CORRECTION OF TRADE DEFICIT THROUGH DEVALUATION- A MISLEADING POLICY IMPLICATION: AN EMPIRICAL EVIDENCE FROM PAKISTAN WITH ITS MAJOR TRADING PARTNERS

Submitted by,
Naseem Akhtar

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Supervised by,
Dr. Hafsa Hina

PIDE School of Economics
Pakistan Institute of Development Economics
Islamabad, Pakistan
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Pakistan Institute of Development Economics, Islamabad

PIDE School of Economics

CERTIFICATE

This is to certify that this thesis entitled: **"Correction of Trade Deficit through Devaluation- A Misleading Policy Implication: An Empirical Evidence from Pakistan with its Major Trading Partners"** submitted by **Ms. Naseem Akhtar** is accepted in its present form by the School of Economics, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree in Master of Philosophy in Economics.

Supervisor: Dr. Hafsa Hina   Signature: _____

External Examiner: Dr. Faiz-ur-Rahim   Signature: _____

Head,
PIDE School of Economics: Dr. Shujaat Farooq   Signature: _____

Dedication

I devote this research work to God Almighty my maker, my origin of motivation and intelligence. I also dedicate this research work to my family, specially my Mother who supported me throughout the process.

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At the very beginning, I give up myself before the Almighty Lord for gift me with the best of what I might have had. Be it this proposal, the staff related with it or the result of this exploration pursuit, every last bit of it is His effortlessness, benevolence and endowments. He has made this conceivable, and I thank the Almighty Allah with all modesty and give up.

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ABSTRACT

In the developing world favorable trade balance is considered as the important measure of development of an economy. Depreciation is typically considered to improve the trade balance, at-least after a suitable duration of time that results in a misleading policy tool, supporting the logic that export demand is less responsive to change in real exchange rate. In order to clear this misconception this study measures the export and import elasticity while considering the prevailing RER in Pakistan. In doing so current study have used the country wise data of bilateral trade and also checked the aggregate biasedness still exist or not using disaggregate data in order to avoid the aggregate biasedness that arrives in elasticity approach used by previous studies on aggregate trade data by applying Dynamic heterogeneous panels techniques, hence removed the misconception that One reason for not finding any significant effect of devaluation is because of aggregation biasness. This study also reveals that the depriciation isn't useful for increasing demand for exports however it increment the imports demand and eventually fall apart the balance of trade. Consequently, study dismiss the presence of J-curve phenomenon in case of Pakistan Further, it also investigated that whether the increase in interest rate(determinant of exchange rate) results in decrease in trade deficit of Pakistan, since it is notable that the countries which are facing high deficit of trade typically have higher loan fees in order to redsuce trade shortfalls as compare to those with excess or adjusted balace of trade. so that we are able to conclude that this determinant of trade is not creating structural problem in our trade balance, infact it improves the trade balance by attracting foreign funding from abroad. The panel ARDL approach is applied for analysis from the period of 1987-2020. The outcomes reveals that devaluation is a misleading policy tool, hence deteriorate the trade balance. The study recommends various policies that can be implemented to avoid exchange rate fluctuation risk

Keywords: Balance of trade;Export elasticity; import elasticity; Aggregate biasedness; real exchange rate; interest rate; ML- condition, Dynamic hetrogenious panel technique; ARDL approach

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List Of Abriviations

REER   Real Effective Exchange Rate

RER   Real Exchange Rate

GDP   Gross Domestic Product

ARDL   Autoregressive Distributive Lag

BOP   Balance Of Payment

ECM   Error Correction Model

VARDL   Vector Autoregressive Lag

Yf   Foreign Income

Yd   Domestic Income

MG   Mean Group

PMG   Pooled Mean Group

DFE   Direct Fixed Effect

ADF   Augmented Dicky Fuller

CPI   Consumer Price Index

WDI   World Development Indicator

IFS   International Financial Statistics

Pi   Price level in Domestic Nation

Pf   Price level in Foreign Nation

REXP   Real Exports

RIMP   Real Imports

RGDPd   Real Gross Domestic Product of Home country

RGDPf   Real Gross Domestic Product of Foreign country

IR   Interest Rate

STPF   Strategic Trade POolicy Framework

WTO   World Trade Organization

MFN   Mostr Fvoured Nations

SRO   Statutory Regulatory orders

PTAs   Preferential Trade Agreements

Chapter 1

1. Introduction

When a country faces the deficit in her trade balance then this country adopts a major macroeconomic policy action that is called currency depriciation. The policy of devaluation is considered as the most important policy tool for guideline of external sector of Pakistan. As Pakistan is facing trade deficit,Which ultimately causes problem for balance of payments. So the Pakistan devalued her currency many times in order to upgrade its balance of trade. Now the question is that whether the devaluation of currency helps improvement in balance of trade? In order to find out the solution many economists have checked the marshal learner condition which accepted that if the addition of exports and imports price elasticity is greater than one, than currency devaluation is more helpful in improvement of balance of trade and vice versa. Hence the Marshal learner approach is considered as the elasticity approach.

Pakistan is one of the developing country who is facing the continuous decline in growth rate of trade in last years. The trading partners have shown a moderately more huge improvement in development rate due to increase in total share of trade, but Pakistan remained unlucky in the sense that Trade Balance of Pakistan recorded a deficit of 2.6 USD billion in January 2021.Hence the trade deficit is a structural problem which is Pakistan facing currently can be better estimated by trade elasticities, but assessing elasticities of trade utilizing data at aggregate level can be hazardous for nations. Biasedness in aggregate data is highlighted by a researcher,Theil (1954), characterizes it; As a deviation of macro-parameters from the average of corresponding micro-parameters. What's more, as Marquez (2005) has contended, utilizing data at aggregate level on

trade can results in wrong estimation of the elasticities of trade, because of the biasedness at aggregate level.

Therefore, using disaggregated data is suitable to address the problem under consideration which has many benefits. To start with, There can be several additional econometric advantages. First, the number of observations increases greatly, by a factor equal to the number of countries included in the analysis. More observations further translate into more variability, which may imply more precise estimates. Secondly, the way of demand perspective to deal with displaying imports and exports is exactly suitable when the investigation is done on a country-by-country level, than on a total level. On aggregate basis supply-side variables can likewise be vital, and inability to control can prompt one-sided estimates. At last, disaggregated information enjoys a benefit that the outcomes are less inclined to be one-sided by the indigeneity between the reliant variable and the regressors. working with disaggregated information enjoys a benefit that the outcomes are less inclined to be one-sided by the indigeneity between the reliant variable and regressors. For example, exports influences the REER - more exports infer greater homegrown costs, which converts into higher REER, and imports influence the homegrown GDP, because they are essential for it. such predispositions are a lot more modest in the disaggregated investigation. since balance of trade with one nation is significantly less prone to influence homegrown GDP and price level than trade balance at aggregate level.

Furthermore the entire debate of devaluation and its role on trade balance also depends upon the composition of exports and imports of a country. For instance, in case of Pakistan, our imports consist of 30% consumer goods, 20% raw material, 28% intermediate goods, and 20% capital goods. So by using exchange rate devaluation, the imported inputs and raw material become relatively costly, and that ultimately makes your exports costly. So, how J curve phenomenon will

occur? The study has explored this dimension as well by concluding that imports are inelastic which means that our imports consist of finished products whose demand remains inelastic, hence instead of decreasing, imports are increasing which deviates from the J curve theory.

However, it is essential to explore practicality of measuring elasticity at country level and its role in evaluating the exchange rate. In this way, we total the assessed coefficients related with each particular country RER subsequent to product of every coefficient with its individual share of trade. The aggregate conclusion is made with the understanding that the realative real exchange rate between exchanging partners monetary standards stays unaltered as expected in the methodoly of ARDL approach for panel data while at the same time assessing the elasticities of trade.

It is notable that countries with high and persevering trade imbalances typically offers higher loan fees than those with excess or adjusted balance of trade. The explanation is straightforward. The trade deficit bearing countries mostly offer higher interest rates to draw in foreign assets that would back their deficits in trade. Besides, the shortfall increases, the pace of interest rate likewise rises. The 2011–2012 Euro crises brought forth by monetary issues in PIIGS (Italy, irland, Purtgal, Spain, and Greece) has concentrated on how the deficiency tormented nations have to bring to the table extraordinarily high security yields. Such countries saw increasing loan fees when their shortfall increases. The PIIGS countries have sky-high trade imbalances, their loan costs on, 10 years' administration bonds were a lot higher in 2012, than those countries appreciated by surplus like Netherland, Switzerland, and Germany. So the inquiry is Pakistan goes under the recorded phenomenon that shortfall ridden countries have higher loan costs or not? the current investigation have inferred that once the balance of trade weakened due to devaluation, loan costs decidedly affect exchange balance which implies that Pakistan goes under this historical phenomenon as well

and we can cure our trade deficit by rising interest rate instead of misleading policy tool of devaluation.

1.1.Background Of The Study

Reportedly, RER is a vital determinant of imports and exports since it is considered as a parameter of competitiveness at global level. The Marshal Learner condition pronounces that if the addition of imports and exports is greater than one, than devaluation strategy will bring about the improvement of equilibrium of trade balance (Rose (1990). Currency devaluation turns into the prerequisite when the shortcoming of strategy causes loss of foreign reserves. At the point when the national banks deny the acknowledgment of the desire of market and spends the foreign reserves to save the fake worth of exchange rate. Hence a wide range of debates appears for explaining the purpose of currency devaluation in order to improve the competitiveness.

1.2.Research Gap

There exist vast range of studies who empirically investigated the effect of depriciation on balance of trade. In Pakistan, the studies Bahmani-Oskooee (1985) , Aftab and Khan (2008), Bahmani-Oskooee and Kovyryalova (2008), Shahbaz et al. (2012), Saeed et al. (2012) and Rehman and AFZAL (2003) did not discover noteworthy positive impact of RER on the trade balance. There exists a misconception that One reason for not finding any significant effect is because of aggregation biasness. To make the results reliable and remove the aggregation problem, we disaggregate Pakistan and its trade partner exports and imports and further checked whether aggregate biasedness still exist or not using dynamic heterogeneous panel technique. It made us to investigate the correct devaluation impact on the balance of trade. There exist literature gap whether the deficit nation like Pakistan have to offer higher interest rates in order to attract foreign fundings that would fund their trade setbacks or not in order to put an end to misleading

devaluation policy so current study has provided information about it. However, there is also literature gap on finding devaluation impact on trade balance using Panel ARDL approach so we will use this technique for better results. There is also a literature gap on the *practicality of measuring elasticity at country level and its role in evaluating the overall exchange rate policy and dependence of* devaluation and its role on trade balance upon the composition of imports and exports of a country. Hence current study has explored this dimention as well.

1.3. Research Goals

The Goals of the investigation are

- To find out perpetual devaluation is desirable to boost the trade balance or not and the use for country level elasticity in determining the overall exchange rate of Pakistan.

- The biased estimates in Pakistani trade elasticities are substantial, and depending on total trade data may prompt inaccurate ends, and potentially, imperfect policy choices. The of this investigation is to eliminate this elasticity disadvantage utilizing country-wise trade information and to check biasedness at aggregate level..

- To put an attention on how Pakistan as a deficiency tormented nation have to bring to the table high security yield , And as the protectionism has many drawbacks so without protectionism how an economy like, Pakistan can use interest rate policies geared to competitiveness to put an end to recurrent devaluations.

- To Explore that the whole debate of devaluation and its role on trade balance also depends upon the composition of imports and exports of a country by finding out the occurrence/non occurence of J curve phenomenon.

