

Distortions to Agricultural Incentives in Light of Trade Policy

A Study on Pakistan

Neelam Ejaz and Maha Ahmad

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Abbreviations

API	Agriculture Policy Institute
APTMA	All Pakistan Textile Mills Association
BGA	Basmati Growers Association
CD	customs duty
CESS	Commodity Export Subsidy Scheme
CIF	cost, insurance, and freight
ECC	Economic Coordination Committee of the Cabinet
EDS	export development surcharge
EFS	Export Finance Scheme
EPZ	Export Processing Zones
EPZA	Export Processing Zones Authority
ERP	effective rate of protection
FAO	Food and Agriculture Organization
FBR	Federal Board of Revenue
FOB	free on board
FDI	foreign direct investment
FED	federal excise duty
FTA	Free Trade Agreement
GDP	gross domestic product
GSP	Generalized System of Preferences
GST	general sales tax
HS	Harmonized Commodity Description and Coding System
HYV	high-yielding variety
IFPRI	International Food Policy Research Institute
IGC	International Growth Centre
IMF	International Monetary Fund
IPO	Import Policy Order
IRRI	International Rice Research Institute
MEP	minimum export price
MFN	most favored nation
MNFSR	Ministry of National Food Security and Research
MT	metric tons
n.e.s	not elsewhere specified
NFDC	National Fertilizer Development Centre
NOC	No Objection Certificate
NRP	nominal rate of protection
NTB	non-tariff barrier
PASSCO	Pakistan Agricultural Storage and Services Corporation
PBS	Pakistan Bureau of Statistics

PCCC	Pakistan Central Cotton Committee
PFD	Provincial Food Department
PSMA	Pakistan Sugar Mills Association
PTA	Preferential Trade Agreement
REAP	Rice Export Association of Pakistan
SAP	structural adjustment program
SBP	State Bank of Pakistan
SRO	statutory regulatory order
ST	sales tax
STPF	Strategic Trade Policy Framework
TCP	Trading Corporation of Pakistan
TDAP	Trade Development Authority of Pakistan
USC	Utility Stores Corporation
WHT	withholding tax
WTO	World Trade Organization

Executive Summary

Agriculture forms the backbone of Pakistan's economy. Despite the fact that the share of agriculture in the GDP has declined over the years, the sector continues to play an important role in the socio-economic structure of the country. About 60 percent of the population lives in rural areas of Pakistan, the majority of which is dependent on agricultural activities for their livelihood. Yield growth for most crops and livestock products in Pakistan has stagnated and become more variable in recent years. Furthermore, sizable gaps persist between achievable and realized productivity in most crops, and diversification and a move to higher value-added agricultural commodities has been limited, predominantly in the crops sector.

The attainment of sustainable growth in the agriculture sector is imperative to ensure food security, alleviate poverty, and fulfill macroeconomic objectives through agriculture's forward and backward linkages with other sectors. The Government is concerned and determined to achieve the required production targets through collective action by focusing on improving agricultural planning and policies and scaling up investment to implement these plans and policies through provincial coordination based on the National Agriculture and Food Security Policy. However, in order to make significant reforms in the sector, it is important to make an all-inclusive agricultural policy, at both national and provincial level, that is friendly towards small farmers and the rural poor and ensures key initiatives, such as national and transboundary pest and disease surveillance, certification of agricultural products based on international standards, and strategic and basic research on topics of national importance are in consultation with the provincial and federal departments.

In the past decade, Pakistan has made notable progress in reducing urban poverty from about 35 to 17 percent. Rural poverty has been reduced as well but remains much higher than urban poverty. Moreover, in rural areas poverty is now concentrated among the small farmers, rural landless, and those working in nonagriculture-related activities. Agricultural growth and value-added activities could have a fast and direct impact on poverty and employment of those directly involved in agriculture, as well as the landless and the underemployed in the nonfarm economy. There is a need for major revolution in the agriculture sector to reduce dependency on a few agricultural commodities, encourage value-added activities, adopt modern technology, and incorporate innovative practices. The agriculture sector of Pakistan is not only susceptible to unfavorable climate conditions and natural disasters but also to negative externalities like electricity and water shortage, law and order situations, and political instability that have adversely affected sustainable production. A stable policy, implemented successfully with accelerated agriculture growth, will lead to a rise in real incomes of poor household groups as well as stimulate rural nonfarm output and income.

Over the past two decades Pakistan has vacillated between trade liberalization and protection. In the early 1990s the Government abolished numerous para-tariffs, reduced anti-export bias, removed import quotas, and lowered the maximum tariff to 25 percent. However, in 2008 the Government introduced several regulatory duties, in addition to expanding use of SROs (statutory regulatory orders) that were being used to give partial or full exemptions to normal tariffs in some cases, and increased tariffs in others. In the recent past, Pakistan has initiated efforts to

introduce a simple and transparent tariff structure by the phase-in of the revised tariff rates and phase-out of trade SROs. However, the trade regime remains discretionary and complex, which generates considerable uncertainty in terms of expected returns and affects the decision on the mix of crops produced in the country. Furthermore, the uncertainty in the sector discourages private investment in both agricultural activities as well as the related agro-processing industry.

This study shows that major agricultural commodities are provided protection at the border in most years ranging from 15 to 30 percent, with a few outliers. The Government does not directly tax exports in general, and the export market operates competitively,¹ whereas import-competing commodities are protected through a range of tariffs and duties. Furthermore, the Government provides subsidies on inputs, one of the largest subsidies being on fertilizer. Agriculture inputs also continue to be impacted by taxes and duties levied through SROs, although the Government has taken steps towards phasing out of concessionary SROs in the past few years. In the import-competing segment, wheat, sugar, and cotton had negative NRP (nominal rate of protection) values at the farm-gate, implying that during the years of interest, farmers did not receive competitive prices for their crop. However, within this segment, milk is a highly protected import-competing commodity. On the export side, sugar has positive NRP values in most years whereas NRP for rice exhibits fluctuation between positive and negative values. The support price is announced to protect both producers and consumers against international fluctuations. Wheat, being the staple crop, is important for the consumer, thus market prices are kept stable and shielded from border price fluctuations. To achieve the policy objectives, various instruments have been employed by federal and provincial governments. Domestic procurement quantities and prices are the major instruments for spurring domestic production and improving farmer incomes. The Federal Government in consultation with provincial governments sets the targets for the national support price and procurement quantities. Provincial governments and Pakistan Agricultural Storage and Services Corporation (PASSCO) are responsible for the implementation of the procurement policy (Dorosh and Salam 2007).

Pakistan has drafted an Agriculture and Food Security Policy (2013) that aims to provide direction to both provincial and federal governments to articulate their own policies and strategies, as well as to formulate investment plans for both the public and private sectors. The institutional set-up for agriculture and food security has experienced large changes in recent years, one of the most important being devolution following the adoption of the 18th Constitutional Amendment that resulted in provinces taking over responsibility for agriculture and rural development.² This is a positive step in order to reach out to the farmers and better manage agricultural activities in the country. However, to fully benefit from this step and to produce substantive reforms in the sector, it is important to have an overall national vision and direction for agricultural development to ensure that synergies are maximized and overlaps minimized to achieve optimum results.

¹ Regulatory duties may apply on exports in certain years.

² <http://www.pide.org.pk/pdf/Seminar/AgriculturePolicyPakistan.pdf>

Introduction

Trade and agriculture policies have played a crucial role in the development of the agricultural sector of Pakistan, in terms of both raw-material as well as manufactured goods. Over the years the Government has targeted investment toward infrastructure and research and development to improve productivity and hence raise incomes and lower poverty. Major crops (wheat, cotton, rice, sugar cane, and maize) account for about one-third of agricultural GDP. Wheat, cotton, and rice account for about 60 percent of cultivated land. Cotton, one of the main crops, is susceptible to climatic conditions and pests. Livestock is dominated by dairy, sheep, and poultry, which have grown substantially. Punjab, Pakistan's second largest province in area, accounts for two-thirds of national agricultural output.³

The Government's overall policy objectives for the agricultural sector are achieving food security and increasing the sector's growth rate to meet the growing demand. Pakistan's main cash crops are wheat, rice, maize, cotton, and sugar cane. However, over the last 20 years the crop subsector has been gradually declining, while the share of livestock in agricultural value-added has significantly increased. Pakistan has traditionally been a net food importer, but for the first time in many years it achieved a trade surplus in food products in 2013. Rice is the single most important export product, while palm oil has been the main agricultural import (GOP 2014a; WTO 2013).

Pakistan's main agricultural policy measures include tariffs, input subsidies, support prices and a development cess. The tariff structure is prepared by the Federal Board of Revenue (FBR) on an annual basis and is revised as needed through statutory regulatory orders. Various exemptions to taxes detailed by statutory regulatory orders (SROs) are particularly relevant for agriculture to provide protection to local industry. SROs are the instruments through which the Ministry of Commerce or FBR can alter border taxes without involving Parliament. SROs have been used to give partial or full exemptions to normal tariffs in some cases and to increase tariffs in other cases (Valdes 2013). Exemptions are generally granted to various imported goods on the basis of their tariff headings, what complicates this arrangement is the fact that there are hundreds of tariff headings in one SRO and that one particular heading appears in more than one SROs. The general scheme of exemptions should be presented in a rationalized and simple manner so that it becomes easily comprehensible, unambiguous and transparent. In year 2000 the FBR conducted a reform exercise in an attempt to reduce the number of SROs, in which various SROs were clubbed together. Unfortunately the task of reforming the exemption regime could not be carried out further (Ather and Ather, 2014). Other efforts have also been made to streamline the system. Under the Extended Fund Facility led by the IMF, the government agreed to stop issuing any new tax concessions or exemptions through SROs except by an Act of Parliament in 2013. In fact, it was decided that by end-December 2015 legislation would be introduced to permanently prohibit the practice (MEFP, IMF, 2013). In the Finance Bill 2015/16 an amendment was presented to the parliament that aimed to permanently eliminate the discretion of FBR to issue special tax exemptions, making any proposed tax exemption subject to approval from the Cabinet.⁴ This meant that FBR cannot issue SROs without the approval of

³ http://www.wto-pakistan.org/documents/tpr/WTO_TPR_report_5.pdf

⁴ Pakistan—Second Fiscally Sustainable and Inclusive Growth Development Policy Credit Project, World Bank.

the Economic Coordination Committee (ECC) of the Cabinet (WTO 2015).⁵ However, despite all these initiatives and efforts SROs continue to be issued in 2017. For instance, in August 2017 it was reported that the FBR issued an SRO to decrease the sales tax on high speed diesel and petroleum, without having taken prior approval.⁶ During 2018, the FBR complied to the new amendment, and SROs are no longer issued without approval from the ECC of the Cabinet. It remains to be seen whether this step in the right direction is merely a phase, or whether this change in policy sticks. Yet, a complete phase-out is still in progress, for instance, in February of 2018, the Supreme Court temporarily allowed the government to continue collecting the regulatory duty imposed on over 356 import items, providing some breathing space to the FBR which was facing a potential loss of PKR 90 billion in revenues. This interim relief was provided after a decision by the Sindh High Court whereby the Statutory Regulatory Order (SRO) 1035 of 2017 was declared unconstitutional.⁷ The culture of SROs has been one of the most prominent impediments to a transparent trade policy in Pakistan. As it stands at the moment, the FBR's power to issue SROs without parliament/cabinet approval is curtailed. That means that FBR will continue issuing the SROs for administrative purposes, but with approval from the cabinet. The amendment presented in the Finance Bill of 2015/16 has taken a targeted aim to rid the trade policy of SROs; while there has been keen progress, a thorough wipe-out remains to be executed.

Exemptions and partial exemptions provided to industries through SROs are the main source of deviation from most favored nation (MFN) rates. SROs do not affect the duty rates shown in the customs schedule, and the specific applications sometimes violate the principles of non-discrimination and national treatment. Often it is the case that there is so much information asymmetry, and so many complications, that certain items may be covered under multiple SROs (IFPRI 2015). Certain agricultural products, like sugar, have also been subject to export prohibitions. For other products, the Government announces support/indicative prices like wheat (Pakistan has submitted no notifications about domestic support to the WTO since 2008). Since the adoption of the 18th Constitutional Amendment⁸, many responsibilities in agricultural policy-making have been shifted to the provinces.⁹

This study provides an overview of key policies in terms of agricultural imports and exports and identifies policy measures that distort production incentives for important agricultural commodities. It further attempts to quantify the effects of policy interventions by the Government, at the border and farm-gate level that determine the protection afforded to farmers. The first

⁵ Under the World Bank Fiscally Sustainable and Inclusive Growth DPC series prior Action 2.8: The Government (a) has issued a Presidential Ordinance containing all amendments of the corresponding tax laws to permanently eliminate the discretion of FBR to issue special tax exemptions, making any proposed tax exemption subject to parliamentary approval as part of the annual budget law and/or the corresponding tax legislation; and (b) has submitted to the Parliament such amendments as part of the Finance Bill for the budget 2015/16. The aim was to curtail the power of FBR to issue concessions through SROs "independently". That means that FBR can only issue SROs if they get the approval or direction from the ECC, Cabinet or assembly. For example, the SRO on new RDs was first approved by cabinet and only issued by FBR. While FBR does not have the power to issue SROs independently, more than 10 SROs in 2017 were issued or amended and 3 SROs have already been amended in 2018, thus FBR continues to affect trade policies via SROs

⁶ <https://www.thenews.com.pk/print/220586-FBR-power-to-issue-SRO-in-absence-of-cabinet-questioned>

⁷ <https://tribune.com.pk/story/1652812/2-sc-temporarily-allows-collection-regulatory-duty/>

⁸ In 2010, Pakistan passed the 18th Constitutional Amendment to the Constitution, devolving significant legislative, fiscal and administrative autonomy to the provinces, resulting in a structural shift from centralized to a predominantly decentralized federation in Pakistan. A total of 17 subjects were devolved, including education, health, labour and manpower, local government and rural development, woman development, population welfare, social welfare and special education from the federal to the provincial governments.

⁹ Policy making for food security and all international/multilateral trade issues regarding food and agriculture are federal subjects, and implementation of food- and agriculture-related policies and the development of an agriculture supporting infrastructure is a provincial subject (WTO commentary).

chapter provides a brief background of the agriculture sector of Pakistan and growth trends. The second chapter discusses how Pakistan has liberalized trade over the years—the tariff structure of Pakistan and bilateral trade between important trading partners. It further discusses specific import and export policies toward selected commodities. The third chapter analyzes the NRP and ERP of major agricultural commodities: wheat, basmati rice, cotton, sugar, maize, gram, mango, milk, and poultry. The last chapter provides recommendations for the sustainable growth and market competitiveness of agricultural trade in Pakistan.

The Agriculture Sector:

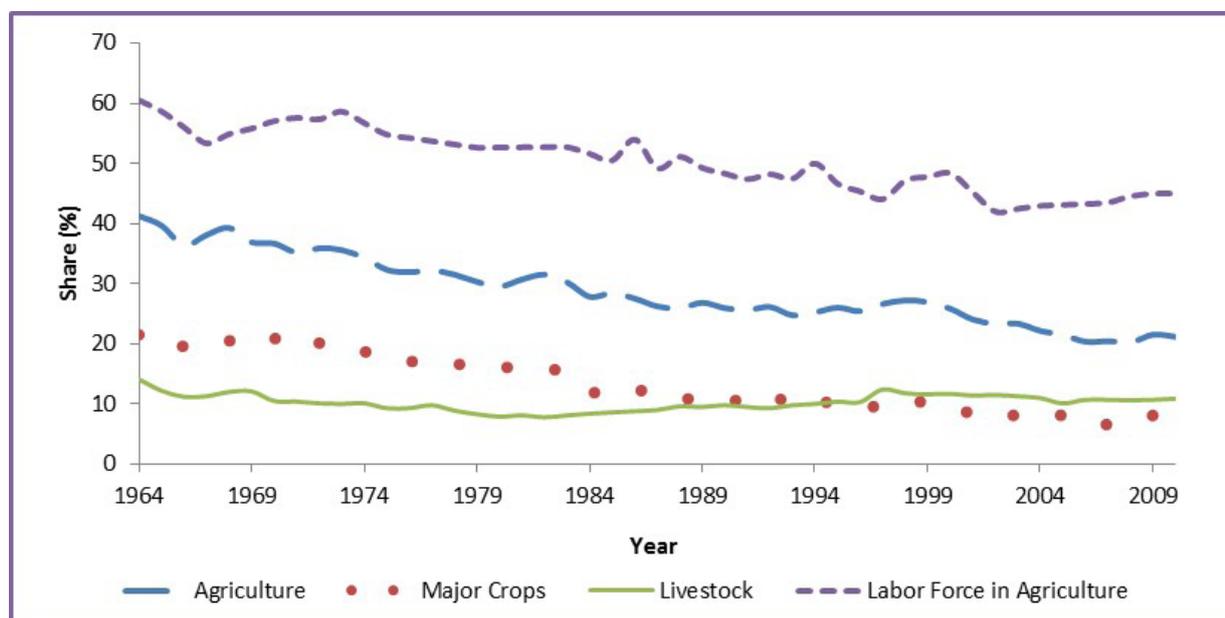
A Brief Background

Agriculture in Pakistan is the primary sector of employment, engaging 43.7 percent of the labor force and contributing 21 percent to the GDP. It holds a share of around 20 percent in the export earnings of Pakistan, including processed foods (GOP 2014b). The annual agricultural growth was 2.1 percent in 2013–14; however, the importance of the sector has relatively declined over the years. A large proportion of the country’s population resides in rural areas, and almost 30 percent (22.8 million hectares) of the land is cropped area. The agriculture sector comprises crops, livestock, fishing, and forestry. Important crops in Pakistan include wheat, rice, sugarcane, cotton, and maize. Together, these crops account for 25.6 percent of the value-added in overall agriculture and 5.4 percent of GDP. The major crops occupy approximately 80 percent of the total cropped area. Notable minor crops include gram, oilseeds, pulses, onion, potatoes, and tobacco, and they account for 11.6 percent of the value-added in overall agriculture.

Livestock comprises cattle, buffalo, sheep, goats, camels, horses, mules, and poultry and their products. It contributes 11.8 percent to GDP and 55.9 percent to agricultural value-added, exceeding the combined contribution of major and minor crops (37.2 percent). The fishing and forestry sectors, although growing, have very small shares in agricultural value-added.

The share of agriculture in total GDP has been declining since independence in 1947. Agriculture contributed more than 50 percent to GDP in the 1970s. Moreover, compared to major crops, livestock had a smaller contribution in the 1970s. The trend shows that, since 1995, the share of livestock in GDP exceeded that of major crops (Figure 1). The share of labor employed in agriculture has declined at a pace similar to its share in GDP.

Figure 1: Share of Agriculture, Major Crops and Livestock in GDP (factor cost), and Share of Labor Force Employed in Agriculture, 1964–2009



Source: State Bank of Pakistan.

There are 8.26 million farms in the country, with an average farm size of 2.6 hectares (GOP 2010). Traditionally, a farm of less than 5 hectare is defined as a small farm. A medium-sized farm is between approximately 5 and 10 hectares, while a large farm is defined as above 10 hectares. Almost 90 percent of farms are small but occupy only 47 percent of farm area (Table 1). There are approximately 10,000 farms over 60 hectares (0.1 percent), which occupy 11 percent of total farm area.

Table 1: Distribution of Farm Area, 2010

Hectares	Number of Farms (%)	Farm Area (%)
Less than 5	89	47
5 and under 10	7	18
10 and under 20	3	13
20 and under 60	1	11
More than 60	–	11

Source: Pakistan Bureau of Statistics, Agricultural Census 2010.

According to the latest figures, more than 80 percent of the total cropped area is irrigated. The main irrigation source is the canal system; other sources include wells, tube-wells, and tanks. Between 1960 and 2014, the total irrigated area rose from about 10 million to nearly 19 million hectares. The increase in irrigated area was brought about mainly through the introduction of ca-

nal wells and canal tube-wells in the 1980s, along with an increase in the number of tube-wells. Figure 4 shows irrigation water availability in Pakistan over the past 10 years. The use of machinery played a considerable role in farm operations, and the Government has encouraged mechanization at the farm level by increasing the availability of agricultural credit. The State Bank of Pakistan approved an agricultural disbursement target of PRs 380 billion in 2013–14 (GOP 2014a).

Pakistan does not have a formal operative national agriculture policy at present. Various ad-hoc policy measures are framed from time to time related to timely availability of inputs like machinery and fertilizers, support prices, farmer incentives, and agricultural credit. The Government continues to subsidize main agricultural inputs, such as fertilizer, water, electricity and machinery.¹⁰ Subsidy schemes for purchase of agricultural machinery include provision of funds for drip irrigation systems, construction of water storage, provisional land leveling, and laser technology. The Agriculture Department of Punjab also rents bulldozers to farmers engaged in agricultural activity. Furthermore, the Government also supports farmers in the installation of biogas-supplemented tube-wells and water and soil test services. Thus there is an increasing dependence on the services sector—and just how many of the 8.3 million farmers in Pakistan have access to the services sector is a question that remains to be answered.

A background paper on agriculture drafted by the Pakistan Institute of Legislative Development and Transparency (PILDAT¹¹) in 2015 provided an overview of input policies and their impact. The paper observes that policies relating to seed/pesticide supply devised by the Government are mostly in the interest of the firms/suppliers. Malpractices like the provision of mixed seed (maize and fodders), the smuggling of sugarcane seed, or the supplying of adulterated pesticides are very common. Adulteration is common in the fertilizer supply as well. Despite the fact that the Government provides huge subsidies on imported fertilizers, these rarely benefit small farmers who often end up paying high prices due to shortages during peak periods, lack of information, and involvement of middlemen. The electricity for the tube-wells was previously

¹⁰ <http://www.agripunjab.gov.pk/faqs#s1q1>

¹¹ http://www.millat.com/wp-content/uploads/pdf/democracy/PromotionofAgriculturalinPakistan_BackgroundPaper.pdf

subsidized. However, the Government in the last few years reduced the subsidy and the farmers had to pay higher rates for peak hour consumption (6:00–10:00 pm), as is the norm for domestic consumers¹².

Government interventions also involve setting procurement prices. Historically, support prices were set for the major crops, namely wheat, rice, cotton, and sugarcane. The policy was designed to simultaneously protect farmers from price volatility in agricultural commodities and to protect consumers by ensuring price and supply stability. At the time of harvest, there is a risk of prices falling, thus the Government procures crops to ensure prices do not fall in order to protect the farmers. Given the importance of wheat, the procured stock is released over the year, depending on shortages and risk of price increases, thus protecting the consumer. No procurement prices are announced if prices are considered high enough. Currently, the Government has only announced support prices for wheat and sugarcane. While such interventions have ensured food stability, the economic costs have become a growing concern (SBP 2013). Substantial subsidies are still provided on imported fertilizer (although it has decreased in recent years), and 25 percent of the power sector subsidy is afforded to the agriculture sector (SBP). Surface irrigation water is also implicitly subsidized, as the price charged does not cover the distribution and maintenance of water storage facilities (Dorosh and Salam 2007). The Government also encourages the use of improved seeds. During July–March 2013–14, approximately 372,000 tons of certified seeds were procured by the Government (mostly indigenous, pure, high-yielding varieties), and various efforts have been made to strengthen the seeds certification services.¹³

Growth in the agricultural sector has declined since the 1960s. Annual agricultural growth averaged 3.7 percent during the period 1960–2000, with wide fluctuations within this time period (Dorosh and Salam 2007). An industrialization strategy based on import substitution was initiated in the early 1950s, with a substantial implicit tax on the agriculture sector, leading to a rapidly growing industrial sector and a decline in agricultural growth. In the 1960s several steps were taken to promote agriculture (Ijaz, Naved, and Naseem 1992). Public investment, the Salinity Control and Reclamation Projects, and land reforms were introduced, along with the dawn of the Green Revolution. The Green Revolution technology required the punctual application and a precise blend of high-yielding variety (HYV) seeds, fertilizers, and irrigation water (Hussain 2012). Agricultural output witnessed a pronounced increase of 3–6 percent annually during the period 1961–1965, reaching a maximum of 15 percent during the period 1967–1968 (Child and Kaneda 1975). During the 1970s agricultural growth dropped to 2.3 percent as a result of the uncertainty created by land reforms in 1972 and 1977, severe climatic shocks, a cotton virus that depressed production for most of the decade, and political instability. The recovery in 1980 and early 1990s were marked by an accelerated performance in the livestock sector and cotton production, in addition to improved management techniques, as well as to a gradual improvement in economic incentives (Faruqee 1999). Average annual agricultural growth rate was 5.4 percent, the highest average for any decade. Agricultural imports accounted for 14 percent of total imports during this period. The late 1990s were again marked by instability in the agricultural production, attributed largely to the policy environment characterising the marketing of farm commodities¹⁴ (Salam 1999).

¹² The rates of electricity are revised on an ad hoc basis. In 2015, the prime minister lowered the electricity tariff for peak hours but it is still higher compared to non-peak hours for tube-well users.

¹³ Ministry of Finance

¹⁴ <http://www.pide.org.pk/pdf/PDR/1999/Volume4/537-572.pdf>

It is notable that despite the volatility in agricultural growth, there has been a declining trend since the early 2000s (Figure 2), with agricultural growth ranging from 0.5 to 6.5 percent. Pakistan's agricultural sector grew at a modest rate of 2.6 percent per year from 1999–2000 to 2005–06.¹⁵ The growth rate increased in 2004–05 to the highest for that decade at 6.5 percent. This was due to farmer-friendly Government policies, favorable weather conditions, and an improvement in the availability of water.¹⁶ Much of this growth can be attributed to the unprecedented rise in the cotton crop (production increased by 42 percent) and a bumper wheat crop, the result of widespread and timely winter rainfall, as well as an increase in its support price; thus agriculture surpassed its target for that year by a wide margin.

Agriculture performed poorly in 2007–08 and 2009–10, with growth rates of 1.5 and 0.2 percent, respectively. Most of the major crops performed poorly in those years. The disappointing performance of the major crops subsector was largely attributed to resource management issues and the absence of a clear pricing policy. According to the SBP annual report (SBP 2007–08), a reduction in the cultivated area under cotton, rice, and wheat resulted from water shortages at sowing time. Delays in harvesting cotton and sugarcane (mainly due to pricing issues) and lack of clear incentive signals (as the Government did not announce its pricing policy before sowing time) also resulted in fewer acres of cultivatable land available for the wheat crop. In addition, stubbornly high prices of fertilizers and pesticides reduced farmers' agro-input use, resulting in depressed yields for most major crops. Similar factors contributed to low agricultural growth in 2009–10. Pakistan also experienced widespread floods in 2010, which resulted in almost 20 percent of agricultural land being inundated. According to reports by the Ministry of National Food Security and Research (MNFSR), the floods led to a loss of half a million tons of wheat, 1.6 million tons of rice paddy, 7.6 million ton of sugarcane, and 2–3 million bales of cotton. Crop losses were estimated at US\$ 2.8 billion. In addition, major gas fields along with four power plants were also shut down, adding a loss of 1,500 megawatts to an already existing shortfall of 4,500 megawatts (Miankhel and Nasir 2010).

The havoc created by the floods also exposed the weakness of contract-enforcing institutions in Pakistan. For instance, cotton is supplied to the spinning mills through informal contracts, word of mouth, and middlemen. As the cotton crop was damaged during the floods, informal channels were not enough to enforce the contracts for the supply of cotton, which adversely affected the industrial activity in the textile sector. Absence of contract-enforcing institutions reflects an institutional weakness and also shows how a drop in agricultural production can potentially have spillover effects into the industrial sector (IFPRI, 2015). The agricultural growth rate rose after 2010; however, heavy rainfall in 2012–13 in Punjab and Sindh, the major agrarian belts of the country, damaged the crops, resulting in low production.

