

ECONOMICS OF PUBLIC CAPITAL EXPENDITURE IN THE SRI LANKAN ROAD INFRASTRUCTURE SECTOR

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T Lalithasiri Gunaruwan



Abstract

The Sri Lankan Government spends a significant share of its capital budget on road infrastructure. Therefore, it is important to ensure the efficiency of capital deployment in road sector projects. This research was undertaken with the objective of assessing capital efficacy in road development. In addition, the research sought to appraise strategies adopted in the institutionalisation of an appropriate public investment management mechanism, such that the maximum possible economic gain could be obtained.

Road projects undertaken by the Road Development Authority of Sri Lanka over the period 2005-2012, covering an overwhelmingly large share of public spending on road sector, were examined. The indicator used as the inverse of capital efficacy was the real capital expenditure intensity per unit of surface area, which was regressed against a selected set of cost-influencing factors, whereby significant determinants of capital intensity were identified.

Project size, class of road, nature of terrain, funding mechanism and contract procurement process emerged as significant determinants with their influence being exerted in the expected direction, while the surface technology and the type of contractor were not significant. It was found that to fund projects through bilateral credit tied to contractors domiciled in lender countries without competitive bidding was highly capital intensive, and therefore inefficient, in terms of capital deployment. The outcomes of the study recommend that public investments should be executed through local contractors to the maximum possible extent, and that, whenever foreign funding becomes necessary, contract negotiation with a pre-designated company without competitive bidding should be avoided, given that such a modality would be prone to wastage, leakages, mismanagement, and corruption. It is strongly recommended to institutionalise a competitive procurement process through an effective mechanism for public investment planning, appraisal, and implementation management, to ensure the efficiency of public sector capital expenditure.

Key Words: *Capital Spending Efficacy, Public Investment Management, Competitive Procurement, Road Sector, Sri Lanka*

JEL Codes: *G31, H43, H54, H57, L52, L92, O22*

T Lalithasiri Gunaruwan

Department of Economics, University of Colombo, Colombo 7, Sri Lanka
Telephone: +94 772 28 28 08, Email: tlgun@econ.cmb.ac.lk

INTRODUCTION

The Sri Lankan Government spends a significant portion of its annual capital expenditure on road infrastructure development. Since defeating terrorism in 2009, nearly 6% of the Government's total capital budget has been expended by the Road Development Authority (RDA) alone.¹ In addition, a considerable portion of capital resources voted for Provincial Councils, which amounts to nearly one-third of what was received by the RDA, also have been invested in developing road infrastructure. In this context, it is of prime importance to assess how efficiently such capital budgets allocated to the road infrastructure sector have been utilised. Any inefficiency, whether as a result of over-expenditure, wastage, leakages, or even owing to inappropriate procurement and implementation mechanisms, would be unbearably costly for a capital-scarce and heavily indebted developing economy like Sri Lanka.

If an economy has spent more than what it should have to realise a given objective, such additional spending would amount to a resource waste for the spending agency. While the economic plough-back effect could lead to economic benefits from such additional expenditure if it takes place domestically, any such additional expenditure made on imports or on foreign construction contracts would constitute a net leakage out from the national economy. Given the increased dependence of the State on foreign borrowing, and the employment of foreign contractors,² this risk of resource drain-off is much more prominent in the present context than a few decades ago when most road development projects were locally-funded and implemented. Therefore, it is of utmost importance that capital efficacy in road development is assessed, and that strategies are implemented to realise the greatest possible economic benefits with the least possible capital outlay, through appropriate strategic planning, implementation and financing of projects.

This research was conducted with the objective of examining the capital efficacy of project development and implementation on the road sector by focusing on road rehabilitation and development projects undertaken by the Road Development Authority during the 2005-2012 period. This focus was chosen because all A- and B-Grade roads fall within the purview of the RDA, and many other projects at the provincial level had also been undertaken by the RDA during the period, thus representing an overwhelmingly large share of public sector spending on the road sector during this period.

