manufacturing	Food Sector and Sugar	Chemical and Pharma	Others
Lagged Export Sales	0.404***	-0.207	-0.247	-0.806	0.186***
	(0.004)	(0.490)	(0.794)	(0.904)	(0.033)
Log of Assets	1.197***	8.938	1.244	-1.465	0.925***
	(0.018)	(10.598)	(1.241)	(1.270)	(0.176)
Asset Tangibility	-6.745***	-65.638	29.204	-0.752	-0.662
	(0.119)	(60.164)	(39.294)	(10.879)	(1.462)
Debt to Equity Ratio	0.001	13.123	-0.406	-0.249	0.000
	(0.001)	(8.574)	(0.374)	(1.009)	(0.002)

Gearing	-0.050***	-23.543*	-0.433	-0.191	0.004
	(0.002)	(13.570)	(1.448)	(0.267)	(0.035)
Observations	2,338	486	568	538	1,440
Number of IDs	147	27	31	33	81
Year Dummies	Yes	Yes	Yes	Yes	Yes
F test	49802***	94.18***	232.79***	149.8***	2475***
AR1/prob.	-7.02/0.00	-1.11/0.26	-1.05/0.29	-0.51/0.61	-5.01/0.00
AR2/prob.	0.84/0.39	0.06/0.95	-0.79/0.432	-0.61/0.54	1.44/0.15
Sargan/prob.	241.08/0.08	88.2/0.99	113.23/0.99	111.4/0.99	118.77/0.99
Hansen/prob.	125.18/0.99	0.00/1.0	3.58/0.99	7.78/0.99	64.26/0.99
Controls	Yes	Yes	Yes	Yes	Yes

*Note: i) Robust standard errors are reported in parentheses; ii) *** denotes p<0.01, ** p<0.05 and * <0.1, respectively; iii) F is a Wald test of the joint significance of the reported coefficients; iv) AR(1) and AR(2) are serial correlation tests of order 1 and 2 using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; v) Hansen is a test of the over-identifying restrictions, asymptotically distributed as under the null of no correlation between the instruments and the error term, the p-value is given after /; vi) all equations include RETA, OINS, risk premium, trade openness, and quantum index as control variables.*

Discussion

This positive impact of assets implies that firms with larger resources/assets tend to increase exports. Exporting firms bear certain fixed costs to acquire enabling factors, such as license and shipping. Firms having larger assets and resources increase their exports. On the other hand, small firms are less likely to export subject to financial resource constraints (Williams, 2011). These results align with other studies (Sousa, Martínez-López, & Coelho, 2008).

Acquiring external finance requires collateral that ensures debt backup and returns. Therefore, firms often need larger fixed assets to secure formal financial institution loans. It implies that firms with larger fixed assets are more likely to acquire external loans. Firms acquiring loans from commercial banks subject to collaterals in developed and developing economies differ.

Enterprises in developing economies, where financial development is less developed, have the comparative advantage of tangible assets in determining international trade. Tangible assets play a significant role in terms of availing external financial resources. It is used as collateral to secure external loans and protect financers against possible default on the debtors' end (Braun, 2003). In the case of advanced economies with higher levels of financial development, intangible assets play a significant role in determining firms' export performances instead of tangible assets Hur and Raj (2006). One plausible explanation can be that firms in advanced economies use

intangible assets to secure a loan that leads to higher exports. An enterprise invests more in intangible assets to secure external loans in a country with higher financial development and an effective legal system (Giannetti, 2003).

However, in this study, the results related to asset tangibility indicate that the capital formation of fixed assets concerning a firm's total assets undermines export performances. The inverse impact of asset tangibility may be that the firm more probably diverts its financial resources from financing export activities toward larger fixed assets development. The study focuses on Pakistan's larger manufacturing sector firms listed on the Pakistan Stock Exchange operating in an almost developed economic environment. Therefore, to secure an external loan, relying on fixed assets to secure a loan may be costlier than depending on intangible assets that back up an external loan. (Bridges & Guariglia , 2008).

