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Balance of Payments Constrained Growth in Pakistan - Implications for Development Policy

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Balance of Payments Constrained Growth in Pakistan - Implications for Development Policy

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Abstract

This study examines relevance of Thirlwall's Law (1979) for Pakistan which states that in the long run no country can grow faster than the rate consistent with balance of current account, unless it can finance ever-growing deficits. Descriptive analysis shows that worsening of external sector balances leads to slowdown in growth rate. Different estimations of growth rate using ARDL regression analyses also suggest that Pakistan's long run growth is at least partly BOP constrained. Major factors for this constraint are stagnant primary structure of exports, relatively inelastic demand for imports and deteriorating terms of trade. Relaxing external constraint requires structural transformation; however, political economy of stabilization process results in stability without reforms and thus leads to vicious cycle of crises. It is argued that dynamic manufacturing sector is key to long-term development; and Pakistan should pursue dynamic comparative advantage as it is in consonance with historical global experiences of successful developments.

JEL Classification: E12, F43, E63
Key Words: Growth Rate, Balance of Payments Constraint, Post-Keynesian, Stabilization

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Non-technical Summary

Economic literature suggests that Pakistan needs to grow at least 7% per annum to provide jobs to newly entering youth in the labor market. However, Pakistan's actual growth rate since 2008 is only 3.9%. This markedly less than desired growth rate can convert potential demographic dividend into demographic disaster.

Thirlwall's law (1979) says that in the long run no country can grow faster than the rate consistent with the balance on current account, unless it can finance ever growing deficits. Following this post-Keynesian approach, this paper argues that Pakistan can't sustain high growth rate because of balance of payments constraint on effective demand. Declining exports to GDP ratio as well as repeated episodes of slowdown in economic growth following a balance of payments crisis show relevance of this approach in the case of Pakistan.

For empirical evaluation, this study takes annual data over the period 1980-2017. Using Autoregressive Distributive Lag (ARDL) regression analysis, it finds that balance of payments constrained growth rate is 4.2%. In other words, external account will become unsustainable as growth rate will start moving above this level, *ceteris-paribus*. Results show that declining terms of trade also put significant downward pressure on economic growth.

This study postulates that because of the way economic and political forces interact in Pakistan, repeated IMF programs do achieve stability but reforms remain incomplete. It gives rise to a myopic outlook and results in lower R&D and long run investment expenditures. This makes future crisis a self-fulfilling prophecy by further reducing exports and growth potential. This vicious cycle of crisis is put forward as an explanation for Pakistan's deteriorating terms of trade as well as declining exports and growth potential.

Within the framework of this study, if sufficiently high growth to accomodate increasing labour force is to be achieved then Pakistan needs to relax external constraint on growth by improving terms of trade, increasing income elasticity of export demand and/or decreasing income elasticity of import demand. Based on the understanding of historical episodes of economic development, this study suggests that Pakistan should pursue dynamic comparative advantage wherein successful import substitution precedes export oriented strategy for economic growth.

1. Introduction

Pakistan's economy needs to grow at a minimum 7 percent per annum, that is also long run growth target set by the government, to provide jobs to newly entering youth in labor market (Framework for Economic Growth, 2011; Pakistan Economic Survey, 2015-16). However, Pakistan's growth rate since 1980 has averaged 4.91 percent and stood at merely 3.90 percent from 2008-18. In a country of 212 million with about 64 percent population under the age of 30 (UN Population Statistics), this markedly lower GDP growth rate means supposed demographic dividend may end up in a demographic disaster. Therefore, it is pertinent to explore why Pakistan has failed to achieve long run growth target to identify structural bottlenecks and design optimal policy.

Pakistan had experienced periods of high economic growth, sometimes exceeding current long run target of seven percent. From 1961-70, average GDP growth rate was 7.24 percent and it had better economic prospects than most Asian Tigers. Economic performance was relatively better in 1980s as average growth rate stood at 7.08 percent from 1980-88. Similarly, in mid 2000s, at one point it was only second to China in growth rate and average growth rate from 2003-07 was 6.18 percent. During the latest spurt in economic growth, it peaked at 5.8 percent in 2017-18 before taking a nosedive.

All these episodes show two things. *First*, peak as well as average growth rate for successive boom periods has declined that suggests steady erosion of long run growth potential. *Second*, Pakistan can certainly achieve higher growth rate but fails to sustain it for a longer period, and that is what differentiates it from Asian Tigers. Hence, problem is with both trend and cyclical components of growth. This leads to next question: Why Pakistan has failed to sustain high growth rate?

There is a multitude of factors, with possibility to frame within different theories and models, that can help explain Pakistan's inconsistent economic performance. However, one of the most convincing and plausible explanations comes from Balance of Payments Constraint Growth (BPCG) model. BPCG model states that in the long run no country can grow higher than the rate that is consistent with balance of current account, unless it can finance ever-growing deficits (Thirlwall, 1979). A balance of payments (BOP) constraint emerges when higher growth rate is achieved through domestic demand management policies that increases imports but does not affect exports. Assuming net capital flows are negligible, the resulting trade deficit cannot be sustained in the long run. External financing can only provide short run relief because rising level of external debt increases country risk and makes borrowing costly. One effective way to address this deficit in the short run is to slowdown economic activity, ceteris paribus. Hence, BOP constraint impedes sustainability of higher economic growth rate.

Stylized Facts

Pakistan has never run a trade surplus from 1980-2018. Although most of the times net inflows of capital and remittances compensated negative impact of trade deficit on current account, there are recurrent episodes when it led to BOP crisis. After liberalization of the economy in early 1990s, foreign reserves averaged for 1.76 months of import bill from 1993-2000, well below satisfactory level of three months, and average growth rate plummeted to 3.35 percent. Table.1 presents five episodes when growth rate declined below 4.8 percent that is also approximately equal to actual average growth rate. Each time, average current account deficit (CAD) as percentage of total foreign earnings (TFE) for period 't' and 't-1' jumped significantly above the historical average while foreign reserves (Res) fell markedly short of

standard benchmark of three months import bill. Fig.1 shows that CAD as percentage of GDP in time 't' is almost mirror image of GDP growth It supports our claim that build-up of CAD translates into BOP constraint and leads to decline on GDP growth.