¹ Annual Reports 2015 and 2011 of the Central Bank of Sri Lanka

² Gunaruwan & Jayasekera (2012)

MATERIALS AND METHODS

Many references to the importance of capital efficiency, in terms of both the outcome delivery efficacy (output side) and capital usage efficacy (input side), are found in literature. The former dimension is reflected in the remarks made by Pritchett (2000) that public investment may have a low impact on production even when public capital has a particularly large contribution to make³. It is the latter dimension of capital efficacy that was dealt with when the International Monetary Fund remarked that only a fraction of the public investment translates into productive capital stock (IMF, 2014). The same dimension was dealt with by Gupta et al (2011) in remarking that the actual rate of accumulation of productive public capital was slower than what was suggestive in Government spending on investment. When Breg et al (2015) examined the merits of additional public investment spending being dependent on, inter alia, the marginal product of the resulting capital, the efficiency, the cost of financing, and the fiscal space, both these dimensions appear to have been embedded in the discussion. It is thus clear that a country failing to perform efficiently in these two dimensions would not only be prevented from realising the maximum development potential of its public capital expenditure, but would also risk being saddled with unnecessarily high public debts which arise as a result of borrowing by the State in order to meet such inefficient public investment.

In this light, the present research focuses on the “input side” of public capital accumulation with respect to Sri Lanka’s road infrastructure sector, and attempts to empirically estimate its implicit efficiency. “Capital expenditure per unit area (meter-kilometre) of road space”, worked out by dividing actual investments by the corresponding square areas of road surface constructed, was used as the measure of capital expenditure intensity: lower the value of this measure, the greater would be the capital input efficacy. The inflationary effects on capital costs embedded in data over the years were removed by deflating the capital expenditure figures using the implicit investment deflator⁴.

Road projects, even within the selected framework of those implemented by the RDA, have different characteristics. Specific capital costs were identified in relation to such

³ <<One-off 1 percent of GDP increase in public investment would increase output by just 0.3 percent for countries in the bottom efficiency quartile, but by 0.6 percent for countries in the top efficiency quartile. Were a country in the lowest efficiency quartile able to increase its efficiency to the level of the highest quartile, it would double the economic “bang” it gets for its public investment “buck.”>> (IMF, 2015), (Breg et al, 2016)

⁴ Implicit Investment Deflator was estimated by working out the ratio between the current and constant price-based data on the country’s Gross Domestic Capital Formation, published in various issues of Sri Lanka’s Central Bank Annual Reports.

characteristic variables in order to segregate the “capital cost intensity” measure corresponding to each such specific combination of road characteristics. For instance, different project sizes (denoted in terms of kilometers of road length), different terrains (from relatively easier flat terrain to more difficult or complicated hilly terrains and conflict impacted areas), different surface technologies (Asphalt, DBST⁵, SBST⁶, etc), different contractors (local or foreign), different funding sources (Government of Sri Lanka, Japan, European Union, Asian Development Bank, the World Bank, Korea and China) and even the mode of procurement of contractor (whether on complete competitive bidding, on limited competitive process, or on bilateral negotiation with no competitive bidding), were chosen to be examined for their influence as characteristic project variants. This array of potentially influential variables, both containing actual values (such as project size, represented by road length in km) and categorical variables (such as mode of procurement, where “0”, “1” and “2” would represent “no bidding”, “limited bidding” and “competitive bidding”, respectively), were used as determinants; first, to examine possible patterns of their influence through graphical means, and subsequently, to perceive, using multiple linear regression, the significance and degree of influence exerted by each variable over the capital cost intensity of road sector projects in Sri Lanka.

Secondary data obtained from the RDA for the period between 2005 and 2012 were used for graphical analysis and statistical estimations.

The results were interpreted in relation to their contextual setting in Sri Lanka, while comparing and contrasting them with findings in literature to suggest policies and strategic means to realise greater capital efficiency in Sri Lanka’s road sector projects.