1.4. Significance Of Study

Despite of the controversy of studies due to aggregate biasedness regarding devaluation impact on trade balance Pakistan has made the maximum use of currency depreciation in order to enhance the trade balance which shows that Pakistan have more motivation to rely on the evidence of devaluation to produce economic growth**. The **major contribution** of this study is that the current study will use the disaggregated trade data because there is large criticism on aggregate level data named as aggregate biasedness which means the huge elasticity of price with one exchanging partner could be compensated trivial elasticity of another partner. Hence these existing gaps open another exploration region for the investigation of elasticity of trade. **Another contribution** of this study is the estimation through panel ARDL approach. **Third contribution** of study is to check whether the rising cost for loans is helpful for financing trade deficit and should we focus on interest rate policy which could be used in place of misleading policy of devaluation. The **final contribution** of this study is that the whole debate of devaluation and its role on trade balance also depends upon the composition of imports and exports So by using exchange rate devaluation, the imported inputs and raw material become relatively costly, and that ultimately makes your exports costly. So, how J curve phenomenon will occur? The study will explore this dimension as well.

1.5. Organization Of Study

The remainder of the examination is coordinated into 7 sections. Section 2 opens review of literature concerning devaluation impact on trade imbalances. Section 3 describes the methodology that is used to accomplish the targers of examination. In section 4 data source, variable description and mode of data analysis is discussed. In section 5 estimation results are discussed, while in section 6 policy review along with qualitative analysis and in section 7 conclusion and policy recommendations are discussed.

Chapter 2

Literature Review

2.1. Introduction

This section will clarify the literature on exchange rate and trade balance initiating with theoretical background in the study then further extend to empirical review of exchange rate impact on trade balance.

2.1.1. Theoretical Background

The changing method to the globalization and market economy which has started in 1980's and accelerate in 1990's which have made the economy more reliant upon one another because of outside occasions. The connection between the exhibition of external trade and unfamiliar trade policies of nations have explained the need of exploration **(Hook and Boon, (2000)**. The comprehension of progress in foreign exchange rate effects on execution of external trade is extremely important to foster the foreign trade strategies for the developing nations **(Taylor and Sarno (1998)**. Currency depreciation is regarded as the major factor for the correction of balance of or trade balance is considered as an objective instrument behind the price adjustment mechanism in which the changes in relative export and import prices results in adjustment in trade balance to correct the deficit. So that the devaluation results in the increase in prices of imports for domestic consumers which expected to decrease the imports demand and decrease in prices of exports for foreign consumers which expected to increase the exports demand**(Taylor and Sarno (1998)**. In today's world pure financial transactions and devaluation improves the balance of trade but role playing by exchange rate is of greater importance in improving the trade flows. The speed of

adjustment in the balance of trade can be determined through the level of of imports, exports and RER which is known as the elasticity approach towards equilibrium of Balance of payments and henceforth trade imbalance. For the evaluation of elasticity approach towards the equilibrium of BOP; discover the connection between swapping scale and exchange streams. Thus it is assumed that exchange rate isn't affected by the unadulterated financial transactions so there is no global capital stream. Accordingly, the supply and demand of imports and exports decided exclusively by the demand and supply of foreign currency. In any case, in ongoing investigations this phenomenon is viewed as deceiving if there should arise an occurrence of Pakistan.

The current investigation has summed up the hypothetical writing regarding the effect of exchange rate variations on trade balance by four methodologies:

2.1.1.1. Standard Trade Theory

Despite the fact that the standard hypothesis of worldwide trade gave the productive grounds and fundamentals for future methodologies. The hypothesis has discussed the effects of exchange rate on balance of trade and has to a great extent examined about free trade by absolute advantage hypothesis of Adam smith as well as comparative advantage hypothesis by David Ricardo. So this hypothesis doesn't appropriate to the current conditions which are considerably more complicated. This methodology negates with the money related methodology in light of the fact that the monetary policy doesn't acknowledge the case that depreciation can further develop the trade balance. In any case, different methodologies likewise repudiate the standard hypothesis of worldwide trade since it is guaranteed that currency devaluation can further develop the trade balance unequivocally.

2.1.1.2 Keynesian Based Absorption & Monetary Approach

Keynesian based absorption and monetary approach focus harder on macroeconomic connections rather than microeconomic connections of the elasticity approach. Subsequently, the connection between trade equilibrium and exchange rate issues and different factors issue could be effectively perceived under these two methodologies; however there is not many observational proof in regards to the examination of the two methodologies on the grounds that these methodologies couldn't beat the progressions in the idea of current record balance in the post-Bretton woods time. Therefore, these two methodologies stays less created/immature and at starting stage.

2.1.1.3. Elasticity Approach

The elasticity approach that was set off while considering the Bickerdike, Marshal and Groenewegen thoughts and went through number of headways for half of century and considered the main progression in the judgment of exchange rate influence on balance of trade which is confirmed by no of experimental investigations. The main part of this methodology is J-curve hypothesis which in a roundabout way tried the methodologies of elasticities and Marshal-learner condition by surveying the short- run and long run coefficients of RER in econometrics investigation. as the elasticities shows the structure of economy so here we think about the elasticities of import and export concerning RER to explore the presence of J-CURVE phenomenon if there should be an occurrence of Pakistan with its significant exchanging partners. The marshal learner condition and J-Curve phenomenon are further explained under this section.

2.1.1.3.1. Marshal Learner Condition

The Marshall-Lerner condition was developed by Abba Lerner, who used Alfred Marshall's model of trade to show the effect of a depreciation on the trade balance from different scenarios. The

condition states that if policy makers devaluate a currency in order to get a positive effect on the trade balance, the demand for the nation's exports and the nation's demand for imports needs to be sufficiently elastic. The condition under the simplest of circumstances is that the two elasticities together must exceed one **(Brown & Hogendorn, 2000).** Generally, if the sum of the two elasticities is less than one then in reaction to a depreciation the trade balance will decrease and if the sum is greater than one the trade balance will improve **(Lerner, 1944).**

2.1.1.3.2. J.curve effect

The J-curve shows that how devaluation of a country's exchange rate affects its balance of trade. After the depreciation immidiately, the domestic importers faces increased import prices in terms of the domestic currency; hence, the net export falls initially. However In terms of foreign currency, the foreign market faces lower export prices but since the demand for exports and imports are relatively inelastic in the short-run the export and import volumes needs some time to adjust to the change in price. The elasticity of demand is affected by the change of consumer behavior. When the demand patterns adjust to the new exchange rate, the trade balance will start to improve **(Mackintosh, Brown, Costello, Dawson, Tompson, & Trigg, 1996**).

2.1.2. Empirical Evidence

Different countries have applied different exchange rate regimes. Generally developing countries adopt same form of exchange rate regimes so in order to come across the recurring movements in exchange rate and its impact on trade balance; this section intends to investigate the current writing in setting of devaluation connection with trade balance.

2.1.2.1. International Studies

This segment will give an exact proof in favor and against the depreciation received by various nations: While talking about the investigations which are agreeable to devaluation incorporates; Boyd et al. (2001) utilizing the vector auto regressive distributed lag (VARDL) model gives the premise that the RER debasement improves the trade balance after considering lag due to J-curve impacts in the setting of OECD nations; subsequently the general outcomes recommend that in presence of heterogeneity the Marshal learner condition is fulfilled over the long run.

Türkay (2014) clarified the very proof in setting of turkey that devaluation essentially affects exchange balance by utilizing Johnsen cointegration test and ECM fulfilling the Marshal Learner condition in the long run to recognize the elasticity approach of exchange equilibrium and depreciation of currency. Mahmud et al. (2004) determined the import-trade elasticities to check the Marshal learner condition for six countries by applying non-parametric kernel assessment method. the outcomes showed that condition has more convenience to fulfill if there arise an occurrence of fixed exchange rate system. Caporale et al. (2015) tried the marshal student condition utilizing quarterly information for Kenya. By applying co-integration and fractional integration strategies they utilized export import proportion, RER and relative earnings and presumed that Marshal student condition is fulfilled in setting of Kenya. Jamilov (2013) inspects the presence of J-curve for Europe with its significant exchanging partner Azerbaijan. The outcomes showed that devaluation in Azerbaijan diminished the exchange balance short run yet worked on in since a long time ago run.

However, studies which explained that devaluation further worsen the trade includes Masih et al. (2018) found that there is no connection among depreciation and exchange balance in setting of

China. Onakoya et al. (2019) analyzed the negative connection among depreciation and exchange balance for Nigeria the since a long time ago run.

2.1.2.2. Studies On Pakistan

This segment will explain the literature about devaluation and foreign trade of Pakistan whose objective is to examine the impact on imports and exports caused by the relative variation in prices, income & real exchange rate. In case of Pakistan there exist a vide range of literature for investigation of movements in exchange rate and trends of trade. Final products of these investigations shows various examples concerning the effect of exchange rates on flow of trade. Studies showing the huge outcomes for devaluation impact on trade balance are:

Hasan and Khan (1994) Investigated the influence of devaluation on trade shortfalls of Pakistan by utilizing the quarterly information of exports, import and general price level. The outcomes showed that depreciation further improves the trade balance by fulfilling the Marshal condition in setting of Pakistan. Khan and Aftab (1995) discovered the demand functions of export, import by applying conventional-strategy in setting of Pakistan. By utilizing RER rather than relative costs or prices; they presumed that there is no effect of depriciation on trade balance. Bahmani-Oskooee (1998) investigated that if the summation of import and export demand is more noteworthy than 1, outcomes in improvement of trade balance utilizing co-integration method over the long haul. Aftab (2002) re-assessed the elasticity of trade since quite a while ago run by applying OLS and 2SLS strategies on quarterly information of top ten exchanging partners of Pakistan, legitimacy of Marshal Learner condition and short run impact of RER. Rehman and AFZAL (2003) disscussed the presence of J-curve marvel in setting of Pakistan however discovered unfavourable influence of devaluation in real terms of Pakistani rupee over the long haul utilizing co-integration strategy, ARDL. Afzal and Ahmad (2004) assessed the long run elasticity of trade utilizing co-integration

approach which shows that depreciation will bring about expenditure shift from importable products to locally created products so the devaluation affects trade balance. Kemal and Qadir (2005) explored that there exist a long run correlation among RER, imports and exports yet in short run import respond more towards exchange rate shocks nonetheless abrupt shock in exchange rate don't impacts the exports so Pakistan need not to stress over exchange rate shock in short run. Baluch and Bukhari (2012) examined that there exist short run and long run connection between RER and trade balance instance of Pakistan utilizing Engel granger and Johnsen's Juselious approach. Saeed and Hussain (2013) assessed the elasticity of imports as for relative costs and income of Pakistan; thus reasoned that there exists co-integration among these factors. Bano et al. (2014) assessed the Marshal learner condition utilizing Johnsen co-integration approach. Results showed that regardless of shocks in external sector and exchange rate, market pressure trade equilibrium can be worked on through depriciation. Chaudhary et al. (2016) Analyzed the short run and long run connection between exchange rate, imports and exports of significant south east Asian and south Asian nations utilizing ARDL way to deal with co-integration as well as ECM model. Results showed that long run connection between RER and exports exists among the greater part of chosen test in any case this connection between RER and imports exist just for one example, There exists no short run relationship between RER, exports and imports on the other side. Ashar et al. (2016) utilizing fully modified least square method(FMLS) assessed the total demand for exports capacity of Pakistan with its significant exchanging partners. The outcomes showed that foreign income of trading nations has positive and relative costs and RER altogether affects send out demand of Pakistan. Nawaz and Ghani (2018) presumed that there is a negative connection among depreciation and yield development of Pakistan.

