Challenges of Increasing the Capital Investment to Accelerate Economic Growth in Sri Lanka

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The 2011 Budget Speech targets a doubling of per capita income to more than of US$ 4,000 by 2016 from US$ 2,375 in 2010. In order to achieve this target, private investments from both foreign and domestic sources are expected to rise from the present level of 19-21 percent of Gross Domestic Product (GDP) to a range of 26-28 percent over the next 6 years. This together with public investment of around 6-7 percent, it is envisaged that the total investment will increase from the present level of around 25-27 percent to 32-35 percent of GDP, to support the targeted annual economic growth exceeding 8 percent in the medium term and 10 percent thereafter.

The government's earlier policy document, *"Vision for a New Sri Lanka: A Ten-Year Horizon Development Framework 2006-2011"*, targeted a growth rate of 8 percent for 2006-2011, and 10 percent for 2012-2016. According to that document, the sector-wise growth targets for 2006-2011 were 4-5 percent for agriculture, 8-9 percent for industry and 9-10 percent for services. As per more recent policy document, *"The Development Policy Framework – Government of Sri Lanka"* published by the Ministry of Finance and Planning in late 2010, the projected economic growth of 8 percent is expected to be achieved through a gradual increase in investment to over 30 percent of GDP and efficiency gains in investment and production from both the public and private sectors.

Theoretical Underpinnings of Economic Growth

As a background to examine the potential to achieve the above-mentioned growth targets, let us briefly outline some of the underlying growth theories. The output of a country is determined by capital, labour and technology. Technological improvements include advances in both mechanical (machinery and equipment) and human capital (improved health, education, worker skills, etc.). In fact, technological changes are seen by economists as productivity improvements. So, a country could raise her output or GDP by either (a) increasing labour or capital inputs or (b) improving productivity. A common yardstick that can be used to approximately measure a country's productivity is the capital-output ratio (k) which is equivalent to the capital stock (K) divided by GDP (Y). Accordingly, the capital-output ratio is k=K/Y. A change in the capital stock in a particular period is usually treated as investment. The capital stock of a country is not easily measurable, and therefore, it is rather difficult to compute the capital-output ratio accurately. Therefore, the ratio of the change in capital stock (investment) to GDP ($I/\Delta Y$) is commonly used in place of the capital-output ratio. This measurable ratio is called incremental capital-output ratio (ICOR).

Assuming other things remain constant, an increase in output depends on investment divided by the incremental capital-output ratio ($\Delta Y=(I/k)$. This implies that higher the investment the higher the output while the higher the incremental capital-output ratio the lower the output. In other words, a higher incremental capital-output ratio demands more investments to attain a higher output level reflecting low productivity of capital. Using these relationships, we can determine the GDP growth rate (g) as follows:

$$g = \Delta Y/Y = (I/Y) \cdot (1/k) \quad (1)$$

As investment is equal to savings in equilibrium,

$$I/Y = S/Y = s \quad (2)$$

S/Y is the savings rate (=s) for the economy. Substituting (2) into (1):

$$g = s/k \quad (3)$$

Equation (3) states that the growth of an economy mainly depends on increases in the capital stock or investment, and adequate savings are needed for this purpose. Given the ICOR, it can be simply used to estimate the required savings and investment rates to achieve a particular growth target. Also, it tells us the growth rate that can be achieved in the context of the current savings and investment rates.

The above analytical framework is based on the famous Harrd-Domar Growth Model developed independently by the two economists, Toy Harrod of England and Evsey Domar of the US in 1948. Their model was based on a fixed coefficient, constant returns to scale function (which assumes that capital and labour are used in a constant ratio to determine the total output).