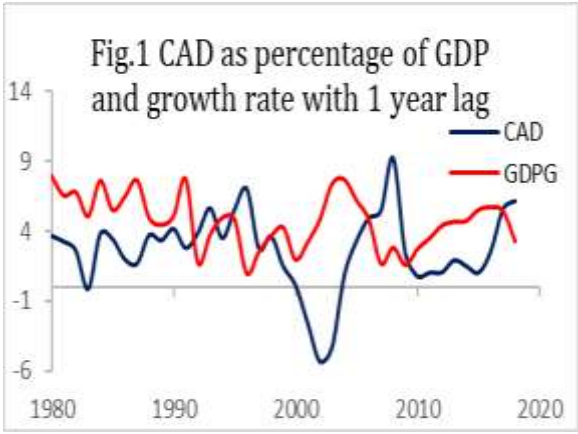


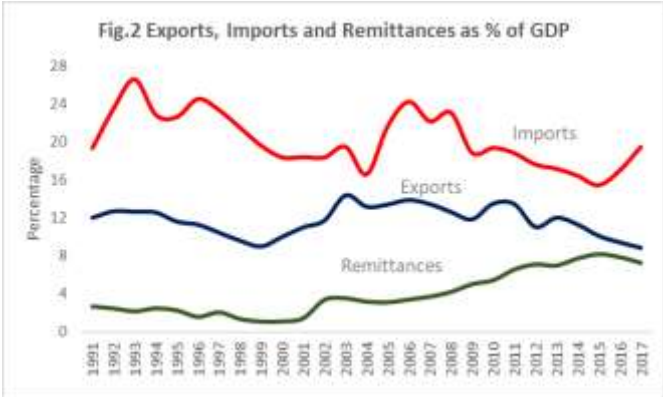
Table.1 BOP Components as percentage of TFE when Growth Rate fell below 4.8

Period	CAD	TAD*	FAD*	Res	ΔY
1989-90	16.0	34.7	17.8	1.1	-0.5
1992-93	21.3	33.3	20.8	1.8	-5.9
1996-97	22.6	31.1	22.2	1.4	-3.8
2007-08	32.6	52.2	32.2	2.0	-3.1
2018-19	34.8	68.4	35.4	1.9	-3.9
1980-19	12.4	36.5	11.2	3.0	-

*TAD=Trade Account Deficit; CAD=Current Account Deficit.

Similarly, last two consumption-led booms (2003-07 & 2014-18) ended after reserves depleted to 2.02 and 1.92 months of import bill and current account deficit reached at 8.4 and 6.3 percent of GDP, respectively. Each time Pakistan entered in an IMF program for structural adjustment and focus of government policy shifted from growth to macroeconomic stability. For example, Pakistan Economic Survey (2007-08) states that *'top priority of government is correction of imbalances through shaving off aggregate demand by appropriate policies'*. Similarly, Pakistan Economic Survey (2018-19) states that *'foremost challenge to the economy is the rising aggregate demand without corresponding resources to support it, leading to rising fiscal and external account deficits*' and to address it '*government has introduced a comprehensive set of economic and structural reform measures'*. This analysis can help us draw two conclusions: i) successive IMF programs have succeeded in bringing stability without reforms; ii) Current account deficit is the perennial underbelly that does not allow sustaining high growth rate once achieved.

Within current account, Pakistan has three major components i.e. imports, exports and remittances. Since 2000, remittances have grown from 1.13 percent to 7.3 percent of GDP. Imports have stayed on average around 19 percent of GDP with occasional big jumps acting as prelude to external crisis. However, exports as percentage of GDP have steadily declined from 14.4 percent in 2003 to 8.9 percent in 2018. It means Pakistan's Achilles' heel is poor performance in exports, so any long run solution to relax BOP constraint must contain measures to increase exports growth.



Literature on Pakistan's economic growth is predominantly focused on supply constraints. This paper builds on Felipe et al. (2009) to appreciate role of aggregate demand in determining Pakistan's long run

GDP growth. Apart from estimating standard model for latest data, this study modifies BPCG model to allow capital flows to finance CAD so that estimates are more realistic and reliable.

The rest of the paper progresses as follows. Section two describes BPCG model. Section three discusses literature review. Section four is data and methodology while section five presents estimation and results. Section six analyzes reasons for Pakistan's BOP constraint and discusses policy implications. Section seven provides conclusions.

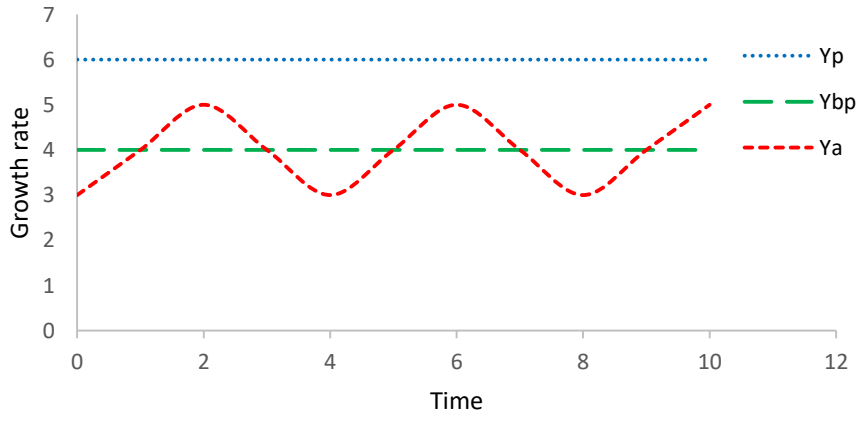
2. Balance of Payments Constraint Growth Model

In a simple closed economy Keynesian model, full employment equilibrium requires that planned savings (leakages) are equal to planned investment (expenditures). However, in an open economy framework, another important constraint arises when exports earnings fall short of financing full employment imports. Harrod (1933) states that if terms of trade are constant and exports are less than imports (X<M), then, like Keynesian models, output (Y) will adjust to restore BOP equilibrium. In Harrod's static economy model, $Y=X/\mu$ where μ is propensity to import and $1/\mu$ is foreign trade multiplier. Thirlwall (1979) revived Harrod's analysis and developed Dynamic Harrod foreign trade multiplier, also known as BPCG model. Following is a beautiful articulation of this idea:

"At any given time there is a certain level of domestic spending at which . . . the balance of payments on current account would be in balance. We may call this the level of spending 'warranted' by the country's performance in foreign trade . . . While swings of fiscal and monetary policy . . . have influenced the level of spending from year to year, in the longer run the main determinant was the spending level 'warranted' by the economy's performance in foreign trade." (Cambridge Economic Policy Group, 1981, pp.10-11).

BPCG model presumes underutilization of capacity and claims that effective demand "drives" economic system, to which supply, within limits, adjusts. If actual growth rate is higher than BOP consistent growth rate ($y_A > y_{BP}$), then output will contract to adjust BOP imbalances. To put it simply, growth rate will be BOP constrained if Y_A is consistent with Y_{BP} but lower than the potential rate of economic growth (y_P). Fig.3 below presents graphical illustration of BOP constraint growth.

Fig.3: Balance of Payments Constraint Growth



Harrod's static foreign trade multiplier and Thirlwall's dynamic foreign trade multiplier are based on similar assumptions (Thirlwall and Hussein, 1982). BPCG models has following three equations:

$$P_t X + R + F = P_t^m M \quad - \text{BOP} \tag{1}$$
$$X = A.Z^{\varepsilon}(\text{REER})^{\Psi} \quad - \text{Exports} \tag{2}$$
$$M = B.Y^{\pi}(\text{REER})^{\eta} \quad - \text{Imports} \tag{3}$$

Where P_xX, P_mM, R and F are values of exports, imports and net remittances & capital flows, respectively. Z and Y are world and national income respectively. REER is real effective exchange rate. Similarly, ε and π are world income elasticity of demand for national exports and national income elasticity of demand for imports whereas Ψ and η are price elasticity of export and import demand, respectively. A & B are constants.