The yields of major crops have shown improvement over time; yet continue to fall short of their potential (Figure 3). Factors that hold back progress in the agriculture sector include unequal land holdings,¹⁷ inefficient distribution of irrigation water and lack of effective investment in

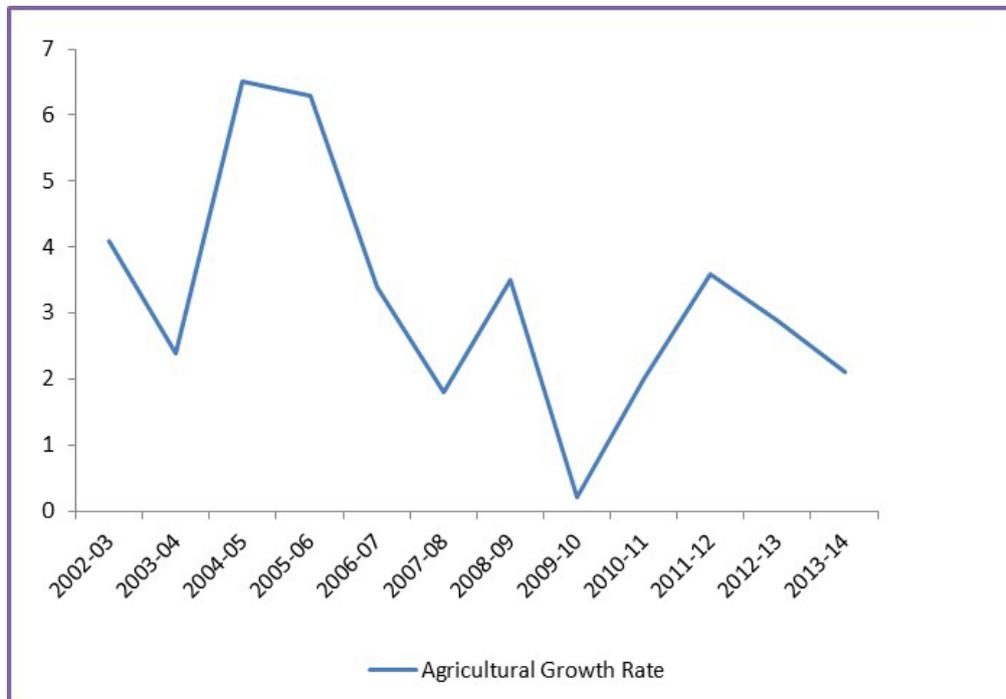
¹⁵ <http://siteresources.worldbank.org/PAKISTANEXTN/Resources/293051-1177200597243/ch3.pdf>

¹⁶ <http://pc.gov.pk/mtdf/18-Agriculture/18-Agriculture.pdf>

¹⁷ Industrial processors involved in agriculture have a stronger influence in policy making compared to farmers. Take the case of cotton, for instance: businessmen involved in the manufacturing side of cotton, i.e., spinning, weaving, and the clothing industry, have a more dominant standing in cotton policy than farmers because of the higher value-added and employment in these subsectors. Despite this, farmers in Pakistan have more political influence than farmers in other countries with more equal distribution of land. Less than 2% of farmers own 22% of the land area in the country (see Table 1). "The presence of many large farmers gives the agricultural sector a stronger voice in political debates" (Dorosh and Salam 2007).

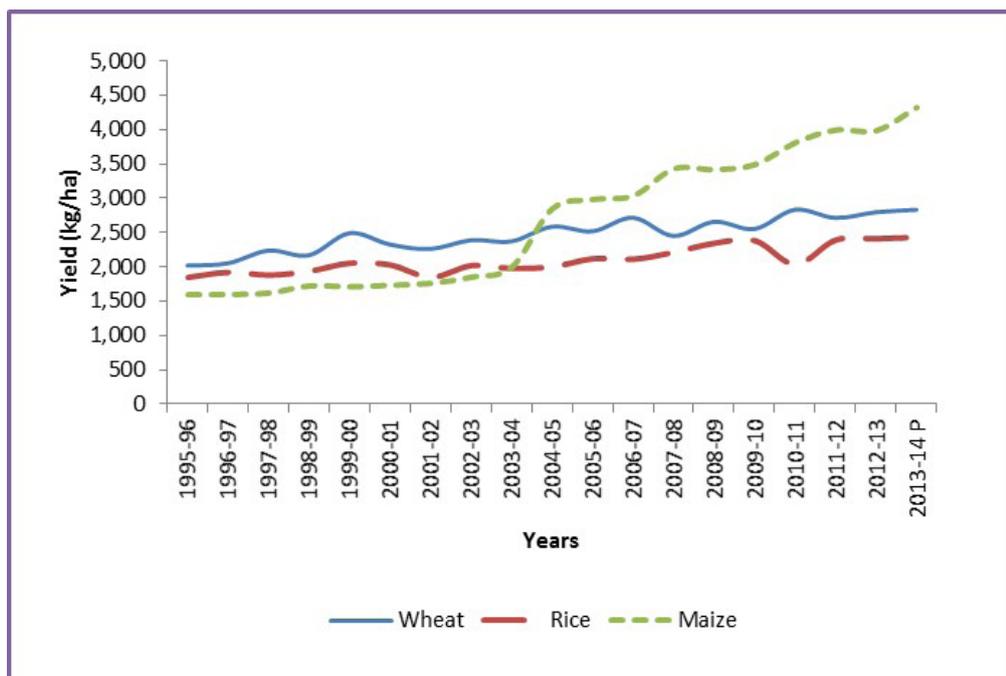
irrigation systems, absence of timely adoption of new strategies and technology, policy distortions, and inadequate market development.¹⁸ Despite the increase in irrigated land area, the irrigation and drainage system continues to face major problems. Waterlogging and salinity, wastefulness in delivery and use, underpricing of water, and unequal distribution are a few issues observed. Water availability in 2013–14 stood at 138.7 million-acre feet¹⁹.

Figure 2: Agricultural Value of Production Growth Rate, 2002–2014



Source: Ministry of Finance.

Figure 3: Yield (kg/ha), 1995–2014

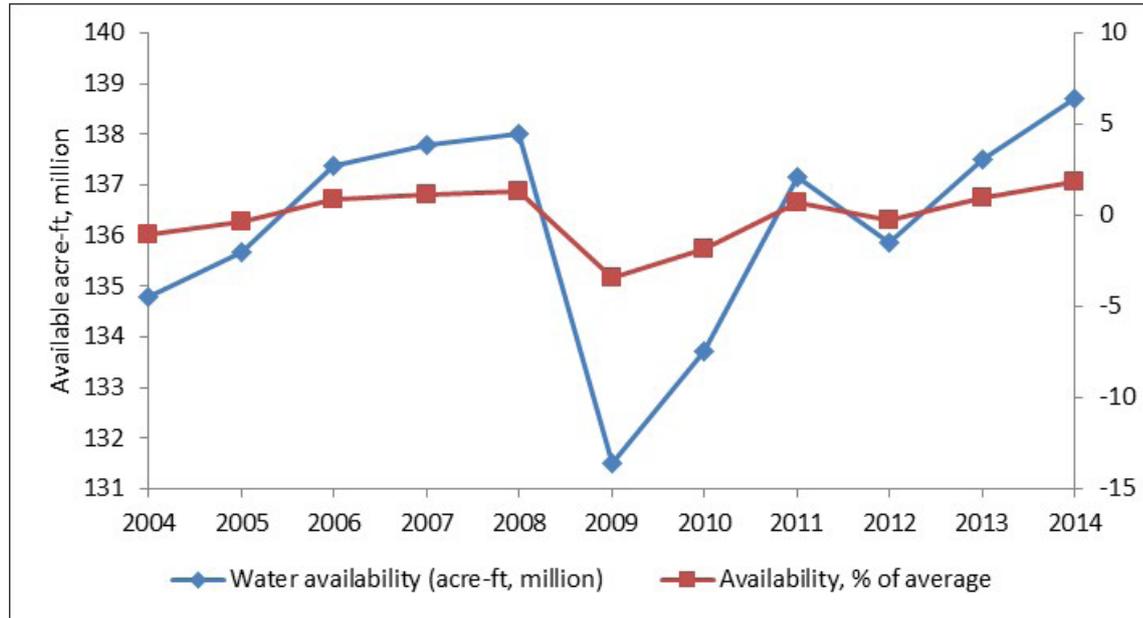


Source: Ministry of Finance.

¹⁸ <http://www.pide.org.pk/pdf/Seminar/AgriculturePolicyPakistan.pdf>

¹⁹ <http://www.pide.org.pk/pdf/PDR/1997/Volume4/565-591.pdf>

Figure 4: Water Availability in Pakistan, 2004–2014



Source: Ministry of Finance.

Trade Liberalization and Trade Policy

After the creation of Pakistan as an independent state in 1947, the country was predominantly agricultural. During the early formative years, Pakistan's economic policy emphasized import substitution, although efforts were also made to promote exports. However, over the past two decades the country has moved towards trade liberalization. The Governments from 1988 to 1999 undertook trade liberalization under a series of structural adjustment programs (SAPs). Under the SAPs the Government encouraged foreign direct investment (FDI) by providing a fair trade policy, fiscal incentives, and tariff facilities to investors in order to make Pakistan's economy more efficient. During this period, the maximum tariff was reduced from 125 to 80 percent and a few para-tariffs (flood relief surcharge and Iqra surcharge) were abolished. During the Musharraf regime of the 2000s, the Economic Regulations Program was introduced under which the country's core trade policy objective was to reduce anti-export and anti-import biases by opening the economy to international trade and FDI. Furthermore, in 2005, the Government removed import quotas, import surcharges, and regulatory duties and reduced the maximum tariff from 80 to 25 percent.²⁰ However, in view of the global financial crisis of 2008, a number of trade liberalizing reforms were backtracked, "notably of wheat, sugar and fertilizer policies."²¹

In 2008 there were introduced several Regulatory Duties, in addition to the expanded use of SROs—Statutory Regulatory Orders—which, since 2006, had been used to give both partial or full exemptions to normal tariffs, in some cases, and increased tariffs, in others (Valdes 2013). It was observed that most of the tariff exemptions are directed towards only a few large industries, which negatively affect small farmers, as they do not get the benefits from these exemptions.

Pakistan over the last few years is in process of developing a potential market for foreign investors with its liberal investment policy 2013 and the Strategic Trade Framework 2012–2015. The domestic market offers cheap labor, tax incentives, and a decent return on investment, which is far better than that of other South Asian countries.²² In order to create a more transparent system the Government is working on tariff reforms to simplify the tariff structure and make it more transparent. According to the Memorandum of Economic and Financial Policies (March 12, 2015, pp.18) between the Government and the International Monetary Fund (IMF)²³:

"We are finalizing the design of the new system to simplify the tariff structure to move over three years to a simple, transparent framework, with four slabs between 1 and 25 percent rates with fewer exceptions. For FY2014, we consolidated from seven tariff slabs to six. All items at 30 percent have been moved to a new maximum rate of 25 percent rate. The phase-in of the revised tariff rates and phase-out of trade SROs began in July 2014. We are on track to further reduce tariff slabs to five in the next round of trade-related SRO elimination with the FY2015/16 budget cycle. Implementation of the new tariff structure would be completed by July 2017."

²⁰ <http://www.ipripak.org/foreign-direct-investment-fdi-and-trade-liberalization-policies-in-pakistan/#sthash.cR4vblqc.dpuf>

²¹ <http://www.theigc.org/wp-content/uploads/2014/09/Pursell-Et-Al-2011-Working-Paper.pdf>

²² <http://www.ipripak.org/foreign-direct-investment-fdi-and-trade-liberalization-policies-in-pakistan/#sthash.zqG19clB.dpbs>

²³ <https://www.imf.org/external/np/loi/2015/pak/031215.pdf>

Furthermore, there are also underlying discussions on a gradual movement from the general sales tax (GST) to a full-fledged integrated modern indirect tax by end-June 2017.

In the World Trade Organization's (WTO's) fourth trade policy review (2015), the WTO Secretariat expressed its apprehension toward Pakistan's revenue mobilization performance. The tax-to-GDP ratio in Pakistan has remained low (less than 10% up until 2011 and has shown slight improvement increasing to 11% in 2015 (Pakistan Economic Survey). The WTO report identifies a number of tax exemptions, a culture of tax evasion, and a low number of taxpayers as principal reasons for the low tax-to-GDP ratio.²⁴ The report, however, recognizes the Government of Pakistan's efforts to modernize and automate border trade by developing better customs collection system to make the policies more stable and consistent in the medium term, to reduce the transactions costs of trade, and to enhance the competitiveness of Pakistan's private sector.

Agricultural trade in Pakistan is subject to five major types of taxes (Valdes 2013):

1. The Customs Duty (CD), the standard tariff assessed on an import's CIF value.
2. A Regulatory Duty (RD), a special Federal Government border tax, which is applicable to the CIF value, and in some cases applied to exports.
3. The Federal Excise Duty, FED, and the Special FED on CIF value.
4. The Sales Tax (ST) on the duty paid value.
5. The Withholding Tax (WHT) on duty and the sales tax paid value.²⁵

In addition to the taxes above, there is an Export Development Surcharge of 0.25 percent applicable to all exports.

The agriculture sector that contributes 21 percent in GDP, contributes less than 1 percent of GDP in the form of taxes. The border tax system of Pakistan is not considered fair and transparent by small businesses that do not have political connections. All tariff rates are amended annually in the Finance Act (passed on a yearly basis). About 86 percent of tariff lines are affected by SROs, which reduce the effective tariff rate. Some SROs even exempt certain specific products from sales and other taxes in addition to the rules and ordinances usually affecting imports. "Sometimes there is so much information asymmetry, and so many complications, that certain items may be covered under multiple SROs" (IFPRI 2015). Due to wide exemptions and a complicated tax system, revenue collections from customs duties are generally much lower than the statutory rates. In addition, there is discrimination across different sectors. Commercial importers and small business are directly hit since they have no financial muscle to go through the process of obtaining concessions through complex procedures. Given the large number of different tariffs and para-tariffs, there is apparently a high effective dispersion of support, which makes it difficult to anticipate for specific products.²⁶

²⁴ <http://defence.pk/threads/wto%E2%80%99s-trade-policy-review-praising-and-criticising-pakistan%E2%80%99s-performance.388125/#ixzz3nDdbh7h7>

²⁵ Withholding tax is an "advance tax" charged at the time of import (or export) and may be credited when traders file a final return to the tax authorities.

²⁶ <http://www.sdpi.org/publications/files/Drafft%20Study-%20Reforming%20Tax%20System%20in%20Pakistan.pdf>

Imports are subject to a range of tariffs while most exports do not have explicit taxes (except export development surcharge (EDS) and Regulatory Duty (RD)), however, there are input subsidies provided to certain agricultural commodities.

- » Imports—variety of taxes with SROs and Regulatory Duty
- » Exports—no taxes except for export development surcharge and regulatory duties. Bans and quotas are implemented on exports based on the local supply/demand situation.

The Federal Board of Revenue publishes the tax code for Pakistan each year; however, the code could be altered via FBR without consultation with the Parliament under SROs. In 2015, an amendment was made under which FBR cannot issue SROs without prior approval of the Cabinet. Even though the bill was successfully passed, on-ground implementation has been slow. Over time, the frequency of SROs being issued has decreased but complete implementation has been sluggish. According to the International Growth Centre (IGC²⁷) report (August 2014), Pakistan’s non-tariff barriers are mostly concentrated on agriculture, plant, and food-related products. Given the historical importance of farming in Pakistan, agriculturists have been entrenched in political offices across the country, thus the dominance of agricultural non-tariff barriers appears to be a foreseeable result of interest group pressures to maintain economic rents (IGC 2014). Table 2 shows selected statutory and applied taxes for key agricultural commodities and inputs.

Table 2: Statutory and Applied Duties on Agricultural Commodities and Inputs, 2013–14

Commodities	Customs duties %		Sales tax %		Withholding tax %	
	Statutory	Applied	Statutory	Applied	Statutory	Applied
Wheat	10	0	17	0	5	5
Cane sugar	25	0	17	0	5	5
Rice seed	0	0	17	0	5	5
Rice, Basmati	10	0	17	0	5	5
Cotton, not carded	0	0	17	0	5	5
Cotton, carded	5	0	17	0	5	5
Mango	30	5	17	0	5	5
Farm equipment	5	0	17	0	5	5
Weedicide	5	0	17	17	5	5
Tractors	15	0	17	17	5	5
Fertilizers	0	0	17	17	5	1
Maize	10	0	17	0	5	5
Maize seed	0	0	17	0	5	5
Poultry	25	25	17	0	5	1
Milk	25	25	17	0	5	1
Gram	0	0	17	0	5	5
Wheat seed	10	0	17	0	5	5
Cotton seed	0	0	17	0	5	5
Chisel plough/ cultivator/ combine harvester	5	0	17	0	5	5

Source: Pakistan Customs Tariff and Pakistan Custom Laws, FBR.

²⁷ <http://www.theigc.org/wp-content/uploads/2014/09/Pursell-Et-Al-2011-Working-Paper.pdf>

Bilateral and Regional Trade Agreements

Pakistan is a signatory to the following bilateral and regional trade agreements:

- » South Asian Free Trade Area (SAFTA) since 2006
- » Pakistan–Sri Lanka Free Trade Agreement (FTA)
- » Pakistan–China FTA 2007
- » Pakistan–Malaysia FTA 2008
- » Pakistan–Iran Preferential Trade Agreement (PTA) 2006
- » Pakistan–Mauritius PTA 2007
- » Pakistan–Indonesia PTA
- » Organization of Islamic Conference (OIC) 2005
- » Developing-8 group of countries (D-8) 2006
- » Economic Cooperation Organization (ECO) 1985

Tariffs are the main trade policy tool and bring in approximately 20 percent of the Government’s revenue. There are a total of 7,018 MFN tariff lines in Pakistan, out of which 6,868 (97.9 percent) are bound.²⁸ Table 3 shows the summary of tariffs and imports for the years 2012 and 2013. It should be mentioned that the MFN tariff rate is not the actual duty paid, which may be affected by exemptions. The customs duty framework of Pakistan has an average final bound tariff of 60, which is relatively high compared to other South Asian countries. The MFN applied rate of Pakistan at 13.5 percent is more comparable to other South Asian countries. Tariffs on agriculture have a higher bound as well as MFN applied average rate as compared to non-agriculture sector, but the trade-weighted MFN applied average for agriculture is lower.

Table 3: Summary of Tariffs and Imports, 2014

Summary		Total	Agriculture	Non-Agriculture
Simple average final bound		60.0	95.5	54.8
Simple average MFN applied	2013	13.5	15.4	13.2
Trade-weighted average	2012	10.0	7.1	10.4
Imports in US\$ billion	2012	44.0	5.6	38.4

Source: WTO.

Table 4 shows the percentage of tariff lines that fall within different ranges of final bound and MFN applied tariff rates. According to the WTO, 90 percent of agricultural commodities in Pakistan have a final bound tariff between 50 and 100 percent; interestingly, more than half of the tariff lines in agriculture consist of an MFN applied tariff ranging from 0 to 10 percent.²⁹

²⁸ <http://www.ifpri.org/publication/pakistan%E2%80%99s-potential-trade-and-%E2%80%98behind-border%E2%80%99-constraints>

²⁹ According to the WTO, the “final bound” tariff is the legally binding ceiling after reductions have been made post trade negotiations. (https://www.wto.org/english/res_e/statis_e/popup_indicator_help_e.htm)

Table 4: Summary of Pakistan's MFN Applied Import Duty Ranges, 2014

Frequency Distribution		Duty-Free	0 ≤ 5	5 ≤ 10	10 ≤ 15	15 ≤ 25	25 ≤ 50	50 ≤ 100	>100	Non ad valorem
		% of tariff lines or % of import value					% of lines or value			
Agricultural Commodities										
Final Bound		0	3.3	0	0.3	0.2	0.5	90.0	1.9	0.2
MFN Applied	2013	14.3	22.4	16.3	11.3	14.8	18.8	2.2	0	4.5
Import Value	2012	33.9	3.0	39.8	15.9	4.3	2.8	0.4	0	40.4
Non-Agricultural Commodities										
Final Bound		0	1.8	0.0	1.9	14.3	18.2	62.7	0	0
MFN Applied	2013	5.0	37.8	14.5	6.7	30.9	4.8	0.3	0	0.1
Import Value	2012	41.8	23.8	17.4	2.3	9.7	2.6	2.5	0	2.1

Source: WTO.

Table 5 shows the tariffs and imports by product group. According to the WTO, agricultural commodities are 13.3 percent of total imports. Animal products, cotton, fruits, vegetables, and plants have notably high percentages of duty-free tariff lines. Almost half of Pakistan's agricultural imports comprise oilseeds, fats, and oil, and this group has an MFN applied average tariff of 8.8 percent. The product groups with relatively higher average MFN applied duties have small import shares and include products such as dairy products, beverages, and tobacco.

Table 5: Profile of Pakistan MFN Applied Import Duties by Product Group, 2014

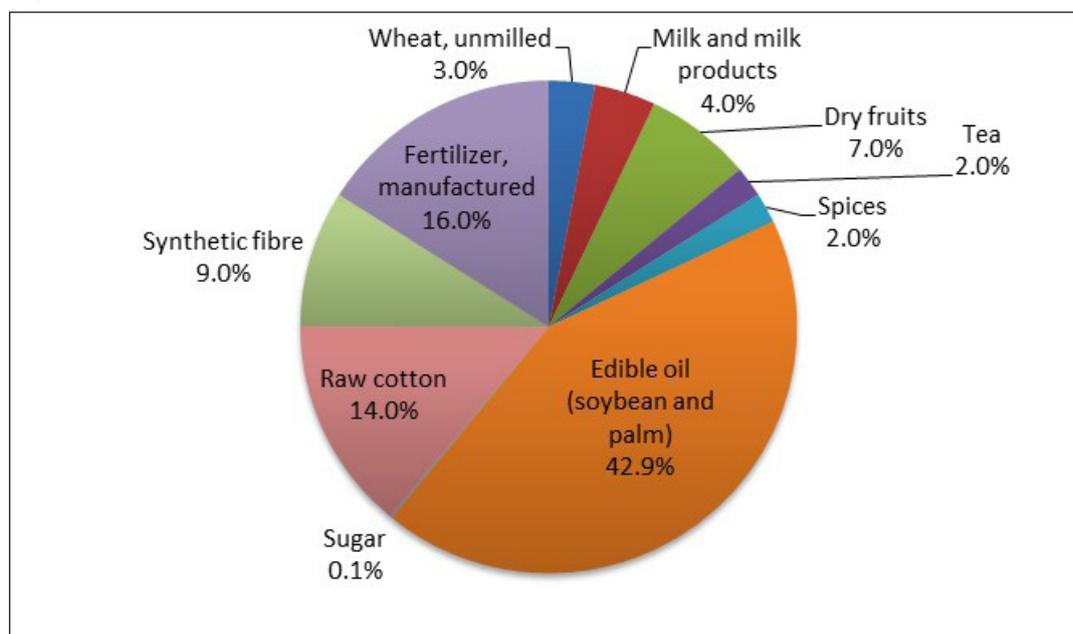
Product	MFN Applied Duties			Imports	
	AVG	Duty-free % of tariff lines	Max	Share % of total imports	Duty-free % of tariff lines
Animal products	14.1	19.8	25	0.1	54.3
Dairy products	27.4	0	30	0.3	0
Fruit, vegetable, plants	16.1	12.4	88	1.8	72.5
Coffee, tea	12.8	0	30	0.9	0
Cereals and preparations	15.7	5.5	30	0.6	43.0
Oilseeds, fats, and oils	7.7	18.1	25	7.2	16.5
Sugars and confectionary	17.1	0	30	0.1	0
Beverages and tobacco	48.9	0	90	0.1	0
Cotton	7.0	20.0	10	1.3	99.9
Other agricultural products	6.6	27.8	30	0.6	48.9
Fish and fish products	10.7	0.2	20	0.0	0.2
Minerals and metals	12.2	7.3	35	12.2	46.4
Petroleum	10.6	30.1	25	34.6	76.1
Chemicals	9.5	2.0	46	13.0	6.7
Wood, paper, etc.	14.9	22.6	35	1.9	20.0
Textiles	16.6	2.1	35	4.0	6.7
Clothing	24.8	0	25	0.1	0
Leather, footwear, etc.	14.9	26.7	35	1.4	33.6
Non-electrical machinery	9.0	2.6	35	7.0	8.6
Electrical machinery	14.7	0.9	35	6.0	7.7
Transport equipment	24.4	2.1	100	5.3	24.2
Manufactures, n.e.s (not elsewhere specified).	13.0	1.8	35	1.8	6.2

Source: WTO.

Pakistan's Import Policy

In most years since Independence, Pakistan has been a net importer of food and agricultural goods. Pakistan's net imports for the year 2014 were worth PRs 37.1 billion. Imports of crude oil and other petroleum products constitute about 33 percent of the import bill, while machinery and agro-chemicals also have significant shares³⁰ (Figure 5). The food group makes up 9.9 percent of the total imports. Pakistan's major imports include raw cotton, milk, vegetable oil, tea, and pulses.

Figure 5: Structure of Food and Cotton Imports, 2013–14



Source: Pakistan Ministry of Finance.

Multilateral, bilateral, and regional trade arrangements fall under the authority of the Ministry of Commerce. The ministry also has the primary responsibility for trade policy formulation and implementation along with the Federal Board of Revenue (FBR), which administers customs and collects domestic federal taxes on imports. The ministry's WTO department deals with multilateral issues, including agreements and negotiations. Up until 2009, the Ministry of Commerce released an Annual Trade Policy. The Ministry of Commerce now releases a medium-term Strategic Trade Policy Framework (STPF). The first STPF was issued in 2009 for the period 2009–12. In January 2013, the Government released the second STPF for 2012–15. A three-year trade policy document is published instead of an annual one to maintain policy continuity.

Pakistan is a member of the World Trade Organization and provides MFN treatment to all except two WTO members, namely India and Israel. It also extends MFN treatment to non-WTO trading partners. Import surcharges and license fees were removed during 1993–95 (FAO 2000). All items are freely importable, including textile products, except for 30 items on a negative list, mostly on religious, environmental, security, and health grounds. Trade between India and Pakistan has remained restricted. Until 2012 Pakistan allowed imports from India on the basis of a positive list comprising approximately 2,000 items.³¹ In 2012 the positive list was replaced

³⁰ Ministry of Finance

³¹ Import of goods from India or of Indian origin specified in Appendix-G of IPO 2012–15 is permitted. Goods other than those mentioned in the said Appendix shall be importable from India subject to same conditions and requirements as prescribed under this Order wherever applicable.

by a negative list of about 1,200 products that could not be imported from India, including 16 agricultural products. This change has resulted in a significant boost to bilateral trade. Trade with Israel still remains prohibited. In December 2013 the European Union granted Pakistan Generalized System of Preferences (GSP) status for 10 years. This is expected to revitalize the industrial sector of Pakistan, create job opportunities, and increase exports by more than \$1 billion. The GSP Plus status has been granted after active efforts for Pakistan's inclusion in EU's GSP Plus scheme to gain preferential market access for Pakistan's exports.

“The current system of formal tariffs with SRO exemptions and regulatory duties is becoming a form of concessional rates and import licensing” (Valdes 2013). The WTO report on trade policies states that Pakistan's average tariff of 14.3 percent is much higher than those of comparative economies. The high tariffs “weaken productivity growth and constitute an impediment to efficient resource allocation and integration of Pakistan into global value chains.” The Valdes report also highlighted concerns regarding the transparency of the regulatory system, characterizing the SROs as discretionary, highly arbitrary, and providing relief and exemptions to vested interests.³² According to the WTO Trade Policy Review: These “ad hoc policy measures undermine the predictability of the trade regime and support a culture of rent seeking” (WTO 2015). However, the secretariat has positive expectations regarding the proposed tax reforms, an effort made by the Government to eliminate the exemption provided by SROs: the new policy would enhance the transparency of the country's trade policies.

At present, according to the Import Policy Order (IPO) 2012–15 there are not many explicit bans on imports of agricultural commodities, except for live animals and certain restrictions (on commodities and inputs) based on health, safety and security, environment, and quality reasons. Over the years, many non-tariff barriers have been dismantled. No licenses are required in terms of Article 1.1 of the Agreement on Import Licensing Procedures for the import of products. However, specific authorizations and No Objection Certificates (NOC) are required for the import of products listed in the Appendices B and C of Import Policy Order 1950 (WTO 2015). According to IPO 2012–2015, the Federal Government may, where it deems it to be in the public interest, suspend for a specified period or ban the import of any good from all or any source. Table 6 shows Pakistan's import policy toward specific agricultural commodities. The table also shows that Withholding taxes apply to many importable commodities in Pakistan, including agricultural goods (see Appendix 2). This is an advance tax, which is credited when traders file a final return to the taxation department.

³² On 26 June 2014, the Government imposed a regulatory duty of 5 percent through SRO 568 (I)/2014 on some 284 products. Agriculture and food products have also been subject to exemptions through various SROs, such as potatoes, raw poultry meat, several milk products, raw and ginned cotton, and leather and articles thereof.