Though if there should arise an occurrence of studies which are against the depreciation impact on RER incorporates: Akhtar and Malik (2000) utilizing quarterly information they explored the effect of devaluation in real terms, inflation, opportunities for exports and real income on trade balance of Pakistan with its top trading partners. The outcomes showed that USA and Japan have negative export demand elasticity while Germany and USA have critical effect of income on trade. Shahbaz et al. (2012) didn't uphold the J-curve, hence recomeded that policy makers should not utilize this methodology of devaluation to further develop the trade balance by relieving disequilibrium of balance of payments. Gul et al. (2013) considering the two phase least square technique reasoned that there exists immaterial connection between exports demand and price level and NER however huge connection between world income and export demand of Pakistan. Shah and Majeed (2014) assessed that there exist long run connection between REER, income and trade balance however Marshal learner condition for exchange balance doesn't hold. Shahzad et al. (2017) The examination utilizes the Random effect model to discover the elasticity for import and export demand and reasoned that amount of flexibility of exports and import demand is short of what one for south Asian nations so Marshal learner condition isn't fulfilled. Subsequently this investigation recommended that rather than devaluation approach producers should focus on the export advancement and import replacement to further develop the exchange balance. Yasmeen and Hafeez (2018) Investigated that the expansion of outright upsides of imports and export demand elasticity is more noteworthy than one so Marshal learner condition doesn't hold neither in long run nor in short run utilizing the ARDL system. They likewise researched that there is no critical connection between terms of trade and trade balance. Hina (2020) measured the elasticity of export, import and trade balance with respect to exchange rate; further investigated that whether the elasticity of trade is effected by the exchange rate policies and trade regimes over the time or

not using co-integration technique with structural break in case of Pakistan with its trading partner USA. Results showed that devaluation increases import instead of boosting exports which ultimately worsens trade balance.

2.1.2.3.. Literature On Aggregate Biasedness And Interest Rate Policy

Marquez (2005) and Jovanovic (2013) has contended, utilizing total information regarding trade can prompt inaccurate estimates pertaining to elasticities, because of biasedness in case of US and Macedonia. Byrne et al. (2007) and Byrne and Fiess (2010) examine bisedness in inflation that arrives due to aggregate data. Though if there should arise an occurrence of loan fee Batra and Beladi (2013) have clarified that It is notable that countries with high import/export imbalances ordinarily have higher loan costs than those with trade surplus. But unfortunately such has not been the situation with the USA, which has seen a persevering import/export imbalance from 1982. Its loan costs remains lower than the countries which enjoys surplus in trade. Besides, these rates fell when the trade deficiency rises. This shows that this phenomenon is different for different countries, the rising import/export imbalance itself turned into the reason for lower US loan fees, and this happened as a result of the strong world intention in keeping high worth of the dollar.

2.1.3. Summary of Literature Review

The literature consists of two types of studies: national and international level which are explained comparatively due to the contradiction in arguments of literature. Some studies have argued that the depreciation of currency bring about consumption shift from importable commodities to locally produced products. So that because of shift of consumptions;devaluation brings about a decent way to further improve the trade balance in long run. On the opposite side some have contended that devaluation of domestic currency demolishes the trade balance. additional proof is likewise given in regards to loan cost and aggregate biasedness. So major contribution of this examination

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is that the researchers misconception has been removed that disaggrement of studies is due to the existence of aggregate biasedness to infer that devaluation have no affect on trade balance improvement in absence of J-curve by exploring the presence of J-curve phenomenon in setting of Pakistan with all its major trading partners.Hence the policy maker will be able to exclude this misleading policy tool and will be able to focus on the interest rate policy which geared competitiveness.

Chapter 3

Economic Framework and Econometrics Methodology

3.1. Economic framework

Economic framework is a set of decision rules that align everyone to the financial objectives of the solution and guides the economic decision making process which is explained in following subheadings:

3.1.1. Aggregate Biasedness

Biasedness at aggregate level is the normal contrast between impacts for the groups and impacts for the individual. Aggregate biasedness is first examined by Theil (1954), who characterizes it as an systematic deviation of macroparameters from the average of corresponding microparameters. Basically as far as anyone is concerned, talk about aggregate biasedness as a drawback in elasticities of trade, But still there exist Just two examinations, Marquez (2005), who examines it in the US trade in services as well as Kaplan and Kalyoncu (2011), who talk about the impacts of devaluation(considering biaseness) on trade balance. Hence there is need of time to find out the impact of aggregate biasedness in case of Pakistan as well.

3.1.2. Elasticity Approach

The recommendation of Marshal learner condition requires that for improvement in trade balance due to devaluation of home currency; If the summation of exports and imports demand elasticity is greater than one and vice versa. Thinking about the extraordinary work of creeks (1999), the examination of Bicker barrier (1906, 1920) depends on the methodology of elasticity to adjust balance of payments and subsequently import/export imbalance. At whatever point the conditions

are fulfilled over the long-run, Price elasticities in context of imports and exports stays inelastic in short-run which can be clarified as the J. curve theory.

For the examination of how the devaluation impacts the trade balance, require the assessment for the demand functions of import and export. The demand for imports can be clarified by showing the relationship of progress in amount of imports because of the adjustment real exchange rate (RER) and homegrown income(Yd.) and loan fee (I), while if there should arise an occurrence of export demand shows the relationship of progress of exports and foreign income (Yf), real exchange rate (RER) & financing cost (IR). In the current examination the Cobb-Douglas production function is used for the demand capacity of imports and exports as explained by H.Hina, (2020) which can be composed as:

$$\text{Imports} = A_1 \, \text{RER}_1^{\beta} \, Yd_2^{\beta} \, i_3^{\beta} \, e^{\mu} \qquad\qquad (3.1)$$

$$\text{Export} = A_2 \, \text{RER}_4^{\beta} \, Yf_5^{\beta} \, i_6^{\beta} \, e^{\nu} \qquad\qquad (3.2)$$

For the estimation of linear equation transformation of both the equations into logarithmic form:

$$\text{Ln Imports} = \ln A_1 + \beta_1 \ln \text{RER} + \beta_2 \ln Yd + \beta_3 i + \mu \qquad\qquad (3.3)$$

$$\text{Ln Exports} = \ln A_2 + \beta_4 \ln \text{RER} + \beta_5 \ln Yfi + \beta_6 i + \nu \qquad\qquad (3.4)$$

Where the β1, β2 and β3 shows the elasticity of real exchange rate and domestic income and interest rate. So it is expected that devaluation of currency will result in decrease of import demand β1 < 1 and because of the increment in homegrown pay increment the import demand so β2<1 and because of expansion in loan cost will expand the demand for imports so β3<1. In addition, β4 and β5 and β6 addresses the elasticity of RER and foreign income of significant exchanging partners and financing cost. It is normal that devaluation of currency expands the export demand though

expansion in foreign income increment the export demand so that β4, β5 <0. Though expansion in

loan cost expands the demand for exports so β6>0. Using the regression analysis trade balance is

estimated by finding the regression of exchange balance on real homegrown income, real foreign

income of exchanging partners of Pakistan, real exchange rate and loan cost which can be indicated

as:

$$\text{Ln Trade Balance} = \ln A_3 + \phi_1 \ln \text{RER} + \phi_2 \ln Y_{fi} + \phi_3 \ln Yd + \phi_4 I + \varepsilon \qquad (3.5)$$

Where φ1, φ2, φ3 and φ4 addresses real exchange rate, real foreign income, real homegrown

income and loan fee elasticities. So it is normal that φ1 and φ2 ought to be positive though φ3

ought to be negative which would show that currency devaluation, expansion in foreign income

and decline in homegrown income will further develop the trade balance.

3.2. Econometrics Methodology

Econometrics methodology will be founded on two assessments. First; Dynamic heterogeneous

panel technique is utilized for checking aggregate biasedness. These strategies depend on the

ARDL approach that is embraced for the most part to the panel case. Thus, the fundamental

condition is:

$$\Delta Z_{it} = \phi_i z_{i,t-1} + \gamma_i X_{it} + \sum_{j=1}^{p-1} \lambda_{ij} \Delta Z_{i,t-j} + \sum_{h=0}^{q-1} \delta_{ith} \Delta X_{i,t-h} + \mu_i + \varepsilon_{it} \qquad (3.6)$$

Z_{it} is dependent variable, x is considered a vector of explainatory factors, t shows time file, μ

shows constant, ε depict the residuals, λ defines the coefficients of lags for reliant variable however

δ defines the coefficients of explainatory variables.

Three distinct unique heterogeneous strategies exist: mean group (MG) by Pesaran and Smith

(1995), dynamic fixed effect (DFE), and pooled mean group (PMG) by Pesaran et al. (1999). The

DFE expect that φi = γi = λij = δith for all I. though the MG accepts that φi, γi, λij, δith are difference for all I. PMG accepts that φi, γi, λij, δith are distinctive for various units (short run coefficients are diverse among units yet same over the long run for all units).

A test for the presence of the biasedness at aggregate level is the trial of the suitable of the three assessors. in the event that the DFE ends up being the most proper strategy, that it will be said that there is no aggregate biasedness except for assuming the MG or the PMG are chosen, one might say that there exist aggregation biase (see Theil (1954), for trial of aggregate biasedness). As a matter of first importance, we have looked at the MG, PMG assessors, and utilize the recognizable Hausman test to segregate between both of them. Specifically, considering null hypothesis for coefficients homogeneity; PMG estimates considered effective and predictable, but the MG are just consistent. Then again, if since a long time ago run coefficients are diverse among cross areas, PMG is conflicting, while MG is as yet reliable. Thus, if the distinction between the two assessors is measurably significant, this implies that the reliable assessor will be liked (MG for our situation) and if the thing that matters is insignificant, the productive assessor (PMG for our situation) will be liked. On the off chance that the PMG ends up being liked in this initial step, we will then, at that point think about the PMG and the DFE similarly on the off chance that they are different, this would suggest that the PMG is liked. Second; the panel ARDL approach is utilized for the assessment of import, export and trade elasticities. A few strategies are utilized for the assessment of long run elasticities utilizing co-integration methodology to stay away from the deceptive regression, fully intent on examining J-curve in exchange among Pakistan and its significant exchanging partners. Initially, all the variables are transformed by taking logs, except loan fee(IR) to obtain immediate evaluations of elasticities; after unit root test, the panel ARDL co-integration technique is applied.

3.2.1. Unit Root Test

The ARDL co-integration method can be utilized independent of the order for variable. Nonetheless, the requirement for testing the variable stationarity is still there in light of the fact that we can't utilize ARDL if the factors are integrated of order two (Jalil et al. (2016). Here we utilize the test for unit root in panel case on the grounds that the fundamental benefit of utilizing that tests is that their power is altogether more noteworthy contrasted with the low power of the time-series test for unit root in finite examples against alternate hypothesis with profoundly tireless variations from equilibrium. Since the power of unit root tests rely upon the complete variation in the data utilize, test for unit root in panel data are more remarkable than standard time-series test for unit root on the grounds that the variation in nations adds a lot of information to the variations across time, bringing about possibly more exact estimates of the parameters (see Sarno and Tylor 1998).

3.2.2. Fishers Type Using ADF Test

In current examination there is a case for imbalanced data i.e 15 nations and 30 years so will favor fishers type test utilizing ADF tests. It proposes utilizing Fisher-type ADF tests which approach unit root testing for panel data from a meta-examination point of view. All the more explicitly, this test leadunit-root tests for each time series independently, and afterward consolidate the p-values from these tests to create a general test. Fisher tests consolidate data dependent on individual level test for unit root and take into account a heterogeneous the hypothesis assuming ρj can vary across nations

The hypothesis are:

H0: $\rho j=1$ where $j = 1, 2, 3……j$.