Writing Equation (1 – 3) in growth rate form and solving Equation (1), after substituting Equation (2&3), yields following equation (See Appendix-A):

$$y = \frac{\theta\ \varepsilon z + (\theta\ \Psi - \eta)\ (\text{reer}) + \theta_r(r - p\ ) + \theta_f(f - p\ ) + (p\ - p_m)}{\pi} \tag{4}$$

Here θ_x, θ_r, and θ_f denote share of exports, remittances and capital flows in total foreign earnings respectively and $\theta_x + \theta_r + \theta_f = 1$. As noted above, BOP consistent growth rate is the one that can be sustained in the long run without capital flows i.e. $\theta_f = 0$. Hence,

$$y_{BP} = \frac{\theta_x \varepsilon z + (\theta_x \Psi - \eta)\ (reer) + \theta_r(r - p_x) + (p_x - p_m)}{\pi} \tag{5}$$

If we assume that (i) terms of trade remain constant and (ii) $\theta_r=0$, Equation (5) will reduce to the following:

$$y_{BP} = \frac{\varepsilon z\ +\ (\Psi -\ \eta)\ (\text{reer})}{\pi} \tag{6}$$

Now if changes in reer are negligible, we will get the following expression:

$$y_{BP} = \frac{\varepsilon z}{\pi} \tag{7}$$

Equation (7) is also called strong version of Thirlwall's law because it allows changes in reer to have an impact on exports growth. If this effect is equal to zero, we will have weak version of Thirlwall's law:

$$y_{BP} = \frac{x}{\pi} \tag{8}$$

The difference between weak and strong version is the nature of exports variable: former considers exports as deterministic variable and later considers exports as stochastic that need to be measured separately (Perraton, 2003). This is a demand-led post-Keynesian model to the extent that an increase in exports growth, by relaxing the BOP constraint, allows a faster growth of effective demand and, hence, output.

The parsimonious nature and an alternative to neoclassical growth theory are plausible but it has also made BPCG model subject to a rich critique. McCombie (1981) argues that Thirlwall's law is a tautology. However, inclusion of relative prices means it is a behavioral relationship rather than an identity and can be refuted (Thirlwall, 1981). Statistically significant and large coefficients in a neoclassical and post-Keynesian world should be of relative prices and income, respectively. Another criticism is that neoclassical 'law of one price' implies little observed variation in relative prices of identical tradable goods and infinitely large export price elasticities for a small country and, therefore, growth cannot be BOP constrained (McGregor and Swales, 1985). However, this line of reasoning is inconsistent with many studies where relative prices show significant variation but associated price elasticities are low. On the other hand, contrary to conventional wisdom, income elasticities of export demand are large and significant. Secondly, even if Marshall-Learner (ML) conditions are satisfied, a permanent increase in exports growth and decrease in imports growth requires a continuous exchange rate depreciation that is implausible.

Thirlwall's law has two different interpretations: first, $y_{BP}$is the growth rate that will preserve BOP equilibrium; second, y_{BP} is the growth rate toward which economy will converge (Lavoie, 2014, p.521). The former enjoys almost universal acceptance but the latter is controversial. Krugman (1988) rediscovered Thirlwall's law and called it 45-degree rule (because of the empirical regularity showing that when log $(\mathcal{E}/\pi)$ is regressed on $\log(z/y)$, the coefficient is unity). He rules out sustained changes in exchange rate as a significant mechanism to achieve BOP equilibrium; however, he also refute post-Keynesian argument that growth rate adjusts to ensure BOP equilibrium as "fundamentally implausible". Krugman reiterates neoclassical explanation that "differences in growth rates among countries are primarily determined in the growth rates of total factor productivity" and find it "hard to see what channels link BOP due to unfavorable income elasticities to total factor productivity growth". In fact, he argues, faster growth and increased specialization leads to higher export elasticities of demand i.e. causality is reversed. However, post-Keynesian economists have identified various mechanisms such as circular and cumulative causation models (Myrdal, 1957), embodied technical progress function (Kaldor, 1957), leaning by doing, scale economies, Verdoorn's law (1949), etc., that produce fast productivity growth in countries where exports and output growth are fast. Dutt (2002) argues that differences in income elasticities of import demand may affect growth trajectories of different countries. Similarly, transitional economies can experience underutilization of capacity because home consumption of goods produced in those units will increase imports while export market for those goods has not yet developed.

Although post-Keynesians emphasize that BOP constraint operates through effective demand, it does not mean that supply-side factors do not matter. Perhaps the only effective way to increase long run growth, within BPCG framework, is to either make exports more attractive (raise ε) or make imports less attractive (lower π), which is also called 'supply-side Keynesianism' (Setterfield, 2012). The alternative is faster growth rates throughout the world i.e. 'global Keynesianism'.

3. Literature Review

Most studies to understand external sector dynamics and improve BOP have focused on assessing impact of exchange rate devaluation policies. The most common practice is to estimate price elasticities and test Marshall-Learner (M-L) conditions. For example, Afzal and Ahmad (2004) use cointegration analysis on time-series data stretching from 1960-2003 and conclude that M-L conditions satisfy, however, trade

balance does not improve significantly because devaluation may have set in motion other forces that neutralize its positive effects. Similarly, Aftab (2002) use cointegration and error correction model to estimate log-run and short-run impacts of devaluation policy and find J-curve effects.

The relationship between GDP growth and exports & remittances is also explored. For example, Hameed et al. (2012) use annual data from 1960-2009 and apply Granger causality analysis to find unidirectional causality from GDP to exports. However, Memon et al. (2008) find strong backward linkages and bi-directional causality between total exports and agriculture sector GDP growth. Ammed et al. (2011) employ time-series data from 1976-2009 and using bound-test approach find that remittances inflows impact GDP growth significantly in both short and long run.

In recent years, economists have studied Pakistan's external sector quandaries using post-Keynesian BPCG approach. For example, Felipe et al. (2010) use annual time-series from 1980-2008 and find that BOP consistent growth rate is 5.05 percent, marginally below actual growth rate of 5.31 percent but markedly lower than target growth rate of 7-8 percent. They also find that income elasticities are higher than price elasticities and M-L conditions do not satisfy. Similarly, Rosbach and Aleksanyan (2019) estimate that BOP consistent growth rate is 3.8 percent using annual time-series data from 1980-2017. They attribute decrease in BOP consistent growth rate to lower exports growth and argue for structural reforms to improve exports performance.

4. Data and Methodology

Testing of Thirlwall's law requires estimation of export and import demand functions. For this purpose, we take time-series data for imports, exports, effective exchange rate, domestic and domestic & world GDP. However, a realistic calculation ofy_{BP} also requires time-series for net remittances, terms of trade and capital flows. All series are real and range from 1980-2017.

We check series stationarity with Augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1981). In ADF test, a failure to reject null-hypothesis means series is non-stationary and has a unit root. Table.2 shows that on levels only GDP is stationary while all series are first difference stationary (at 5%). Similarly, all series are of AR (1) process and inverse roots strictly lie inside the unit circle. It means our estimations are dynamically stable.

