

TURKEY'S DEFENCE EXPENDITURES AND DEBT BURDEN*

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ABSTRACT

Turkey has been undergoing a severe economic crisis recently. Despite its low standing in terms of basic economic and welfare indicators, Turkey has been leading in arms imports. The pressing issues of macroeconomic imbalances are budget deficits, current account deficits and external debt burden. Previous work on the trade-off between defence and growth (by Sezgin) and on the trade-off between defence and budget deficits (by Günlük-Senesen) conclude that presence of such trade-offs are not confirmed. As Turkey is a capital importing country and as budget deficits are financed through internal and external debt, the basic research question in this paper is: "What is the role of defence expenditures in Turkey's indebtedness?". We estimate a growth rate model for external debt, and find that defence expenditure and expenditure on military equipment do not have significant effects on growth, but growth of arms imports emerges as a significant determinant.

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1. Introduction

Turkey has been undergoing a severe economic crisis recently. The pressing issues of macroeconomic imbalances are budget deficits, current account deficits and external debt burden. Despite its low standing in terms of basic economic and welfare indicators, Turkey has been leading in arms imports.

Turkey's current problems overlap with the national level subset of the linkages between debt crisis and security (economic, political and military) listed in the international context in Sen (1991). That is, chronic external debt crisis due to high budget and current account deficits along with the decline of investments have all been detrimental to the growth performance and intensified the unemployment and inequality problems.

Related work on the trade-off between defence and growth (e.g. Sezgin, 2001) and on the trade-off between defence and budget deficits (e.g. Günlük-Senesen, 2003) for Turkey conclude that presence of such trade-offs are not confirmed. As Turkey is a capital importing country and as budget deficits are financed through internal and external debt, this paper attempts to explore the debt trade-off of defence since 1980's in Turkey.

2. Review of the Literature

The link between defence spending of a country and its external debt can be defined along two dimensions. Firstly, defence spending, a typical government budget item, might be pressing on budget revenues, therefore government borrowing requirement increases. Funds for borrowing might be sought from domestic and/or foreign sources. Government might borrow directly from external sources or induce foreign borrowing indirectly through its resort to the domestic financial system which borrows from external sources. In consequence external debt liabilities of the country accumulate. This link does not necessarily imply that the country is an arms producer or an arms importer. Secondly, however, if the country is an arms importer and foreign exchange revenues fall short of the total import bill, then foreign borrowing is an inevitable source of foreign exchange. These two links are not obviously mutually exclusive, they might be in effect contemporaneously.

Whether high external borrowing due to defence will have negative effects on the country's overall growth performance and resource allocation depends on the capacity of

international borrowing as Looney and Frederiksen (1986) hypothesise. Scarce foreign loans would lead to a zero-sum game result, that is trade-offs would be inevitable. However a non-zero one prevails if the country has international credit availability, then the trade-off is accumulation of external debt, if donations or aid are not in effect..

Looney and Frederiksen (1986) finds for 1970-1982 that “for 37 resource constrained developing countries, external debt and external capital flows have played a major role in financing government expenditures.” (p.334) Turkey is classified among the unconstrained group (though with relatively lower probability) with easier access to external funds and higher reliance on internal sources of funding for government expenditures. As stated in Looney (1997), for Pakistan, it was possible to divert concessionary funding loans into military expenditures; therefore negative trade-offs are not visible.

The research question formulated in Looney (1989) and also in Looney (1998) is also the basis of our research, i.e. the role played by defence expenditures and arms imports on the level of debt. In Looney (1989), the country classification based on the criterion of access to foreign capital and data are identical to his previous work (e.g. Looney, 1986) cited above. The focus, however, is not on growth but on the determinants of external public debt: GNP, merchandise imports, debt-servicing, international reserve holdings and government expenditure items like defence, health and education. Reconciling this model with models of the determinants of arms imports and defence expenditures, it is found that “for the resource constrained countries defence expenditures contribute to their debt position, but not the unconstrained.” (p.229) Arms imports decreased from 1970 to 1982 for both constrained and unconstrained countries due to increases in their indigenous arms production, the effect being higher for the latter group¹. However as Alami (2002) notes indigenous arms production itself might worsen import needs, as they induce demand for high-tech imported inputs. This indeed is the case for Turkey as discussed in Günlük-Senesen (2002). Also from past experience, Sen (1991) states that arms imports in 1980’s have been a major contributory factor towards debt creation.

