

Fiscal Stance In Savings/Investment Constrained Economies (Preliminary Draft) 5/7/02

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Abstract

The study explores the notion that governments in developing countries are more likely to run balanced or surplus budgets, where private sector investments are energised by a relaxation in the savings constraint. On the other hand, we contend that fiscal deficits are likely to persist where private sector investments are suboptimal and savings constrained. To investigate the arguments, a logit model is applied to a sample of countries to see whether such a constraint is associated with the fiscal stance of governments. Private sector savings were assumed to be directly correlated to net current account earnings, foreign direct inflows, the income status of the country and growth. With the exception of economic growth, positive developments in these variables turned out to be significant to the likelihood of the government adopting a surplus fiscal budget.

1.0 Introduction

Despite attempts by many developing countries to undertake fiscal reforms in order to avoid continuous deficits, positive fiscal balances still remain elusive, as governments in many developing countries have been running deficits.¹ While the buzz words, fiscal discipline and fiscal reforms have been proclaimed as important ingredients for the sustainability of fiscal policy, the fact that these deficits persist over a wide array of countries may in itself signal that structural considerations outside of government's utility function, may play a substantive role in driving them.

The circumstances under which governments are likely to run fiscal surpluses warrants further investigation, since continued deficits may in fact leave these countries caught with deficit induced macroeconomic instability.² The hypothesis is advanced in the study, that governments are more likely to run balanced to surplus budgets in the presence of foreign exchange accumulation, especially where there is an abundance of foreign direct investment, as well as

¹ Fiscal reforms included privatisation, decentralisation, and shifts in domestic tax regimes in congruence with the demands of trade liberalisation, expenditure cuts, reforms of the civil service, wage policies and reforms of social security. See for example, UNECLAC (1998).

where local savings are accumulated. Such accumulation relaxes the private sector investment constraint and can therefore allow the opportunity for government to relax expenditure, while enhancing revenue collection from an expanded private sector.

On the other hand, where the country is starved for foreign exchange, or savings are depleted, it is contended that fiscal deficits are more likely as the private sector would be too constrained to allow its investments to absorb idle labour and capital resources. In other words, the study tests whether the savings gap and the foreign exchange gap matters to the cross-country persistence of fiscal deficits.

The intuition behind these arguments has its genesis in the assumed substitutability between government and private sector investment.³ Foreign direct investment, and domestic investment by the local private sector, assists in reducing the number and the extent to which projects require government investments for initiation. However, where a country is developing, and the private sector is weak, pressures are on government to promote investments in order to lift the welfare of the population. In a depressed state, government deficits may be likely as the revenue base shrinks owing to lower tax receipts, while the demands for greater expenditures continue to increase.

We note that there have been an abundance of studies that use fiscal deficits as the starting point of analysis. The general discussion, led particularly by the advanced industrialised countries and the financial multilateral institutions, tends to be concerned with the merits and limitations of deficits. Consequently, there are many studies examining the impact of fiscal deficits on macro-economic variables such as private sector investments, consumption, external current account and

² It has been argued extensively in the literature that persistent fiscal deficits tend to lead to rising inflation, crowding out of the private sector from domestic capital markets and to spiralling debt.

³ This is different from Keynes, in the sense that investment is not demand constrained, but instead it is savings or resource constrained.

exchange rates, and inflation.⁴ In contrast, we would like to explore whether there are common factors that account for the persistence of deficits, besides the assumed altruist nature of government that is typical in the neoclassical paradigm.

For the rest of the paper, stylised facts concerning government deficits, theoretical development of arguments concerning the existence of these deficits, the logit methodology and results and the conclusions thereby derived would be elaborated on.

Stylised facts concerning fiscal balance

Stylised facts were examined with respect to those countries considered in the sample. Since our interest is in developing countries, the OECD countries were not included. In addition, countries that were predominantly socialist within the period 1970 to 2000 were omitted, since the economic systems in these countries would have been biased in favour of government's domination of economic activities. As such, Cuba, Russia, China, North Korea and the Eastern Block European countries were excluded from the sample.

The survey of the remaining countries listed in the IFS for which data are available, suggest that very few countries have been able to run fiscal surpluses. Table 1 presents a depiction of the cumulative frequency concerning the fiscal stance of governments.⁵ Deficits are defined according to line 80 of the IFS on a cash basis as “the difference between revenue and, if applicable, grants received on the one hand and expenditure and lending minus payments on the other.”⁶

⁴ See Agenor and Montiel (1996) for a review of these studies.