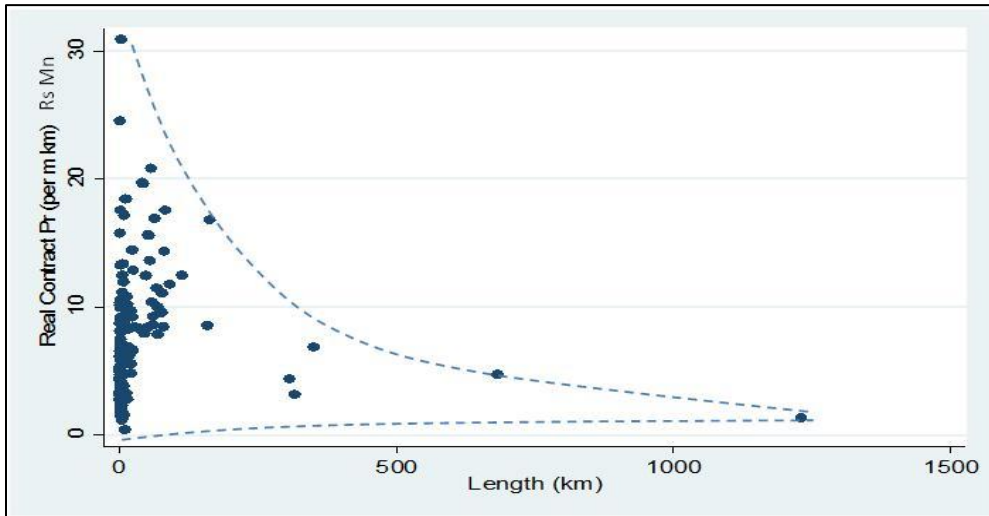
RESULTS AND ANALYSIS

To begin with, an attempt was made to understand the patterns implicit in data by graphical means. Figure 1, a simple scatter plot of all specific capital intensities, expressed in real terms (in millions of rupees per metre-kilometre of surface area constructed), is indicative of the potential economies of scale associated with project size.

⁵ Double Bituminous Surface Treatment

⁶ Single Bituminous Surface Treatment

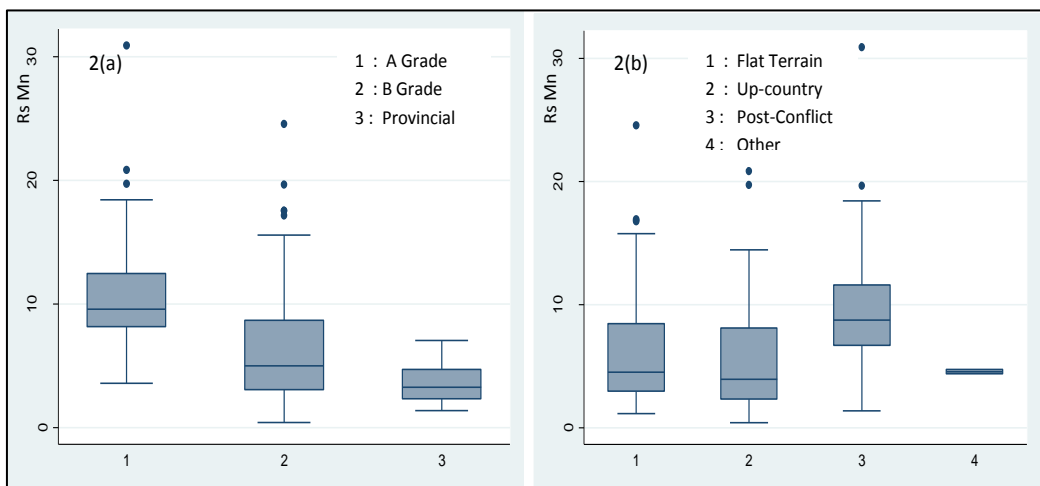
Figure 1: Variation of Capital Cost Intensity in Real Terms against Project Size



Source: Author’s estimates using data sourced from RDA.

As expected, the “Class of road” (whether A-Grade, B-Grade or Provincial Grade) also seemed to influence the capital intensity: A-Grade roads would be associated with the highest capital cost intensities while provincial roads with the lowest [Figure 2(a)]. The “Nature of Terrain” was presumed to be influential, because more difficult localities such as mountainous areas or conflict-affected areas would imply greater costs: the possibility that such effect exists was evident in Figure 2(b).

Figure 2: Capital Cost Intensity Variability on Class of Road and Nature of Terrain