Ha: ρj <1 for one j for finite N

The null infers that time series in the panl informational collection contain a unit root and are non stationary, while the alterative showed that something like one-time series is stationary.

In the event that the data have the unit root, we check its integration order by taking 1st difference. Assuming the information become stationary in the wake of taking the first difference, we say that the variable is I(1). On the off chance that the series is incorporated of d occasions to make it stationary, it is supposed to be I(1). on the off chance that the independent variables are I (0) and I (1) or both; the panel Autoregressive Distributed Lag (ARDL) will be utilized in the current investigation which can be momentarily talked about in the following section:

3.2.3. Panel ARDL Approach

The empirical examination created in this work depends on ARDL models utilized to the

co-integration, as proposed in Pesaran et al. (1999) and Pesaran et al. (2001). These models were picked because of their benefit over the co-integration tests in non-stationary factors, such the ones created by Engle and Granger (1987), Phillips and Hansen (1990) and Johansen (1991) just as over VAR models. ARDL models applied to co-integration likewise will in general be more effective to catch the since quite a while ago run relationship data in little examples, and they perform well, independent of whether variables are stationary I (0), non-fixed I (1), or even commonly co-integrated (Pesaran et al. (1999). There is absolutely a mixture of I (0) and I (1) factors, which makes Panel ARDL approach more than proper to our examination. Pesaran, Shin and Smith (1999) fostered a Pooled Mean Group (PMG) model, which depends on a co-integrated ARDL structure adjusted for a panel data collection climate. Indeed, PMG probability assessors are utilized to appraise since a long time ago run coefficients, catching the pooling conduct of

homogeneity limitations, and short-run coefficients, by the average across groups used to acquire

method for the assessed mean values of error correction coefficients and other parameters in short-

run. An essential ARDL model can be indicated as Follows:

$$Y_{it} = \sum_{j=1}^{p} \lambda_{ij} y_{i, t-j} + \sum_{j=0}^{q} \delta_{ij}.x_{i, t-j} + \mu_i + \varepsilon_{it} \quad (3.7)$$

t = 1, 2, 3, … t distinguishes the period and i = 1, 2, 3, … i recognizes the groups;

$x_{it} = k \times 1$ which is a vector for group i for explanaitry variables ; μi = fixed impacts term;

λij = scalar of coefficients identified with all slacked subordinate factors; and δij = coefficient

vectors k × 1.

This econometric strategy is equipped for keeping up with significant data identified with

short-run and long-run properties for the model under consideration. Furthermore, short-run

unbalances is viewed as a adjustment speed with regard to long run balance. these changes are

made through ECM. re-parametrizing of Equation (6), we can discover the ECM condition:

$$\Delta(y)_{it} = \phi_i(y)_{i, t-1} + \beta_i.x_{it} + \sum_{j=1}^{p-1} \lambda_{ij}\Delta(y)_{i, t-j} + \sum_{j=0}^{q} \delta_{j=0}\Delta(x)_{i, t-j} + \mu_i + \varepsilon_{it} \quad (3.8)$$

Where φi = - (1-Σpj=1 λij is the ECM term for ith group; βi = Σqj=0 δij is the since quite a while

ago run group for the ith group; λij = - Σpm= j+1λim, j = 1, 2, 3, 4,… .., p-1 and δij = - Σqm=

j+1λim, j = 1, 2,3, 4, 5… … ..,q-1.

In that particular case, Panel ARDL (PMG) models are applied in the examination of influence of currency devaluation, domestic income, foreign income and loan fees for one dependent variable log of trade balance(trade shortfall). In the event that we assume μ signify a constant term and T indicate a period pattern, the assessed equation for our standard panel ARDL models is:

$$\Delta(\ln rtb)_{it} = \mu + \alpha_1 T + \phi_1(\ln rtb)_{it-1} + \phi_2(\ln rer)_{it-1} + \phi_3(\ln rgdp_d)_{it-1} + \phi_4(\ln rgdp_{fi})_{it-1} + \phi_5(\text{int})_{it-1} +$$

$$\sum_{j=0}^{p}\phi_6(\ln rtb)_{it-j} + \sum_{j=0}^{q}\phi_7(\ln rer)_{it-j} + \sum_{j=0}^{r}\phi_8(\ln rgdp_d)_{it-j} + \sum_{j=0}^{s}\phi_9(\ln rgdp_f)_{it-j} + \sum_{j=0}^{t}\phi_{10}(\text{int})_{it-j}. (3.9)$$

How to observe the overall exchange rate devaluation impact using country level elasticity approach for the *practicality of measuring elasticity at country level and its role in evaluating the exchange rate* we total the assessed coefficients related with each separate country-wise RER subsequent to increasing every coefficient value with its individual share in trade trough multiplication. The total is calculated with understanding that exchange rate relative to other partners between exchanging parteners stays unaltered. Hence, the total impact of homegrown exchange rate devaluation might be communicated as follows:

$$\theta = \sum \delta_i \beta_i$$

OR

$$MLC = \sum \delta_x \beta_x + \sum \delta_m \beta_m > 1$$

If the resulted figure is significant **OR** sum of import and export elasticities of all trading partners multiplied by import and export share of all partners in total trade >1 satisfies the Marshal learner condition than we will conclude that at aggregate level the exchange balance is refined because of deterioration of the Pak rupee in opposition to the domestic currencies of its individual exchange partners and the other way around.

3.3. Sources of data and variable description

3.3.1. Sources of Data

According to the availability of data, selected the data from the period of 1990-2020 however the data for checking the aggregate biasedness has been selected from the periode of 1990-2020. The 13 top trading partners which are included in current study are United States with 16% exports share, China 7.7% exports share, 7.3% exports share with United Kingdom, Germany 5.5% exports share, Netherland 4% exports share , , Bangladesh 3.3% exports share, Italy 3.3% exports share, Belgium 2.8% exports share, France 1.9% exports share, India 1.6% exports share, Sri Lanka 1.5% exports share, and Saudi Arabia 1.3% exports share. The data for the included variables excessed from WDI, IFS and State Bank of Pakistan. however Spain, Bangladesh and United Arab emirates has been dropped due to the non-availability of certain essential variables.Data for imports, collected from State Bank and the data for consumer price index (CPI), nominal exchange rate, and GDP of Pakistan and its trading partners extracted from WDI and IFS according to the availability of such data for different countries.

3.3.2. Variable Description

3.3.2.1. Trade Balance

The trade balance of Pakistan is calculated by subtracting real exports and real imports with each trading partner, and than result is divided by the real GDP of Pakistan for the purpose of controlling scale effect. However for the purpose of log transformation, this transformation is done by adding 1 minus the minimum value for avoiding logs with the null values. On the other side for

aggregate trade balance same procedure is adopted while taking the aggregate imports and exports of Pakistan.

3.3.2.2.Exchange Rate

Three kinds REER, NEER, country wise exchange rate in real terms has been utilized in past investigations. The real exchange rate is significant in this examination since it estimates the CPI (cost) of one country as far as another nation CPI (cost).

$$RER = (NER \text{ of pakistan} \div NER \text{ of its trading partner}) * \frac{Pi}{Pd}$$

Here we have divided the nominal exchange rate of Pakistan with the nominal exchange rate of each trading partner in order to acquire the real exchange rate of Pakistani rupee as US dollar, multiplied by pi and pf; Where Pi and Pf are the price level in foreign and domestic nation utilizing the CPI of related countries.

3.3.2.3. Real Gross Domestic Product(Foreign and Domestic)

Real GDP is described as the final worth of total level of goods and services which are produced within the border of Pakistan or its trading partners. Under this study in order to find the values of real gdp; Nominal GDP is divided by GDP deflator of Pakistan or trading partner. Where

$$Yd = real \, GDP \, of \, pakistan$$

$$Yi = real \, GDP \, of \, trading \, partner, \, i = 1,2,3\ldots\ldots n$$

3.3.2.4. Real Exports

Sale of goods and services to another country is called exports. When the nominal exports with its trading partner are divided by domestic price index of exports(base year,2010=100) of Pakistan.

3.3.2.5. Real Imports

Purchase of goods and services from another country is called imports. Where the nominal imports from its major trading partnesr are divided by domestic price index of imports(base year, 2010=100) of pakistan. Same procedure is adopted for aggregate real exports and imports.

3.3.2.6. Interest Rate

Variations in loan fee influences the worth for money and dollar exchange rate. However loan costs, and inflation are totally associated.when there is an Expansion in loan fees cause a country's money to appreciate because higher financing costs give higher rates to moneylenders, accordingly attracting more foreign capital, which causes an increase in rates rates.

3.3.2.7. Aggregate Foreign GDP

Aggregate foreign GDP is calculated by weighted sum of foreign countries' GDP. Where the weights are the share of each country trade in Pakistan total trade.

3.3.3. Mode of Data Analysis

The secondary data is analyzed through the aid of Computer software; Microsoft Excel,Eviews, and STATA. However the qualitative analysis is done through face-to-face interview method.

Chapter 4

Results and Discussion

4.1. Introduction:

The main aim of this chapter is to investigate the country level J curve using dynamic hetrogenious panel technique for checking aggregate biasedness and panel ARDL approach for investigating the devaluation impact on trade balance. The first section shows the results of test for ADF unit root. The other section presents results for bound test, while third section shows the comparison of aggregate and bilateral trade elasticities results. Finally Fishers-ADF unit root test has been employed than the imports, export elasticities and trade results are discussed after removal of aggregate biasedness.

4.1.1. Results of Test for Unit Root

Initial step of examination was to check the stationarity of the information. Along these lines, prior to continuing to the data analysis examination, stationarity of the variables remembered for current investigation was checked. The outcomes for ADF unit root test are introduced in Table 4.1.

Table 4.1: Results for Fisher ADF unit root test for Panel data

Variable	At level	At 1st difference	Conclusion
LnREXP	0.41	0.00	Integrated(1)
LnRIMP	0.41	0.00	Integrated(1)
LnRER	0.22	0.003	Integrated(1)
LnRGDPF	0.99	0.0002	Integrated(1)
LnRGDPD	0.57	0.00	Integrated(1)
IR	0.19	0.002	Integrated(1)

Is Significance level at 5%

Results in the Table 5.1 show that every one of the variable are significant at first difference. Order of integration is controlled by unit root test. The degree of significance is 5%. Results demonstrate that at order I (1) all variables are stationary .

4.1.2. Results Of Bound Test

If the variables are I(2) than F-test results would provide spurious results **(Quattara, 2004),** hence firsly we have ensured that no variable is I(2). Secondly we have found the VAR order selection criteria which indicate that the model for import and export elasticity possesses order 1 under Schwarz selection criteria, hence our specific model will be based on ARDL(1 1 1 1). Further both the models possess normal distribution, no autocorrelation and no hetroscedasticity. Now we have applied bound test approach, given the lower and upper bound value of F-statistics (**Pesaran et al. (2001)).** The null hypothesis shows that there is no long run relationship among the variables against the alternate hypothesis that there is long run relationship among the variables.The results

indicate that Fcritical >F-cal(4.11>3.67) at 5% level of significance for model of import elasticity, hence we can conclude that we reject null hypothesis means that there is long run relationship among the variables. However in case of model of export elasticity results indicate that Fcritical >F-cal(3.32>3.2) at 10% level of significance, hence we reject null hypothesis means that there is long run relationship among the variables.

4.1.3. Comparison of Aggregate and Disaggregate Results

Initially in this section comparison of the results of aggregate trade elasticities and disaggregate trade elasticities is explained and conclude that the coefficients results are biased in aggregate data.