Gearing shows the firm's financial inclusion and access to external financial resources. The results imply that firms relying more on external debt to finance assets and activities are more likely to enhance exports. Qasim, Rizov, and Zhang (2020) empirically investigate the response of financial constraints to the export decisions of Pakistani firms. The study showed that financial constraint was a significant factor affecting the exporting decisions of Pakistan's firms. Along with the significant impact on export and exporting decisions, it had an impact on the exporting tendency of firms. Attempts to gain access to finance ensure export enhancement.

The debt-to-equity ratio is the relative ratio of the creditor's fund versus shareholder equity. The construct shows the firm's total debt concerning shareholder equity. The reported results indicate that the acquired debt can encourage export performances for firms acquiring higher debt than shareholder equity. Harrison, Lin, and Xu (2022) reported that other key factors, such as lack of infrastructure, political competition, and firms' access to finance, define firms' growth and export performance. Efobi, Orkoh, and Atata (2018) found through a quasi-experiment that formal financial services increased firms' exports. In addition, the study argued that access to formal debt enhanced firms' export capacity.

The present study also used macro controls, such as trade openness, industrial production, risk premium, and exchange rate. Several studies investigated the macro environment's role in determining a country's economic growth and export performance. For instance, a macro variable, trade openness, is positively associated with economic growth. Several studies have reported that trade openness positively and significantly affects economic growth (Romer & Frankel, 1999). Fatima et al. (2020) argued that trade openness was negatively related to GDP growth and was subject to low-level human capital accumulation. Usman (2014) concluded that trade openness improved export performance in the primary, manufacturing, and service sectors of Pakistan. The study considered the importance of exchange rates in the context of export performance. As per the findings of the study and as per theory and literature, the study concluded that for better export performance sound macro environment was equally crucial. Specifically, exchange rate stability, trade liberalisation and openness, sound industrial production environment, human capital accumulation, political stability, and the firm's financial inclusion led to higher export performances.

5. EMPIRICAL MODEL-BASED POLICY RECOMMENDATIONS

=> Firms, especially manufacturing firms, need to enhance their assets/resources, which significantly impacts firms' export performance.

=> Asset tangibility depicts a negative relationship with export performance in the LSM sector of Pakistan. A greater proportion of fixed assets as part of total assets undermines the export performance. This result is consistent for all sample estimates. The result also suggests that the composition of assets for the LSM sector of Pakistan must factor in the development of intangible assets, as in the case of developed

countries having high levels of financial development, intangible assets, such as property rights play a significant role in firms' export performances.

=> The highly significant and negative sign for high-gearing firms is in line with the literature that increasing a firm's leverage ratio beyond a certain threshold increases the failure probability of domestic firms (Bridges & Guariglia, 2018).

=> For export orientation, the capital structure needs to be leverage-based, as the ratios for leverage/debt significantly enhance export sales performance. The formal line of credit, ensuring leverage, is a workable phenomenon for facilitating the export performance of the LSM of Pakistan.

Recommendations for Stakeholders

For State Bank:

- Policies such as the Export Finance Scheme (EFS) and Long-Term Finance Facility (TFS), which were in place for two years by the SBP, under which loans were given to exporters at low policy rates, are needed.
- It is high time that TERF, which was extended to exporters and local manufacturers during COVID-19, is resumed for exporting manufacturers, if not for all.
- Diaspora bonds for industries in the Far East (3 years-5 years)
- Collateral issue
- Establish a more predictable exchange rate regime for exporting firms. East Asia has had a dual exchange rate for a long time as they want to facilitate exports).

For BOI

- There is a need to focus upon:
  - Availability and ability to raise the debt
  - availability and ability to raise equity
- Planning Commission and BOI must sit together and bring regulatory reform that the OFDI must go to exporting firms, which currently going mostly to domestic consumption, i.e., iron, cement, leather, footwear, etc.)
- There must be a sound investment policy that creates room for:
  - FDI for exporting firms
  - Joint ventures with exporting firms

For Planning Commission

- The PSDP for economic ministries must be carefully reviewed, such as industry, food security, and commerce.