Table 6: Pakistan's Import Policies related to Specific Agricultural Commodities, 2012–15

Product	Status
Wheat	Importable subject to the specifications notified by the Ministry of National Food Security and Research, Government of Pakistan, from time to time and subject to preshipment inspection by approved PSI agencies as per Appendix D (Import Policy Order 2012–15)
Rice	Importable subject to customs duty and withholding tax
Cotton	The average MFN tariff on cotton imports is 3.8%, with tariffs ranging 1–10%.
Sugar	Imports of sugar are subject to an MFN tariff (regulatory duty) of 25%, up from 15% in 2007
Maize	Importable subject to import duties
Gram	Importable subject to import duties
Milk powder	Importable subject to a customs duty of 25% and withholding tax, with the approval of Pakistan Standards and Quality Control Authority.
Poultry	Ban on import of live birds from 37 countries on account of Avian Influenza H5N1 strain. Import of poultry products is allowed subject to import duties.
Seeds (rice and other field crop seeds)	Importable subject to drawing of samples and testing of quality by Federal Seed Certification Agency and Department of Plant Protection of Ministry of National Food Security and Research, Government of Pakistan. Import of rice seeds shall be subject to strict quarantine measures prescribed under the Seed Act 1976 (XXIX of 1976) and any other related law.
All Edible Products	Imports shall be subject to following conditions; <ul style="list-style-type: none"> i. Must be fit for human consumption; ii. Shall be free of any "haram" element or ingredients; iii. Edible products shall have at least 50% shelf life, calculated from the date of filing of Import General Manifest (IGM). iv. Where conditions at (iii) above are not printed on the packing, certificate issued by the Manufacturers or Principals in respect of these conditions shall be accepted by Customs Authorities. v. That, in the case of meat, it was obtained from halal animals and slaughtered in accordance with the Islamic injunctions.

Source: Import Policy Order 2012–2015.

Fertilizer is one of most important and expensive agricultural inputs. Fertilizers were imported and introduced as a key agricultural input in Pakistan in 1950s. Under the importsubstituting industrialization policy pursued by the Government, two fertilizer production plants were set up in Pakistan in 1958 and 1973, followed by a rapid increase in the fertilizer manufacturing in the past two decades. Fertilizer use gained momentum after 1970s, when farmers began adopting high-yielding modern wheat and rice varieties in Pakistan's irrigated areas, with government promotion through subsidies and research support (Mubarik et al. 2016). However, despite many gains attributed to increased fertilizer use, public policies designed to promote its production and use remained controversial. Policies towards the sector have not been stable and as various governments have alternated between subsidizing its production, importation, and distribution and; withdrawing these subsidies on an ad hoc basis. The net benefit of these policies to the farmers remains questionable due to oligopolistic structure of the industry. The box below provides an overview of the recent developments in the sector.

Box 1. Fertilizer Overview

Fertilizer production, import, and distribution have been key areas of intervention for the Government since partition. Provision of subsidies on fertilizers as input for agriculture is a common practice in many countries as part of their food security policy. Pakistan has gone through numerous policy changes over the years. In the early years the fertilizer industry was highly regulated and all production and imports were done through the public sector. In 1986, the Government started a phased deregulation of the fertilizer sector along with the removal of subsidies on all forms of fertilizers. Provincial quotas were abolished, provincial supply organizations in the public sector abandoned, and import controls were lifted. All imports were done by the private sector. Since 2005, the state has protracted its role in fertilizer supplies at the expense of PRs 4 billion in 2004–05, which gradually increased to PRs 45 billion in 2011–12. In 2004, there was a phenomenal increase in world prices for urea, followed by hikes in the prices of phosphate and potassium fertilizer that led to Government intervention, resulting in re-introduction of subsidies on imports of urea and other chemicals. Urea is the single most important nitrogenous fertilizer, with a share of 71.2 percent (2015) in total fertilizer production. About 80 percent of the fertilizer demand is met from local production while the other 20 percent is imported through Trading Corporation of Pakistan (TCP).

Over the past six years, fertilizer subsidies have accounted for a significant share of the total support to agriculture. The Government not only subsidizes imported fertilizer to bring its prices to par with domestic prices but also provides an indirect subsidy to local producers in the form of a subsidy on feedstock (gas).

“The local fertilizer industry has the capacity to meet our national needs and may be able to export if the plants are run to full capacity. Unfortunately, that is not the case as they face curtailment of gas, which is used as raw material for urea. The gap between demand and supply is met through imports at a much higher price—PRs 2455 per bag—and it is sold at subsidized rates which is closer to the local price (varying between PRs 1440 and PRs 1600)” —Dawn News—July 02, 2013.

Experts have mixed views on who actually benefits from the subsidy, while some believe benefits are transferred to the farmers in form of lower prices, others feel most of the subsidy is utilized by producers of fertilizer. Producers are also blamed for transferring Gas Infrastructure Development Cess (GIDC) charges and tax impact on the farmers, mitigating the effect of the subsidy. In addition, the net effect of the subsidy may be beneficial for large farmers; however, small farmers have negligible cost impact of the support. In the past three years, fertilizer prices in the international market have declined significantly, from \$533 per ton to \$350 per ton, showing a fall of 34 percent in 2014; however, the net benefit has not been transferred to the farmers. Recent studies show that producing fertilizer domestically and subsidizing it is turning out to be a more expensive endeavor for the Government, as billions of dollars are spent to shield the inefficient producers, while significant cost reductions due to the lower international prices could be highly beneficial.

Source: The News, Dawn News—July 02, 2013.

Fertilizer Review, National Fertilizer Development Centre (2014–15).

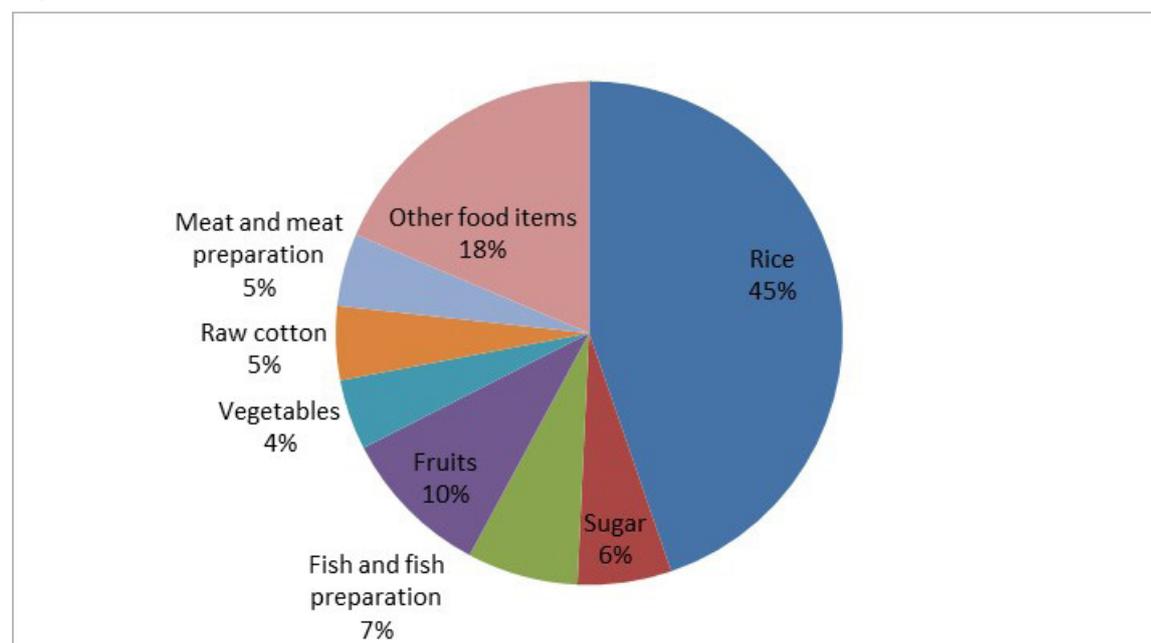
Pakistan's Export Policy

Pakistan's major agricultural export items include cotton and cotton manufactures, leather, rice, chemicals, and sporting goods. Cotton manufactures alone make up 52 percent of Pakistan's total merchandise exports. The raw cotton and food group exports account for about 20 percent of the total value of exports.³³ The main agricultural exports are rice, sugar, fish, and raw cotton. Wheat has consistently remained an import, but over the last few years Pakistan has become a net exporter of wheat. Wheat exports have been volatile over this period and a negligible value was exported in 2013–14. Figure 6 shows the structure of agricultural exports in 2013–14.

³³ Pakistan Economic Survey (2014–2015)

The Global financial crisis of 2008 led to a substantial decrease in world aggregate demand that subsequently led to an abrupt fall in exports across the globe during the period. The magnitude of this fall, however, was quite different across countries and sectors. According to the “World Economic Outlook Update” (July 2010), advanced economies faced a greater decline in exports compared to emerging and developing economies’ exports. Following the world trend, Pakistan’s exports also fell considerably (13.4 percent) during 2009.³⁴ In the last two decades, this was the largest fall in Pakistan’s exports in a year.³⁵

Figure 6: Structure of Food and Cotton Exports, 2013–14



Source: Ministry of Finance.

Administrative requirements for exporters have been moderated over the past decade, even though some commodities such as cotton still require registration. Minimum export prices on rice and cotton have been removed; though they continue to be imposed on a few commodities such as onions. The Government announced a minimum export price (MEP) on four grades of rice in April 2008: super basmati US\$1500/ton, basmati US\$1300/ton, long-grain (IRRI-9) US\$1000/ton, and broken (IRRI-6) US\$750/ton. The MEP on basmati rice was removed shortly after it was initiated, in October 2008 (FAO 2011). Starting in 1988 and up until the mid-1990s cotton could be exported subject to a MEP set daily by the an inter agency committee and announced by the Pakistan State Bank. The MEP on cotton was based on the international prices of lint, the domestic prices of yarn and lint, the domestic requirements of the industry, and the global and local supply situations (Dorosh and Salam 2007). In addition, a benchmark MEP was set, and a variable export duty was imposed on the difference between the minimum export price and the benchmark price.³⁶ When the domestic price of cotton was below the benchmark price, exports were profitable; however, when the domestic price was above the benchmark, the export tax exceeded the potential revenue and the domestic supply was effectively contained within the country.³⁷ An export development surcharge (EDS) is collected at 0.25 percent on

³⁴ <http://www.sbp.org.pk/research/bulletin/2010/Vol6No.2/Fayyaz.pdf>

³⁵ https://www.wto.org/english/news_e/pres14_e/pr721_e.htm

³⁶ <http://www.pide.org.pk/pdr/index.php/pdr/article/viewFile/1372/1345>

³⁷ <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.39.6718&rep=rep1&andtype=pdf>

all categories of exports, except defense. This tax has been in place since 1999. All exports are allowed unless listed in Schedules I or II of the Export Policy Order. The Federal Bureau of Revenue can impose up to 100 percent regulatory duties on certain commodities through SROs. The regulatory duty is used as a tool to regulate domestic supply rather than to raise tax revenue.³⁸ Currently, potatoes are subject to a 25 percent regulatory duty; molasses has a regulatory duty of 35 percent; wheat products (flour, suji, etc.) are subject to a regulatory duty of 35 percent.

There are a few restrictions on exports, mostly in the form of bans and quotas. Table 7 shows Pakistan's export policy for select agricultural commodities. Wheat exports were banned up until 2011. Since the Government also procures wheat, this essentially meant that the Government would export wheat at a subsidized rate during surplus years.³⁹ However, as of 2011, wheat exports have been freely allowed (Export Policy Order 2013). The export of sugar was banned up until 2011 with no exceptions, after which the ban was replaced by an export quota of 100,000 metric tons (MT). The quota was increased to 200,000 MT in 2012 and 500,000 MT in 2014.⁴⁰ The export of urea, diammonium phosphate (DAP) and other types of nitrogen-phosphorus (NP) fertilizers were also banned. Other banned items include pulses of all sorts and gram and gram flour. Bans imposed on other agricultural commodities are temporary and imposed during times of domestic shortages. The export of onion, mango and kino (citrus hybrid) is permitted subject to route and timing conditions.

Exports of raw cotton are permitted subject to the conditions mentioned in Table 7. Pakistan is a net importer of raw cotton, despite being the fourth largest producer in the world. The expansion of the textile industry has led to a fall in exports of raw cotton, as a large proportion of cotton is processed domestically into yarn and then exported (Dorosh and Salam 2007). Lint exports fell from an annual average of 414,000 tons in the 1980s to only 78,000 tons in 2000–09. While exports of cotton consist mostly of short staple varieties, imports of cotton lint are mainly high-grade longer-staple cottons. Milk and dairy products face no export restrictions while livestock exports are subject to sanitary conditions. Since the 18th Constitutional Amendment, livestock exports have been regulated by the Ministry of National Food Security and Research. Exports from the meat sector are dominated by meat and meat preparations.⁴¹

The Trade Development Authority of Pakistan (TDAP) is responsible for the implementation of various trade-related policies announced by the Ministry of Commerce. The TDAP provides exporters with a number of facilities, including common warehouses, marketing assistance, and freight subsidies. Export assistance is offered through the Export Development Fund, which has been set up using the finances gathered through the Export Development Surcharge charged to exporters. The duty drawback scheme allows the rebate of duty charged on imported inputs used to manufacture exported commodities. This scheme is offered for selected export goods such as textiles, leather products, metal/engineering products, cables, and pipes.⁴²

³⁸ http://wto-pakistan.org/documents/tpr/WTO_TPR_report_4.pdf

³⁹ Procurement refers to wheat being purchased by the Government at a fixed rate. Such an intervention has the effect of dampening border price transmissions to the domestic market. As a result of this price stabilization technique, stocks of wheat have increased, in which case the Government exports the excess stock of 'procured' wheat.

⁴⁰ <http://www.dawn.com/news/1144073>

⁴¹ <http://trtapakistan.org/wp-content/uploads/2012/04/Livestock.pdf>

⁴² FBR <http://www.fbr.gov.pk/SROsExportA.aspx>

There are several complications associated with export subsidies and duty drawbacks that may make them counterproductive. These instruments may be easily availed by larger exporters that already have a presence in foreign markets but are not as accessible for firms with a smaller market base. The Export Finance Scheme (EFS) has been in operation since 1973 with the objective of encouraging and boosting exports. Short-term financing facilities are provided to exporters through banks. The Government also offers a sales tax refund on the packing material used for exports.

However, despite these schemes, Pakistan's long-term decline in export competitiveness remains, putting into question the on-ground effectiveness of these incentives. The export basket is composed of mainly food items and textiles, commodities that continue to suffer from a decline in international prices and demand. The deteriorating performance of exports is only partly explained by external factors.

Pakistan's share in the world market has gradually eroded from 0.18% in 1990 to 0.15 % in 2003, then to 0.13 % in 2015 (insert footnote: <https://www.pide.org.pk/pdf/Seminar/Pakistans-Export.pdf>). The declining trend in exports is attributed to three structural factors: trade facilitation, logistics and infrastructure; trade policy; and investment climate. Inefficient trade facilitation and logistic arrangements are hindering Pakistan's export potential in comparison to regional competitors. More than 90 percent of Pakistan's international trade is transported by sea and 80 percent of land transport is over roads, making Pakistan's logistics below the South Asian average. Compared to providing export subsidies, improved customs and border management for lowering logistical costs would be more effective in promoting export competitiveness of local firms. Lowering trade costs and upgrading connectivity between domestic and foreign markets can play a decisive role in attaining export competitiveness (PDU, April 2016).

Another facilitation given to exporters is the provision of export processing zones (EPZs). There are currently eight operational EPZs in the country.

1. Karachi Export Processing Zone (Karachi)
2. Risalpur Export Processing Zone (Risalpur)
3. Sialkot Export Processing Zone (Sialkot)
4. Gujranwala Export Processing Zone (Gujranwala)
5. Khairpur Special Economic Zone (Khairpur)
6. Rashakai Economic Zone (Rashakai-Mardan, M1)
7. Gadoon Economic Zone (Gadoon-Amazai Swabi)
8. Hathar Economic Zone (Hathar-Haripur).

In addition, there are some Industrial Parks in Pakistan: Rachna Industrial Park (Lahore), Marble City (Lahore), and Textile City (Port Qasim). Industrial deterioration in the 1970's led to the establishment of industrial estates around the country. Due to poor governance and rent-seeking by industrialists and political agents, the estates were unable to pick up the kind of export promoting pace observed in other countries like China and the Asian Tigers. The Board of Investment (BOI) set up the Special Economic Zone Framework in Pakistan in September 2012 in an effort to streamline regulatory enforcement and simplify business and establishment rules.

The law permits SEZs to be set up by federal or provincial governments or in collaboration with the private sector through different public-private partnership capacities. Benefits include a one-time exemption from customs duties and taxes for all capital goods imported with the intent of contributing to the development, operations and maintenance of an SEZ. All taxes on income are also exempted for 10 years.⁴³

Table 7: Pakistan's Export Policies Related to Specific Agricultural Commodities, 2013

Products	Status
Rice	Subject to the conditions and procedures specified by the Ministry of Commerce
Wheat	Since 2011 exports of wheat freely allowed
Sugar	<ul style="list-style-type: none"> » Export ban on sugar was removed in 2012 under the following conditions which are revised on a yearly basis: <ul style="list-style-type: none"> » 250,000 tons of sugar allowed for export (2014) - » Quota will be allocated on first come first serve basis. » Export may be made against irrevocable letter of credit or a contract with 25% non-refundable advance payment. » Shipment may be made within 45 days of the registration of contract with the SBP². » ECC had approved an inland subsidy at PRs 2/kg and cash subsidy at PRs 8/kg in December 2014 to facilitate export of sugar on a fast-track basis to enable the sugar mills to offload their surplus inventories and pay the growers' dues.*
Urea	Banned for export. Subject to the approval of Economic Coordination Committee (ECC) of the cabinet on case-by-case basis.
DAP other NP and other fertilizers	Banned for export except re-export of fertilizer by the United Nations Development Programme (UNDP) and other UN agencies.
Cotton	<ul style="list-style-type: none"> » Export contract registration with TDAP against security deposit of 1% of the contract value and presentation of the same before customs authorities with shipping documents along with cotton grading and classification certificate issued by the Pakistan Cotton Standards Institute. » An irrevocable letter of credit shall be opened by the buyers within thirty-five days and the shipment of contracted quantity shall be completed within 180 days of the registration of contract. In case letter of credit is not opened within the stipulated time or non-performance of the contract the security deposit shall be forfeited to the State Bank of Pakistan, proportionate to the quantity not-shipped. » The export of cotton shall be allowed on the basis of types as well as grades. The exporters shall, however, mention the grade equivalence on the shipping documents if they opt to export the cotton on type basis and the requirement of classification and grading certificate in such cases, shall be dispensed with, if the ginned cotton is packed in export packing.
Milk and Dairy Products	Freely exportable
Livestock	As per procedure and conditions laid down by the Ministry of National Food Security and Research
Mango	<ul style="list-style-type: none"> » The export of mango to Europe, Canada, Iran, China, Kuwait, and Bahrain by air shall be in standardized packaging with 5% variation in weight on either side. » Export of mangoes shall not be allowed before 20th May unless otherwise specified by Ministry of Commerce. » The Pakistan Customs authorities shall enforce the weight standards and date of export.
Gram	Gram and other pulses are banned from export

Source: Export Policy Order 2013.

Note: *<http://www.dawn.com/news/1153050>.

⁴³ <http://boi.gov.pk/InvestmentGuide/SEZ.aspx>

Table 8: Value of Export for Important Agricultural Commodities, 2013–14

Commodity	Quantity (000 tons)	Value (PRs million)	Unit Value (PRs/kg)
Rice	3717.2	222906.7	60.0
Fish and Fish Preparation	150.5	37917.6	251.9
Fruits	784.4	45196	57.6
Vegetables	568.1	21507.9	37.9
Wheat	20.0	731.9	36.6
Oilseeds, Nuts and Kernels	60.1	8558.9	142.4
Raw hides and skins	0.2	77.2	386.0
Tobacco	6.4	2190	342.2
Molasses	197.3	2510.4	12.7
Raw cotton	114.7	21352.5	186.2
Sugar	67.8	3117.9	46.0
Spices	17.5	5824.3	332.8
Meat and meat preparation	1.3	555.7	427.5

Source: Pakistan Bureau of Statistics.

Methodology and Results

Methodology: Measuring Distortions to Agricultural Incentives

Price distortions arise primarily for two reasons: market failures and policy interventions. Market failures may cause actual prices to deviate from their long-term equilibrium due to factors such as monopolistic power, information asymmetries, and other externalities. Direct policy interventions may include tariffs, import and export quotas or bans, export subsidies, and sanitary restrictions. Indirect policy interventions include commodity programs (for instance, setting the procurement price of wheat), marketing support, input subsidies and tax exemptions, investment assistance, and exchange rate management.⁴⁴ In order to measure policy interventions, the standard practice is to compare the domestic price with the international price of a product of similar quality. This paper does not attempt to measure the effect of any misalignment in the exchange rate.

This study examines four indicators to measure agricultural support for the production of nine agricultural commodities:

- » Nominal rate of protection (NRP) at farm-gate
- » Nominal rate of protection (NRP) on tradable inputs
- » Effective rate of protection (ERP)
- » Nominal rate of protection (NRP) at border

The NRP at the farm-gate is the most basic indicator used to measure the level of protection arising from market distortions. It is based on the price received by farmers relative to the hypothetical price that would prevail without intervention. This counterfactual price is the border price equivalent at the farm-gate, i.e., it is the parity price attained by adjusting the border price for domestic transport, marketing margins, and quality differences. For exports, the parity price is calculated by subtracting from the FOB (free on board) price all costs incurred in delivering the goods from the farm to the port. These include transport and marketing costs, taxes, wholesale margins, and storage charges. Conversion rates are used in cases where the exported commodity undergoes some kind of industrial alteration, as is the case of rice when paddy is converted into milled form, for example. For imports, added to the CIF (cost, insurance and freight) value are all costs incurred in delivering the goods from the port to the market of reference (Lahore, Punjab, in this study). These include any fees, transport and incidental costs, and handling charges. In order to obtain the farm-gate parity price of imports, the wholesale margins and incidental costs are subtracted from the border price adjusted for quality differences. The NRP at farm level is calculated as follows:

$$NRP \text{ at farm-gate} = \frac{\text{farm-gate price}}{\text{parity farm-gate price}} - 1$$

The NRP on tradable inputs measures the effect of Government interventions on the costs

⁴⁴ <http://www.fao.org/docrep/003/x7352e/x7352e03.htm>

incurred by farmers. This study considered four inputs: fertilizer, weedicide, seeds and machinery. In measurement of these indicators, the cost of these four inputs is taken as the cost incurred by farmers. Hence the NRP on tradable inputs captures only the effect of explicit taxes or subsidies on these four inputs; any implicit interventions (subsidy on electricity or irrigation, for instance) are not accounted for in NRP on tradable inputs. Tariffs applied on inputs have the effect of increasing the cost of production, whereas the subsidy on fertilizer reduces costs incurred by farmers. The Government also subsidizes machinery and assists in the marketing of seeds, but these have not been accounted for in this study.⁴⁵

$$NRP \text{ on Tradable Inputs} = \frac{\text{Observed Tradable Input Cost}}{\text{Hypothetical Tradable Input Cost}} - 1$$

The nominal rate of protection has two limitations. First, as mentioned, the NRP on tradable inputs does not capture the implicit tax or subsidy imposed on inputs. Second, it is not the price of the commodity but rather the income of factory owners that affects production of the commodity. The behavior of producers can more accurately be predicted by considering the consequences of interventions on value-added. For a small farmer, the decision to increase or decrease production depends not on the price received, but rather on what is left as net farm income. The effective rate of protection is an indicator that overcomes the shortcomings of the NRP. The ERP measures protection as the ratio of value-added in the presence of market distortions and the hypothetical value-added that would prevail without distortions.⁴⁶ The ERP has the advantage of taking into account the joint effect of trade barriers and price interventions on net income by considering the effect of such distortions on both output and tradable input prices (Valdes 2013).

$$ERP = \frac{\text{Observed Value Added}}{\text{Hypothetical Value Added at World Prices}} - 1$$

The NRPs and ERPs calculated in this study use direct price comparisons and hence accommodate the effects of quantitative restrictions, price interventions made by the Government, and any other non-tariff policy that may lead to deviations between local and international prices.⁴⁷

In this study the nominal rates of protection were calculated for nine commodities: wheat, rice, cotton, sugarcane, maize, gram, mango, milk and poultry. In addition, the effective rates of protection for the first four crops were calculated.⁴⁸

The policy at the border is such that certain taxes are imposed on taxes, leading to a total tax that is greater than the simple sum of the taxes. The NRP at the border is the combined effect of tariffs and taxes applied on imports and exports. There are five types of taxes imposed on imports in Pakistan⁴⁹:

1. Customs Duty (CD), the standard tariff applicable on the CIF value of an import

⁴⁵ Subsidies on machinery are not available to all farmers, especially those in isolated rural areas. Also, the subsidies available on machinery are difficult to quantify. The Government is also engaged in the procurement of seeds.

⁴⁶ <http://www.fao.org/docrep/003/x7352e/x7352e03.htm>

⁴⁷ This study does not use quantitative restrictions as part of the formulae.

⁴⁸ Information on production costs is available in Agriculture Policy Institute documents for wheat, rice, cotton, and sugarcane. Data on cost is not available for the other commodities.

⁴⁹ Valdes 2013.

2. Regulatory Duty (RD), a tax levied on luxury items and often used as a tool to manage supply and balance of payments. It is also applicable on the CIF value.
3. Federal Excise Duty (FED) and Special Federal Excise Duty (Spl FED). The latter is applied on a yearly basis and does not remain at a steady rate. Both are applicable on the CIF value of imports.
4. Sales Tax (ST) on duty paid value.
5. Withholding Tax (WHT), an advance tax that is credited when traders file a final return to the taxation department. It is applicable on duty and sales tax paid value.

Since the sales tax is levied on both locally produced and imported goods, this particular tax does not have the effect of producing a wedge between domestic and border prices. Therefore, the sales tax has been taken as zero for all commodities and inputs, that is, the sales tax is not included in the calculations. Following Valdes (2013), the total rate of protection is calculated by first deriving the duty paid value as follows:

$$\begin{aligned} \text{Duty Paid Value} &= \text{CIF} + \text{CIF} \cdot \text{CD} + \text{CIF} \cdot \text{RD} + \text{CIF} \cdot \text{FED} + \text{CIF} \cdot \text{Spl FED} \\ &= \text{CIF} \cdot (1 + \text{CD} + \text{RD} + \text{FED} + \text{Spl FED}) \end{aligned}$$

Since the sales tax is zero, the sales tax paid value is the same as the duty paid value. So the final tax paid is calculated as follows:

$$\text{Final Tax Paid Value} = \text{CIF} \cdot (1 + \text{CD} + \text{RD} + \text{FED} + \text{Spl FED}) \cdot (1 + \text{WHT})$$

The tax rate announced is often different from the tax rate applied on imported commodities due to exemptions and SROs. In this study the exempted tax rates were used to yield the nominal rate of protection (NRP) at the border. The NRP at the border for imports is defined as the final tax paid value expressed as a percentage of the CIF price, and it is calculated for the selected commodities stated above as well as for four inputs, namely fertilizer, weedicide, seeds, and machinery.

$$\begin{aligned} \text{NRP at Border} &= \frac{\text{Final Tax Paid Value}}{\text{CIF}} - 1 \\ &= \frac{\text{CIF} \cdot (1 + \text{CD} + \text{RD} + \text{FED} + \text{Spl FED}) \cdot (1 + \text{WHT})}{\text{CIF}} - 1 \\ &= (1 + \text{CD} + \text{RD} + \text{FED} + \text{Spl FED}) \cdot (1 + \text{WHT}) - 1 \end{aligned}$$

Once the NRP values at the border have been computed for final products and inputs, the border prices were adjusted. Transport and incidental costs are taken into account in the direct price comparison.

Limitations

The nominal rate of protection, also known as the price wedge method, provides an implicit tariff or tariff equivalent of trade restrictions that result from both tariff and non-tariff barriers (NTBs) (Beghin and Bureau 2001). It captures the tariff rate that would have the same effect on trade as the set of all restrictions, including both tariffs and NTBs. The price wedge method assumes that NTBs can alter relative prices between world and domestic markets, thus creating a price wedge between potential traders. This method estimates the level to which tariffs and NTBs raise (lower) domestic prices above (below) international reference prices in countries using them (Ferrantino 2006). One limitation of the price wedge method is that it generally

provides a tariff equivalent of a set of tariffs and NTBs without being able to identify what the NTBs precisely are. A working definition of NTBs includes six major categories, namely, quantitative restrictions, trade facilitation and customs procedures, technical barriers to trade and sanitary and phytosanitary measures, financial measures, para-tariff measures, and licenses and visas. So, in addition to applied tariffs, either or all of these NTBs could be responsible for the gap observed between domestic and international prices. This study has controlled for quality differences between imports and domestic goods (in cotton and milk, for example).