⁵ See Appendix 1 for a list of the countries considered.

⁶ There are difficulties in defining and standardising the fiscal stance of governments. According to Blajer and Cheasty (1991), complications arise owing to differences in accounting systems, differences in the degree of coverage of government and quasi government activities, and differences in the treatment of valuations owing to exchange rate fluctuations. See Jun Ma (1997) for an overview of intergovernmental transfers in a select group of countries.

Table 1: Cumulative frequency of the number of countries running fiscal deficits (%)

<i>Fiscal Balance to GDP</i>	<i>1975</i>	<i>1985</i>	<i>1995</i>	<i>1999</i>
>0	15.9 (69)	15.3 (72)	31.3 (83)	4.6 (65)
>-1	19.7 (64)	16.4 (67)	45.0 (78)	14.8 (54)
>-3	48.4 (64)	38.8 (67)	58.0 (78)	46.3 (54)
>-5	59.4 (64)	49.2 (67)	74.4 (78)	63.0 (54)
>-10	78.1 (64)	77.6 (67)	86.0 (14)	77.8 (54)

Source: Tabulated from the International Financial Statistics, International Monetary Fund. The numbers of countries from which the corresponding percentages are calculated are in brackets.

Even when one allows for a narrow deficit of 1 percent, the percentage of countries achieving this is small, except for 1995. Instead, at least half of the countries run surpluses or deficits up to 5 percent of GDP, and about three quarters would be represented when the range of deficits are extended up to 10 percent. What is evident, however, is that most countries run deficits ranging between 1 to 10 percent of GDP.

An important issue here concerns the sustainability of such deficits. Many ideas have been circulated on this, but most of these ideas are trained on North America.⁷ Two important considerations emerging from these studies concern the ability of the country to finance the deficit and the attitude of the creditors. In the LDC context, however, sustainability may be linked to factors such as the continuity of capital flows, ability to finance deficits from foreign currency earnings, economic growth and interest rate movements.

⁷ See Cuddington (1996) for a review of some of these studies and an outline of the accounting perspective on fiscal deficits.

Table 2. Persistence of Deficits by developing countries

	No significant difference in deficit	Significantly smaller deficit	Significantly larger deficit
Percentage of countries in the 1980s compared to 1970s (52 Countries)	53.9	11.5	34.6
Percentage of countries in the 1990s compared to 1980s (59 Countries)	39.0	50.9	10.2
Percentage of countries in the 1990s compared to 1970s (52 Countries)	44.2	30.8	25.0

Source: Tabulated from the International Financial Deficits. Significances are based on the difference of means test.

There were no widespread reductions in fiscal deficits in the 1980s over the previous decade (See Table 2). In fact, about half of the countries in the sample exhibited insignificant changes in their fiscal deficits, while about one third displayed increasing deficits. Some improvements are noticeable in the 1990s, compared to the decade of the 1980s, where only 10.2 percent of the countries exhibited increasing deficits, while 50.9 percent recorded significantly smaller fiscal deficits. The reduction in the magnitude of fiscal deficits in the 1990s may partly represent shifts in internal policies during the 1980s. Internal policy reforms included the retreat of the state from the active involvement in the market, active reduction in the size of government, and attempts to improve revenue collection while moving from direct to indirect taxes. In spite of these reforms, however, many countries continued to run fiscal deficits.

While the number of countries examined in the sample was limited by data constraints, the recurring nature of fiscal deficits is evident. Structural reforms as important as they were in the 1980s have still not yet been able to eliminate deficits in the majority of countries.

The incidence of fiscal deficits across countries therefore warrants an investigation into the determination of the fiscal stance of governments.

Theoretical Considerations

In the theoretical model that is explored, we argue that where private sector investments are constrained by the savings gap from reaching optimal levels necessary to generate near full employment, pressures mount on government to intervene. The model touches a bit on Bacha (1990) three-gap approach, where the investment growth is constrained by the savings gap, the foreign exchange gap and the fiscal gap. However, for the sake of simplicity, we incorporate the foreign exchange gap into the savings gap and our interest is in the interaction between savings and the fiscal gap.

The channels of investment in the economy can be thought to be exercised through the private sector, I_p , and the government sector, I_g , such that,

$$I_t = I_p + I_g \dots(1)$$

In turn, the funds available for private sector investment may be drawn from the pool of savings available, S_p , so that

$$S_p = S_d + S_f + S_c \dots(2)$$

Where,

S_d Is domestic savings obtained as the difference between private sector income, Y_p , and consumption, C_p , S_f is inflows of foreign savings, particularly foreign direct investment, and S_c is retained earnings from surpluses traded abroad. We assume for the sake of simplicity, that the private sector is not allowed to borrow internationally, so their investments are constrained by local savings, their foreign exchange earnings and by the inflow of foreign savings from foreign direct investment.