- The evaluation of the PSDP portfolio of how the PSDP outlay facilitates exporting firms (in general and particularly in economic ministries).

- There are barriers to scaling up, i.e., why exporters cannot increase exports or handle big orders. Big orders are going to Bangladesh and India. Pakistan focuses more on SME exports and not on large exports even in the textile sector. The Planning Commission needs a sector-wise diagnostic.

For the Finance Ministry and the SECP

- They need to look into why is the asset base of the enterprise sector locked and why it does not grow in terms of GFCF (gross fixed capital formation).

- A 'sandbox' by SECP is needed.

- Further, a burning issue is that the accumulation of debt is not allowed by 'crowdsourcing,' while raising equity from crowdsourcing is allowed even though debt is much cheaper than equity.

- Even though there is s a working committee on the FATF, there appears to be a decision paralysis.

For Finance Ministry

- Since the phenomenal increase in the policy rate, the private sector has been shedding credit. Also, 80% of domestic borrowing is by the government. So loanable funds are reduced from two angles:

  - Domestic borrowing

  - Less supply of loanable funds

- Since exports pick up at a floating rate, when the policy rate increases, loans become expensive and the exporter returns credit. This also hinders asset creation.

- The SBP may increase the rate but must manage exporters at a lower rate.

- The issue of EXIM Bank: The EXIM Bank (The Export-Import Bank) was established for this purpose by the World Bank to smooth the business cycle. However, no single entity can continue export financing.

- SBP was to put an exchange reserve in the EXIM Bank for exports but there is now an impasse due to the economic meltdown.

For the Ministry of Commerce

- National Tariff Policy (Component of tariff on imported inputs): This policy has an anti-export bias as tariff rates are too high for imports. If textile sector dyes are to come, then the tariffs must be at least at the level of Bangladesh.

- Further, the 3-year trade policy by the Ministry of Commerce (STPF) focuses on increased asset creation and size. However, considering the current crisis that Pakistan is facing, this policy needs to be reviewed/revised. It had very little focus on a few sectors. The number of focused sectors needs to be increased.

Ministries of Industries and Production

There are two organizations under MOIP

1. EDB (Engineering Development Board): The ratio of input/output is decided by the EDB, i.e., how much of an imported input is allowed to exporters. This input-output assessment, again, has an anti-export bias. Some can import, others cannot, which is discriminatory and needs to be deliberated upon for manufacturing exporters.

2. SMEDA:

- SMEDA should partner with PIDE on the issue of why only established exporters and not exporters are present in manufacturing after 2013 and why this list has not changed over time.
- SMEDA must look into barriers to entry, i.e., why SMEs do not become exporters, and what are the challenges to new entrants in the export segment.

CPEC LTP (Long-Term Plan)

- It is time to review why the goals outlined in LTP have not been fulfilled, such as China-bound goals.
- Rethinking CPEC LTP
- Overlapping is another issue. Provincial P&Ds, in their development budget, allocate budget for "Industrial Development," and there is considerable misalignment and duplication, e.g., in the Hattar Industrial Estate, KPK, is already established, and the Federal placed STZA.
- Why is the Cabinet Committee on Export Promotion dormant?

Contribution

The present study thoroughly investigated and analysed the large-scale manufacturing sector's data comprising thousands of balance sheets and firms' export performance. Seminal study as per scale of data and diss-aggregated analysis of the LSM sector of Pakistan from multiple angles. The study has the following contributions:

- This study goes beyond and assesses the capital structure of the LSM concerning Export performance.
- The study employs holistic debt ratios. It captures the debt burden relative to firms' equity and total capital employed.
- Based on the firm's size and the firm's capital structure, the study estimated thresholds where leverage is useful and positively impacts export sales performance.
- The study contributes that over-access to external debt largely has critical implications for high-gearing firms, as after a certain threshold, any additional debt increases the probability of risk and firms' ability to meet debt repayments rather than to increase exports.