The Nobel laureate, Robert Solow, who developed a neoclassical growth model in 1956, added technological improvements as another the important factor in the growth equation. He considered technological improvements, which are independent (exogenous) of the model in two forms: mechanical (improved machinery and equipment) and human capital (improved health, education, worker skills, etc.). In contrast to the Harrod-Domar model, the Solow Growth Model assumed a production function with the property of diminishing returns where each additional increment in capital per worker results in less output. Solow's model can be summarised in the formula $Y = f(K,L,A)$ where Y is output, K is capital, L is labour, and A is a parameter that captures the effects of things other than capital stock and labour supply which might influence growth (increasing technology, worker skill levels, education, health, institutions, etc.). The term "A" is generally referred to total factor productivity (TFP). It captures not only efficiency gains, but also the net effect of errors and omissions from economic data. This approach is used as a "growth accounting" method to quantitatively assess a country's sources of growth.

According to Solow, technological progress is exogenous, which means that it is completely independent of decisions of economic agents. Therefore, technological change does not respond to economic policies. In the early 1990s, Paul Romer of the University of California at Berkeley – a new growth theorist – argued against this view. He pointed out that investment has various external benefits and spillovers that could prevent the decline in productivity of capital as the ratio of capital to labour rises. According to Romer, technological improvements, such as, a discovery of a new computer hardware or software, can be used unlimited number of times by many users, once the initial investment is made. The new growth theorists, thus, consider technological change as an output of the economic system. Inventors have spent years of research to produce things like light bulbs, railway locomotives, airplanes, transistors, microchips and computers. Some researchers have been able to generate billions of dollars, but others lose.

A peculiar characteristic of technologies is that they become

Table1: Savings and Investment in Sri Lanka from 2005 to 2010

Item	2005	2006	2007	2008	2009	2010
			Rs. million			
1. Gross domestic product at *market prices*	2,452,782	2,938,680	3,578,688	4,410,682	4,825,085	5,556,005
2. Consumption expenditure	2,013,802	2,439,816	2,949,712	3,799,084	3,955,355	4,558,040
Private	1,692,765	1,988,378	2,403,167	3,085,296	3,103,806	3,677,396
Government	321,037	451,438	546,545	713,788	851,549	880,644
3. Investment	658,018	822,240	1,000,323	1,215,247	1,183,654	1,495,556
Private	549,723	703,065	807,417	929,115	865,077	n.a.
Government	108,295	119,175	192,906	286,132	318,577	n.a.
4. Domestic savings	438,981	498,865	628,976	611,598	869,730	n.a.
Private	502,584	568,992	686,683	700,048	1,046,661	n.a.
Government	-63,603	-70,127	-57,707	-88,450	-176,931	n.a.
5. Domestic savings-investment gap	-219,037	-323,375	-371,347	-603,649	-313,924	n.a.
6. Net factor income *from abroad*	-30,049	-40,424	-39,054	105,031	-55,814	n.a.
7. Net private current transfers from abroad	174,542	197,861	245,006	277,711	336,578	n.a.
8. National savings	583,474	656,302	834,928	994,340	1,150,494	n.a.
			As % of GDP			
1. Gross domestic product at market prices	100.0	100.0	100.0	100.0	100.0	100.0
2. Consumption expenditure	82.1	83.0	82.4	86.1	82.0	82.0
Private	69.0	67.7	67.2	70.0	64.3	66.2
Government	13.1	15.4	15.3	16.2	17.6	15.9
3. Investment	26.8	28.0	28.0	27.6	24.5	26.9
Private	22.4	23.9	22.6	21.1	17.9	n.a.
Government	4.4	4.1	5.4	6.5	6.6	n.a.
4. Domestic savings	17.9	17.0	17.6	13.9	18.0	n.a.
Private	20.5	19.4	19.2	15.9	21.7	n.a.
Government	-2.6	-2.4	-1.6	-2.0	-3.7	n.a.
5. Domestic savings-investment gap	-8.9	-11.0	-10.4	-13.7	-6.5	n.a.
6. Net factor income from abroad	-1.2	-1.4	-1.1	2.4	-1.2	n.a.
7. Net private current transfers from abroad	7.1	6.7	6.8	6.3	7.0	n.a.
8. National savings	23.8	22.3	23.3	22.5	23.8	n.a.

