

# Impacts of capital inflows on saving and investment: A comparison of Turkey and Latin American countries

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## **Abstract**

The purpose of this paper is to discuss the impact of foreign savings on domestic saving and investment in developing countries and to provide comparative figures from Turkey and some Latin American countries. The major finding is that relying on foreign savings in order to reach a long-lasting increase in investments will not likely be sufficient.

## 1. Introduction

The objective of this paper is to discuss the effects of capital inflows on saving and investment in developing countries and highlight comparative evidence from Turkey and some Latin American countries. Section 2 reviews discussions on the interest rates, saving and investment relationships. Section 3 gives historical data and some empirical evidence on the trends of foreign savings, domestic savings and investment in Turkey, and some Latin American countries. Section 4 briefly concludes.

## 2. Saving, investment and interest rates

The approach which is termed the "Washington Consensus" (Williamson,

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I would like to thank Jean-Marc Fontaine, Mario Lanzarotti and Burç Ülengin for their valuable comments.

1990) suggests that removing financial repression will encourage saving, limit capital flight and raise available resources for growth (McKinnon, 1973; Shaw, 1973; Krueger, 1984). Critics of this approach show that this is true if the substitution effect (giving up current consumption for future consumption) of the increase in the interest rate is stronger than the income effect (future income increasing current consumption) (Blanchard and Fischer, 1989). Furthermore, a higher interest rate can reduce aggregate saving, while augmenting private saving and inducing a fall in public saving especially in countries with a high public debt (Williamson, 1990). One of the major effects of financial liberalization is on the formal sector such as banks. Freeing interest rates in the formal sector can create a shift away from formal to informal markets. This shift does not always result with an increase in aggregate savings (Wijnbergen, 1993).

Moreover, the redistribution of income from the corporate sector (with a high propensity to save) to rentiers (with a low propensity to save) through higher interest rates can reduce aggregate saving (Akyiiz, 1991). A rise in household saving and a fall of corporate saving have also been observed in OECD countries (Aghevli *et al*, 1990; European Economy, 1990). In order to maintain the standard of living, consuming not only the real component of interest income but also part of its nominal component corresponding to inflation is often observed at the initial phase of stabilization programmes in developing countries. The outcome of this tendency which is reinforced by money illusion, can be to lower the aggregate savings under conditions of rapid inflation and in the context of highly restrictive stabilization programmes (Akyiiz, 1993a).

According to McKinnon and Shaw, financial liberalization and removing financial repression increase financial intermediation, make a strong positive impact on "financial deepening" and improve the allocation of resources. The sectoral rate of return will have a tendency towards convergence and the rise of savings will lower the cost of funds as well as influence investment decisions positively.

The proponents of alternative approaches in the literature argue that financial deepening can enhance efficiency if and only if financial assets raise the volume of productive investment. In developing countries, the result of financial deepening can be an increase in consumption by a shift of savings from surplus sectors to deficit sectors (from households to government) on the one hand, and can give rise to speculative activities by a redistributive shift in favour of the rentiers, on the other (Akyiiz, 1993a; Frenke! *et al.*, 1993). Financial deepening can take place simply as a result of changes in the distribution, rather than a growing level of saving and investment (Akyiiz,

1993a).

Another critical approach is that higher interest rates have not always succeeded in promoting efficiency in the financial sector. In fact, evidence from developing countries points towards quite a different effect (Akyüz and Kotte, 1991). It shows that high interest rates can have a distorting effect on efficiency in resource allocation. First of all, in these countries the deterioration of the finances of the corporate and the public sectors is causing an increase in the share of non-performing loans (Villanueva and Mirakhor, 1990). Additionally, higher interest rates do not lower the cost of financial assets. This is originated from a higher uncertainty which increase the lender's risks and the cost of intermediation between lender and borrower (Akyüz, 1993a).

Besides the internal financial liberalization, the neo-classical theory holds that inflow of foreign savings will create new resources for investment and growth. External financial liberalization will improve the allocation of resources internationally by channeling the capital flows towards developing countries which have capital shortages. The inflow will be realized by an increase in the interest rate in countries with a scarcity of capital, *vis-à-vis* countries with excess capital. The flow from developed countries towards developing countries will continue until the rates of return on investment will be equal everywhere. The more sensitive global saving rates are to investment rates, the more rapid is the process of convergence.