Future Research

The exchange rate needs to be factored in to capture the over-appreciation paradigm, continuing for years in this framework of export performance.

The firm's investment and export nexus needs to be explored further. Since, as per our analysis, the risk premium is negative, investment in long-term and short-term government bonds/securities may not be the optimal option as the sample period of two decades has seen a bullish trend in investing in these instruments, therefore, this aspect needs to be investigated empirically.

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PART II

SUGAR INDUSTRY, WATER COOPERATION & FINANCIAL INCLUSION

Policy Briefs

THE ONGOING CRISIS IN THE SUGAR INDUSTRY: DEREGULATING THE SUGAR INDUSTRY

Ahsan J. Pirzada, Barrister Naima Shahid and Roha Tahir Ghauri

CONTEXT

Pakistan's sugar industry is marred by anti-competitiveness (cartelization), misuse of political influence by mills, and outdated agricultural practices, leading to disappointing productivity and yield of sugarcane. The existence of legal gaps, such as provisions that allow responsible parties to escape liability and controversial price control mechanisms etc., further compound the problem alongside a fragmented and dispersed regulatory framework. This ultimately racks up compliance and enforcement costs. Additionally, the lack of meaningful research & development (R&D) for the sugar commodity, which, coupled with a mostly inactive Extension Department, has caused sugarcane production to fall short of its potential (compared to other cane-growing countries). As a result of all this, sugar production in Pakistan is costly and vulnerable to massive price fluctuations. Exacerbated by a non-intuitive import/export policy, this means that local consumers are forced to purchase expensive sugar and Pakistani sugar remains uncompetitive in the international market. This marks an urgent need for comprehensive reform of the industry, not only for economic reasons but in furtherance of the welfare of farmers, consumers, and other vulnerable stakeholders.

POLICY RECOMMENDATIONS

Keeping in view the complex systematic challenges alongside immediate-term priorities (generated by political imperatives), the deregulation of the industry should be phased out. This will not only "soften the blow" for vulnerable stakeholders, such as farmers, but also allow the industry time to readjust to change.

Phase I: Consolidation and Accessibility of Laws

The fragmented and complex web of laws, rules and regulations has rendered the present governing system incoherent, opaque, and unreliable. This has led to increased compliance/enforcement costs and opened the doors for the exploitation of vulnerable groups (farmers), such as the selective enforcement of the Gur Control Order 1948 despite it possessing no legal force.

The following are recommended:

- Formulate a working manual for stakeholders elucidating the processes, rights, roles, and responsibilities of those involved in the industry.
- Focus on comprehensive education and awareness campaigns so that all stakeholders can be brought onto the same page regarding their rights, roles, and responsibilities alongside generating an understanding of threats and opportunities within the industry.
- Redraft, consolidate, and make available all relevant governing provisions into a single enactment.

Phase II: Implementation and Enforcement

The lack of consistent enforcement of laws and regulations is the most pervasive criticism of the Pakistani sugar industry. However, enforcement is central to not only identifying true shortfalls in the

system but also informing future policy-making efforts.

Consider the following:

- Adopting cooperative enforcement strategies e.g., creating a distinction between hardened offenders and compliance irregularities by well-meaning individuals. The former may be pursued more rigorously and for the latter, a cooperative and less intrusive approach can be taken.

Phase III: Government/ Industry Reviews

To generate momentum for real reform, it is important to bring prevailing issues to the forefront (often repeatedly). To this end, collaborative government-industry reviews are strongly recommended. These have proven to play a pivotal role in driving radical reform of industries, as demonstrated by the Indian and Australian sugar industries' examples.

Other avenues to raise general awareness of the sugar industry's issues should also be proactively engaged, e.g., media campaigns etc. The implementation of this phase must remain a continuing pursuit even after the change is made.

