DEBT BURDEN SHIFTING AND WELFARE LOSS IN COUNTRIES UNDER DEBT TRAP

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Abstract:

The government spending on development sector plays a significant role towards economic growth as it is the most powerful economic agent in all modern societies. The main objective of this paper is to explain theoretically the phenomenon of unique debt burden shifting and welfare loss in countries under debt trap with the support of descriptive statics of a panel of fourteen, Asian Pacific Developing Countries (APDC). This paper is an extension of our previous paper on debt trap and basic borrowing fundamentals (see Alam & Taib, 2012). The analysis shows that the government spending on development sector plays significant role towards economic performance of the country and improves welfare of its citizens. Any decrease in government development spending affects country's economy negatively and hurts welfare of the citizens. It provides guidelines for the policy makers on choice between debt and tax especially in the servicing of public debt.

Keywords: Debt burden shifting, welfare loss, debt trap

1.0 Introduction

The financing through debt is an important tool for the government that plays a vital role towards economic development as it accelerates the pace of development of infrastructure of the country. However, it needs extra care and seeks assurance that expected rate of return of the development projects exceeds the cost of borrowing. For instance, Tanzi

and Blejer (1988) document that an efficient investment of borrowed funds can be expected to promote enough future growth and can enhance debt servicing capability of the borrower out of future higher income. Such evidences are also witnessed from the debates of Cole (1960), Kuznets (1965) as cited in Wijnbergen (1989) especially in the case of United Kingdom and United States. These two countries had extensive debt in past over many decades turned into lenders in later stage. Other proponents of this premise are Rao et al (1994) as in accord to them a country that borrows for capital formation will, sooner or later, repay the debts and become a creditor.

The literature highlights that the growth of public spending over the past decade played a significant role in generating fiscal deficits in many countries that led to increase the public debt to gross domestic product (GDP) ratio. The borrowed moneys were not utilized properly as in a number of instances the government used them in extending various subsidies to the workers of its own political group. The conventional wisdom holds that growth in public debt should be maintained with the growth in revenues. This can only be realized if the borrowed moneys are prudently utilized on various development plans of the government. A misappropriation of borrowed funds that are used in unproductive means may lead to accumulation of debt at a faster rate than the growth in the economy. For instances, Daseking and Kozack (2003) document that investment returns depend on how funds are used. If the borrowed funds are prudently used and the development projects are timely completed then it would be a positive sign of the economy. Under such circumstances, the project after its completion would start generating revenues and therefore enhance the debt servicing capacity of the government. In reverse scenario, the government would engage in a chain of borrowing phenomenon that signals debt trap. Under debt trap, the government procures new debt just to service old debt thus accumulation of debt instead of accumulation of capital takes place (Alam & Taib, 2012). The increase in level of debt therefore demands higher debt servicing obligation that generates resource allocation problem in the national budget and generates temptation for shifting of resources from development to debt servicing sector. Consequently, the citizens face their welfare loss in terms of decrease in economic activities in the country (Alam, 2012). The main objective of this paper is to explain theoretically the phenomenon of unique debt burden shifting that generates welfare loss for the citizens of countries under debt trap with the support of descriptive statics of a panel of fourteen APDC. The organization of rest of the paper is as follows: section 2.0 discusses theories on debt burden shifting and highlights the significance of government development expenditure; section 3.0 briefly

explains welfare loss and per capita income; section 4.0 conceptualizes research framework and covers analysis; and section 5.0 concludes the paper.

2.0 Debt Burden Shifting and Development Expenditure

The shifting of resources from development to debt servicing sector signals a unique debt burden shifting especially in countries under debt trap. In literature, the subject of debt burden shifting is under discussion since 1817 and David Ricardo may be recognized as pioneer to it. The paper has tried to develop a linkage between debt burden shifting and the role of government development expenditure with the support of literature. Accordingly, the sub-section 2.1 discusses theories on debt burden shifting and sub-section 20.2 highlights the importance of government development expenditure which has been discussed frequently in literature.