Critiques to this neo-classical approach can be summarized under two headings. The first is that this approach assumes the efficiency of financial markets. The second is that this approach envisages the allocation of savings in the global context and predicts the equalization of the returns to investment among countries.

In fact, the evidence shows both that financial markets work independently from global saving and investment, and they work inefficiently. Moreover, the augmentation of the capital flows to developing countries does not lead to a fall in interest rates and the convergence of investment rates between countries does not take place (Akyüz, 1993a).

Especially excessive capital inflows increase the interest rates related to the enlargement of the public deficit and public interest payments. The outcome is a drop in the public savings and rise in the external debts which, in turn, regenerate a rise in the interest rates (Vos, 1993).

Another cause for the increase in interest rates is that capital flows towards developing countries are motivated primarily by speculative activities of rentiers. Since speculative activities are oriented to short-term gains rather

than real investment opportunities, there has been no narrowing of difference in rates of return on investment between countries (UNCTAD, 1992). Additionally, higher interest rates caused by capital inflows discourage real investment decisions in developing countries and reduce the ability of governments to achieve national objectives by using the interest rate as an instrument for the investment decisions. This is known as the loss of policy autonomy (Akyiiz and Held, 1993; Banuri and Schor, 1992; Akyiiz, 1993b).

Speculative capital inflows are also indicated as one of the main causes of capital flight in developing countries. Together with a surge of the capital inflows, the tendency towards appreciation of real exchange rate enlarges the current account deficit and accentuates the expectation of devaluation and uncertainty. This, in turn, encourages the capital flight (Vos, 1993) and diminish the national savings and resources for domestic investment. The expectations of greater uncertainty and macroeconomic disorder also discourage foreign direct investment.

One of the major effects of the excess external debt which grows together with capital inflows, is the increased burden of external interest payments. Therefore, a considerable part of domestic savings is used to finance transfers abroad instead of investment at home. On the other hand, capital inflows are mostly used to finance domestic consumption and imports of consumer goods (Frenkel *et al.*, 1993; Agosin, 1994; Calvo, 1994; Ffrench-Davis *et al.*, 1994).

When there are large-scale capital inflows into a country, it is possible to distinguish two different effects on the investment decision. The first is the accelerator effect of the capital inflows on the investment. This positive effect is mostly neutralized by the increase of imports of consumer goods in the traded goods sector. The tendency towards appreciation of real exchange rate also hurts investment decisions in tradable goods sector and diminishes the long term competitiveness of the country.

### 3. Saving and investment in Turkey and Latin American countries

There are many empirical studies for Latin American countries which show that foreign savings do not always create additional resources for investment and growth. For example, Frenkel *et al.* (1993) highlight the problems encountered to achieve a saving rate compatible with a reasonable growth rate (Smithian constraints) and to reinforce the links between savings and investment (Keynesian constraints) in highly indebted Latin American

countries. The results of their study which covers Argentina, Brazil, Colombia, Chile and Mexico for 1980-1988 show that foreign savings used to compensate for the lack of domestic savings increase the real transfer abroad instead of financing real investment. Similarly, having a national saving rate which is lower than domestic saving rate arises mainly from a higher amount of interest payments (current private transfer). The study also shows that domestic savings follow an upward trend during the periods of fall in foreign savings (Frenkel *et al.*, 1993: 70, Table 8).

There are some other studies which examine problems encountered by Latin American countries in increasing domestic savings and in strengthening the link between savings and investment. For example, according to Calvo *et al.* (1993), Latin American countries have the tendency to channel the capital inflows more towards a current account deficit and less towards the accumulation of reserves, which, in turn, increase imports and consumption. French-Davis *et al.* (1994) argue that a surge in capital inflows to Latin American countries has not brought about a considerable increase in investment. The reason is that domestic expenditures rose faster than output and income on the one hand, and the increase in total investment was less than increase in external savings on the other.