4.1.3.1. Results at Aggregate Level

The estimated results for export and import elasticity at aggregate level is discussed by their equations using aggregate data from 1987-2020.

4.1.3.1.1. Results for Export Elasticity

Initially the results in case of export demand function are explained using 4.1 and 4.2 equations in long run and short run respectively. The specification that is selected as ARDL (1 1 0 1):

long run relationship

$$\text{Ln(rexp)} = 2.78 + 0.63.\text{ln(RE ER)} + 0.91.(\text{lngd pf}) + 0.001.(\text{ir}) \tag{4.1}$$
$$(\text{P - value}) \quad (0.44) \qquad (0.31) \qquad\qquad (0.00) \qquad\qquad (0.95)$$

Short run relationship

$$\Delta\text{ln(rexp)} = -0.41.\text{ECM} - 0.40.\Delta\text{log(REER)} - 0.018.\Delta(\text{ir}) \tag{4.2}$$
$$(\text{P - value}) \qquad (0.00) \qquad (0.27) \qquad\qquad (0.02)$$

The primary thing that is predicted from the outcomes is positive insignificant certain coefficient of REER means that The positive sign for price elasticity could be because of omission of some significant factors that are decidedly connected with both the exports and the real exchange rate in aggregate data. One such factor come to mind is industrial production(supply side factor). As noted stock is significant determinant of exports in little nations, and this is especially clear in Pakistan. Since industrial production is decidedly connected with the REER and with the export, its omission could increase the REER coefficient upwards. Whereas the foreign income(lngdpf) and interest rate(ir) are also showing positive significant and insignificant relationship respectively means that increase in foreign income will increase the demand for exports of Pakistan in the long run because it Will increase the demand for exports if the income of trading partner will increase**(H.Hina, 2020).** Devaluation and interest rate has negative insignificant and significant relationship respectively with real exports means that rsing interest rates attract foreign funding in the short run, however foreign income has been removed in the short run from model automatically. The results including industrial production can be explained with the short run and long run equations:

$$\text{Ln(rexp)} = 2.40 + 0.62.\text{ln(RE ER)} + 0.92.(\text{lngd pf}) - 0.001.(\text{ir}) + 0.12(\text{ln } IP) \qquad (4.1.1)$$
$$(\text{P - value}) \quad (0.60) \quad (0.34) \qquad (0.00) \qquad (0.98) \qquad (0.048)$$

Short run relationship

$$\Delta\text{ln(rexp)} = -0.40.\text{ECM} - 0.42.\Delta\text{log(REER)} - 0.019.\Delta(\text{ir}) \qquad (4.2.1)$$
$$(\text{P - value}) \quad (0.002) \qquad (0.25) \qquad (0.25)$$

The positive and significant coefficient of the industrial production over the long run gives some proof for the theory that supply factors increases the total Pakistani exports. The GDP coefficient increases somewhat, to 0.92, interest rate and the REER coefficient remains insignificant when

the industrial production is incorporated. Subsequently, these outcomes would recommend that Pakistani exports are profoundly income elastic, expanding by 0.92% when foreign income increases by 1%, and remains inelastic in term of devaluation, in the long run. Foreign income and industrial production has been removed automatically from the model in short run. Hence we conclude that at at aggregate level despite of inclusion of omitted significant factors aggregate bisedness has not been removed. Hence we should check whether after using country-wise data, aggregate biasedness can be removed or not?

4.1.3.1.2. Results for Import Elasticity

Second the results of the import demand function are depicted in the the short and long run equations. The specification that is selected as ARDL (1 1 0 1):

Long run relationship

$$\text{Ln(rimp)} = 0.18 + 0.41.\text{ln(RE ER)} + 1.05.\text{ln(rg dpd)} - 0.004.(ir) \tag{4.3}$$
$$(\text{P - value}) \quad (0.96) \quad (0.04) \quad (0.00) \quad (0.82)$$

Short run relationship

$$\Delta\text{ln(rimp)} = - 0.41.\text{ECM} - 0.42.\Delta\text{ln(REER)} - 0.03..\Delta(ir) \tag{4.4}$$
$$(\text{P - value}) \quad (0.00) \quad (0.22) \quad (0.00)$$

Results indicate that the domestic income elasticity is positively significant means that 1% increment in income increases the demand for imports by 1.05% while price elasticity/devaluation is positively significant as it increases the imports by 0.44% and interest elasticity is insignificant in the long-run. Devaluation has negative insignificant impact on imports, interest rate has negative significant impact on imports means that 1% increase in interest rate decreases imports demand because people will invest more instead of spending, whereas domestic income has been droped by the model in short run. Hence results are contrary to the findings of **Jovanovic, B. (2013)**

4.1.3.2. Disaggregate or Bilateral Results

This section presents disaggregated results of trade elasticities using dynamic heterogeneous panel technique.

4.1.3.2.1. Results for Export Elasticity

Pooled Mean Group

The results of the PMG estimates for the exports are shown in equation 4.5 and 4.6

Long run relationship

$$Ln(rexp) = 3.47.ln(RER) - 0.04.ln(rg\,dpf) + 0.13.(ir) \qquad (4.5)$$
$$\quad\ (0.00) \qquad\quad (0.80) \qquad\quad (0.00)$$

Short run relationship

$$\Delta ln(rexp) = -0.88 - 0.62.ECM + 1.03.\Delta ln(RER) + 0.05.\Delta ln(rgdpf) - 0.05.\Delta(ir) \qquad (4.6)$$
$$\qquad (0.57)\ \ (0.00) \qquad (0.25) \qquad\quad (0.16) \qquad\quad (0.09)$$

Mean Group

The disaggregate MG results in short run and long run are shown in equation 4.7 and 4.8.

Long run relationship

$$Ln(rexp) = 3.13.ln(RER) - 0.75ln(rgd\,pf) + 0.13.(ir) \qquad (4.7)$$
$$\qquad (0.00) \qquad\quad (0.20) \qquad\quad (0.00)$$

Short run relationship

$$\Delta ln(rexp) = 3.24 - 0.73.ECM + 0.79.\Delta ln(RER) + 0.54.\Delta ln(rgdpf) - 0.06.\Delta(ir) \qquad (4.8)$$
$$\qquad (0.38)\ \ (0.00) \qquad (0.31) \qquad\quad (0.21) \qquad\quad (0.00)$$

Dynamic Fixed Effect

the DFE results are shown below

Long run relationship

$$Ln(rexp) = 3.38.ln(RE\,R) - 0.59..ln(rgdpf) + 0.13.(ir) \qquad (4.9)$$
$$(P\text{-}value) \quad (0.00) \qquad (0.35) \qquad (0.00)$$

Short run relationship

$$\Delta ln(rexp) = -0.15 - 0.59.ECM + 0.36.\Delta ln(RER) + 0.15.\Delta ln(rgdpf) - 0.02.\Delta(ir) \qquad (4.10)$$
$$(P\text{-}value) \quad (0.34) \quad (0.00) \quad (0.45) \qquad (0.11) \qquad (0.25)$$

Table 4.2: Hausman test results for export model

Variable	Coefficients		difference	S.E
	MG	DFE		
Lnrer	3.13	3.38	-0.25	18.71
Lnrgdpf	-0.75	-0.16	-0.59	11.87
Ir	0.132	0.134	-0.002	0.66
Chi.square probability>0.05 i.e 0.9999				

As a matter of first importance, we look at the MG and the PMG assessors, and utilizes the recognizable Hausman test to segregate between MG and PMG. Specifically, under the null hypothesis that the cefficients are homogenious where the pmg estimates are effective and predictable, while the MG are just consistent. Then again, In the long run coefficients are diverse between cross areas, the pmg is conflicting, while mg is as yet reliable. While contrasting between PMG and MG we are using the hausman test whose results (=-2.66 chi2<0.05) indicate that the difference between PMG and MG is statistically significant so we prefer MG in our case. Now further we compare MG and DFE whose results (Prob>chi2 = 0.99) shows that we prefer DFE which means aggregate biasedness has been removed as supported by theory.

Concerning the biasedness at aggregate level , when DFE is preferred more than MG means there is no aggregation biasedness in the elasticity of export. Contrasting DFE results with the Results acquired from aggregate data, it can be noted that the price, income and interest elasticity from the aggregate data are showing biased coefficients, the income elasticity was 0.91(significant), instead of -0.59(insignificant), devaluation was estimated at 0.63(insignificant), instead of

3.38(significant), while interest elasticity was estimated at 0.001(insignificant) instead of 0.13(significant). Hence coefficients of export demand are biased in aggregate data.

4.1.3.2.2. Results for Import Elasticity

Pooled Mean Group

The results of the Pooled mean group for the imports demand are shown in equation 4.11 and 4.12.

Long run relationship

$$\text{Ln(rimp)} = 4.51.\text{ln(RE R)} + 1.68.\text{ln(rg dpd)} + 0.07.\text{(ir)} \qquad (4.11)$$
$$\quad\ \ (0.00) \qquad\qquad (0.00) \qquad\quad (0.00)$$

Short run relationship

$$\Delta\text{ln(rimp)} = 0.85 - 0.54.\text{ECM} + 0.59.\Delta\text{ln(RER)} + 1.62.\Delta\text{ln(rgdpd)} + 0.03.\Delta\text{(ir)} \qquad (4.12)$$
$$\qquad\quad (0.00)\ \ (0.00) \qquad (0.05) \qquad\qquad (0.03) \qquad\qquad (0.00)$$

Mean Group

The disaggregate MG results are shown in equation 4.13 and 4.14.

Long run relationship

$$\text{Ln(rimp)} = 4.45.\text{ln(RE R)} + 2.004.\text{ln(r gdpd)} + 0.08.\text{(ir)} \qquad (4.13)$$
$$\quad\ \ (0.00) \qquad\qquad (0.00) \qquad\qquad (0.00)$$

Short run relationship

$$\Delta\text{ln(rimp)} = 0.84 - 0.74.\text{ECM} - 0.23.\Delta\text{ln(RER)} + 0.96.\Delta\text{ln(rgdpd)} + 0.01.\Delta\text{(ir)} \qquad (4.14)$$
$$\qquad\quad (0.00)\ \ (0.00) \qquad (0.40) \qquad\qquad (0.04) \qquad\qquad (0.16)$$

Dynamic Fixed Effect

The DFE results are shown in equation 4.15 and 4.16.

Long run relationship

$Ln(rimp) = 3.45.ln(RE R) + 1.96.ln(rg dpd) + 0.72.(ir)$ (4.15)

(P - value)   (0.00)   (0.00)   (0.06)

Short run relationship

$\Delta ln(rimp) = 0.96 - 0.49.ECM + 0.01.\Delta ln(RER) + 1.84.\Delta ln(rgdpd) + 0.03.\Delta(ir)$ (4.16)

(P - value)   (0.00)   (0.00)   (0.02)   (0.04)   (0.08)

Table 4.3: Hausman test results for import model

Variable	Coefficients		Difference	S.E
	MG	DFE		
Lnrer	4.445	3.450	0.995	16.086
Lnrgdpd	2.004	1.959	0.045	3.828
Ir	0.077	0.072	-0.005	0.257
Chi.square probability>0.05 i.e 0.9999				

As a matter of first importance, we will look at the Mean group and the pooled mean group assessors, and will utilize the recognizable Hausman test to segregate between MG and PMG. Specifically, under the null hypothesis of coefficients are homogenious means the Pooled mean group estimates are effective and predictable, but the Mean group(MG) are just consistent. Then again, if the since a long time ago run coefficients are diverse between cross areas, the Pooled mean group is conflicting, while mean group is as yet reliable. For comparison between PMG and MG we are using the hausman test whose results (=-4.70, chi2<0.05) indicate that the difference between PMG and MG is statistically significant so we prefer MG in our case. Now further we

compare MG and DFE whose results (Prob>chi2 = 0.9998) shows that we prefer DFE which means aggregate biasedness has been removed as supported by theory.

concerning the biasedness at aggregate level, when the DFE is preferred over MG points out that there is no aggregation bias in the import trade elasticities. Contrasting the DFE results with results acquired from aggregate data, it can be observed that the price & income elasticity from the aggregate data are showing biased coofients, the income elasticity is 1.06, instead of 1.96, devaluation was estimated at 0.41, instead of 3.45, while interest elasticity was estimated at -0.004, instead of 0.72, which is explaining that there is difference in value of coefficients but the biased estimates are more in exports elasticity as compare to import elasticity due to the ignorance of supply side factor in export demand but tis biasedness is removed in bilateral trade data.

