Is Pakistan's Growth Rate
Balance-of-Payments Constrained?
Policies and Implications
for Development and Growth

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Abstract

This paper examines the extent to which Pakistan's growth has been, or is likely to be, limited or constrained by its balance-of-payments (BOP). The paper begins by briefly considering the BOP-constrained growth model in the context of demand and supply-oriented approaches to economic growth. Evidence presented suggests that Pakistan's maximum growth rate consistent with equilibrium on the basic balance is approximately 5% per annum. This is below the long-term target rate of a growth of gross domestic product of 7–8% per annum. This BOP-constrained growth approach provides some important policy prescriptions for Pakistan's development policy. Real exchange rate depreciations will not lead to an improvement of the current account. Pakistan must lift constraints that impede higher growth of exports. In particular, it must shift its export structure to products with a higher income elasticity of demand and sophistication.

I. Introduction

Pakistan's output growth rate since the 1960s has averaged 5.3% per annum, and 2.5% in terms of productivity growth. While these figures are respectable by world standards, they are not so impressive compared with those of the East Asian economies when they were at a similar stage of development in the late 1960s. In the 1950s and 1960s Pakistan started transforming from a poor agricultural economy into a rapidly industrializing one; yet it never subsequently achieved growth rates similar to those of the Asian tigers or, more recently, the People's Republic of China (PRC). The country's Poverty Reduction Strategy (April 2007) has targeted a growth rate of gross domestic product (GDP) of 7–7.5% per annum for the next decade. The question that naturally arises is whether this is feasible or whether it is a hopelessly overoptimistic target. If the former, what are the necessary policy measures that should be taken to ensure this outcome? If the latter, what impedes higher growth?

In the past there have been periods where Pakistan's growth rates have considerably exceeded 8%, but these have been offset by pronounced decelerations, especially in the early 1970s and, more recently, in the late 1990s. The first are easily explained by the global recession associated with the quadrupling of oil prices and the war with Bangladesh. The more recent slowdown was primarily associated with Pakistan's domestic and international political tensions.[1] But the question is whether or not there are other factors that could prevent any attempt to achieve a sustained faster rate of growth.

Recent developments in Pakistan's economic conditions suggest that the main limitation is likely to come from an underperformance in growth of exports and the consequent balance-of-payments (BOP) problems (Felipe and Lim 2008). While it is necessary to be cautious about drawing conclusions concerning Pakistan's long-term prospects from its performance over only the last couple of years, nevertheless this gives cause for concern. Although Pakistan has achieved a reasonably fast growth of output and output per capita since the downturns in 1997 and 1999, there are indications that growth in fiscal year 2009 is likely to be fragile and the reasons point to deep-seated weaknesses in Pakistan's economy.

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[1] These include Pakistan's nuclear tests in 1998 and the subsequent loss of international aid, especially from Japan and the United States. It was only after 2001 that aid was restored.

In particular, there are concerns about the changing composition of output and the rise of substantial deficits on the current and fiscal accounts. In 2001–2003, export growth made a significant contribution to GDP growth. But in 2004–2007, when the growth rate was higher, consumption, investment, and government expenditure were the largest contributors. From the supply side, the service sector was the largest contributor to GDP growth (Felipe and Lim 2008). Exports plus net factor income from abroad has fallen as a percentage of GDP while the rapid growth has sucked in imports. This is reminiscent of the early periods of high growth in the 1980s and 1990s when there were also significant deficits in the current account. In fiscal year 2007–2008, the current account deficit rose to 8.4% of GDP. This has led to a serious BOP crisis. As a consequence, rating agencies Standard and Poor's and Moody's downgraded Pakistan. This will have serious consequences for overseas borrowing.[2]

The current account deficits in the past, as now, have been partly financed by short-term international borrowing, which is highly volatile and brings with it the real danger of capital flight and a collapse in the exchange rate. In previous years, net positive capital inflows have prevented a BOP crisis.[3] As Felipe and Lim (2008) point out, a BOP deficit is not necessarily a bad thing; it all depends on what the funds are used for. If the capital flows are used for productive investment, in activities where the rate of return measured in terms of foreign exchange is greater than the cost of borrowing, this might not be a cause for concern. In particular, if the funds are used to improve export performance and enhance the competitiveness of import-competing industries, then this may be sufficient to generate a subsequent improvement in the current account.

However, this is not the case for Pakistan at present. As Felipe and Lim (2008, 8) put it: "in the case of Pakistan, the current deficit reflects low export growth… and, ultimately export competitiveness problems. Pakistan's persistent current account deficit does not reflect a highly productive economy." In November 2008, the problem was so serious that Pakistan had to enter an International Monetary Fund (IMF) program and borrow US$7.6 billion to avoid defaulting on its sovereign debt. Over the period March to November 2008, the rupee had depreciated by 20%.

The heart of the current problem lies in the collapse of the growth of exports, as noted above, which does not bode well for future growth. For example, Felipe and Lim (2008, 8) point out that, since the 1960s "Pakistan's performance is clearly substandard, with only Afghanistan, the Kyrgyz Republic, Mongolia, Sri Lanka, Turkmenistan and Uzbekistan having lower export growth rates." This suggests that Pakistan's relative poor economic performance cannot be attributed to an overvalued exchange rate. The cause of Pakistan's relatively poor export growth is structural and deep-seated; it is not one that can be quickly and easily solved by an exchange rate adjustment.[4]

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[2] As of December 2008, Pakistan's foreign currency long-term debt was rated CCC by Standard and Poor's. The ranking of local currency long-term debt was CCC+.

[3] Pakistan has in the past been able to run current account deficits that have been largely covered by overseas development assistance and expatriate workers' remittances.

[4] Even though Pakistan's exports experienced a growth of 16% per annum between 2002–2003 and 2005–2006, this is dwarfed by a growth of imports of 29% over the same period.

The recent *Pakistan Economic Survey* (2007–08, pages xvi-xvii) confirms this gloomy picture:

> Pakistan's exports suffer from serious structural issues which need to be addressed primarily by the industry itself, with government playing its role of a facilitator. Textile is the backbone of Pakistan's exports but bears various tribulations.[5] These include: (i) low value added and poor quality products fetching low international prices; (ii) the machinery installed in recent years has depreciated considerably relative to Pakistan's competitors; (iii) these machines are power-intensive, less productive, and carry high maintenance cost; (iv) augmented wastage of inputs adding to the cost of production; (v) little or no efforts on the part of industry to improve their workers' skills; (vi) industry spending less money on research and development and; (vii*)* export houses lacking capacity to meet bulk orders as well as meeting requirements of consumers in terms of fashion, design and delivery schedule.

Linens and other furnishings art (of textile), accounting for 20% of exports, suffered a decline of 7.5% in 2007–2008. This is worrisome particularly given the rapid rise in aggressive competition in textiles from countries such as the PRC. Pakistan is competing for export markets in low-technology industries, which are facing increasing competition from the PRC. This is a relatively low-wage economy compared with Pakistan, yet is investing heavily in its export-oriented industries.

This suggests that, in the long term, there is a need for a radical restructuring of the economy, so that exports do not depend so heavily on textiles, toward manufactured goods with a higher income elasticity of demand. The problem is how this can be accomplished. It is a common complaint that much of the private sector is uncompetitive, with agriculture and textiles relying on outmoded technologies. Small businesses are hampered by lack of access to credit and Pakistan's business strategies and government policies are seen as outdated. The outlook is not promising.

What is interesting is that the *Economic Survey of Pakistan* (2007–08, page xvii) recommends that the top priority of the government should be "correction of imbalances through shaving off aggregate demand by appropriate policies." In other words, in spite of the high unemployment and the damage this would do to investment, the remedy advocated for the BOP problem is to curtail economic growth. This would certainly solve the problem as a slower growth of output would reduce the rate of increase of imports, while exports would be largely determined by the growth of world markets and hence unaffected by the reduction in domestic growth. In this sense, Pakistan is running into, or is actually, experiencing a *BOP constraint.* However, the solution is not to reduce

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[5] In 2004/5 "Cotton Group" comprised 57.3% of total exports. The remaining categories were Leather 5.4%, Rice 5.9%, Synthetic Textiles 2.2%, Sports Goods 2.1%, and Others 27.1%.

aggregate demand but to introduce policies that will increase the growth of exports and thereby obviate the BOP constraint.

The rest of the paper is structured as follows. In Section II we discuss the meaning of being demand-constrained and argue that countries can be BOP-constrained. In Section III we introduce formally the BOP-constrained growth model. In Section IV we present the empirical results and discuss the extent to which Pakistan's growth rate is BOP-constrained. Section V discusses the implications for Pakistan's development policy.

II. Balance-of-Payments Constrained Growth: Demand versus Supply-Oriented Growth Models

As has been noted in the introduction, a major problem facing the Pakistan economy is its recurrent current account crises. When Pakistan's growth rate increases and this is not due to a rise in the growth of its exports, the result is a BOP crisis. In 2008, Pakistan had to borrow from the IMF. A standard conditionality of the Fund is fiscal rectitude, which inevitably results in the return to a slower rate of growth. In order to avoid such recurrent crises, it is necessary that the growth rate be kept permanently below the growth of productive potential.

The basic premise of the BOP-constrained growth model is that in the long run, no country can grow faster than the rate consistent with balance on the current account, unless it can finance evergrowing deficits. Indeed, if imports grow faster than exports, the current account deficit has to be financed by borrowing from abroad, i.e., by the growth of capital inflows.[6] But this cannot continue indefinitely. The seminal paper is Thirlwall (1979).

The reason is straightforward. If the growth of financial flows is greater than the growth of GDP, then the net overseas debt to GDP ratio will rise inextricably. There is a limit to the size of this ratio before international financial markets become distinctly nervous about the risk of private and, especially in less developed countries, public default.[7] If much of the borrowing is short-term, then there is danger of capital flight, precipitating the collapse of the exchange rate. Not only will this cause capital loses in terms of foreign currency (notably United States [US] dollars) of domestic assets owned by foreigners (the lenders), but it will also cause severe domestic liquidity problems. This is especially true of many developing countries as overseas borrowing by banks and firms is predominantly

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[6] The current account also includes remitted profits and wages and salaries from overseas. For expositional ease, this complication will be ignored in the theoretical discussion. However, remittances have become a very important net inward financial flow in the case of Pakistan.

[7] The financial markets also carefully scrutinize the ratio of the current account deficit to GDP.

denominated in a foreign currency, normally US dollars.[8] As the exchange rate plummets, so domestic firms have difficulty finding domestic funds to finance their debt and day-to-day operations, often with disastrous consequences.

The exact size of the net overseas debt to GDP ratio at which it becomes difficult for a country to borrow in the world markets will vary from country to country, depending upon the strength of its underlying economy and the perceived danger of government default. The US, for example, can run a much larger deficit as a proportion of its GDP than any less developed country, but there are limits even to the size of the US current account deficit.

Consequently, there is a growth rate that a country cannot exceed for any length of time, because if it does so, it will quickly run into BOP difficulties. This is the "BOP equilibrium growth rate".[9] Simply put, an increase in a country's growth rate, *ceteris paribus*, increases the growth of imports through the import demand function while export growth, determined largely by the growth of a country's overseas markets, remains unaffected. Thus, the only effective way to quickly reduce a growing current account deficit is to reduce the rate of GDP growth. A country is said to be "BOP-constrained" if its actual growth rate (y_A) is such that the current account is in balance[10] in the long run and y_A is below the growth of productive potential (y_p). This is termed the BOP equilibrium growth rate (y_{BP}).