Phase IV: Amendments to Laws and Other Initiatives to Promote Competition

In light of the problems faced by the industry, the following should be considered:

- Amendments to the law to overcome the gaps in the legal framework.
- Establish a Single Regulator (Ministry of National Food Security and Research) as a focal organisation dedicated to providing support for sugarcane cultivation, monitoring and managing all dealings pertaining to the production, marketing, import/export of sugar, formulating and implementing strategic development plans for the furtherance of the interests of all stakeholders, and ensuring the long-term sustainability of the industry. The mandate of this body should be focused on providing pre-emptive support such as training programs for farmers and timely enforcement of laws rather than being another vessel for Government intervention in times of crisis.
- Remove unnecessary barriers to entry into the industry such as regulatory prerequisites for the setting up and running of sugar mills. Further study may be required for this.
- Increased focus on the robust enforcement of competition and antitrust laws.
- Revitalisation of and increased funding for R&D and extension programs.

Phase V: Deregulation

Deregulation is the removal or simplification of government rules and regulations that constrain the operation of market forces. However, this does not mean that all regulations need to be abolished, especially those that are required as a part of services or support to rural communities such as the setting of food safety standards, natural resource protection, chemical use safety etc. Whenever a government is considering radical deregulation, it is very important to identify the most vulnerable stakeholders and devise strategies to mitigate negative outcomes via timely support and empowerment. Note that deregulation can only be successfully implemented in the existence of certain conditions:

- Significant power imbalances between stakeholders must have been corrected e.g. farmers must have a unified representative association, with a functioning and reliable mode of recourse in case of abuses of power.
- Eradication of monopolistic abuses of mills and effective mechanisms to prevent future cartelization/collusion.
- The process of deregulation must be transparent, and stakeholders must be made aware of what to expect in a deregulated market.
- Availability of appropriate adjustment programs to ameliorate the negative impact of change on those most vulnerable to it.

USING ECOSYSTEM VALUATION TO ENHANCE TRANSBOUNDARY WATER COOPERATION IN THE KABUL RIVER BASIN

Hameed Jamali, Shakeel Hayat, and Muhammed Rafiq

INTRODUCTION

Globally, there are approximately 310 transboundary rivers in 150 countries and water-related conflicts are frequent and increasing due to the worsening current global water situation. These conflicts are often approached with a focus on water rights, that is, using a predominately political lens to control and transfer water. While this is an important aspect, it does not account for the constantly changing political priorities, stakeholders, and water use. More importantly, the existing mechanisms do not account for the ecological aspect of a conflict centred on a nature-based system.

Similarly, the transboundary water conflict in the Kabul River Basin (KRB) is narrowly conceptualised in terms of quantitative water distribution leading to the win-lose situation. The situation is exacerbated due to ongoing insurgencies, climate change, growing industrialisation, and urbanisation. The existing transboundary water mechanisms are state-centric, bilateral, exclude other actors, and disregard the broader biodiversity & ecosystem services (BESS) of the river basin for enhancing human well-being. The paper has attempted to explore a novel idea of using the BESS concept by redefining the water management problem in the context of a green water economy and evidence of shared environmental benefits. The study used market-based valuation services to estimate the provisioning services of the upstream area (Chital) of KRB on the Pakistani side.

In the context of transboundary water governance in basins, such as the Kabul River Basin, the rationale for using BESS is that the existing water mechanisms are state-centric and bilateral. By including BESS in water management, we will be able to foster water cooperation.

Thus, the paper on which this policy brief is based, analysed and evaluated the provisioning ecosystem services of the KRB to understand water-related conflicts with an inclusive lens that considers shared environmental benefits and can bring together multiple stakeholders.

STUDY AREA

The study area was the KRB, specifically its upstream territory as it enters Chitral after flowing for 560 km in Afghanistan. Chitral is located in the extreme northern region of Khyber Pakhtunkhwa with Gilgit Baltistan on its east and Afghanistan on its north and west sides. The KRB serves as an important water source for irrigation as well as fulfilling the drinking water needs in both Afghanistan and Pakistan. With the increasing population, these needs are increasing, making this a critical area where existing conflicts could escalate.

In the KRB region, the most common agricultural products are wheat, tomatoes, potatoes, beans, maize, barely pulses, onion, rice, and different other vegetables. The region's inhabitants also collect medicinal plants, wild grass, and fuel wood from the non-agricultural land and nearby forests. Some of the agricultural product is used for household consumption, while the rest is sold on the market for income generation.