Sources: Central Bank of Sri Lanka
Ministry of Finance and Planning

public goods or "non-rival" goods. This means that they can be utilised by many people at the same time without being depleted. A new computer hardware architecture, a new software, a new automobile design or a new drug can be used by anybody without any reduction in productivity. Inventions are said to be expensive to produce but cheaper to reproduce. These inherent characteristics of technological advancement have resulted in acute market failures. The reason is that inventors find it difficult to generate profits from their inventions, because others can copy them without incurring much cost. Hence, there is no incentive for inventors in the market system for discoveries or innovations. Therefore, the government has a major role to play to provide incentives for research, and also to protect intellectual property rights of researchers.

Domestic Savings – Investment Gap

In the light of the above theoretical background, let us now examine the country's prospects to accelerate her economic growth to over 8 percent per annum during the next 6 years, as envisaged in the 2011 Budget Speech. As shown in Table1, domestic savings have been lower than domestic investment continuously. On average, domestic investment was around 27 percent of GDP as against domestic savings rate of 17 percent of GDP during 2005-2009. Thus the savings-investment gap was as much as 10 percent of GDP. The entirety of domestic savings was generated by the private sector. The average private sector savings amounted to 19 percent of GDP during that period. The government absorbed a part of these private savings amounting to over 2 percent of GDP to meet its dissavings resulting from the current account deficit. The current account deficit reflects the excess of the government's current expenditure over its total revenue. The use of a part of private savings by the government in this manner to meet its current expenditure reduces the domestic savings of the country. This is a major constraint to raise domestic savings and investment.

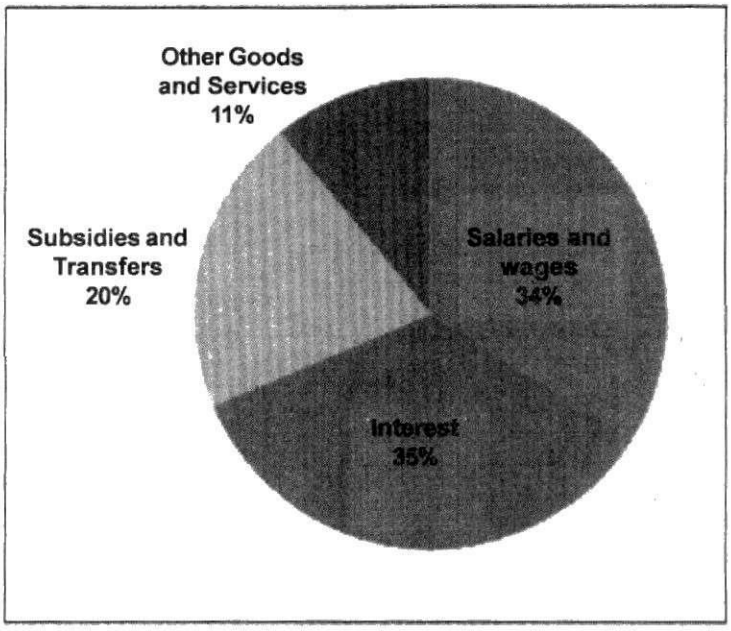

Figure 1: Composition of government's current expenditure, 2011

Source : Budget Speech 2011

In the 2011 Budget, the anticipated total revenue and grants is only Rs. 986 billion as against the estimated total expenditure of Rs. 1,420 billion resulting in a budget deficit of Rs. 434 billion or 7 percent of GDP. About 72 percent of the allocated expenditure (16 percent of GDP) is to be for recurrent expenditure, and the balance is for public investment (6.5 percent of GDP). Almost 90 of the total current expenditure in the 2011 Budget is allocated for three major items – interest payments (35 percent), salaries and wages (34 percent) and subsidies and transfers (20 percent), as shown in Figure 1. The government revenue has not increased sufficiently to meet the rising expenditure. In fact, the revenue to GDP ratio has been on a declining trend since the 1990s. It is essential to reverse this trend to restore fiscal stability, and to achieve the budget deficit target of 5 percent of GDP as stipulated in the Fiscal Management Responsibility Act. Such an improvement will also help to reduce the absorption of a part of private savings into government coffers, and thereby to increase domestic savings.

