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List of Acronyms

ARDL	Autoregressive Distributed Lags
CADF	Cross-sectionally Augmented Dickey Fuller
CD	Cross-section Dependence
CIPS	Cross-sectional Im-Pesaran Shin
ECM	Error Correction Model
ECT	Error Correction Term
FBR	Federal Board of Revenue
GDP	Gross Domestic Product
HS	Harmonized System
IMF	International Monetary Fund
PCT	Pakistan Customs Tariff
REER	Real Effective Exchange Rate
SBP	State Bank of Pakistan
SRO	Statutory Regulatory Orders
UNCTAD	United Nations Conference on Trade and Development
WITS	World Integrated Trade Solution

Abstract

Exchange rate misalignment has been quite persistent in Pakistan, and it has drastic effects on the external sector as well as macroeconomic indicators. The increasing global trade and policy interlinkages makes stable exchange rate and balanced coexistence with macroeconomic policies of prime importance. While misaligned real exchange rate either way leads to negative spillovers, in this context trade policy is one of the key compensatory policy tools. Evidence suggests that trade policy is sometimes used by the government to compensate for the misaligned exchange rates. To empirically examine, this paper investigates the relationship between exchange rate misalignment and government's decision to mitigate misalignment by using compensatory trade policies with a panel data set consisting of 37 trading partners ranging from 2003 to 2020. The empirical findings support and reaffirm the impact of trade policy tools, whereby during the periods of overvaluation the trade measures raises restrictiveness while during the periods of undervaluation the trade-restrictive measures are relaxed by the government. Paradoxically, contrary findings are found in the sectoral (product group) analysis. The analysis shows use of inconsistent policies for different sectors, which cancels out the compensatory favorable impact for the economy and further causes a surge in exchange rate misalignment.

Keywords: Exchange Rate Misalignment, Trade Policy, Trade Policy Instruments, Trade Liberalization

1.   Introduction

Despite many trade reforms, Pakistan has not seen much improvement in its external sector. Consequently, sluggish growth, rising unemployment, high fiscal deficit, and rising balance of payments deficits have become the hallmark of the economy. The recurring problems in the trade sector is the outcome of *ad hoc* trade and foreign exchange policies.

The key factors to perform macroeconomic analysis are Real Effective Exchange Rate (REER)[1] and trade policy tools. REER shows the relative position of a country in terms of international competitiveness of its goods and services. Owing to its significance for the external sector, stability of REER is a critical concern for policymakers.

Exchange rate misalignment significantly impacts a government's decision to use commercial policies (trade policies) against it. The relationship between exchange rate and misalignment is not studied vastly despite its significance. Most studies support the compensatory effect of trade policies against currency misalignment. (Oatley, 2010; Nicita, 2013). As domestic firms loose competitiveness due to overvalued REER, they lobby and demand for higher trade restrictive measures (Copelovitch & Pevehouse, 2011).

Government has the option to use trade policy tools to compensate and mitigate the negative impact of exchange rate misalignment. It can employ both tariff, non-tariff barriers and export subsidy as compensatory tools. Where tariff barriers can be an import tariff on imported goods in addition to regulatory duties and para-tariffs.[2] Export subsidy is provided to promote exports in the international market. Free trade agreements seek to reduce mostly tariff barriers. Non-tariff barriers can include quotas, embargoes[3], sanctions, or levies[4].

Trade policy includes a multitude of instruments, and it has a huge effect on public welfare (Baig, 2009). An optimal policy target of the country should be a stable and competitive REER, as it impacts trade prospects significantly. Trade policies can be used for compensation of both exchange rate overvaluation and undervaluation by keeping domestic prices and exchange rates stable (Papanek, 1996). Nevertheless, coordination among the policies is quite crucial for the economy, e.g., if free trade agreements are signed with a competitor country at the wrong time when currency is overvalued,

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[1] Estimation reported in Zeb & Mahmood (2022). Real Exchange Rate Misalignment & its Impact on Pakistan Economy. Working Paper Number 3: 2022, School of Social Sciences and Humanities (S3H), National University of Sciences and Technology (NUST), Islamabad, Pakistan.

[2] https://www.wto.org/english/tratop_e/tariffs_e/tariffs_e.htm.

[3] Embargo: To impose an official ban on trade or other commercial activity with a particular country.

[4] https://www.tradebarriers.org/measures#:~:text=Non%2Dtariff%20measures%20(NTMs)TAB%2F2009%2F3).

i.e., imports are cheaper & exports are expensive then the country will be at a loss and competitors will be at a benefit. Therefore, the international market needs to be evaluated in-depth and in coordination with the exchange rate policy before announcing a trade policy[5].

This paper evaluates the relationship between exchange rate misalignment and compensatory trade policies along with a detailed sectoral analysis. This discussion also points out how inconsistent macroeconomic policies can lead to REER misalignment. This study seeks to answer to the following research questions:

- Do trade policies respond to exchange rate misalignment in Pakistan?
- Are the trade policy and exchange rate misalignment effects consistent at the sectoral level?

There is an evident *research gap* in the literature concerning the relationship between trade policies and exchange rate misalignment in Pakistan as there has been no comprehensive study to assess the relationship between trade policies and exchange rate misalignment especially at the sectoral level.

Since, exchange rate- and trade-policies are considered functional equivalent coordination, balance, and action at the right time are vital (Broz, 2010). Therefore, to omit the barriers to trade growth in Pakistan, this in-depth analysis is of great significance. In addition, recent macroeconomic disruptions around the world shows that growing financial integration has amplified the urgency of constructing accurate measures of long-run equilibrium exchange rates and well-aligned trade policies.

1.2.   Research Objectives

This paper focuses on the following key research objectives:

1. To examine the relationship between trade policies and exchange rate misalignment considering bilateral trade flows between Pakistan and its major trading partners.
2. To evaluate the sectoral impact of exchange rate misalignment and its relationship with the sectoral trade policy indicators.

A novel contribution of this study is that it provides an assessment of the impact of REER movements on the government's trade policy decisions. It shows the use of trade policies as the compensatory tool, against exchange rate misalignment, used by Pakistan.

Rest of the study is structured as follows: Section 2 focuses on the Literature Review, which includes a thematic review of topics around exchange rate and trade policies. Section 3 presents a brief

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[5] http://herald.dawn.com/news/1153812.

overview of external sector of Pakistan, trade policy regimes and issues therein. Section 4 presents the theoretical framework. Section 5 provides detailed empirical methodology and data description. Section 6 presents the empirical findings and their analysis. Section 7 concludes the study and draws implications for policy.

2.   Literature Review

Rising trade imbalances and protective measures around the world have spiked a renewed interest in trade policy and exchange rates (Nicita, 2013). The subsequent components of this section will give a detailed review of literature regarding exchange rate misalignment, trade policies, and the significance of their balanced coexistence.

2.1.   Trade Policy and its Impact on Economy

To begin with, the key objectives of trade policy are either import control or export promotion. Major tools used to achieve these objectives are multiple import duty levies, anti-dumping investigation, export financing/facilitation schemes, duty exemption and duty drawbacks for exporters, and high tariff imposition on the final output goods. Tariff is one of the most vital trade policy tools, and it is quite useful for economic growth, revenue generation, productivity, protection of local industries, and consumer welfare. Tariffs provide a price advantage to domestic goods over foreign goods, and it creates a wedge between world prices and the domestic prices of goods. Where a rise in domestic prices raises domestic production, it reduces the demand for imported goods at the same time. Therefore, tariffs are an undeniable reality of our global trade which influences production, consumption, and trade altogether (Nasir, 2020).

Since the 1980s, the developing world shifted its trade policy towards liberalization seeking higher trade performance. Empirical findings support the argument that trade policy liberalization impacts exports positively while the exchange rate misalignment has a significant negative influence on the export performance of a country (Sekkat, & Varoudakis, 2002). Furthermore, it is asserted that the trade reforms alone cannot be sustainable nor beneficial to reap the fruits of trade liberalization. It can only be beneficial if it is well-coordinated and consistent with fiscal, monetary, and exchange rate policies (Rodrik, 1998; Sekkat, & Varoudakis, 2002; Collier & Gunning, 1992).

Trade policy liberalization fosters economic growth especially in the exports sector of the economy for various reasons. Firstly, provision of low-cost input items that are imported. Secondly, the resources allocation is quite efficient, such that, there is a shift of resources towards export industries instead of domestic import-substituting protected industries. Thirdly, it leads to knowledge

spillovers. Lastly, because of foreign competition, there is a boast given to domestic competition which ultimately leads to higher productivity and higher economic growth (Sachs. *Et al.*, 1995).

Trade liberalization is one of the most vital tools for the betterment of economic performance as well as for integration into the global economy. However, it has not been an overnight phenomenon. The debt crisis of the 1980s essentially led developing countries to move towards industrialization and trade openness (Edwards, 1993). Theoretical developments in the late 1980s provided a rigorous framework for the relationship between economic growth and trade policy, especially the endogenous growth models of Romer and Lucas in 1986 and 1988 respectively. Consequently, the developing economies move towards trade liberalization to enhance their global market integration and international trade.

Developing countries are key protagonists of starting the story of tariff. They supported it with the infant industry argument, i.e., supporting the potential export industries and protecting them against excessive foreign competition in the early stages of development with a view of import substitution strategy. After decades of practicing trade policy globally, the majority of economists support trade liberalization today. However, when it comes to the implementation of non-tariff and tariff measures both developed and developing world countries adopt these policy tools (Nasir, 2020).

2.2. Trade Policy and Exchange Rate Misalignment

One of the significant aspects of international trade that has been neglected for a long time is the relationship between trade policies and exchange rates. One of the crucial aspects of the analysis of real exchange rate is that how it responds to policy decisions or external shocks. Understanding the fundamentals of real exchange rates, we can differentiate between overvalued exchange rates and undervalued exchange rates. Therefore, the analysis effect of commercial policies and behavior of equilibrium exchange rate is of great significance. Here relative prices of exportable and importable goods are the key link between the two. For instance, as the tariff decreases relative prices of imports fall, and consequently its demand rise. It leads to a higher current account deficit which would need real devaluation of the currency to restore equilibrium and vice versa. It establishes a strong link between the two policies where coordination is of utmost importance to maintain both internal and external balance in the economy (Edwards, 1989).

As a result of persistent exchange rate misalignment countries around the world take compensatory policy action using trade policy such as tariff, non-tariff barriers, export subsidy, antidumping investigations, etc. Evidence suggests that five developed economies (United States, Canada, Australia, European Union, and South Korea) have responded to an overvalued exchange

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rate in the form of anti-dumping investigations for approximately 20 years especially during the Great Recession of 2008-10 (Bown & Crowley, 2012). The use of trade policy tools to compensate for some of the implications of an overvalued currency is endorsed by many studies revolving around developed countries (Knetter & Pursa, 2003; Oatley, 2010).