Prevalence of a non-consensus on the theoretical aspects notwithstanding, there are in fact serious problems with regard to the two main bodies of data, namely data for arms

¹ See Brzoska (1992) for a review of these findings.

imports and data for debt incurred specifically due to defence, i.e. military debt. Neither military debt nor military imports can be identified from normal debt and trade statistics (Bayoumi *et.al.* 1998; Brzoska (1992); Günlük-Senesen (1993); Looney (1998); Sen (1991)). Brzoska (1992:81) reports that “for non-OECD developing countries as a whole, official military debt was about 10 per cent of total reported long-term debt.” This ratio raises to 40% for Arab countries (Alami, 2002).

One distinct source of military debt is the Foreign Military Sales Programme (FMS) of the U.S., a scheme whereby both transfer of arms to the recipient countries by selling US companies and the financial aspects of the transfers are organized by the U.S. Department of Defence (Brzoska, 1992:89). Brzoska (1992:94) estimates: end of 1988 Turkey’s total debt is around \$ 41 billion and FMS debt is around \$ 3 billion, leading to a 7% share in total debt. This places Turkey in the 6th rank in military debt following Israel, Lebanon, Egypt, Greece and Pakistan.

Although various data sets exist for arms transfers, they are far from coherence and besides it would be erroneous to identify them with the bill for arms imports. Brzoska (1992) estimates that for 1970-1987 on the average 40 % of arms transfers to the third world are paid in real cash by the countries with increasing indebtedness. This naturally raises the issue of opportunity cost, especially for those countries where foreign exchange is a scarce source.

3. Macroeconomic Imbalances in the Turkish Economy and Defence: 1980-2000

Turkey initiated a liberalisation program in 1980 and thus ended the import substitution development policies implemented in 1960’s and 1970’s, which were regarded as the main source for the economic bottlenecks in late 1970’s. This new phase of the IMF supported structural adjustment and stabilization program was, however, far from preventing the chronic budget deficits and accumulation of government debt. Policies to reduce budget deficits have involved cuts in expenditures like investment, rather than significant improvements in revenues. Meanwhile, interest payments on debt have displayed an increasing trend. The government started issuing bonds to borrow from the domestic sources in 1985 and financial liberalization was initiated in 1989, making Turkey one of the most “open” economies in the world. This facilitated borrowing from the international financial market by the domestic banking system. As resorting to internal borrowing for debt financing

boosted real interest rates, the economy was set on a rather shaky route of heavy dependence on short-term foreign capital flows. In consequence Turkey also has become one of the highly indebted countries ².

Turkey also redefined its defence procurement strategy in the early 1980's. This involved an arms modernization program, that is, for import substitution in arms production. This new strategy of arming has also comprised entering in the international arms market as a buyer. The implementation of the program along with arms transfers under the CFE (Conventional Forces in Europe) cascade scheme put Turkey to the top ranks of leading arms importers, with no significant presence among arms exporting countries. The modernization program introduced in 1985 with a 10 year prospect and \$ 10 billion bill, was revised in 1996 to cover 30 years ahead with a \$150 billion bill, presenting the interesting example of the never ending financial burden of arming with high technology products. A further revision in the light of bottlenecks in early 2000 involved a 10-year \$ 20 billion bill as a first future phase. Hence, an annual average cost of \$ 1 billion was raised to \$ 5 billion, and then lowered to \$ 2 billion.

Another concurrent issue in the late 1980's and throughout 1990's is Turkey's "low intensity war" with PKK mainly in the south east of Turkey. Since investments in domestic arms production have a rather long probation period, and since production under licence has been subject to numerous restrictions set by the parent firms' governments, Turkey resorted to ready-made arms imports. This might have acted as a deep cause under the above-mentioned macroeconomic imbalances. The likely adversary impacts of this partial civil war interestingly coincide with Brück (2000) where the economic impacts of the civil war in Mozambique are discussed. War financing would exert growing pressure on budget deficits and high debt burden. The obvious outcomes are reductions in growth and welfare in the present through misallocation of resources and also in the future through reducing accumulation and growth. It should also be noted that these issues have never become central to the ongoing macroeconomic policy implementation under close IMF surveillance.