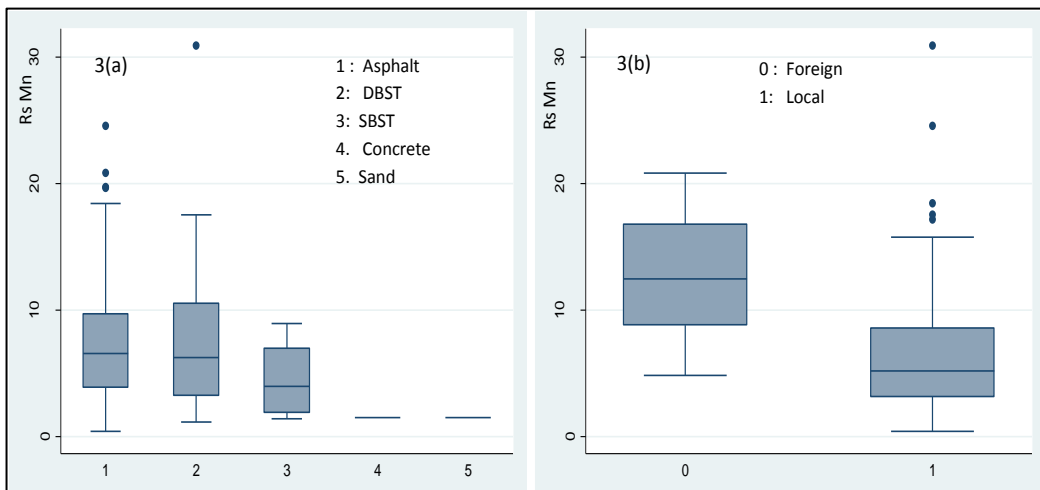


Source: Author’s construction using data sourced from RDA.

Technical specifications of road construction, represented by the surfacing technology used, indicate that there is not much of a difference between Asphalt and DBST surfacing technologies when determining the average capital cost intensities of road projects, while the capital intensity would be lesser with SBST usage [Figure 3(a)]. Only a few projects with concrete surfacing or sand sealing were found among the framework of projects selected for this analysis, and thus no meaningful result could be expected in that regard even though concreting and sand sealing are known to be much less costly than the other technologies considered in this study.

Figure 3(b) indicates the average behavior of the capital intensity variable, with the type of contractor serving as a determinant. It suggests that projects undertaken by local contractors, at least as joint-ventures, would be less capital intensive than those executed by foreign construction firms. This could be owing to a number of possible causes. First, foreign firms may have been charged excessive capital costs, for which the enabling conditions would have been set through the absence of competitive bidding in contractor procurement. Second, it might also be possible that local firms undertook (or were given) those smaller scale and “lower-end” projects funded by the Government. Next, the possibility of getting projects executed through local contractors being truly capital efficient cannot be ruled out either.⁷ These possibilities would have to be further investigated by statistical means.

Figure 3: Behaviour of Capital Cost Intensity on Surface Technology and Type of Contractor

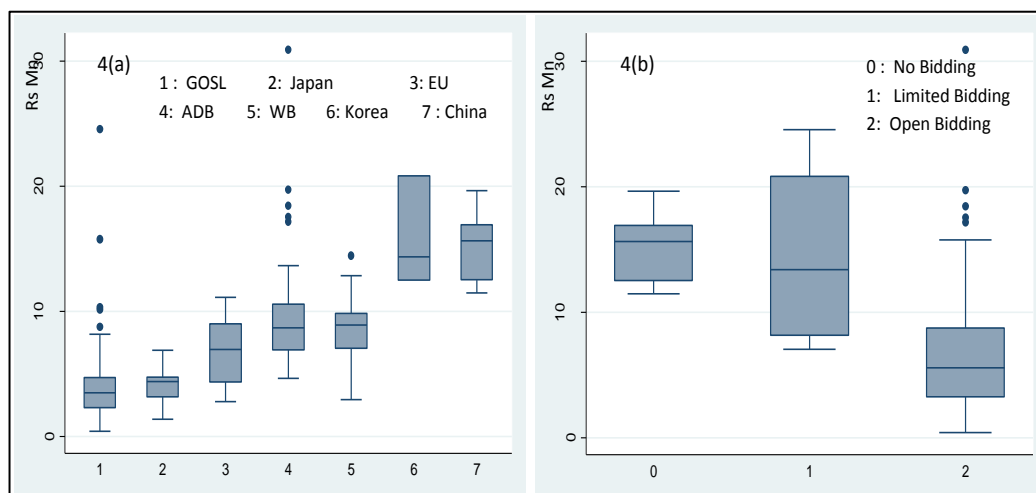


Source: Author’s construction using data sourced from RDA.

⁷ This may be due to an inherent efficacy of the modality, or due to such contracts being awarded on competitive bidding, thus enabling the Government to secure greater capital economies

Figure 4 depicts the patterns indicated by data with regard to capital intensity variation according to funding source [Figure 4(a)] and method of contract procurement, meaning the extent to which the competitive bidding process was used [Figure 4(b)].