While the government's fiscal operations have led to dissavings causing a reduction in domestic savings, the private sector continues to generate positive

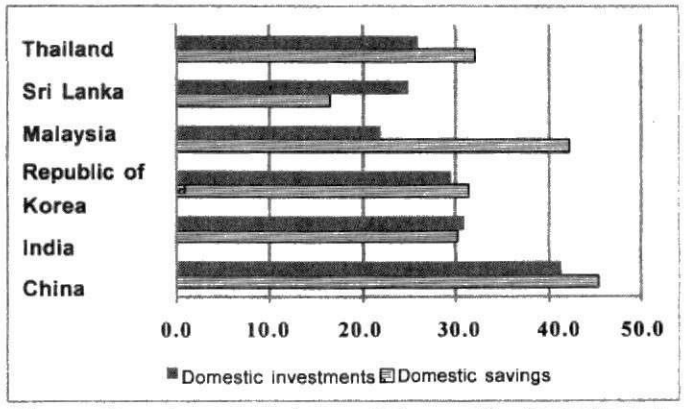

Figure 2: A comparison of domestic investment and savings rates (percent of GDP)

Source: Central Bank of Sri Lanka Asian Development Bank

Table 2: Government's Fiscal Operations in 2010 and 2011

Rs. Billion

Item	2010 Revised	2011 Budget
Total Revenue and Grants	**828.3**	**986.1**
Total Revenue	**812.1**	**963.5**
Tax Revenue	720.0	862.1
Income Tax	135.0	154.9
Taxes on Goods and Services	429.5	495.5
Taxes on External Trade	155.5	211.8
Non Tax Revenue	92.0	101.4
Grants	16.2	22.6
Total Expenditure	**1,275.0**	**1,419.9**
Recurrent	926.0	1,017.0
Salaries and wages	295.3	344.0
Interest	350.3	353.9
Subsidies and Transfers	197.2	207.3
Other Goods and Services	83.2	111.7
Public Investment	359.0	413.7
Education and Health	29.4	54.0
Other Infrastructure Development	329.6	359.7
Other	-10.0	-10.8
Revenue surplus(+) / Deficit(-)	**-113.9**	**-53.4**
Budget Deficit	**-446.7**	**-433.7**
Total Financing	**446.7**	**433.7**
Total Foreign Financing	**205.5**	**94.5**
Net Foreign Borrowings	93.5	94.5
Gross Concessional Foreign	172.5	189.5
Borrowings		
Debt Repayments	79.0	115.0
Foreign Commercial	112.0	20.0
Total Domestic Financing	**241.2**	**339.2**
Non-Bank Borrowings	166.2	257.7
Foreign Owned T Bills and Bonds	40.0	39.6
Bank Borrowings	35.0	42.0
Revenue and Grants/GDP (%)	14.9	15.6
Revenue/GDP%	14.6	15.2
Tax/GDP (%)	13.0	13.6
Expenditure/GDP (%)	23.0	22.4
Current Expenditure/GDP (%)	16.7	16.1
Current Account deficit/GDP (%)	-2.1	-0.9
Public Investment/GDP (%)	6.5	6.5
Revenue surplus (+) / Deficit(-)/GDP %	**-2.1**	**-0.8**
Budget Deficit/GDP (%) (Excluding Grants)	**-8.0**	**-6.8**

Source: Budget Speech 2011

savings contributing to boost both domestic investment and economic growth. Nevertheless, the ratio of private savings to GDP has not shown any significant improvement in the past. A major reason for this stagnation is slow economic growth which prevents any substantial rise in household incomes. As incomes remain low, households are compelled to spend a larger proportion of their incomes to meet essential consumer needs, such as, food, shelter and clothing. As income levels go up, a reduction in the share of income allocated for consumption and a consequent rise in the savings rate could be expected. Acceleration of economic growth is imperative for such a development.As shown in Figure 2, Sri Lanka's domestic savings and investment rates are rather low in comparison with fast growing countries such as China, India, Thailand, Malaysia and South Korea.