Moreover, panel data analysis of 95 countries (including developing countries) has shown that countries with overvalued currencies opt for higher tariffs and lower trade liberalization as they must control the surge in their import demand (Nicita, 2013). The external sector policies are linked, and balanced coexistence must be maintained by the government, therefore, exchange rate misalignment effects can be mitigated with other commercial policies. Regardless of the significant impact of exchange rate on relative prices, which is a common factor of trade policies and exchange rate policy, state offices rarely consider exchange rate movements while devising the national trade policy (Copelovitch & Pevehouse, 2011; Dornbousch, 1989).

Trade policy has a significant correlation with exports of a country and trade protection, or liberalization are of high concern for interlinked countries around the globe (Yeo & Deng, 2019). The pressure for import protection often increases during macroeconomic downturns or periods of exchange-rate appreciation (Niels & Francois, 2006). Primarily, a consensus exists among economists that overvaluation hurts, and undervaluation benefits the economies especially in case of developing countries. Yet, governments prefer overvaluation of the domestic currency. The most obvious reason seems to be the short-run political costs that come with devaluation.

The rise in protection measures (trade policy tool) is observed to mitigate the loss of domestic industry competitiveness due to the worsening of the terms of trade because of currency misalignment (Corden 1997). Exchange rate misalignment implicates trade policy instead of other macroeconomic policies as its effect passes on to each industry differently. As the currency appreciates, some of the domestic firms become less competitive in the foreign market. These firms lobby to show their trade policy preferences and put pressure on the government to increase the level of trade protective measures (Oatley, 2010; Broz, 2010).

In the case of Pakistan, the exchange rate policy has been used primarily as a tool to boost export competitiveness. However, the highly concentrated export flows & recurring balance of payments crisis of Pakistan put the policy decisions in question. Our inability to diversify exportable goods and lower international market penetration lead trade liberalization to negatively impact Pakistan's export potential (Abbas & Waheed, 2015). Exchange rate misalignment can have crucial trade retarding impacts overvaluation raises the price of exportable goods, i.e., a price disincentive in

the international market. It further leads to lower output, reducing exportable goods, eventually foreign currency earning fall and we see a great trade deficit that ultimately leads to a balance of payments crisis for Pakistan (Nabi, 1997).

The literature review shows that trade policy and exchange rate policy regimes have a significant impact on the misalignment and both external sector and domestic prices. There is an evident relationship between trade policy and exchange rate movements. However, in the case of Pakistan, there is a significant literature gap as trade policy and its link with exchange rate misalignment have not been studied so far. Similarly, most of the international literature focuses on the trade between US and China when the use of exchange rates and protectionism is studied. Therefore, an in-depth analysis of this issue is of prime importance for the revival of the external sector of Pakistan.

3. Overview of the External Sector & Trade Policies in Pakistan

Over decades Pakistan's import-export gap has grown wider where speed of import growth is quite faster than the export growth. Due to this Pakistan's current account balance remain in deficit leading to recurring balance of payment issues while inconsistent policies fuel it further. Its exports are limited to a few goods only such as cotton manufactures, leather, and rice. Merchandise exports of Pakistan grew slowly and reached USD 18.7 billion in FY21 showing a growth of 7.1%. Low diversification of Pakistan's exports can also be seen in Table 3.1. In addition, the direction of exports remained the same as well (see Table 3.3). Some of the major export partners of Pakistan are the USA, China, Afghanistan, the UK, U.A.E, and Germany.

Table 3.1. Structure of Exports ($ Million)

Commodity Group	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
Food	4249.90	4,762.00	4,625.20	4,563.90	3,989.20	3,711.10	4,797.80	4,607.40	4,361.20
Textile	12336.00	13047.60	13720.10	13453.90	12447.30	12451.40	13521.10	13328.20	12527.10
Petroleum	903.1	28.3	721.4	585.6	160.7	189.3	393.7	477.1	273.2
Manufactures	4863.70	5131.10	4657.60	3851.30	3234.60	3096.90	3399.30	3361.70	3036.10
Others	1271.60	1491.40	1385.30	1212.50	954.7	973.5	1100.20	1183.90	1196.00
Total	23624.30	24460.50	25109.60	23667.30	20786.50	20422.20	23212.00	22958.30	21393.70

Source: Handbook of Statistics of Pakistan, SBP.

Furthermore, Imports of Pakistan kept growing and reached USD 39.5 billion in FY21 showing a growth of 13.6%. Non-energy imports had the highest share in contribution towards mounting import bills. Imports of Pakistan are also quite concentrated around a few countries such as China, Saudi Arabia, UAE, and Indonesia. Table 3.3 shows that over the period Pakistan's exports

trade share with developed countries surged compared to decreasing share of exports with the developing world. In addition, the share of imports from the developing world grew significantly. Lastly, it can be seen that Pakistan has quite a meager share of trade with regional and global corporations.

Table 3.2. Structure of Imports ($ Million)

Commodity Group	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
Food	5035.14	4187.82	4243.55	5027.79	5388.60	6143.43	6184.22	5668.02	5423.94
Machinery	5635.63	5705.29	6457.84	7416.96	8572.78	11754.68	11562.01	8921.72	8787.15
Transport	2228.97	2436.87	2214.15	2699.65	2962.23	3327.21	4388.24	3085.86	1545.94
Petroleum	15252.64	14972.93	14860.56	11793.81	7632.98	10923.34	14430.17	14441.42	10411.55
Textile	2398.21	2611.56	2677.24	2561.74	3146.88	3357.68	3664.08	3221.417	2529.44
Agricultural & Other Chemicals	7143.39	6416.35	6706.25	7494.68	7225.95	7583.35	8918.17	8754.60	7353.68
Metal Group	2824.23	3337.46	3080.93	3705.78	4120.82	4411.73	5356.57	4973.83	4057.55
Miscellaneous	934.88	840.53	894.63	1060.11	1109.79	1223.07	1293.61	1024.50	809.29
Others	3458.82	4441.61	3937.84	4065.58	4524.78	4185.43	4997.64	4671.60	3634.34
Total	44911.93	44950.45	45073.01	45826.13	44684.84	52909.95	60794.73	54762.98	44552.9

Source: Handbook of Statistics of Pakistan, SBP.

Table 3.3. Direction of Trade with Key Trading Partner Groups ($ Million)

REGION	% Share	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY20
Developed Countries	Exports	40.3	41.5	44.7	46.7	51.6	53.4	52.2	53.6	54.4	57.5
	Imports	21	21.5	20.5	20.9	23.3	22.5	22	21.8	20.9	21.4
Developing Countries	Exports	58.3	57	53.7	51.6	46.6	44.6	45.8	44.2	43.2	39.9
	Imports	77.9	77.6	78.5	77.8	75.8	76.2	77	77.3	78	76.5
a. OECD	Exports	39.2	40.4	43.5	45.5	50.5	52.2	50.8	52.3	53	56.2
	Imports	19.9	20.5	18.5	18.4	20.9	20.6	20.1	19.9	19.2	18.8
a. OIC	Exports	28.8	26.5	23.3	20.9	18.6	17.2	17.5	16.7	17.4	15
	Imports	40.8	40.5	39.4	33.2	24.7	26.2	28.2	30.8	29.6	25.2
b. SAARC	Exports	5.4	5.6	5.5	5.6	6	6.1	6.1	5.8	5.1	3.8
	Imports	3.7	4.3	4.8	4	4.3	3.5	3.4	3	1.2	0.9
c. ASEAN	Exports	3	2.8	2.6	3.6	2.6	2.8	3.7	3.4	3.2	3
	Imports	11.8	11	11	10.7	10.2	9.8	10.2	10.3	10.3	11

Source: Handbook of Statistics of Pakistan, SBP.

3.1. Structure of Tariff & Export Subsidy

3.1.1. Background

Since its inception, Pakistan has undergone a wide diversification in its trade policies and shifts in the exchange rate regime. The 50s witnessed a more protected outlook towards the domestic industries hence the trade policies adopted were following this approach. During this period, the producers of infant industries reaped maximum benefits from the trade policies in terms of reduced

prices of raw agricultural and manufacturing materials compared to the international market prices. This was followed by trade policies aimed at promoting exports in the 1960s through devaluing the local currency, exports bonuses, and schemes for import substitutes. The Exchange and trade control regimes evolved remarkably from the 1970s to the present situation. A better understanding may be developed if the post-1970s exchange rate and trade regimes are analyzed after dividing the eras into four phases (Mahmood, 2013).

Figure 3.1. Trend in Average Applied Weighted Tariff
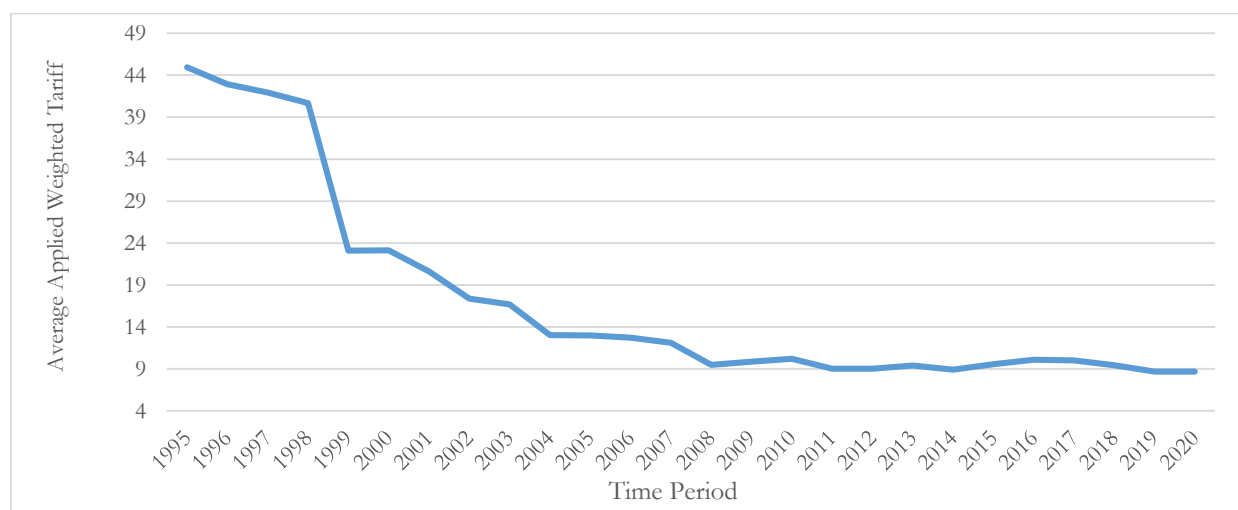
Source: World Bank Data.

Over the decades, Pakistan has gone through various exchange rate regimes since the secession of East Pakistan in 1971 as depicted in Figure 3.1. The four phases of different exchange rate regimes are highlighted in the graph. In addition, Figure 3.2 shows the falling trend in average tariff rate of Pakistan over the years, which shows the phases of liberalization. Evidently, the policy makers keep on taking several decisions to keep the domestic economic on a sustainable path to keep both internal and external balance.