The purpose of econometric exercise is to estimate long run price and income elasticities for export and import demand. Engle and Granger (1987) and Johansen and Juselius (1994) are commonly used procedures to estimate cointegrating relationship. These approaches require that all underlying series have same order of integration; however, as noted above, this condition does not satisfy in our case. Therefore, we used autoregressive distributive lag (ARDL) modelling approach that is applicable when underlying series have different order of integration but none of the series is integrated in second order. A simple ARDL model (p, q_1, q_2,…,) with dependent variable y_t and independent variables (x_1,x_2,….x_k) can be written as follows:

$$y = \alpha_0 + \alpha_1.t + (x + a)^n \sum_{i=0}^{p} \Psi_i y_{t-i} + \sum_{j=1}^{k} \sum_{l_j=0}^{q_j} \beta_{j,l_j} x_{j,t-l_j} + \epsilon \qquad (9)$$

Where α_0 is constant, and α_1, Ψ_i, and β_{j,I_j} are coefficients associated with linear trend t, lags of y_t and lags of k regressors for $x_{j,t-I_j}$ for j = 1, 2, …., k respectively. ARDL modelling has certain advantages over other approaches. It allows different variables to have different optimal lags. All variables are endogenous and residual correlation is not a problem. Single equation set up makes it parsimonious and easy to implement and interpret. It is especially relevant for small samples as in our case. Similarly, simple linear transformation can produce error correction model (ECM) that integrates short-term adjustment with long-term equilibrium while keeping long run information intact.

5. Estimation of BPCG Model

As mentioned above, BPCG model tests for weak and strong versions of Thirlwall's law. The former treats exports as deterministic and only requires estimation of import demand function; however, exports are stochastic in the latter and it requires estimation of export demand function as well.

5.1 Test for Weak Version of Thirlwall's Law

The first step is to estimate import demand function given as given in Equation (3). The optimal model selection is based on Schwartz Information Criterion (SIC) as it imposes relatively high penalty for degree of freedom lost, as compared to Akaike Information Criterion (AIC), and considered favorable for parsimonious specifications. We began with sufficiently large model comprising four lags of each variable and used general-to-specific methodology to arrive at the following best model:

$$\Delta \boldsymbol{lnM} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}.\boldsymbol{lnM}(-\mathbf{1}) + \boldsymbol{\beta_2}.\boldsymbol{lnY}(-\mathbf{1}) + \boldsymbol{\beta_3}.\boldsymbol{lnREER}(-\mathbf{1}) + \boldsymbol{\delta_1}.\Delta\boldsymbol{lnM}(-\mathbf{1})) + \boldsymbol{\partial_1}.\Delta\boldsymbol{lnY}(-\mathbf{1}) \quad \textbf{(10)}$$

Table.3 presents regression output of import demand estimation. The pre-requisite to calculation of long run elasticities is cointegration i.e. presence of long-run relationship. The calculated F-statistic from Wald test (H_0: $\beta_1 = \beta_2 = \beta_3 = 0$) is 5.40 that is above the interval of critical values (3.79-4.85) at the 95% level of confidence. Hence, we reject the null hypothesis of no cointegrating relationship and estimate elasticities as shown in Barsden (1989). The income elasticity of import demand is $\pi = -(\beta_2/\beta_1) = -(0.42/-0.51) = 0.82$ and price elasticity of import demand is $\eta = -(\beta_3/\beta_1) = -(0.03/-0.51) = 0.06$. Here $\beta_1 = -0.51$ is significant and highlights speed of adjustment.

Table.3 ARDL regression for Pakistan's import demand

Coefficient	Estimate	p-value
β_0	0.03	0.9772
β_1	-0.51	0.0025
β_2	0.42	0.0021
β_3	0.03	0.7499
δ_1	0.07	0.6204
∂_2	2.93	0.0038

No. of observations=36; R^2=0.50; Wald F-stat=5.40; Prob. F-stat=0.0005; SIC=-1.78; Prob. LM stat=0.73; CUSUM & CUSUM-SQ test (stable at 5%)

Remittances constitute significant part of Pakistan's TFE. Historically, Persian Gulf states, UK and USA have remained largest sources for inward flow of remittances. Similarly, Pakistan's terms of trade have steadily deteriorated over the period under consideration. Therefore, we use the following equation to calculate BOP consistent growth rate:

$$Y_{BP} = \frac{\theta_x x - \eta(reer) + \theta_r(r - p_x) + (px - pm)}{\pi}$$

By substituting growth rates and parameter values for different variables from Table.5, we obtain value of Y_{BP} that is 4.98 percent. This is fairly close to actual growth rate of 4.91 percent but markedly less than target growth rate of 7-8 percent. These results *suggest* that long-run growth rate from 1980-2017 was

BOP constraint and lend further support to our claim that external constraint inhibits Pakistan's ability to sustain higher growth rate.

5.2 Test for Strong Version of Thirlwall's Law

As mentioned above, testing for strong test requires estimation of export demand function. Following similar methodology as for import demand, we select the following ARDL model:

$$\Delta \boldsymbol{lnX} = \boldsymbol{\alpha_0} + \boldsymbol{\omega_1}.\boldsymbol{lnX}(-\mathbf{1}) + \boldsymbol{\omega_2}.\boldsymbol{lnZ}(-\mathbf{1}) + \boldsymbol{\omega_3}.\boldsymbol{lnREER}(-\mathbf{1}) + \boldsymbol{\sigma_1}.\Delta\boldsymbol{lnX}(-\mathbf{1}) + \boldsymbol{\sigma_2}.\Delta\boldsymbol{lnX}(-\mathbf{3}) + \boldsymbol{\sigma_3}.\Delta\boldsymbol{lnREER}(-\mathbf{3}) + \boldsymbol{\sigma_4}.\Delta\boldsymbol{lnZ}(-\mathbf{2}) \quad (\mathbf{11})$$

Table.4 presents results for exports regression. The calculated F-stat from Wald test ($H_0: \omega_1 = \omega_2 = \omega_3 = 0$) is 4.99 that is above the interval of critical values (3.79-4.85) at 5 percent level of significance. Hence, we reject the null hypothesis of no cointegrating relationship and estimate long run elasticities.

Table.4 ARDL regression for Pakistan's export demand

Coefficient	Estimate	p-value
α_0	1.03	0.5196
ω_1	-0.56	0.0013
ω_2	0.62	0.0125
ω_3	-0.51	0.0050
σ_1	0.13	0.4294
σ_2	0.38	0.0396
σ_3	0.09	0.7609
σ_4	-1.10	0.4192

No. of observations=34; R^2=0.41; Wald F-stat=4.99; Prob. F-stat=0.0358; SIC=-1.42; Prob. LM stat=0.53; CUSUM & CUSUM-SQ test (stable at 5%)

The income elasticity of export demand is $\mathcal{E}$=-(ω_2/ω_1)=-(0.62/-0.56)=1.10 and price elasticity of export demand is Ψ=-(0.51/-0.56)=-0.91. Here, error correction term (ω_1=-0.56) is significant and reflects speed of adjustment. The following equation is used to calculated BOP consistent growth rate:

$$Y_{BP} = \frac{\theta_x \mathcal{E} z + (\theta_x \Psi - \eta)(reer) + \theta_r(r) + (px - pm)}{\pi}$$

After substituting growth rate and parameter values from Table.5, we obtain value of Y_{BP} that is 3.84 percent. This is roughly 1 percent below the historical average and begs explanation. One plausible explanation is influx of foreign currency as FDI, foreign debt accumulation and aid for development and war against terrorism.