These various growth rates are shown in Figure 1 when the economy is BOP-constrained. It can be seen that the actual growth of the economy, y_A, fluctuates around the BOP equilibrium growth rate. In a boom, y_A can exceed y_{BP} for a short period (given by *ab*), where the difference in growth rates is financed by short-run speculative capital flows. Subsequently, y_A falls and there are net financial outflows (*bc*). However, y_A is consistently below y_{BP}.[11] It is important to note that a persistent current account deficit is *not* a necessary condition for growth to be BOP-constrained.

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[8] The Asian financial crisis of 1997 bears testimony to this, and the Argentinean and Russian crisis demonstrate the possibility of government default.

[9] It is worth emphasizing at this stage that this assumes that the standard adjustment mechanisms through changes in the exchange rate and the relative prices of imports and exports are, for a variety of reasons, largely ineffective in ensuring external equilibrium. This is discussed further below.

[10] Some developing countries are able to run a current account deficit almost indefinitely as capital inflows are in the form of long-term investments that help to develop their resource base and thereby exports. Consequently, in these circumstances, the BOP-constrained growth rate is defined as that growth rate that is compatible with the "basic balance" being in equilibrium.

[11] It is, nevertheless, possible for the actual growth rate in a boom to reach the growth of productive potential, but this is unsustainable in the long run.

Figure 1: Actual Growth, Balance-of-Payments Equilibrium Growth, and Growth of Productive Potential

Growth of Output

Time
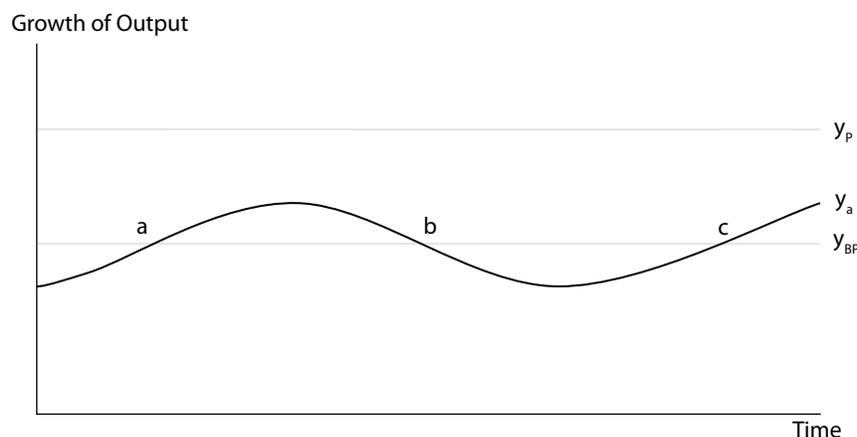
While the growth of productive potential is not empirically a well-defined concept,[12] it is likely that most less-developed countries could grow faster, given more foreign exchange. On one hand, if $y_A > y_{BP}$ the resulting current account deficit will necessitate y_A to decline until it equals y_{BP}. On the other hand, if $y_A < y_{BP}$, then the country will accumulate trade surpluses. Given the asymmetry in the adjustment process resulting from BOP surpluses and deficits, there is no, or certainly less, pressure on the country to raise its growth rate until it reaches y_{BP}. A country can accumulate foreign exchange reserves almost indefinitely. This imparts a strong deflationary bias into the world economy.

The consequences of having BOP problems are straightforward. If a country encounters a BOP problem before short-term capacity utilization is reached, then demand is curtailed. Disguised and open unemployment will increase, and capital accumulation will be reduced (as will be embodied and induced technical progress). This will lead, in the long run, to a relative deterioration of the country's export potential compared with to that of its main competitors'. This may lead to a vicious circle with a further increase in BOP problems. By way of contrast, if export growth is fast, this will allow the import of necessary capital goods; it will encourage a high rate of investment, and allow rapid structural change with labor moving from low-productivity to high-productivity areas. Growth takes the form of a "circular and cumulative causation" (Myrdal 1957).

Highly aggregated growth models, of course, do not provide any detailed prescriptions for the policy maker, but merely provide an appropriate framework within which to analyze

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[12] For example, it is not an immutable growth rate. It is likely to be determined by past economic performance, i.e., it is path-dependent. A country that has experienced fast growth rate in the past is likely to have experienced high rates of capital accumulation and hence has a faster growth of productive potential. Leon-Ledesma and Thirlwall (2002) find evidence of the endogeneity of the "natural rate of growth" with this being a function of the actual growth rate.

development problems. The focus of the BOP-constrained growth model is that a *sine qua non* of increasing economic growth is to introduce policies that increase the trend rate of growth of exports.

The importance of trade and exports in explaining growth has long been recognized and has given rise to the export-led growth theory (see, for example, Balassa 1978, Tyler 1981, and Feder 1982). There have been many studies examining the relationship between openness or trade liberalization and growth, although often with inconclusive results (Santos-Paulino and Thirlwall 2004). Yet, the emphasis of these studies has been on the real side of the economy and not on impact of financial flows constraining growth.[13] There are other reasons for emphasizing the growth of exports other than for BOP reasons. The traditional export-led growth theory often makes no mention of the BOP but instead emphasizes the benefits of exports, *per se,* on the growth and efficiency of the economy. There are a number of reasons for this:

(i)   Exports enable the scale of production to be larger than if production were just for the domestic market, hence the benefits of economies of scale can be reaped.

(ii)   Competition in world markets is likely to be fiercer than in the home market, leading to increased pressure for firms to become increasingly efficient and to invest in capital equipment and encourage the development of skills.

(iii)   Exposure to world markets leads to greater acquaintance with best-practice technologies and this can have spillover effects into domestic firms.

(iv)   Faster export growth allows a faster growth of essential imports, such as capital goods.

However, the key difference is that BOP-constrained growth places emphasis on the growth of exports, not just for the reasons enumerated above, but because exports are the one component of demand whose growth simultaneously relaxes the BOP constraint. The approach is sometimes termed a "demand-oriented" approach. This is because when y_{BP} is below y_p, an increase in the growth of exports will increase the growth of output via the dynamic Harrod foreign trade multiplier, or more generally, the Hicks super-multiplier (McCombie and Thirlwall 1994). However, this is not to say that the supply side

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[13] There are also now numerous cross-sectional studies that find a close correlation between export and output growth (see the survey in Shirazi and Manap 2004). This is, of course, the same relationship that the BOP-constrained growth predicts, but for different reasons. Granger causality tests provide more mixed evidence, but these tests largely capture the relationship between exports and output fluctuating around the trend rate of growth. The BOP equilibrium growth rate suggests that the relationship is between faster *trend* rates of growth of exports and output. Consequently, Granger tests are unlikely to be very informative and, indeed, it is not hard to think of reasons as to why GDP may increase prior to an increase in exports. For example, multiplier effects will occur from the increased demand for inputs for exports before the latter are sold. Nevertheless Shirazi and Manap (2004) find that Granger causality tests show causality from exports to output but not in the reverse direction. They conclude from this that Pakistan should follow an export-led growth strategy.

is unimportant. Indeed, the approach focuses the policymaker's attention on the necessity of increasing the rate of growth of exports, which will inevitably involve supply-side measures.

This approach assumes that there are underutilized resources that can be brought into production, given that there is a *sustained* increase in the growth of demand. (In the short run, there may be supply bottlenecks that can put a break on growth.) There is either disguised unemployment or a substantial traditional sector where productivity is below that in the modern sector. In the latter case, a faster growth rate will lead to a more rapid transfer of labor from the traditional to the modern sector, and hence induce productivity gains (Pack and Nelson 1999). Capital accumulation is, as Kaldor (1970) once noted, as much a consequence of economic development as a cause. Increased output generates profits that provide the funds for investment. Growth does not occur because countries have a high (exogenous) savings (and hence investment) rate; rather, countries have a high savings rate because of fast growth. (Blomstrom et al. 1996 find that output growth Granger-causes investment.) Henry Ford, for example, did not build up his automobile business from high personal initial savings, but from the profits his factories generated (Kaldor 1970). Underlying the BOP-constrained growth model there is a supply side model such as the Verdoorn productivity growth function, where a faster growth of output leads to a faster growth of productivity. The rate of output growth, in turn, is determined by the growth of exports and the operation of the BOP constraint. In this paper we shall be concerned with the last relationship but Thirlwall and Dixon (1979) discuss the role of the Verdoorn law in the BOP-constrained growth model.

Developing countries, as mentioned above, need to earn foreign exchange to import advanced capital and intermediate goods. If the less developed countries cannot earn enough foreign earnings to pay for these goods, as well as the expensive consumption goods demanded by the wealthy elite, this will act as a brake on growth. Exogenous capital inflows, it is true, can provide a boost to growth, but experience has shown that the volatility of short-term capital flows can lead to major financial crises and sovereign default. These can have damaging effects in the short term, and indeed, on the long-term growth rates of the affected countries. The term the "lost decade of growth" is often applied to the experience of some Latin American countries in the 1980s and 1990s and to Pakistan in the 1990s.

All this stands in marked contrast to conventional neoclassical growth theory, of both the Solow (1956) and the endogenous growth varieties (Romer 1986 and 1990). These are supply-oriented in the sense that the growth of demand has no independent role to play and essentially Say's law is assumed to hold. Under Say's law, all factors are fully utilized (an assumption at variance with the experience of the developing countries) and all output produced is assumed to be sold.

At the macroeconomic level, most factors of production are endogenous to demand. Capital is as much a consequence of growth as it is a cause. Indeed, as was noted above, most investment is generated out of retained profits and once an industry, or indeed a country, begins to grow rapidly, it generates the necessary resources to sustain its expansion.[14] Labor is a derived demand from output and with disguised unemployment; movement of labor from the low-productivity, traditional sector to the high-productivity sector; etc., labor is generally forthcoming.

The fact that growth is BOP-constrained does not imply that the supply merely reacts passively to the growth of demand and can therefore be safely ignored. Far from it. The supply side is important in this approach for a number of reasons. Firstly, the supply characteristics of existing exports are crucial for the possible success of the latter in competing in overseas markets. "Nonprice competitiveness", reflecting the quality of the product, reliability and speed of delivery, effectiveness of overseas marketing, etc., are all of great importance. Generally, this is more important in the long run than "price competitiveness".

Secondly, for a fast sustained rate of growth without BOP problems, it is necessary for a country to export those goods for which world demand is increasing rapidly. Yet, as has been noted above, one of the major problems of the less developed countries is the inability to compete effectively on world markets. To anticipate an example later in the paper, it is no use if Pakistan is able to manufacture *cheap* brass automobile radiators when technology has moved on so that the leading world automobile manufacturers are now using aluminium radiators (the exception is that Pakistan can sell these radiators in its small protected domestic market). It is therefore not surprising that many reports looking at development strategies for the less developed countries pay particular attention to the potential for increasing export growth (see for example, World Bank 2006 for the case of Pakistan).