3.1.2. Tariff Structure

Pakistan has gradually liberalized its tariff structure where a massive reduction in the maximum possible statutory rate of duty occurred from 500% in FY2001 to 30% in FY2002 (FBR Yearbook). Similarly, the maximum average tariff rate was reduced from 111.1% to 44.1%. The maximum tariff was reduced in FY 2015 to 25%; on the other hand, 1% duty was imposed on the 40% tariff lines, mainly essential raw materials and machinery were hitherto exempted from duty. In FY2016, the

number of slabs was further reduced to 5 and the maximum tariff was reduced to 20%; on the other hand, the lowest slab was increased from 1% to 2%.

In FY2017, the slabs were reduced to four, by merging the slab of 2% and 5% and creating a new slab of 3%. It increased the import tariff on raw materials and machinery from 0% in FY2014 to 3% in FY2017. In the Finance Act FY2019-20, the tariff on 1635 tariff lines comprising raw materials and capital goods was reduced from 3% to zero. However, an additional customs duty on the slab of 16% and 20% was increased by 2% and 5% respectively. The four duty slabs in FY19 were set at 3%, 11%, 16%, and 20%, with many tariff lines subject to an additional duty of 2%, 4% to 7%.

Table 3.4. Structure of Tariff Duty Slabs

Duty Slab	No. of Tariff Lines	Value of Imports ($ Billion)
3%	2747	24.2
11%	1096	11.1
16%	513	2.5
20%	2419	7.1

Source: Ministry of Commerce, National Tariff Policy (2019-24).

Figure 3.2. Average Tariff Rates (Product Group Wise Comparison)
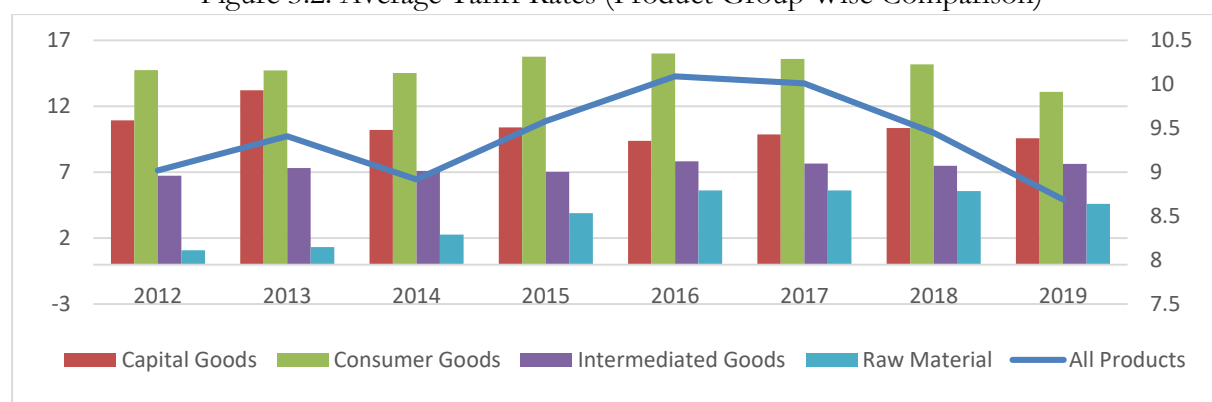
Source: World Integrated Trade Solutions (WITS).

Table 3.5. Structure of Average Tariff (HS-6 Digit Product Level)

Year	Average Tariff Rate	No. of Tariff Lines	Dutiable Import ($ Mn)	Duty-Free Imports ($ Mn)
2012	9.02	87518	31.760	11.936
2013	9.41	85324	33.024	10.742
2014	8.92	88113	44.727	2.810
2015	9.58	91148	40.466	3.482
2016	10.09	96461	42.328	4.587
2017	10.01	96461	42.328	4.587
2018	9.45	93791	54.574	4.702
2019	8.69	87724	45.580	3.745
2020	8.67	82996	35.28	9.91

Source: World Integrated Trade Solutions (WITS).

It can be seen from Figure 3.2 that consumer products have the highest average tariff in Pakistan followed by the capital goods. There are many types of tariffs applied on imports such as average applied tariff and effective tariff rate. In addition, para-tariffs, regulatory duty, sales tax on imports, Iqra surcharges, etc. are also imposed at different stages. However, as we cannot find a complete-time series for those duties, we use the average weighted tariff rate for this analysis. In addition, Table 3.5 shows an in-depth view of tariff rates and the tariff structure of Pakistan.

3.1.3. Export Subsidy

Moving on, trade policy also aims at export facilitation in Pakistan for which the government provides some facilitation schemes. Export Re-Finance Scheme (ERFS), Long Term Financing Facility (LTFF), and rebates/duty-drawbacks are the major export subsidies provided to exporters in Pakistan. Table 3.6 shows a brief on rebates provided to exporters which clearly shows a concentration of rebates in a few sectors only.

Table 3.6. Structure of Export Subsidy (Duty Drawback/Rebates)

Sector-wise Rebate ($ Mn)	FY16	FY17	FY18	FY19	FY20
Textile Sector	28.081	30.858	44.091	51.456	104.660
Leather Sector	10.540	16.065	13.956	14.271	12.901
Carpet/Handicraft	0.544	0.445	0.515	0.550	0.569
Sports Goods	2.418	1.061	0.647	0.687	1.614
Surgical Goods	5.443	4.272	7.796	7.514	4.878
Plastic/Rubber Goods	1.0951	0.329	0.392	0.375	0.443
Biscuits/Confectionary	1.898	0.995	1.559	1.045	3.986
Electrical Goods	0.412	0.282	0.394	0.469	0.539
Others Goods	9.316	3.412	3.270	3.730	9.824
Grand Total	59.751	57.724	72.623	80.087	139.416

Source: Federal Board of Revenue.

3.3. Recent Trade Policy Developments & Concerns

During the last couple of decades, the worldwide focus of growth is shifting towards Asia, particularly in the vicinity of Pakistan. Since 2003, the global market shares of China, India, Iran & Afghanistan (CIIA) has increased by 216%, in which the SAARC region and ECO have a share of 186% & 127% respectively whereas, Pakistan's share has reduced by 19%. If only, Pakistan's export had grown at the same pace as CIIA, its annual exports in FY 2019 would have been plunged to US$55 Billion rather than US$23 Billion.

The main reason for failing to compete with neighboring countries in export growth is mainly accompanied by an anti-export bias in Pakistan's economic policy model and this anti-export bias is driven by tariff rules on imports. Since FY2001, the export growth of Pakistan has been in line with tariff liberalization. Moreover, the applied weighted mean tariff decreased from 23.1% in FY2000 to 8.9% in FY2014. During the said period, exports increased by 173% from US$ 9.02% billion to US$ 25.1 billion. Since FY2014, the applied tariff was increased to 11.6% by reversing the tariff liberalization, due to which exports declined to US$23 billion in FY2019. It is a common phenomenon that applying the imports tariff effectively would result in the ideal distribution of resources, removal of anti-export bias, protection of local market, improvement in competitiveness, attracting and protecting the investment.

Furthermore, improving the balance of payments such that it can serve as a source of revenue and income distribution by levying higher duties of imported luxury goods and lowering tariffs on raw materials and goods. Whereas, if used in disproportionality, the effects of the tariffs competitiveness by an increase in the cost of input, breeding de-industrialization, incompetence by protecting inefficient producers, imposing sales and excise tax on consumers and making the local market more attractive than exports by creating anti-export bias.

The adverse effects of higher tariffs showed results in the form of continuous de-industrialization that happened in Pakistan with the share of industrial production declining from 26.4% of GDP in FY2010 to 20.3% in FY2019, and the shares of export going down from 13.5% of GDP in 2010 to 7% in 2019. In Pakistan, import tariffs are considered as a revenue generation tool instead of an instrument of trade because import tariffs are relatively easy to impose and manage than direct taxes. Eventually, it leads to various structural issues in the tariff regime.

3.4. Issues in Tariff Regime

Pakistan's tariff system is like a tripod of three key objectives that are revenue generation by tariffs, export promotion, and protection of domestic industries. Major tools used to achieve these objectives are multiple import duty levies at every stage of import, duty exemption and duty drawbacks for exporters, and high tariff imposition on the final output goods. Textile, auto, and agriculture sectors enjoy specific benefits mainly. Despite the high protection provided to local industries manufacturing surplus and product diversification is still low and exports are in a stagnant position where imports keep on surging. Nonetheless, it is worth mentioning that despite trade policy failure to contain the rising import-export gap, customs tariff contributes up to 46% in the total tax revenue

collected by the Federal Board of Revenue (FBR). In addition, it also leads to higher incentives for smuggling, under-invoicing, and tax evasion (Mahmood, 1997; Qureshi and Mahmood, 2016).

The current tariff regime created multiple issues such as taking import tariff as a source of revenue generation created various distortions which affected the competitiveness of the manufacturing sector particularly the export-oriented sector where higher tariffs on imported raw material, machinery, and intermediate goods pushed the cost of inputs upward. Another issue is, continued high level of tariff protection has led to inefficiencies in the manufacturing sector.

Moreover, an anti-export bias has been created by the tariffs as the export market looks more attractive to the producers as compared to the protected domestic markets. This burden of protection is endured by domestic consumers as the prices of protected goods are kept higher than the international market prices. The fourth issue is use of regulatory duties, concessionary statutory regulatory orders (SROs), high tariffs, and many customs duty slabs have made the overall tariff structure quite complex. In addition, fraudulent activities such as smuggling, mis-declaration of quality and quantity, and trade mis-invoicing seem more attractive due to high tariffs. It has been observed that the tariff system has become more unpredictable and inconsistent owing to the repeated imposition of regulatory duties. Overall, the competitiveness of the manufacturing sector has been adversely affected due to the replacement of the 0% duty slab with a 3% slab.[6]

4.   Theoretical Framework

Exchange rate misalignment can hurt an economy via many channels, and trade policy is used to compensate it (Nicita, 2013). The model of Relative Prices, Equilibrium Output, and Trade Balance, based on the work of Dornbusch (1989) and Edwards (1989), provides an in-depth analysis of the link between exchange rate policy and trade policy tools. It determines the equilibrium output and trade balance while allowing for variations in relative prices.

As the relative prices are not given (constant), it allows for the discussion of policy instruments of trade policy and exchange rate policy and its impact on equilibrium output and trade balance. Both policies have a common effect, i.e., the policy instruments induce a change in relative prices that leads to expenditure-switching behavior of economic agents. When both policies combine with general aggregate demand policies that are used expenditure switching, they lead the economy towards both internal and external balance.

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[6] https://www.commerce.gov.pk/wp-content/uploads/2019/11/National-Tariff-Policy-2019-24.pdf.