2.1 Theories on Debt Burden Shifting

The theory on debt burden shifting states that a present tax-cut by debt finance is actually a shifting of burden from present to future tax-payers. Therefore, a present rise in the level of public debt simply means an increase in taxation in future to retire the debt and interest thereon indicating the burden of debt in terms of future taxes. The question that who actually, bears the burden of debt in future has remained a long debate since David Ricardo's proposition about the equivalence of debt and taxes (1817). The proposition holds that under rational behavior, debt and taxes would be regarded as equivalence, hence there is no burden. More recently, Robert Barro discovered his own equivalence of theorem in 1974. He states that even with infinite lives in an overlapping generation model, the intergenerational transfers (from old to young) imply that government bonds do not have a marginal wealth effect. Hence, the equivalence theorem is usually referred to as Ricardo-Barro proposition (Blanchard, 1997). However, this proposition has generally not found much empirical support (Pasha & Ghaus, 1996). Haque and Montiel (1993) discard Ricardian proposition for fifteen out of a sample of sixteen developing countries including Pakistan. Further Kazmi (1994) has tested this proposition in the Pakistan setting and found no convincing evidence. More recently, Alam (2012) in his empirical study also found similar evidence. Actually, the socio-cultural, economic, and political setups in developed and developing countries usually do not permit a theory to reflect an identical portrait in both sets of countries.

In 1948, Lerner developed intergenerational overlapping model that explained debt burden shifting however only to the extent of external debt. Thereafter in 1958, James

Buchanan argued that the burden of debt finance was shifted to future generations even in case of domestic debt. The subject was further discussed in literature with reference to the impact of debt on the level of utility of consumer. In this behalf, Diamond (1965), using Samuelson's (1958) generation-overlapping framework, shows that at least in certain circumstances an increase in government debt will lessen the long-run utility level of consumers. Rosen (1995) mentions burden of debt as a tax incidence problem in an intergenerational setting therefore it is hard to pin down or even how to define the burden. In accord to him, the kinds of debt (internal or external), the effect of various economic decisions and the kinds of projects would also need consideration to ascertain the burden however the empirical examination of some of these decisions has not given any concrete evidence that could lead to any consensus. This was further supported by Dornbusch et al. (2002), who discussed that there was no hard-and-fast economic principle that described what was fair and not fair in allocating burdens among generations. Nonetheless, politicians and non-politicians have strong views on how burdens should be shared across generations. Such decisions have, of course, to be based on an accounting of just how much current policies impose burdens on different generations. Intergenerational accounting evaluates the costs and benefits of the entire fiscal (tax and spending) system for various age groups in society. However, literature does not show any final outcome in this context.

The growing importance given to intergenerational transfers and long-run considerations in the discussion of fiscal issues has led to explicit consideration of the government's intertemporal budget constraints, in the context of models based on government balance sheets. Auerbach, Gockhale and Kotlikoff (1991 & 1994) as cited in Hernández-Catá (n.d.) have provided a framework based on the most comprehensive and rigorous approach to these ideas. They indicate what both existing and future generations will have to pay under current (or expected) fiscal policy. And they specify an inter-temporal budget constraint under which "those government bills not paid by current generation will ultimately have to be paid by future generations". However, Alam (2012) argues that even under no innovation in tax, the debt burden shifting takes place through resource reallocation and affects all generations because of the impact of government fiscal policy which is based on annual accounting system and under this set up all generations (young, middle, and old) bear the burden of debt. Under annual accounting system, it is difficult to pin point any specific generation that actually bears the burden of debt therefore it may be appropriate to assume that the burden of debt would be imposed on all generations.

2.2 Development Expenditure

The government expenditure on development sector plays a significant role in a country's overall economic performance. It acts as a catalyst in the building up of the overall infrastructure of the economy. It is the government who first takes the initiative to provide basic infrastructure facilities to gear up the national economy (Alam & Taib, 2005). For this purpose a substantial development funds are required. The government makes allocation for its development programs in the annual budget, which depends on national resource position. Usually in developing countries, there is always a scarcity of domestic resources thus the government fills its deficit gap through external borrowing. Hence, the accumulation of public debt can arise from the need to finance a 'big push' in economic development. The future growth could be promoted through efficient investment of borrowed funds so that the debt can be serviced without difficulties out of future higher income (Tanzi & Bleger, 1988).

The impact of public expenditures on economic growth gained tremendous attention in literature. For instances, Arrow and Kurz (1970) recognize it as the most powerful economic agent in all modern societies. A number of researchers like as Aschauer (1989), Barro and Sala-i-Marin (1991), Easterly and Rebelo (1993), Gramlich (1994), Gupta et al. (2002), and Turnovsky (2004) argue that government's investment can be considered as one of its important beneficial factors. The findings of Aschauer (1989a, 1989b) in case of the United States recommend that public capital is a significant determinant of output growth and that the fluctuations in public stocks could have striking effects on the private sector. Similarly, the findings of Seitz (1993) suggest significant contributions of public road infrastructure to the economic performance of the private industry in Germany.