The transfers from foreign trade can be written as

$$X - M = F - J = S_c, \dots (3)$$

Where

F Denotes capital inflows due to export earnings, and J denotes capital outflows due to imports.

At equilibrium, domestic investment is constrained by the private sector savings gap and the constraint on government savings, T , less government expenditure, G , such that

$$I_t = I_e = S_p + (T - G) \dots (4)$$

Where I_e is equilibrium investment.

Substituting (4) in (1) and rearranging yields,

$$I_g = (S_p - I_p) + (T - G) \dots (5)$$

Here it is suggested that government can finance their expenditure by borrowing the surplus left over from private sector investment or from their own savings. At the same time, let the actual investments made by the private sector out of its constraints be represented as

$$I_p = I_d + I_f + I_c, \dots (6)$$

Where,

I_d Is the portion of S_d used for domestic private sector investment, I_f is the portion of foreign savings used for domestic investment, and I_c is the portion of net foreign from current account earnings used for local investment.

Further, government investment can either crowd-in or crowd out private sector investment, so that the relationship between the two can be written as

$$I_p = k \times I_g, \quad (7)$$

Where $k > 0$ if there is crowding in, or $k < 0$ for crowding out.⁸

Substituting (7) in (1), and (5) in (7) yields:

$$I_e = (1+k)[(S_p - I_p) + (T - G)] \dots\dots(8)$$

At equilibrium, the overall level of investment is equal to government's expenditure generated from its own savings, plus what it borrows from residual savings from the private sector, and the level of private sector investment crowded in or crowded out by government activity. Private sector behaviour and the savings constraint can be thought of as the stimuli that triggers government's behaviour, so that government in this model can be thought as performing a reactionary role with respect to their fiscal stance. By substituting (2) and (6) to expanding (8),

$$I_e = (1+k)[(S_d - I_d) + (S_f - I_f) + (S_c - I_c) + (T - G)] \dots\dots(9)$$

An interpretation of (9) is that the equilibrium level of investment in the economy is constrained by domestic savings emanating from the private sector and government, net foreign currency earnings and from inflows of foreign direct investment.

Now suppose equilibrium investment would not necessarily allow for near full employment, but there is an optimal level of investment, I_0 , that would raise investment to near full employment and it is greater than the equilibrium level of investment, I_e , so that

$$I_0 - I_e = I_0 - (1+k)[(S_d - I_d) + (S_f - I_f) + (S_c - I_c) + (T - G)] > 0 \dots(10)$$

⁸ Bacha (1990) assumed crowding out in the three-gap model, based on historical evidence of how government expenditure at the developmental stages of a country tends to have a crowding in effect. He had to assume that k was not impacted on by price, however, since high inflation rates can create uncertainty and weaken the crowding in effect. Thus in his model, crowding-in can only apply up to a certain level of inflation.

If the private sector is not allowed to borrow from abroad, and I_d , I_f , and I_c are sub-optimal, then we argue that the government would be under pressure to raise investment in productive activities for total investment to be boosted to approach I_0 . Government may therefore face pressure to run fiscal deficits, since it may seek to rise above the constraint T in order to narrow the gap between equilibrium investment and optimal investment. Of course, the crowding in of the private sector to meet social welfare needs is one way of alleviating the pressure on the government sector in the long run. Additionally, government can use their seigniorage to seek an expansion in the money supply, in order to create resources to finance their investment. Drawing from Bacha (1990),

$$S_d - I_d = dH/P = f(p, h) \dots (11)$$

Where dH is the change in the holdings of nominal money and, p is the nominal price level, while h is the propensity to hoard. The government therefore, is able to siphon the excess savings through seigniorage. However, there is a limit to what can be sustained by the economy, since, according to Bacha (1990), rising inflation would eventually erode savings. Moreover, the foreign exchange constraint puts a damper on the extent to which government can use seigniorage to finance deficits.