4.1. Correlation between Exchange Rate Misalignment & Trade Policies

This section establishes the fact that an equal tariff rate and export subsidy demonstrate an equivalent impact on the economy as in the case of devaluation. Consider given domestic prices (P) and foreign prices (P*) then the exchange rate corresponds one to one with the terms of trade. Devaluation in the currency will lead to higher prices for imports and terms of trade will deteriorate. This relationship is shown as follows in equation 4.1 where $p^\cdot = dp/p$, i.e., a percentage change in the terms of trade:

$$p^\cdot = \frac{dp}{p} = e^\cdot \qquad \qquad \text{… (4.1)}$$

Consider the model of relative prices, equilibrium output and trade balance as the relative prices rise due to exchange rate depreciation the change in equilibrium income is calculated as:

$$dY = \left[\frac{M^*(\alpha^* + \alpha - 1)}{(s+m)}\right] e^\cdot \qquad \qquad \text{… (4.2)}$$

As the Marshall Lerner's Condition is satisfied then the exchange rate depreciation improves the trade balance and equilibrium income rises. Where, **s** and **m** are marginal propensities to save and spend on imports respectively. The effect on trade balance is calculated as:

$$dT = \left[\frac{s}{(m+s)}\right] M^*(\alpha^* + \alpha - 1)e^\cdot \qquad \qquad \text{… (4.3)}$$

With the Marshall Lerner's Condition being satisfied, the trade balance unambiguously improves. Firstly, when the exchange rate depreciates then the relative prices of imports increases and the relative prices of domestic goods decreases. Secondly, the elasticity condition ensures that deterioration of terms of trade improves the trade balance of home country. Lastly, the demand shifts toward domestic goods led towards income expansion. Now at the higher income levels imports demand also increases that dampens the trade balance improvements but does not offset them completely. Since we have employed a strategic assumption that the depreciation does not affect domestic prices, therefore, nominal and real exchange rate corresponds one to one.

Provided there is a change in domestic prices then the relative prices will rise, export competitiveness will stay the same and there will be no real effect on the economy. Therefore, we need careful measurement of each aspect of the model.

To analyze the impact of trade policies, tariff's implication on trade balance, we use:

$$\frac{dT}{dt} = M^*\alpha - m\frac{dY}{dt} = \left[\frac{\alpha s+m}{(s+m)}\right] M^* \qquad \qquad \text{… (4.4)}$$

Consider that α=1, i.e., output remains unchanged as tariff is induced. In this scenario, trade balance improvement is equal to the tariff revenue collected by the government, i.e., *dT=pMdt*. It

shows that the trade surplus matches the budget surplus. Now, consider that the elasticity of demand is greater than unity, i.e., α >1, then the trade surplus rises more than the tariff revenue. Therefore, in case of tariff redistribution of tariff revenue is of crucial importance for the trade improvements in the country. Moving on, the trade effects produced by a subsidy is quite ambiguous. We receive less per unit price for our goods and the rise in income give rise to an expansion in imports as well. As for example if the subsidy provided by the government is financed by putting the economy in a fiscal deficit condition then there will be no trade surplus gained. From the trade balance equation, we will have the following result for trade effects of export subsidy:

$$\frac{dT}{dz} = M^* \left[\frac{\alpha^* s}{(s+m)} - 1 \right] \qquad \dots (4.6)$$

To sum up the correlation analysis, lastly, we set basic assumptions as M*=pM and dt=dz and then add equations 4.4 and 4.5, and after simplification, it gives us the effect on trade balance:

$$\frac{dT}{dt} = \left[\frac{s}{(s+m)} \right] (\alpha^* + \alpha - 1) M^* \qquad .. (4.7)$$

Equ. (4.7) demonstrates that a trade policy mix is equivalent to the effects of RER misalignment. Considering the complementarity of trade policy and exchange rate misalignment, in the case of devaluation, it happens due to a common effect of these policy instruments as mentioned earlier, i.e., the increase in relative prices. In such a way that it generates a transfer and a substitution effect.

When a combination of tariff and subsidy is implemented, it gives rise to the prices of foreign goods and the prices of domestic goods fall in both home and foreign countries. Therefore, it shifts the demand towards domestic goods as a substitution effect, and it ultimately produces an income transfer effect. The revenue earned from the tariff is redistributed towards the financing of export subsidies. Finally, this combination of trade policy instruments implies a balanced budget transfer of foreign exchange towards abroad.

In conclusion, persistent RER misalignment is bad for the economy, and it can be mitigated using trade policy measures (Papanek, 1996). Evidently, there are common factors among trade policies and exchange rate policy, i.e., effects on relative prices. Therefore, a policy mix ensures a simultaneous balance in both the internal market and external market of the economy.

5. Data Description, Empirical Model, & Econometrical Techniques

5.1. Data Description

For the analysis of the relationship between exchange rate misalignment and trade policy tools we develop a panel data analysis model with a period ranging from 2003 to 2019 and number of cross-

sections, i.e., major trading partners are 37. Bilateral export trade flows, average weighted tariff is collected from UNCTAD TRAINS, WITS. Moreover, the series for exchange rate misalignment is estimated via model-1. Other data sources, include Pakistan Economic Survey, WDI[7] and FBR.

Table 5.1. Data Description & Data Sources

Variable	Definition	Source of Data
Exmis	Difference between long-run equilibrium & actual REER.	Authors' calculations[8]
Average Weighted Tariff	Weighted on import value the average tariff for HS 6-digit level and HS 2-digit level product groups.	WITS: UNCTAD Database
Rebates	Rebate/duty drawback (DDB) is the re-payment of customs duty paid on import of input goods consumed in the manufacture of output goods exported.	Federal Board of Revenue (FBR)
GDP (constant $)	Gross Domestic Product: the value of final goods produced within the country using domestic resources within a given period	WDI
Fiscal Deficit	The gap between income spent and earned by the government	Pakistan Economic Survey
Trade Deficit	The gap between imports and exports	Pakistan Economic Survey
Imports	Value of imported goods & services product group wise	WITS
Exports	Value of exported goods & services product group wise	WITS
Dexm	Interaction Dummy for overvaluation period in exchange rate misalignment (exmis) so as the variable exmis is multiplied with a dummy, i.e., D =1 for overvaluation & 0 otherwise	Authors' Calculation
Dexmd	Interaction Dummy for undervaluation period in exchange rate misalignment (exmis) series so as the variable exmis is multiplied with a dummy, i.e., D =1 for undervaluation & 0 otherwise	Authors' Calculation

5.2.   Relationship between Trade Policies & Exchange Rate Misalignment

The third model is Panel regression analysis, which tests the hypothesis exchange rate misalignment might also affect the choice and level of trade policies as high protection or higher trade liberalization. For a detailed analysis, we will establish models with both HS 2-digit product level and product group wise (HS 6-digit level). Provided the data are non-stationary after the unit root test. In the case of stationarity, we employ simple Panel OLS regression with either fixed or random effects methods. However, in the case of non-stationarity, we either use the panel ARDL model or else we test for cointegration among variables and then move forward with the random effects or fixed-effects model. Panel ARDL model provides detailed analysis of long-run and short-run dynamics therefore, it is much more preferred for our analysis. However, one limitation of the panel ARDL estimation model is that it does not work well in case of missing data values. In our analysis of HS 2-digit product level, there are missing values of a few years due to which HS 2-digit level analysis is done with random

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[7] WDI: World Development Indicators.

[8] Zeb & Mahmood (2022). Real Exchange Rate Misalignment & its Impact on Pakistan Economy. Working Paper Number. 3: 2022, School of Social Sciences and Humanities (S3H), National University of Sciences and Technology (NUST), Islamabad, Pakistan.

effects model after cointegration and Hausman test as shown in model 3(a). Whereas product groups that are formed from HS 6-digit level products are done by ARDL techniques as shown in Model (b)

Model (a): Analysis at HS-2 Digit Level Products

The third model examines the relationship between RER misalignment and government's trade policy decisions in a panel data analysis. We perform Hausman test to select the use of fixed effects or random effects techniques. Panel random effects model allows for individual-specific effects is specified in Equations 5.1 and 5.2:

Trade Policy Import Control model:

The hypothesis of Trade Policy Import Control model H_0: $\alpha_i = 0$ or H_1: $\alpha_i \neq 0$

$$lnAHW_{jkt} = \alpha_0 + \alpha_1 Exmis_{jkt} + \alpha_2 lnGDP_{jkt} + \alpha_3 lnTD_{jkt} + v_{jkt} \qquad \dots (5.1)$$

Trade Policy Export Control model:

Hypothesis of Trade Policy Export Control model: H_0: $\beta_i = 0$ or H_1: $\beta_i \neq 0$

$$lnReb_{jkt} = \beta_0 + \beta_0 Exmis_{jkt} + \beta_0 lnGDP_{jkt} + \beta_0 lnE_{jkt} + \beta_0 FD_{jkt} + u_{jkt} \quad \dots (5.2)$$

where,

    AHW= Import Policy measured by bilateral average weighted tariff rate

    Reb= Export Policy measured by average export subsidy, i.e., rebates

    Exmis = Exchange Rate Misalignment of Pakistan

    Mt= Value of Import of Goods & Services

    Et= Value of Exports of Goods & Services

    TD= Trade Deficit (% of GDP)

    FD= Fiscal Deficit (% of GDP)

    GDP= Real Gross Domestic Product

Here, j represents the home country (Pakistan), k shows the foreign partner country and t shows the time trend. The exchange rate misalignment is calculated for the case of Pakistan and placed in a panel data form for the detailed analysis at product level with the trading partners. For the differentiation of periods of overvaluation and undervaluation two interaction dummy variables are created for additional models as explained above. Moving on, the next model is the panel ARDL model for detailed product group wise analysis as shown below:

Model (b): Analysis at HS-6 Digit Level Product Groups

Trade Policy Import Control model:

$$\triangle ln\,AHW_{jkt} = \sum_{i=1}^{p} \beta_i \triangle lnAHW_{jkt-i} + \sum_{i=0}^{q} \alpha_{1i} \triangle lnExmis_{jkt-i} + \sum_{i=0}^{q} \alpha_{2i} \triangle lnGDP_{jkt-i} + \sum_{i=0}^{q} \alpha_{3i} \triangle lnM_{jkt-i} + \delta_1 lnExmis_{jkt-1} + \delta_2 lnGDP_{jkt-1} + \delta_3 lnM_{jkt-1} + v_{jkt} \quad \dots (5.3)$$

where,

AHW= Import Policy measured by bilateral average weighted tariff rate

Exmis = Exchange Rate Misalignment of Pakistan

Mt= Value of Import of Goods & Services

GDP= Real Gross Domestic Product

v_{jkt} = random errors

Trade Policy Export Control model:

$$\triangle \ln Reb_{jkt} = \sum_{i=1}^{p} \psi_i \triangle lnReb_{jkt-i} + \sum_{i=0}^{q} \phi_{1i} \triangle lnExmis_{jkt-i} + \sum_{i=0}^{q} \phi_{2i} \triangle lnGDP_{jkt-i} +$$
$$\sum_{i=0}^{q} \phi_{3i} \triangle lnE_{jkt-i} + \sum_{i=0}^{q} \phi_{4i} \triangle FD_{jkt-i} + \lambda_1 lnExmis_{jkt-1} + \lambda_2 lnGDP_{jkt-1} +$$
$$\lambda_3 lnE_{jkt-1} + \lambda_4 FD_{jkt-1} + u_{jkt} \qquad \qquad \dots (5.4)$$

where,

Rebates= Export Policy measured by average export subsidy, i.e., rebates

u_{jkt} = random errors

where, β and ψ parameter shows the relationship of dependent variable with its lagged values in equations 5.3 and 5.4, respectively. α and ϕ parameters show short term relationship of the independent variables in equations 5.3 and 5.4, respectively. Lastly, δ and λ parameters show the long-term behavior of the variables in equations 5.3 and 5.4, respectively. Here, j represents the home country (Pakistan), k shows the foreign partner country and t shows the time trend. For the differentiation of periods of overvaluation and undervaluation two interaction dummy variables are used for additional models as explained above. An interaction dummy Dexm for overvaluation is created with exchange rate misalignment such that D=1 if overvaluation & 0 otherwise. Whereas interaction dummy for undervaluation with exchange rate misalignment is created termed as Dexmd such that D=1 if undervaluation & 0 otherwise.