Problems on the supply side can also be damaging for growth, especially to the extent that they restrict export growth. Some problems are specific to exports, such as congested ports, administrative bureaucracy with respect to importing and exporting, and poor communications between the ports and the main export-producing regions. But more general problems that plague developing countries as diverse as power outages and political instability can also reduce the production of exports and hence lower the BOP-constrained growth rate. Consequently, the supply side is important, but not in the way it is treated in the neoclassical growth models.

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[14] This is a very different way of viewing the endogeneity of capital accumulation from the endogeneity of the growth of capital in neoclassical steady-state growth due to diminishing returns of the produced means of production.

III. The Balance-of-Payments Equilibrium Growth Rate

In this section, following Thirlwall and Hussain (1982), we derive the determinants of the BOP equilibrium growth rate. It is convenient to start with the definition of BOP, namely:

$$P_d X + F \equiv (P_f E)M \tag{1}$$

F is the value of net capital inflows in the domestic currency (including the net change in foreign exchange reserves), $P_d X$ is the value of exports measured in nominal domestic currency, and $(P_f E)M$ is the value of imports also in domestic currency. P_d and P_f are the domestic price of exports and foreign price of imports, and E is the nominal exchange rate (the domestic price of foreign currency).

The demands for exports and imports are given, respectively, by the functions:

$$X = AZ^{\varepsilon}(P_d / P_f E)^{\psi} \tag{2}$$

and

$$M = BY^{\pi}(P_f E / P_d)^{\eta} \tag{3}$$

where Z is world income,[15] ε is the world income elasticity of demand for the country's exports, ψ (<0) is the price elasticity of demand for exports, Y is domestic income, π is the domestic income elasticity of demand for imports, and η (< 0) is the price elasticity of demand for imports. A and B are constants. In a growing economy, BOP equilibrium requires that the growth of exports and net flows equals that of imports. Expressing equations (1), (2), and (3) in growth rates and substituting the export and import demand functions (in growth rates) into the BOP equation (also in growth rates) gives the following equation for the growth of output (lowercase letters denote growth rates):

$$y = \frac{\theta_X \varepsilon z + (1 + \theta_X \psi + \eta)(p_d - p_f - e) + \theta_F (f - p_d)}{\pi} \tag{4}$$

where θ_X and θ_F are the share of exports and capital flows in total foreign earnings, i.e., $\theta_X = (P_d X)/(P_d X + F)$, $\theta_F = F/(P_d X + F)$, respectively, and $\theta_X + \theta_F = 1$.

It is now possible to derive a number of different equations for the BOP equilibrium growth rate, depending upon the exact assumptions made. Some countries have run current account deficits for many years without this being perceived as a problem. This is because capital flows are largely foreign direct investment (FDI) that go into building up the country's productive capacity, and hence increase its potential export performance. Moreover, generally (though not always) these funds do not flow out as other more

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[15] Strictly speaking, this is the growth of the country's trading partners each weighted by the country's share of exports.

volatile capital flows can do. Other developing countries have been able to rely on substantial volumes of overseas aid and remittances from expatriate workers (this is especially true in the case of Pakistan). The sum of all these net long-term capital flows gives what is termed the "basic balance", and it is this that needs to be in equilibrium in the long run. In other words, the current account can be in deficit so long as this does not exceed the long-term capital flows (f_{LT}). Hence the equation for BOP-constrained growth is given by:

$$y_{BP} = \frac{\theta_X \varepsilon z + (1 + \theta_X \psi + \eta)(p_d - p_f - e) + \theta_F(f_{LT} - p_d)}{\pi} \tag{5}$$

Equation (5) differs from equation (4) in that in the latter, growth of the capital flows includes both long-term capital flows, such as FDI and official development assistance, as well as short-term speculative capital flows. Equation (5), consequently, excludes the more volatile short-term speculative capital flows

If all the capital flows are short-term, then for the net overseas debt to GDP to stabilize at any given θ acceptable to the international financial markets,[16] it is necessary that ($f_{ST} - p_d$) = y (where the subscript ST denotes short term) and, consequently:

$$y_{BP} = \frac{\theta_X \varepsilon z + (1 + \theta_X \psi + \eta)(p_d - p_f - e)}{\pi - \theta_F} \tag{6}$$

The third equation for the BOP equilibrium growth rate is when the current account is in equilibrium, or θ_F is approximately zero (i.e., the share of capital flows in total overseas receipts is small enough to be ignored):

$$y_{BP} = \frac{\varepsilon z + (1 + \psi + \eta)(p_d - p_f - e)}{\pi} \tag{7}$$

Some standard economic propositions follow from these equations.

(i)   If the Marshall-Lerner condition holds ($|\eta + \psi| > 1$), the BOP growth rate given by equation (7)—and equations (5) and (6) if $\theta_X < 1$—will be lower if domestic inflation exceeds world inflation (assuming that the prices of exports and imports closely follow these).

(ii)   If the sum of the price elasticities equals minus unity, changes in relative prices will have no effect on the balance of payments. Moreover, if they are just above unity, a large change in the real exchange rate (i.e., $p_d - p_f$ - e) will be needed to have any significant effect upon the current account.

(iii)   A continuous depreciation of the exchange rate (e >0), *ceteris paribus,* will raise the BOP growth rate, again assuming that the Marshall-Lerner condition is met. However, it is important to note that this has to be a *continuous* depreciation (i.e., the exchange rate needs to fall in each period).

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[16] It is the short-term net overseas debt that is likely to cause the international financial markets particular concern.

(iv)   An increase in the growth of world income will raise the BOP equilibrium growth rate, but the percentage point increase will depend crucially upon the value of ε.

(v)   Likewise, an increase in the propensity to import (π), will reduce the BOP equilibrium growth rate.

And finally, if the growth of relative prices has little systematic effect on the growth of exports and imports and there are no net capital flows, the BOP equilibrium growth rate reduces to what has become to be known as "Thirlwall's law" (Thirlwall 1979):

$$y_{BP} = \frac{\varepsilon z}{\pi} = \frac{x}{\pi}$$

(8)

In this last case, the BOP growth rate is equal to the growth of "world income'" multiplied by the ratio of the income elasticities of demand for exports and imports. This is equivalent to the growth of exports divided by the income elasticity of demand for imports. In Section IV we extend this model to include the effect of remittances. We shall discuss the factors determining these crucial parameters below.[17]

This framework for analyzing the growth of countries stands in marked contrast to the neoclassical (monetary) approach to the BOP, where the small country assumption is made and the world price elasticity of demand for exports is taken to be infinite. (This implicitly assumes that countries' exports are homogeneous and markets are perfectly competitive.) If growth is to be BOP-constrained, changes in relative prices must play a negligible role in determining the rate of growth of exports and imports. There are a number of reasons why this may be the case.

First, for especially the advanced countries exporting largely manufactured goods and financial services, evidence suggests that nonprice competition (quality, design, delivery times, distribution networks, after-sales service, and reputation) is far more important than price competition. In other words, successful exporting focuses on *shifting* the product demand curve outward through, for example, product development, rather than by improving relative prices and *moving down* the demand curve. A corollary of this is that for manufactured goods and certain types of services, the price elasticities are likely to be low. The empirical evidence from testing the theory suggests that for a large number of countries, the Marshall-Lerner condition is often barely, if at all, met (McCombie and Thirlwall 2004). McCombie and Thirlwall (1994, chapter 4) also present survey and other evidence in support of the proposition that it is nonprice rather than price competition that matters in international trade. Likewise, for many less developed countries, and to the extent that imports are especially capital goods or manufactured consumer goods, the import price elasticities are also likely to be low. Exports of many less developed

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[17] Krugman (1989) rediscovered this relationship, which he termed the 45-degree rule. However, he argued that the income elasticities change endogenously to bring the current account into balance and presented a supply-side model to explain how this comes about. However, Thirlwall (1991) has shown that this is not a convincing explanation.

countries are largely primary products where price elasticities are likely to be higher, but the attempt by one less developed country to gain an international price advantage is likely to be met by competitive devaluations.

Secondly, there may be a strong element of pass-through of higher import prices into the general price level and into the price of exports. In other words, it may be difficult to translate a change in the nominal exchange rate into a real exchange rate change, i.e., $p_d - e - p_f = 0$.[18] It is important not to overstate the argument and, as we shall see, this not the case for Pakistan. (Nevertheless, at times the depreciation of the rupee has led to substantial imported inflation.) Consequently, this is not to say that exchange rate changes have *no* effect on the current account.[19] A sharp deterioration in the exchange rate may, after *J*-curve effects have worked themselves out, improve the current account for any given growth of output.[20] But it is unlikely to increase the *growth* of exports and reduce the *growth* of imports, allowing the BOP equilibrium growth rate to increase. (It will be recalled that for this to occur, given the multiplicative nature of the export and import demand functions, there will have to be a continuous and substantial fall in the real exchange rate.) In other words, exchange rate adjustments generally have level effects (although sometimes only temporarily) and not growth effects.

Furthermore, there is evidence that for many developing countries exchange rate depreciations are actually contractionary and a floating exchange rate, far from relaxing the BOP constraint, could actually be destabilizing.[21] There are two channels through which this could occur. The first is that developing countries are heavily dependent on capital and other key intermediate goods. The increased costs of these necessary inputs in the domestic currency could severely curtail production of both domestic goods and exports. The other channel, which was seen to operate during the Asian crisis of 1997–1998, arises from the balance sheets of firms. If overseas loans are denominated in foreign currency, a *substantial* depreciation will raise the domestic value of these liabilities. This will have large adverse effects on firms' liquidity and wealth, which will reduce investment and consumption. Moreover, repeated devaluations could also lead to loss of confidence by the financial markets, making it difficult to access foreign capital. Nevertheless, given the observed, often substantial, differences in national inflation rates, it is still necessary to have a floating nominal exchange as preserving price competitiveness is not totally unimportant. The Asian crisis showed how pegging the

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[18] It is important not to confuse this argument with the neoclassical "law of one price" where $p_d - e - p_f = 0,$ as do McGregor and Swales (1985). The law of one price states that arbitrage will ensure that the price of traded goods will be equalized in the long run. But a necessary assumption is that goods are homogeneous and this, together with the small country assumption, means that the price elasticities of exports are infinite. Hence, there can be no BOP constraint; small relative price changes will be sufficient to bring the current account into equilibrium. However, the law of one price is one of the most widely empirically refuted propositions in economics.

[19] There does not seem to be any strong evidence for exchange rate changes to affect Pakistan's prices (see Haque and Montiel 1992, Siddiqui and Akhtar 1999, and Choudhri and Khan 2002).

[20] Aftab and Aurangzeb (2002) and Rehman and Afzal (2003) find J-curve effects.

[21] See Diaz Alejandro (1963), Cooper, (1971), Krugman and Taylor (1978), Edwards (1989), and Kamin and Rogers (2000).

exchange rate to the dollar eventually became unsustainable and led to a more serious situation than if the currencies had been allowed to float in the first place.