Table.5 BPCG Model: Growth rates year-on-year (Y/Y) and parameter values (1980-2017)

Variable	Description	Value
Y_A	GDP Growth	4.91%
X	Exports Growth	5.63%
$px - pm$	Terms of Trade Growth	-1.79
Reer	REER Growth	-1.23
R	Remittances Growth	6.21
Π	Import Income Elasticity	0.82
H	Import Price Elasticity	0.06
Ɛ	Export Income Elasticity	1.10
Ψ	Export Price Elasticity	-0.91
θ_x	Exports Share in TFE	0.70
θ_r	Remittances Share in TFE	0.30
$Y_{BP} = \frac{\theta_x x - \eta(reer) + \theta_r(r - p_x) + (px - pm)}{\pi}$	*BOP Consistent Growth for Weak Test ($\theta_f = 0$)	4.98%
$Y_{BP} = \frac{\theta_x Ɛz + (\theta_x \Psi - \eta)(reer) + \theta_r(r - p_x) + (px - pm)}{\pi}$	BOP Consistent Growth for Strong Test ($\theta_f = 0$)	3.84%
$Y_{BP} = \frac{\theta_x x + -\eta(reer) + \theta_r(r - p_x) + (px - pm)}{\pi - (1 - \varphi)}$	BOP Consistent Growth for Weak Test ($\theta_f \neq 0$)	5.53%
$Y_{BP} = \frac{\theta_x Ɛz + (\theta_x \Psi - \eta)(reer) + \theta_r(r - p_x) + (px - pm)}{\pi - (1 - \varphi)}$	BOP Consistent Growth for Strong Test ($\theta_f \neq 0$)	4.23%

*Technically, this is current account consistent growth rate when($\theta_f = 0$).

5.3 Separate Contribution of BOP Components to Actual GDP Growth

Table.6 presents separate contributions of growth in BOP components to actual GDP growth.

Exports remained the largest contributor for both weak and strong test; however, their impact is significantly larger in the former as compared to the latter. Remittances have experienced remarkable growth in the last two decades and made significant positive contribution toward actual GDP growth. The impact of REER and KA varies from being negligible for weak test to modestly positive for strong test. However, the most interesting component is TOT that contributed negatively toward growth rate. It is pertinent to note that negative impact of TOT growth (2.21 percent) is roughly equal to the difference between Pakistan's actual and target growth rate.

Table.6 Separate contribution of BOP components to actual GDP growth

Component	Weak Test	Strong Test
EXP	4.81 pp	2.70 pp
NRR	2.27 pp	2.27 pp
TOT	-2.18 pp	-2.18 pp
REER	0.09 pp	1.05 pp
KA*	-0.08 pp	1.07 pp
Total	4.91 pp	4.91 pp

*Contribution of capital account is the residual measure.

This component analysis suggests important implications for development policy. Given constraints on KA and REER policies, they are of little help to increase long run growth. Remittances have contributed significantly but their importance must not be overstated.[1] Therefore, any development policy to relax BOP constraint on long run must focus on increasing exports demand (Ɛ), decreasing import demand (π) and/or improving TOT.

5.4 BOP Constraint Growth with Fixed Current Account Deficit

BOP constraint with zero net capital flows underestimates potential growth as Pakistan can afford *some* percentage of CAD. Let suppose $B = \frac{M-(X+R)}{Y}$ is the initial level of CAD to GDP ratio. If B remains constant over time, solving constraint $dB = 0$ will result in the following equilibrium growth rate (See Appendix-A):

$$y_{BP} = \frac{\theta_x.\mathcal{E}.z + (\theta_x.\Psi - \eta).reer + \theta_r.(r - p_{x)} - (p_x - p_m)}{\pi - (1 - \varphi)} \tag{12}$$

Here $\varphi = \frac{X+R}{M}$ is the ratio of total earnings and expenditures in foreign currency. A country will have CA surplus or deficit if φ is greater or less than one, respectively. A balanced current account ($\varphi = 1$) is equivalent to assuming zero net capital flows. Pakistan's historical average is $\varphi = 0.9$ i.e. capital flows financed roughly 10 percent of external account expenditures. BOP consistent growth rate for weak and strong version of Thirlwall's law for $\varphi = 0.9$ is 5.53 percent and 4.23 percent, respectively. Table.7 presents separate contributions of growth in BOP components to actual GDP growth when fixed CAD is allowed.

Table.7 Separate contribution of BOP components to actual GDP growth with fixed CAD

Component	Weak Test	Strong Test
EXP	5.47 pp	3.08 pp
NRR	2.59 pp	2.59 pp
TOT	-2.49 pp	-2.49 pp
REER	0.10 pp	1.19 pp
KA*	-0.77 pp	0.54 pp
Total	4.91 pp	4.91 pp

*Contribution of capital account is the residual measure.

6. Overview of Pakistan's International Trade and Implications for Development Policy

Discussion in previous sections suggests that Pakistan's growth rate is partly BOP constraint and persistent TD and declining TOT are major contributors toward it. It implies that any strategy to relax BOP constraint must focus on abridging TD and/or transforming product structure to improve TOT. Therefore, first step is to explore evolution of Pakistan's international trade.

6.1 Overview of Pakistan's International Trade

Table.8 presents evolution of Pakistan's exports from 1980-2017. On average, textiles share remained the single largest component (59.6 percent) followed by vegetable products (13.1 percent) and animals hides

(6.1 percent). The average share of machines and electronics remained only 1 percent and 2.1 percent respectively. Overall, exports structure remained stable and largely consisting of raw materials and primary products. On the other hand, Pakistan's imports are relatively diversified (Table.9). Share of machinery showed steady decline from 26.5 percent during 1995-98 to 14 percent during 2011-14. Similarly, average share of chemical imports also declined from 16.5 percent during 1995-98 to 11.7 percent during 2015-17. Falling import share of machinery and chemical products partly reflects premature deindustrialization. Share of metals and transport goods showed little variation and averaged 6.7 percent and 7.9 percent respectively. However, import of minerals during this period showed significant variation and averaged less than 2 percent in late 1990s but more than 30 percent in early 2010s. Increase in mineral imports was almost entirely due to increased demand for fossil fuels. Overall, imports structure showed slight shift from finished industrial products to raw materials. Here, it is pertinent to note that in last fifteen years exports to GDP ratio has gradually fell from above 14 percent to below 10 percent whereas imports to GDP ratio hovered around average 19 percent. This suggests that declining exports contribute more than excessive imports toward external constraint. Therefore, we have to enquire reasons for Pakistan's failure to diversity and increase exports, and inability to transform their structure to improve TOT.