Theoretically, the relationship between trade policy and exchange rate misalignment is such that we expect that the government uses trade policy as a compensatory tool to correct currency misalignment. As exchange rate misalignment can have both positive and negative signs indicating undervaluation and overvaluation. Therefore, in the case of developing countries, it is expected that the average tariff will have a negative relationship with undervaluation periods as it boosts exports and a positive relationship with overvaluation periods as it spikes up the imports. The common factor that links up real exchange rate and trade policy tools is terms of trade or relative prices. Moreover, control variables are used to control for the shocks in the economy. GDP is used to counter economic

conditions in the economy, i.e., demand for protection while the government takes policy decisions, it is expected that the relationship between GDP and trade policy will be negative (Nicita, 2013).

The relationship between trade policy tools and imports is expected to have a negative relationship with imports as the import bill rises which leads to a balance of payment imbalance and the government tries to contain it by tariff measures & vice versa. The trade balance is of prime importance considering tariff measures as tariffs are known to take economies out of recessions (Gardner & Kimbrough, 1990). Level of imports can also be proxied with trade deficit as with the increase in imports trade deficit rises, therefore, the channel is similar, and the impact is also similar on the policy action. The relationship between rebates and exports can be seen as export facilitation policy tools such as rebates/duty drawbacks have a positive association with the volume of exports as it is designed to boost exports (Balassa, 1978). Furthermore, the relationship between rebates and fiscal deficit is expected to be the opposite. As rebates are paid to exporters from tax money, therefore, fiscal deficit has prime importance in this decision and has a negative relationship as the fiscal deficit increases there are fewer funds available to be spent on rebates (Heim, 2007). This model shows the relationship between trade policies and exchange rate misalignment in Pakistan, and if the trade policies respond to exchange rate misalignment.

6.   Empirical Results & Discussion of Findings

In this Chapter, estimation analysis results are presented with a discussion analysis on the assessment of the relationship between exchange rate misalignment and trade policy tools.

6.1.   Empirical Results of Model (a)

Foremost, we estimate the basic panel OLS model and check for the cross-section dependence test (CADF). The results show that there exists a cross dependence among the cross-sections of this panel. Therefore, we move forward with the 2nd generation unit root test Pesaran CD. If the series is non-stationary, then the Probability value is greater than 5% or 10% and when the series is stationary then the probability value is less than 5%. The results for the panel unit root for model 2 are shown in Table 6.1.

As there is a mixed order of integration with some non-stationary series. We established cointegration first with the help of the Kao test of cointegration with a null hypothesis of no level cointegration. Then, Hausman test is applied (Table 6.2).

Table 6.1. Unit Root Test Results (Model (a))

Cross Section Dependence Test (Pesaran CD) : P-value = 0.000

Variable	CIPS I(0)	P-Value I(0)	CIPS I(1)	P-Value I(1)	OoIN
AHW	-2.794	<0.01			I(0)
Exmis	0.278	>0.10	-2.45	<0.01	I(1)
lnGDP	0.034	>0.10	-3.76	<0.05	I(1)
TD	1.002	>0.10	-2.63	<0.01	I(1)
lnRebates	0.004	>0.10	-4.56	<0.01	I(1)
lnExp	-3.278	<0.05			I(0)
FD	0.014	>0.10	-3.26	<0.05	I(1)

Table 6.2. Panel Data Estimation Results HS-2 Digit Product Level Analysis (Model (a))

Dependent Variable: Log(AHW)			
Variable	Coefficient	T-Statistics	P-Value
Exmis	0.25	7.03	0.000
lnGDP	-1.416	-4.69	0.000
TD	0.21	16.60	0.000
Hausman Test	Prob> Chi2 = 1.000		
Cointegration Test:	Kao Residual Cointegration Test: P-Value = 0.001		
Dependant Variable: Log(Rebates)			
Variable	Coefficient	T-statistics	P-Value
Exmis	3.173775	32.83665	0.0000
lnGDP	3.398384	37.77165	0.0000
FD	-0.294103	-42.49796	0.0000
Hausman Test	Prob> Chi2 = 0.984		
Cointegration Test:	Kao Residual Cointegration Test: P-Value = 0.000		

This model reports the relationship between trade policy and exchange rate misalignment is such that we expect that the government uses trade policy as a compensatory tool to correct for currency misalignment. As the coefficient for Exmis is positive and significant concerning both tariff and rebates as the trade policy tool we cannot differentiate its response to overvaluation and undervaluation individually. In the case of the tariff as a policy tool, it indicates that as the REER misalignment leads the trade restrictiveness to rise by 0.25%. This result is in line with theory as the tariff rate rises relative prices increases which make imports expensive and domestic export competitive leading the economy towards a balance (Nicita, 2013). Table 6.3 shows the estimation model results with the interaction dummy variable incorporated for differentiated impact of overvaluation and undervaluation on trade policy measures.

The alternative model with the interaction dummy shows that during the periods of overvaluation tariff rises by 1.36% while rebates rise by 2.3% to support exports growth. However, during periods of undervaluation the rebates rises by 4.6% on average while it shows insignificant relationship with tariff at HS 2-digit product level. Rest of the control variables results are in line with

the 1st estimation model with the exchange rate misalignment as key variable instead of interaction dummy.

Table 6.3. Panel Data Estimation Results (Model 2)

Model	Model (b) Overvaluation			Model (c) undervaluation		
Dependent Variable: Log(AHW)						
Variable	Coeff.	T-Stats	Prob.	Coeff.	T-Stats	Prob.
Dexm	1.36	6.134	0.00			
Dexmd				0.31	1.144	0.25
LGDP	-6.84	-34.02	0.00	-6.39	-31.96	0.00
TD	0.054	6.81	0.00	0.048	5.301	0.00
_Cons	78.64	35.44	0.00	73.72	33.47	0.00
Dependent Variable: Log(Rebates)						
Dexm	2.316	12.86	0.00			
Dexmd				4.64	33.67	0.00
LGDP	-2.62	-27.42	0.00	-3.67	-43.99	0.00
FD	-0.19	-27.82	0.00	-0.26	-44.52	0.00
Cons	39.57	37.34	0.00	51.38	55.06	0.00

In practice, the most important part of this empirical assessment is based on how the exchange rate misalignment of Pakistan has an association with the slower trade liberalization or lower trade value. Moreover, the relationship between rebates as export subsidy and misalignment is explained as with the rise in rebates the relative prices remain the same although the productivity of the domestic industry rises (Dornbusch, 1989). Therefore, the positive relationship is justified. To sum it up, the GoP utilizes trade policy tools to achieve the objective of import control to promote domestic industries as well as export promotion in case of exchange rate misalignment overall. However, the effect is not that pronounced that the government's policy action could resolve the imbalance swiftly as policy decisions are made at least after one year with varied objectives.

The relationship of trade policy tools with the control variables for all models is line with each other in all models. Control variables are used for the shocks in the economy, and it is quite in line with the theoretical expectations. GDP is used to counter economic conditions in the economy, i.e., demand for protection while the government takes policy decisions, it is expected that the relationship between GDP and trade policy is negative, and it might be due to a slower trade liberalization process over the years (Nicita, 2013). The relationship between trade policy tools and imports has a negative and significant relationship with imports as the import bill rises which leads to a balance of payment imbalance and the government tries to contain it by tariff measures & vice versa.

Moving on, trade balance/trade deficit has a positive relationship with the tariff. As the trade deficit increases tariffs are applied raises to contain the rising imports. It is of prime importance considering tariff measures as tariffs are known to take economies out of recessions (Gardner &

Kimbrough, 1990). Moving on, the relationship between rebates and exports is negative and insignificant where it was expected to have a positive association. It is explained by the lower export diversification and lower productivity of industries in Pakistan as discussed earlier. Furthermore, the relationship between rebates and fiscal deficit is negative and significant. It shows that as rebates are paid to exporters from tax money with a constrained budget and the fiscal deficit has prime importance in this decision and has a negative relationship. As fiscal deficit increases there are fewer funds available to be spent on rebates (Heim, 2007). This model shows a relationship between trade policies and exchange rate misalignment in Pakistan, and the way trade policies respond to exchange rate misalignment.

The influence of exchange rate misalignment on relative pricing of tradable and non-tradable products is linked to the effect of misalignment on international trade. An undervalued currency, in theory, benefits domestically produced marketable products, protecting domestic industries from imports, and encouraging them to export. Countries with undervalued currencies would have more exports and fewer imports, according to this idea. In countries whose currencies have stayed undervalued, exports have expanded at a faster rate, but the undervaluation cannot be persisted for long in developing countries like Pakistan where debt is mounted up. In the literature, there is a weaker but still favorable link between undervaluation and import growth. This is surprising because one would predict a negative link. After all, undervaluation is thought to operate as a tariff on imports, lowering rather than increasing imports.

One argument is that the positive relationship between exports and undervaluation extends to imports since increases in exports must be accompanied by increases in intermediate inputs. Although this explanation may not apply to all nations, it might be enough to explain the reduced positive link. It may be more difficult for countries with overvalued currencies to seek trade liberalization. The argument is that certain nations may fight trade liberalization to offset the increase in imports brought on by an overvalued currency.