On the world stage, the mere fact that policymakers express great concern about the impact of the slowdown of large trading blocs (such as PRC, European Union, and US) on the rest of the world points to the ineffectiveness of relative price changes. This stands in marked contrast with the conventional approach, which stresses that, at full employment, a devaluation and expenditure-reducing policies are necessary and sufficient to correct the current account deficit. In other words, if exchange rate adjustments were effective, these would delink the world's economies and prevent the contagion effects through trade flows observed in practice. The usual prescriptions under the IMF and World Bank Structural Adjustment programs for developing countries that run into BOP difficulties are based on the conventional approach.

A continued devaluation may actually reduce the incentive and push for structural change (i.e., the shift of production and exports toward more sophisticated products) in less developed countries. In the case of Pakistan, a depreciation of the rupee, by protecting the profit margins of producers of low value-added goods, such as yarn and grey cloth, reduces the incentive for moving up the value-added chain (Sakib 2000, cited by Zaidi 2005).

There have been a number of studies for Pakistan concerned with the possibility that a currency devaluation will improve the trade balance (a level adjustment) rather than leading to a sustained rise in the growth rates of imports and exports. Most of these have focused on the values of the price elasticities and whether or not the Marshall-Lerner condition is met. But it should be reemphasized that even if the Marshall-Lerner condition were satisfied, it will still require a continuous real depreciation of the exchange rate to influence the *growth* of exports and imports. Moreover, the size of the continuous devaluation would have to be large to have any significant effect even if the Marshal-Lerner condition were met, if the absolute values of the price elasticities are low.

An early study by Khan (1994, 1) using quarterly data found a "modified version of a Marshall-Lerner condition barely satisfied for Pakistan, suggesting little or no positive effect on the external balance due to devaluation. This finding is reinforced by disaggregate export demand functions." Khan and Aftab (1995) concluded that the Marshall-Lerner condition was not satisfied, and at the disaggregated level a depreciation did not improve export performance. Afzal (2001) used a simultaneous equation framework over the period 1960–1999 including import supply and demand functions, and found that the coefficients of the relative price terms in both equations were small and statistically insignificant. Rehman (2007) estimated an import demand function using annual data for the period 1975 to 2005. He found that the absolute values of the price elasticities were small and statistically insignificant in the short run, and also small in the long run. The coefficient on the import price term was –0.50 and on the domestic price

level –0.36 and not statistically significant. Akhtar and Malik (2000) found that the effect differed depending upon who the trading partners were. A real devaluation improved the trade balance vis-à-vis Japan and the United Kingdom (UK) but not vis-à-vis Germany and the US. Aftab and Aurangzeb (2002), however, found higher absolute values for the price elasticities. The OLS and ML estimates for the import demand function were –0.69 and –0.87, respectively. And for the import demand function the values were –0.41 and –0.62.

The picture that emerges is one where the absolute values of price elasticities are generally low regardless of whether or not the Marshall-Lerner condition is met. As Sakib (2000) points out, while Pakistan's main exports have increased in both volume and value, this has been very small compared with the fall in the value of the rupee. Zaidi (2005, 181, emphasis in the original) concludes that "it seems that the costs associated with a depreciation of the rupee are *significant* while the benefits are *uncertain*." In the next section we present some new evidence on this issue.

IV. Is Pakistan's Growth Rate Balance-of-Payments Constrained?

In this section, we test whether or not Pakistan's growth rate can be considered to be BOP-constrained over the period 1980–2007. Since this approach was first promulgated by Thirlwall (1979) there have been a large number of studies that have tested the model. Generally, the results have provided compelling evidence in favor of the hypothesis for a large number of countries (see McCombie and Thirlwall 1997 and 2004.)

Clearly, however, not all countries can be simultaneously BOP-constrained. In the case of some countries such as Japan, which has run substantial current account surpluses, for much of the early postwar period, the growth of productive potential was below the BOP equilibrium growth rate. This was because the country was growing so fast that it encountered capacity constraints. Countries in this position are termed *resource-constrained.* Some countries are constrained to grow below their BOP equilibrium growth rate in order to reduce the rate of inflation. These countries are *policy-constrained*.

Most of these tests involve estimating the import and export demand functions and then calculating the hypothetical BOP equilibrium growth as $y_{BP} = x / \pi$. If a country is at, or near, its BOP equilibrium growth rate, then y_{BP} should be a good predictor of the actual growth rate, y_A, when these are calculated over a number of years. This is referred to as the "weak test". The "strong test" uses the equation for the BOP-constrained growth in the form $y_{BP} = \varepsilon z / \pi$. In some studies, the rate of change of the terms of trade is also included and an allowance is made for an initial current account deficit. However, for

Pakistan it is necessary to incorporate unrequited remittances from workers overseas as these are an important source of foreign exchange.

A. The Import Demand for Pakistan's Imports and the Weak Test of Thirlwall's Law

The first test that we discuss involves estimating the standard import demand function given by equation (3) $M = BY^{\pi}(P_f E / P_d)^{\eta}$. Regression analysis was used to obtain an estimate of π, which was then used to calculate Thirlwall's law in the weak form by using the growth of exports. The BOP equilibrium growth rate can then be compared with the actual growth rate. A more formal test, first proposed by McCombie (1989), is to calculate the hypothetical income elasticity of demand that exactly equates the BOP equilibrium growth rate with the actual growth rate (π_h) and to test whether π_h is statistically different from π.

As the difference between the actual growth rate and the BOP-constrained growth rate must, by definition, be covered by the growth of financial flows, we use the results to calculate the latter. We then calculate the contribution of exports to the growth of output, remittances, real exchange rate, relative prices, and capital flows.

The seminal study of import and export demand functions was by Houthakker and Magee (1969) who estimated the equations in logarithmic form by ordinary least squares. The relative price term in Thirlwall's model, discussed above, is simplified for expositional purposes. Houthakker and Magee used the ratio of the price index of imports to the domestic wholesale price index.[22] While these indices have the advantage of being readily available, their use assumes that imports are substitutes for domestically produced goods, including nontradables. This is implausible especially for developing countries. Ideally, the denominator should be an index of prices of a basket of similar goods produced by other competing exporters, weighted by the country's import shares. This assumes that the elasticity of substitution of imports and domestically produced goods is low.[23] But the data requirements to construct such an index are substantial. In the case of the advanced countries where much trade is intra-industry, the terms of trade (the ratio of export to import prices expressed in domestic prices) could be used, with the former as a proxy for import competing products. In this study, the real effective exchange rate was used in estimating Pakistan's import (and export) demand functions as the preferable measure.[24] It should be noted that Khan (1994) makes a plausible case for using real effective exchange rates.

Since Houthakker and Magee's (1969) study, recent developments in time-series econometrics have raised the problem of nonstationarity of the variables and spurious

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[22] Aftab and Auranzeb (2002) use a similar measure.

[23] Alternatively, the price of domestically produced substitutes for exports should also be included, but the data requirements become intractable.

[24] There is the further problem in the use of the "prices" of imports (and exports). These are usually proxied by unit values of imports and exports but there are serious errors in this procedure. (See, for example the IMF discussion at www.imf.org/external/np/sta/tegeipi.)

regression. Empirically, the variables in the export and import equations are often found to be I(1). Bairam (1993) found that using first differences for a sample of advanced countries did not lead to any significant differences in the estimates (compared with the estimates in logarithm form).[25] Subsequent analyses using more appropriate and recent econometric techniques have generally found that the variables in the import and export demand equations are cointegrated (see the empirical studies in McCombie and Thirlwall 2004).

In this study, both import and export demand functions have been estimated by employing the autoregressive distributed lag (ARDL) modelling approach to cointegration analysis. Although there are other approaches to estimating cointegrating relationship such as Engle and Granger (1987) and Johansen (1991 and 1995), all these testing procedures require that the underlying variables be integrated of same degree. The ARDL method has the advantage of avoiding the classification of variables into I(1) or I(0). Moreover, it takes a sufficient number of lags to capture the data generating process in a general-to-specific modelling framework and avoids the pretesting issues associated with standard cointegration analyses. Another reason for using the ARDL in this study is that while most of the conventional multivariate cointegration procedures are valid for large sample sizes, the ARDL approach is suitable for a small sample size. Therefore, in this study, where the sample size is limited to 26 observations, this approach seems to be the appropriate one. The estimation of an ARDL requires first establishing a long-run relationship among the variables under investigation by employing the F-statistic. Pesaran et al. (2001) provide the asymptotic critical values of the bounds for the F-test to be used for cointegration analysis under various assumptions. If the F-statistic is higher than the upper bound critical value, the null hypothesis of no cointegration is rejected in favor of alternative hypothesis. Second, once the long-run relationship is established, then both the short-run and long-run parameters can be derived from the estimated ARDL model.

We started with a sufficiently general model. After testing the insignificance of the short-run dynamics, the specific ARDL model for aggregate imports takes the following form:

$$\Delta lnM = \beta_0 + \varphi_1 \Delta lnY_{-1} + \varphi_3 \Delta lnY_{-3} + \sigma_3 \Delta lnREER_{-3} + \delta_1 lnM_{-1} + \delta_2 lnY_{-1} + \delta_3 lnREER_{-1} + vdum \qquad (9)$$

where M, Y, and $REER$ are the volume of imports, GDP and the real effective exchange rate, respectively. The variable dum is a dummy that takes the value of one from 2001 onward, and zero otherwise. This captures the structural break corresponding to the date Pakistan became "open" according to Wacziarg and Welch (2003).

In the above model the hypothesis that $\delta_1 = \delta_2 = \delta_3 = 0$ was tested using Pesaran et al. (2001) F-statistic. The results show that the calculated F-statistics at 5.20 is above the interval of critical values (3.79–4.85) at the 95% significance level, thereby rejecting the

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[25] Economic theory suggests that it would be very surprising if the equations were not cointegrated, i.e., it is highly improbable that income and imports could diverge without limit.

null hypothesis of no long-run relationship. After establishing the presence of cointegration among the variables, error correction term and long-run estimates were derived. The results of the ARDL model for Pakistan's aggregate imports are given in the following table:

Table 2: ARDL Model for Import Demand: Equation (9)
Dependent Variable: $\Delta\ln(M)$

Coefficient	Estimate	t-ratio
β_o	−0.58	−0.43
φ_1	1.32	1.82
φ_3	0.17	0.24
σ_3	0.11	0.52
δ_1	−0.87	−3.87
δ_2	0.79	3.15
δ_3	−0.21	−1.18
ν	0.15	3.38

No. of observations: 24
$R^2 = 0.55$
Wald F-statistic = 5.20
Interval of critical values (3.79-4.85)

Having estimated the ARDL model for aggregate imports, the long-run elasticities were derived. The income elasticity of import with respect to Pakistan's GDP is estimated as 0.91 (calculated as − [0.79/(−0.87)]) and the price elasticity as −0.24 (calculated as −[(−0.21)/(−0.87)]). The error correction term δ_1 is significant and shows a high speed of adjustment (−0.87).[26]

Before testing whether Pakistan's growth rate is BOP-constrained, two important points arise. The first is that Pakistan has continuously run a substantial trade deficit over the period concerned. This was largely offset by the large net flows of unrequited private remittances. Remittances (part of the current account) accounted for 37% of total foreign exchange receipts in 1981, and 27% in 2007 with an average over the period of 33%. A substantial proportion of these remittances came from expatriate workers. However, it is not clear that they are related to either the growth of Pakistan's domestic income or to the growth of its major trading partners; and undoubtedly are influenced by political factors in the form of foreign countries' willingness to have overseas workers. Table 3 shows how workers' remittances have grown considerably from US$136 million in 1973 to US$5,494 million in 2007. Moreover, it can also be seen that the distribution of the countries of origin of the remittances has also changed markedly over the last quarter of a century. These earnings were therefore treated as exogenous for purposes of this exercise.