Vu Le and Suruga (2005) discuss the importance of public expenditure for a government to control the economy. Its two-side effects in promoting economic growth cannot be ignored. The public investment is vital for capital accumulation and is also used for filling the gaps in a market economy such as public utilities, health care, social security, etc. Kirkpatrick, Parker, and Zhang (2006) argue that the provision of efficient, reliable and affordable infrastructure services is an essential requirement for economic growth and sustainable development in the developing countries. It is an important determinant of the pace of market development and output growth and serves to improve household welfare, particularly among the poor.

Availability of adequate infrastructure is essential for private firms to be productive even if it is also provided for its amenity value. It plays a pivotal role in boosting the capacity of the economy to produce goods and services. Arrow and Kurz (1970) as cited in Rodríguez

(2006) have used this idea by introducing public capital directly into the production function as a complement to private capital. The concluding point is that the investment in infrastructure increases production given the level of private capital and employment.

3.0 Welfare Loss and Per Capita Income

Under conventional wisdom at micro or household level, an individual or family with higher income enjoys a better facility as compared to the individual or family with lower income. Similarly, at macro level, the citizens of a country with higher per capita income enjoy higher standard of living than the country with lower per capita income. The welfare of an individual, a family, or a citizen is directly related to their income however the government is the ultimate source that ensures the maximization of the welfare of its citizens through the tools of its fiscal policy. In sub-sections 3.1 and 3.2 we discuss welfare loss and per capita income in the backdrop of literature.

3.1 Welfare Loss

The term "welfare" is generally referred to "happiness" or "prosperity" which is achieved through availability of desirable resources appropriate to make the living condition comfortable. Welfare economics analyzes the total good or welfare that is achieved at a current state as well as how it is distributed. This relates to the study of income distribution and how it affects the common good. Because different "optimal" states may exist in an economy in terms of the allocation of resources, welfare economics seeks the state that will create the highest overall level of social welfare. The role of government is important in this context as it extends a number of economic assistance to its citizens in terms of social insurance, provision for unemployed, injured, or aged people or destitute or handicapped. Welfare programs are funded by taxpayers and allow people to cope with financial stress during rough periods of their lives. The goals of welfare vary, as it looks to promote the pursuance of work, education or, in some instances, a better standard of living.

The overall economic performance of a country is associated with the welfare of citizens of the country. The objective of the government is the welfare of people. The welfare economy always concerns with the social desirability of alternative economic states (Rosen, 1995). The choice of public goods does not follow the path of demand and supply as its priority consideration is always based on equitable distribution i.e. each individual must be provided the same quantity of the public good (Anderson, 2003).

The welfare of society is raised if it is possible on a reallocation of resources to

increase the utility of one individual without decreasing the utility of any other individual (Cullis & Jones, 1992). However, in real world under the assumption of scarcity of resources one cannot receive a lion-share without compelling other to bear an ant-share. The Pareto efficient works on the same principle that no one can be made better off without making someone else worse off. Since, the government spending program is welfare-based hence reallocation in it may also raise the welfare issue that is directly linked with the citizens.

3.2 Per Capita Income

Per capita income measures the value of output according to the size of population and is obtained by dividing the GNP by total population. At an aggregate level, the per capita income of a country therefore depends on its population and the level of its outputs (GDP/GNP). The level of outputs increases with the positive growth in country's economy that is linked with the government's spending on development sector. Under ceteris paribus, a negative sign in development expenditure of the government will set the same sign for the country's economy and ultimately its per capita income will show a downward trend. Since, per capita income is recognized as the basis for identification of the standard of living of a country's citizens and influences their level of utility therefore a decrease in per capita income raises the issue of their welfare that would suffer a loss under this situation.

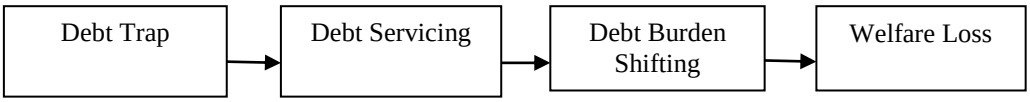
Broadly, the world is divided into two major groups i.e. developed and developing countries. The citizens of developed countries enjoy higher standard of living than the developing countries which is under ceteris paribus based on their per capita income. Hence, the utility or levels of consumption of developed nations are higher because of their higher per capita income which also satisfies the Keynsian income-consumption function. For instance, Ferraro and Rosser (1994) argue that the access to goods and services is linked with the level of income of the citizens. A citizen with a higher income will have greater access to goods and services thus satisfaction of his basic needs will be more as compared to the citizen with lower income. The countries with a higher GNP and GNP per capita apparently will have a proportionally higher standard of living for all their citizens. Otani and Delano (1989) document that in the developing world there appears to be a positive correlation among the level of per capita income, the rate of domestic savings, and the growth rate of export but a negative correlation among per capita income, external debt accumulation, and the growth rate of population. Iqbal et al. (1998) document that per capita income and GDP growth, are positively related to primary school enrollment taken as one of proxies for human capital stock.