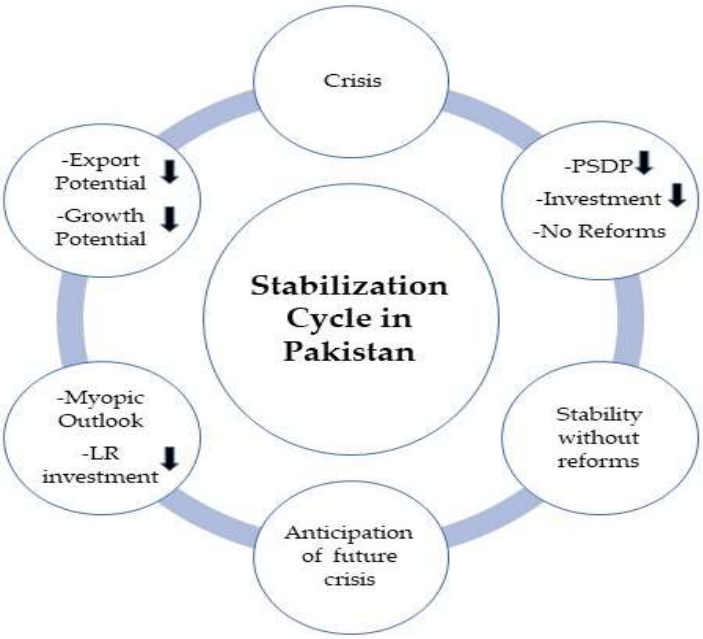
6.2 Political Economy of Stabilization and Vicious Cycle of Crisis

Pakistan has entered in its 22nd IMF program, with third in less than a decade. The persistency of BOP crisis reveals that underlying reasons for dismal external sector performance are not exogenous shocks but some inherent features of the way political economy functions. In fact, political economy of stabilization process under IMF programs connects persistent BOP crisis with consistent deterioration of export potential. The problem is not stabilization programs per se: there is a plausible theoretically grounded case to defend the claim that macroeconomic stability is pre-requisite to long run growth. The issue is with the cosmetic measures that give pretense of stability but make future instability inevitable. The result is a vicious circle of crisis that explains gradual deceleration of exports growth (see next page).

In Pakistan, a typical external crisis usually follows by a policy decision to shrink aggregate demand. As Public Sector Development Program (PSDP) and private investment are most elastic expenditures in the short run, it is expedient to cut them for the sake of structural adjustment. This one time decline in growth and deceleration in the rate of accumulation is the price to adjust macroeconomic imbalances. However, point is to sustain stability once achieved, and that demands structural transformation of the state apparatus and incentive structures to do away with the underlying reasons that gave rise to crisis in the first place. In this sense, economic crises provide an opportunity to bring desired structural transformation that should never go wasted.

However, in Pakistan's case, political economy considerations ensure concentrated benefits prevail over widespread costs and status-quo remains intact. Economic agents perceive stability without meaningful reforms as harbinger of future instability. This increase in future uncertainty translates into myopic outlook and economic agents, especially firms, focus on maximization of gains during short window of stability while postponing long-term investments (Fig.5). Similarly, it is a well-established empirical fact that economic uncertainty has positive impact on R&D expenditures in countries with technologically advanced product structure and negative impact in countries with primary product structure. This relationship holds true for Pakistan as evident from falling R&D expenditures to GDP ratio (Fig. 6). The

combination of these factors has resulted in stagnant and relatively backward economic structure as measured by Economic Complexity Index (ECI) (Table.10). This steady decline in ECI offers a plausible explanation for poor exports and decline in long run GDP growth rate (Hausmann & Hidalgo, 2011). Hence, it can be argued that political economy of stabilization process perpetuates business cycles as well as lowers trend growth rate.



6.3 Industrial Policy to Relax BOP Constraint

To escape this vicious cycle, Pakistan must introduce structural reforms and lay incentive structures that promote innovation and efficiency. Revitalization of manufacturing sector is important to achieve competitiveness and long run economic growth (Hamilton; 1791; List, 1885; Chang, 2002; Greenwald & Stiglitz, 2006). However, despite widespread recognition of premature deindustrialization and need for industrial policy (Hamid & Khan, 2015; Rasiah & Nazeer, 2015), Pakistan has not had a proactive industrial policy since early 1990s. Although there is no consensus on design of potential industrial policy, recent proposals include upgrading technology of existing industries and adopting 'learning, industrial and technology' (LIT) policies (Noman, 2015), focusing on export competitiveness (Haque, 2014), integrating in global value chains (Rahim, 2012), picking winners in selected sectors from small and medium enterprises (Burki, 2008) and creating competitive advantage in high value added sectors (Rasiah & Nazeer, 2015). In a nutshell, any successful policy to relax external constraint must increase the ratio $\mathcal{E}/\pi$ i.e. either make exports more attractive or make imports less attractive.

Industrial policy is a contentious issue and, in a broader picture, there are three major contenders for it. First, long list of governance reforms popularized in conditionality era by international financial institutions to provide enabling environment for private sector to fully exploit comparative advantage. This is standard neoliberal orthodoxy inspired from mainstream neoclassical economics' emphasis on specialization. However, overwhelming nature of these reforms often overlooks limitations of market

mechanism as well as state's implementation capacity, and therefore, requires prioritizing and sequencing (Stiglitz, 2002). Similarly, it contradicts historical pattern of industrial development that exhibits inverted-U shape behavior of sectoral diversification i.e. increased diversification over most of the development path and increased specialization once high income level is achieved (Imbs & Wacziarg, 2003). Second, a relatively new strand of literature under the banner of new structural economics (NSE) that focuses on evolving endowment structure across time and space and argues for exploitation of "latent comparative advantage", primarily guided by free market but facilitated by state (Lin, 2009). Here, role of the state goes beyond ensuring property rights, contract enforcement and macroeconomic stability to actively performing strategic and coordinating role in the sphere of production (Rodrik, 2004).

Unlike first two approaches, which are comparative advantage following (CADF), third approach is comparative advantage defying (CADD) and that is what Pakistan should pursue. The crux of CADD base industrial policy is pursuit of "dynamic comparative advantage" through import substitution and subsidizing strategic industries. State plays active developmental role and design incentive structures to ensure learning, knowledge & skill acquisition and innovation & technical advancement during protectionist phase. In this sense, successful import substitution is considered pre-requisite for export oriented industrialization. As protectionism entails a social cost, a stick must follow the carrot if desired outcomes are not achieved. Similarly, policy focus should be on designing a rent-management system that encourages growth-enhancing rents and discourages growth-reducing rents (Ngo, 2017; Khan, 2004). A key difference from NSE approach is the degree to which a country should deviate from its comparative advantage: NSE emphasizes on small jumps for gradual development while CADD argues for large jumps to get expertise in strategic high-tech industries. CADD also bears more consonance with historical experience as Japan was protecting supposedly wrong industries e.g. automobiles, ship-building, steel, etc. with per-capital income only 19% of US and Korea started producing steel and semi-conductors with per-capital income only 5.5% and 14% of US, respectively. Similarly, Pakistan itself started, and for a quite long time successfully ran, large-scale steel production with income only 1.8% of US. Moreover, no country except sixteenth century Holland (first country to experience capitalistic development) and twentieth century Hong Kong (city state acting as gateway to mainland China) developed following comparative advantage and laissez-faire economics. With a population of over 210 million, Pakistan has the market size to successfully pursue CADD industrial policy provided a well-designed rent-management system and carrot & stick base incentive structure.