Figure 4: Variability of Capital Cost Intensity on Source of Funding and Mode of Procurement



Source: Author’s construction using data sourced from RDA.

This graphical representation enabled the identification of possible determinants which could potentially influence the capital expenditure intensity of road projects. To examine their significance when acting as individual variables in a group of determinants, multiple linear regression analysis was performed. The validity of cross-section regression models examined was tested for multicollinearity and heteroskedasticity problems adopting covariance examination of error terms and Breusch-Pagan methodology respectively, and using STATA software. The model estimated using robust regression estimates was finally retained. The results are summarised in Table 1.

Models 3 and 4, in their robust forms, were retained for final analysis. Model 4 retained five of the determinants while Model 3 has only four. The explanatory power of Model 4 also appears to be superior to that of Model 3. However, the variable “Funding Agent” appears to be causing a certain degree of error correlation with “Class” and “Procurement Process” variables, in spite of there being no significant multicollinearity-related error indicated by Variance Inflation Factor (VIF) analysis.⁸ This is understandable, as an association with foreign funding would be expected to be more

⁸ Highest VIF value of 2.70 is associated with the determinant variable representing “Funding Agent”.

likely in the context of Class-A roads than with Class-B roads, and more so with the latter than with Provincial Roads, while competitive bidding with bilateral credit-based funding is not prevalent as a mode of contractor procurement. While this effect may have given rise to the overall VIF value of Model 3 being lower than that of Model 4, the greater representation of determinant variables and greater F and R-squared values would not permit the rejection of the latter in favour of the former. It is interesting to note that the variable representing project scale (“Length”), which stands insignificant in raw regressions in both Model 3 and Model 4 becomes significant at 5% level when robust regression results are considered.

Table 1: Statistical Parameters of Regression Models Estimated

Determinant	Model 1	Model 2	Model 3	Model 3 Robust Est	Model 4	Model 4 Robust Est
Length (km)	-0.0027 (-1.13)	-0.0022 (-0.90)	-0.0022 (-0.85)	-0.0022** (-2.08)	-0.0025 (-1.02)	-0.0025*** (-2.69)
Class	-1.729*** (-3.23)	-2.889*** (-6.12)	-3.021*** (-7.04)	-3.0213*** (-7.26)	-1.998 (-4.11)	-1.998*** (-3.74)
Nature of terrain	0.873** (2.41)	1.453*** (4.25)	1.376*** (4.27)	1.376*** (4.11)	0.759 (2.19)	0.759** (2.37)
Funding agent	0.9045*** (3.77)				0.881 (3.94)	0.881*** (3.55)
Procurement process	-2.290*** (-2.96)	-3.827*** (-6.22)	-3.891*** (-6.38)	-3.891*** (-5.18)	-2.483 (-3.62)	-2.483** (-2.54)
Technology	-0.515 (-1.20)	-0.3032 (-0.68)				
Contractor type	-0.150 (-0.14)					
Constant	11.57	17.61	17.63	17.63	11.79	11.79
Observations	166	166	166	166	166	166
F Value	24.34	28.25	35.31	28.91	33.89	43.19
R-Squared	0.519	0.469	0.467	0.467	0.514	0.514
Mean VIF	1.75	1.20	1.07	1.07	1.54	1.54

Source: Calculations by the Author.

It could be inferred from both robust estimates that road sector capital investment tends to have economies of scale indicated by the negative coefficient of the variable “Length”. Therefore, one may tend to suggest a larger *bundling* of road projects to economise on capital intensity. However, this suggestion has to be treated with caution, as larger projects might be beyond the investment capacity of local contractors and could keep them away from securing construction contracts if larger-scale projects are planned, thus potentially inflicting negative national economic implications. It is noteworthy that no project larger than 200 km of length has been implemented by local contractors during the period under study.

The capital expenditure intensity would reduce, as expected, as the “Class” of road moves from A- to B-Grade and then to “Provincial” grade. This is because higher-grade roads have greater technical and engineering features which would involve supplementary investments. Similarly, it becomes evident that the “Nature of Terrain” has a significant influence over the capital intensity of road works, ranging from lower intensities in “flat country” to higher intensities when the terrain is difficult (as in mountainous areas) or complicated (in conflict affected Northern and Eastern Sri Lanka).