Low Productivity

As noted earlier, another way to accelerate economic growth is to improve the overall productivity of the economy. The average ICOR for Sri Lanka during the last five years has been around 1:4.7. This implies 4.7 units of investment are needed to produce additional one unit of output each year. Given this ICOR which is rather high, the required domestic investment to achieve the targeted annual growth rate of over 8 percent would be around 38 percent of GDP (=8 X 4.7%). An equivalent national savings rate is required to meet this investment demand. Achieving such high investment and savings rates is a major challenge faced by the country. Low productivity in the production sectors, as reflected by high value of ICOR, is primarily responsible for such high level of investment requirement. As shown in Figure 1, ICOR has hovered around 1:4 to 1:7 during the last two decades.

It is encouraging to note that the 2011 Budget has recognised the need to be more productive and competitive in export and import activities. For this purpose, the Budget has offered a few tax and import duty concessions for value-added export ventures. This includes exemption of value-added exports from a proposed cess imposed on all raw and semi-processed exports. Import duties and taxes on machinery, equipment and raw material are to be reduced. Several income tax reductions have been proposed for manufacturing and export enterprises. Machinery and equipment to manufacture textile, leather, footwear and bags are to be exempted from import duties and VAT (Value-Added Tax).

Improvement of productivity by 5-6 percent in the 'development decade' is recognised as a key goal of the government in the Budget. Provision of training for selected youth and assistance to the Small and Medium-scale Enterprises (SMEs) are two major steps. It is also proposed to encourage enterprises to undertake Research and Development (R&D), registration of patent, trademarks

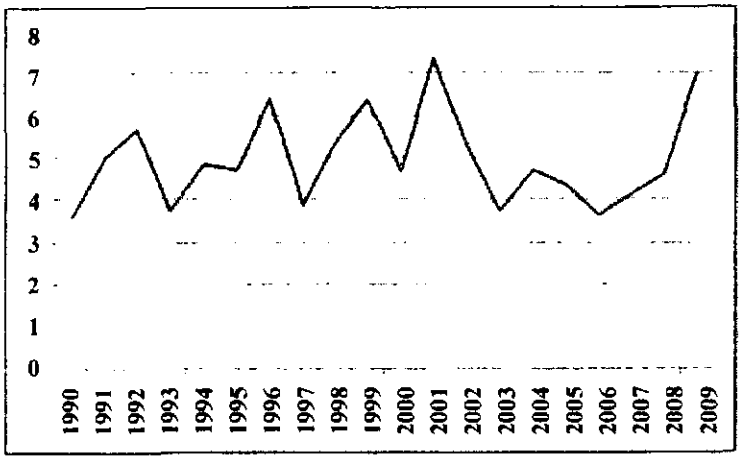

Figure 3: Incremental capital-output ratios of Sri Lanka from 1990 to 2009

Source : Computed by the author using the data published in Annual Reports of the Central Bank of Sri Lanka

and designs, automation through technology and training of workers. R&D is expected to be improved through certain incentives offered. It is also proposed to relax administrative procedures to encourage partnership between Government and private sector research centres to undertake R&D initiatives. Certain proposals are laid down to strengthen the secondary and tertiary education sector to uplift the country's human resources capabilities. The budget proposals pertaining to investment climate include restructuring of Board of Investment of Sri Lanka (BOI) and simplification of foreign exchange and trade control arrangements.