Seasonality

For commodities that are imported, adjustments are made to account for seasonality. The observed farm-gate prices used to derive the NRP values are those prevailing at harvest time, since farmers usually sell their crop immediately after harvest. In order to accurately measure the direct price intervention, it is important to consider the cost of storage that exists in a market where demand is quite stable over time but harvests are concentrated during a couple of months (thus lowering the domestic prices prevailing during that period).

Following Valdes, Muchnik, and Hurtado (1990), we consider two components in storage costs are considered: a direct cost of storage and a financial cost derived from the opportunity cost of the capital involved in the process. Let P be the border price of the imported commodity, r is the discount rate including financial and real costs of storage, and T is the month in which domestic consumption exceeds domestic supply, then the adjusted border price, during the sales period of seven months post-harvest can be calculated as

$$P_{adj} = \left[\frac{P}{(1+r)^T} + \dots + \frac{P}{(1+r)^{T-6}} \right] / 7$$

$$= P \left[\frac{(1+r)^7 - 1}{(1+r)^T \cdot r} \right] / 7$$

The discount rate includes the monthly real rate of interest (lending rate) plus a 0.5 percent direct storage cost per month.⁵⁰

Fertilizer Subsidy

The Government of Pakistan provides a subsidy on domestic feedstock used in the production of fertilizer and also on imported urea. Total subsidies given to fertilizer have ranged from PRs 11 billion to PRs 95 billion since 2013. In order to take account of this substantial subsidy on fertilizer, a weighted average was calculated using the subsidy rate on domestic and imported fertilizer. The required data has been gathered from National Fertilizer Development Centre (NFDC) and Mubarik, A. et al. (2016).

⁵⁰ Data on storage cost was gathered from Pakistan Agricultural Storage and Services Corporation Ltd. (PASSCO).

NRP and ERP of Important Agricultural Commodities

Wheat

Wheat is the main staple food of Pakistan and contributes 10 percent to value-added in agriculture and 2.1 percent to GDP (GOP 2014a). Wheat occupies 39 percent of the total cropped area in Pakistan; it is cultivated on over 9 million hectares with an annual average production of 24 million tons. Historically, wheat has been primarily an import-competing crop, but in the past three years Pakistan's wheat exports significantly exceeded imports. According to the Agriculture Policy Institute, the national average of wheat production is approximately 2.8 ton/ha, while the potential yield is 6 ton/ha. This gap appears attributable to the fact that resource-poor farmers cannot use quality seeds, fertilizers, pesticides, and other inputs to the optimum level due to lack of funds. Pakistan ranks 7th in terms of area and production of wheat but 59th in terms of yield/hectare.⁵¹ Punjab has a share of around 76 percent in production of wheat, while Sindh has a share of 16 percent. The remaining 8 percent of wheat production comes from Khyber-Pakhtunkhwa (KPK) and Balochistan. Punjab is the only province with a surplus; up to 95 percent of procurement comes from Punjab, while the rest comes from Sindh. Over the past decade, wheat production increased at 2.4 percent per annum, owing to a 1.5 percent improvement in yield and a 0.9 percent expansion in area.⁵²

Provincial and federal Governments intervene heavily in wheat marketing. The Government of Pakistan reviews the support price of wheat on an annual basis. The support price of wheat has gone from PRs 350 per 40 kg in 2003–04, to PRs 650 in 2007–08 and is currently fixed at PRs 1200 (2013–14). Table 10 summarizes nominal and real market and support prices of wheat over the past few years. Pakistan Agricultural Storage and Services Corporation LTD (PASSCO) and Provincial Food Departments (PFDs) are responsible for the procurement of wheat. Procurement by these departments, along with the Government's controls on trade of wheat, absorbs the effects of the price transmissions that would otherwise prevail. Procurement as a percentage of production has ranged from 8.8 percent to 38.3 percent since 2003; the figure averaged 24 percent during the last three years. The market price of wheat tends to rise during off-season, when supply is low, and falls during the harvest season when stocks grow. The harvest season is a time when small and medium farmers are vulnerable to relatively low prices. Most farmers lack adequate storage facilities and are unable to hold on to their produce to receive better prices in the future. The procurement policy of wheat is designed to protect farmers by providing a price floor during the harvest season.⁵³

Wheat is procured by the Government at administratively set prices to support farmer incomes and to subsidize wheat sales to flour mills or directly to consumers with the objective of stabilizing prices at a level affordable for consumers (Dorosh and Salam 2007). Exports of wheat were banned from 2007 to 2010, after which the Government allowed the private sector to export 1 million tons of wheat for 2010–2011 without any subsidy.⁵⁴ During the ban, in surplus years, the Government would procure wheat at a subsidized rate and sell abroad. The export of wheat is now freely allowed according to Export Policy Order 2013.

⁵¹ Agriculture Policy Institute 2013–14

⁵² Ministry of Finance

⁵³ <http://pssp.ifpri.info/files/2011/12/006-Review-of-Input-and-Output-Policies-for-Cereals-Production-in-Pakistan.pdf>

⁵⁴ <http://www.pakistantoday.com.pk/2010/12/08/national/govt-lifts-3-year-ban-on-wheat-exports/>

Wheat imports are undertaken by the Federal Government and have been used to supplement provincial food stocks and enable sufficient wheat sales to regulate domestic price levels. Wheat issue prices (prices at which wheat is sold to flour mills) do not cover the cost of procurement, handling, and storage. Hence the sale of wheat to flour mills involves major subsidies and economic rents, which amass mostly to wheat millers who purchase wheat at the issue price (Dorosh and Salam 2007). Since there is no mechanism in place to distinguish flour produced by market wheat or Government wheat, their prices are the same; thus profits from sales of milled Government wheat are often sizeable.

From Independence to the early 1980s, the wheat market in Pakistan was characterized by significant market intervention; to stabilize consumer prices, the Government had set up ration shops with fixed prices. This system was abolished in the late 1980s and trade liberalization followed. The private sector was freely allowed to import wheat, but disallowed shortly after. Abundant harvests in 2000 led to a large increase in stocks and successive subsidized exports. The private sector was encouraged to participate and invest in the set-up of storage facilities. Following a crop shortfall in the early 2000s, the Government restricted transport of wheat between provinces and increased the procurement price of wheat. Production improved in 2005; transport restrictions were removed and the private sector was encouraged to commercially import wheat (Dorosh and Salam 2007). Pakistan has primarily been a net importer of wheat; however, in light of a surplus stock, the country became a net exporter of wheat from 2010 to 2014.⁵⁵

Table 9 shows the results of NRP and ERP estimations for wheat; calculations have been made by considering the country as a net importer during 2003–2010 and a net exporter during the following four years. The NRP at farm-gate calculation compares the farm-gate price to the border price equivalent at the farm-gate. Following Dorosh and Valdes (1990), the farm-gate price was calculated by subtracting margins from the wholesale price.⁵⁶ The border price is the actual CIF value (yearly average) in the case of imports, that is, it is the unit value of imports as observed in the Pakistan Bureau of Statistics; in the case of exports, and the border price is the FOB value or the unit value of exports. Import border prices have also been adjusted for seasonality as explained in the methodology. The discount rate used includes the monthly real rate of interest (lending rate) plus a 0.5 percent direct storage cost per month. It is assumed that domestic consumption exceeds domestic supply in the ninth month, based on import and consumption data. For imports (2003–2010), the border price equivalent at the farm-gate is computed as the border price per kg (as measured at Karachi port), plus incidental charges, minus the wholesale margin. The incidental charges in the case of imports include stevedoring, clearing, handling, wharfage, weighment (cost of weighing), inland insurance, survey and pre-shipment charges, provision for unforeseen losses, LC opening charges, TCP commission, and bank markup. The wholesale margin is computed as the difference between the wholesale price and the farm-gate price. For exports (2011–14), the border price equivalent at the farm-gate is the border price per kilo (Karachi) less the incidental charges and wholesale margin. The incidental charges for exports are similar to those for imports, except that, instead of TCP charges and LC opening charges, we take insurance charges and bank commission charges. See Appendix 3 for an explanation of the methodology used in calculating the ERP of wheat.

⁵⁵ In 2007, the Economic Coordination Committee (ECC) of the Cabinet banned wheat exports because of shortages and high prices in the world market. The ban was lifted after three years in 2010 and the Government allowed the private sector to export 1 million tons of wheat. Post 2010, despite a fall in cropped area under wheat, yields improved substantially and led to a bumper harvest.

⁵⁶ Margins are calculated by using CPI to extend the series provided by Dorosh and Valdes (1990).

Figure 7 shows the behavior of the border price (Karachi) and the farm-gate price. Large fluctuations can be seen in the border price, whereas the farm-gate price displays a steady increase over the period of interest. The import years are marked by moderate to high negative NRP values (an implicit tax on farmers' income). In 2005, the Government allowed private wheat imports, which totaled around 1 million tons for the year and kept wholesale prices close to import parity prices (Dorosh and Salam 2007). The international price of wheat nearly doubled in 2006–07 and shot up again in 2007–08 due to the global food crisis. Domestic wheat prices were maintained at low levels by initially imposing a 35 percent regulatory duty on wheat exports and eventually imposing a ban on the export of wheat from 2007 to 2010 (FAO 2011). Due to a bumper harvest in 2010, the ban was lifted and the Government allowed the private sector to export 1 million tons of wheat; the NRP at farm level went from –28 percent in 2009–10 to –11 percent in 2010–11. After 2010–11 the Government allowed the private sector to freely export wheat; one can observe that there is a very small gap between export parity and farm-gate prices during the last three years of analysis.

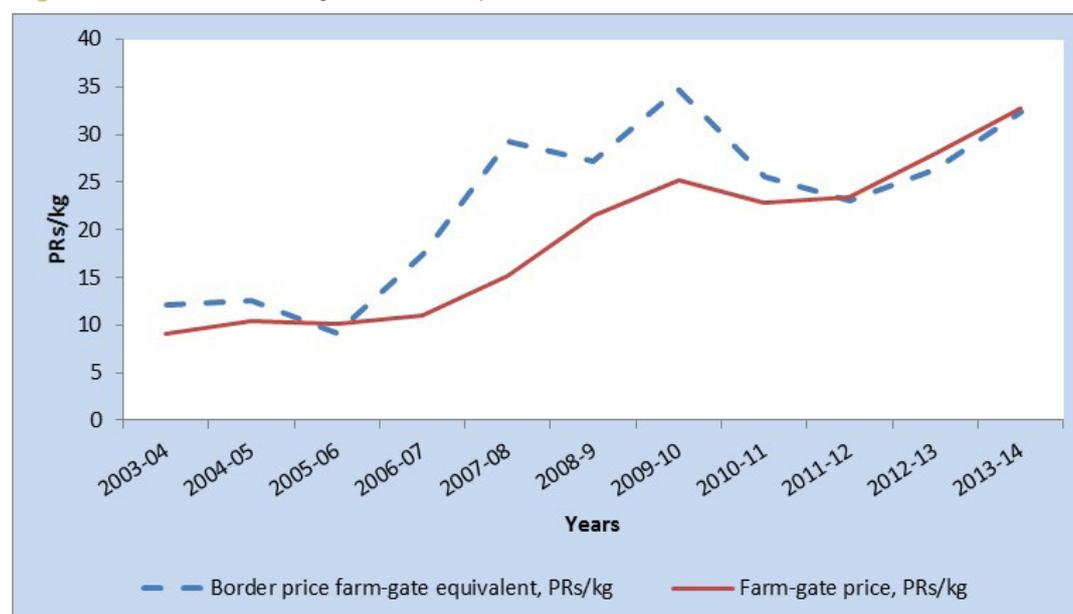
Box 2. The Story of wheat policy in the recent past

Post 2014, the international price of wheat has declined substantially: in the 2016 Rabi season, the international price of wheat was US\$190/ton fob and cif Lahore approximately US\$220/ton (World Bank Wheat Policy Note), which is well below the procurement price of wheat, fixed at PKR1300/40kgs (US\$ 310/metric ton) since 2016. During the years of analysis 2003–2014, the results show (mostly) a negative NRP at the farm level, indicating that farmers are taxed. As a result of the current high procurement price (relative to the price prevailing in international market), the production of wheat has been in excess of domestic needs despite declining per capita consumption. The excess product is procured by the government and is subsequently exported at a unit price lower than the procurement price, so in effect, the government ends up giving an export subsidy. However, only relatively small quantities are exported. In 2016, an export subsidy policy of US\$120 per ton to be shared equally by federal and provincial governments was announced. It is worth noting, these generous export subsidies have not been effective in encouraging significant levels of wheat exports (PDU, May 2017). A lower international price also implies that urban consumers as well as the rural poor who are net consumers of wheat end up paying significantly higher prices than they would in a liberalized market. Finally, the burden of storage falls on the government: the cost of storage is normally uncovered from the time of procurement to the time of release, discouraging private investment in storage facilities. The wheat procurement policy is financed through budgetary allocations and bank borrowing. The direct cost borne by the Government of Punjab to sustain the wheat policy is enormous; costs of procuring, storing and releasing wheat are estimated at Rs. 35 billion (approx. Rs. 80 billion for the country) annually, most of which consists of interest payments to banks. Proposed alternatives to this system include gradual phasing out of the wheat procurement program, income transfer programs, involvement of the private sector in the wheat market, liberalizing trade and offering support for farmers to diversify (PDU, 2017). Post 2015, if international wheat prices are stable, the wheat policy is expected to tax consumers and protect farmers by offering a higher support price.

Table 9: Nominal and Effective Rate of Protection for Wheat, 2003–2014

	IMPORT							EXPORT			
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Value of export/import (USD million)	23.54	92.92	132.70	41.53	865.46	1,082.8	40.68	537.63	125.26	29.29	7.11
Quantity of export/import (ton, thousand)	107.98	426.76	816.40	135.96	1,820.2	3,102.6	94.06	1,636.4	413.7	93.04	20.0
Border price per kg US\$ Karachi (unit value)	0.21	0.21	0.16	0.30	0.48	0.35	0.43	0.33	0.30	0.31	0.36
Exchange rate, PRs/US\$	57.57	59.36	59.86	60.63	62.50	78.50	83.80	85.50	89.24	96.73	102.86
Wholesale price, PR/kg	9.96	11.47	11.29	12.17	16.39	23.00	26.75	24.63	25.45	30.22	35.00
Adjusted Border Price PRs/kg Karachi	11.62	12.33	9.27	17.65	28.88	27.20	34.61	28.09	27.02	30.45	36.58
Wholesale margin	0.91	0.98	1.13	1.16	1.21	1.46	1.55	1.76	2.00	2.17	2.27
Incidental charges	1.38	1.28	1.08	1.03	1.64	1.52	1.75	0.78	1.89	1.91	1.94
Border price farm-gate equivalent, PRs/kg	12.08	12.63	9.21	17.52	29.31	27.25	34.81	25.56	23.13	26.37	32.38
Farm-gate price, PRs/kg	9.05	10.48	10.16	11.01	15.19	21.54	25.20	22.88	23.45	28.05	32.73
Implicit NRP on product at farm-gate (%)	-25.09	-16.97	10.27	-37.15	-48.19	-20.96	-27.60	-10.49	1.39	6.37	1.09
Observed costs of tradable inputs, PRs/kg	4.27	4.73	5.33	5.53	5.79	9.50	10.05	11.23	14.54	15.28	16.19
Hypothetical costs of tradable inputs PRs/kg	4.57	5.70	6.32	6.88	6.85	14.12	12.06	13.16	17.98	17.58	18.24
Implicit NRP on tradable inputs, (%)	-6.58	-17.10	-15.74	-19.58	-15.47	-32.69	-16.70	-14.60	-19.10	-13.12	-11.23
Observed value-added net of tradable inputs, PRs/kg	4.79	5.76	4.83	5.48	9.40	12.04	15.16	11.64	8.90	12.78	16.54
Hypothetical value-added net of tradable input, PRs/kg	7.52	6.92	2.89	10.64	22.46	13.13	22.75	12.40	5.15	8.79	14.14
ERP (%)	-36.34	-16.86	67.17	-48.51	-58.17	-8.34	-33.38	-6.12	72.89	45.40	16.97
NRP at border (%)	26.25	1.00	10.00	6.05	7.06	2.00	10.25	-0.25	-0.25	-0.25	-0.25

Source: Calculations are based on data from API, FBR, PBS and SBP.

Figure 7: Border and Farm-gate Price Comparison for Wheat, 2003–14

Source: Data from Table 9.

The implicit NRP on tradable inputs' calculation compares the observed cost per kilo of tradable inputs and the hypothetical per kilo cost of tradable inputs. In the study, tradable inputs include fertilizer, weedicide, seeds, and machinery. The observed cost is the actual cost paid by farmers at the farm-gate for the various inputs. Hypothetical cost is calculated by removing the effects of subsidies and taxes on the relevant inputs. There are import tariffs on all of the inputs as well as a subsidy on fertilizer. To calculate the hypothetical cost, adjust downward using the effective NRP rate (calculated for each input using the tariff and tax equation) and adjust upward to remove the effect of the fertilizer subsidy. The implicit NRP on tradable inputs is negative in all years under consideration, ranging from -6% to -33 percent; the negative rates imply that interventions in input prices afford protection to wheat farmers overall.⁵⁷ Among the four inputs—fertilizer, seeds, weedicide, and machinery—only fertilizer is subsidized. Withholding taxes ranging from 1 to 6 percent are applicable on all the aforementioned inputs (in varying degree and different for each year). Customs duties worth 20 and 10 percent were imposed on machinery during 2003–04 and 2004–05, respectively; a 5 percent customs duty was also imposed on fertilizer during those two years. Customs duties on all tradable inputs were exempt post 2004–05. The fertilizer subsidy, ranging from 25 to 52 percent, dominates the negative impact of taxes on farmers' income. The subsidy on fertilizer is availed for both domestic production as well as imports. In this study, a weighted average subsidy on fertilizer is calculated using a domestic subsidy rate and an import subsidy rate.

The weighted average fluctuates over the years, reaching a maximum of 52 percent in 2008–09. The variation in subsidy on fertilizer and protective rate on inputs at the border leads to abrupt fluctuations in NRP on tradable inputs. See Appendix 1 for details of tariffs and taxes applicable on inputs.

The ERP calculation compares the observed value-added net of tradable inputs to the hypothetical value-added in the absence of distortions to input and output prices. The former is simply the observed farm-gate price less the cost of all tradable inputs at domestic prices. The hypothetical value-added is defined as the border price without interventions less intermediate inputs without the distortions applying on their prices. The vast fluctuations and changes in sign of the ERP are noteworthy (Table 9). The ERP captures the combined effect of domestic interventions as well as interventions at the border. The ERP estimates are negative in all import years except 2005–06 and positive in all export years except 2010–11. During import years, Government interventions at the domestic level and at the border create an overall tax on farmers' incomes, since value-added would be higher in the absence of taxes and subsidies. At export parity, the ERP estimates are mostly positive and high, implying protection to farmer incomes. The last three of years of analysis had almost no interventions at the border; therefore, the protection afforded to farmers can be attributed to the overall subsidy on inputs.

The NRPs at border values show the combined effect of exempted taxes and tariffs applied on wheat imports and exports over the years. A breakdown of tariffs and taxes on wheat imports is provided in Appendix 2. A customs duty of 25 percent was levied on wheat imports in 2003–04 and 10 percent in 2005–06. In all other years, the customs duty on the import of wheat was exempt. The withholding tax on wheat imports ranges from 1 to 5 percent, increasing over the years; a regulatory duty was imposed during 2006–08 and 2009–10. As for the export side, an export development surcharge worth 0.25 percent is applicable in all years.

⁵⁷ Since the farmers are consumers of these inputs rather than producers, positive NRP on tradable inputs is interpreted as discrimination (implicit tax) against farmers, whereas negative NRP indicates a protection of farmers consuming these inputs (implicit subsidy).

Table 10: Nominal and Real Indicative Price of Wheat Punjab, 2003–14

Year	Consumer Price Index (CPI) [Base year 2007–08 = 100]	Wholesale Prices		Support Prices	
		PRs/40 kg		PRs/40 kg	
		Nominal	Real	Nominal	Real
2003–04	70.25	391.0	556.6	350	498.2
2004–05	76.77	452.4	589.3	400	521.0
2005–06	82.84	457.2	551.9	415	501.0
2006–07	89.28	459.1	514.2	425	476.0
2007–08	100.00	627.3	627.3	625	625.0
2008–09	117.03	887.1	758.0	950	811.8
2009–10	128.85	1016.6	789.0	950	737.3
2010–11	146.45	962.5	657.2	950	648.7
2011–12	162.57	994.3	611.6	1050	645.9
2012–13	174.53	1159.5	664.4	1200	687.6
2013–14	189.58	1200	633.0	1200	633.0

Source: Agriculture Policy Institute.

Sugar

Sugarcane is one the most important cash crops of Pakistan. It is primarily used as a raw material for production of refined sugar and numerous variants. Sugarcane byproducts, such as molasses, treacle, and bagasse, are also used in several industries. The sugar industry plays a pivotal role in the economy of Pakistan. Sugarcane accounts for 3.4 percent in agricultural value-addition and 0.7 percent in GDP. During July–March 2013–14 sugar exports earned foreign exchange worth US\$ 236.8 million—approximately 0.5 percent of total export earnings for the year according to the Trade Development Authority of Pakistan (TDAP). Sugarcane was grown on an area of 1,173 thousand hectares⁵⁸ during 2013–14 against 1129 thousand hectares in 2014–15, showing an increase of 3.9 percent. The production of sugarcane for the year 2013–14 stood at 66.5 million tons, against the target of 65 million tons for that year, a 2.3 percent greater level of production against the target and a 4.3 percent increase in production compared to the previous year. Pakistan ranks fifth in acreage and production and almost 53rd in yield. The production of sugarcane is not consistent, thus in some years Pakistan imports sugar to cover the deficit, while in case of surplus, sugar is exported.

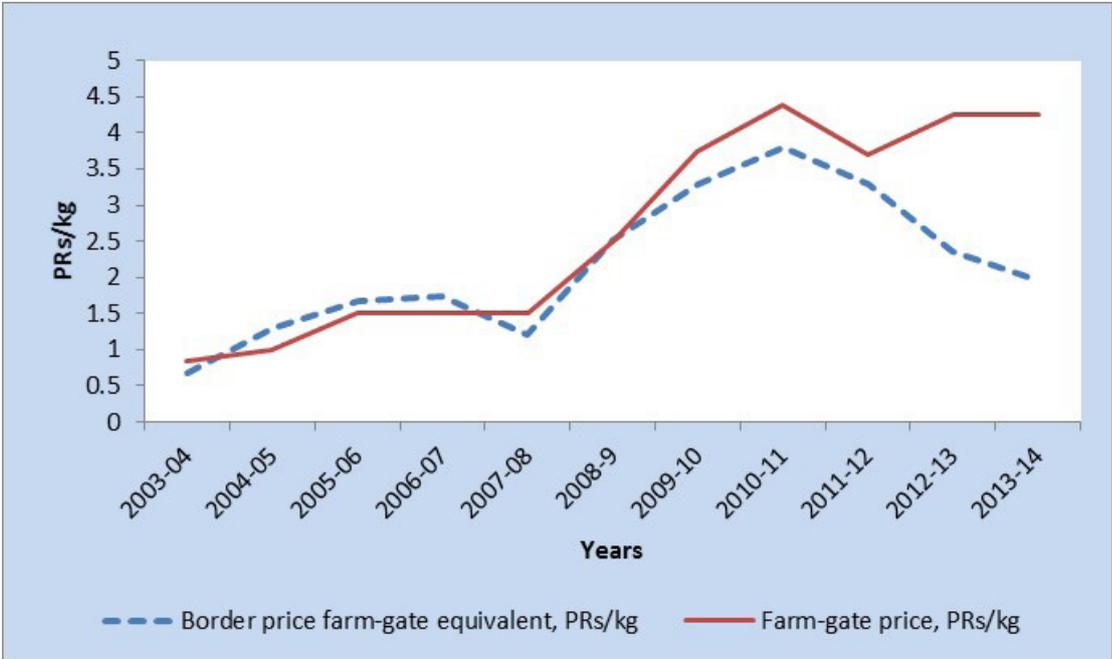
The price survey by Pakistan Bureau of Statistics reported fluctuations in retail and wholesale price of sugar across the country 2003–14; the trend in variation of international price of white sugar and that of farm-gate price are very similar, but farm-gate prices remain above the parity price in most years. Figure 8 shows the border and farm-gate price trend during the period of interest.

The Government announces an indicative price for sugar every year; however, its implementation is not ensured. The indicative price announced for 2013–14 was PRs 4.25/kg (Punjab) but farmers received an average price of PRs 3.75/kg. The Government occasionally buys excess stocks of sugar from sugar mills through the Trading Corporation of Pakistan (TCP). Imports are

⁵⁸ Agriculture Statistics 2013–14

sold by the TCP and the state-owned Utility Stores Corporation (USC) at subsidized prices. Due to delays in payment by the mills, farmers usually choose to sell their standing crop to middlemen in order to receive immediate payment. Farmers face many problems, including delivery of cane to sugar mills, water shortages, load-shedding at the time of irrigation, rising input prices, delays in payment, undue deductions, understatement of weight at procurement centers, and commission demanded by middlemen (API 2014). Domestic sugar production fluctuates significantly and subsequently affects imports and exports. There is an excise duty on imports of 25 percent, which has been reduced to 0 percent under SRO 567/2006 (Tbl.I Sr.2AA CD 0 percent). To stabilize prices, the Government banned sugar exports from 2009 to 2011. After 2011, given the sugar surplus, the Government has set export quotas. The inland subsidy was revoked in early 2013; however, it was reinstated again in the same year at the inland freight subsidy rate of PRs 1.75 per kg for 1.2 million metric tons of sugar. To stabilize prices, the Pakistan Government has time and again adjusted import tariffs and related taxes on sugar and even banned exports in years of very high world prices.

Figure 8: Border and Farm-gate Price Comparison for Sugar, 2003–14



Source: Data from Table 11.

The State-run Trading Corporation of Pakistan (TCP) is also involved in the foreign trade of sugar. The import of sugar is managed by the TCP; the Economic Coordination Committee (ECC) of the Cabinet consults with MNFSR and the State Bank to decide how much sugar is needed to meet domestic demand. The TCP then begins its tendering process for import of sugar.⁵⁹

Compared to other commodities considered in this study, the sugar industry is highly protected, and nominal rates of protection for sugar in Pakistan are unstable. This is due to frequent changes in customs duties and regulatory duties, as well as quantitative restrictions. In the period of interest, international prices also displayed substantial variability. For the calculation of parity prices, the export years taken were those in which the quantity of export exceeded the quantity of import. The NRP and ERP for sugar were calculated using data from Agriculture

⁵⁹ Quotas on import of sugar were phased out in 2005.

Policy Institute (API) and Pakistan Sugar Mills Association (PSMA) for the province of Punjab that accounts for two-thirds of sugarcane production in the country (Dorosh and Salam 2007, 14). The methodology is similar to that used in wheat (import years) and rice (export years). The conversion of sugarcane into white crystalline sugar has been outlined for a representative mill (Fatima Sugar Mills Ltd) in Punjab in order to arrive at a mill-gate price.⁶⁰ The NRP calculations compare the observed farm-gate price with the parity price of CIF Karachi (world price) for refined sugar adjusted to its farm-gate equivalent⁶¹ in Punjab (Table 11). The NRP for export years is calculated by adjusting the FOB Karachi price to compare farm-gate price with the border price equivalent at the farm level without any interventions. Adjustments for seasonality are made for the import years, similar to those for wheat.

NRP estimates for 2003–04, 2007–08, and the following three years (2011–14) have been calculated at export parity, the remaining years at import parity. Results show that NRP estimates at farm-gate are positive for all export years, implying net protection to farmers. On the import side, NRP values are negative except in 2009–10 and 2010–11. Dorosh and Salam (2007) find high and positive nominal rates of assistance on sugar at the wholesale level (averaging 86 percent 2000–05) using import parity prices. Keeping this in mind, the results in the present study suggest that on the import side Government interventions may in effect be protecting middlemen and mill-owners involved in the production chain for sugar; farmers, on the other hand, are taxed. The farm-gate price of sugarcane in 2003–04 is 24.8 percent higher than the parity price. Imports were restricted by higher duties during this year; a protective rate of 26.25 percent on white crystalline sugar. A 15 percent regulatory duty was imposed on the export of sugar in May 2006 to discourage exports; the NRP at farm-gate is negative during this period⁶² (see Table 23 and Table 24). It is worth mentioning that the calculation of parity prices is highly sensitive to incidental costs, processing costs, and milling rates. Incidental costs are much higher in import years compared to export years. This study uses a recovery rate of 8.91 percent (conversion of sugarcane to sugar); processing, handling, and incidental costs are taken from API documents.