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[26] Notwithstanding the above comment, the model was also estimated using the Johansen method of cointegration and a vector error correction model. This gave virtually identical results with an estimate of the income elasticity of imports of −0.93 and the import price elasticity of demand of −0.26.

Table 3: Pakistan: Expatriate Workers' Remittances by Country of Origin (percent)

	FY1973	FY1980	FY 2007
Total Middle East	25.54	78.06	48.18
Abu-Dhabi	0	6.02	3.65
Bahrain	1.81	1.89	2.48
Dubai	0	4.98	11.57
Iran	0.49	0.95	0
Iraq	0.09	0	0
Kuwait	5.18	6.4	5.26
Libya	1.63	2.94	0
Qatar	1.6	3.62	3.11
Saudi Arabia	5.79	45.61	18.64
Sharjah	0	1.43	0.53
Sultanat-e-Oman	8.97	4.22	2.94
Germany	0.97	3.29	1.4
Norway	0.49	0.83	0.04
United Kingdom	53.04	8.85	7.83
Canada	1.56	0.42	1.59
United States	7.34	3.52	26.58
Others	11.06	5.29	13.94
Total	100	100	100
US$ Million	136	1744	5494

Source: Federal Bureau of Statistics, Pakistan.

The full equation for the augmented BOP growth rate is given by

$$y_{BP} = \frac{\theta_X x + \eta(reer) + \theta_R(r - p_X) + \theta_F(f - p_X) + (p_X - p_M)}{\pi} \tag{10}$$

where r is the growth of remittances, $reer$ is the growth of the real effective exchange rate, and p_X and p_M are the rates of change of the export and import prices, and so ($p_X - p_M$) is the rate of change in the terms of trade.[27] The θ_i's (where $i = X, R, F$) are the shares of exports, unrequited transfers, and capital flows (including changes in reserves), and $\theta_X + \theta_R + \theta_F = 1$. It is a weak test because it is derived using the observed growth of exports directly rather than the weighted growth of the country's trading partners.

This differs from the theoretical model discussed in Section III in two ways. First, the growth of imports is specified as a function of the real effective exchange rate rather than of the relative prices of imports and exports. This may not lead to any radically different conclusions if the growth of domestic prices and those of Pakistan's trading partners (weighted by the trade shares) do not differ greatly from the growth of export and import prices in Pakistan.

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[27] These are expressed in a common currency and so the rate of change of the exchange rate (e) does not explicitly appear.

Secondly, we define the BOP-constrained growth rate to be the maximum growth rate that can occur *without* any capital flows other than remittances, i.e.,

$$y_{BP} = \frac{\theta'_X x + \eta(reer) + \theta'_R(r - p_X) + (p_X - p_M)}{\pi}$$ (11)

Equation (11) is used because the growth of capital flows tends to be volatile and subject to political influences.[28] Consequently, the financial markets cannot be sure about how it will occur over the long run. This exclusion of the term $(f_X - p_X)$ has the minor effect of altering the values of the shares, which are now θ'_X, the share of exports in the sum of the receipts of exports and unrequited remittances, and θ'_R the share of remittances ($\theta'_X + \theta'_R = 1$).

Table 4 reports the growth rates and parameters of equation (11) and the BOP equilibrium growth rate for 1980–2007. The latter is 5.05% per annum and is marginally below Pakistan's actual growth rate of 5.31% per annum, suggesting that, over this period, Pakistan was growing at, or very near to, its BOP equilibrium growth rate. The estimates of the price elasticities show that the demand for Pakistan's exports is price-inelastic. The BOP equilibrium growth rate when the price elasticities are each constrained to minus 0.5 is 5.78%. If the growth of the real effective exchange rate is close to the rate of change of the terms of trade, then the constraint implies, from the Marshall-Lerner condition, that a change in the exchange rate would have no effect on the balance of payments, provided that the current account is in equilibrium. It is clear from these results that the rate of growth of exports cannot be increased through real exchange rate depreciations, and Pakistan's growth rate is BOP-constrained.

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[28] US aid was temporarily cut off after Pakistan tested its nuclear bomb.

Table 4: Balance-of-Payments Equilibrium Growth Rate: Growth Rates and Parameter Values, 1980–2007

Variable		Value
y_A	growth of GDP	5.31% p.a.
z	weighted growth of trading partners	3.00% p.a.
x	growth of exports	6.45 % p.a.
$r - p_x$	growth of real remittances	5.79 % p.a.
$p_X - p_M$	growth of terms of trade	−2.15 % p.a.
$reer$	rate of change of real effective exchange rate	−2.48% p.a
π	import income elasticity	0.91
η	import price elasticity	−0.24
ε	export income elasticity	1.51
ψ	export price elasticity	−0.34
θ'_X	average export share in foreign currency receipts	0.665
θ'_R	average remittance share in foreign currency receipts	0.335
The BOP equilibrium growth rates:		
Eq. (11) $y_{BP} = \dfrac{\theta'_X x + \eta(reer) + \theta'_R (r - p_X) + (p_X - p_M)}{\pi}$		5.05 (5.78) % p.a.
Eq.(13)* $y_{BP} = \dfrac{\theta'_X \varepsilon z + (\eta + \theta'_X \psi)(reer) + \theta'_R (r - p_X) + (p_X - p_M)}{\pi}$		4.06 (5.07) % p.a.

* See Section IVB.
Note: Figures in parentheses in the last two rows are the balance of payments equilibrium growth rate when η and ψ are each
         constrained to take a value of -0.5
Sources: IMF International Financial Statistics database, Pakistan Federal Bureau of Statistics, ADB sources.

This is confirmed by testing whether the hypothetical value of the income elasticity of demand for imports that would bring y_{BP} and y_A into strict equality is statistically different from the estimated elasticity. The value of the hypothetical elasticity is 0.88, compared with the estimated value of 0.91. The difference is not statistically significant with a *t*-value of 0.41.

Table 5 reports the contributions of the various components of the BOP to the actual growth of GDP. This is an *ex post* analysis because it includes the growth of capital flows; see equation (10).[29] Consequently, the shares used are for exports, remittances, and capital inflows.

The column headed (*A*) reports the contributions calculated using equation (10). The growth of exports contributes nearly 88% of the growth of GDP, which is equivalent to a growth rate of GDP of 4.66% per annum. (This is given by the figure in parenthesis.) This is perhaps not too surprising. The importance of the growth of remittances is also readily apparent. This accounts for over a third of the growth of GDP, equivalent to 2.11 percentage points. It can also be seen that the deterioration in the terms of trade

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[29] These are measured as the residual after all other contributions have been included. It is not possible to measure the growth of capital flows directly because the annual values include both negative and positive values.

imposes a heavy cost in the growth rate, reducing it by the equivalent of 2.34 percentage points, although this is partially offset by the rate of change of the real exchange rate. The growth of capital flows raises the growth rate by about 0.26 percentage point. If the price elasticity of demand for imports is constrained to be –0.5 (rather than the estimated –0.25), this increases the contribution the rate of change that the real effective exchange rate makes and reduces the contribution of capital flows.

All this serves to demonstrate just how dependent Pakistan is on the performance of the various components of the balance of payments, and even though the growth of exports (and imports) may be steady, a relative small short-run deterioration in the growth of remittances, the real effective exchange rate or the terms of trade could plunge Pakistan into a BOP crisis.

Table 5: Contribution of the Components of the *Ex Post* Balance-of-Payments Growth Rate to the Actual Growth Rate, 1980–2007

Component	(A) Equation (10) Weak Test	(B) Equation (12) Strong Test
Exports: $\dfrac{\theta_X x}{\pi}$, $\dfrac{\theta_X \varepsilon z}{\pi}$	88% (4.66 pp)	58% (3.06 pp)
Unrequited remittances: $\dfrac{\theta_R(r - p_X)}{\pi}$	40% (2.11 pp)	40% (2.11 pp)
Real effective exchange rate: $\dfrac{\eta(reer)}{\pi}$, $\dfrac{(\eta + \theta_X \psi)(reer)}{\pi}$	12% (0.65 pp)	24% (1.26 pp)
Terms of trade: $\dfrac{(p_X - p_M)}{\pi}$	−44% (−2.34 pp)	−0.44% (−2.34 pp)
Financial flows: $\dfrac{\theta_F(f - p_X)}{\pi}$	5% (0.26 pp)	24% (1.25 pp)
Total	100% (5.30)	100% (5.30)

Note: The figures in parentheses are the contributions expressed as a percentage point growth rate (pp).
Columns may not sum to the value of the totals because of rounding errors.
The first expression in exports and real effective exchange rate is from equation (10); while the second one is from expression (12).

B.   The Demand for Pakistan's Exports and the Strong Test of Thirlwall's Law

The above approach suffers from the shortcoming that it assumes, rather than tests, that the growth of exports is unaffected by the rate of change in relative prices. The strong test requires estimating the export demand function and using εz instead of x, and modifying the coefficient of *reer*. Consequently, the counterpart to equation (10) is:

$$y_{BP} = \frac{\theta_X \varepsilon z + (\theta_X \psi + \eta)(reer) + \theta_R(r - p_X) + \theta_F(f - p_X) + (p_X - p_M)}{\pi} \tag{12}$$

However, as in the previous section and for the reasons set out there, we exclude the growth of the capital flows and test whether the growth rate given by the equation:

$$y_{BP} = \frac{\theta'_X \varepsilon z + (\theta'_X \psi + \eta)(reer) + \theta'_R(r - p_X) + (p_X - p_M)}{\pi} \tag{13}$$

significantly differs from the observed growth rate, y_A. As the estimates of both ε and π have associated standard errors, it is not possible to test this hypothesis statistically with the weak test. Estimation of the export demand function followed the same approach as that of the import demand function.

1.   ARDL Model for the Export Demand Function

As with the import demand function, we started with a general ARDL model and through successive tests ended up with a specific export demand function, which takes the following form:

$$\Delta \ln X = \alpha_0 + \delta_1 \ln X_{-3} + \beta_1 \Delta \ln Z + \beta_2 \Delta \ln Z_{-1} + \beta_3 \Delta \ln Z_{-4} + \phi_1 \Delta \ln REER_{-2}$$
$$+ \phi_2 \Delta \ln REER_{-3} + \lambda_1 \ln X_{-1} + \lambda_2 \ln Z_{-1} + \lambda_3 \ln REER_{-1} + \gamma\, dum \tag{14}$$

X and Z are the volume of exports and the level of GDP of Pakistan's trading partners, weighted by their trade shares. The variable *dum* is a dummy introduced to capture the structural break in the data. It takes a value of zero from 1992 to 1999 and one otherwise. The coefficients δ_s, β_s, and ϕ_s represent the short-term dynamics while the terms with λ_s in the second part of the equation correspond to the long-run relationship.