Defence expenditures in money value, financed both through the budget and extra-budget resources increased remarkably in the last two-decades. On the other hand, the share of defence in the budget continuously declined. This is contradictory as it is, however

² As of 1999, Turkey ranked 8th in terms of total external debt, 6th in terms of debt-service/GDP ratio (7 %) and 4th in terms of debt-service/exports ratio (26 %) (*World Development Indicators 2001*, Table 4.16)

growing portions of the budget are swept away by interest payments on debt, swelling the overall budget. Then, netting out this effect we find that in fact defence has retained its position in the primary budget (budget-interest payments).

Despite the stabilization program and the partial civil war, research on the trade-off between defence and growth (Sezgin 2001) and on the trade-off between defence and other budget items as well as deficits (Günlük-Senesen, 2003) concludes that presence of negative trade-offs are not confirmed. This of course does not imply that increased defence expenditures do not have any alternative costs, but welfare expenditures, mainly on education and health increased contemporaneously, obscuring the financial trade-offs. The public approval for the long lasting war with PKK could have been sustained through no directly visible sacrifice imposed on the public. The persistence of such a non-zero game result would be possible in the presence of borrowing from both internal and external sources. Therefore defence expenditures in general not only directly induced budget expansion, budget deficits, internal and external debt but also did so indirectly through budget expansion for populist consensus. Obviously, it is not easy to isolate the direct impact from the indirect one. However ours is an attempt to document the direct impact as a first step. Below we present concurrent imbalances in the Turkish economy since 1980's and focus on the trade-off between defence and debt.

4. Indicators for macroeconomic imbalances

The growing trends in the general budget expenditures despite the austerity measures are depicted in Figure 1. The gap between the general budget and primary budget (budget netted of interest payments) significantly widened since mid-1980's as the burden of interest payments on debt accumulated.

Figure 1. General budget and primary budget

The resulting growth of budget deficits due to the pace of expenditures being greater than that of revenues in general since mid-1980's are illustrated in Figure 2. This second phase is also characterised by notable, mainly short term, internal borrowing, which resulted in interest payments reaching up to 44 % of the general budget in 2000. Interest payments on debt was 3 % of the budget in 1980, took off in mid-1980's as budget financing policy changed (Table 1 and Figure 4).

Figure 2. Budget Deficits

As shown in Figure 3, defence expenditures increased faster after 1988, coinciding with the budget expenditures increase in the last decade.

Figure 3. Turkish defence expenditure

Table 1. Shares of Defence and Interest Payments in the Budget, %

Year	ME/GB	ME/PB	INT/GB	Year	ME/GB	ME/PB	INT/GB
1979	13,2	13,7	3,2	1990	13,3	16,7	20,4
1980	17,2	17,7	3,0	1991	12,1	14,8	18,2
1981	16,6	17,4	5,1	1992	13,5	16,5	17,9
1982	16,8	17,8	5,4	1993	10,9	14,3	23,7
1983	15,4	16,8	8,2	1994	11,9	17,8	33,1
1984	15,3	17,3	11,9	1995	11,9	17,9	33,4
1985	15,4	17,6	12,5	1996	10,1	16,3	37,8
1986	14,9	17,7	16,0	1997	10,9	15,2	28,3
1987	12,7	15,5	17,7	1998	10,4	17,1	39,6
1988	11,8	15,4	23,2	1999	10,1	16,4	38,2
1989	13,1	16,7	21,2	2000	9,5	16,8	43,9

Note: GB: General Budget, PB: Primary Budget, ME: Military Expenditure, INT: Interest payment

As was noted above, the decline of the share of defence in the budget would be misleading as the pace of interest payments share shows. We note that in analogy to Sen (1991), the combination of two basic ‘unproductive’ expenditures-in the military and on interest payments demanded expanding portions in the general budget: Their combined share increased from 20 % in 1980 to 53 % in 2000. The share of defence in the primary budget, however, can be regarded as resilient around 16-17 %.