The reference/parity price is calculated as follows; incidental costs, processing costs, and general sales tax are subtracted from the adjusted border price; this value is divided by 11.22 (or multiplied by 8.91 percent) to account for recovery of sugar from raw sugarcane; the value of molasses is then added to get the final parity price. Processing costs are defined as costs incurred at the sugar mill. Incidental costs for imports include clearing, handling, stevedoring, wharfage charges, and marine insurance; incidental costs for exports include loading and unloading, clearing and forwarding agents commission, pre-shipment inspection, and bank commission. The farm-gate price is taken from API documents: it is the wholesale price of sugarcane realized by growers. The negative deviation of the farm-gate price could in part represent the market structure of the sugar subsector, which is dominated by a few large mills that have greater control on the market and seem to be major beneficiaries of economic activity in the sector. Sugarcane farmers also face exploitation by sugar millers due to delayed payments and often accept lower payment in order to avoid losses due to the cane going bad. There is much debate regarding the taxation of sugarcane farmers in Pakistan. Some studies argue that the local price of sugar is above the international price, which implies that sugar farmers are protected due to Government intervention; others argue that middlemen and millers reap all of

⁶⁰ The mill-gate price was provided for one year, and extended for all other years using the inflation rate.

⁶¹ It equals the world price times the nominal exchange rate (p.a.) plus margins and other import handling costs.

⁶² <http://download1.fbr.gov.pk/sros/CustomsSROs/2006sro474.pdf>

the benefit of these policies and farmers continue to be at a disadvantage. However, the data in Table 11 show that at least some portion of the protection provided by the Government policies is transmitted to the farmers as well (after 2009).

Table 11: Nominal and Effective Rate of Protection for Sugar, 2003–14

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-9	2009-10	2010-11	2011-12	2012-13	2013-14
	Export	Import	Import	Import	Export	Import	Import	Import	Export	Export	Export
Value of imports/ exports, US\$ million	24.3	63.4	587.1	255.7	91.8	57.2	294.9	683.7	27.7	534.1	287.9
Qty of imports/ exports, ton thousand	105.3	189.8	1419.3	578.9	260.7	125.4	501.3	1027.2	46.6	1063.8	647.0
CIF/FOB Karachi, US\$/ ton	230.5*	333.9	413.7	441.7	352.2*	456.3	588.2	665.5	593.3*	502.1*	444.9*
Exchange rate, PRs/ US\$	57.6	59.4	59.9	60.6	62.5	78.5	83.8	85.5	89.2	96.7	102.9
Adjusted border price, PRs/ton	13267.1	18905.6	23580.1	25517.3	22014.5	35567.0	47050.3	55429.2	52950.3	48569.0	45776.8
Cost of incidentals, PR/ton	919.0	2064.6	2241.3	2314.6	1050.2	2694.4	3128.5	3445.2	1794.3	1728.5	1686.7
Ex mill equivalent cost, PRs/ton	12348.1	20970.3	25821.5	27831.9	20964.3	38261.4	50178.8	58874.4	51156.1	46840.4	44090.2
Processing cost, PR/ ton	5167.0	5434.0	5434.0	6290.0	6290.0	6071.0	6796.0	8072.0	8000.0	13795.0	15044.0
General sales tax (15–17%), PRs/ton	2627.3	3960.6	4688.3	5118.3	4088.1	7093.2	9685.7	11380.9	9465.0	9701.7	10052.8
Net value raw cane, PRs/ton (ex mill equivalent-processing cost–Sales Tax)	4553.8	11575.6	15699.1	16423.6	10586.2	25097.2	33697.0	39421.6	33691.1	23343.8	18993.4
Recovery PRs/ton (11.22%)	405.9	1031.7	1399.2	1463.8	943.5	2236.8	3003.3	3513.5	3002.8	2080.5	1692.8
Parity price sugar farm-gate cane, PRs/40kg	16.2	41.3	56.0	58.6	37.7	89.5	120.1	140.5	120.1	83.2	67.7
Molasses additional PRs/40 kg of cane	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Reference/parity price farm-gate cane PRs/40 kg	27.2	52.3	67.0	69.6	48.7	100.5	131.1	151.5	131.1	94.2	78.7
Reference/parity price farm-gate, PRs/kg	0.68	1.31	1.67	1.74	1.22	2.51	3.28	3.79	3.28	2.36	1.97
Farm-gate price, PRs/ kg	0.85	1.00	1.50	1.50	1.50	2.50	3.75	4.38	3.70	4.25	4.25
NRP of product at farm-gate, %	24.8*	-23.5	-10.4	-13.7	23.1*	-0.5	14.4	15.5	12.9*	80.4*	116.0*
Tradable input costs, PRs/kg product	0.20	0.21	0.23	0.27	0.27	0.49	0.42	0.55	0.74	0.83	0.87
Hypothetical tradable costs PRs/kg	0.21	0.26	0.29	0.35	0.33	0.82	0.55	0.67	0.93	0.96	0.99
NRP of tradable inputs at farm-gate, %	-6.70*	-19.65	-20.64	-22.73	-16.5*	-39.56	-23.05	-18.14	-20.2*	-14.1*	-12.1*
ERP, %	38.9*	-24.4	-8.3	-11.4	37.6*	18.3	22.0	22.8	26.0*	146.0*	244.9*
NRP at border, %	-0.25*	1.00	0.00	1.00	-0.25*	3.02	6.05	6.05	-0.25*	-0.25*	-0.25*

Source: Calculations are based on data from API, FBR, PBS, SBP, NFDC, PASSCO and PSMA.

Note: *NRP and ERP values are computed at export parity.

Pakistan was a net importer of sugar again in 2008–11. No sugar was exported in 2009–10 and 2010–11, because TCP imposed a temporary ban, as local supplies were insufficient and imports were required to meet local demand. Approximately 1.1 million tons of sugar was imported by TCP in 2010–11. During the last three years of analysis, production of sugarcane increased and the Government allowed exports. During 2011–12, the Government allowed 200,000 tons of sugar to be exported; however, the actual export quantity recorded for the year was much lower.⁶³ The reason for the non-success in dispatching the full extent of the export quota is that the State Bank maintained that the quota had already been exhausted, which dissuaded sugar mills to seek and explore opportunities to export. The State Bank of Pakistan was mandated to register contracts only against letters of credit and advance payments, but they entertained paper contracts as well and continued to maintain that the quota was exhausted. Those with contracts then failed to find opportunities to export before the specified date. Registration of contracts with the State Bank of Pakistan is mandatory for the export of sugar, and a date is specified before which all exports are to be shipped. According to newspaper sources, a subsidy worth PRs 4 billion was spent on the sale of sugar at utility stores.⁶⁴ The Pakistan Sugar Mills Association (PSMA) had asked the Federal Government to divert the subsidy given to consumers toward the millers in order to ease the export of surplus sugar. Millers complained that the Government often has ad-hoc policy measures, which confuses the exporters about production targets and export strategies. PSMA also claims that their cost of production is very high, making the local product uncompetitive in the international market. However, if this is true, any intervention by the Government simply helps keep an otherwise uncompetitive industry in business. Also, as mentioned earlier, the benefits of the subsidies provided by the Government and the economic rents in the sugar market chain accrue either to middlemen or sugar mills.

In 2012–13, Pakistan allowed export of surplus sugar, and the ECC set the export quota at 1.2 MMT for the year. Box 2 provides a brief discussion on most recent export policy for sugar. The State Bank of Pakistan (SBP) allocates this quota on a first-come, first-served basis.⁶⁵ Exports are to be made against electronic-forms monitored by SBP to ensure that no e-form is issued in excess of the ceiling announced for the particular year. Parity prices are substantially below farm-level prices in the last years, giving highly positive NRP values at the farm level. The ECC also approved an inland freight subsidy of PRs 1.75/kg (\$18/ton) for the export of sugar. In the last year of analysis the ECC approved an export quota of 500,000 metric tons. In addition, SRO 77(I)/2013 was passed, which states that an excise duty of 8 percent would be imposed on local sales of sugar, but a 0.5 percent excise duty would be applicable on the quantity of local supply of sugar equivalent to the amount exported by the sugar manufacturer. This was a measure used to encourage exports and was applied to a maximum exportable quantity of half a million tons.⁶⁶ The Government further aided the export of sugar during 2013–14 by offering a cash subsidy worth PRs 1/kg on the export of 500,000 tons of sugar. All these incentives to promote export of sugar had the impact of boosting the local price of sugar, leading to highly positive NRP values at the farm-gate.

The NRP on tradable inputs is negative throughout the period of interest, implying that Government interventions on tradable input prices afford overall net protection to sugarcane farmers. As in the case of the other products considered, the decrease in tradable input costs due to the

⁶³ [http://www.lcci.com.pk/rnd_reports/Sugar%20Sector%20\(LCCI\).pdf](http://www.lcci.com.pk/rnd_reports/Sugar%20Sector%20(LCCI).pdf)

⁶⁴ <http://nation.com.pk/business/31-Dec-2012/usc-subsidy-be-diverted-to-mills-for-sugar-export-psma-chief>

⁶⁵ <http://www.sbp.org.pk/epd/2013/FECL10.htm>

⁶⁶ SRO 1072(I)/2013

fertilizer subsidy more than balances the increase due to tariffs. The highest absolute value of NRP on tradable inputs is observed in 2008–09; this is the year in which the weighted average fertilizer subsidy was also at its peak. Fluctuations are mostly due to changes in applied tariffs on seeds, machinery, pesticide, and fertilizer, and due to the high fluctuations in urea subsidy (explained in section on wheat; also see Appendix 1).

The effective rate of protection (ERP) reflects the joint effect of local interventions and interventions at the border. The estimated ERP values are positive in all years except during 2004–06: value-added would be lower in the absence of Government involvement in most years. The ERP on sugar is exceptionally high in the last two years of the study. The Government gave massive incentives to export sugar as of 2011, as discussed above. The impact has been an unprecedented increase in observed value-added: value-added is 245 percent higher than it would be without these policies. In general, sugarcane and refined sugar production continue to be highly protected in Pakistan.

The NRP at the border shows that taxes have been relatively low on sugar. However, Table 23 and Table 24 show a more representative picture; import taxes were much higher during the years when Pakistan was a net exporter of sugar. See Appendix 2 for a breakdown of the tax structure on sugar. The high price wedges in the case of sugar are mostly explained by quantitative restrictions on trade, as discussed earlier.

Table 12 shows that the real market price remained below the indicative market price for all the years under consideration. The real indicative price has been lower than the nominal price from 2008–09 onward. The major factor for this mismatch between the nominal and the real price is attributed to the higher CPI, which has been increasing constantly, thus pushing the real value/return below the support price. This indicates that sugar farmers have been getting less in real terms from the crop (API 2015).

Table 12: Nominal and Real Indicative Price of Sugarcane Punjab, 2000–13

Crop year	Nominal Prices		Consumer Price Index	Real Prices	
	Indicative PRs per 40 kg	Market PRs per 40 kg		Indicative PRs per 40 kg	Market PRs per 40 kg
2000–01	35	45	100	35	45
2001–02	40	37	103.54	38.63	35.73
2002–03	40	35	106.75	37.47	32.79
2003–04	40	34	111.63	35.83	30.46
2004–05	40	40	121.98	32.79	32.79
2005–06	45	60	131.64	34.18	45.58
2006–07	60	60	141.87	42.29	42.29
2007–08	60	60	158.9	37.76	37.76
2008–09	80	100	191.9	41.69	52.11
2009–10	100	150	212.41	47.08	70.62
2010–11	125	175	244.26	51.17	71.64
2011–12	150	148	258.31	58.07	57.29
2012–13	170	170	285.34	59.58	59.58

Source: Agriculture Policy Institute.

Box 3. Sugar Export Policy 2012 Onward

It may be pointed out that the Government of Pakistan has allowed export of sugar on the terms and conditions as mentioned below:

200,000 tons of sugar will be exported.

A quantity not in excess of 5,000/-tons shall be allowed to be exported by individual sugar mills on a first-come, first-served basis.

The export shall be made only against e-form.

The State Bank of Pakistan will monitor the export and no e-form shall be issued in excess of the individual and cumulative ceiling mentioned above.

Later on the Government allowed to export a total of 500,000 MT of sugar out of which 250,000 MT are allowed to be exported with immediate effect up to 31st October, 2013; and the remaining quantity of 250,000 MT from 1st November, 2013 onward subject to the following conditions:

- a) The Sugar Mill owners will clear the outstanding arrears of PRs 1.7 billion (as reported by the representative of PSMA), to be paid to the growers.
- b) The Sugar Mills will start crushing sugarcane in Sindh and Punjab by 1st November and 15th November, 2013, respectively.

The ECC has also approved an inland subsidy of PRs 1.75/kg to facilitate export of sugar on a fast-track basis to enable the sugar mills to offload their surplus inventories and pay the growers' dues.

As of 2014, in order to encourage the export of sugar, the ECC approved a subsidy of PRs 10/kg on export of 650,000 tons of sugar. "The ECC imposed 20pc regulatory duty on the import of raw and beet sugar to discourage imports because of substantially lower prices in the international market. It fixed minimum price of sugar for export to Afghanistan and Central Asian states at \$450 per ton." (Dawn News, Dec 25, 2014).

Source: State Bank of Pakistan (<http://www.sbp.org.pk/epd/2013/FECL10.htm>).

Source: Dawn News (<http://www.dawn.com/news/1153050>).

Rice (Basmati)

Rice is one of the most important sources of food calories after wheat. Rice was also one of the major exports of Pakistan, with its share in global trade at 8 percent during 2011–12, and contribution of PRs 2.08 billion to foreign exchange revenues (API 2014). Rice production was at its peak in 2008–09 at 6.952 million tons, however, production has since declined due to unfavorable weather conditions including floods (API 2014). In addition, over the years, there has been a decline in international prices, which may have contributed to lower production and returns. In Pakistan, two major varieties of rice are produced: basmati rice, the long grain aromatic variety, and IRRI rice so called after the International Rice Research Institute, also known as ordinary rice. Basmati rice is produced only in the province of Punjab, while the production of IRRI rice is concentrated in Sindh. Domestic production of the basmati variety averaged around 2.5 million tons 2003–14. Exports of basmati rice declined by 18.57 percent between 2010–11 and 2011–12 (API). The production of basmati rice has decreased since 2009–10, causing a significant increase in local prices. Exports of basmati rice declined by 18.57 percent between

2010–11 and 2011–12 (API). In addition, Pakistan’s exports of basmati to Iran have also declined significantly, which is partly due to the authorities concerned being unable to promptly finalize the currency swap and currency transfer arrangements.⁶⁷

The NRP calculations provide a comparison of the farm-gate price with the border price equivalent at the farm level (Table 13). For this purpose the FOB Karachi (world price) is adjusted for port and customs related charges, marketing expenses, and wholesale margin based on data published by the Agriculture Policy Institute (API), Rice Export Association of Pakistan (REAP) and Pakistan Bureau of Statistics (PBS). A conversion rate of 0.66 is used to derive the price of paddy from the price of rice. The farm-gate price is calculated by subtracting farm-gate to wholesale margins from the wholesale price of paddy basmati in Punjab.

Table 13: Methodology for Exports (Rice)

Item	Calculation/Explanation
(a) Border price/kg, US\$ (Karachi)	FOB price at Karachi Port
(b) Exchange rate	Period average (PRs/US\$) during each fiscal year
(c) Marketing expenses, PRs/kg	Export & purchase incidentals, insurance & financial expenses for each fiscal year
(d) Wholesale price, PRs/kg	Source: PBS/provincial governments database
(e) Millgate price, PRs/kg	Farm-gate price of paddy plus milling costs
(A) Farm-gate price, PRs/kg	Wholesale price adjusted by subtracting margins for farm-gate, various sources
(B) Border price, farm-gate equivalent PRs/kg	$[\{(a) * (b) - (c)\} * 0.65 - \text{milling costs} - \{(d) * 0.65 - (e)\}]$, 0.65 is the standard paddy-to-rice conversion rate
Implicit NRP on product at farm-gate	$[(A)/(B) - 1]$
(C) Observed costs PRs/kg tradable inputs	Cost of all tradable inputs with interventions
(D) Hypothetical costs PRs/kg tradable inputs	Cost of all tradable inputs without interventions
Implicit NRP on tradable inputs	$[(C)/(D) - 1]$
(E) Observed value-added net of tradable inputs	Farm-gate price—Cost of all tradable inputs with interventions
(F) Hypothetical value-added net of tradable inputs	Border price farm-gate equivalent—Cost of all tradable inputs without interventions
ERP	$[(E)/(F) - 1]$

Note: This is the methodology used in Valdes (2013). The NRP calculation compares the wholesale price of Punjab with the export price. The world price is FOB Karachi. The border price is measured at the farm-gate. It equals the world price times the nominal exchange rate (p.a.) plus any export tax adjusted for export and processing margins, middleman’s margin, and marketing expenses. These marketing expenses include export and purchase incidentals as well as insurance and financial expenses and have been observed from the Agriculture Policy Institute (API), Pakistan’s publications on Rice Policy, for the eleven years of analysis. Tradable inputs include fertilizer, weedicides, seeds, and machinery. “Observed” value-added calculation takes into account actual tariffs and subsidies on selected tradable inputs, while “hypothetical” assumes no tariff and subsidies.

Table 13 shows the methodology for the calculation of ERP for rice. There are no major explicit taxes on the export of rice except for the export development surcharge⁶⁸. Rice exporters enjoy a sales tax refund on packing material for export. On the import side a 10 percent customs duty is imposed on the import of rice along with a fluctuating withholding tax on imports ranging from 1 to 6 percent over the period of analysis. There may also be implicit restrictions and subsidies driving a wedge between the prices observed domestically and the border price. The

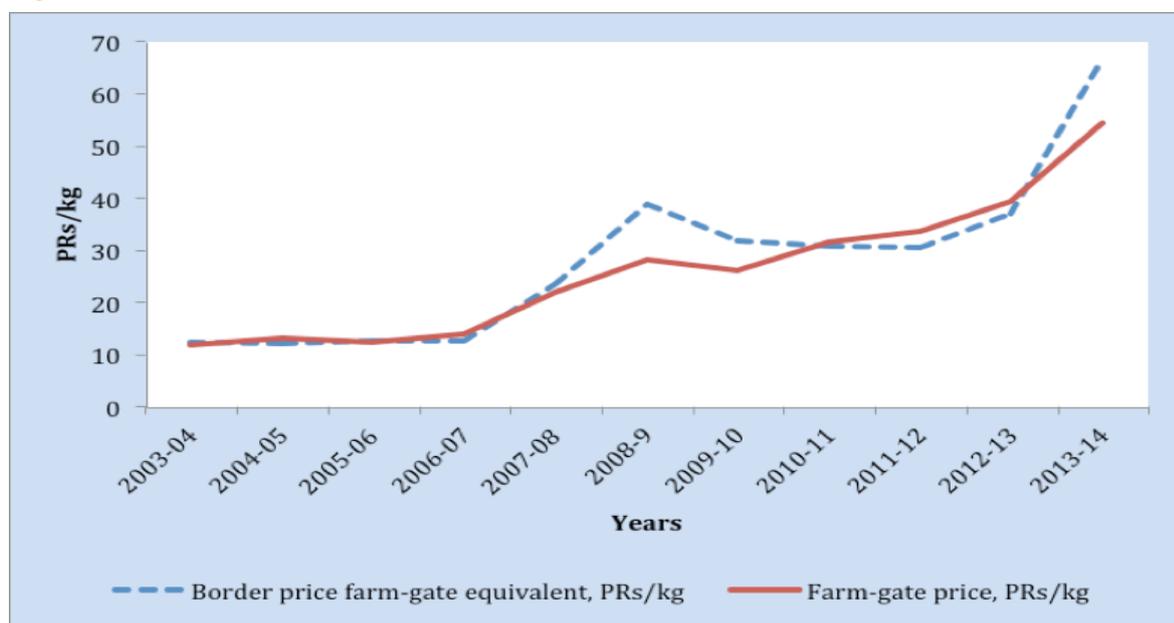
⁶⁷ <http://www.agribusiness.com.pk/rice-exporters-upset-about-ambiguous-policy/>

⁶⁸ There are skepticism amongst exporters on the utilization of the money generated for development of export infrastructure for rice sector through the Export Development Surcharge of 0.25%.

Government announced indicative prices for basmati paddy until 2005 after which no indicative price was announced until 2008. From 2008 to 2010 the Government announced indicative prices for both paddy and rice. There have been no support price announcements by the Government for basmati rice since 2010 (PBS).

Government policies for IRRI rice also included domestic procurement and setting up of indicative prices during the 1980s and 1990s. However, in the early 2000s procurement of IRRI rice discontinued and indicative prices were announced until 2005 (similar to basmati rice). According to NRAs reported in Dorosh and Salam (2007), producers were taxed in the early 1980s; however, over the past decades this has gradually disappeared and average NRAs between 1995 and 2005 were reported to be positive but low, showing little protection to the IRRI rice farmer.

Figure 9: Border and Farm-gate Price Comparison for Basmati Rice, 2003–14



Source: Data from Table 14.

Figure 9 shows fluctuations in the border price and the farm-gate price for the years of interest. The farm-gate price displays a steady increase over the years; hence the fluctuations in NRP at the farm level can be explained by the variation in border prices. The estimates for NRP at farm-gate fluctuate between positive and negative values over the period of analysis; the estimates are low during the period 2003–08.⁶⁹ In 2008–09, the border price increased by 35 percent compared to the previous year in the wake of the food crisis. There is an observed increase in the farm-gate price as well during this year, but it falls significantly below the export parity price, giving an NRP value of –27 percent at the farm level. Attempts were made to keep domestic prices low during this time; the Government imposed a minimum export price (MEP) of US\$1300/ton to ensure local supply. The MEP on basmati rice was removed after six months. According to newspaper sources, during the food crisis Indian exports of basmati rice fetched a price of US\$1400/ton, whereas the average unit price of Pakistani super basmati price was approximately \$855/ton.⁷⁰ Pakistani exporters were more inclined to sell to meet their export targets and enter into forward contracts with the PSB, which is why they were unable to secure better prices. In the

⁶⁹ Dorosh and Salam (2007) estimate the NRP for basmati rice at wholesale, and find negative values from 1962 to 2005.

⁷⁰ <http://www.pakissan.com/english/news/newsDetail.php?newsid=16708>

recent years export earnings have declined and rice exporters have been pressing government to intervene in order to remain competitive in the international market (Box 3).

From 2011 to 2013, rice farmers suffered from production losses due to floods, so export quantities were low⁷¹. The estimates for NRP at farm-gate are on the lower side during these years. In 2013–14 exporters got a record average price for basmati rice in the international market.⁷² According to newspaper sources, REAP officials expressed their concerns over a sudden increase in rates charged by shipping companies. “As there are no fixed shipping charges in the country, Pakistan’s rice exporters are always reluctant while making any contracts with buyers, as compared to other leading rice exporting nations which have relatively less cargo charges than Pakistan’s rice exporters.”⁷³ The 10 percent customs duty generates sustainable protection to farmers from cheaper imports; during the years in which the parity price is lower than farm-gate price, the Government further enhanced protection to rice farmers by increasing the withholding tax to 5 or 6 percent. See Appendix 2 for details on taxes applied on basmati rice at the border. The NRP on rice is –18 percent in 2013–14. Quota restrictions from China (500,000 MT) and Malaysia and Sri Lanka (6000 MT)⁷⁴ limit the potential of rice exports increasing.

The NRP on tradable inputs is negative in all years except 2003–04, implying a net subsidy to farmers as with all other crops. The positive value of 0.6 percent in the first year of analysis is the only positive estimate for NRP on tradable inputs observed in this study; it implies that the cost borne by farmers would be 0.6 percent less in the absence of interventions. Rice uses a higher percentage share of machinery compared to other crops; as a result, the 20 percent customs duty applied on machinery in 2003–04 has a greater impact on the cost of rice, so much so that it dominates the effect of the fertilizer subsidy. In all other years, where negative values of NRP on tradable inputs are observed, the effect of the fertilizer subsidy dominates the combined negative impact of input tariffs on farmers’ incomes. The highest absolute value is observed in 2008–09, when the subsidy on fertilizer was at its peak. Fluctuations in NRP on tradable inputs are mostly due to changes in applied tariffs on seeds, machinery, pesticides, and fertilizer, and due to the high fluctuations in urea subsidy (explained in section on wheat; also see Appendix 1).

The ERPs reflect the percent changes at the farm level in the value-added over tradable costs per ton due to the removal of tariffs and taxes on inputs and the exclusion of the fertilizer subsidy. Hence, the ERP estimate has the advantage of reflecting the joint effect of domestic market interventions and interventions at the border. The ERP estimates of basmati rice are positive in almost all years (Table 14), suggesting that value-added would be lower in the absence of Government interventions; hence the present Government policies afford protection to farmers. The ERP values on rice are particularly high in years when international prices are low compared to farm-gate prices. Growers are protected from low market prices by import tariffs; these distortions create a higher value addition for rice farmers.

The NRP at border is simply the export development surcharge applicable on all exports.

⁷¹ Pakistan and India have been the major competitors in the basmati rice market; however, over the past few years Indian farmers have been given heavy subsidies, resulting in low international prices.

⁷² <http://tribune.com.pk/story/753053/rice-industry-lack-of-branding-hurts-pakistan-india-moves-ahead/>

⁷³ <http://par.com.pk/2014/08/13/rice-exporters-concerned-over-raise-in-shipping-charges/>

⁷⁴ <https://nation.com.pk/10-Nov-2014/quota-limit-restricting-rice-export-potential-to-china>
<https://nation.com.pk/30-Nov-2017/rice-exporters-to-visit-sri-lanka>
<http://par.com.pk/2014/09/20/quota-restrictions-limiting-rice-export-potential/>
<http://nation.com.pk/business/10-Nov-2014/quota-limit-restricting-rice-export-potential-to-china>

Box 3. Rice Policy

About 3 million tons of rice are consumed annually in the country, and the remainder is exported. Rice exports for the last few years have remained over US\$2 billion; however, during the year 2014–15, rice export earnings declined to \$1.5 billion, primarily because of a substantial decline in the prices of rice and other food commodities in the world market.

The prices of paddy have been decreasing in the local market. This has led to associations like Basmati Growers Association (BGA) to ask the Government for intervention at the international level through better marketing and announcement of an indicative price for both paddy and rice to protect the growers. Given the surplus production in the recent year and the need for a better export framework, three key demands were put forward by the rice exporters: a subsidy on rice exports, procurement of surplus stock by PASSCO, and waiving of withholding tax on loans taken by rice growers and exporters.

In view of the farmers' grievances, the Government has subsidized growers due to sliding international prices since 2014. The Economic Coordination Committee (ECC) of Pakistan's cabinet has approved a subsidy package of around \$98.3 million to small-scale rice farmers with up to 10 hectares of rice land. The ECC is certain that basmati rice farmers would be given a subsidy of around PRs 5,000 per acre (around \$123 per hectare).

Source: Dawn News.