6.2. Empirical Results of Model (b)

Here, we estimate the basic panel OLS model and check for the cross-section dependence test (CD). The results show that there exists a cross dependence among the cross-sections of this panel. Therefore, we move forward with the 2nd generation unit root test Pesaran CD. If the series is non-

stationary, then the Probability value is greater than 5% or 10% and when the series is stationary then the probability value is less than 5%.[9]

In summary, we found mixed order of integration in each product group, and we move forward to estimate the panel ARDL model as we want to analyze both the short-run and long-run impact of exchange rate misalignment on trade policy measures related to each sector/ product group. According to AIC criteria, optimum lags for all product groups range from 1 to 2 lags. In addition, the cointegration test for all product groups is significant and the existence of cointegration is approved. The results for this analysis are summed up in Tables 6.4-6.7). Moreover, the differentiated impact of the overvaluation and devaluation is studied by incorporating an interaction dummy variable.[10] The analysis indicates that there are inconsistencies among different product groups such that it seems that one policy is used for all which is not justified (just like there cannot be one medicine to all problems in the economy). Each sector of the economy has its own needs and require differentiated policy actions to get effective policy response.

Foremost, we begin the analysis with the composite group for all product types. In the product category of all products the estimation results are consistent with those of HS 2-digit level analysis. Here the exchange rate misalignment has a positive relationship with the trade policy tools. It shows that in the case of currency misalignment trade restrictiveness will rise by 0.255%. For the average results of all products group, the results indicate that overvaluation leads to a significant and positive impact on trade restrictiveness such that in the periods of overvaluation tariff rises by 0.05% in case of all products analysis which is quite meager impact. In addition, during periods of undervaluation it responds positively with a rise of 0.42% in tariff. Export subsidies respond positively to misalignment in both cases which indicates that government does not differentiate well according to the policy needs of the economic conditions.

Moving on, we analyze the impact of exchange rate misalignment on the key product categories based on the nature of products, i.e., capital goods, consumer goods, intermediate goods, and raw materials and all products aggregated based on HS 6-digit level tariff analysis by WITS sourced from UNCTAD TRIANS. Primarily, import control policies have played a significant role in the economic planning of Pakistan over the decades. The amount of policy incentive towards specific industries, import of machinery and raw material has directly shaped the nature and pace of the sectoral development and productivity. These different product categories will allow us to differentiate

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[9] Detailed results for the panel unit root for model 3(b) are available with the authors.

[10] Detailed results for all groups are available with authors.

sectoral impact on trade policy tools. We can say that the composition of imports and export affects the relative prices significantly and shape the final policy outcomes against misalignment in the relevant sector (Thomas, 1966).

Similarly, the models with interaction dummy show that policy response is not consistent with theoretical expectations such that in some cases overvaluation and devaluation both lead to higher tariff and rebates rise in case of overvaluation while it falls during the periods of undervaluation. This shows clear failure of government to place right policy action at the right time where higher export subsidy during undervaluation periods can lead to higher productivity and higher exportable surplus.

In the case of capital goods, we have consistent results for the composite group of all products. Where exchange rate misalignment in the economy will cause 0.385 % rise in tariff rate as Pakistan imports capital goods such as machinery abundantly so it has to be controlled in times of overvaluation. During the periods of overvaluation there is a 0.16% positive and significant rise in tariff. In addition, misalignment leads to a 0.62% rise in rebates allocated to the sector to promote exports from the capital goods sector.

Furthermore, it is worth noting that in the case of product categories of consumer products, intermediate products, and raw material there is no significant relationship between trade policy tools and exchange rate misalignment in the long run. The estimation results with interaction dummy variables to differentiate overvaluation and undervaluation shows similar results for these groups.[11] Pakistan's import has the largest share of consumer goods followed by raw materials. It shows a critical policy inconsistency here. We can see that the most important groups of products that should have been targeted to reduce imports is not catered for and exchange rate misalignment will be producing an adverse impact on the economic fundamentals as its impact is not compensated by the trade policy. Although, intermediate goods are not targeted by tariff policy perhaps to keep the input material readily available for domestic industries to promote exports. This argument is also supported by the empirical findings in Table 6.4. We can see that raw material and intermediate goods have a highly significant positive relationship between misalignment and export subsidy.

Short-run dynamics show that the models are stable with a significant and negative coefficient of ECM, and it has a normal speed of recovery from short-run disequilibrium and converges towards long-run equilibrium. We can see that most of the findings of the short-run are consistent with the long-run analysis, although, some variables like GDP and imports which are used as control variables

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[11] Details are available with authors.

are insignificant. It is because they have a lagged effect and eventually converge towards a significant association in the long run (Table 6.4).

Table 6.4. Panel Estimation Results with Product Groups (a)

Variable	All Products	Capital Goods	Consumer Goods	Intermediate Goods	Raw Material
Import Trade Control: Dependent Variable = log(AHW)					
Long-run					
Exmis	0.255	0.385	0.818	-0.426	-0.346
	(3.34)***	(2.51)**	(1.03)	(-0.57)	(-1.98)*
LGDP	-4.68	-10.61	-11.21	-4.62	10.038
	(-3.79)***	(-9.38)***	(-7.28)***	(-3.71)**	(2.61)**
Limp	-3.52	-3.301	-3.464	-2.316	-8.501
	(-7.041)***	(-7.706)***	(-6.108)**	(-5.135)*	(-9.554)***
Short-run					
Exmis	0.843	-0.460	0.339	-1.072	2.0558
	(0.66)	(-1.993)**	(1.487)	(-1.062)	(1.89)**
LGDP	6.0287	-2.3783	-4.552	3.8262	3.8619
	(2.276)**	(-0.681)***	(-0.189)***	(3.118)**	(3.016)**
Limp	-2.3930	-1.355	-0.448	-1.792	-4.610
	(-1.049)	(-1.558)**	(-0.218)***	(-2.586)**	(-2.348)**
ECM	-0.606	-0.634	-0.712	-0.643	-0.308
	(-12.012)***	(-9.838)***	(-13.45)***	(-11.896)***	(-4.053)***
Cons	49.414	9.3470	11.3974	45.611	-20.440
	(11.646)***	(9.857)***	(13.517)***	(11.862)***	(-4.292)***
Export Trade Control: Dependent Variable= Log(Rebates)					
Long-run					
EXmis	1.3673	0.629	0.636	1.889	2.265
	(3.377)***	(1.761)*	(1.611)*	(4.632)***	(5.532)***
LGDP	6.278	5.599	5.524	5.457	4.528
	(11.426)***	(11.223)***	(10.514)***	(11.510)***	(8.527)***
Lexp	-0.850	-0.097	0.077	-0.889	0.421
	(-3.947)***	(-2.938)**	(0.446)*	(-5.166)***	(2.576)**
Fd	-0.083	-0.504	-0.072	-0.105	-0.344
	(-2.432)**	(-3.378)***	(-1.972)*	(-3.218)**	(-10.695)***
Short-run					
Exmis	0.527	1.0007	0.732	0.469	0.787
	(5.678)***	(17.156)***	(9.177)***	(5.228)***	(11.632)***
LGDP	14.872	17.585	16.414	15.394	2.018
	(14.531)***	(15.96)***	(15.978)***	(12.486)***	(2.005)**
Lexp	1.444	-0.004	1.151	1.066	-0.0296
	(5.248)***	(-0.913)	(4.397)**	(5.984)**	(-0.326)
Fd	-0.0164	-0.015	-0.0138	-0.0061	-0.0045
	(-3.648)***	(-0.115)	(-2.400)**	(-1.175)*	(-0.716)
ECM	-0.461	-0.507	-0.454	-0.453	-0.456
	(-22.464)***	(-33.865)***	(-35.237)***	(-16.809)***	(-37.803)***
Cons	-26.484	-26.55	-24.178	-21.907	-19.159
	(-22.463)***	(-33.438)***	(-35.231)***	(-17.052)***	(-37.787)***

Value of t-stats in parenthesis. P*<0.10, P**<0.05, P***<0.01.

Tables 6.5-6.7) provide a detailed analysis of the relationship between exchange rate misalignment and trade policy tools with each product category. In the case of animal trade, we have consistent results for the composite group of all products, although the sign for the relationship

between tariff and imports is positive. It shows that in Pakistan as the imports of live animal or animal products rise tariff rate on them increases to create a disincentive for the import of animal products. As Pakistan exports a significant number of live animals itself where export amounts to $9.68 million in the year 2020 as reported by UN COMTRADE. Therefore, there will be a negative association between the import value of the animal category and its tariff rate. The relationship between tariff rate and currency misalignment shows that misalignment will lead to a 0.282% rise in tariff rate, although, it is significant at 10% only. In addition, misalignment leads to a 4.06% rise in rebates allocated to the sector to promote exports from the animal category as shown in Table 6.5 below. The product category of chemicals has consistent results for the composite group of all products. Where exchange rate misalignment in the economy will cause 0.223% rise in tariff rate. In addition, misalignment leads to a 0.82% rise in rebates allocated to the sector to promote exports from the chemical products category (Table 6.5).

Moving on, food products are one of the major import items and empirical findings suggest that if there is exchange rate misalignment in the economy will cause 0.6013% rise in tariff rate (significance level is low at 10%). Tariffs are increased to control high imports in times of overvaluation. In addition, misalignment leads to a 0.65% rise in rebates allocated to the sector to promote exports from food products manufacturing industries (Table 6.5).

Moving on, footwear products have consistent results as for the composite group of all products. Where exchange rate misalignment in the economy will cause 0.816% increase in tariff rate. In addition, misalignment leads to 0.71% in rebates allocated to the sector to promote exports from the footwear industry (see, Table 6.5). Pakistan exports approximately $135.3 million worth of footwear[12] products (as of 2019).

Pakistan's oil resources are said to be 355 million barrels. Whereas it imports 65% of its crude oil, the single largest import, with MFN duty ranging from 1% to 25%. The government keeps the reserves of petroleum products that are enough for 20 days of consumption. The product category of fuels has the most inconsistent results for the relationship between exchange rate misalignment and trade policy. Where overvaluation in the economy is not targeted by a rise in tariff rate as Pakistan is highly dependent on the import of fuels. In addition, the relationship between export subsidy and currency misalignment is insignificant as the export ratio of fuel is too meager in Pakistan. We can say

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[12] https://www.worldfootwear.com/news/pakistans-footwear-exports-up-by-429/5164.html.

that the government's priority is fulfilling the demand for fuel and petroleum products instead of managing the macroeconomic balance and policy consistency in the economy.