In the emerging literature, mention should be made of panel data based econometric studies which include foreign savings as a variable in the equations estimating national or domestic savings. For example Fry (1980) and Giovannini (1985) find out a negative and significant relation between national and foreign savings. Schmidt-Hempel and Webb (1992), in their equations on private consumption and household savings for the period of 1980-1987, conclude that the relation of foreign savings is positive with the private consumption and negative with the household savings (Schmidt-Hempel and Webb, 1992: 148, Table 8.1; 151, Tables 8.3 and 8.4).

Agosin (1994) draws similar conclusions for the period 1968-1992 in 8 Latin American countries (Argentina, Brazil, Colombia, Chile, Mexico, Peru, Uruguay and Venezuela). According to this study, after a year of high debt servicing (1982), in all of the countries mentioned (except Peru) the domestic investment ratio was lower than domestic saving ratio, and the contribution of foreign savings to domestic investment before 1982 was very small (Agosin, 1994: 4; Table 1). Another interesting outcome of this study is that five Asian countries (Indonesia, Malaysia, South Korea, Singapore and Thailand) which attain higher saving and investment ratios than those of Latin American countries, have also an external transfer problem since 1982 (Agosin, 1994: 14, Table 4).

Furthermore, Agosin (1994) estimated three panel data equations for private, public and machinery investment including eight Latin American countries for the period of 1977-1992. He found out a negative and significant relation between three types of investment and external debt service ratio (Agosin, 1994: 25, Table 10). According to Serven and Solimano (1992), uncertainty and instability arising from higher external debt and external transfer are the main causes for a negative relation between investments and debt burden. However, in their study which carried out a panel data regression for 15 countries between 1976-1988 (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Kenya, Korea, Mexico, Peru, Singapore, Thailand, Turkey, Uruguay and Zimbabwe), they found out a negative and significant relation between private investment and debt burden (Serven and Solimano, 1992: 130, Table 7.8)

Consequently, results obtained from empirical studies undertaken for developing (especially Latin American) countries do not contain evidence of complementarity between foreign and domestic/national savings. Rather, positive relationships among foreign savings, consumption and net factor transfer abroad is drawn from econometric studies. Moreover, increasing external debt inhibits the availability of foreign saving. Domestic savings are, therefore, used to finance transfer abroad instead of investment at home.

Some structural problems such as low level of domestic savings and a loose link between foreign saving and investment are also valid for Turkey. But there are some differences between Turkey and Latin American countries. First of all, workers' remittances are always an important transfer of resources from abroad into the Turkish economy which can be considered as a foreign rent. The second difference is that Turkey's liberalization attempt began much later than that of Latin American countries. Most Latin American countries began to pursue structural adjustment policies just after the 1973 crisis. Apart from some minor differences in timing, the period of 1974-1975 is the period for the liberalization of the trade, 1977-1981 is the period for the liberalization of capital accounts. The major cause of the debt crisis in Latin American countries is the high amount of hot money inflows which were oriented towards these countries at the end of 1970s and at the beginning of 1980s (Corbo *et al*, 1986; Calvo *et al*, 1992; Agosin and Tussie, 1993). In Turkey, the starting year for the adjustment process is 1980. Thus, at the beginning of 1980s when a number of Latin American countries found themselves in the midst of a debt crisis, combined with a dramatic decline in new external credit, Turkey embarked upon her adjustment process which provided a large credit inflow to the country and generated a net resource transfer from abroad (Rodrik, 1991; Oniş and Ozmucur, 1991).

Evidence suggests that problems encountered by the Latin American countries during the end of 1970s can also be experienced by Turkey in the coming years, if similar errors are made.

In the following subsections of this paper some empirical analysis will be carried on and Argentina, Brazil, Chile, Mexico and Turkey will be compared in relation to foreign savings, domestic savings and domestic investment.

Table 1 presents data on savings, investment and resource transfers for Argentina, Brazil, Chile, Mexico and Turkey, respectively. There is no coincidence in cyclical behaviour of variables, since the timing of adjustment processes were different in Turkey and Latin American countries. The data are grouped into three sections for each country: In the first section, the relation between domestic and national savings, and in the second section the relation between domestic savings and domestic investment can be found. The third section shows foreign savings and primary foreign savings of the countries '.