The model therefore predicts that in a savings constrained economy, or where investment is sub-optimal; government would be under political pressure to find ways of expanding their investment, perhaps through borrowing to finance fiscal deficits, and or through the use of seigniorage to expand the money supply. Note, there is no seigniorage in this model if $S_d = I_d$, in which case one option remains, borrowing overseas. In contrast, where private sector savings and investments are constrained, the government is under less pressure to run fiscal deficits, and may tend towards balanced or surplus budgets, depending on their own utility function. Our

empirical estimation is focussed on the exploration of the proposition with respect to the fiscal stance, so we do not test the hypotheses regarding the method of financing the deficits.

Model and data

To facilitate our interest in estimating the probability of the fiscal balance (FB) being influenced by local and foreign savings, net external current account earnings (CA) and the inflow of foreign direct investment were used to capture foreign savings inflows (FDI). Economic growth (Yg) and income per capita (INC) were used as proxies for domestic savings. The model therefore is:

$$FB = F(CA, FDI, Yg, INC)$$

Dummy variables were created to transform all variables into qualitative categories. The dependent variable, FB , took on the value 1 for countries with balanced budgets or fiscal surplus greater or equal to negative 1 percent of GDP, and zero otherwise. Indeed, a country was considered to be running a balanced budget if its deficit was not more than 1 percent of GDP. Just under a third of the sample, 31.83 percent, was consequently assigned the value of one. We also defined another dummy dependent variable that took the value 1 for those countries with a surplus or a deficit of no more than three percent and zero otherwise. By doing so, dep=1 increased from 31.83 percent to 48.37 percent of the sample. The categorical definitions of the other variables are given in Table 3.

Table 3. Description of Sample Data Categories

Variable	Category	Definition of Categories	Percentage of observations
GDP per Capita (INC)	Middle to High	>US\$ 3,126	34.0
	Low to Middle	>US\$ 786 to US\$ 3125	33.6
	Low	<US\$ 786	32.3
Real economic growth (Yg)	High	>5%	28.3
	Moderate	>2% to 5%	28.4
	Weak	≤ 2%	43.1
Current Account Balance as a ratio of GDP (CA)	Surplus to narrow deficit	≥ -8%	41.1
	Moderate deficit	<-8% to -25%	23.6
	Severe Deficit	<-25%	35.2
Foreign Direct Investment as a ratio of GDP (FDI)	Strong	≥ 10%	35.6
	Low to moderate	<10%	64.4

Notes: GDP per Capita Categories are based on the classification obtained from the World Development Report

The Logit Estimation

Estimation of probabilities of a government running a fiscal surplus/narrow deficit was done via logistic estimation. Consider a logistic random unobservable process, Z_i , in which a government may run a fiscal surplus or deficit over time. Suppose Z_i is affected by a vector of explanatory variables X_i , so that

$$Z_i = X_i' B,$$

Where $X_i' = [1 \ X_{i2} \ \dots \ X_{ik}]$ and B is a vector of coefficients, b_i , such that $B = [b_1 \ b_2 \ \dots \ b_k]$.

Based on the cumulative distribution function of the logistic distribution, Z_i can be approximated by the log-odds ratio as

$$Z_i = \ln [P_i / (1 - P_i)]$$

The odds ratio therefore gives the odds of a government running a balanced budget or a fiscal surplus as the relevant explanatory variable changes by one unit.

Using L_i as the response variable obtained from the regression for individual i , the probability of a particular response can be calculated by first finding,

Antilog $L_i = P_i / (1 - P_i)$, and then by finding,

$$P_i = (1 - P_i) \text{antilog } L_i = \text{antilog } L_i / (1 + \text{antilog } L_i).$$

Results

The data used in the model were collated from the International Financial Statistics, covering the period 1970 to 2000. Income, the current account and foreign direct investment were scaled by GDP. Due to missing data, many observations were deleted, so that the remaining data points, 1197, were used for estimation.

Table 4 Logit Estimation results. Dependent variable is fiscal balance to GDP, Dep=1 \geq -1% of GDP (%)

Variables		Coefficients	t ratio	Odds
Intercept		-1.66537	-7.20	-0.36136
Current account to GDP	Surplus/Narrow Deficit	0.567236	2.67	0.12308
	Moderate Deficit	0.193250	0.819*	0.041932*
	Severe Deficit	♣		
Foreign Direct Investment to GDP	Strong	0.520414	2.65	0.11292
	Low-Moderate	♣		
Growth	High	-0.25839	-1.64	-0.06077
	Moderate	0.0158304	0.104*	0.003435*
	Weak	-		
Income	Middle-High	0.855355	5.01	0.18560
	Low Medium	0.519792	3.12	0.11279
	Low	♣		

♣ Indicates the dummy variables that were omitted; * indicates statistically insignificant coefficient estimates at the 10 percent level of significance. Restricted base line log likelihood = -748.8; LR statistic = -56.81; McFadden R squared = 0.037934.