Table 6.5. Panel Estimation Results with Product Groups (b)

Variable	Animal	Chemical	Food Products	Footwear	Fuels
Dependent Variable: log(AHW)					
Long-run					
EXmis	0.282	0.223	0.613	0.801	-4.166
	(1.877)*	(2.654)**	(1.907)*	(13.303)***	(-4.166)**
LGDP	-3.8091	-1.455	-1.8511	-3.0307	-1.2954
	(-13.793)***	(-1.079)*	(-3.879)**	(-30.460)***	(-6.770)***
Limp	2.309	-2.180	-5.926	-0.4815	-0.9882
	(4.860)**	(-3.649)***	(-9.533)***	(-4.141)***	(-6.245)***
Short-run					
Exmis	-0.383	-0.303	2.619	-1.708	-1.23
	(-1.586)	(-3.035)**	(2.24)**	(-3.127)	(-1.65)
LGDP	-3.482	4.4058	4.467	-5.3841	-1.2954
	(-0.117)	(2.8163)**	(2.52)**	(-5.854)	(-6.770)***
Limp	-0.297	-3.654	0.17	0.352	-0.988
	(-0.300)	(-4.487)***	(2.49)***	(1.062)	(-6.245)***
ECM	-0.767	-0.500	-0.835	-0.7786	-0.489702
	(-11.267)***	(-11.597)***	(-13.62)***	(-12.609)***	(17.45)***
Cons	3.371	16.695	3.548	28.479	-24.63
	(11.338)***	(11.459)***	(13.56)**	(12.574)***	(-12.54)***
Dependent Variable: Log(Rebates)					
Long-run					
EXmis	4.060	0.828	0.651	0.7126	0.7167
	(14.132)***	(4.240)**	(1.680)	(1.949)*	(1.819)
LGDP	7.684	2.722	5.208	5.0641	5.2636
	(21.811)***	(10.142)***	(10.236)***	(10.580)***	(10.657)***
Lexp	0.0517	-0.017	-0.003	0.303	0.0016
	(0.944)	(-0.971)	(-0.048)	(3.356)**	(0.78)
Fd	-0.3615	-0.209	-0.102	-0.1122	-0.1104
	(-19.394)***	(-14.50)***	(-2.843)**	(-3.347)**	(-3.034)**
Short-run					
Exmis	0.535	1.17	0.907	0.930	0.888
	(9.258)***	(29.42)***	(24.602)***	(11.471)***	(2.34)**
LGDP	-2.964	8.5	17.518	17.134	17.770
	(-3.102)**	(11.87)***	(36.897)***	(13.010)***	(3.678)***
Lexp	0.102	1.31	0.006	-0.0424	-0.023
	(0.981)	(2.59)*	(0.0836)	(-0.406)	(0.189)
Fd	0.060	-4.23	-0.0007	-0.0067	0.0014
	(8.031)***	(-14.58)***	(-0.213)	(-1.397)	(2.14)**
ECM	-0.525	-0.283	-0.4893	-0.490	-0.489702
	(-19.396)***	(-45.25)***	(-104.97)***	(-28.415)***	(21.561)***
Cons	-39.866	-20.387	-24.382	-5.3942	-22.31
	(-19.422)***	(-6.827)***	(-105.202)***	(-28.307)***	(-10.45)***

Value of t-stats in parenthesis. P*<0.10, P**<0.05, P***<0.01.

Similarly, Table 6.5 for short-run dynamics show that the models are stable with a significant and negative coefficient of ECM, and it has a normal speed of recovery from short-run disequilibrium and to converge towards long-run equilibrium. We can see that most of the findings of the short-run are consistent with the long-run analysis. Manufacturing accounts for over 13% of Pakistan's GDP and employs roughly 14% of the workforce[13]. The industrial sector is extremely important to the government. This comprises operations such as light engineering, pharmaceutical and surgical sectors, and high-quality textile garments as well as the shift to higher value-added businesses. It acknowledges the significant obstacles that must be addressed, such as high business costs, outmoded technologies, and unskilled labor. Furthermore, power outages and high electricity prices have disproportionately harmed the manufacturing sector. The majority of industries want to use alternative energy sources. Moving on, to the sectors with higher manufacturing capacity we observe that hides and skin show inconsistent results. Where we see that the coefficient for the relationship between tariff and misalignment has a negative sign, and it is insignificant as well. Where it has a positive and significant relationship between export subsidy and misalignment as expected theoretically. Similarly, mechanical, and electric products also show inconsistent but significant results. It shows that this sector's trade policy does not respond to exchange rate misalignment in such a way that it leads 0.342% decrease in tariff rates.

Provided there is undervaluation persisting in the economy there is no need to deepen it further with tariff reduction as it will cancel out the impact of export competitiveness generated by undervaluation or else it might make it difficult for REER to converge back to the equilibrium level. Conversely, devaluation measures are more likely to be used for short-term adjustment. The goal is to restore export competitiveness in most situations by shifting expenditures from non-tradables to tradables *(Gillingham, 2008)*. For metal products, we have inconsistent results for the composite group of all products. There is no significant relationship between tariff and misalignment. In addition, misalignment leads to a 1.01% rise in rebates allocated to the sector to promote exports (Table 6.6).

Moving on, mineral products have consistent results as for the composite group of all products. Where exchange rate misalignment in the economy will cause 0.298% rise in tariff rate. In addition, misalignment leads to a 0.69% rise in rebates allocated to the sector to promote exports from the capital goods sector. The miscellaneous goods category has quite inconsistent results of high magnitude. It shows that this sector's trade policy such that because of exchange rate misalignment

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[13] https://www.finance.gov.pk/survey/chapter_20/03_Manufacturing_and_Mining.pdf.

tariff rates will decrease by 1.637%. Whereas we see an opposite relationship in the short run between tariff and currency misalignment such that currency misalignment will cause a rise of 3.335% in tariff rates. In addition, misalignment (overvaluation/devaluation) leads to 1.01% in rebates allocated to the sector to promote exports (Table 6.6).

Table 6.6. Panel Estimation Results with Product Groups (c)

Variable	Hides & Skin	Mach & Electric	Metals	Minerals	Miscellaneous
Dependent Variable: log(AHW)					
			Long-run		
EXmis	-0.340	-0.342	0.968	0.298	-1.637
	(-1.788)	(-3.103)**	(0.9068)	(4.986)***	(-2.083)**
LGDP	11.185	-3.5183	-12.979	-9.340	-23.401
	(3.517)	(-2.164)**	(-8.014)***	(-7.786)***	(-9.321)***
Limp	-5.0242	-1.008	-2.3639	-0.1906	3.539
	(-8.347)***	(-3.723)**	(-4.937)***	(-3.278)**	(6.939)***
			Short-run		
Exmis	1.022	1.26	-1.040	-0.839	3.335
	(0.644)	(15.27)***	(-1.061)	(-0.624)	(2.7465)**
LGDP	-4.8213	-1.669	-3.2371	-4.2223	-3.8380
	(-1.655)	(-3.43)**	(-1.7614)	(-1.652)	(-1.541)
Limp	-1.500	-5.61	0.6066	-0.002	-2.313
	(-1.595)	(-1.23)	(0.940)	(-0.023)	(-2.874)**
ECM	-0.704	-0.62	-0.611	-0.6380	-0.775
	(-12.994)***	(-10.87)***	(-10.742)***	(-10.167)***	(-13.177)***
Cons	-74.370	83.97	101.578	71.916	204.75
	(-13.362)***	(11.07)***	(10.708)***	(9.720)***	(13.107)***
Dependent Variable: Log(Rebates)					
			Long-run		
EXmis	1.004	0.747	1.015	0.698	1.0184
	(2.585)**	(1.977)*	(2.842)**	(1.862)	(2.448)**
LGDP	6.116	5.651	5.736	5.450	5.470
	(11.064)***	(11.518)***	(11.901)***	(9.891)***	(10.068)***
Lexp	-0.6643	-0.3127	-0.2855	-0.034	-0.1944
	(-4.664)***	(-3.455)**	(-4.737)***	(-0.457)	(-0.947)
Fd	-0.112	-0.114	-0.1065	-0.114	-0.1238
	(-3.283)**	(-3.243)**	(-3.211)**	(-3.371)**	(-3.212)**
			Short-run		
Exmis	0.7512	0.903	0.810	0.863	0.838
	(11.710)***	(25.488)***	(14.959)***	(16.138)***	(18.966)***
LGDP	16.207	14.483	18.073	18.591	16.178
	(17.147)***	(19.250)***	(23.834)***	(22.877)***	(27.726)***
Lexp	0.657	0.034	-0.102	0.025	-0.115
	(3.103)**	(0.4705)	(-1.4508)	(0.3675)	(-0.844)
Fd	-0.010	-0.010	0.0002	0.0029	-0.031
	(-2.026)**	(-2.517)**	(0.0695)	(0.990)	(-3.71)**
ECM	-0.485	-0.475	-0.521	-0.499	-0.27
	(-25.114)***	(-30.473)***	(-29.084)***	(-39.941)***	(-18.36)***
Cons	-27.841	-25.511	-28.565	-26.176	-22.58
	(-25.015)***	(-30.437)***	(-29.155)***	(-39.727)***	(-18.35)***

Value of t-stats in parenthesis. P*<0.10, P**<0.05, P***<0.01.

Considering the Large-Scale Manufacturing such as textile sector, plastic and rubber, iron and steel, pharmaceutical and automobile in Pakistan, production capacity is not fully utilized. The textile sector of Pakistan contributes 8.5% in GDP[14], 63% of exports[15] & employs 45% of the labor force[16] in the country. The textile sector lags primarily because of the negligence towards innovation and innovative culture (creative & challenging work environment).

For the textile and clothing group, we have consistent results for the composite group of all products. Where misalignment in the economy causes 0.512% rise in tariff rate as Pakistan must protect its foreign competitiveness for the textile sector which is the key export trade sector of Pakistan. In addition, misalignment leads to a 1.40% rise in rebates allocated to the sector to promote exports from the textile sector. Moreover, the plastic or rubber goods category has inconsistent results. It shows that this sector's trade policy does not respond to overvaluation rather it responds to undervaluation as with the 1 unit rise in undervaluation tariff rates will be decreased by 0.311 units. While, opposite relationship is found for short run between tariff and currency misalignment such that it rises tariff by 0.264%. In addition, misalignment leads to 3.31% in rebates allocated to the sector to promote exports (Table 6.7).

For stone and glass, we have consistent results for the composite group of all products. Where misalignment in the economy will cause 0.268% rise in tariff rate. In addition, misalignment leads to a 1.08 % rise in rebates allocated to the sector to promote exports. Similarly, transportation also has consistent results for the composite group of all products. Where misalignment in the economy will cause 0.266% rise in tariff rate. In addition, misalignment leads to a 0.64 % rise in rebates allocated to the sector to promote exports (Table 6.7).

The product category vegetables show inconsistent results as for the composite group of all products. Where tariff does not respond to the currency misalignment. One of the possible reason might be the seasonal or cyclical shortage of basic vegetable commodities in Pakistan such as tomatoes where government seek fulfillment of basic needs instead of maintaining the macroeconomic balance. In addition, misalignment leads to a 3.44% rise in rebates allocated to the sector to promote exports from the vegetable category of the agriculture sector.

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[14] https://cleanclothes.org/resources/publications/factsheets/pakistan-factsheet-2-2015.pdf.
[15] Rehman, S. U., Mohamed, R., & Ayoup, H. (2019). The mediating role of organizational capabilities between organizational performance and its determinants. *Journal of Global Entrepreneurship Research*, *9*(1), 1-23.
[16] http://www.slideshare.net/uuroosa/textile-industry-of-pakistan.