The “Funding Agency” variable in robust Model 4 holds a significantly positive coefficient, indicating the importance of capital-sourcing choice. Chinese- and Korean-funded projects appear to be significantly more costly *ceteris paribus* than Japanese or European Union-funded projects. Interestingly, the projects funded by the most established multilateral lenders, namely the World Bank and the Asian Development Bank, indicate somewhat higher capital intensities than those funded through Japanese or European financing. Local funding is clearly the most economical, and thus, even if the secondary multiplier effects are ignored, funding road projects through local means would help gain capital expenditure efficacy.

It is noteworthy that neither “Surface Technology” nor “Contractor Type” emerges significant in any of the models estimated. It is quite possible that the effects of surface technology and contractor type being camouflaged by “Class” and “Funding Agent” variables respectively, would have caused this insignificance. Besides, contractor type was found to bear significant correlation to both funding agent and procurement process variables, possibly could explain the reasons for its coefficient not emerging significant.

The fact that the value of the coefficient associated with “Procurement Process” variable is significant in all models estimated indicate that “Resorting To Competitive Bidding” in contract procurement would significantly save the capital requirement for a given project of a pre-determined scale, class, surface technology, terrain or funding agency. This, together with the “Choice of Funding Source”, could be strategically

managed by the policy makers as adjustable variables to seek capital input efficiency gains. For instance, the range of capital efficiency gains realisable in implementing a project to develop 10 km of A-Grade road, 7 metres in width, in ordinary terrain, could be estimated using the regression model and presented in matrix form as indicated in Table 2.

Table 2: Capital Efficiency Potential under Different Procurement Modalities

Case		Length: 10 Km, Width: 7m, Class: A-Grade, Terrain: Flat		
Procure Mode	Funding Agency	From No Bidding	From Limited	From No Bidding to
		to Limited Bidding	Bidding to Open Competitive Bidding	Open Competitive Bidding
	Bilateral Credit	16%	19%	32%
	Multilateral Credit	19%	24%	38%
	Local Financing	22%	28%	44%

It could be observed from the above results that, depending on the method of financing opted for, and subject to further amplification, along with increased length or width of the road project concerned, capital efficiency economics ranging from 16% to 44% could be secured by opting for greater openness and competition in the process of contractor selection. Going by the capital expenditure of Rs 135 Billion voted for the RDA in 2012, the conservatively estimated potential for capital saving at 16% means that the Government could have saved approximately Rs 20 Billion in capital that year: an amount sufficient to procure nearly 1000 new air-conditioned low-floor city buses of 100-passenger capacity for the SLTB or over 15 new high quality Diesel Multiple Units to augment the rolling stock fleet of Sri Lanka Railways.⁹ Alternatively, those savings would have financed a rehabilitation of over 150 kilometers of railway track to operate trains at 100 kmph or the development of another 200 km of four-lane highway (having two lanes in each direction) of similar characteristics, executed through local contractors.

In addition to these, it must be noted that such capital savings would largely be foreign loans: thus, a strategic move towards competitive bidding and local execution would help reduce external borrowings and public foreign debt by the same extent, while enabling domestic economic value multiplication (depending on the scale of relevant multiplier) once such foreign savings are re-invested within the national economy.

⁹ The S-12 Air-conditioned Diesel Multiple Units had been imported from China in 2012 by the SLR at an average cost of USD 10 Million per set.

DISCUSSION

The most distinctive finding of this study is its reflection of the economic advantages of resorting to competitive procurement when selecting the contractor for project execution. It is noted that bilateral sources of funding generally insist on awarding contracts on negotiation basis, thus inhibiting the scope for open competitive bidding. This puts in question the wisdom of going for such bilateral credit because the capital inefficiency factor associated with considerably over-estimated capital expenditure would nullify any interest or payment term-related advantages, if any, in financing projects on such credit terms. The road projects funded through Korean or Chinese-funding sources were particularly notable for their implementation through *negotiated contractors* (instead of competitively procured contractors), and the fact that those being overwhelmingly more capital intensive than others would further substantiate the observations made by Brautigam (2010, pp. 24-42) to the effect that “other kinds of strings are attached” to such sources of funding, and closed bidding with pre-determined contractors come part-and-parcel with credit assistance.¹⁰ Similar occurrences have been observed in the railway sector as well, where unsolicited projects negotiated on bilateral credit from India and China with no competitive bidding and implemented through contractors domiciled in those lender countries have been found to be associated with heavier-than-normal capital cost intensities (Gunaruwan et al, 2012).