Hence results supports the arguments of **Theil (1954)**,, who characterizes it as an efficient deviation of macroparameters from the normal of the comparing microparameters **and Marquez (2005)** has argued, who examines it in the US trade in services and are contrary to the findings of **Jovanovic, B. (2013)**

4.1.4. Estimation Results of Trade Elasticities

The initial step of examination is to check the stationarity of the information. Along with these lines, prior to continuing to the data analysis examination, stationarity of the variables under consideration for current investigation was checked. To get the immediate appraisals of versatilities from the model, all variables are changed into natural log. The panel ARDL(PMG) procedure can be utilized independent of the order of variable.The requirement for testing the variable stationarity is still there in light of the fact that we can't utilize ARDL if the factors are integrated of order two **(Jalil et al. (2016).** the outcomes for ADF unit root test are introduced in Table 4.4.

Table 4.4: Fishers-ADF panel unit root test results

Variable name	At level	At 1st difference	Conclusion
LnTB	.99	.00	Integrated(1)
LnREXP	.87	.00	Integrated(1)
LnRIMP	.13	.00	Integrated(1)
LnRER	.96	.00	Integrated(1)
LnRGDPF	.00	.00	Integrated(1)
LnRGDPD	.95	.0004	Integrated(1)
IR	.91	.00	Integrated(1)

Significance at level 5%

Results referenced in the Table 4.4 show that every one of the variable are significant at first difference. Order of integration is controlled by unit root test. The degree of significance is 5%. Results demonstrate that at order I (1) all variables are stationary aside. The arrangement is supposed to be stationary at first difference when its order is I(1). In current case, all variables are integrated of order 1.

Further this part initially gives the short-run and long- run estimates of import and export demand function for sample 1987 to 2020 after that trdae equation is introduced.

4.1.4.1. Import Demand

Table 4. 5: Results for import demand

Variable	Co-efficient	Standard error	t-states	Probability
Panel-A: long run estimates				
LNRER	4.51	0.46	9.87	0.00
LNRGDPD	1.68	O.14	11.68	0.00
IR	0.07	0.02	3.49	0.55
Panel-B: short run estimates				
ECT(-1)	-0.54	0.06	-9.05	0.00
D(LNRER)	0.59	0.30	1.97	0.06
D(LNRGDPD)	-1.62	1.06	-1.53	0.03
D(IR)	0.03	0.009	3.03	0.003
C	-0.85	2.18	4.06	0.0001

The elasticities of import demand function are explained by three variables log of real imports (lnRIMP), log of real exchange rate (lnRER) and log of real domestic income (lnRGDPd). The import and export trade elasticity are estimated through ARDL (pooled mean group) model for Pakistan with its major trading partner's analysis. the long run equation is:

$$Ln(rimp) = 4.51.ln(RE R) + 1.68.ln(rg\ dpd) + 0.073.(ir) \qquad (4.17)$$

Where the short run relationship can be explained as:

$$\Delta\ln(rimp) = -0.85 - 0.54.ECM + 0.59.\Delta\ln(RER) - 1.62.\Delta\ln(rgdpd) - 0.029.\Delta(ir) \qquad (4.18)$$

The estimation results show that RER and domestic income shows positive significant impact on imports of Pakistan whereas interest rate has insignificant impact on imports from its major trading partners in long run. Results indicate that in long run one percent depreciation of real exchange rate significantly increase the real imports by 4.51 percent, which is opposing the theoretical expectations; that devaluation hinders the import level in the country, where the increase in domestic income leads to increase in imports of the Pakistan because now people have more money to spend on better quality products in the long run. However, in short run the depreciation shows an insignificant impact on imports demand. 1% increase in domestic income significantly increases the demand for import both in long-run and short-run. These results are according to the results of **Hasan and Khan (1994), YASMEEN and HAFEEZ (2018) and H.Hina(2020)** and contrary to the results of **Bano et al.(2014) and Khan et al.(2016)**. Interest rate has negative significant impact on imports means that as foreign funding attracted in the short run imports decreases by 0.029%. Moreover, in the short run, the resultant demand elasticity for imports is 0.59<1 which shows that the demand for imports behavior is price inelastic, because the major imports of Pakistan consist of finished products and raw materials that are considered essential for production(Petrolium, metals and chemicals) that are showing inelastic behavior. Hence the imports are increasing despite of devaluation of currency, which rejects the J curve phenomenon.

4.1.4.2. Export Demand

The results for demand for exports of Pakistan with its major trading partners are depicted in table 4.6.

Table 4. 6: Results for Export equation

Variable	Co-efficient	Standard error	t-states	Probability
Panel-A: long run estimates				
LNRER	3.47	0.42	8.18	0.00
LNRGDPF	-0.04	O.18	-0.24	0.80
IR	0.13	0.02	6.34	0.00
Panel-B: short run estimates				
ECT(-1)	-0.62	0.03	-18.26	0.00
D(LNRER)	0.03	0.91	1.14	0.26
D(LNRGDPF)	0.05	0.04	1.39	0.16
D(IR)	-0.05	0.03	-1.66	0.097
C	-0.88	1.56	-0.57	0.571

Elasticities of export demand function are explained by three variables log of real imports (lnREXP), log of real exchange rate (lnRER) and log of real foreign income (lnRGDPf). The long run relationship is explained as:

$$Ln(rexp) = 3.47.ln(RE R) - 0.043.ln(r\, gdpf) + 0.13.(ir) \qquad (4.19)$$

The short run equation is depicted as:

$$\Delta\ln(rexp) = -0.62 - 0.88.ECM + 0.029.\Delta\ln(RER) + 0.05.\Delta\ln(rgdpf) - 0.05.\Delta(ir) \qquad (4.20)$$

The results of export demand shows that foreign income shows negative insignificant impact on export demand in both short-run and long-run which is according to the findings of **Afzal and Ahmad (2004)**, because when foreign GDP of trading partners of Pakistan increases partners spends more on capital goods for growth purpose, which are used in production instead of primary products and exports of Pakistan consists of primary products instead of capital final goods. Where a exchange rate has significant relation to exports means that 1% increase in devaluation increases the exports by 3.47% but this rise in exports is less than the rise in imports as depicted previously, hence income received from exports is not enough to meet the income required for financing the rising imports of Pakistan. Interest rate has positive significant impact on exports because the rise in interest rate attracts foreign funding which results in investment and hence increases exports. In the short run Devaluation, foreign income has positive insignificant impact on exports whereas interest rate has negative insignificant impact on exports in the short-run. Furthermore, the estimated positive insignificant export elasticity is 0.029 in short run. hence analysis shows that the sum of short-run elasticities of imports and exports is less than one which means that marshal learner condition has been violated. Further the J. CURVE phenomenon has also been rejected due to rising imports despite of devaluation. The rise in imports due to rising devaluation is greater than rise in exports caused by devaluation, hence marshal learner condition has been violated automatically. These results are according to the results of **Ishtiaq et al.(2016)** and **H.Hina(2020)** and contrary to the findings of **Khan(1994), Bano et al.(2014)** and **Khan et al.(2016).**

4.1.4.3. Country-Wise Short-Run Import Export Elasticities

Table 4. 7: Country-wise short-run import export elasticities

Country	Export elasticity	import elasticity	ML-condition satisfied
Bangladesh	-0.30	1.52	No
Belgium	-0.26	-0.24	No
China	-0.25	-0.13	No
France	1.63	0.32	Yes
Germany	0.68	1.68	No
India	-0.18	-0.17	No
Italy	-1.03	-1.22	No
Netherland	0.30	-0.15	No
Saudi Arabia	2.31	10.76	No
Sri Lanka	-0.09	0.45	No
UK	0.73	1.27	No
US	0.40	1.45	No

Results depicted in above table indicate that the country wise sum of import and export elasticity is less than 1 and imports elasticity are greater than export elasticity in majority of the cases, which does not satisfy the Marshal learner condition, means that the devaluation have no role in improving the trade balance. However, export and import elasticity is greater than 1 or export elasticity is greater than import elasticity which means the marshal learner condition is satisfied, devaluation is improving the trade balance with France only because Pakistan is importing dairy products, honey and plastic etc from france and after devaluation due to rise in the prices of these

products decreases the imports and due to low prices of domestic products; hence rises the demand for articles of leather and cotton etc from France which in turn rises the exports. In case of United States results are matched with **Hina (2020)** findings which suggests that the reasearchers should consider structural breaks while using aggregate trade data, this will help in reducing the aggregate biasedness that comes under the aggregate trade data, otherwise they should prefer the bilateral trade data because in using country wise trade data aggregate biasedness is removed as depicted in current study results. Now the question arises that How to find the overall exchange rate devaluation impact using country level elasticity approach? So we are providing the answer in following section.

4.1.4.4. Trade Equation

The trade balance equation is estimated through ARDL (pooled mean group) model for Pakistan with its major trading partner's analysis. The results are depicted in table 4.8 and is explained using long run and short run equations.

Table 4. 8: Results of trade balance equation

Variable	Co-efficient	Standard error	t-states	Probability
Panel-A: long run estimates				
LNRER	-0.014	0.003	-4.39	0.00
LNRGDPF	0.002	O.003	0.59	0.55
LNRGDPD	-0.004	0.002	1.92	0.04
IR	0.0008	.001	8.17	0.00
Panel-B: short run estimates				
ECM(-1)	-0.39	0.097	-3.99	0.00
D(LNRER)	-0.001	0.008	-0.13	0.89
D(LNRGDPF)	-0.0002	0.0007	-0.23	0.82
LNRGDPD	-0.016	0.04	1.97	0.64
D(IR)	-0.0001	0.0004	-0.26	0.79
C	-0.01	0.0096	1.12	0.26

Long Run Relationship

$$\text{Ln(TB)} = -0.014.\ln(\text{RER}) + 0.002.\ln(\text{r gdpf}) - 0.004.\ln(\text{r gdpd}) + 0.001.(\text{ir}) \qquad (4.21)$$

Short Run Relationship

$$\Delta\ln(\text{RTB}) = 0.01 - 0.39.\text{ECM} - 0.001.\Delta\ln(\text{RER}) - 0.0001.\Delta\ln(\text{rgdpf}) + 0.016.\Delta(\text{rgdpd}) - 0.0001.\Delta\ln(\text{ir}) \qquad (4.22)$$

Here the sum of import and export elasticities of all trading partners multiplied by import and export share of all partners in total trade <1 does not satisfy the Marshal learner condition than we are able to conclude from the results given above that the balance of trade deteriorated due to devaluation of the Pak rupee. The long-run and short-run equation are enlisted above.