Figure 4. Defence shares

Turkey’s external debt stock increased from \$ 16 billion in 1980 to \$ 73 billion in 1995 and to \$ 120 billion in 2000. These correspond to 23 %, 43 % and 60 % of GDP, respectively. Of this total stock, public debt is mostly of medium and long term nature. Public debt stock increased from \$ 12 billion in 1980 to \$ 62 billion in 2000. As defence spending is traditionally a budget item, Figure 5 depicts the trend in the external debt incurred by the budget, which increased from \$ 7 billion in 1980 to \$ 40 billion in 2000.

Figure 5. External debt

As all these imbalances indicate, the Turkish economy is historically characterized by the typical macroeconomic gaps: gaps between saving and investment, between budget expenditures and revenues, between exports and imports. For capital-importing countries, this would also add to the build up of external debt (Brzoska, 1992) and Turkey is no exception. Despite the expectations from the adoption of liberalisation policies, these gaps have had a persistent nature and the economy has been entering financial crisis more frequently (in years 1994, 1998, 2001) recently.

Table 2 shows the shares in GDP of military expenditures and external debt. Although the defence burden is rather stable, share of external debt in the GNP had an increasing trend during the term.

Table 2. Defence Burden and External Debt Burden of Turkey

YEARS	ME/GDP %	EXDEBT/GDP %	YEARS	ME/GDP %	EXDEBT/GDP %
1980	4,3	23,0	1991	3,7	33,2
1981	4,9	23,0	1992	3,7	34,7
1982	5,2	27,0	1993	3,8	37,0
1983	4,8	29,6	1994	4,1	50,0
1984	4,4	34,0	1995	3,9	42,6
1985	4,5	37,4	1996	4,1	43,1
1986	4,8	42,0	1997	4,1	43,8
1987	4,2	46,1	1998	4,4	46,6
1988	3,8	44,8	1999	5,4	55,1
1989	4,3	38,4	2000	4,5*	59,7
1990	4,9	32,2			

Sources: NATO (2001); SIPRI (1991, 1995, 2001), Treasury (2001); SPO (1999)

*Estimate

The only piece of information we have on the level of military related debt for Turkey is the rough estimate of \$ 6.5 billion regarding its FMS debt stock by the end of 2001. Besides, Turkey's arms deals in the international market in the 1990's involve joint production, transfers at no cost as well as imports. Günlük-Senesen (2002) estimates that of these deals, the annual import bill is in the \$ 700 million-1.5 billion interval. The Turkish Armed Forces reveal that, the import dependency rate for the Turkish defence systems is 62 % on the average, but 89 % for the aerospace. It is not clear though, how these imports are financed. One can speculate that the modernisation programme of two decades has not yet accomplished import substitution in arms.

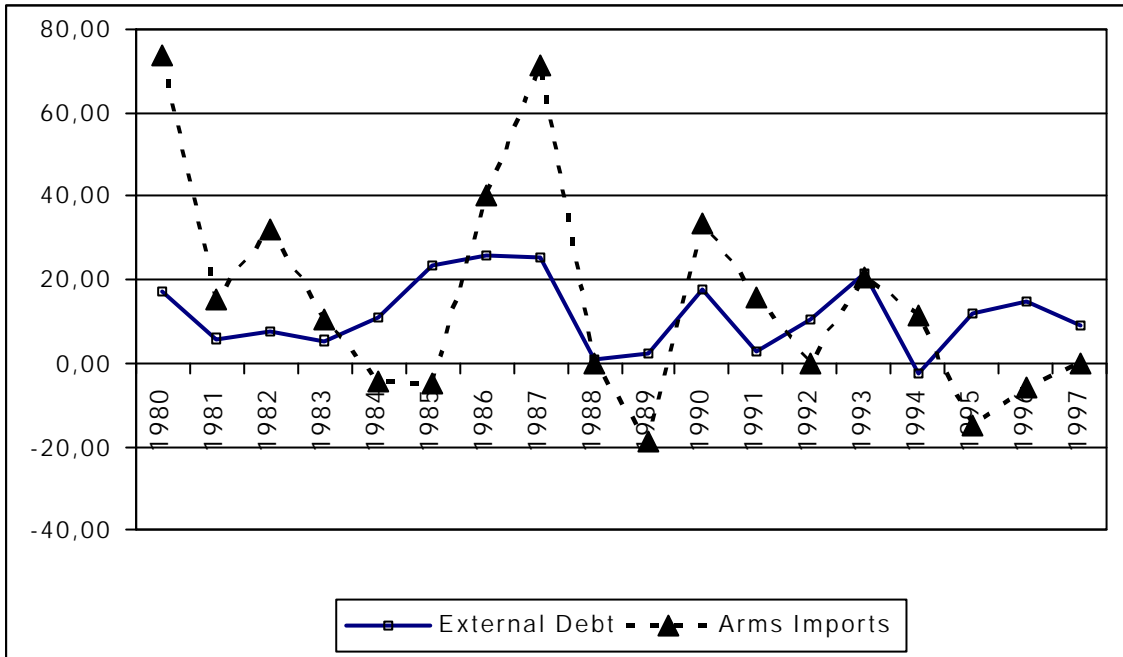
Next, we present the results of model estimation for the likely role of military expenditures on one of the gaps, i.e. external debt, we mentioned above, in view of the fact that direct information is not available.