7. Conclusions

Our study discusses relevance of BOP constraint for Pakistan's failure to sustain high growth rate. Descriptive analysis highlights strong association between worsening external sector and large declines in GDP growth. Econometric evidence using ARDL regression analysis shows that income elasticities are large and significant as compare to price elasticities, and hence, support critical theoretical assumption of BPCG model. Estimates for weak version of BOP constraint growth are slightly larger while for strong version are a little lower than actual growth rate. Moreover, exports and remittances are first and second largest positive contributors while terms of trade deterioration is largest negative contributor toward BOP constraint growth rate. Overall, evidence *suggests* that Pakistan's growth rate is at least partly BOP constraint.

Pakistan's international trade highlights that exports structure is stagnant & primary while imports are either much needed capital goods or raw materials. Therefore, relaxation of BOP constraint requires either making exports more attractive or imports less attractive i.e. increasing the ratio $\mathcal{E}/\pi$. Moreover, it is argued that status-quo forces are entrenched in Pakistan, and therefore, macroeconomic stability achieved under IMF programs is not accompanied by structural reforms. This stability without reforms contributes to vicious cycle of crisis and also explains steady decline in trend growth rate. It is recommended that Pakistan should pursue a comparative advantage defying industrial policy to relax BOP constraint as it is in more consonance with historical pattern of successful development.

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Appendix-A1:

Model Derivation with No Current Account Deficit

$$X = A.Z^{\mathcal{E}}.(REER)^{\Psi} \tag{1}$$

$$M = B.Y^{\pi}.(REER)^{\eta} \tag{2}$$

$$P_X.X + R + F = P_m.M \tag{3}$$

Taking differential of Equation (1):

$$dX = \left[\mathcal{E}.A.Z^{\mathcal{E}-1}.(ER)^{\Psi}\right]dZ + \left[A.Z^{\mathcal{E}}.\Psi(REER)^{\Psi-1}\right]d(REER)$$

$$dX = \left[\mathcal{E}.A.Z^{\mathcal{E}}.(ER)^{\Psi}\right]\left(\frac{dZ}{Z}\right) + \left[A.Z^{\mathcal{E}}.\Psi(REER)^{\Psi}\right]\left(\frac{dREER}{REER}\right)$$

$$dX = [\mathcal{E}.X]\left(\frac{dZ}{Z}\right) + [\Psi.X]\left(\frac{dREER}{REER}\right)$$

$$\frac{dX}{X} = \mathcal{E}.z + \Psi.reer \tag{4}$$

Similarly taking differential of Equation (2) will yield:

$$\frac{dM}{M} = \pi.y + \eta.reer \tag{5}$$

Now solve Equation (3) as following:

$$P_X.X + R + F - P_m.M = \Delta = 0 \tag{6}$$

Taking differential of Equation (6):

$$d\Delta = \left(\frac{\partial\Delta}{\partial P_X}\right).dP_X + \left(\frac{\partial\Delta}{\partial X}\right).dX + \left(\frac{\partial\Delta}{\partial R}\right).dR + \left(\frac{\partial\Delta}{\partial F}\right).dF - \left[\left(\frac{\partial\Delta}{\partial P_M}\right).dP_M + \left(\frac{\partial\Delta}{\partial M}\right).dM\right]$$

$$d\Delta = (X).dP_X + (P_X).dX + (1).dR + (1).dF - [(M).dP_M + (P_M).dM]$$

$$d\Delta = (X.P_X).\left(\frac{dP_X}{P_X}\right) + (P_X.X).\left(\frac{dX}{X}\right) + (R).\left(\frac{dR}{R}\right) + (F).\left(\frac{dF}{F}\right) - [(P_M.M).\left(\frac{dP_M}{P_M}\right) + (P_M.M).\left(\frac{dM}{M}\right)]$$

Now if $\theta_x = \frac{X.P_X}{X.P_X+R+F}$ and $\theta_x = \frac{X.P_X}{X.P_X+R+F}$ and $\theta_x = \frac{X.P_X}{X.P_X+R+F}$ such that $\theta_x + \theta_r + \theta = 1$, then dividinf both sides by $X.P_X + R + F$ will yield the following:

$$d\Delta = \theta_x.p_x + \theta_x.(\mathcal{E}.z + \Psi.reer) + \theta_r.r + \theta.f - \frac{P_M.M}{P_X.X + R + F}[p_m + (\pi.y + \eta.reer)] \tag{7}$$

As we know $P_M.M = P_X.X + R + F$, so

$$d\Delta = \theta_x.p_x + \theta_x.(\mathcal{E}.z + \Psi.reer) + \theta_r.r + \theta.f - p_m - \pi.y - \eta.reer$$

Now solving for y will yield:

$$y = \frac{\theta_x.\mathcal{E}.z + reer(\theta_x.\Psi - \eta) + \theta_r.r + \theta\ .f + \theta_x.p_x - p_m}{\pi} \quad (8)$$

We know that $\theta_x + \theta_r + \theta\ = 1$ so we can write $\theta_x = 1 - \theta_r - \theta_f$;

$$y = \frac{\theta_x.\mathcal{E}.z + reer(\theta_x.\Psi - \eta) + \theta_r.r + \theta\ .f + (1 - \theta_r - \theta\ ).p_x - p_m}{\pi} \quad (9)$$

Simplification will yield following equation:

$$y = \frac{\theta_x.\mathcal{E}.z + reer(\theta_x.\Psi - \eta) + \theta_r.(r - p_x) + \theta\ .(f - p_x) + (p_x - p_m)}{\pi} \quad (10)$$

If we assume $\theta\ = 0$, we will have the current account constraint GDP growth:

$$y_{bp} = \frac{\theta_x.\mathcal{E}.z + reer(\theta_x.\Psi - \eta) + \theta_r.(r - p_x) + (p_x - p_m)}{\pi} \quad (11)$$

Appendix-A2:

Model Derivation with Fixed Current Account Deficit

Let $\mu_M = \frac{M}{M-(X+R)}$; $\mu_X = \frac{X}{M-(X+R)}$; $\mu_R = \frac{R}{M-(X+R)}$; $\theta_x = \frac{X}{M}$; $\theta_r = \frac{R}{M}$; $\varphi = \frac{X+R}{M}$

Where:

$$X = A.Z^{\mathcal{E}}.(REER)^{\Psi} \quad (1)$$

$$M = B.Y^{\pi}.(REER)^{\eta} \quad (2)$$

$$P_X.X + R + F = P_m.M \quad (3)$$

Differentiating imports and exports demand function will yield following:

$$\frac{dX}{X} = p_x + \mathcal{E}.z + \Psi.reer \quad (4)$$

$$\frac{dM}{M} = p_m + \pi.y + \eta.reer \quad (5)$$

Taking differential of Equation (3):

$$dB = \frac{\partial B}{\partial M}dM + \frac{\partial B}{\partial X}dX + \frac{\partial B}{\partial R}dR + \frac{\partial B}{\partial Y}dY \quad (6)$$