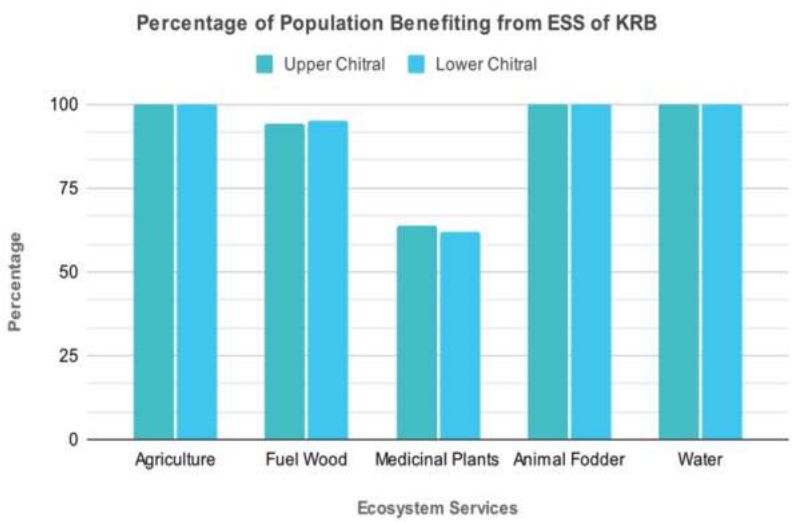
The economic values of the ESS were calculated for the following Common International Classification of Ecosystem Services (CICES) classes: (i) agriculture crops (e.g., beans, potatoes, tomatoes, pulses, onion, barley, wheat, maize, and perennial crops), (ii) livestock, (iii) fuel wood (iv) medicinal plants, and (v) water (drinking and non-drinking uses).

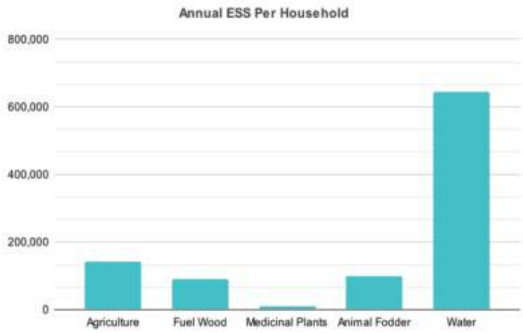
RESULTS

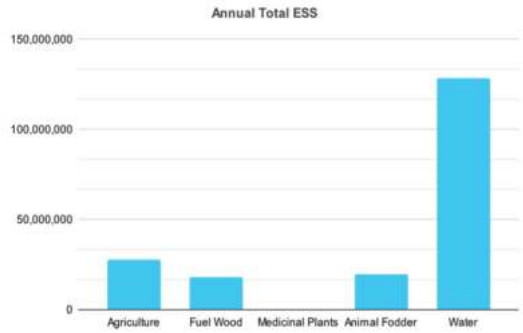
The ESS provisions are widely used in Chitral. Most commonly, these provisions are used in agriculture and the rearing of livestock, i.e., cultivation of agricultural products, surface water for drinking and non-drinking uses, medicinal plants, minerals, fuel wood, animal fodder, vegetables, and fishing.

The ESS provision by the Kabul River is the main source of livelihood for the local communities in Chitral. The importance of ESS provided by river Kabul to the localities of district Chitral can be identified by the monetary benefits obtained by the local communities. This study reveals a high monetary contribution by provisioning ESS to the communities living near the Kabul River.

The best ESS, in terms of monetary value, was for the water, both for drinking and non-drinking purposes. It was valued at PKR 636,919/household/year ($3,185). The second-best ESS was for agriculture which yields 141979 PKR/HH/YR ($710) from the data collected from respondents in district Chitral. The third best ESS was for medicinal plants and fuel wood. These generated PKR 103,433/household/year ($517). The fourth leading ESS was for animal fodder, generating PKR 98,976/household/year ($1,012).