5. Estimation results for Defence Expenditure and External Debt

In this section, we provide some preliminary results how defence expenditures of Turkey might have contributed to the accumulation of its external debt. We estimated effect of defence on external debt using OLS estimation techniques. Following Looney (1989) partially, determinants of external debt are selected as GNP (Gross National Product), volume of imports, volume of exports and military expenditures. Obviously, total output growth would have a direct positive effect on external indebtedness. Secondly, imports would exert additional pressure on debt. Following Looney (1989), a positive relationship between country's debt and debt service and volume of exports are expected, because export earnings in foreign currency facilitate debt repayment and servicing. Finally, military expenditure is a determinant of external debt. Several proxies employed for military expenditure are arms imports ΔARM , defence equipment expenditure ΔEQU and total defence expenditure ΔMIL .

Figure 6 provides some insight to the relationship between growth rates of external debt and arms imports, for which we provide the estimation results.

Figure 6. Growth rate of Arms Imports and External Debt



For estimation, growth rate of variables are used in the following econometric form:

$$\Delta ED = a_0 + a_1 \Delta Y + a_2 \Delta IMP + a_3 \Delta EXP + a_4 \Delta MIL + e_t \quad (1)$$

Definitions of the variables:

ΔED : growth rate of external debt

ΔY : growth rate of real GNP

ΔIMP : growth rate of merchandise imports

ΔEXP : growth rate of merchandise exports

ΔMIL : growth rate of real defence expenditures

ΔEQU : growth rate of real defence equipment expenditures

ΔARM : growth rate of real arms imports

Empirical results are summarised in Table 3. The GNP growth rate is a major determinant of external debt as expected. However, import growth and export growth did not give any significant results in any of the estimations. Total defence expenditure and expenditure on military equipment also were not significant. The only significant defence related variable in this preliminary estimation is arms imports.

Table 3. Estimation Results 1980-2000

Dependent variable: External Debt, ÄED						
	1	2	3	4	5	6
Constant	0,04 (1,70)	0,04 (1,92)*	0,04 (2,09)**	0,04 (2,06)**	0,04 (2,23)**	0,04 (2,04)**
ÄY	1,25 (2,92)**	1,26 (3,05)***	1,45 (4,11)***	1,45 (4,09)***	1,47 (4,36)***	1,40 (4,19)***
ÄIMP	0,07 (0,84)	0,06 (0,88)	-	-	-	-
ÄEXP	-0,01 (-0,11)	-	-	-	-	-
ÄME	0,07 (0,30)	0,08 (0,38)	0,07 (0,33)	-0,08 (-0,49)	-	-
ÄEQU	-0,04 (-0,65)	-0,05 (-0,92)	-0,05 (-1,06)	-	-0,04 (-1,15)	-
ÄARM	0,07 (1,66)	0,07 (1,76)*	0,08 (1,97)*	0,07 (1,80)*	0,08 (2,00)*	0,07 (1,84)*
R ²	0,55	0,55	0,53	0,50	0,53	0,49
DW	1,54	1,54	1,56	1,84	1,64	1,82

t statistics in parenthesis

All the estimation were carried out by PC-Give 8.0 (Doornik and Hendry, 1995)

p*<.01; *p*<.005; ****p*<.001

Data: defence related data are from SIPRI; USACDA and WMEAT. Data on national variables are from the Undersecretariat of Treasury(2001) and SIS (1999)

The impact is positive. The significance level for arms imports is not high, though: Its coefficients are significant for one tail, for $\alpha=0.05$, but not for $\alpha=0.025$.. Taking Model 5 for example, the marginal effect of arms imports growth on debt growth is 0.08. The 90 % confidence interval ranges between 0.01 and 0.15, calling for further modelling for improved confidence.