Table 14: Nominal and Effective Rate of Protection for Basmati Rice, 2003–14

Items	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Value of exports, US\$ million	421.8	439.3	479.7	556.3	1,091.7	1060.6	856.4	962.7	844.2	626.7	846.2
Quantity of exports, ton, thousand	816.3	814.9	839.0	907.9	1,138.1	974.3	1032.3	1170.6	969.0	630.0	733.9
Border price US\$/kg Karachi	0.52	0.54	0.57	0.61	0.96	1.09	0.83	0.82	0.87	0.99	1.15
Exchange rate, PRs/US\$	57.57	59.36	59.86	60.63	62.50	78.5	83.8	85.5	89.24	96.73	102.89
Border price PRs/kg Karachi	29.7	32.0	34.2	37.2	60.0	85.5	69.5	70.3	77.8	96.2	118.6
Marketing expenses PRs/kg	4.65	4.65	4.65	4.65	4.65	5	5	5.63	5.63	5.63	5.63
Wholesale price PRs/kg	24.38	28.92	29.42	34.44	52.93	64.27	55.4	65.84	77.2	94.25	94.25
Mill-gate price PRs/kg	13.50	14.81	14.18	15.61	23.77	21.3	25.98	30.21	33.25	35.18	37.52
Border price farm-gate equivalent, PRs/kg	12.19	12.00	12.39	12.43	23.33	38.63	31.81	30.62	30.30	36.78	66.43
Farm-gate price, PRs/kg	11.72	13.02	12.29	13.69	21.79	28.11	25.88	31.37	33.60	39.16	54.23
Implicit NRP at farm-gate, %	-3.9	8.5	-0.8	10.2	-6.6	-27.2	-18.7	2.4	10.9	6.5	-18.4
Observed costs PRs/kg of tradable inputs	4.69	4.97	5.32	5.82	6.15	6.96	6.85	8.67	12.36	14.03	15.69
Hypothetical costs PRs/kg of tradable inputs	4.66	5.55	6.06	6.79	6.89	10.60	8.47	10.23	14.25	15.43	16.79
Implicit NRP on tradable inputs, %	0.60	-10.43	-12.29	-14.41	-10.83	-34.35	-19.08	-15.21	-13.22	-9.10	-6.58
Observed value-added net of tradable inputs	7.03	8.05	6.98	7.88	15.65	21.15	19.03	22.70	21.23	25.13	38.54
Hypothetical value-added net of tradable inputs	7.53	6.45	6.33	5.64	16.44	28.02	23.35	20.39	16.05	21.35	49.64
ERP, %	-6.61	24.78	10.22	39.76	-4.82	-24.52	-18.51	11.31	32.27	17.70	-22.35
NRP at Border, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25

Source: Calculations are based on data from API, FBR, PBS, SBP, NFDC and REAP.

Note: Marketing expenses and farm-gate price are observed from API documents.

Cotton

Pakistan is the world's fourth largest producer of cotton in terms of area and production, but ranks 20th in terms of yield. Cotton is cultivated by around 1.6 million farmers, mostly with small land holdings of less than five hectares. In 2013–14, total production stood at 12.8 million bales, showing a 2 percent decline over the previous year. The cotton crop contributes 1.4 percent to GDP and 6.7 percent to agricultural value addition, with production primarily in two provinces: Punjab (75.8 percent) and Sindh (23.4 percent). The area under cotton is second only to wheat; it was approximately 2.8 million hectares in 2013–14, accounting for 15 percent of the total cropped area.⁷⁵

The rapid expansion of the textile sector has resulted in much higher domestic consumption after the 1990s. Table 15 shows the decade-wise production, consumption, and trade of cotton. It is worth noting that these consumption numbers are not final consumption, but rather mill consumption. The textile sector contributes more than 50 percent to Pakistan's merchandise exports. Despite an increase in production over the years, Pakistan has become a net importer of cotton, owing to its use as an input in the textile sector, and the import of some staple lengths not produced in Pakistan. Specifically, the country has become a net-importer of the American and Egyptian varieties of raw-cotton and also other cotton (HS code 5201); cotton carded/combed is mostly exported.⁷⁶ The cotton subsector contributes to export earnings through products such as lint, yarn, cloth, made-ups, and garments (Dorosh and Salam 2007). Increasing domestic use has led to a fall in exports of raw cotton and a rise in exports of processed cotton. The growth of the textile industry has also resulted in a keen interest in cotton by the Government. The Pakistan Central Cotton Committee (PCCC), a semi-autonomous body in the Ministry of Textile Industry established in 1948, has an objective to improve the sector's productivity. It is engaged primarily in cotton research and development, which is funded by the cotton cess levied on each cotton bale consumed or exported. The PRs 20 cotton cess has been effective since 2006 and was increased to PRs 50 per bale as of January 2011.⁷⁷

Table 15: Production, Consumption, and Trade of Cotton, 1960–2014

Year	Production (tons, thousands)	Domestic Consumption (tons, thousands)	Exports (tons, thousands)	Imports (tons, thousands)	Net Exports (tons, thousands)
1960–69	427	309	116	2	114
1970–79	584	448	132	1	131
1980–89	1067	648	414	6	408
1990–99	1644	1498	161	66	95
2000–09	1946	2250	78	372	-294
2010–14	2118	2254	143	272	-129

Source: Production Supply and Distribution Online Database (United States Department of Agriculture).

The Government places no quantitative restrictions on cotton imports. An export development surcharge worth 0.25 percent is levied on cotton exports (applicable to all exports from Pakistan). The average MFN tariff on cotton imports is 3.8 percent.⁷⁸ The customs duty on imports of cotton is exempt; withholding tax and federal excise duty apply, ranging 1–5 percent.

⁷⁵ Ministry of Finance

⁷⁶ Pakistan Bureau of Statistics

⁷⁷ <https://fp.brecorder.com/2012/07/201207051209035/>
<http://towelassociation.com/userfiles/files/NEWS%202015/April/03-04>

⁷⁸ https://www.wto.org/english/tratop_e/tpr_e/s311_e.pdf

Direct market interventions have been minimal; export and import duties on cotton have been low since the mid-1990s. The Trading Corporation of Pakistan (TCP) made an exception in 2004 when it bought 350,000 tons of cotton in an effort to boost domestic prices, and again in 2008 when it bought 42,000 tons. The Government began announcing support prices for cotton lint and seed cotton in 1975; TCP was designated as the implementing agency responsible for buying cotton lint on the basis of the support price. The support price was abandoned in 1995; indicative benchmark prices are now announced by the Government (WTO 2015).⁷⁹ Through the mid 1970s to mid 1980s, the Cotton Export Corporation had a monopoly on cotton lint exports. The corporation reduced the domestic price of cotton below the world price by restricting the volume of exports. Cotton producers nonetheless benefitted from the trade protection for vegetable oils that boosted the domestic price of cottonseed (Dorosh and Salam 2007). According to Import Policy Order 2012–15, published by the Ministry Of Commerce, there is no restriction on import of cotton. Export Policy Order 2012–15 states that cotton can be exported only after an export contract registration (against a security deposit of 1 percent of the contract value) with the Trade Development Authority of Pakistan (TDAP) and a classification certificate issued by the Pakistan Cotton Standards Institute.

Table 16 shows the estimation and results of the NRP at farm-gate for cotton, NRP at farm-gate of tradable inputs, and the effective rate of protection (ERP). The rates of protection are based on import parity. Farmers grow seed cotton, which is then separated into cottonseeds and cotton lint, both of which should be taken into account in calculating the protection afforded to farmers. The incidental costs and input prices are observed from API documents for the province of Punjab, where 75 percent of production takes place.

The U.S. cotton price is the post-harvest average of monthly rates of upland cotton (color 41, leaf 4, staple 34) for the months August–December taken from U.S. Department of Agriculture market prices. It should be noted that the U.S. cotton price fluctuates considerably during the year, so the analysis is quite sensitive to which month of the year is being considered. Figure 10 displays the trend in the farm-gate price and the parity farm-gate price (border price equivalent at the farm-gate) of seed cotton over the 11 years of analysis. Note that both series follow a similar trend, but the farm-gate price remains consistently below the import parity price except in 2010. That was the year in which Pakistan suffered from widespread floods, resulting in a loss of 2–3 million bales.

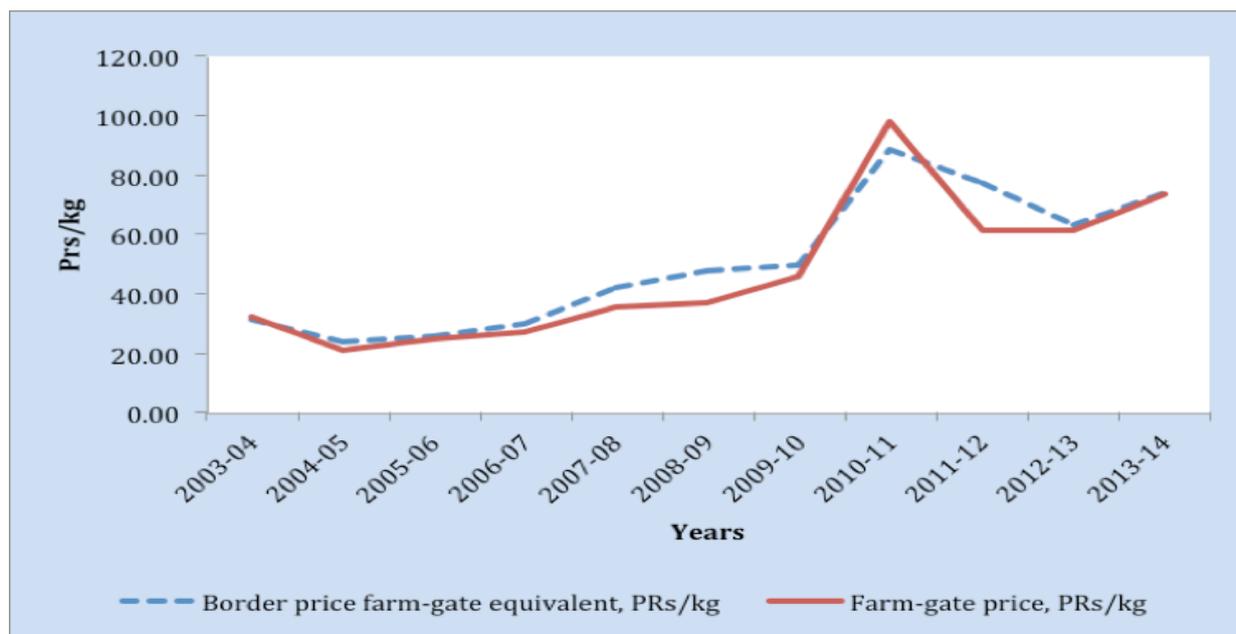
⁷⁹ Wholesale prices have remained above the indicative price during the period of interest of this study.

Table 16: Nominal and Effective Rate of Protection for Cotton, 2003–14

	2003– 04	2004– 05	2005– 06	2006– 07	2007– 08	2008– 09	2009– 10	2010– 11	2011– 12	2012– 13	2013– 14
(a) U.S. cotton price, US cents/pound spot Average	69.55	52.1	56.12	58.5	68.6	64.89	68.74	129.06	108.30	82.95	88.86
(b) Freight charges, US cents/pound	0.62	0.64	0.69	0.82	0.84	0.87	1.11	1.18	1.36	1.47	1.54
(c) Grade and staple discount, US cents/pound	3.50	3.50	3.50	3.50	3.50	4.50	4.50	4.50	4.50	4.50	4.50
Parity price Karachi, US cents/pound [(a)+(b)-(c)]	66.67	48.60	52.62	55.00	65.10	60.39	64.24	124.56	103.80	78.45	84.36
Handling charges and transport cost to textile mills, 1.5% of CIF, US cents/pound	1.00	0.73	0.79	0.83	0.98	0.91	0.96	1.87	1.56	1.18	1.27
Adjusted Ex-gin price lint, PRs/40 kg	3179.7	2463.1	2684.8	2844.1	3538.5	4213.4	4599.1	9285.5	8007.8	6472.5	7462.4
Exchange rate, PRs/US\$	57.57	59.36	59.86	60.63	62.50	78.50	83.80	85.50	89.24	96.73	102.89
Ex-gin value of 80 kg cotton seed, PRs	868	782	782	1116	1854	1854	1854	1854	1794	1616	2054
Ginning charges for 120 kg seed cotton, PRs	250	350	350	350	350	350	500	500	500.00	500.00	600.00
Value of 120 kg seed cotton, PRs	3797.66	2895.06	3116.75	3610.11	5042.51	5717.44	5953.11	10639.5	9301.78	7588.48	8916.42
Seed cotton for 40 kg farm-gate price, PRs	1265.89	965.02	1038.92	1203.37	1680.84	1905.81	1984.37	3546.49	3100.59	2529.49	2972.14
Parity farm-gate price seed cotton PRs/kg	31.65	24.13	25.97	30.08	42.02	47.65	49.61	88.66	77.51	63.24	74.30
Farm-gate price PRs/kg	32.52	21.17	25.04	27.64	35.94	37.46	46.35	98.32	61.95	61.63	73.83
NRP at farm-gate for product, %	2.75	-12.26	-3.58	-8.11	-14.46	-21.37	-6.57	10.89	-20.08	-2.54	-0.63
Observed tradable input cost PRs/kg output	9.63	10.28	10.85	11.84	12.02	15.35	15.13	17.79	20.55	25.39	26.10
Hypothetical tradable input costs PRs/kg output	9.78	11.40	12.14	13.76	13.24	21.98	18.21	20.43	23.77	28.80	28.87
NRP at farm-gate of tradable inputs, %	-1.53	-9.82	-10.59	-13.94	-9.23	-30.15	-16.93	-12.93	-13.56	-11.84	-9.59
ERP, %	4.66	-14.44	2.56	-3.19	-16.87	-13.85	-0.56	18.03	-22.97	5.24	5.06
NRP at border, %	1.50	1.50	1.00	1.00	2.01	2.01	5.00	1.00	2.01	1.00	1.00

Source: Calculations are based on data from API, FBR, PBS, SBP, PASSCO, NFDC and World Bank Commodities Price Data (pink sheet).

Figure 10: Border and Farm-gate Price Comparison for Cotton, 2003–14



Source: Data from Table 16.

The NRP at farm-gate for cotton is negative in all years (an implicit tax on farm income) except 2003–04 and 2010–11. The adjusted ex-gin price of lint is the parity price inclusive of handling charges, adjusted for storage costs using the formula on seasonal adjustments. It is assumed that domestic consumption exceeds domestic supply in the ninth month after harvest. The prices received by farmers have been by and large less than the corresponding border price. Dorosh and Salam (2007) found that the nominal rate of assistance was on average 7 percent during 2000–05; however, these figures are based on export parity prices. Since Pakistan became a net-importer of cotton in the mid 1990s, this study employs an import parity approach.

The NRP at the border on cotton is low, ranging from 1 to 5 percent as shown in the last row of Table 16. Customs duties on the import of cotton are exempt; the only taxes that apply are the withholding tax and the special federal excise duty. On the export side, a 0.25 percent export surcharge is imposed. The international price of cotton has been volatile and displays large jumps during the years of the food crisis. The movements in farm-gate price reveal a similar trend, albeit consistently remaining below the parity price (Figure 10). The Trading Corporation of Pakistan (TCP) bought 270,000 tons of cotton (11 percent of production) in 2004; apart from this, the Government has had a hands-off approach toward the cotton industry.

Since cotton imports and exports are exempt from tariff and border taxes and direct Government intervention has been minimal, it calls into question what might explain the wedge between farm-gate and parity prices. Perhaps a combination of the internal market structure of the sector and policy can explain these results. According to officials at the Ministry of Textile Industry, cotton ginners buy seed cotton from farmers at the domestic farm-gate rates reported in Table 15, and they sell to APTMA (All Pakistan Textile Mills Association, the sole buyer of lint). The monopsonistic power enjoyed by APTMA allows it to depress the local price of lint by restricting purchases from the local market. This creates a wedge between world price and farm-gate price, which cannot be overcome since the export of cotton, although not taxed, is a cumbersome procedure (see section on export policy), which requires registration and has

a time limit on shipment. In addition, given that the international price of cotton is volatile, exporters are discouraged since the registration procedures require preplanning and act as a barrier for exporters to benefit from temporary spikes in the international price of lint. During the years of interest, there have not been any explicit quantitative restrictions on the import of cotton. It is also possible that farmers do not reap the benefits of rising international prices, and that any extra margins are absorbed by the respective marketing chains.

The NRP on tradable inputs is negative, implying net protection to farmers. Again, as with other crops, the fertilizer subsidy is most influential in determining the NRP values. The cost of tradable inputs ranges 1–31 percent less than what it would be in the absence of intervention on input prices. The ERP captures the effects on farmer income of a much larger set of policies, which are not reflected in the NRP, and more accurately captures the incentives facing domestic producers. The impact of the trade regime and fertilizer subsidies on cotton reduces the negative impacts of the price wedge between the farm-gate and border price. The ERP estimates are volatile, being positive in some years and negative in others.

Maize

Maize is one of the major crops in Pakistan, accounting for 5 percent of the total cropped area and 3.5 percent of the value of agricultural output. Maize contributes 2.1 percent to value-added in agriculture and 0.4 percent to GDP. Maize was cultivated on 1,117 thousand hectares in 2013–14, showing an increase of 5.4 percent over the previous year's area of 1,060 thousand hectares. Production of maize stood at 4,527 thousand tons during 2013–14, showing an increase of 7.3 percent against the previous year's production of 4,220 thousand tons. The province of Punjab alone accounts for 41 percent of total maize cultivated in the country. Maize is not only consumed by people as a food grain but also used as feed for livestock and poultry (about 25 percent). The demand for maize has increased over time due the expansion of the livestock and poultry industry. In addition, maize is also gaining importance as a commercial crop, where a large number of products are being manufactured out of its grain.

Maize has historically been imported in Pakistan; however, for the past several years (since 2008) there has been enough production for export. The main international markets for Pakistani maize include Indonesia, Malaysia, Viet Nam, Singapore, Sri Lanka, China, and Hong Kong. Maize exports can be streamlined and increased through an effective policy toward maize production, marketing, and exports. At present, there has not been sufficient planning to induce farmers to adopt new technologies and improve yield and quality.

There is a customs duty on imports of maize of 10 percent⁸⁰ and a regulatory duty of 25 percent (SRO 482 (I)/2009) if imported from India.⁸¹ The NRP for maize is calculated at the border and wholesale level.⁸² The value and quantity of export is taken from Pakistan Bureau of Statistics

⁸⁰ Customs duty is exempted if maize is imported for poultry feed under SRO 567/2006.

⁸¹ Recently (2015), on a proposal submitted by the Ministry of National Food Security and Research, the ECC approved imposition of a 30% Regulatory Duty on import of maize. The decision has been taken in view of the abundant maize stock available in the country and a noticeable difference between price in the local market and international market.

⁸² The NRP results are different from Dorosh and Salam (2007) for the years 2003–2005 as that study uses international prices while this study uses actual value and quantity of imports.

(PBS), which is then used to calculate the unit value of imports/exports, including the impact of applicable taxes. The wholesale prices are average annual wholesale prices for Lahore as published by PBS. The wholesale margin is the difference between the wholesale price and the unit value of imports/exports (including taxes) and includes marketing, incidental, and transportation costs. During the period 2003–04 to 2007–08 maize was imported. The high NRPs during import years show that maize farmers are being protected due to the explicit tariff at the border and implicit restrictions.⁸³ The only export tax is the 0.25 percent export development surcharge that accounts for the difference in the border prices. The export parity price at wholesale level is greater than the wholesale price for the export years under consideration. Table 17 shows the NRP estimations for maize. The NRP (post 2008) shows there is no protection given to maize farmers.

Table 17: Nominal Rate of Protection for Maize, 2003–14

Items	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Value of Imp/Exp, US\$ million	3.90	3.79	0.01	0.17	38.32	19.90	28.79	5.35	63.58	80.33	20.64
Value of Imp/Exp, PRs million	224.73	224.73	0.46	10.16	2395.11	1562.42	2412.57	457.37	5674.18	7769.96	2122.59
Quantity of Imp/Exp, million kg	22.58	22.58	0.04	0.56	123.86	77.81	154.22	18.47	235.72	306.04	90.20
Unit value of Imp/Exp, US\$/kg	0.17	0.17	0.21	0.30	0.31	0.26	0.19	0.29	0.27	0.26	0.23
Exchange Rate PRs/US\$	57.57	59.36	59.86	60.63	62.5	78.5	83.8	85.5	89.24	96.73	102.86
Unit value of Imp/Exp, PRs/kg	9.95	9.95	12.41	18.21	19.34	20.08	15.64	24.77	24.07	25.39	23.53
Value of Imp/Exp including taxes, PRs/kg	11.60	11.60	14.46	21.23	22.33	20.03	15.60	24.71	24.01	25.33	23.47
Wholesale price PRs/kg	8.45	9.52	10.94	11.11	15.1	17.60	17.81	26.35	24.42	26.09	28.75
Margin PRs/kg	-3.15	-2.08	-3.52	-10.12	-7.23	-2.43	2.20	1.65	0.40	0.76	5.28
Protection to the tradable product at the border of the country											
Baseline price, PRs/kg	11.60	11.60	14.46	21.23	22.33	20.03	15.60	24.71	24.01	25.33	23.47
Hypothetical price, PRs/kg	9.95	9.95	12.41	18.21	19.34	20.08	15.64	24.77	24.07	25.39	23.53
NRP at border, %	16.6	16.6	16.6	16.6	15.5	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Protection to the tradable product at the wholesale of the country											
Baseline price, PRs/kg	8.45	9.52	10.94	11.11	15.1	17.60	17.81	26.35	24.42	26.09	28.75
Hypothetical price, PRs/kg	6.80	7.87	8.88	8.09	12.10	17.65 (E*)	17.85 (E*)	26.42 (E*)	24.48 (E*)	26.15 (E*)	28.81 (E*)
NRP at wholesale, %	24.30	21.00	23.19	37.37	24.77	0.00	0.00	0.00	0.00	0.00	0.00

Source: Calculations are based on data from FBR, PBS and SBP.

Note: Maize is imported from 2003–04 to 2007–08 and exported from 2008 onwards.

E* represents measurement error as the counterfactual prices are slightly inflated and thus NRP at wholesale has been set to zero.

Authors' calculations.

⁸³ During these years import of maize from India was banned.

Milk

Milk is the single most important output from the livestock sector. This livestock subsector accounts for 52 percent of agricultural value-added and 11 percent of total GDP. The dairy sector in Pakistan plays a significant role in the national economy; its value is more than that of the wheat and cotton sectors combined. Estimated annual milk production in 2013–14 was approximately 41.13 million tons, making Pakistan the fourth largest milk producer in the world. However, owing to Pakistan's increasing population, the country has been facing a domestic deficit in milk supply (FAO 2011). Pakistan's main dairy imports come in the form of powdered milk and other milk products, which are imported subject to import duties. The milk sector of Pakistan is not regulated, and most of the milk is marketed in unprocessed form, sold by local farmers in their respective areas. Less than 5 percent of the milk traded is actually processed by the dairy industry (WTO 2015). However, the processed milk industry is growing as many multinational players have entered the sector, resulting in technology transfers leading to higher productivity, improved quality, and better income for farmers.

Table 18: NRP Calculated for Milk, 2003–14

Items	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Value of imports, PRs million	224.05	481.38	1026.84	776.08	1011.81	1907.26	2652.54	7556.74	7467.11	5886.95	8460.17
Value of imports, US\$ million	3.89	8.11	17.15	12.80	16.19	24.30	31.65	88.38	83.67	60.86	82.25
Quantity of imports, million kg	2.60	4.89	8.87	6.72	5.50	10.38	10.49	28.55	26.22	22.29	23.25
Adjusted quantity of imports, million kg	18.75	35.24	63.84	48.38	39.63	74.77	75.52	205.56	188.78	160.49	167.41
Unit value of imports, US\$/kg	0.21	0.23	0.27	0.26	0.41	0.32	0.42	0.43	0.44	0.38	0.49
Exchange rate, PRs/US\$	57.57	59.36	59.86	60.63	62.5	78.5	83.8	85.5	89.24	96.73	102.86
Unit value of imports, PRs/kg	11.95	13.66	16.08	16.04	25.53	25.51	35.12	36.76	39.55	36.68	50.53
Adjusted value of imports including taxes, PRs/kg	15.09	17.24	21.31	20.05	32.49	33.75	46.47	48.64	50.34	46.68	64.31
Wholesale price of fresh milk, PRs/liter	13.42	17.35	19.43	22.42	26.06	32.74	36.70	43.13	50.83	57.88	62.03
Wholesale price of fresh milk, PRs/kg	13.03	16.85	18.87	21.77	25.31	31.80	35.64	41.89	49.37	56.21	60.24
Margin	-2.05	-0.39	-2.44	1.72	-7.18	-1.95	-10.83	-6.75	-0.97	9.53	-4.07
Protection to the tradable product at the border of the country											
Baseline price, PRs/kg	15.09	17.24	21.31	20.05	32.49	33.75	46.47	48.64	50.34	46.68	64.31
Hypothetical price, PRs/kg	11.95	13.66	16.08	16.04	25.53	25.51	35.12	36.76	39.55	36.68	50.53
NRP at border, %	26.25	26.25	32.50	25.00	27.26	32.30	32.30	32.30	27.26	27.26	27.26
Protection to the tradable product at wholesale of the country											
Baseline price, PRs/kg	13.03	16.85	18.87	21.77	25.31	31.80	35.64	41.89	49.37	56.21	60.24
Hypothetical price, PRs/kg	9.90	13.26	13.64	17.76	18.35	23.56	24.30	30.01	38.58	46.21	46.47
NRP at wholesale, %	31.70	27.03	38.32	22.58	37.93	34.98	46.69	39.56	27.95	21.64	29.65

Source: Calculations are based on data from FBR, PBS and SBP.

Note: Adjusted quantity of milk is found using a conversion ratio of 1:8 and quality factor of 90%.

The NRP for milk is calculated at the border and wholesale level using the value of imports of powdered milk and converting it to fresh milk equivalent using a conversion ratio of 1:8 and a quality factor of 90 percent.⁸⁴ At the border the NRP depicts the difference due to import taxes, specifically customs duty of 25 percent on import of dry milk in order to protect the local dairy industry. See Table 23 and Appendix 2 for details on border taxes applied on milk. In Table 18, positive and high NRP estimates at wholesale show that the milk industry is highly protected by the Government, mainly due to border taxes. The duties on milk are an example of the escalating tariff structure of Pakistan's tax regime; dry milk, being a manufactured good, is subject to higher duties compared to unprocessed goods.

Pakistan is a net importer of powdered milk and any change in duty rates will have a direct bearing on the prices of packaged milk as well as fresh milk. Instead of providing protection at the border, the Government needs to improve farming techniques in the domestic market to increase productivity, as despite being the fourth largest producer in the world, Pakistan is still unable to meet domestic demand due to poor resource utilization.

Gram

Gram (or chickpea) is one of the most import crops in the pulses group and about 83 percent of gram is grown in the province of Punjab⁸⁵. Pakistan is a net importer of pulses, with major suppliers including Australia, Burma, Tanzania, Ethiopia, and Canada. About 7 percent of the total cultivated land is under pulses. Major pulse crops are gram, masoor, mung, and mash. Gram (chickpea) and masoor (lentil) are the major *rabi* (winter) crops, while mung and mash are the important *kharif* (summer) crops. Among them gram is of major importance, occupying 73 percent of the total area covered by pulses with about 74 percent contribution to the total pulse production⁸⁶. Although Pakistan is a major producer of pulses, demand has been outstripping domestic supply, making it a regular importer of pulses (Dawn News). A major challenge faced by the pulses sector in Pakistan is that farmers get lower prices for their outputs compared to grains such as wheat and rice, so they switch to other crops. Other issues in this subsector include the role of middlemen and poorly organized farmers, less resistant varieties of pulses, lack of interest of Government or improper Government policies, and lack of modern technology and research on pulses to increase production.

Pakistan was an exporter of gram from 2003 to 2006 due to bumper crop in those years; however, in the past decade Pakistan has been a major importer. There was a ban on the export of all pulses as of 2006 (including gram) to ensure domestic supply. Although the ban was lifted in 2007, the Government placed a 35 percent regulatory duty (SRO 492(I) 2006) on export of gram to prevent traders from benefitting from the international price differential and exporting the gram needed for local consumption.

According to the 2013 economic survey of Pakistan (GOP 2014a) there has been a decline in the production of pulses, with 36.8 percent lower production in gram, 5.1 percent decline in

⁸⁴ The NRP is calculated using the import value of dry milk and adjusting it by a conversion ratio of 1:8 and a quality factor of 90%, following Dorosh and Valdes (1990).

⁸⁵ Agriculture Statistics of Pakistan, 2013–14

⁸⁶ <http://www.dawn.com/news/753271/rising-import-of-pulses>

production of masoor, and 5.4 percent decrease in other pulses. Lack of use of improved technologies and farm machinery like threshers also contributes to low productivity. Crop losses at the time of harvesting and during threshing are sometimes also significant. There is also an absence of a comprehensive policy for raising local production of pulses (Dawn News).

The NRP for gram is negative during export years and positive during import years. However, over the past decade NRPs have remained low (Table 19) as its imports are exempted from customs duty under Pakistan Customs Tariff Fifth Schedule. NRP values are close to zero, implying that border measures do not create a price wedge in this case.