An argument frequently advanced in defence of resorting to bilaterally-negotiated public project implementation is the availability of soft credit from multilateral sources becoming increasingly scarce. While this, in effect, is a valid argument, it cannot be used as a pretext for resorting to expensive and capital-inefficient bilateral credit, where there is no or little room for open competitive bidding in contractor selection. This is because, many projects, or at least a considerable number of them, could be locally turned out, thus paving the way for a greater national economic multiplier effect, and because funding at least those components through public coffers, even on borrowings, is economically advantageous in the medium- to long run. Besides, even for those components that cannot be executed by local contractors for one reason or the other, the Government, in the absence of soft credit from multilateral sources, may create a competitive environment by resorting to the Request For Proposals (RFP) methodology, in which interested contractors from a much wider spectrum of countries could submit their competitive bids to be funded by bilateral (including Ex-Im Bank) credit made available from their own countries. Any disinterest in exploring such means could have

¹⁰ It was also remarked that such credit would not reach the intended destination in the form of cash that could be utilized as the recipient would feel efficient or fit, implying the borrowing nation would be deprived of obtaining “competitive” prices for contract implementation by resorting to open bidding [Brautigam (2010)].

its origins found in root causes ranging from sheer ignorance to corruptive instincts. The latter possibility might be fuelled by the fact that actual money transaction between the foreign financiers and their contract executing company in the bilateral execution of projects is made off-shore, thus making leakages being made easier than when actual loan amounts are physically credited to the General Treasury to meet contractual obligations upon successful execution of projects by the respective contractors.

It is often believed that foreign assistance by way of investment is advantageous to the recipient economy as it would go beyond mere financing of a capital projects but would also contribute to the local economy by creating employment and introducing efficient technologies (Wooster and Diebel, 2006). But, this holds true only if there is a material, labour, or technology link between the respective foreign-funded projects and local industries: a condition rarely adequately met with respect to foreign-funded bilaterally-negotiated public projects. Much of the material and equipment are to be imported from the lender nation, and the executing foreign companies are allowed to employ cadres of their nationality, excepting, perhaps, manual and unskilled labour. This deprives the recipient nation of possible economic linkage creation, and thus, much of what is expected in terms of positive economic externalities would be lost. In fact, in many ways, public projects implemented through negotiated foreign contracts on bilateral foreign credit extended from the Ex-Im Bank modality could be identified as a way to *exploit* the recipient's market and opportunities for the lender's own benefit, rather than to support the borrowing nation. This is because the modality enables the lender nation to secure business for its companies in the recipient market without competition (and is likely to make projects more expensive than when executed under competitive conditions), to find jobs for the large pools of unemployed labour in their own markets, and also to enable the lender to render the borrower *indebted* without physically expatriating much of the capital amount recorded in the loan agreement.¹¹

The issue of capital productivity at national level could be looked at within this context. While the apparently excessive capital expenditures on public projects executed through unsolicited negotiated contracts amounts to resource waste, and thereby to loss of capital input efficacy, they also mean that the physical capital actually deployed in delivering the project outputs would be worth much less than the recorded capital expenditure values.¹² This observation leads to the inference that the investment

¹¹ In national accounts, surpluses earned off-shore by a national or a national enterprise is counted within the country's "Gross National Product", even though such is not counted within the framework of "Gross Domestic Product".

¹² Similar inference is implicit in Gupta et al (2011) where actual accumulation of productive public capital has been found significantly slower than suggested by the records of Government spending on investment. It also estimates that effective public capital would be up to one-half of the stock suggested by the traditional method for computing public capital stock.

figures, and thereby the capital stock values, recorded in the national accounts of Sri Lanka are over-estimations reflecting a weaker capital productivity level implicit in the Incremental Capital Output Ratio (ICOR) estimate. It also would mean that much greater economic value could be generated if the recorded monetary investments were actually spent, and spent efficiently without leakage, on the creation of public assets (in this case, roads), or that the same quantum and quality of outputs could be created from lower capital outlays.