We have:

$$\frac{\partial B}{\partial M} = \frac{1}{Y}; \frac{\partial B}{\partial X} = -\frac{1}{Y}; \frac{\partial B}{\partial R} = -\frac{1}{Y}; \frac{\partial B}{\partial Y} = -\frac{(M-(X+R)}{Y^2}$$

Putting values in Equation (6):

$$dB = \frac{1}{Y}dM - \frac{1}{Y}dX - \frac{1}{Y}dR - \frac{M-(X+R)}{Y}\left(\frac{dY}{Y}\right)$$

$$dB = \left(\frac{M}{Y}\right)\left(\frac{dM}{M}\right) - \left(\frac{X}{Y}\right)\left(\frac{dX}{X}\right) - \left(\frac{R}{Y}\right)\left(\frac{dR}{R}\right) - \frac{M-(X+R)}{Y}\left(\frac{dY}{Y}\right)$$

Multiply both sides by 1/B:

$$\frac{dB}{B} = \left(\frac{M}{Y}\right)\left(\frac{Y}{M-(X+R)}\right)\left(\frac{dM}{M}\right) - \left(\frac{X}{Y}\right)\left(\frac{Y}{M-(X+R)}\right)\left(\frac{dX}{X}\right) - \left(\frac{R}{Y}\right)\left(\frac{Y}{M-(X+R)}\right)\left(\frac{dR}{R}\right) - \left(\frac{M-(X+R)}{Y}\right)\left(\frac{Y}{M-(X+R)}\right)\left(\frac{dY}{Y}\right)$$

After simplification:

$$\frac{dB}{B} = \left(\frac{M}{M-(X+R)}\right)\left(\frac{dM}{M}\right) - \left(\frac{X}{M-(X+R)}\right)\left(\frac{dX}{X}\right) - \left(\frac{R}{M-(X+R)}\right)\left(\frac{dR}{R}\right) - \left(\frac{dY}{Y}\right)$$

As per definitions above:

$$\frac{dB}{B} = \mu_M\left(\frac{dM}{M}\right) - \mu_X\left(\frac{dX}{X}\right) - \mu_R\left(\frac{dR}{R}\right) - \left(\frac{dY}{Y}\right) \quad (7)$$

If we assume that CAD to GDP ratio does not changes over time, we can write $\frac{dB}{B} = 0$. So,

$$\frac{dY}{Y} = \mu_M\left(\frac{dM}{M}\right) - \mu_X\left(\frac{dX}{X}\right) - \mu_R\left(\frac{dR}{R}\right) \quad (8)$$

Now putting values of $\frac{dM}{M}$, $\frac{dX}{X}$ and $\frac{dR}{R}$;

$$y = \mu_M[p_m + \pi.y + \eta.reer] - \mu_X[p_x + \mathcal{E}.z + \Psi.reer) - \mu_R.r$$

After simplification:

$$y = \frac{\mu_X[p_x + \mathcal{E}.z + \Psi.reer) + \mu_R.r - \mu_M[p_m + \eta.reer]}{\mu_M.\pi - 1}$$

Now divide and multiply by μ_M:

$$y = \frac{\theta_x[p_x + \mathcal{E}.z + \Psi.reer) + \theta_r.r - [p_m + \eta.reer]}{\pi - (1-\varphi)} \quad (9)$$

Because $\frac{\mu_X}{\mu_M} = \frac{\frac{X}{M-(X+R)}}{\frac{M}{M-(X+R)}} = \frac{X}{M} = \theta_x$; $\frac{\mu_R}{\mu_M} = \frac{\frac{R}{M-(X+R)}}{\frac{M}{M-(X+R)}} = \frac{R}{M} = \theta_r$; $\frac{1}{\mu_M} = \frac{1}{\frac{M}{M-(X+R)}} = \frac{M}{M} - \frac{X+R}{M} = 1 - \varphi$

We also know that $\theta_x + \theta_r = 1\ so\ \theta_x = 1 - \theta_r$. Putting it in Equation (9):

$$y = \frac{\theta_x.\mathcal{E}.z + (\theta_x.\Psi - \eta).reer + \theta_r.r - (1-\theta_r)p_x - p_m}{\pi - (1-\varphi)}$$

$$y = \frac{\theta_x.\mathcal{E}.z + (\theta_x.\Psi - \eta).reer + \theta_r.(r - p_{x)} - (p_x - p_m)}{\pi - (1-\varphi)} \quad (10)$$

Appendix-B:

Table.2 ADF Unit Root Test

Variable	p-value (Level)	p-value (First Difference)
LNGDP	0.0438	0.0400
LNWGDP	0.3673	0.0029
LNM	0.1425	0.0001
LNX	0.7381	0.0000
LNREER	0.2514	0.0004

Table.8 Historical Evolution of Pakistan's Exports Structure

Period	Textiles	Animal Hides	Veg Products	Food	Mineral	Machines	Electronics	Total
1980-84	43.3	5.7	25.5	4.7	1.8	0.6	1.7	83.3
1984-89	51.2	8.0	21.4	4.2	0.2	0.4	2.1	87.6
1990-94	70.4	5.0	9.2	3.0	0.8	0.3	2.5	91.3
1995-99	73.2	8.8	5.7	2.6	0.9	0.7	2.9	94.8
2000-04	70.4	7.1	6.9	1.7	2.3	1.0	2.5	91.9
2005-09	57.2	5.1	10.7	2.3	6.7	1.8	2.1	86.0
2010-14	52.6	4.5	13.6	3.6	7.8	1.5	1.5	85.0
2015-17	58.3	4.3	11.7	4.0	4.8	1.4	1.2	85.7
Average	59.6	6.1	13.1	3.3	3.2	1.0	2.1	88.2

Table. 9 Historical Evolution of Pakistan's Import Structure

Period	Machines	Chemicals	Metals	Transport	Minerals	Veg and Animal	Textiles	Total
1995-98	26.5	16.5	8.0	8.4	1.6	19.7	5.1	85.7
1999-02	25.8	18.5	7.3	7.4	2.1	15.7	6.8	83.4
2003-06	21.3	12.7	7.9	8.1	21.5	8.5	6.0	85.9
2007-10	18.3	12.0	8.0	5.3	27.5	9.9	6.6	87.6
2011-14	14.0	12.0	7.4	4.7	32.3	9.8	7.0	87.1
2015-17	20.0	11.7	9.1	6.2	21.0	10.3	7.2	85.5
Average	21.0	13.9	7.9	6.7	17.7	12.3	6.4	85.9

Table 10. Economic Complexity Index Rankings

Year	Pakistan	Malaysia	Thailand	S. Korea	Singapore	India	Total
1978-82	50	63	57	23	38	40	99
1983-87	65	43	53	19	26	38	100
1988-92	85	38	40	19	20	39	115
1993-97	94	37	49	19	21	52	118
1997-02	87	26	37	17	9	41	120
2003-07	83	27	42	10	9	49	121
2008-12	94	27	23	8	6	51	121
2013-17	98	25	32	6	4	45	129