The estimation results of long run equation show that real exchange rate showing negative significant impact on trade balance of Pakistan from its major trading partners means that the increase in devaluation results in decrease in trade balance or further deteriorate the trade balance, whereas the foreign incom shows insignificant positive impact on trade balance of Pakistan in the long-run, domestic GDP shows negative significant impct on trade balance because increase in domestic income increases the imports which in turn results in increasing trade deficit. while interest rate has positive significant impact on trade balance means that Pakistan comes under the historical phenomenon that rising interest rate helps to improve the trade deficit, by attracting foreign fundings and increase in foreign funding increases the state owned investment in export promotion sectors which results in increasing exports, hence it improves trade balance. However, in the short run devaluation, domestic income, foreign income, interest rate has insignificant impact on trade balance. results depict that dependence on external policies i.e devaluation is unable to improve the trade balance because the trading partners are price takers from the global markets and are unable increase the demand for exports of Pakistan despite of the low price opportunities by devaluation relative to foreign prices**.** Hence the findings are according to the findings of **Rehman and Afzal(2003), Aslam and Amin(2018), Shahbaz et al.(2012), Saeed and Hussain(2013), Shah and Majeed(2014), H.Hina(2020)** and contrary to the findings of **Khan(2016) and Ishtiaq et al.(2016**). Hence we can conclude that despite of removal of aggregate biasedness, the depreciation of currency further deteriorates the trade balance and is

creating inefficiencies in the structure of economy instead of improving it, Means that the dependence on external policies i.e devaluation is unable to improve the trade balance because the trading partners are price takers from the global markets and are unable increase the demand for exports of Pakistan despite of the low price opportunities by devaluation relative to foreign prices.. Hence we reached on the conclusion that devaluation results in rise of inflation, trade shortfalls, therefore we should avoide devaluation in coming years. The outcomes of the study proclaims and recommend very strong policy shift. It can also be generalized as it may vary from across countries. The countries with lower import bills and high reserves may get benefit of devaluation policy through correction of balance of trade by promoting exports because, foreign reserves helps in smoothing the unpredictable and temporary imbalances in international trade(Hafsa Hina, Nadeem Ul Haque, 2020) and lower import bills helps in curing trade imbalances in the long run. It may vary across countries and countries with lower import bills like Switzerland, Singapore and Hong Kong, Austrailia with no/or very low tariffs on imports or countries with lower imports may get benefit from devaluation policy in curing trade deficit but this is not possible in case of Pakistan with high import bills; where Pakistan is imposing high tariff rates which ultimately results in high import bills or higher imports.

Chapter 5

Policy Review and Qualitative Analysis

5.1. Trade Policy Review

Previously the Strategic Trade Policy Framework(STPF) (2009-12, 2012-15 AND 2015-18) were failed in achieving their desired objectives due to various reasons. The 2009-10 STPF flopped basically because of mismanagement, though the 2012-15 system endured on account of government's inability to deliver the allotted funds. Further, the 2015-18 STPF was declared after a postponement of over nine months and experienced monetary smash as the public authority just delivered Rs500 million of the absolute financial plan of Rs20 billion that results in lack of implementation of this policy. The main aim of STPF was to achieve three goals till june 30, 2018:

   I.   Upgrade of yearly exports to US$ 35 Billion

  II.   Further develop Export Competitiveness

 III.   Progress from 'factor-driven' economy to 'proficiency driven' and 'development driven' economy.

 IV.   Enhance share in territorial trade

   Key Enablers: To accomplish the above focuses on, the key empowering influences are:

     a. achieve competitiveness(quality foundation, work efficiency, admittance to utilities, and level of innovative turn of events)

     b. Consistence to norms (combination of nearby and global norms, assurance of licensed innovation, and powerful and proficient questions goal component)

c. policy building (money related arrangement, tax and tariffs system, investment and industrial arrangements)

d. Market access (multilateral, territorial, and bilateral)

Pillars: STPF 2015-18 has distinguished four fundamental pillars based on (I) key empowering agents, (ii) assessment of STPF 2012-15, (iii) arising worldwide exchange situation and (iv) broad counsel with the private area and different partners. These pillars are as follows:

a. Item refinement and broadening (innovative work, value expansion, and branding)

b. Market access (upgrading share in existing business sectors, investigating new markets, exchange strategy and regionalism)

c. Institutional turn of events and fortifying (rebuilding, capacity building, and new establishments)

d. Exchange facilitation(diminishing expense of working together, normalization, also, administrative measures)

The main points of 2015-18 STPF are summarized here:

1. the current account deficit of Pakistan diminished from almost $14 billion out of 8.23% GDP 2007-08 to $3 billion out of 1.20% GDP 2013-14. This increase in the current record shortfall was ascribed to a more than dividing of the services shortfall and an impressive increment in laborers settlements. Besides, in 2013-14 the monetary record bounced back. Hence same policy remains continue in 2015-18 STPF.

2. Exports of Pakistan keep on being concentrated with farming, materials and apparel representing more than three fourths of all out trades in 2013. The biggest single import classification keeps on

being filled. The portion of produces in aggregate imports was fallen. That decrease can has been ascribed to a stifled investment climate.

3. Pakistan treated all WTO members as MFN , except Israel and India. from 2012, imports from India are directed based on a negative list of approximately 1,200 items that could not be imported..

4. Pakistan believes, framework for multilateral trade to be the foundation of trade strategy. It additionally accepts that the multilateral trade framework and preferential trade agreements (PTAs)special economic accords (PTAs) are reciprocal to each other. Pakistan was signatory toward the SAFTA. additionally, Pakistan has free trade agreements with sri lanka, Indonesia, Mauratius, China, and Iran.

5. Pakistan has made some wary strides of trade liberalization in its last review. Its normal applied MFN tax is 14.3% in 2014/15, marginally down from 14.8% in 2008. Since July 2014, Pakistan has not any tariff line which is duty free. The tariffs in Pakistan shows a fundamentally certain acceleration. 98.1% of duty lines was bound; the bound rate was 61.51%. Administrative exclusions accommodated different businesses under SRO systems stay a significant source of denying from MFN rates.

6. Notwithstanding mindful liberalization, generally speaking the tariff rates remains high, which debilitates efficiency development and establishes a hindrance to proficient allocation of resources and the combination of Pakistan into worldwide value chains. Moreover, the utilization of impromptu trade strategy under SROs stays common and seriously affect the consistency of trade policies; which is promoting the rent seeking.

7. tax concessions, providing subsidies, concessionary credit, tariff disadvantages, and rural cost and other homegrown help assist the wide scope of sectoral and general programs of exports and

production. Where the exports are dependent upon the advancement charge of 0.25%. Likewise, various horticultural products are dependent upon "administrative obligations" of 5% when exported.

8. the fundamental agrarian policy measures includes the duties, subsidies for imports and support prices for agricultural products. Vast no of agricultural policy making have been moved toward provinces Since the selection of the eighteenth protected Amendment. Various agrarian and food items have been dependent upon specially appointed measures under SROs; certain horticultural items was allowed export preclusions. Backing costs are kept up with for wheat. Pakistan was presented no notice on homegrown help to the WTO from 2008.

9. For the economy of Pakistan Constant power deficiencies and high power costs are a significant issue. Duties are planned in a way that adequately sponsors the working class because energy prices are unable to cover the power production costs.

WAY FORWARD-VISION 2025 of STPF (2015-18)

❖ Pakistan has dispatched "Vision 2025" for monetary and social improvement which depends on a (5+7) structure for development and advancement. There are seven pillars and five key empowering influences. The five key empowering agents are: (a) shared vision; (b) political security and congruity of strategies; (c) harmony and security; (d) law and order; and (e) social equity.

❖ The seven mainstays of Vision 2025 are: (a) putting individuals first; creating human and social capital; (b) accomplishing supported, native and comprehensive development; (c) majority rule administration, institutional changes and modernization of the public area; (d) energy, water and food security; (e) private area and business venture driven

development; (f) fostering a serious informative economy through esteem expansion; (g)

modernizing transportation foundation, and more prominent territorial network.

However, the STPF (2020-2025), which defines that Pakistan's objectives for exports for the following five years, will be uncovered soon by the Ministry of Commerce to the bureau for endorsement. Under this approach, the public authority plans to expand Pakistan's exports to $46 billion by the financial year 2024-2025. The goal of the policy has been expressed as working at the effectiveness of our local industries to satisfy global standards. The no of policies proposed experience been guaranteeing difficulty free refunds to the local area business and ensuring the timely payments to the local area business as a motivation to exporters. Different suggestions incorporate further developing competitiveness of manufacturing through less expensive admittance to imported crude materials, changing the tariff structure to expand effectiveness of the current homegrown exercises and reevaluating trade agreements accords to bring greatest advantages.

Quite possibly the most essential policy which the STPF (2020-2025) guarantees is diversification into new areas. Under STPF, next to each other with incorporation of surgical items, textile and leather products as well as the other top exports of Pakistan, where 26 areas have additionally been incorporated for giving extraordinary consideration for their exports. While talking about the policy, advisor said that one of the goals of the STPF is to accomplish export diversification in items other than the domestic ones. He said the export of new items particularly pharmaceuticals and engineering areas will be advanced. We will decrease our dependence on five traditional export areas; material, sports, surgical, rug and calfskin, adding that this methodology of differentiating export has additionally been upheld in the Budget 2020-21 through decrease of import obligations on crude materials and tariff legitimization. Discussing the arising areas for

trade openings, advisor said the nation's engineering items, particularly home machines are presently delivering universally cutthroat items. He added that in compatibility of the expansion strategy, the export of microwaves from Pakistan has been affirmed interestingly by Dawlance.

He said that with government support, other engineering items will before long take action accordingly. In such manner, obligations on import of TV segments have been diminished to advance manufacturing at local level. The advisor was hopeful that the consequences of the principal ever Mobile Phone Manufacturing Policy as reported by the public authority would before long get noticeable in the coming a long time as an expansion in exports of locally produced cell phones from the country.

Since November the STPF has been still in process, but it is quit promising that the cabinet will adjust it according to the prevailing global economic situation, which have been attacked by the epidemic disease, COVID. Pakistan has not been left sound by COVID, because 50% of Pakistan's exports are coordinated to the nations generally influenced by the COVID. As the major exports of Pakistan consist of textile and leather items, so in this manner we should check the monetary restoration in these nations or look to objective business sectors that don't deliver low-esteemed items locally. It is fundamental that the STPF tap in COVID conditions into its arrangements – both the harm that the COVID has caused, just as the sudden chance it could have for specific items. Certain exporters better ready to take advantage of potential exchanging connections through product diversification or by means of better export techniques may think that its simpler to revitalize their export deals.

In spite of more than 4% decline in exports, the imports expanded 1/10 to $4.6 billion keep going previous month on an annualized premise, the Pakistan Bureau of Statistics (PBS) wrote about Wednesday. Resultantly, Pakistan's trade deficit increased by 24% in February 2021 on annual

basis. The difference among imports and exports expanded to $2.5 billion in February longer than a year prior, a leap of $486 million or 24%, the PBS said. It was the second continuous month that Pakistan's exports dropped from their past levels. The $2.04 billion worth of export receipts were the least in five months. The exports had started increasing early this monetary year and topped to $2.4 billion, provoking festivals on twitter by the public authority. In any case, this end up being a short term accomplishment, as the exports again began sliding towards chronicled band of around $2 billion. Pakistan's exports have since quite a while ago stayed around $2 billion per month and the pattern didn't fundamentally change regardless of 30% money devaluation during the Pakistan Tehreek-e-Insaf (PTI) government's residency in the previous over two years. During the Pakistan Muslim League-Nawaz (PML-N) residency, the exports had topped to $2.3 billion and afterward again settled underneath $2 billion.