Addressing these issues strategically would require an efficient project formulation, appraisal, and implementation system in the public sector. Such a system existed a few decades ago; but is no longer in existence, even though one of the explicit duties of the Department of National Planning is to manage such a system, covering the entire public sector. Such an effective development planning and project appraisal mechanism could bring in significant capital input efficiency advantages, even if the output delivery side, another important dimension that would be covered by such a mechanism, is not taken into consideration.¹³ National value multiplication when projects are executed through local entrepreneurship, even though not focused upon in this study, cannot be ignored in assessing economic benefits of public investment projects. It must be further noted that what is economically important is not the monetary quantum of capital outlay on a project, but its output in terms of a given extent, quality, and technical specifications, as secured at the lowest possible capital expenditure. The national capital budgeting process should be strong enough to capture these aspects, and any inability to do so would lead to worsen the capital productivity of the economy.

CONCLUSIONS AND RECOMMENDATIONS

The foregoing analysis and discussion lead to four main conclusions. First, road sector investment in Sri Lanka between 2005 and 2010 has been far from being efficient. The RDA, and the public coffers, appear to have spent unnecessarily high amounts of capital resources on road sector projects which could possibly have been constructed at much lesser (over 40% lesser under certain conditions and road lengths) capital intensities. Second, resorting to foreign bilateral credit for financing road projects, and surrendering to the attached condition that the implementation contract should be awarded to a designated company belonging to the donor country without calling for competitive

¹³ Improving project implementation comprising of competitive bidding and internal audit, and project selection, comprising of the existence of Medium Term frameworks and their linkage to annual budgetary policies, could significantly benefit public investment and growth in low-income countries. Public investment processes should be strengthened, but with suitable tailoring to country circumstances. For instance, in Middle Income Countries, project appraisal and evaluation would be relatively more productive stages to focus on (Gupta et al, 2011).

bids, was found to be the main cause behind this inefficiency in capital deployment. This inference calls for the urgent revision of policy with regard to the choice of capital sources for public investment financing, particularly in view of advantages accruable to the economy through the competitive selection of contractors and greater reliance on local engineering and entrepreneurial capabilities for road construction in Sri Lanka. Third, the Government, faced with increasing scarcity of multilateral sources of capital, appears to have failed in exploiting avenues to innovatively use bilateral credit facilities so that competition among contract service suppliers could be created by calling for bids together with credit facilities offered by the lender nation. Fourth, the study highlights the urgent necessity of re-establishing an efficient public investment planning and management mechanism capable of ensuring not only the most effective and efficient capital deployment but also the *quality* of public investment¹⁴ in view of maximising the accrual of national economic benefits including added value multiplication through the implementation of public sector development projects.

The study, by generalising the lessons learnt from highways sector, emphasises the necessity to ensure *good governance* in public investment management. The recent establishment of the National Procurement Commission (NPC) is viewed as a welcome move, but continued reliance on bilaterally-negotiated project implementation is bound to be expensive and capital-inefficient, will likely escalate foreign debt, and, as such, appears irrational, development-unfriendly and unsustainable.¹⁵

Given that public sector development projects are undertaken not only to create public assets including road infrastructure, but also to build local technological and engineering knowhow and skills, the study recommends that the Government assigns a policy preference to the employment of local entrepreneurs to the maximum possible extent through public investment.

The development drive towards making Sri Lanka a multi-dimensional regional hub will call for more public investment in years to come, and highways as well as transport-related infrastructure are likely to be allocated capital resources by way of investment. As much of such capital resources would have to be sourced from abroad by way of borrowings, a strategic way forward is necessary for the country to ensure maximum national economic benefits at minimum possible resource use; in other words, maximum capital efficacy. Although such public investment could *prima facie* be expected to bring benefits to the national economy (Collier and Dollar, 2001), the

¹⁴ This concurs with the emphasis by Chakraborty and Dabla-Norris (2009) on the “quality” of public investment.

¹⁵ A group of professionals in an open letter addressed to H E the President of Sri Lanka on January 16, 2016, expressed their concern in this regard, and called upon his intervention to arrest the trend.

experience of Sri Lanka has furnished sufficient basis to question whether the country has been able to gain much from such development activities, or whether those public investment initiatives have transpired to pose an economic burden in the long run. It is therefore pivotally important that the Government takes urgent action to put in place an effective public investment planning, appraisal, and management mechanism if the country wishes to be successful in realising her dream of becoming a regional hub or commercial centre.

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