In the above model, the null hypothesis that $\lambda_1 = \lambda_2 = \lambda_3 = 0$ was tested through the Wald test. The calculated F-statistic turns out to be 4.90, which is greater than the interval of critical values (3.79-4.85) under the assumption of an intercept and no trend, therefore rejecting the null hypothesis of no cointegration at the 95% significance level. The results of the estimated ARDL model for exports are reported in Table 6.

**Table 6: ARDL Model for Export Demand:
Equation (12) Dependent Variable: $\Delta\ln(X)$**

Coefficient	Estimate	t-ratio
α_o	0.12	0.04
δ_1	0.13	0.48
β_1	−2.95	−0.99
β_2	−2.02	−0.60
β_3	−1.99	−0.75
ϕ_1	0.09	0.15
ϕ_2	0.76	1.16
λ_1	−0.55	−3.33
λ_2	0.78	1.88
λ_3	−0.19	−0.50
γ	0.02	1.94

No. of observations: 23
R-Squared = 0.68
Wald F-statistic = 4.90
Interval of critical values (3.79-4.85)

On the basis of the estimated ARDL model, income and price elasticities of export demand were derived. The export demand elasticity with respect to trading partners' GDP turns out to be 1.41. The price elasticity estimated at –0.34 is not significant.[30] This implies that Pakistan's exports are relatively sensitive to foreign countries' GDP while they are unaffected by the real exchange rate.

This also means that the sum of the price elasticities of the demand for imports and exports is –0.58, which implies that the Marshall–Lerner condition is not satisfied.[31] It is likely that the relative-price terms in both the import and the export demand functions are likely to be subject to measurement errors, but with one other explanatory variable it is not possible to determine *a priori* the direction of the bias. Nevertheless, we also present results where the absolute value of the sum of the price elasticities was taken to be equal to unity.

The error correction term carries the correct negative sign and is statistically significant. The coefficient shows that about 55% of the discrepancy between the actual and the equilibrium value of the log of exports is corrected within a year's time.

For the whole period, the BOP-constrained growth rate given by equation (13) is 4.06% per annum (Table 4, equation (13)), which is over one percentage point below the actual growth rate. This suggests that Pakistan's actual growth was substantially above its BOP-constrained growth rate and the difference was covered by net inward capital flows. However, if the constrained estimates of the price elasticities are used then the BOP-constrained growth rate rises to 5.07% annum, which is only marginally below the actual growth rate.

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[30] These results are close to those obtained using the Johansen method and a vector error correction model.
[31] This is strictly true only if the growth of the real effective exchange rate is the same as the rate of change of the terms of trade. It also assumes that trade is initially balanced, which is not the case here.

Table 5, column (B), reports the contribution of the various components to the actual growth rate for equation (12). Once again, the contribution of the growth of capital flows has been calculated as a residual using equation (12). The contribution of the growth of world income plus that of the rate of change of the effective exchange rate amount to 4.32 percentage points of the growth of GDP. This compares with a contribution of 5.31 percentage points in the weak form.

These results once again confirm the ineffectiveness of relative prices in generating export growth because of the low absolute value of the price elasticities. Given the difficulty of attracting substantial capital flows, these results confirm that a relatively small decline in export growth, together with a fall in remittances, is sufficient to present Pakistan with serious BOP problems.

V. Implications for Pakistan's Development Policy

It has been shown that the maximum sustainable rate of growth of many countries is given by the simple rule $y_{BP} = \varepsilon z / \pi$, although in the case of Pakistan this has to be augmented by the growth of overseas workers' remittances. Of course, it should be emphasized that the rule is not a theory of the determinants of growth from the supply side *per se,* but a hypothesis of what is likely to be a major impediment to growth should there be an expansion in the rate of growth unaccompanied by an improvement in export performance. But having said this, the implication is that any successful development strategy needs to concentrate on improving exports; specifically, increasing the ratio ε/π. In other words, the supply *characteristics* are important. This is because it follows from the BOP growth rule that the key parameters that determine the maximum growth of an economy, consistent with BOP equilibrium, are the income elasticity of demand for exports (ε) and the domestic income elasticity of demand for imports (π). Given scarce resources, it is the factors affecting these values upon which the policymaker should focus. Policies designed to increase ε and reduce π should also improve the supply side of the economy in general.

Regarding ε, disparities in the world income elasticity of demand for exports can arise for two reasons. The first, which applies mainly to the developed countries, concerns differences in nonprice competitiveness. The composition of exports does not greatly differ between the developed countries at the aggregate level (there is a great deal of intra-industry trade). The poor export performance of, for example, the UK in the early postwar period was due to a bad performance in *all* of its export markets, and not because its exports were concentrated in slow-growing overseas markets. The second reason applies to many developing countries and it is that the composition of exports is unfavorable. This is true of many less developed countries, whose exports tend to concentrate on primary commodities or very low-tech, labor-intensive manufactured goods, such as textiles. These are generally commodities for which world demand is growing slowly or where there is fierce international competition.

Differences in the income elasticity of demand for imports (π) are the consequence of similar factors. In the case of the developing countries' imports, the values of π partly reflect the degree of dependence of the country on imported capital and intermediate goods necessary for domestic production. This elasticity can also be affected by the degree of income inequality and, as a consequence, the demand for sophisticated and expensive consumer goods.[32]

There are a number of problems common to all developing countries. These include the need to increase capital accumulation, both physical and human. The former includes not only investment in domestic private firms, but the efficient investment in public utilities and transport infrastructure. The investment in human capital includes the provision of appropriate education at particularly the primary and secondary levels. Other targets are the eradication of malnutrition and provision of public health. Wider aims should be the abolition of rent seeking, reduction of red tape, elimination of corruption, and encouragement of FDI.

The BOP-constrained growth model shows that while these "economywide policies" may increase the growth of exports as well as domestic output, if the former is not fast enough, the economy will run into a BOP crisis. Growth can only be domestically led to some degree. Thus, the BOP-constrained growth model demonstrates the importance of measures to improve the performance of exports. This includes identifying, for example, supply bottlenecks in the production of exports, poor transport facilities including ports, and excessive bureaucracy and red tape in the import and export of goods. The last also includes the multiplicity of tariffs and claw-back arrangements with their high resource allocation and administrative costs.

If a country is BOP-constrained, an increase in exports will have very large multiplier effects. First, there is the direct effect of the Harrod foreign-trade multiplier, arising through the purchase of the necessary inputs used to manufacture exports and the fact that exports may be a sizeable proportion of GDP. (In the Asian tigers, the share can be well over 100%, whereas in Pakistan it is about 15%.) Secondly, and equally important, the growth of exports generates the foreign exchange earnings that allow domestic output to increase, permitting the resulting increase in imports. This indirect effect, together with the working of the Harrod foreign trade multiplier, is the Hicks super-multiplier. But it should be noted that the BOP-constrained growth model is more a *permissive* rather than *causative* mechanism. The term super-multiplier may give the impression that export growth will automatically increase the growth of GDP through the growth of demand. For this to occur, the supply side must be in a position to respond.

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[32] It is important to emphasize that the BOP-constrained growth model has policy elements common to the export-led growth theory, namely, the increase in the growth of exports. However, there are two important differences: (i) As indicated in Section II, the emphasis on exports in the BOP-constrained growth model lies in the fact that exports are the component of demand whose growth relaxes the balance of payments constraints; and (ii) the BOP-constrained growth model emphasizes exports of products with a high income elasticity of demand.

A. The Role of the Growth of Exports and Import-Substituting Industrialization

It is somewhat paradoxical that the importance of export-led growth has been emphasized by both neoclassical economists (contrasting it unfavorably with import-substituting industrialization [ISI]) and more interventionist-minded economists. Representative of the former are Balassa (1978 and 1983) and Tyler (1981); and Wade (1989) for the latter. The *World Development Report 1987* (World Bank 1987) placed great emphasis on the role of exports and the failure of ISI. Commentators point to the rapid growth of Japan in the early postwar period, the Asian tigers since the mid-1960s, and more recently the PRC as being a direct consequence of their export performance. Tyler (1981) expresses a commonly held view when he argues that many studies point to the harmful effects of ISI, especially in the Latin American countries. Even though ISI may lead to a faster growth rate and could be judged as necessary *faute de mieux*, there is a better alternative of export-oriented growth. This does not bring with it the price and other distortions that accompany ISI. A theme in these writings is that any form of government intervention will most likely prevent these countries from pursuing the benefits of specialization according to comparative advantage. Related to this is the advocacy of rapid trade liberalization where protectionism still remains. Indeed, Shirazi and Manap (2004) have gone so far as to describe this view the "new conventional wisdom". The advocacy of export-led growth sometimes becomes seen as synonymous with trade liberalization, including the supposed advantages of unilateral abolition of tariffs and quotas.

But the success of Japan and the Asian tigers was also due to the deliberate and careful intervention of governments (Wade 1990). Policies adopted included tariffs and administrative import controls, cheap credit and an undervalued exchange rate, export subsidies, and credits. The division between export-oriented growth and ISI is too simplistic. Husain (2003), a former Governor of the State Bank of Pakistan, pointed to the success of Republic of Korea, especially when compared with the autarkic policies of North Korea as an example for Pakistan. But Republic of Korea relied on tariffs and protectionism, and its growth was also state-led as argued by the *governed market* proponents (Wade 1990).

In Japan, while there was substantial protectionism for automobiles that allowed domestic production to reap the benefits of increasing returns, there was fierce domestic competition that also drove efficiency.

This approach was in direct contrast to the early advice of the Bank of Japan, which in 1949 concluded that any attempt to develop an automobile industry would be futile. Luckily for Japan, the Ministry of International Trade and Industry won the argument and the necessary economic instruments to implement the strategy were introduced. The traditional export industries were left to their own devices and the targeted new industries were protected at home by a battery of protectionist measures. The focus was

on developing these new industries for the export markets. Productivity missions were sent overseas to study best-practice technology in the leading countries. The Ministry of International Trade and Industry controlled the purchase of foreign patent licences targeting key industries. Singapore and Taipei,China also provide exemplars for this type of economic strategy. Is there a lesson here for Pakistan's economic development strategy?

The governed market school of thought points out that comparative advantage should be viewed as a dynamic concept and the key to a successful export strategy is to develop those industries for which world trade is growing fast; namely, the high-tech manufactured goods for which the world income elasticity of demand is high. Naturally, this is easier said than done, as the likelihood of a developing country making serious inroads into these sectors depends on the country's actual capabilities. Indeed, it is very difficult, if not impossible, to redeploy the capabilities required to produce textiles into the production of high-tech machinery.

This can be contrasted with those attempts at import substitution where import controls merely cushioned inefficiency. Import substitution can lead to rent-seeking and the damaging effect of special interest groups (Olson 1982) against which the most effective remedy is the progressive exposure to overseas competition. But the sequencing is very important, as is the introduction of other government measures supportive of an export-led growth policy. Reduction in protectionism is in the long run a necessary, but not a sufficient, condition for development. The empirical evidence suggests that a reduction in tariffs and quotas raises the income elasticity of demand for imports, and if there is no compensating increase in exports this can actually lead to a fall in the long-run growth rate. The work of Pacheco-Lopez and Thirlwall (2007, 481) is instructive in this regard. They studied the effect of trade liberalization on 17 Latin American countries during the period 1977–2002. They found that "in the aftermath of trade liberalisation, growth performance did improve in the majority of countries, but at the expense of trade balance deterioration. For some countries, the growth was not sustainable; for others it was sustainable only by financing larger trade or current account deficits. In the vast majority of cases, the trade-off between growth and the trade balance did not improve as a result of liberalization, but deteriorated."