Table 19: NRP Calculated for Gram, 2003–14

Items	2003–04	2004–05	2005–06	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Value of export/import, US\$ million	7.25	6.74	13.95	7.49	5.65	10.97	20.03	23.86	52.94	31.16
Value of export/import, PRs million	417.37	400.17	835.29	468.05	443.35	919.61	1712.85	2129.67	5120.57	3205.30
Quantity of export/import, million kg	24.03	20.41	37.38	12.11	8.17	31.85	30.74	36.17	70.21	51.41
Unit value of export/import, US\$/kg	0.30	0.33	0.37	0.62	0.69	0.34	0.65	0.66	0.75	0.61
Exchange rate, PRs/US\$	57.57	59.36	59.86	62.5	78.5	83.8	85.5	89.24	96.73	102.86
Unit value of export/import, PRs/kg	17.37	19.61	22.35	38.66	54.24	28.87	55.72	58.87	72.93	62.34
Value of imports including taxes, PRs/kg	17.32	19.56	22.29	40.60	55.33	29.45	57.39	60.05	73.66	62.97
Wholesale price, PRs/kg	25.70	34.51	39.69	38.88	57.54	78.46	91.20	102.33	96.05	63.87
Margin, PRs/kg	8.38	14.95	17.40	-1.72	2.21	49.01	33.81	42.28	22.40	0.90
Protection to the tradable product at the border of the country										
Baseline price, PRs/kg	17.32	19.56	22.29	40.60	55.33	29.45	57.39	60.05	73.66	62.97
Hypothetical price, PRs/kg	17.37	19.61	22.35	38.66	54.24	28.87	55.72	58.87	72.93	62.34
NRP, %	-0.25	-0.25	-0.25	5.0	2.0	2.0	3.0	2.0	1.0	1.0
Protection to the tradable product at the wholesale of the country										
Baseline price, PRs/kg	25.70	34.51	39.69	38.88	57.54	78.46	91.20	102.33	96.05	63.87
Hypothetical price, PRs/kg	25.74	34.56	39.75	36.95	56.46	77.88	89.53	101.15	95.32	63.25
NRP, %	-0.17	-0.14	-0.14	5.23	1.92	0.74	1.87	1.16	0.77	0.99

Source: Authors' calculation.

Note*: 2003 to 2006 are export years. There was no trade of gram in 2006–07. After 2007 Pakistan was a net importer.

Poultry

The poultry sector is considered to be one of the most organized and vibrant sectors of the agricultural industry in Pakistan. Commercial poultry farming started in Pakistan in the early 1960s and has showed rapid growth over the decades. The initial growth of this sector was the result of the promotional policies by the Government and the persistence of the poultry farming community. The Government considered the poultry production chain to be a crucial part of the food processing industry and gave special incentives to this sector. The poultry sector was declared free of sales and income taxes as well as exempt from import duties on inputs such as machinery and vaccines for a number of years (Hussain et al. 2015). As a result, during the early 1970s, the sector saw 20–30 percent growth per annum and continued to grow at a rate of

10–15 percent in the 1980s. The 1990s and 2000s were characterized by a number of disasters in the industry, especially from disease. This resulted in a ban on imports by the Middle-East, which is one of the major markets for Pakistan. The emergence of these diseases opened new avenues in the industry, because prophylactic measures regarding vaccination and biosecurity were introduced in addition to improved research⁸⁷ (Hussain et al. 2015).

Box 4. Poultry Industry Structure

Broilers and Layers are produced at farms. The farmers get day old broiler and layer chicks (day old chicks) from hatcheries. Hatcheries maintain their breeder farms or in some cases purchase their hatching eggs from breeder farms, which depend on producers of parent stock. Feed mills are also the major players of the poultry industry, though dependent on the poultry industry's demand for their product. The major component of cost of production of chicken meat and eggs accounts for feed costs. Broilers, layers and breeder stocks extensively consume feed. The marketing of chicken is still following the traditional channels of distribution. In most of the cases, broilers are distributed into the markets through middlemen (arhi) and wholesalers. The produce is brought into the cities and sold to the retailers. The role of the arhi is to identify a farm and negotiate the price. The chicken is sold to consumers in live form through wet market–street slaughtering. The time spent in getting broilers from the farm to the retail shop is brief. Although collection and handling of birds has improved with the use of loader vehicles, it is an established fact that greater the distance between the poultry producer and consumer, the more complicated is the marketing system including their collection, handling, and transportation to the consumer or processing plants. The processing plants produce dressed chicken (slaughtered and cleaned). However, a very small amount of dressed chicken is available in the local retail market. The integrated processing units distribute frozen and dressed chicken packed in whole or cut-ups to the consumer through retail shops under their brand names. In spite of relative growth in the volume of broiler and egg sales over the years, there is no evidence traced that marketing facilities for poultry products have expanded. There are only two established, integrated processing units, of which one has already taken a corporate decision to close down operations; apart from these, no such investment is foreseen in the coming future.

Source: Poultry Sector Issues in Pakistan, Small and Medium Enterprise Development Authority (SMEDA).

The production of poultry meat has been on a steady rise for the past decade, with 987,000 tons of poultry meat produced in 2013–14. Poultry meat contributes 28 percent of the total meat production in the country. This sector has contributed 1.3 percent to GDP during 2014–15, while its contribution in agriculture and livestock value-added stood at 6.3 percent and 11.2 percent, respectively. Import and export of poultry has varied drastically over the past decade. Before 2009 there was limited trade especially in the frozen poultry segment. The sector got a major thrust in recent years with increased demand for halal chicken, especially in the Middle East. However, Pakistan is still not utilizing its full export potential in the sector, despite the fact that sufficient equipment is available. Presently, the turnover of the poultry industry is about PRs 750 billion with a growth rate of 10–12 percent per annum. The poultry sector generates employment and income for about 1.5 million people. According to the Pakistan Poultry Association, over 190 billion rupees worth of agriculture produce and byproducts of agriculture are being used in poultry feeds. There are over 25,000 poultry farms, spread deep into the rural areas across the country, and the capacity of these farms ranges from 5,000 to 500,000 broilers.⁸⁸

⁸⁷ The establishment of the University of Veterinary and Animal Science in Lahore in 2002 was a further step toward extending support to this fast growing industry in Pakistan by helping solve disease issues and providing trained personnel.

⁸⁸ <http://www.pakistanpoultryassociationz.pk/statistic-of-ppa/>

The poultry industry is one of the rising sectors in the livestock trade. There are no export taxes except for the export development surcharge of 0.25 percent applicable to all agricultural commodities. According to FBR Pakistan Customs Tariff there is a customs duty of 25 percent applicable to import of poultry. The NRP calculation for poultry shows very low protection to the industry; however, this does not account for the protection in the form of subsidies on the import of inputs. The Government has allowed import of incubators, brooders, evaporation cooling pads, cooling systems, grain storage silos for poultry, poultry equipment, and milk and meat processing machinery/equipment (not manufactured locally) at zero percent customs duty. In addition, poultry, vaccines, feed additives, and coccidiostats (a veterinary medicine) used in poultry feed manufacturing have been allowed at zero percent customs duty (SMEDA 2009). It is notable that mostly influential business families with political linkages manage/own the poultry industry, and exemptions only benefit these large farm owners and not the small farmers. Table 20 shows tax exemptions for selected inputs in the poultry industry.

Table 20: Tax Exemptions for Selected Inputs in Poultry Industry under SRO 567(I), 2006

INPUT EXEMPTIONS FOR THE POULTRY MEAT SECTOR UNDER SRO 567(I)/2006

Tariff on finished product	25% Customs Duty	LK=0, MY=20	Banned from India
Selected inputs	Imports authorized by MINFAL ⁴	All other importers	Imports with preferential agreements
Maize grain	0%	10	6.2
Soybean meal	0%	10	6.2
Vitamin B12 (feed grade)	0%	20	16.8
Vitamin H2 biotin (feed grade)	0%	20	16.8
Fish feed	0%	20	16.8
Poultry feed preparation	0%	20	16.8
Growth promoter premix	0%	20	16.8
Vitamin premix	0%	20	16.8
Choline chloride	0%	20	16.8
Mineral premix	0%	20	16.8

Source: Pursell, Khan, and Gulzer 2011, 45.

Note: LK=Sri Lanka and MY=Malaysia.

Note: MINFAL has now changed to MNFSR (Ministry of National Food Security and Research) Ministry of Food, Agriculture and Livestock (MINFAL).

Table 21: NRP Calculated for Poultry, 2009–14

Items	2009–10	2010–11	2011–12	2012–13	2013–14
Value of exports, US\$ million	3.22	1.61	1.49	3.17	3.18
Value of exports, PRs million	270.04	137.90	132.84	306.23	327.42
Quantity of exports, million kg	0.48	1.02	1.05	1.56	1.76
Unit value of exports, US\$/kg	6.76	1.59	1.42	2.03	1.80
Exchange rate, PRs/US\$	83.8	85.5	89.24	96.73	102.86
Unit value of exports, PRs/kg	566.17	135.63	126.58	196.05	185.60
Value of exports including taxes, PRs/kg	564.75	135.29	126.26	195.56	185.13
Wholesale price, PRs/kg	107.25	104.58	128.42	122.00	140.00
Margin, PRs/kg	-457.50	-30.71	2.16	-73.56	-45.13
Protection to the tradable product at the border of the country					
Baseline price, PRs/kg	564.75	135.29	126.26	195.56	185.13
Hypothetical price, PRs/kg	566.17	135.63	126.58	196.05	185.60
NRP, %	-0.25	-0.25	-0.25	-0.25	-0.25
Protection to the tradable product at the wholesale of the country					
Baseline price, PRs/kg	107.25	104.58	128.42	122.00	140.00
Hypothetical price, PRs/kg	108.67	104.92	128.74	122.49	140.46
NRP, %	-1.30	-0.32	-0.25	-0.40	-0.33

Source: Calculations are based on data from FBR, PBS and SBP.

Note: Poultry is taken as an export commodity during the years under the study.

Mango

Mango is one of the most important seasonal fruits grown in Pakistan. The total area under cultivation for any fruit is 776,000 hectares with the production of 6,423,900 tons. The area under mango cultivation is 171,300 hectares with production of 1,658,600 tons. Mango ranks second amongst major fruit crop of Pakistan after citrus. Pakistan is ranked fourth in the world for its production of mango. The annual production of mango, according to the Pakistan Bureau of Statistics, is 1,886,000 metric tons, of which around 1,400,000 metric tons is produced in Punjab, while the remaining 400,000 metric tons are produced in Sindh.

Pakistan has the potential to export greater volumes of mango and other fruits. However, with the exception of a few progressive large farmers, the farming community lacks an understanding of international quality requirements, as well as lacking the incentive to improve quality since much of the benefit is transferred to the middleman. Thus farmers generally prefer crops that have value in the local market like wheat and sugarcane. Furthermore, there is rarely any training by the agriculture line department (extension service) on best practices that can lead to improved productivity and quality.⁸⁹ In addition, there is also a lack of effective interaction between the farmers and the exporters.⁹⁰ A deficiency of this orientation is believed to be one of the root causes of the poor post-harvest handling of fruit (TRTA 2013). The major constraint to

⁸⁹ Discussion with officials at FBR.

⁹⁰ Pakistan fears a ban by EU on its mangoes due to a number of interceptions of infected consignments. EU banned imports from other countries last year (including India).

the expansion of the market for Pakistani mango until recently has been related to the country's inability to supply competitively priced, high-quality mangoes in a significant and consistent manner, while keeping up with the demands put forward by major supermarket chains.

Pakistan's export trends for fruit show that there is an over-dependence on a few markets—particularly those that have a large expatriate Pakistani population—and this is especially true for mango exports. As per the TRTA (2013) report, the UK, the UAE, and Saudi Arabia collectively represent around two-thirds of total mango exports. UAE and Saudi Arabia combined are the recipients of 50 percent of Pakistan's total exports of mangoes, with UAE alone representing 40 percent. Unfortunately, both these countries also happen to be the lowest price markets for the mango exports of Pakistan. The key issue is with the low volume being exported to high-paying markets, and within these, the distinct segments that are being targeted by Pakistani exporters. Presently, the majority of exports to these markets are directed towards South Asian wholesalers, who in turn have a customer-base consisting of buyers of the same ethnic background.

The NRP on mango is negative and low, which indicates there is little protection given to the mango growers at the border level, as shown in Table 22. However, there are general subsidies

for agricultural commodities that are applicable to the fruit sector as well. These subsidies are on agricultural inputs like fertilizer, electricity, and water.

Table 22: NRP Calculated for Mangoes, 2003–14

Items	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Value of exports, US\$ million	23.43	15.93	32.43	19.87	27.90	29.39	30.10	33.79	36.66	48.65	48.38
Value of exports, PRs million	1348.84	945.51	1941.19	1204.74	1743.86	2307.05	2522.40	2889.00	3271.91	4706.39	4976.68
Quantity of exports, kg million	77.47	48.81	105.21	61.63	68.88	73.44	84.92	89.55	85.12	103.49	86.00
Unit value of exports, US\$/kg	0.30	0.33	0.31	0.32	0.41	0.40	0.35	0.38	0.43	0.47	0.56
Exchange rate, PRs/kg	57.57	59.36	59.86	60.63	62.5	78.5	83.8	85.5	89.24	96.73	102.86
Unit value of exports, PRs/kg	17.41	19.37	18.45	19.55	25.32	31.42	29.70	32.26	38.44	45.48	57.87
Value of exports including taxes, PRs/kg	17.37	19.32	18.40	19.50	25.25	31.34	29.63	32.18	38.34	45.36	57.72
Wholesale price, PRs/kg	13.88	17.61	15.47	19.76	20.44	25.72	32.11	36.34	40.06	39.75	48.34
Margin, PRs/kg	-3.49	-1.71	-2.94	0.26	-4.82	-5.62	2.48	4.16	1.72	-5.61	-9.39
Protection to the tradable product at the border of the country											
Baseline price, PRs/kg	17.37	19.32	18.40	19.50	25.25	31.34	29.63	32.18	38.34	45.36	57.72
Hypothetical price, PRs/kg	17.41	19.37	18.45	19.55	25.32	31.42	29.70	32.26	38.44	45.48	57.87
NRP, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Protection to the tradable product at the wholesale of the country											
Baseline price, PRs/kg	13.88	17.61	15.47	19.76	20.44	25.72	32.11	36.34	40.06	39.75	48.34
Hypothetical price, PRs/kg	13.92	17.66	15.51	19.81	20.50	25.80	32.18	36.42	40.16	39.87	48.48
NRP %	-0.31	-0.27	-0.30	-0.25	-0.31	-0.30	-0.23	-0.22	-0.24	-0.29	-0.30

Source: Calculations are based on data from FBR, PBS and SBP.

Sectoral Analysis: A Brief Overview

This section presents a sectoral overview of the agricultural commodities discussed in the preceding sections and provides a snapshot of NRPs/ERPs at the border and wholesale/farm-gate. Import-competing commodities include wheat, sugar, cotton, milk, maize, and gram. Wheat, sugar, and cotton have mostly negative NRP values at farm-gate, revealing that farmers of these commodities are taxed due to Government interventions and policies. Milk, maize, and gram have positive NRPs during import years. Some of the commodities switch between import-competing and exportables, depending on the production and demand each year. Exportables include rice, wheat, sugar, maize, poultry, mango, and gram. Wheat and sugar have mostly positive NRP values during export years; while rice fluctuates between positive and negative NRPs. A summary of NRPs at farm-gate and at the wholesale level is presented in Table 23. For the major agricultural commodities, wheat, rice, sugar, and cotton, NRPs are reported at the farm-gate, while the remaining NRPs are reported at wholesale. Weighted averages have been calculated using gross value of production as weights. The average estimate for NRP at farm-gate on import-competing goods has been below an absolute value of 10 percent in most years, and most of the average values are positive, implying net protection to farmers.

Table 24 reports the import taxes at the border. It is crucial to analyze whether the high NRP values reported for various commodities in Table 23 are supported by the border NRP values, that is, are these price gaps maintained by observed tariffs at the border, or are there other factors at play to maintain the price wedge for certain commodities during particular years? The major commodities are analyzed first. The farm-level NRP estimates for wheat and sugar have been high and mostly negative. The trade of these two commodities has been highly controlled by TCP. A regulatory duty of 35 percent was imposed on the export of wheat in 2007; eventually, the export of wheat was banned until 2010. Pakistan became a net exporter of wheat post-2010; estimates for NRP at farm-gate were fairly low during this period. In 2010–11 the Government allowed the private sector an export quota of 1 million tons, after which exports were freely allowed.

The sugar industry has long been subject to heavy intervention by the Government. In 2003–04, Pakistan was a net exporter of sugar; the NRP value is 24.8 percent. A 15 percent regulatory duty was imposed on export of sugar during 2006. The TCP imposed a temporary ban on the export of sugar from 2009 to 2011. The estimates for NRP at farm-gate on sugar are positive from 2009 to 2011; the NRP at the border during this time is 6.05 percent on imports (Table 24). After 2011, exports were allowed on a quota basis, along with subsidies on freight for the purpose of export; other tax-related incentives to export were also given (see section on sugar for details). The strong promotion to export sugar had the impact of boosting the local price of sugar, leading to highly positive NRP values at the farm-gate during the last two years of the study. Substantial fluctuations in NRP values are observed in the case of sugar. Interventions by the Government also seem to fluctuate between providing protection and taxing the farmer, for instance, moving from a ban on sugar exports to giving massive incentives to exports of sugar in the form of inland freight subsidies in later years.

Table 23: Average Nominal Rates of Protection at Farm-gate/Wholesale, 2003–14

Average %	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Import-competing, %	8.42	-0.94	11.56	0.20	1.06	-1.19	5.53	16.96	3.01	6.62	10.00
Wheat, %	-25.09	-16.97	10.27	-37.15	-48.19	-20.96	-27.60	n.a	n.a	n.a	n.a
Sugar, %	n.a	-23.50	-10.40	-13.70	n.a	-0.50	14.40	15.50	n.a	n.a	n.a
Cotton, %	2.75	-12.26	-3.58	-8.11	-14.46	-21.37	-6.57	10.89	-20.08	-2.54	-0.63
Milk, %	31.70	27.03	38.32	22.58	37.93	34.98	46.69	39.56	27.95	21.64	29.65
Maize, %	24.30	21.00	23.19	37.37	24.77	n.a	n.a	n.a	n.a	n.a	n.a
Gram, %	n.a	n.a	n.a	n.a	5.23	1.92	0.74	1.87	1.16	0.77	0.99
Exportables, %	5.12	2.70	-0.41	4.95	5.40	-9.17	-5.05	-1.72	4.11	15.42	16.35
Exportables (excluding sugar), %	-1.45	2.70	-0.41	4.95	-3.45	-9.17	-5.05	-1.72	2.36	2.43	-3.58
Rice, %	-3.86	8.50	-0.79	10.15	-6.59	-27.22	-18.66	2.45	10.88	6.45	-18.37
Wheat, %	n.a	-10.49	1.39	6.37	1.09						
Sugar, %	24.80	n.a	n.a	n.a	23.10	n.a	n.a	n.a	12.90	80.40	116.00
Maize, %	n.a	n.a	n.a	n.a	n.a	0.00	0.00	0.00	0.00	0.00	0.00
Poultry, %	n.a	n.a	n.a	n.a	n.a	n.a	-1.30	-0.32	-0.25	-0.40	-0.33
Mango, %	-0.31	-0.27	-0.30	-0.25	-0.31	-0.30	-0.23	-0.22	-0.24	-0.29	-0.30
Gram, %	-0.17	-0.14	-0.14	n.a							
All Commodities, %	3.86	1.30	4.19	2.79	3.05	-6.10	-1.52	2.95	3.81	13.11	14.06
Weighted Average	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Import-Competing, %	11.73	8.32	24.71	4.23	12.14	13.48	20.05	32.80	24.17	19.63	27.50
Exportables, %	9.46	4.62	-0.59	7.40	5.98	-17.30	-8.52	-5.99	4.48	18.19	15.38
All Products, %	11.26	7.84	21.81	4.42	11.04	9.39	16.27	20.03	16.63	19.10	22.71

Source: Calculations based on NRP tables.

Note: NRPs for wheat, rice, sugar and cotton have been calculated at farm level, all other products are calculated at wholesale level. Weighted averages are computed using values of production of various commodities. The blank spaces indicate cases of trade reversal; for instance, Pakistan was a net importer of wheat 2003–10 and a net exporter 2010–14.

Key for blank cells is as follows: m-dash (—) for “not available”; n.a. for “not applicable”; two periods (..) for “negligible”; or 0 for “zero”

The NRP on rice is moderately high and negative in some years, and low and positive in others. A 10 percent customs duty along with varying withholding tax restricts cheaper imports in years of lower border parity prices. Moderately high and negative farm-gate NRP values are maintained by the minimum export price imposed during the year 2008–09; in 2013–14, export quotas set by China, Malaysia, and Sri Lanka limited the export potential of rice from Pakistan.

The weighted average values tell a slightly different story compared to the simple average NRP. Weights have been assigned on the basis of value of production of the relevant commodities. Wheat and milk have much higher values of production compared to other commodities, followed by sugar and rice. On the import-competing side, the simple average values are lower than the weighted average estimates. Milk has both highly positive farm-level NRP values as well as a value of production, pulling the weighted average upwards. The weighted average values of exportable products are a combination of positively signed moderate NRPs and low negative NRP values. There are five years in which the NRP on sugar is calculated on export parity; during these years, the weighted average NRP on exportable goods is positive and moderately high.

Table 24 reveals that there is a jump in average border taxes on import-competing commodities during the food crisis of 2008. In the import-competing sector, milk and sugar have the highest protective rates. This is an example of Pakistan's escalating protection system, where processed commodities are subject to higher tariff rates compared to primary commodities. The customs duty on milk has remained stable at 25 percent over the years, with variations in the withholding tax. Pakistan has maintained high tariff rates on the import of exportable commodities. The average import tax at border on exportable commodities is above 20 percent in most years, providing protection to farmers by ensuring high domestic prices in years of low international prices.

Table 25 shows the combined effect of taxes applied on exports. The Export Development Surcharge (EDS) worth 0.25 percent is levied on all exports in all years.⁹¹ In some cases, for instance, sugar in 2006–07 and gram in 2007–08, regulatory duties worth 15 percent and 35 percent, respectively, have been imposed. However, these duties are not reflected in the border NRP values reported in the individual crop tables, since they are only imposed on import-competing products.

Table 24: Average Import Tariffs and Taxes at the Border, 2003–14

NRP at Border, %	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Import-competing, %	16.45	6.35	9.90	8.87	11.70	8.06	11.12	9.47	10.73	9.01	7.96
Wheat, %	26.25	1.00	10.00	6.05	7.06	2.00	10.25	5.00	5.00	5.00	5.00
Sugar, %	26.25	1.00	0.00	1.00	17.16	3.02	6.05	6.05	13.40	10.78	5.53
Cotton, %	1.50	1.50	1.00	1.00	2.01	2.01	5.00	1.00	2.01	1.00	1.00
Milk, %	26.25	26.25	32.50	25.00	27.26	31.25	32.30	32.30	31.25	26.25	26.25
Gram, %	2.00	2.00	6.00	11.30	5.00	2.00	2.00	3.02	2.00	2.00	2.00
Exportable goods, %	21.54	20.21	23.23	23.23	24.16	23.08	21.23	37.50	30.14	17.09	17.09
Rice, %	11.10	11.10	16.60	16.60	16.55	12.20	15.50	15.50	15.50	15.50	15.50
Maize, %	16.60	16.60	16.60	16.60	15.50	15.50	16.55	16.55	15.50	15.50	15.50
Poultry, %	32.50	27.20	27.20	27.20	32.30	32.30	31.25	58.55	31.25	26.25	26.25
Mangoes, %	25.94	25.94	32.50	32.50	32.30	32.30	21.60	59.40	58.30	11.10	11.10
All commodities, %	18.71	12.51	15.82	15.25	17.24	14.73	15.61	21.93	19.36	12.60	12.01

Source: Calculations based on NRP tables.

Note: VAT not included in calculations above.

Key for blank cells is as follows: m-dash (—) for "not available"; n.a. for "not applicable"; two periods (..) for "negligible"; or 0 for "zero."

⁹¹ Regulatory duties may apply on the export of some commodities during particular years, which have been mentioned in this report.

Table 25: Average Export Taxes at the Border, 2003–14

NRP at Border	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Import-competing, %	-0.25	-0.25	-0.25	-10.25	-7.25	-14.25	-7.25	-7.25	-7.25	-7.25	-7.25
Wheat, %	-0.25	-0.25	-0.25	-0.25	-0.25	-35.25	-0.25	-0.25	-0.25	-0.25	-0.25
Sugar, %	-0.25	-0.25	-0.25	-15.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Cotton, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Milk, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Gram, %	-0.25	-0.25	-0.25	-35.25	-35.25	-35.25	-35.25	-35.25	-35.25	-35.25	-35.25
Export-competing, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Rice, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Maize, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Poultry, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Mangoes, %	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
All commodities, %	-0.25	-0.25	-0.25	-5.81	-4.14	-8.03	-4.14	-4.14	-4.14	-4.14	-4.14

Source: FBR.

Table 26 shows the effective rates of protection for the four major commodities, along with simple and weighted averages for all commodities, exportable goods and import-competing products. The ERP value is the most accurate measure of protection, as it takes into account the joint effect of border and farm level interventions on net income. However, it is important to mention that the approach in the study assumes a fixed proportions function where elasticity of substitution among the inputs is zero. Since input prices are quite distorted in the case of Pakistan, the proportion of total cost spent on tradable inputs will be understated (except in the case of subsidized fertilizer).⁹² The ERP estimates of import-competing commodities are a mix of positive and negative values, suggesting overall protection in some years and taxation in others. The average ERP values on exportable products are high and positive in almost all years, implying a net subsidy on farmers' incomes. ERP values on export goods are particularly high during the last three years of the study, owing to the elevated ERP estimates of sugar. Growers of all commodities considered are protected at the input level, that is, Government intervention on inputs has the effect of deflating the costs borne by farmers. So ERP signs are dependent on domestic market prices in comparison to the price situation in the international market.

Consider wheat: during import years, Government interventions at the domestic level and at the border create an overall tax on farmers' incomes, since value-added would be higher in the absence of taxes and subsidies. At export parity, the ERP estimates are mostly positive and high, implying protection to farmer incomes. The last three of years of analysis had almost no interventions at the border and international prices are close to domestic prices; therefore, the protection afforded to farmers can be attributed to the overall subsidy on inputs, giving high and positive ERP values. The ERP on cotton is also positive during the last two years, attributed to domestic and parity prices being at par, thus providing overall protection to farmers through the overall subsidy on inputs. The farm-level NRP estimates on sugar suggest that sugarcane farmers were taxed until 2010, after which a surplus of sugar prompted the Government to provide incentives such as freight and minor cash subsidies on exports. This led to high ERP values, attributed to overall subsidized inputs as well as support on the export of sugar. Competing interests and the relative influential power of various stakeholders may shed light on the

⁹² <http://www.fao.org/docrep/006/j1866e/j1866e07.htm>

manifold and sometimes conflicting policies adopted by the Government. In the case of wheat for instance, farmers benefit from high procurement prices, while flour millers push for low issue prices to increase their profits. Consumers of the staple food demand low market prices of wheat and flour. While the efficiency of the wheat policy is questionable, the Government has to some extent been successful as far as effectiveness is concerned; all three groups of stakeholders have been protected from international price fluctuations. In cotton and sugar, industrialists have an even stronger influence on policies due to the presence of mill associations. High transport costs and the perishability of the 'rendement' (produced from harvested sugar, rendement is essentially the input for sugar mills) gives sugar millers a strong position in policy decisions. The large fluctuations in the sign and size of ERP values in the case of sugar, for instance, reveals that shifting policies adopted by the federal and provincial government tend to have wavering consequences on farmer welfare.