Table 6.7. Panel Estimation Results with Product Groups (d)

Variable	Plastic or Rubber	Stone & Glass	Textile & Clothing	Transportation	Vegetables	Wood
Dependent Variable: log(AHW)						
Long-run						
EXmis	-0.311	0.268	0.511	0.265	-0.1813	-0.342
	(-3.769)**	(1.645)	(4.9154)**	(0.919)	(-1.2769)	(-4.582)***
LGDP	1.392	-2.422	-7.053	-7.008	-4.383	-4.726
	(9.293)***	(-10.224)***	(-3.6082)**	(-1.706)	(-1.754)	(-3.739)**
Limp	-3.684	-2.424	-2.362	-4.752	-1.913	-2.151
	(-7.626)**	(-7.119)***	(-7.015)***	(-6.203)***	(-4.377)	(-7.469)***
Short-run						
Exmis	0.264	0.689	-0.236	0.254	0.564	0.234
	(3.271)***	(1.55)	(-1.698)	(0.0627)	(2.1517)**	(2.217)**
LGDP	2.636	-3.278	1.093	5.118	7.352	4.416
	(1.3021)	(-0.746)	(0.842)	(0.4577)	(2.790)**	(2.392)**
Limp	-2.334	-0.417	-1.144	-5.536	-0.545	-0.845
	(-3.265)***	(-3.01)**	(-1.491)	(-2.655)**	(-0.3720)	(-0.649)
ECM	-0.577	-0.49	-0.528	-0.780	-0.736	-0.633
	(-11.96)***	(-5.78)***	(-8.901)***	(-14.96)***	(-15.07)***	(-8.07)***
Cons	-76.624	3.43	51.12	93.238	47.895	45.66
	(-11.65)***	(5.79)***	(8.833)***	(13.669)***	(13.801)***	(7.795)***
Dependent Variable: Log(Rebates)						
Long-run						
EXmis	3.315	1.081	1.402	0.645	3.441	2.148
	(16.856)***	(2.8102)**	(3.384)**	(1.6467)	(24.266)***	(14.86)***
LGDP	5.212	5.060	5.762	5.498	5.629	5.650
	(33.709)***	(10.982)***	(11.205)***	(11.024)**	(43.259)***	(5.650)**
Lexp	0.012	-0.301	0.712	0.0290	0.0246	-0.053
	(0.5809)	(-3.086)***	(3.692)***	(0.4534)	(0.7763)	(-0.981)
Fd	-0.303	-0.128	-0.074	-0.097	-0.322	-0.114
	(-19.20)***	(-3.722)***	(-2.106)**	(-2.7025)**	(-27.075)***	(-3.143)**
Short-run						
Exmis	-0.5838	0.7893	0.549	0.8667	-0.1605	0.935
	(-4.505)	(11.182)***	(5.933)**	(17.538)***	(-1.521)	(24.118)***
LGDP	-16.79	16.514	15.654	18.432	21.62	17.908
	(-8.536)*	(16.735)***	(17.780)***	(18.686)***	(12.23)*	(30.103)***
Lexp	0.154	0.0898	1.593	0.0184	0.23	0.0945
	(2.01)*	(0.986)	(5.967)***	(0.2944)	(1.89)*	(1.935)*
Fd	-0.166	-0.001	-0.009	-0.0042	-0.186	0.0041
	(-12.73)***	(-0.2552)	(-1.839)	(-1.189)	(21.91)***	(1.294)
ECM	-0.986	-0.481	-0.440	-0.480	-0.698	-0.489
	(-33.31)***	(-32.421)***	(-21.44)***	(-47.693)***	(-47.33)***	(-61.39)***
Cons	-62.82	-22.728	-23.243	-25.590	-68.441	-26.69
	(-33.11)***	(-32.394)***	(-21.680)***	(-47.172)	(-46.89)***	(-61.02)***

Value of t-stats in parenthesis. P*<0.10, P**<0.05, P***<0.01.

Lastly, wood products also do not have inconsistent results as for the composite group of all products. Where tariff does not respond to the currency misalignment in the long run but in the short run it has a consistent and significant relationship with misalignment. Such that exchange rate misalignment will cause a 0.234% increase in tariff. In addition, misalignment leads to 2.14% in rebates

allocated to the sector to promote exports (Table 6.7). In case of overvaluation tariff reduces by 0.97%. Similarly, in case of undervaluation it reduces by 0.78%. Clearly, there is no distinction between the two policy actions against the two different economic conditions faced by the government.

It is noteworthy that in most of the product categories rebates and the value of exports traded has a negative sign indicating that as exports rise rebates fall. It shows a policy lag, and it causes production to fall eventually as exporters are not given rightful incentives. For several decades, industries have been protected against foreign competition. However, the pace of industrialization remained low resulting into under-utilized production capacity. Major reasons behind it are lack of technological advancement, low levels of adaption, and protection from foreign competition. As foreign competition was omitted by government support firms had no incentive to update their production methods for better quality and efficiency, especially in the textile sector. Pakistan's export is still heavily concentrated in a few product groups such as textiles and agricultural products. As a result, exports produced are either low in quality or low in value-added substance.

Textile, agriculture, and automobile sectors are highly protected. Textiles and clothing make up to 50% of the total merchandise exports. Although reforms in key sectors have commenced, the transition to a more diversified and efficient production pattern has been sluggish. State involvement and ownership are still crucial. Overall tariff levels are high, stifling productivity development and impeding resource allocation efficiency and Pakistan's entry into global value chains.

Pakistan is positioned to take advantage of many opportunities to diversify its production using its existing knowledge and capabilities. It can do so by eliminating bottlenecks that have held its global market share in textile exports stagnant. Evidence suggests that in capital-intensive sectors, concentrated, heavily unionized, and delivering a differentiated product companies have a relative innovative advantage. Innovation is the backbone of economic growth and sustainability for developing countries[17].

The industrial sector of Pakistan needs a boost as it is the major source of exports. Pakistan has been producing traditional textile & agriculture commodities for decades. It is time to diversify within textiles and towards other higher value-added from the manufacturing sector. Pakistan is positioned to take advantage of many opportunities to diversify its production using its existing knowledge. Although, tariff policy is still responding to RER misalignment conditions meagerly, but

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[17] https://www.theigc.org/project/measuring-innovation-in-the-textile-sector-of-pakistan/.

exports subsidy measures are not going in the right direction especially in case of devaluation, and its exports flow is negative, which creates a major disincentive for exporters.

In a nutshell, Pakistan has experienced a persistent dismal economic situation, and it is as complex as expected for its income level. Empirically, we have reaffirmed currency misalignment and its significance for the economy. The existence of a relationship between currency misalignment and the use of trade policies as a compensatory tool according to economic benefit has also been proved.

Most importantly, it has been reaffirmed by product-wise empirical analysis that there exists policy inconsistency among different sectors of the economy which may lead to deeper exchange rate misalignment which will be deeply rooted in the structural pillars of the economy. However, there is still great potential to grow on a sustainable path by following consistent policies and developing our industrial sector to compete in the global market. Pakistan is in a dire need of a productive shift in resource utilization and knowledge accumulation for the betterment of the economy. Since higher the product complexity our economy achieves higher will be our trade gains and economic growth.

7.   Conclusion and Policy Implications

7.1.   Conclusion

This paper has examined the existence of RER misalignment in Pakistan and its impact on the trade policy as a compensatory policy tool. Exchange rate misalignment also affects the choice and level of trade policies as high protection or higher trade liberalization. Coordination, balance, and action at the right time are vital for an economy. Therefore, to omit the persistent barriers to trade growth in Pakistan this in-depth analysis is of great significance.

Economic downturns & upturns are faced virtually by every economy. In this regard, it is important to maintain consistent policies to readily resolve the internal or external imbalances caused by macroeconomic fundamentals. Above analysis reaffirms that recurring misalignment might tempt the government to adopt trade restive or non-traditional protectionist measures, which can hurt the trade.

Objectives of Pakistan's trade policies are: protectionism, revenue generation, cut in consumption of imported goods, and export promotion. When a combination of tariff and subsidy is implemented, it gives rise to the prices of foreign goods and the prices of domestic goods fall in both home and foreign countries. Therefore, it shifts the demand towards domestic goods as a *substitution effect*, and it ultimately produces an *income transfer effect*. The revenue earned from the tariff is redistributed towards the financing of export subsidy, referred to as Revenue-Seeking (Bhagwati &

Tironi, 1980). Finally, this combination of trade policy instruments implies a balanced budget transfer of foreign exchange towards abroad.

Negative relationship of rebates and the value of exports indicate that as exports rise rebates fall. It is a major disincentive for exporters, and it ultimately leads to a fall in production. Similarly, in case of undervaluation rebates fall for several product groups indicating bad policy response which creates negative externality for the growth supporting economic conditions. In Pakistan, for several decades, foreign competition was omitted by government support, as a result firms had no incentive to update their production methods for better quality and efficiency, especially in the textile sector. Concomitantly, the pace of industrialization remained sluggish resulting into underutilized production capacity. This outcome is owing to lack of transfer of technology, knowledge, modern management practices, domestic innovation, and the heavy economic cost imposed by protection.

Policy incentives for specific industries have shaped the nature and pace of the sectoral development and productivity. Findings presented in the preceding section reaffirm the existence of policy inconsistency among different sectors of the economy, which may have led to deeper RER misalignment, which is deeply rooted in the structural pillars of the economy. They also confirm inconsistency between exchange rate policy and trade policy, and within several government institutions. Such that the relevant institutions do not develop rightful policy responses/strategies consistent with industrial performance needs.

7.2. Policy Implications

Based on the above conclusion, we draw here implications for policymaking in Pakistan:

- A positive relationship between trade policy tools and exchange rate misalignment suggests that there is a possibility to use adequate compensatory policies. We suggest authorities to carefully evaluate the misalignment conditions to implement the right policy at the right time. For instance, during the periods of overvaluation the country needs to raise its trade restrictive measures to improve trade performance.

- Pakistan's major importing sectors revealed critical policy inconsistency. There is a need for alignment of tariff policy with the trade flows of the commodity groups that constitute the major share of imports as they are the hardest hit by exchange rate misalignment. As we note that after implementation of Free Trade Agreement (FTA) with China, Pakistan maintained overvalued exchange rate in the absence of compensatory trade policy measures, which caused large bilateral trade deficit.

- Negative relationship between export rebates and exports during RER undervaluation indicates that government needs to extend its support for product diversification and quality improvement of exportable goods.

- Policy-focus needs to be on causes that are creating deindustrialization in the country not only in terms of closure of sick industries but also in terms of under-utilized installed capacity. Reforms to revitalize the economy by removing structural and policy barriers is the need of the hour.

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