4.0 Conceptual Framework and Analysis

We assume that debts are external (foreign) and borrowing is taking place between two sovereign countries. Under our assumption, the debtor country is in debt trap and faces higher debt servicing obligation that creates resource allocation problem in its national budget under ceteris paribus. However, the government of debtor country does not opt for any innovation in taxation to services its debt and instead it ventures to shift its resources from development to debt servicing sector for servicing its debt because of some political constraints. Although, there is no burden of additional tax upon citizens nevertheless a decrease in development expenditure affects the debtor country's economy negatively that imposes a burden on citizens in terms of decrease in its per capita income. Under conventional wisdom the decrease in per capita income symbolizes for the loss of comfort of the citizens thus it transmits a signal for their welfare loss. To strengthen our arguments, we further seek the support of Pareto efficient principle which states that one cannot be made better-off without making someone else worse-off. In accord to this principle, an increase in debt servicing payment by the debtor country to the creditor country will decrease the benefit of the former followed by proportionate increase in the benefit of later. Actually, the debt servicing spending by debtor country is merely a transfer payment that benefits creditor country. If this spending would have been made by debtor country on its development sector then it would have contributed to its national economy and increased its per capita income that ultimately improved the standard of the living of its citizens. Therefore, under Pareto efficient principle an increase in debt servicing spending by debtor country makes the citizens of creditor country better-off and that of debtor country worse-off. Under ceteris paribus, the worse off situation would be symbolized for the welfare loss of the citizens of debtor country.

Based on the above assumptions, we conceptualize that a country in debt trap faces a higher debt servicing obligation that tempts policy makers to shift resources from development to debt servicing sector to service its external debt. Since, the transfer of resources takes place from debtor to creditor country, therefore, the citizens of creditor country enjoy their welfare gain (better-off) while that of debtor country face their welfare loss (worse-off). Our conceptual framework is restricted to the debtor country only which is specific with welfare loss being one of its variables and therefore it does not take creditor country in its loop in its research framework. Accordingly, the research framework is as shown in Figure 1.

Figure 1: Research Framework



Selection of, fourteen Asian Pacific Developing Countries (APDC), grouping of debt trap countries (DTC) and non debt trap countries (NDTC) were followed on the same principles as set by Alam and Taib (2012). Accordingly, India, Indonesia, Nepal, Pakistan**,** Sri Lanka, and Thailand were categorized as DTC and Bangladesh, Fiji, Korea, Malaysia, Myanmar, Papua New Guinea, Philippines, and Singapore as NDTC. Secondary data from Asian Development Bank Report were used which were unbalanced because of some missing data. Descriptive approach with the support of panel data has been adopted. The average compound growth rate for the period of thirty years (1971 to 2000) for each variable was considered for the purpose of analysis. An average of thirty years is more than enough for the robustness in data-trend.

Table 1 shows average growth of external debt servicing (EDS), development expenditure (DE), and per capita income (PCI) during 1971-2000 in debt trap countries (DTC) and non debt trap countries (NDTC). The trend reveals a higher growth in EDS followed by a lower growth in DE and PCI in DTC and conversely a lower growth in EDS followed by a higher growth in DE and PCI in NDTC. In DTC an increase in EDS leads to decrease in DE because of shifting of resources from later to former that affects its economy negatively thus reduces its PCI. The shifting of resources from DE to EDS signals debt burden shifting and reduction in PCI indicates welfare loss of citizens in DTC while comparatively a reverse scenario in NDTC has been observed. In Table 2, the trend in some of the socioeconomic indicators of DTC and NDTC are included as supplement to strengthen our arguments further.

Table 1. Trend of Growth in EDS, DE, and PCI in DTC and NDTC

1971-2000	EDS	DE	PCI
	*Growth (%)		
DTC	7.5	6.4	5.7
NDTC	3.4	11.1	8.7

Note: *Growth in average compound rate.