Revitalisation of Export-led Growth Needed

Although the above proposals would have a positive impact on the country's production capacity and competitiveness, the big question is whether they are sufficient to effectively address the problems in an ailing economy. As claimed in the Budget Speech, we may remain complacent about doubling of our per capita income during the past five years or so to the present level of around US$ 2,000. But the picture is not that rosy if we compare ours with the per capita income levels of South-East Asian countries, such as, Singapore (over US$ 40,000), Malaysia (over US$ 13,000) or Thailand (over US$4,000). Given the low capital-output ratio and the resource constraints, Sri Lanka will find it extremely difficult to attain such high income levels in the coming years. Drastic policy reforms are needed to accelerate economic growth to uplift the per capita income level.

The country's economic growth heavily relies on the performance of the export sector. Having liberalised the economy three decades ago, we have failed to effectively face global competitiveness, and to boost our exports. In the context of the extremely competitive global market, Sri Lanka needs a quantum leap to transform the export sector. The current Budget lacks a coherent policy to make such a radical transformation. The tax concessions proposed in the Budget to promote value-added exports are not sufficient to diversify the export sector, which still depends on the manufacturing of garments and a few other primary products. No policy strategy is articulated in the Budget Speech to promote high-tech manufactured exports, which are essential to make a meaningful positive impact on the export sector and GDP growth.

Specifically, there should have been a special effort to attract Foreign Direct Investment (FDI) which amounts to less than 2 percent of GDP at present. Drastic improvements in the investment climate are needed to attract FDIs. Apart from a few marginal proposals with regard to BOI investment pledges, there is no systematic strategy in the Budget Speech to improve the investment climate to foster FDIs.

Another vital factor that is neglected in the current policy stance is exchange rate flexibility. The exchange rate has not depreciated enough to compensate for domestic inflation in recent years. According to the Central Bank, the Real Effective Exchange Rate (REER), which is the exchange rate adjusted for the differential of domestic and foreign inflation rates, rose from 100 in the base year 2006 to 122 by August this year. This means that the Sri Lankan Rupee is overvalued by about 22 percent reflecting an erosion of export competitiveness. Thus, the export sector, which is already suffering from low productivity and inadequate FDIs, is further hit by the exchange rate over valuation. There is no mention in the Budget Speech of how this problem is going to be addressed.

A visible improvement is needed not only in economic dimensions, such as, macroeconomic stability, infrastructure, financial facilities and exchange rate flexibility, but also in the spheres of good governance, transparency and institutions. Foreign investors would continue to shy away if such improvements do not take place in the foreseeable future. Domestic investors are also discouraged. Therefore, drastic and consistent policy reforms, rather than the ad hoc tax and duty concessions proposed in the Budget Speech, are imperative to revitalise the export sector and to accelerate economic growth.

Global Competitiveness

The failure of domestic industry to meet global competition is a major counteracting factor. According to the latest *Global Competitiveness*

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Report published by the World Economic Forum, Sri Lanka is ranked in the 67th position in 2010 reflecting an improvement from the 79th position in 2009. Although this is a noteworthy achievement, it needs to be recognised the fact that several countries in the South and East Asian regions are ranked ahead of Sri Lanka. Malaysia (26), Thailand (43), India (56) and Vietnam (64) are a few examples.

A country's competitiveness depends on a multitude of factors including robustness of institutions, infrastructure, macroeconomic environment, health and education, market efficiency, financial market development, technological readiness and market size. These factors are critical in competing with the rest of the world, and boosting exports. For a country like Sri Lanka, stronger global competitiveness is more important, as it is mainly through export growth that the country could achieve a higher economic growth path.

Concluding Remarks

As discussed above, there is no single prescription to accelerate economic growth. It needs a multitude of favourable prerequisites. Consolidation of fiscal operations to achieve a lower budget deficit/GDP ratio is paramount not only to increase financial savings, but also to improve investor confidence. Higher domestic savings call for higher economic growth and vice-versa. In achieving accelerating economic growth, the crucial role of the export sector cannot be underestimated. The country has failed to reap the benefits of the export-led growth strategy which has not been directed in a proper manner in the last three decades. Domestic savings, investment, export growth and economic growth are interrelated. Therefore, appropriate policies are needed to direct these variables into a proper path to shift the economy to a higher growth trajectory. ■