POLICY IMPLICATIONS

In terms of policy implications, the results on the Pakistani side of the KRB suggest that the natural flow of water is a win-win situation for both Afghanistan and Pakistan and a mechanism should be explored for cooperation between the people of both countries, i.e., Pakistan and Afghanistan, for the mutual welfare of the region. Cooperation can be built based on some international environmental agreements, conventions and frameworks, such as SDGs, Paris Agreement on Climate Change, and the Convention on Biodiversity, among others. Both Pakistan and Afghanistan are signatories or parties to these conventions.

FIRMS FINANCIAL INCLUSION AND EXPORT PERFORMANCE: EVIDENCE FROM MANUFACTURING SECTOR FIRMS IN PAKISTAN

Fareeha Adil and Rabia Nazir

INTRODUCTION

Financial indicators, such as the credit-to-GDP ratio and financial access of firms, enhance economic growth, innovation, and job creation, and help reduce poverty and income inequality. It is imperative to investigate and determine the impact of "not enough finance" in developing countries where usually the banking sector plays little or insignificant role in the development of the financial sector and plays no significant role in economic growth. Specifically, in economies with low financial development and a credit-to-GDP ratio lower than 14 per cent, financial development plays little role in determining economic growth.

The finance literature provides limited empirical evidence on developing economies' financial depth and growth nexus. A firm's financial inclusion has serious implications for the firm's export potential. In the case of Pakistan, very few studies have investigated firms' financial inclusion and export performance.

Pakistan's export performance has remained low and unimpressive despite several remedial measures. Moreover, export statistics show that Pakistan's exports persistently lag behind other regional and developing countries. The imbalance in the trade deficit and the decline in export performance have been areas of concern over time. The limited and restricted availability of external financing, especially long-term financing for business enterprises that increase a firm's export capacity, is one of the key impediments to the country's export performance.

Limited literature, SDGs' financial inclusion commitments, and the lacklustre export performance of the manufacturing sector provided the motivation to analyse Pakistan's manufacturing sector's export performance. The study highlighted the impediments undermining large firms' export performance in Pakistan's manufacturing sector. The study employed System GMM and quantile regression analysis, using 427 firms' balance sheets to obtain the data from 1999-2020. The study is relevant at the policy level as the export performance of firms, financial underdevelopment, and firms' limited access to external finance have serious implications for the country's export performance and overall economic growth.

METHODOLOGY

The empirical estimation technique for the study was selected based on the data properties.

1. Descriptive statistics of the variables.
2. Panel data's slope homogeneity and cross-section dependence. This study employed slope coefficient homogeneity (SCH) test and the cross-sectional dependence test to determine whether a phenomenon is homogeneous or heterogeneous.
3. Fisher test for the stationarity of data

FINDINGS

Firm's Total Assets

The positive impact of larger assets and resources on

a firm's exports implies that firms with larger resources/assets tend to have higher exports. Firms having larger assets and resources enable them to increase exports. On the other hand, small firms are less likely to export due to financial resource constraints.

Assists Tangibility Ratio

The study's finding regarding Assets tangibility indicates that the capital formation of fixed assets concerning a firm's total assets undermines export performances. The inverse impact of assets tangibility may be that the firm more probably diverts its financial resources from financing export activities toward larger fixed assets development. To secure an external loan, relying on fixed assets to secure a loan may be costlier than depending on intangible assets that back up an external loan.

Gearing Ratio

Gearing shows the firm's financial inclusion and access to external financial resources. The results imply that firms relying more on external debt to finance assets and activities are more likely to enhance exports.

Debt-to-equity Ratio

The debt-to-equity ratio is the relative ratio of the creditor's fund versus shareholder equity. The construct shows the firm's total debt concerning shareholder equity. The reported results indicate that for firms acquiring higher debt in comparison with shareholder equity, the acquired debt has the potential to encourage export performances.