Fig. 2: Comparative Picture of External Debt Servicing, Development Expenditure and Per-Capita Income in DTC and NDTC

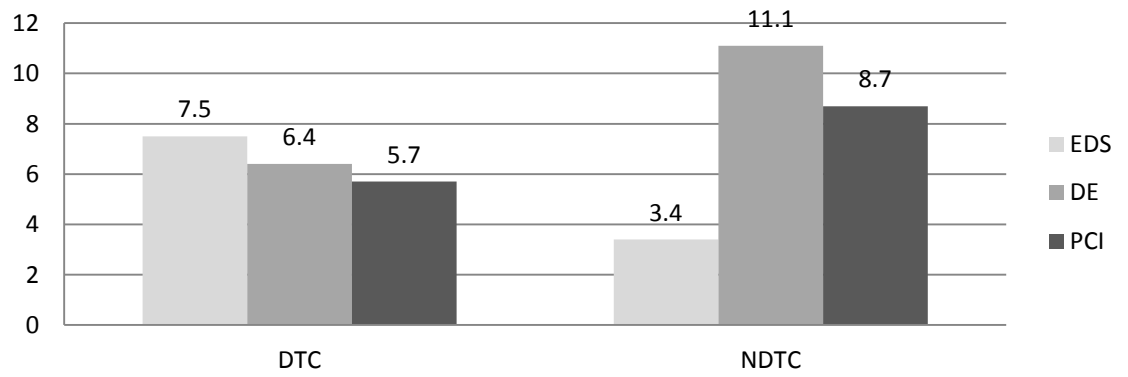


Table 2 shows average growth for 1971 to 2000 in external debt, current revenue, exchange rate, expenditures on education, health, and housing and community amenities for DTC and NDTC. The growth in external debt and the rate of depreciation in domestic currency against US dollar remained higher while growth in expenditure on education, health, and housing & community amenities witnessed a lower trend in case of DTC as compared to NDTC. The trend indicates poor performance of economy as well as declining trend in delivery of the social services by the government in case of DTC while comparatively a good economic performance of NDTC improves the capacity of their governments to provide better facilities to their citizens.

Table 2. Trend of Growth in Socioeconomic Indicators in DTC and NDTC

1971-2000	DTC	NDTC
	*Growth (%)	
Total External Debt	4.15	1.52
Revenue (Current)	8.84	11.23
Exchange Rate	7.44	3.11
Expenditure on Education	5.63	9.89
Expenditure on Health	4.59	8.66
Expenditure on Housing & Community Amenities	6.49	13.06

Note: *Growth in average compound rate.

The data given in Tables 1 and 2 fully support our assumptions that in DTC a higher debt servicing obligation tempts its policy makers to shift resources from development to debt servicing sector that generates welfare loss of their citizens. Our analysis supports the arguments of Arrow and Kurz (1970) Aschauer (1989), Barro (1991), Easterly and Rebelo (1993), Gramlich (1994), , Ferraro and Rosser (1994), Iqbal et al. (1998), Gupta et al. (2002), Turnovsky (2004), Kirkpatrick, Parker, and Zhang (2006) and Alam (2012). However, Alam (2012) concludes that the citizens of debtor country face three-folds of burden of debt; the first through decrease in their utility level of public goods and services because of cut in government development expenditure; the second through decrease in their personal consumption because of decrease in per capita income; and third through loss of capital via external debt servicing because of depreciation in domestic currency.

5.0 Conclusion

The citizens of debt trap countries (DTC) bear three-fold burdens of debt and face their welfare loss even under no innovation in tax. Our analysis showed that the shifting of resources from development to debt servicing sector negatively affected the economy of DTC that decreased their per capita income and signaled for welfare loss of their citizens indicating a unique debt burden shifting in DTC. Beside theoretical explanation, the paper provided a comparative analysis of debt trap and non debt trap countries with the help of panel data approach through descriptive statistics. An average of thirty years data was robust enough for the trends to support our assumptions that were further supplemented by the trend of socioeconomic indictors in DTC and NDTC. The analysis shows that the government spending on development sector plays significant role towards economic performance of the country that improves welfare of its citizens. It provides guidelines to the policy makers on choice between debt and tax that should not be compromised on political grounds. The policy makers must be cautious enough in handling public debt management especially in servicing the debt that should be made without shifting of resources from development to debt servicing sector. The paper mainly focused on external debt and could not cover the domestic debt because of data constraint. The analysis was relied on descriptive statistics and restricted to a group of fourteen Asian Pacific Developing Countries only. It leaves space for future research for a larger group of developing countries in external and internal debt and also for similar study for developed countries. Analysis of the individual member country of DTC, NDTC, and other countries of developing and developed countries would produce some new clues in this context.

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