Table 26: Average Effective Rates of Protection, 2003–14

Effective Rate of Protection Averages, %	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Import-competing, %	-15.84	-18.57	20.48	-21.03	-37.52	-1.30	-3.98	20.42	-22.97	5.24	5.06
Wheat, %	-36.34	-16.86	67.17	-48.51	-58.17	-8.34	-33.38	n.a	n.a	n.a	n.a
Cotton, %	4.66	-14.44	2.56	-3.19	-16.87	-13.85	-0.56	18.03	-22.97	5.24	5.06
Sugar, %	n.a	-24.40	-8.30	-11.40	n.a	18.30	22.00	22.80	n.a	n.a	n.a
Exportable goods, %	16.14	24.78	10.22	39.76	16.39	-24.52	-18.51	2.59	43.72	69.70	79.84
Rice, %	-6.61	24.78	10.22	39.76	-4.82	-24.52	-18.51	11.31	32.27	17.70	-22.35
Wheat, %	n.a	-6.12	72.89	45.40	16.97						
Sugar, %	38.90	n.a	n.a	n.a	37.60	n.a	n.a	n.a	26.00	146.00	244.90
All commodities, %	0.15	-7.73	17.91	-5.84	-10.56	-7.10	-7.61	11.50	27.05	53.58	61.14
All commodities (excluding sugar), %	-12.76	-2.17	26.65	-3.98	-26.62	-15.57	-17.48	7.74	27.40	22.78	-0.11
Weighted Average, %	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
Import-competing products, %	-27.02	-17.94	40.40	-33.64	-50.88	-4.45	-17.99	20.86	-22.97	5.24	5.06
Exportable goods, %	18.02	24.78	10.22	39.76	14.40	-24.52	-18.51	-2.53	54.75	63.44	53.32
All products, %	-11.36	-10.87	34.90	-20.93	-26.07	-8.42	-18.06	6.37	44.83	57.14	48.16

Source: Calculations based on ERP tables.

Note* Key for blank cells is as follows: m-dash (—) for "not available"; n.a. for "not applicable"; two periods (..) for "negligible"; or 0 for "zero"

Weighted averages have also been computed for export and import sectors as well as all commodities. Weights are assigned on the basis of value of production for the various products. Wheat has a much higher value of production compared to the other three crops; the value of wheat is approximately 3 to 4 times higher than other crops, and it is higher than the value of production of rice, cotton, and sugar combined. The pattern is similar to the simple average ERP: import-competing goods are dominated by negative ERP estimates, whereas exportable products have positive values during the period of interest.

Table 27: Comparison at Farm-gate/Wholesale and Border, 2003–14

Rates of Protection, %	2003–2006		2006–2010		2010–2014	
	Border	Farm-gate	Border	Farm-gate	Border	Farm-gate
Import-competing, %	14.67	10.06	11.78	4.63	10.84	9.27
Wheat, %	12.42	-10.60	6.34	-33.48	n.a	n.a
Cotton, %	1.33	-4.36	2.51	-12.63	1.25	-3.09
Milk, %	28.33	32.35	28.95	35.55	29.01	29.70
Maize, %	16.60	22.83	16.05	31.07	n.a	n.a
Gram, %	n.a	n.a	5.08	2.63	2.26	1.20
Export-competing, %	-0.25	0.28	-0.25	-3.04	-0.25	-0.13
Rice, %	-0.25	1.29	-0.25	-10.58	-0.25	0.35
Wheat, %	n.a	n.a	n.a	n.a	-0.25	-0.41
Maize, %	n.a	n.a	-0.25	0.00	-0.25	0.00
Poultry, %	n.a	n.a	-0.25	-1.30	-0.25	-0.33
Mangoes, %	-0.25	-0.29	-0.25	-0.27	-0.25	-0.26
Gram, %	-0.25	-0.15	n.a	n.a	n.a	n.a
All commodities, %	8.28	5.87	6.44	1.22	3.91	3.40
	Import Years 2004–07		Import Years 2008–11		All Export Years*	
	Border	Farm-gate	Border	Farm-gate	Border	Farm-gate
Sugar, %	0.67	-15.87	5.04	9.80	-0.25	51.44

*All export years include 2003–04, 2007–08, 2011–14.

Source: Calculations based on NRP and ERP tables.

Note: All export years include 2003–04, 2007–08, 2011–14. Key for blank cells is as follows: m-dash (—) for “not available”; n.a. for “not applicable”; two periods (..) for “negligible”; or 0 for “zero.”

Table 27 shows a comparison of three-year NRP averages at the border and the farm level. The average protection at the border on the import-competing category hovers around 10 to 15 per cent in all years; the average farm-gate NRP on import-competing products is much lower than the average NRP at the border in the first two timeframes. During all intervals, the import-competing sector has a positive average farm-gate NRP, implying an overall subsidy.

In the case of sugar, a trade reversal is observed a number of times; hence the interval for sugar has been presented separately. The average NRP values for the import-competing and exportable sectors do not include sugar. All export years for sugar include 2003–04, 2007–08, and 2011–14. The farm-level NRP on milk is significantly high, leading to a positive average value. The large price wedge in the case of milk is due to the high tariff rate imposed. During the first interval, if we consider each commodity in the import-competing sector, the negative farm-level NRP values imply that wheat and cotton are taxed, whereas milk and maize are subsidized.

During 2010–14, the average farm-level NRP for the import-competing sector is 9.27 percent; wheat was exported during this period and farm-level NRP values on milk remained high and positive, suggesting that overall Government interventions have a subsidizing effect on farmer incomes. During the first two intervals, despite positive protective rates at the border, wheat farmers were taxed. The Government intervenes heavily in the wheat market to stabilize prices for both farmers and consumers. Wheat is procured and support prices are announced on a yearly basis. The wholesale price has remained close to the support price of wheat during the period of interest.

The protection at the border for the case of sugar is quite low during the import years. Sugarcane farmers are taxed during 2004–07; the farm-gate NRP value is –15 percent during this interval. The border price is higher than the local price during this interval. Exports of sugar were restricted by implementing a 15 percent regulatory duty on sugar exports. The state-run TCP controls the foreign trade of sugar, and imports are sold by the TCP at subsidized prices. During 2008–11, an NRP value of 9.8 percent is observed at the farm-gate; sugarcane farmers are subsidized during this time period as local prices increase at a higher rate than international prices. The protection at the border increased from 0.67 to 5.04 percent during this time. No sugar was exported in 2009–10 and 2010–11 (TCP imposed a temporary ban), as local supplies were insufficient and imports were required to meet local demand.⁹³ The farm-level NRP on sugar was remarkably high during the export years, averaging 51.4 percent. During the last three years of analysis, the ECC approved inland freight subsidies for the export of sugar and set export quotas. The Government further aided the export of sugar during 2013–14 by offering a cash subsidy worth PRs 1/kg on the export of 500,000 tons of sugar. All these incentives to promote the export of sugar had the impact of boosting the local price of sugar, leading to highly positive NRP values at the farm-gate.

The export-competing sector has a steady 0.25 percent NRP at the border owing to the export development surcharge. The farm-gate NRP values for exportables such as poultry, mango, and gram are all negative and mostly below 1 percent. It can thus be concluded that there are no other interventions to distort the prices of these exportable commodities. Rice has a positive but low farm-level NRP in the first and last interval. The NRP value on rice during 2006–2010 is –10.58 percent, implying a tax on farmer incomes due to Government interventions. The food crisis led to higher border prices during this interval, and the price gap was maintained with the help of a temporary minimum export price in 2008.

Conclusion and Recommendations

The agriculture sector contributes significantly to the socio-economic development of Pakistan, providing livelihood for rural populations as well as generating revenue for the country. The agriculture sector contributes about 21 percent to GDP and is an important contributor to poverty reduction. As demonstrated by the recent policy for the agriculture sector, the Government's core objectives are to achieve food security and increase the sector's growth rate. The main cash crops for Pakistan include wheat, rice, maize, cotton, and sugar cane; however, over the last 20 years the share of livestock in agricultural value-added has significantly increased, while the crop sector has declined gradually. Traditionally, Pakistan has been a net food importer, but for the first time in many years it incurred a trade surplus in food products in 2013. Rice accounts for the single most important export product for the country, while palm oil has been the main agricultural import (WTO 2015).

The Government is determined to improve the agriculture sector, especially by targeting the small farmers and businessmen and providing relief packages designed to reach the end user/provider in the supply chain. In line with its mission to address the national food security concerns and poverty reduction, the Ministry of National Food Security and Research identified the following key elements in the upcoming agriculture policy for Pakistan:⁹⁴

⁹³ Approximately 1.1 million tons of sugar was imported by TCP in 2010–11.

⁹⁴ <http://www.mnfsr.gov.pk/>

1. Move toward a more innovation and a technology-based agricultural sector that makes efficient and sustainable use of natural resources.
2. Redirect public-sector agriculture expenditure by directing agriculture subsidies toward socio-economic groups that need it most, such as small farmers, landless people engaged in agricultural activities, women, and nomads and transhumant. The Government aims to enhance public investments in creation of knowledge, technology, and essential infrastructure that would facilitate and encourage private investments by raising the profitability of agriculture and rural-based activities.
3. Ensure that food is accessible to all sections of the population, in particular, vulnerable groups such as children and women, and is prepared, stored, and consumed in a way that ensures nutritional security.

This study presents nominal rates of protection (NRPs) at the farm-gate and for tradable inputs for four major agricultural commodities, along with their effective rates of protection (ERPs) for the time period 2003–14. The commodities include wheat, rice, cotton, and sugarcane. In addition, NRPs at the border and wholesale are also estimated for five minor products, namely maize, gram, mangoes, milk, and poultry. For the major products, the parity price is derived using direct price comparison, adjusting for incidental charges and marketing margins. Data has been collected from API. The NRP for tradable inputs compares the observed cost with the hypothetical cost without border interventions. The inputs taken into account include fertilizer, seeds, weedicide, and machinery. The subsidy on fertilizer has also been included in the estimations. Results reveal that NRPs for tradable inputs are negative for all major products, implying that farmers receive an overall subsidy. The estimates have declined in absolute value over time, which can be attributed to the fall in the weighted fertilizer subsidy. Taxes on the inputs remain more or less stable over the period of interest.

NRPs at the farm-gate compare the actual farm-gate price (observed from API documents) with the border price equivalent at the farm level. The study calculates the NRP at farm level for the four major agricultural commodities produced in Pakistan: wheat, sugarcane, cotton, and basmati rice. Pakistan was a net importer of wheat until 2010, after which it became a net exporter. The cotton sector is dominated by imports throughout, while the country is a net exporter of rice. The production of sugarcane has varied tremendously over the years, so some years have been taken as import years and others as export years (Table 11). NRP estimates for wheat and cotton are almost all negative during import years, implying taxation on farmer incomes; NRP values of wheat during export years are mostly low and positive. Sugar, being a highly protected industry, has high and positive NRP estimates.

For minor crops, the NRPs are calculated at wholesale and are mostly low (except milk), implying very little intervention. For the analysis of milk, the price of local fresh milk is compared with imported dry milk (adjusted by a conversion ratio and quality factor). The NRP at the border turns out high and positive for this commodity since dry milk is a processed good and has a 25 percent customs duty. This is an example of the escalating tariff regime in Pakistan. It is important to note that other than milk, the NRPs are not so much the result of border measures (Table 24), but mainly explained by tariff and duties, restrictions, and high internal margins. Factors other than the trade policy impact the net return to the farmers, which can be studied in detail to find out price gaps in the value chain. It is noteworthy that this makes the rate of assistance values very sensitive to the measurement of internal margins and incidental costs. Errors in the measurement of these costs may lead to unreliable rates of assistance values.

The 2008 food crisis is a period of interest in this study. Especially for major crops, domestic prices did increase but not as sharply as international prices. The Government imposed explicit bans on the export of some goods, such as wheat. For other commodities, regulatory duties were applied on exports (wheat, sugar, gram, for instance). In other cases, such as cotton, while no explicit restrictions on exports were found, domestic prices were lower than parity prices. This perhaps may be due to unobservable non-tariff barriers.

NRP estimates on tradable inputs reveal that while all tradable inputs are subjected to one or the other form of tax, the fertilizer subsidy is strong enough to dominate the tax effect on all other inputs. As a result, farmers of all major crops are protected by Government intervention in input prices.

The ERP estimate is said to most effectively reflect farmer interests. The ERP compares the observed value-added with the hypothetical value-added without Government intervention. This estimate jointly captures the interventions at the border and the interventions in the local market and production stage. The farmer cares not about the cost incurred or the price received, rather is concerned about what is left in hand. Hence the ERP is considered the most accurate representation of incentives to farmers. A negative value implies that overall, farmers are being harmed as a result of Government interventions. ERP estimates were calculated for the major crops: wheat, sugar, rice, and cotton. Effective protection rates on wheat are mostly negative during import years, implying that Government policy has an overall taxing effect on farmers' value-added. Export years show positive ERP values. ERP values on sugar are mostly high and positive, implying overall protection, whereas rice and cotton has a mixed trend.

Governments intervene to stabilize prices of agricultural goods to ensure a reasonable price to the consumer and producer to safeguard the interests of both and moderate the impact of excessive fluctuations in output. The Government's objective is to stabilize prices and induce greater production, which can generate public revenues in return. Prices are stabilized through fixation of support prices below which market prices are not allowed to fall. Support price is only announced for wheat and sugarcane in Pakistan. Support price was also announced for rice; however, for the past few years the Government has not announced any support price for this commodity. Studies show that there is a positive correlation between price and production of a commodity, thus Government can induce production of certain commodities by incentivizing the producers. However, it is important that the incentives are actually passed on to the producers/farmers and not lost in the value chain or benefitting the middleman. Pakistan had previously used output price policy to increase production of three major crops. However, other crops that might have had greater potential have been ignored over the years. Furthermore, the support price policy serves to widen the gap in productivity between the large and small farmers, and input price policy also tends to favor big landlords as they have easier access to subsidized inputs like fertilizers and machinery. It is important for the Government to review policies and revise them based on need. Subsidy on inputs should be temporary and phased in and out based on global trends and needs in order to help farmers adopt new technology and expand production and income, thereby enabling them to become less dependent on the Government.

Way Forward: Pakistan needs to move toward a uniform and transparent tariff structure that will develop trust and encourage trading through formal channels, rather than informal trading channels that harm the well-operating formal trade regime.

Insulated economy: Despite various reforms introduced over the last decade and movement towards trade liberalization, Pakistan's economy still remains substantially insulated. Pakistan still uses ad hoc trade policy instruments despite its focus on promoting private sector investment and export led growth, undermining the predictability of its trade regime. The high degree of overall protection still favors import substitution that reduces efficient utilization of resources, export competitiveness, and diversification (WTO 2015). Numerous exemptions and concessions extended through Special Regulatory Orders (SROs) decrease transparency through the discretionary power vested in the administration. This in turn can result in an anti-export bias in the trade regime. Thus there is a need to expedite the tax reforms through consultative processes in order to bring forth a neutral and balanced trade regime.

- » ***Tax reforms needed:*** The SRO phenomenon in Pakistan disconnects public policy from taxation creating room for distortions and disincentives. The use of ad hoc trade policy instruments under SRQs continues to severely undermine the predictability of the trade regime; it also supports a culture of rent-seeking. It is suggested that SROs be removed through a consultative process under which the impact of each SRO is studied in detail and that the positive SROs be streamlined legally into the tax structure. Tax reforms are already in process, however the progress is slow and all stakeholders are not on board. In order to have a stable tax regime and remove biased policies that result through the influence of various lobbying groups, the Government should fix tariffs preferably by law, moving away from the annual revision approach. This will make it difficult for large businesses to manipulate tax structure for short-term gains and will encourage small businesses to operate economically.⁹⁵

Power of lobby groups: Lobby groups in Pakistan have, in some cases, the power to advocate policy. These groups are industry based and do not represent small farmers. The Pakistan Sugar Mills Association and the All Pakistan Textile Mills Association attempt to push for certain trade policies depending on the international market. Trade policies should be developed based on national priorities and not a result of various lobbying groups. Succumbing to interest groups of this sort leads to weak structures, corruption, and uncompetitive markets. The country could be naturally flourishing in other avenues rather than artificially maintaining industries that are dependent on ever-increasing subsidies and support from the Government.

Maintain low export taxes: Pakistan should maintain the present low taxes on exports. For some commodities, like sugar that is an important food crop previously imported, the quota-based export restriction is in effect important to ensure national food security while finding an international market for the surplus crop. It is important to utilize the export development surcharge collected for actual expansion of infrastructure, research and development, and technological improvements. At present, the amount expended from this tariff is not transparently accounted for.

⁹⁵ A recent study by International Growth Centre (IGC) noted that "This discriminatory treatment may be enough to preclude commercial imports altogether, and has a number of serious economic costs." First, the system forces producers to import themselves, even if importing may not be their core strength, especially considering that the input requirements of an individual manufacturer may be much less than the quantity needed to import at economical rates. Second, "by excluding commercial importers from the concessionary customs duty regime, and also subjecting them to higher sales and income withholding taxes, the system therefore discriminates against small and medium enterprises (SMEs) and confers market power on the generally larger firms that are able to negotiate input tariff concessions" (Pursell et al, 2011).

- » **Target benefits to farmers:** There is a need to study what particular group in the value-chain is actually benefitting from Government policies targeted to support the producers of agricultural commodities. For example, 76 percent of sugarcane growers in Punjab are small farmers; however, studies show that despite the announcement of support price by the Government, farmers are forced to sell their produce for low prices due to the bargaining power of the large mill owners and the presence of middlemen who usually benefit from the delays in the transaction between these parties. Other subsidies, like that on electricity, fertilizer, and canal water, also have greater real benefits for farmers with large holdings. An approach that targets small farmers, through improved availability of appropriate technology, better access to critical inputs, particularly quality seed, irrigation and credit, and attractive prices can raise overall growth rates while also reducing poverty (MNFSR).
- » **Capital investment:** Investment in physical and human capital is required for the growth of economy. Skilled labor is one of the major factors in developing a nation, which makes human capital as important as physical.
- » **Diversify exports:** There is a dire need for the Government to diversify the export industry. WTO has also pointed out that Pakistan's heavy dependence on particular export items such as cotton can make it vulnerable to external distortions and restrictions. Pakistan's exports market is dependent on the European Union, the United States, and Japan. The WTO, on the export performance, commented that Pakistan has a very narrow export basket and exports continue to be heavily concentrated, with agriculture, textiles and clothing accounting for over three fourths of total exports in 2013⁹⁶. The situation has not improved since the last review of Pakistan in 2008.

Trade liberalization: Despite the competing interests of the producers, manufactures and consumers and the presence of various lobbying groups that influence the agricultural setup of Pakistan, over the years Pakistan has been able to move towards a trade liberalization regime through efforts of the Government and donor agencies, and there has been a general reduction in Government interventions and the extent of policy-induced agriculture price distortions. The procurement policy once applied to many agricultural commodities, including wheat, sugarcane, rice, paddy, cotton lint, seed cotton, onions, and potatoes. Today most of the agricultural commodities compete on a free market basis in domestic and international markets, except for wheat, which is strictly monitored by the Government due to its importance as a staple crop for national food security. The Government does provide subsidies to ensure competitiveness in international markets; however, their impact is much lower than in other competing countries, as is the case of rice.⁹⁷ Overall, price distortions do not affect the growth and income of producers involved in minor crops as well as livestock (except milk); however, major crops show a high fluctuation in dispersions, which can be reduced through a uniform tariff policy.

⁹⁶ https://www.wto.org/english/tratop_e/tpr_e/s311_sum_e.pdf

⁹⁷ Pakistan and India have been the major competitors in the basmati rice market; however, over the past few years Indian farmers have been given a heavy subsidy resulting in low international prices. (<http://nation.com.pk/business/22-Jul-2013/india-tops-in-rice-export-through-subsidised-stock>).

Appendixes

Appendix 1: Tariffs and Taxes, Adjusted for Exemptions, Select Agricultural Inputs, 2013–14

Tariffs and Taxes	Fertilizer (HS code 31021000)										
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
CD	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1%	1%	1%	1%	5%	1%	1%	1%	1%	1%	1%
NRP	6.05%	6.05%	1.00%	1.00%	5.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%

Notes: CD = Customs Duty; FED = Federal Excise Duty; Spl FED = Special Federal Excise Duty; RD = Regulatory Duty; PTA = Preferential Trade Agreement; FTA = Free Trade Agreement; ST = Sales Tax; WHT = Withholding Tax; NRP = Net Rate of Protection.

Tariffs and Taxes	Pesticides (HS code 38085010)										
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
CD	5%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	1%	1%	1%	1%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	2%	2%	6%	6%	5%	2%	5%	5%	5%	5%	5%
NRP	7.10%	7.10%	6.00%	6.00%	6.05%	3.02%	6.05%	6.05%	5.00%	5.00%	5.00%

Tariffs and Taxes	Seed for Wheat (HS code 10011100)										
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
CD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1%	1%	0%	1%	1%	2%	5%	5%	5%	5%	5%
NRP	1.00%	1.00%	0.00%	1.00%	1.00%	2.00%	5.00%	5.00%	5.00%	5.00%	5.00%

Sugarcane Seed (HS code 12129300)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1%	1%	0%	1%	1%	2%	5%	5%	5%	5%	5%
NRP	1.00%	1.00%	0.00%	1.00%	1.00%	2.00%	5.00%	5.00%	5.00%	5.00%	5.00%

Seed for Sowing-Rice (HS code 10061010)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%
WHT	1.0%	1.0%	6%	6%	5%	2%	5%	5%	5%	5%	5%
NRP	1.00%	1.00%	6.00%	6.00%	5.00%	2.00%	5.00%	5.00%	5.84%	5.00%	5.00%

Cotton seed (HS code 12072100)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1.50%	1.50%	6%	6%	5%	2%	5%	5%	5%	5%	5%
NRP	1.50%	1.50%	6.00%	6.00%	5.00%	2.00%	5.00%	5.00%	5.00%	5.00%	5.00%

Machinery (HS code 84322910)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	20%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	1%	1%	1%	1%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1%	1%	0%	1%	1%	2%	5%	5%	5%	5%	5%
NRP	21.2%	11.1%	0.0%	1.0%	2.01%	3.02%	6.05%	6.05%	5.00%	5.00%	5.00%

Appendix 2: Tariffs and Taxes, Adjusted for Exemptions, Select Agricultural Products, 2003–14

Basmati Rice (HS code: 10063010)											
Tariffs and Taxes	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
CD	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1.0%	1.0%	6%	6%	5%	2%	5%	5%	5%	5%	5%
NRP	11.1%	11.1%	16.6%	16.60%	16.6%	12.2%	15.5%	15.5%	15.5%	15.5%	15.5%

Notes: CD = Customs Duty; FED = Federal Excise Duty; Spl FED = Special Federal Excise Duty; RD = Regulatory Duty; PTA = Preferential Trade Agreement; FTA = F Trade Agreement; ST = Sales Tax; WHT = Withholding Tax; NRP = Net Rate of Protection.

Cotton (HS Code 52010030)											
Tariffs and Taxes	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14
CD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	1%	1%	0%	0%	1%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	2%	2%	1%	1%	1%	1%	5%	1%	1%	1%	1%
NRP	1.50%	1.50%	1.00%	1.00%	2.01%	2.01%	5.00%	1.00%	2.01%	1.00%	1.00%

Poultry (HS code 07132010)					
Tariffs and Taxes	2009–10	2010–11	2011–12	2012–13	2013–14
CD	25%	25%	25%	25%	25%
FED	0%	0%	0%	0%	0%
Spl FED	0%	1%	0%	0%	0%
RD	0%	25%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%
WHT	5%	5%	5%	1%	1%
NRP	31.25%	58.55%	31.25%	26.25%	26.25%

Mango (HS code 08045020)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	25%	25%	25%	25%	25%	25%	35%	35.00%	35.0%	5.00%	5.00%
FED	0	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Spl FED	0.00%	0.00%	0.00%	0.00%	1%	1%	0.00%	1.00%	0.00%	0.00%	0.00%
RD	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.0%	15.0%	15.0%	0.00%	0.00%
Discount PTA/FTA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ST	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WHT	0.75%	0.75%	6%	6%	5%	5%	5.00%	5.00%	5.00%	5.00%	5.00%
NRP	25.94%	25.94%	32.50%	32.50%	32.30%	32.30%	21.60%	59.40%	58.30%	11.10%	11.10%

Wheat (HS code 10011900)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	25%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RD	0%	0%	0%	5%	5%	0%	5%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1%	1%	0%	1%	1%	2%	5%	5%	5%	5%	5%
NRP	26.3%	1.0%	10.0%	6.05%	7.06%	2.00%	10.3%	5.00%	5.00%	5.00%	5.00%
Regulatory Duty	0%	0%	0%	5% (I)	5%(I)	35%(E)	5%(I)	0%	0%	0%	0%

White Crystalline Sugar (HS Code 17019910)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	25%	0%	0%	0%	15%	0%	0%	0%	0%	5%	0%
FED	0%	0%	0%	0%	1%	0%	0%	0%	8%	1%	1%
Spl FED	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1%	1%	0%	1%	1%	2%	5%	5%	5%	5%	5%
NRP %	26.25%	1.00%	0.00%	1.00%	17.16%	3.02%	6.05%	6.05%	13.40%	10.78%	5.53%
Regulatory Duty	0%	0%	0%	15%(E)	0%	0%	0%	0%	0%	0%	0%

Milk and Milk Products (powdered milk) (HS code 04021000)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25%	25%	25%	25%	25%
FED	0.00%	0.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	1%	0%	1%	1%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	1%	1%	6%	0%	1%	5%	5%	5%	5%	1%	1%
NRP	26.25%	26.25%	32.50%	25.00%	27.26%	31.25%	32.30%	32.30%	31.25%	26.25%	26.25%

Maize (HS code 10059000)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	6%	6%	6%	6%	5%	5%	5%	5%	5%	5%	5%
NRP	16.60%	16.60%	16.60%	16.60%	15.50%	15.50%	16.55%	16.55%	15.50%	15.50%	15.50%
Regulatory Duty	0%	0%	0%	0%	0%	0%	25% (I)				

Gram (HS code 07139010)											
Tariffs and Taxes	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
CD	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
FED	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Spl FED	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
RD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Discount PTA/FTA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ST	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
WHT	2%	2%	6%	6%	5%	2%	2%	2%	2%	2%	2%
NRP	2.00%	2.00%	6.00%	11.30%	5.00%	2.00%	2.00%	3.02%	2.00%	2.00%	2.00%
Regulatory Duty	0%	0%	0%	35%(E)							

Source: FBR Customs and Tariffs.

Appendix 3: Methodology for Calculation of ERP for Imports (Wheat)

Item	Calculation/Explanation
(a) Border price/kg, US\$ Karachi	CIF price at Karachi Port
(b) Exchange rate, PRs/US\$	Period average during each fiscal year
(c) Wholesale price, PRs/kg	Source: PBS/Provincial Governments database
(A) Farm-gate price, PRs/kg	Wholesale price adjusted by subtracting margins for farm-gate, various sources
(B) Border price farm-gate equivalent, PRs/kg	$[(a) * (b)] + \text{Stevedoring, clearing, handling, wharfage, weighment, inland insurance, survey and pre-shipment charges, and provision for unforeseen losses} + \text{LC opening charges, TCP commission and bank markup} - [(c) - (A)]$, Source: API, TCP
Implicit NRP on product at farm-gate	$[(A)/(B) - 1]$
(C) Observed costs PRs/kg of tradable inputs	Cost of all tradable inputs with interventions
(D) Hypothetical costs, PRs/kg of tradable inputs	Cost of all tradable inputs without interventions
Implicit NRP on tradable inputs	$[(C)/(D) - 1]$
(E) Observed value-added net of tradable inputs, PRs/kg	Farm-gate price – Cost of all tradable inputs with interventions
(F) Hypothetical value-added net of tradable input, PRs/kg	Border price farm-gate equivalent – Cost of all tradable inputs without interventions
ERP	$[(E)/(F) - 1]$

Source: Valdes 2013.

Appendix 4: List of Relevant People Interviewed

Sr. No	Name	Organization
1	Dr. Abdul Salam	Federal Urdu University
2	Mehwish Ashraf	World Bank
3	Dr. Umar Farooq	Pakistan Agriculture Research Council
4	Sohail Khan	Agriculture Policy Institute
5	Shinwari Ishaq	Ministry Of Commerce
6	Munir Ahmed	Pakistan Institute of development Economics
7	Ahmed Ali Khan	National Fertilizer Development Center
8	Muhammad Arsalan Zafar	Ministry of National Food Security and Research
9	Dr. Muhammad Zubair	Federal Bureau of Revenue
10	Dr. Eatzaz Ahmad	Quaid-i-Azam University
11	Dr. M. Aman Ullah	Ministry of Planning, Development and Reforms
12	Dr. Abdul Satar	Pakistan Bureau of Statistics
13	Habib Ullah	Pakistan Bureau of Statistics
14	Dr. Mubarik Ali	Member (Food Security and Climate Change), Planning Commission
15	Shafiq Virk	Ministry of Commerce
16	Muhammad Awais Ishaque	Federal Bureau of Revenue
17	Tariq Hussain Sheikh	Federal Bureau of Revenue
18	Muhammad Waheed	World Bank

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