Apparently, huge devaluation plus regulatory import duties did not help cut costly imports on a durable basis nor encouraged import substitution in any noticeable way. Nor have exports increased to expected levels owing to the challenging domestic and international business environment created by Covid-19 and the preceding weak recovery from the 2007-2008 international financial crisis. However, the value of imports is rising double than exports. In a related Senate Standing Committee on Commerce on June 28 asked the commerce secretary to explain reasons for stagnant exports, which according to a committee member, has remained stuck at the 2013 level of $24bn in 2020-21.

A Pakistani political market analyst got comfortable the US says "while the free float of the rupee will cut the current account shortfalls, it will fuel inflation as well, and will not end current record shortage completely."

At 11 months of execution of 2020-21, the trade deficit of goods rose to $24.14bn from $19.12bn contrasted with a similar time of 2020-21. The current record surplus was decreased to $153bn with deficit increasing since December that shot up to $632bn in May. The main problems in export of merchandise persevere on both supply and demand side. Then again, exports of broadcast communications, PC and data administrations expanded by practically 48pc to $1.9bn during the period under review.

5.2. Qualitative Analysis

In order to provide the view point of concerened policy maker and researchers, as well as faculty members of Pakistan institute of development economics; the current study conducted face to face and call interviews for getting the answer of nine questions. The questions are: (1) appreciation and depriciation of currency are considered as a good measure for improving trade balance, is that going to rise inflation? (2) As we know Pakistan follows a market based ER system, in your point of view what is the impact of devaluation of currency on trade balance of Pakistan? (3)what will be the short run and long run measures that can be implemented in order to reduce foreign dependency/import reduction and increase exports? Give your suggestions. (4) how we finance our trade deficit without loss of reserves? (5) how rising interest rate is helpful in curing the trade deficit? (6) whether removing SRO's and rationalizing tariffs are good measures for improving trade balance? (7) how many products are registered for exports and less registration for exports is a cause of trade deficit? (8)devaluation helps to save reserves which were wasted to fight against overvaluation. what you think? Is that true? (9) as trade policies mostly focus on export of goods but export of services has never been the focus, what should we do for increase in export of services? And responses can be generalized as:

The discussion starts from the depreciation of currency that is considered as a good measure for improving trade balance. Whenever there is depreciation (as recently happened in Pakistan), this usually gives rise to inflation as the prices of imported goods goes up in the local currency.however others answering that whether appreciation of currency would reduces inflation because the imports of Pakistan will be available at lower prices, hence reduces inflation. This will make imports attractive, hence demand for local products would decline.

Theoretically devaluation can help check imports and promote exports. It should therefore improve balance of trade. However, practically it may not always happen if most of the imports are essential goods like food products and energy while exports are low value goods not much in demand in the international market. Where others are conflicting with first argument by saying that Improvment will be in balance of trade because it will increase exports and decrease the imports, hence Shrinkage of trade shortfalls.

In the short run, export subsidies can help boost exports. However, in the long run, it has to be higher productivity, more investment in industrialization and greater global integration. By improving regional trade and buying goods from the cheapest sources can help save on freight charges. Where others recommends that By encouraging our own talented human capital, give boost to domestic industry with public sector investment, quality imporovement, and keeping price competitive and Improving our technological push imports can be substituted in the short run where long run-make short run plans sustainable. For export promotion it is important that government should facilitate trade, should make good policies to promote exports, and improve quality of exported items. In terms of Brand loyality- if consumers buys some particular exported brand , its good for the company to stay in competition internationally.show good quality of

product, good marketing strategy and customer satisfaction by educating our exporters. Some have argued that for export promotion and imports reduction we have to remove SROs and rationalize the tariff structure in short run. Whereas in long run we have to focus on increase in productivity and improve our tax system.

We can finance our trade deficit without loss of reserve.The only option seems to be to get some of the imports on deferred payments as Pakistan often does for petroleum products. If we can increase our exports, it would also help us pay for the imports without having to deplete our reserves. Others have argued that Drag more foreign investment and Facilitate remittances channels is a good way to save our reserves. It depends that foreign reserves are reducing or not on import of type of product, in case of oil import If prices increase results in rise in inflation but its demand is not reducing, hence we have to use foreign reserves for meeting excess demand for energy products. However the speculators also causes the loss of reserves because whenever they expect that devaluation policy is going to implement they start buying and selling of currency before implementation which results in loss of reserves.

Higher interest rates curb economic activity. Therefore, there is less demand for imports and consequently lower trade deficit. Recently when the interest rates were raised substantially, GDP growth rates fell sharply. There was not much demand for imports and thus the trade deficit was considerably reduced. However others argued that High interest rate will not cure trade deficit if foreign investments are not there, so we should attract foreign investment.

Removing SROs and rationalizing tariffs is a good measure or not to improve trade balance depends on what kind of SROs are removed. If concessionary SROs are eliminated, it would reduce imports. Rationalization of tariffs to make our exports more competitive is always a good

measure as it facilitates our manufacturing industries and also help with making it more competitive.

2,824 products are exported to 194 countries and 4,039 products are imported from 208 countries (See in Pakistan exporters directory by Trade Development Authority of Pakistan) these products passed through export registration procedures. Means that we are importing approximately double than exports; a major cause of trade deficit.

It is true that devaluation helps to save reserves which were wasted to fight against overvaluation because the mechanism works with import prices. Others have argued that It depends that foreign reserves are reducing or not on import of type of product, in case of oil import If prices increase due to devaluation results in rise in inflation but its demand is not reducing, hence we have to use foreign reserves for meeting excess demand for energy products and vice versa. However the speculators also causes the loss of reserves because whenever they expect that devaluation policy is going to implement they start buying and selling of currency before implementation of devaluation policy which results in loss of reserves.

 Before COVID we were focusing only on merchandise exports but In current scenario of COVID, service export has increased . This shows high IT technology is needed.,Speaking at meetings and worldwide exchange occasions; Creating expo shows that utilization video, are intelligent, and eye-getting; Partnering with nearby organizations or business associations in foreign business sectors; Being highlighted and refered to in business and industry magazines and diaries; Showing an arrangement of undertakings with tributes that shows your great history; and Optimizing your site for foreign customers to plainly clarify your administration and pass on a comprehension of their way of life and special necessities. Thus Services exporters may require more regular contact

with expected customers to develop business. Think about the utilization of innovation stages, for

example, videoconferencing, for virtual gatherings.

Chapter 6
Conclusion and Policy Recomendations

6.1. Conclusion

The major focus of this study is to analyse the devaluation impact on trade balance. We promoted the work of Hina (2020) after adding several improvements by disaggregating the trade data. The Pakistans country wise trade with Bangladesh, Belgium, Sri Lanka, France, Germany, India, Italy, Netherland, UK, US, Saudi Arabia, China has been the subject of this study under consideration, clearing the researchers misconception that the disagreement of studies is due to the aggregate biasedness, hence in this study first of all aggregate biasedness has been checked by introducing augmented dickey fuller unit root test in order to cofirm the order of integration whether it is mixed order or not. After that bound test has been employed in order to check the long run co-integration among the variables.finally error correction model(ECM) has been employed for short run coefficients results. For comparison between aggregate and disaggregate data, dynamic hetrogenious panel technique on disaggregate data and than results are compared. Finally fishers-ADF unit root test has been employed in order to check that the panel series are I(1 or 0), After that devaluation impact on import, export elasticities and trade equation using panel ARDL approach(pooled mean group) has been checked.

Aggregate biasedness is prevailing most in export elasticity despite of inclusion of supply side factor in aggregate data, however current study results in case of united states matches with Hina (2020) findings, hence the researchers who are facing disaggrement regarding devaluation impact on trade balance should include structural breaks while using aggregate data otherwise they should rely on bilateral trade data for better results. Moreover under current study devaluation results in loss of resrves instead of policy tool in reducing the trade shortfalls. As the elasticities of trade

explains the structure of Pakistans economy, elasticity of exports shows that the export demand is less responsive to increase in devaluation as compare to import demand. It means that we are exporting the commodities by using the name of brand of other countries like basmati rice. Whereas the import demand remains inelastic to variation in RER, means that our main imports consists of capital goods which are the necessity inputs in production process like machinery and petroleum products. Hence the exchange rate policy is not making any improvement in curing the trade deficit of Pakistan, infact it is creating inefficiencies in the structure of economy by further deteriorating the trade balance of Pakistan, but focusing on rising interest rate is a better option for curing trade shortfalls.

6.2. Policy Recommendations

On the basis of analysis under current study we have derived following recommendations in order to make the trade balance better instead of devaluation misleading policy tool:

As the devaluation policy prooved a misleading policy tool in curing the trade balance because NER devaluation does not results in RER devaluation and the nominal devaluation can be successful only if domestic prices remains unchanged as compare to foregn prices, hence the policy makers should focus on monetary approach(macroeconomic stability) because as proved empirically under current study that rising interest rate attract foreign funding which increases the state owned investment in export promoting areas, hence improves trade balance, on the other side rising interest rate would help in reducing the demand for imports by increase in savings which in turn helps to improve the trade balance. The Govt and state bank should provide a plan and effective monitory policy to control inflation and devaluation of currency from Pakistan.

The policy makers should focus on the improvements toward supply side by educating exporters regarding the branding of their product in order to protect their goods in international markets like

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basmati rice, Iran and Saudi Arabia together comprise 55% of all out import market of Basmati rice. Pakistan's offer in these business sectors is 0.52% and 4.4% separately. There is an inclination for parboiled basmati rice in these business sectors. The help for import of parboiling hardware should be remembered for the Technology Upgradation. Other than the impetus branding and confirmation, backing should be given to improvement of warehousing offices for rice in Iran and Saudi Arabia. "Pakistani Basmati Rice" should be branding in both the business sectors to produce customer preferences.

In current scenario of COVID, service export has increased . This shows high Information technology progress is needed, hence technological progress should be the major part of trade policy.

As PM Imran khan said(published in times of islamabad) that the state bank has not informed the Govt before devaluation of currency and devaluation of currency is a problem and devaluation creates insfficiencies in the economy, this method should be avoided and the control of foreign exchange should be under the goverenment control and under goverenment control all exporters should be instructed to submit their foreign exchange to the central bank of Pakistan, which in turn should be divided only among the importers who are possessing import licences. Hence no one should be allowed to import without import licenses, this in turn helps to limit the imports and hence improves the trade balance as well.

 As the empirical results depict that dependence on external policies i.e devaluation is unable to improve the trade balance because the trading partners are price takers from the global markets and are unable increase the demand for exports of Pakistan despite of the low price opportunities by devaluation relative to foreign prices, hence the the Govt should have to focus on internal policies of providing effective environment for exporter and import substitution industries.We can

finance our trade deficit without loss of reserve.The only option seems to be to get some of the imports on deferred payments as Pakistan often does for petroleum products. If we can increase our exports, it would also help us pay for the imports without having to deplete our reserves.

The outcomes of the study proclaims and recommend very strong policy shift. It can be generalized as it may vary from across countries across countries and countries with lower import bills like Switzerland, Singapore and Hong Kong, Austrailia with no/or very low tariffs on imports or countries with lower imports may get benefit from devaluation policy in curing trade deficit.

6.3 Future Research Directions

Current study has focused on disaggregated country level overall devaluation impact on trade balance which can be disaggregated further for industry level devaluation impact on trade balance with its all major trading partners. Further a study can be done by testing the devaluation impact on trade balance at aggregate level with all its major trading partners, by introducing structural breaks.

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