Since the coefficient estimates are difficult to interpret, the odds ratios were calculated to facilitate interpretation (See Table 4). The greatest odds of a country running a balanced budget or a fiscal surplus was with respect to middle to high income countries, where the odds were 18.6 percent. At the same time, the odds of low middle-income countries adopting such a fiscal stance

were 11.2 percent. The odds therefore favoured middle to high-income countries running balanced or surplus budgets, as compared to low-income countries. If there is a direct correlation between incomes per capita with savings, then an interpretation of this can be that countries that are internally savings constrained are more likely to run moderate to large fiscal deficits.

In terms of external current account earnings, the ratio suggested that the odds of a country with an external current account surplus/narrow deficit running a balanced or surplus budget were 12.3 percent. The coefficient was insignificant for countries with moderate deficits, however. It seems to be the case therefore that countries that are generating net current account surplus or narrow deficits are more likely to reflect fiscal restraint.

It also turned out that the odds of a country, which is the recipient of strong foreign direct investment running a balanced, or surplus budget was 11.3 percent. As such, a country with weak to moderate foreign direct investment flows is less likely to achieve such fiscal balance. Thus, the evidence suggested that countries with stronger foreign exchange inflows either through net current earnings or foreign direct investment are more likely to reflect fiscal balance. At the same time, the odds of a country with severe current account deficits, low to moderate foreign direct investment, and low income running a fiscal surplus or a balanced budget seems less likely by 36.1 percent. These findings are consistent with the results of our theoretical model.

Economic growth did not seem to provide positive information on the likelihood of countries running a balanced or surplus budget. In fact the odds ratio suggests that a government in a high growth country was more likely to run fiscal deficits. Perhaps, the growth impetus affords them the ability to finance their deficits through higher demand for their assets both internally and

externally.⁹ Thus, GDP growth seems to be a poor predictor of the fiscal stance of government. At the same time, there were slight odds of 0.03 percent of countries reflecting moderate growth running fiscal balance or surplus.

Probabilities of countries running balanced or surplus budgets can also be calculated. For example, the probability of a country adopting such a fiscal stance where there are severe current account deficits, low to moderate foreign direct investment flows, weak economic growth and belonging to the low income category can be obtained by first calculating L_i as:

$$L_i = -0.36136 + 0.012308 + 0.11292 - 0.06077 + 0.18560 = 0.018$$

And secondly by calculating

$$P_i = \text{antilog } L_i / (1 + \text{antilog } L_i) = \frac{0.18912}{1 + 0.18912} = 0.159$$

Similarly, the probability of a country running a balanced or surplus budget where the external current account is in surplus/narrow deficit, foreign direct investment is strong, growth is high and the country belongs to the upper middle to high-income group is 0.505. Thus, the model derives higher probabilities with respect to a country running a balanced or surplus budget in the presence of strong foreign direct investments, and higher domestic savings.

Overall, the estimated model correctly predicts 69 percent of the observations. However, the model is far better at predicting fiscal deficits than fiscal surplus as 98.9 percent of the deep=0 observations were correctly estimated by the model, while 6.0 percent of the Dep=1 observations were correctly specified by the model (See Table 5).

⁹ Jaspersen (1997) observes, for example, that East Asian economies ran budget deficits just as high as Latin America, but deficits were more sustainable in the former owing to higher growth rates and the consequent demand for financial assets. Indeed, there seems to be consensus that governments in high growth countries do not need to consistently run fiscal surpluses.

Table 5. Expectation-Prediction (Classification) Table (%), Dep=1 \geq -1% of GDP (%)

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
Correct	98.9	6.04	69.34	100	0.00	68.17
Incorrect	1.10	93.6	30.66	0.00	100.00	31.83
Gain	-1.10	6.04	1.17			
Percent gain	-	6.04	3.67			

The predictive ability of the model was also examined through the gain in the number of correct predictions of the estimated equation over the constant probability model. The contribution of the other regressors to the correct forecast over the base was greater for dep=1 predictions, with a gain of 6.04 percent, compared to dep=0 predictions. Overall the total gain was 1.17 percent, which represented a 3.67 percent improvement over the 68.17 percent of the constant probability model. The marginal gain by the estimated equation may be the result of the low percentage of countries achieving a fiscal surplus or a balanced budget.