B. Pakistan's Postwar Growth

Given the present parlous state of Pakistan's economy, it is sometimes overlooked that the early growth of Pakistan was a successful case of ISI. Pakistan was for a couple of decades immediately after the Second World War the first of the "growth miracle" countries. Zaidi (2005, 109) considers that ISI was "the right policy *for that time*". In 1947, at the time of independence, Pakistan was among the poorest countries in the world. It had an almost entirely agricultural economy and had no substantial industry and commerce. It produced three-quarters of the world's jute but had no jute mills. It

was a major producer of cotton but had few textile mills. Yet, by following an aggressive and reasonably successful policy of import substitution, *together with an explicit export promotion strategy*, after 20 years it became a prosperous developing country. The 1950s saw a very rapid growth of large-scale manufacturing industry, although agriculture stagnated. This arose from a deliberate strategy not to devalue in 1949 and later to impose exchange and import controls—from 1953 to 1964 virtually all imports were subject to quantitative controls. The rationale was ISI and the need to import capital goods at relatively low prices. It also led to a marked change in the terms of trade in the domestic market away from agriculture and in favor of manufacturing.

The Ayub Khan government (1958–1968) saw a controversial "decade of development" with a further emphasis on export promotion. The Bonus Voucher scheme was introduced in 1959. This amounted to a subsidy on exports and helped make the import of raw materials and capital goods cheaper. It compensated for the overvaluation of the rupee. There was some liberalization of import restrictions but this was dependent upon the volume of aid Pakistan received at the time and many commentators argue that Pakistan's rapid growth rate was largely the result of the amount of aid it received at that time. Indeed, it was this aid that raised the BOP equilibrium growth rate. As Amjad (1982, 166) commented, Pakistan was very much a "foreign aid dependent region". And as Zaidi (2005, 99) noted, "once these aid flows slowed down, the system, not being able to replace foreign aid with other forms of external finance like direct foreign investment … found it difficult to sustain the earlier growth it had generated." Nevertheless by 1965 Pakistan's exports were greater than those of Indonesia, Republic of Korea, Thailand, and Turkey combined.

The change in fortunes came with the Bhutto nationalizations (1971–1977) in the 1970s. As these were largely directed at large industries, new investment (looms in the case of the textile industry) went to small firms. The benefits of technical and pecuniary economies of scale were lost. Pakistan's share of world textile markets declined and the textile industry has remained inefficient until the present.

Growth in the 1950s and 1960s was accompanied by increasing spatial inequalities. The terms of trade turned against agriculture, and East Pakistan was still predominantly rural. This led eventually to civil war, war with India, and the secession of East Pakistan.

The Bhutto regime has been judged harshly, but it should be remembered that in 1973–1974 the world economy went into a long period of stagflation, which hit Pakistan. There was extensive nationalization of private manufacturing and the banks, and a substantial devaluation of the rupee removed the implicit subsidy that manufacturing had received. The military dictatorship of General Zia-ul-Haq (1977–1988) saw a return to fast growth rates. This was partly due to the rapid growth of remittances that eased the strain on the balance of payments, and military and other aid that stemmed from the Soviet invasion of Afghanistan. From 1988 onward, policy was in the form of a series of comprehensive

structural adjustment programs closely supervised by the IMF and the World Bank. These programs provided a very detailed micro-management of the policies. But these have been accompanied by low growth rates, with 1998–1999 especially presenting severe macroeconomic difficulties (ADB 2000). The 1998 nuclear tests saw the imposition of sanctions and the loss of Japanese and US foreign aid and BOP problems. It was not until the invasion of Afghanistan and the September 11 events in the US that Pakistan was able to benefit from foreign aid again. There was also a substantial rescheduling of its overseas debt that considerably reduced the pressure on the balance of payments. This episode shows clearly the operation of the BOP constraint and how dependent the economy is on foreign aid. The period 2007–2008 has served to reinforce this conclusion. It should be emphasized that a BOP deficit is a sufficient, but not necessary condition, for the BOP constraint to be binding. If the government does not allow the rate of growth to exceed the BOP equilibrium growth, even though this is below the growth of productive potential, then no crisis will be apparent. In other words, the country's growth rate will be *policy-constrained.*

C. Implications for Pakistan's Development Strategy

Pakistan's development policies may be usefully classified into three groups.

(i)   "Economywide development policies". These are broad policies designed to raise the level of development such as investment and human capital formation.

(ii)   "Microeconomic-export strategic policies". These are policies that take the existing structure of exports as a datum and seek to improve their performance. These are detailed policies targeting specific areas that are preventing current exports from achieving higher growth rates.

(iii)   "Macroeconomic-export strategic policies". These consider how a country can alter the structure of its exports so that they concentrate on those areas where world demand is growing fast. As many industries are subject to increasing returns to scale, this may involve an infant industry argument for protection.

The last two are focused on raising the BOP equilibrium growth rate, whereas the first is more concerned with general policies for development.

1.   Economywide Development Policies

One of the most important of these is not specifically a development policy, but is macroeconomic stability in general. Bruno (1995) found that inflation and growth are positively related up to 5% inflation, and then diminishing returns to inflation set in. Both variables are negatively related once inflation rises above 30%. Barro (1997) found that these two variables are unrelated when inflation is below 20–30%. Bruno and Easterly

(1998) found that there is no evidence that inflation rates below 40% have adverse effects on growth. They argue that the negative inflation–growth correlation is only present with high frequency data, and that there is no cross-sectional correlation between these two variables using (averages) long-run data. While the Central Bank must watch inflation, this cannot be at the cost of reducing the growth of real GDP. Indeed, Akbari and Rankaduwa (2006) estimated an output-inflation trade-off model for Pakistan and found out that: "…a one percent decline in inflation rate caused by a permanent reduction in monetary growth rate would result in a cumulative output (GDP) decline of 0.87 percent below its potential level […] if monetary policy were to target the inflation rate of 3.4 percent, the resulting cumulative decline in output below its potential level (trend) would be about 5.1 percent" (Akbari and Rankaduwa 2006, 185).

Given its level of development, Pakistan has a very poor record of education at the primary and secondary level, while producing a large number of overqualified graduates. Easterly (2003) ascribes this to the highly concentrated distribution of income. For example, education skills are not all that essential in agriculture and Easterly asks the rhetorical question, Why should the wealthy and influential landowners tax themselves to provide schooling when they see no obvious benefit to agricultural production? It is only with the development of capital-intensive industry that skilled labor becomes a complement and there is pressure for greater schooling. But this attitude can lock the economy into low-productivity agriculture.

Another area where action is required is the improvement of governance. While Pakistan has attempted to improve competitiveness by privatizing state-owned finance, utilities, and industrial enterprises the results have been disappointing, to a large extent because governance is often poor. The World Bank (2006, x) argues "as a guarantor of fair competition, Pakistan's judiciary has been ineffective in enforcing contracts and protecting property rights. Against a background of many antiquated laws enforced by autonomous and government institutions at federal, provincial, and local levels, arbitrary discretion exercised by civil servants imposes high official and unofficial compliance costs." Not only does this hamper the development of domestic SMEs, it also acts as an impediment to FDI.

2.   Microeconomic Export Strategic Policies

Pakistan has long recognized the importance of export-led growth, and has taken measures to promote this stemming from the mid-1980s. These included two export processing zones, compensatory excise and sales tax, tax relief for exporters of capital goods, and reduction of excise taxes and other impediments for the import of raw materials necessary for exports. Attempts were made to improve quality control. An export credit scheme was introduced. A move toward trade liberalization was made in 1998.[33] But all this has largely been seen as a failure.

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[33] The maximum rate of tariff was reduced from 65% in 1996–1997, to 45% to 1997–1998, and 25% in 2002–2003.

Akbar (2003) notes the point made above that in the Asian tigers the production structure and composition of exports was not left to the market but had an important steer from the government. Export-led growth was stimulated by the creation of price and resources allocation "distortions" that favored economic growth. "We in Pakistan were doing exactly the opposite. Historically the export-led–growth strategy has been used [only as] rhetoric and very little efforts were put into make it just more than a slogan" Akbar (2003, 2). There is a substantial anti-export bias in Pakistan. The ratio of the effective exchange rate on exports to that on imports suggests that this anti-export bias is around 20% and probably much higher once nonquantifiable barriers are taken into account. The tariffs merely serve to increase the profitability of domestic production. The recent tariff cuts have had the effect of increasing the dispersion[34] and there is still pronounced tariff escalation, "with the result that final consumer goods continue to be protected at relatively higher nominal protection rates and that effective protection rates are probably more skewed in favour of domestic production of final consumer goods" (World Bank 2006, 122).

There is scant evidence that tariffs improved the efficiency of export industries through the infant industry argument. For example, the escalation of tariffs is meant to protect the final producer while keeping the cost of imports of intermediate goods relatively low. This, however, has the effect of preventing the efficient development of downstream production. This has occurred in the automobile industry where the local content requirements have also provided significant nontariff protection. These reduce competition by acting as barriers to entry. "Under such a setting where foreign competition is blocked and 'tariff jumping foreign' investment comes in for low level (but profitable) production, developing an efficient and competitive automotive industry where both assemblers and component manufacturers are induced to operate at least at 'minimum efficient scales' will be difficult. The result is that many firms with very low production volumes exist, enjoying high profits, thanks to very high protection, with little pressure to become more efficient and competitive" (World Bank, 2006, 123). This is in marked contrast to the development of the Japanese automotive industry that developed with protectionism but there was aggressive competition in the domestic market.

The World Bank's (2006) study of export competitiveness found, not surprisingly, that many of the problems affecting the export sector are symptomatic of the economy as a whole. In order to consider specific and concrete micro-level evidence, the report used "integrated value chain analysis". This is a detailed analysis of all the factors that affect costs and productivity through the different stages of production. Some of the costs were evaluated against the costs of comparable exporters in competitor countries. The report considered five products. For reasons of space only the findings of two will be discussed here, blue denim jeans and textiles, and automobile radiators and light engineering.[35]

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[34] This is because low tariff rates have been cut proportionally more than high tariff rates.
[35] The other three were shrimps and fishing, marble tile and mining, and powdered milk and dairy products.

The readymade garment industry comprises a significant part of Pakistan's exports. It is internationally a highly competitive market and almost a monopsony with a few large-scale final purchasers, such as Wal-Mart, Gap, and Levis. While Pakistan has opportunities for expanding its exports due to the phase-out of the Agreement on Textiles and Clothing, the product cycle has shortened considerably in recent years as the market is moving fast and is consumer-driven. The main problems facing the blue denim industry and indeed textiles as a whole are: longer shipping times and higher freight charges compared with other major competitors such as the PRC; high electricity tariffs together with frequent outages (with firms having to go to the expense of buying back-up generators); scarcity of skilled workers and engineers (in ginning and weaving); insufficient credit due to substantial collateral requirements; substantial delays in obtaining rebates on customs dues levied on essential imports; and excessive use of water through flood irrigation (this reduces cotton yields). Some of these problems can be solved more quickly than others. Customs and port administration could in principle be quickly streamlined and the management of floodwater should be amenable to improvement in the medium term. However, improvement of skills and education; greater access to sufficient credit (through improvements in the judicial process and enforcement of contracts); and the improvement of electricity generation are longer-term projects (the reduction of electricity tariffs should have a high and quick payoff).