Macro Environment

The study controlled for macro variables, such as trade openness, industrial production, risk premium, and exchange rate. Several studies have investigated the macro environment's role in determining a country's economic growth and export performance. For instance, a macro variable trade openness is positively associated with economic growth and export performance. The study considered the importance of exchange rates in the context of export performance and proposed future studies on exchange rates and firms' export performance. Theory, literature, and the study's findings conclude that a sound macro environment is equally crucial for better export performance. Specifically, exchange rate stability, trade liberalisation and openness, sound industrial production environment, human capital accumulation, political stability, and the firm's financial inclusion lead to higher export performances.

RECOMMENDATIONS FOR STAKEHOLDERS

For State Bank:

- Policies such as the Export Finance Scheme (EFS) and Long-Term Finance Facility (TFS), which were in place for two years by the SBP, under which loans were given to exporters at low policy rates, are needed.
- It is high time that TERF, which was extended to exporters and local manufacturers during COVID-19, is resumed for exporting manufacturers, if not for all.
- Diaspora bonds for industries in the Far East (3 years-5 years).
- Establish a more predictable exchange rate regime for exporting firms. East Asia has had a dual exchange rate for a long time as they want to facilitate exports).

For the Board of Investment

- There is a need to focus on the availability and ability to raise the debt and equity.
- Planning Commission and BOI must sit together and bring regulatory reform that OFDI must go to exporting firms.
- There must be a sound investment policy that creates room for the FDI for exporting firms and joint ventures with exporting firms.

For the Finance Ministry and the SECP

- They need to look into why is the asset base of the enterprise sector locked and why it does

not grow in terms of GFCF (gross fixed capital formation).

- A 'sandbox' by SECP is needed.
- Further, a burning issue is that the accumulation of debt is not allowed by 'crowdsourcing,' while raising equity from crowdsourcing is allowed even though debt is much cheaper than equity.

For Finance Ministry

- Since the phenomenal increase in the policy rate, the private sector has been shedding credit. Also, 80% of domestic borrowing is by the government. So loanable funds are reduced from two angles, viz., domestic borrowing and less supply of loanable funds
- Since exports pick up at a floating rate, when the policy rate increases, loans become expensive and the exporter returns credit. This also hinders asset creation.
- The SBP may increase the rate but must manage exporters at a lower rate.
- The issue of EXIM Bank: The EXIM Bank (The Export-Import Bank) was established for this purpose by the World Bank to smooth the business cycle. However, no single entity can continue export financing.

For the Ministry of Commerce

- National Tariff Policy (Component of tariff on imported inputs): This policy has an anti-export bias as tariff rates are too high for imports. If textile sector dyes are to come, then the tariffs must be at least at the level of Bangladesh.
- Further, the 3-year trade policy by the Ministry of Commerce (STPF) focuses on increased asset creation and size. However, considering the current crisis that Pakistan is facing, this policy needs to be reviewed/revised. It had very little focus on a few sectors. The number of focused sectors needs to be increased.

The Ministry of Industries and Production

- There are two organisations under the MOIP:

1. EDB (Engineering Development Board): The ratio of input/output is decided by the EDB, i.e., how much of an imported input is allowed to exporters. This input-output assessment, again, has an anti-export bias. Some can import, others cannot, which is discriminatory and needs to be deliberated upon for manufacturing exporters.

2. SMEDA: SMEDA should partner with PIDE on the issue of why only established exporters and not exporters are present in manufacturing after 2013 and why this list has not changed over time. SMEDA must look into barriers to entry, i.e., why SMEs do not become exporters, and what are the challenges to new entrants in the export segment.

CPEC LTP (Long-Term Plan)

- It is time to review why the goals outlined in LTP have not been fulfilled, such as China-bound goals.
- There is a need to rethink CPEC LTP.
- Overlapping is another issue. Provincial P&Ds, in their development budgets, allocate budget for "Industrial Development," and there is considerable misalignment and duplication, e.g., in the Hattar Industrial Estate, KPK, is already established, and the Federal placed STZA.
- There is a need to look into why the Cabinet Committee on Export Promotion is dormant.

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