An attempt was made to see if the predictive ability of the model would improve, if the dep=1 was expanded to include observations with narrow deficits, that is, deficits up to 3 percent of GDP (See Table 6).

Table 6. Expectation-Prediction (Classification) Table, Dep=1 \geq -3% of GDP (%)

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
Correct	58.58	60.79	59.65	100	0.00	51.63
Incorrect	41.42	39.21	40.35	0.00	100	48.37
Gain	-41.42	60.79	8.02			
Percent gain	Na	60.79	16.58			

Fewer of the estimates, 59.65 percent, correctly predicted the overall observations. This time, however, the model did better at correctly predicting dep=1. Moreover, the predictive ability of the model improved as the percentage gain overall was 16.58 percent over the constant

probability model compared to the 6 percent in the other estimation. The gains in forecasting fiscal surplus/narrow deficit improved, though the gains in forecasting fiscal deficits declined. The result is not surprising, since the fiscal balance is easier to predict the wider the range of the fiscal balance considered.

Given the better predictability derived from the model the robustness of the signs and significance of the odds ratio were examined (See Table 7).

Table 7. Logit Estimation results. Dependent variable is fiscal balance to GDP, Dep=1 \geq -3% of GDP
(%)

Variables		Coefficients	t ratio	Odds
Intercept		-0.933496	-4.47	-0.23313
Current account to GDP	Surplus/Narrow Deficit	0.541138	2.73	0.13514
	Moderate Deficit	0.190523	0.892*	0.047580*
	Severe Deficit	♣		
Foreign Direct Investment to GDP	Strong	0.0250237	1.36*	0.062493*
	Low-Moderate	♣		
Growth	High	-0.0888390	-0.613*	-0.022186
	Moderate	0.263129	1.82	0.065712
	Weak	♣		
Income	Middle-High	0.795298	5.09	0.19861
	Low Medium	0.555084	3.76	0.13862
	Low	♣		

The signs of the odds ratios remained the same, thus giving some rigour to the results obtained for the balanced of surplus budget regression. However, foreign direct investment and high economic growth were no longer significant. The variables which remained significant to predicting dep=1 were the surplus/narrow deficit in current account earnings, and the income category of the country.

Conclusion

The results suggest that savings generated from current account earnings and the wealth of the country in terms of GDP per capita, matter to the predictability of the fiscal stance of government.

More specifically, a government is more likely to run a balanced or surplus budget where the current account earnings of the country is in surplus, and its income level is in the low middle to high income categories. There is also some evidence that foreign direct investment matters to the predictability of fiscal surplus, but its significance was not maintained when countries with narrow fiscal deficits were also considered. It is interesting to note that governments in high growth countries were more likely to run fiscal deficits than those in low growth ones. No doubt, growth allows them the opportunity to finance such deficits off of their own resources or to be more attractive to international lenders.

The model has succeeded in presenting evidence to suggest that persistent fiscal deficits may not only be the result of fiscal ill-discipline, but may also be the result of structural factors. The opening up of external markets to allow for healthy external current account earnings and the wealth of the country are important considerations, otherwise, the tendency may be for such deficits to persist until these goals are achieved. Foreign direct investment may also have a role to play in subduing deficits.

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Appendix 1
List of Countries for which observations are used in the Estimation

Ethiopia	Korea
Argentina	Kuwait
Bahamas, The	Lesotho
Bahrain	Madagascar
Bangladesh	Malaysia
Barbados	Mali
Belize	Malta
Bolivia	Mauritania
Botswana	Mauritius
Brazil	Morocco
Burkina-Faso	Myanmar
Burundi	Nepal
Cameroon	Nicaragua
Chad	Nigeria
Chile	Pakistan
Columbia	Panama
Congo Democratic Republic	Papua New Guinea
Congo Republic	Peru
Costa Rica	Philippines
Cotê d' Voire	Rwanda
Cyprus	Saudi Arabia
Dominican Republic	Sierra Leon
Egypt	Seychelles
El Salvador	Singapore
Ecuador	Sri Lanka
Fiji	Sudan
Ghana	Swaziland
Grenada	Thailand
Guatemala	Trinidad and Tobago
Guinea-Bissau	Tunisia
Guyana	Turkey
Haiti	Uganda
Honduras	United Arab Emirates
India	Uruguay
Indonesia	Venezuela
Iran	Vietnam
Israel	St. Vincent
Jordan	Yemen
Kenya	Zambia
St. Kitts	Zimbabwe