Automobile radiators were chosen as representative of Pakistan's light engineering. The product requires semi-skilled and skilled workers and technical machinery. But Pakistan's level of technology is low and the product has low quality. Pakistan still produces copper "tube/brass fin radiators" for the domestic automobile industry while international markets have moved to aluminium radiators. The low production scales and old technology are attributed to high tariff protection and the domestic content requirement, both of which limit competition in the market. To improve the radiator industry would require a major upgrading in technology, e.g., use of robotic technologies, and also the development of the skills necessary to use this technology.

Each export industry has its own problems, and many of these are common to both the tradable and nontradable sectors. The implications of the export-led growth theory and the BOP-constrained equilibrium growth theory are that, where possible, the emphasis should be given to improving the competitiveness of exports and potential exports. For example, Pakistan suffers from major transportation problems, and although there have been improvements in recent years, more needs to be done to improve the shipping of goods to the ports, especially containers. And the efficiency of Pakistan's ports also has to increase.

3.   Macroeconomic Export Strategic Policies

The discussion above suggests that for a country to grow rapidly, it must specialize in those commodities with a relatively high income elasticity of demand. These are

commodities that, in some sense, can be deemed more "sophisticated". Hausmann et al. (2005) provide empirical evidence in support of this proposition.

They calculate a measure of the productivity associated with a country's exports (*EXPY*) that could be regarded as a measure the sophistication or "quality" of the exported goods. To calculate this index, they first calculate the overall level of productivity associated with a particular export, $PRODY_k$. This is the sum of the exporting countries' income per capita weighted by the relative share of k in their total export basket, divided by the world share of k in world exports. This gives a measure of the "average" world productivity of export k. To obtain the productivity level of the exports of a specific country (i.e., *EXPY*), the "average" productivity of an export k ($PRODY_k$) is multiplied by the share of that export in the country's total exports and then all the values summed.

Intuitively, this gives a measure of the degree of sophistication of a country's total basket of exports in terms of the productivity level of all countries producing those exports. So it is possible for a less developed country to be exporting a basket of high productivity goods if those exports are also predominantly exported by relatively advanced countries. The converse is, of course, equally true. Exports with low productivity tend to be primary products that are predominantly produced by developing countries. Hausmann et al. *(*2005), not surprisingly, find that there is a strong correlation between a country's level of productivity and *EXPY*, but what is more interesting is that after controlling for a number of "fundamentals" (e.g., initial per capita income, human capital levels), countries with a higher level of *EXPY* have faster growth rates. Moreover, today's level of *EXPY* is a very good predictor of future growth.

Hausmann et al. (2005) explain this in terms of "cost discovery" and present a formal model of the process. Entrepreneurs in developing countries engaged in breaking into new export markets undertake a detailed analysis of the cost structure of the possible production process. This has considerable positive externalities since, if it is successful, additional entrepreneurs can take advantage of this without having to incur all the expenses of the discovery process. Consequently, "some traded goods are associated with higher productivity levels than others and countries that latch on to higher productivity goods (through cost discovery…) will perform better." This provides one micro-foundation (but not the only one) of the observed disparities in the world income elasticity of demand for a country's exports (ε). It is likely that high productivity exports have a higher income elasticity than low productivity exports and, hence, the former will grow faster than the latter. This is confirmed by the fact that countries with initially high levels of *EXPY* experience high rates of growth of exports. Hausmann et al. (2005) conclude that the evidence shows that *ceteris paribus* "an economy is better off producing goods that richer countries export. Standard models of comparative advantage indicate that pushing specialization up the product scale in this fashion would be bad for an economy's health: it would simply distort production and create efficiency loses." Their results suggest, however, that countries that latch on to a set of goods that are placed higher on this quality spectrum tend to perform better.

Table 7 presents data on the sophistication and composition of Pakistan's exports. What is immediately apparent is that many of them are relatively unsophisticated goods that have very low income elasticities of demand. The table shows the PRODY values of the top export categories in 2006 (with a share of at least 1%). The information in this table is revealing. Pakistan has not been able to increase the export shares of products with relatively high sophistication (PRODY). For example, the share in exports of medical instruments and appliances, the product with the highest PRODY in Pakistan's export basket (with share of at least 1%), has remained stagnant, at about 1% (even lower than the share in 1980). On the other hand, the share of linens and furnishing articles of textiles, with a much lower level of sophistication, increased from less than 2% in 1980 to over 13% in 2006. Likewise, the share of exports of men's and boy's outwear has increased from 0.03% to 3.15% of total exports. This indicates that Pakistan is specializing in the lower end of the textile range. Indeed, using constant-market-share analysis to study the changes in export performance between 1984–1985 and 1988–1989 and between 1988–1989 and 1992–1993, Mahmood and Akhtar (1996) found that the market distribution of Pakistan's exports improved over time and that exports became more competitive. But this "was offset to a large extent by the concentration of exports in the traditional commodities whose world demand is very sluggish" (Mahmood and Akhtar 1996, 701.) This is still very much the position today.

The implication of the shift to products with a lower PRODY is that the income level of Pakistan's exports (EXPY) has shown a minimal increase, contrary to what can be seen in countries that are undergoing the kind of structural transformation that leads to faster growth (seen in economies that promote exports of more sophisticated goods). Pakistan's index in 1980 (at US$6,998) is marginally lower than that in 2006 (at US$8,728), much lower than the indices of Indonesia, Malaysia, Philippines, and Thailand.

Pakistan, like many other developing countries today, would like to move fast into the production and export of sophisticated goods such as computers and telecommunication equipment. This is very unlikely to happen any time soon, as the production of these goods requires a set of capabilities (in terms of inputs and institutions) that Pakistan does not have yet. Policymakers should be realistic and should not "target" in their development plans industries that Pakistan is not ready for.

Table 7: Pakistan's Exports Ranked by PRODY (SITC Rev2 4-digit level) and Share in Total Exports

Commodity	Sophistication Product-Level (PRODY)	Export Share (percent)						
		1980	1985	1990	1995	2000	2005	2006
Medical instruments and appliances, nes	20,814	1.25	1.23	0.95	0.89	0.88	0.97	1.00
Other sporting goods and fairground amusements, etc	15,712	1.66	1.22	1.87	2.00	1.85	1.76	1.94
Furniture for medical, surgical, dental or veterinary practice	13,534	0.01	0.00	0.09	0.07	0.31	0.91	0.98
Cotton fabrics, woven, bleached, dyed, etc, or otherwise finished	11,214	1.44	3.46	4.11	6.02	3.61	4.78	4.48
Leather of other bovine cattle and equine leather	10,168	0.91	2.21	2.04	1.31	0.92	1.17	1.14
Clothing accessories, knitted or crocheted, nes	9,429	0.14	0.23	0.36	0.73	0.90	1.65	1.95
Fabrics, woven, less 85% of discontinuous synthetic fibres	8,683	0.04	0.10	2.49	3.09	4.00	3.48	3.17
Womens, girls, infants outerwear, textile, not knitted or crocheted; other outer garments of textile fabrics, not knitted, crocheted	8,585	0.31	1.24	2.59	1.90	2.44	2.59	2.77
Other made-up articles of textile materials, nes	8,359	0.28	0.89	0.93	1.60	2.86	2.79	2.72
Outerwear knitted or crocheted, not elastic nor rubberized; jerseys, pullovers, slip-overs, cardigans, etc	8,199	0.17	0.16	1.16	1.65	3.79	3.23	3.05
Articles of apparel, clothing accessories of leather	8,176	1.26	2.11	4.49	4.80	4.61	2.96	2.73
Outerwear knitted or crocheted, not elastic nor rubberized; other, clothing accessories, non-elastic, knitted or crocheted	8,119	0.06	0.28	0.96	1.63	1.70	2.18	2.17
Linens and furnishing articles of textile, not knitted or crocheted	7,345	1.93	3.66	5.45	5.94	9.30	12.63	13.38
Under-garments, knitted or crocheted; of cotton, not elastic nor rubberized	7,122	1.01	1.00	2.27	4.27	3.62	3.55	3.87
Men's and boys' outerwear, textile fabrics not knitted or crocheted; trousers, breeches and the like	6,798	0.03	0.28	0.64	1.25	2.75	2.96	3.15
Copper and copper alloys, refined or not, unwrought	6,556				0.01		0.60	0.95
Cotton yarn	5,728	10.74	10.32	16.91	18.91	13.21	10.14	10.53
Carpets, carpeting and rugs, knotted	5,309	14.14	4.57	3.86	1.82	2.33	1.93	1.74
Rice, semi-milled or wholly milled	5,060	6.69	8.63	4.64	5.55	5.71	5.82	6.46
Cotton fabrics, woven, unbleached, not mercerized	4,578	6.91	5.07	5.15	6.88	6.16	5.15	5.20
Subtotal		48.98	46.66	60.96	70.32	70.95	71.25	73.38
Sophistication, Country-level (EXPY)		6,998	7,231	7,693	8,268	8,362	8,833	8,728

Note: The units of PRODY and EXPY are in 2005 constant US dollars, purchasing power parity-adjusted.
Source of raw data: UN COMTRADE.

If the BOP constraint is binding, it can be seen that one way of relaxing it is by restricting imports through quotas and tariffs. This will reduce the domestic income elasticity of demand for imports (π). However, ε and π are not independent. The introduction of tariffs may well lead to an increase in the price of essential imports necessary for exporting. Moreover, to the extent that this reduces competitive pressures on domestic firms, this could reduce their efficiency, which in turn could be detrimental to export growth. A long period of import restriction, especially without a sunset clause as to when it will end, can lead to rent seeking and more concern with the distribution of a given level of output rather than with incentives to increase output. Given the prevalence of increasing returns, the infant industry argument shows that for a country to break into the production of high value-added exports an element of protection is required, at least in the early stages.

VI. Conclusions

This paper has looked at the various options facing Pakistan's economic development. Of particular importance is the BOP-constrained growth rate. It has been argued that this is the major problem facing Pakistan's development. Attention needs to focus on supply-side improvements that will raise the growth of sophisticated exports. In other words, Pakistan needs to move out of its traditional export areas and shift the structure of its trade toward the export of manufactured goods with higher sophistication, given the country's capability set. In a growth context, static comparative advantage is not a good guide to a development strategy for Pakistan. It is unlikely that trade liberalization and the free market will result in the optimal strategy for Pakistan. The country requires a carefully thought industrial policy that emphasizes the new niches (exports) in which Pakistan can succeed; and private/public dialogue that leads to a clear understanding of the private and public inputs necessary for successful production and export.

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About the Paper

Jesus Felipe, J. S. L. McCombie, and Kaukab Naqvi show that Pakistan's maximum growth rate consistent with equilibrium on the basic balance is approximately 5% per annum. Any successful development strategy has to aim at relaxing the balance-of-payments constraint by increasing more sophisticated exports.

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