Conclusions

The concurrence of severe macroeconomic imbalances and ambitious arming programme in Turkey provokes an analysis on the role of the defence for these imbalances. Since direct data are not available on cash payments for arms imports and military debt, we resorted to indirectly to find out the likely impact of defence on external indebtedness via a model of debt and arms imports (in fact arms transfers to Turkey). We find that, for the 1980-2000 era, Turkish arms imports do have a contributing effect on external debt, though the result is not strongly significant. Further modelling work is needed for stronger conclusions with more confidence.

References

- Alami, R. (2002) Military Debt: Perspectives from the Experience of Arab Countries, *Defence and Peace Economics*, 13/1, 13-30.
- Bayoumi, T., Hewitt, D. and Symansky, S (1998) The Impact of Military Spending Cuts on Developing Countries, *Journal of Policy Modeling*, 20/3, 261-303.
- Brück, T. (2000) The Economics of Civil War in Mozambique, in Brauer, J. and Hartley, K. *The Economics of Regional Security: NATO, The Mediterranean and Southern Africa*, Harwood, 191-215.
- Brzoska, M. (1992) Military Trade, Aid and Developing Country Debt, in Lamb, G. and Kallab, V. (eds.) *Military Expenditure and Economic Development: A Symposium on Research Issues*, World Bank Discussion Papers, no.185, Washington D.C., 79-111.
- Doornik, A. J. and Hendry, F. D. (1995) *PC-GIVE 8-0: An Interactive Econometric Modelling System*, Chapman and Hall, London
- Günlük-Senesen, G. (1993) Turkey: The Arms Industry Modernization Programme, in Wulf, H. (ed.) *Arms Industry Limited*, SIPRI-Oxford University Press, 251-267.
- Günlük-Senesen, G. (2002) "Turkey's Globalisation in Arms: The Economic Impact", in Balkan, E., Balkan, N. (eds.) *Turkey in the Global Economy*, Nova Scientific Pub., New York, 2002 (forthcoming).
- Günlük-Senesen, G. (2003) Budgetary Trade-offs of Security Expenditures in Turkey, *Defence and Peace Economics*, 14/1, (forthcoming)
- Looney, R.E. (1989) The Influence of Arms Imports on Third World Debt, *The Journal of Developing Areas*, 23/January, 221-232.
- Looney, R.E. (1997) Excessive Defense Expenditures and Economic Stabilization: The Case of Pakistan, *Journal of Policy Modeling*, 19/4, 381-406.
- Looney, R.E. (1998) Foreign Capital Flows and Defence Expenditures: Patterns of Causation and Constraint in Pakistan, *Canadian Journal of Development Studies*, XIX/1, 117-132.
- Looney, R.E. and Frederiksen, P.C. (1986) Defence Expenditures, External Public Debt and Growth in Developing Countries, *Journal of Peace Research*, 23/4, 329-338.
- NATO (2001) *NATO Review Spring*, Brussels;

- Sen, S. (1991) Debt, financial flows and international security, *SIPRI Yearbook 1991: World Armaments and Disarmament*, 181-195.
- Sezgin, S. (2001) "An Empirical Analysis of Turkey's Defence-Growth Relationship with a Multi Equation Model (1956-1994)," *Defence and Peace Economics*, Special Issue on Economic Aspects of Defence in Turkey and Greece, 12 (1) 69-86
- SIPRI (2001). *Yearbook 2001*, Stockholm International Peace Research Institute, Oxford UP, Oxford.
- SIPRI (1995). *Yearbook 1995*, Stockholm International Peace Research Institute, Oxford UP, Oxford.
- SIPRI (1991). *Yearbook 1991*, Stockholm International Peace Research Institute, Oxford UP, Oxford.UP,
- Undersecretariat of Treasury (2001), *Treasury Statistics*, Ankara , Turkey.
- SIS (State Institute of Statistics, Turkey) (1999). *Statistical Indicators 1923-1998*, Ankara Turkey.