Relations between savings, investment and resource transfer will be analyzed under three headings :

### *3.1. A comparison of domestic and national savings*

An examination of the first section of the country tables shows that in Latin American countries national savings are lower than domestic savings. In Turkey, by contrast, national savings are higher than domestic savings.

The main reason for this is that in Latin American countries net factor payments (NFI/GDP) (mostly interest payments) are high and became higher after the debt crisis of the 1982. In Turkey the reason for national savings being greater than domestic savings is workers' remittances (NCTP/GDP) which compensate the factor payments abroad. While this ratio is below 1 % for Latin American countries, it is around 4 % of GDP for Turkey. But workers' remittances can not be accepted as a permanent external resource. However, as it can be seen in Table 1, the compensation effect of the worker's remittances falls after the second part of 1980s.

### *3.2. A comparison of domestic savings and domestic investment*

The difference between domestic savings and domestic investment is

Table 1

Argentina	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
GDS/GDP	23.05	23.84	23.63	23.54	23.48	30.79	34.63	33.35	30.83	25.86	23.85	22.26
NFI/GDP	-0.86	0.60	-0.73	-0.63	-0.46	-0.81	-0.95	-0.95	-0.83	-0.66	-0.89	-2.35
NCTP/GDP	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.06	0.08	0.05	0.03	-0.03
GNS/GDP	22.19	24.43	22.90	22.91	23.03	30.00	33.71	32.44	30.06	25.22	22.97	19.89
GDS/GDP	23.05	23.84	23.63	23.54	23.48	30.79	34.63	33.35	30.83	25.86	23.85	22.26
RB/GDP	0.00	0.60	-0.36	-1.88	-0.61	0.15	-3.22	-2.29	-2.89	-0.18	1.42	0.45
GDI/GDP	25.18	24.01	24.09	20.69	22.08	28.81	30.43	30.89	27.74	25.92	25.25	22.69
FS/GDP(-CAD)	0.53	1.17	0.66	-1.34	-0.16	2.40	-1.26	-1.98	-3.19	0.74	6.20	5.99
PFS/GDP	-0.33	1.76	-0.07	-1.97	-0.62	1.59	-2.21	-2.93	-4.02	0.08	5.31	3.63
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
I. GDS/GDP	24.32	24.65	22.57	23.55	19.30	19.85	21.96	21.99	19.50	16.22	15.06	16.45
NFI/GDP	-6.00	-6.24	-4.90	-5.98	-4.52	-4.65	-4.35	-8.37	-4.39	-3.09	-1.86	-1.54
NCTP/GDP	0.04	0.02	0.00	0.00	0.00	-0.01	0.00	0.01	0.71	0.42	0.33	0.21
GNS/GDP	18.36	18.43	17.67	17.57	14.78	15.20	17.61	13.63	15.82	13.55	13.53	15.12
II. GDS/GDP	24.32	24.65	22.57	23.55	19.30	19.85	21.96	21.99	19.50	16.22	15.06	16.45
RB/GDP	-2.57	-3.30	-2.84	-5.43	-1.84	-0.30	-3.32	-6.48	-5.50	-1.58	1.64	1.94
GDI/GDP	21.76	20.76	20.02	17.48	17.46	19.55	18.64	15.51	14.00	14.64	16.70	18.39
iii. FS/GDP(-CAD)	2.79	2.33	2.14	1.07	2.70	3.89	1.24	1.70	-3.22	0.34	2.86	2.92
PFS/GDP	-3.21	-3.91	-2.76	-4.91	-1.82	-0.76	-3.11	-6.67	-7.61	-2.75	1.00	1.38



**Table 1 (cont'd)**

Brazil		1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
I.	(i)S'(iDP	20.12	19.39	19.59	22.01	19.52	22.87	20.72	21.40	21.78	20.71	21.09	22.71
	NM (iDP	-0.95	-0.95	-0.95	-0.92	-0.87	-1.42	-1.52	-1.62	-2.31	-2.69	-3.28	-4.14
	NCTP/GDP	-0.01	-0.01	-0.03	0.01	0.00	0.01	0.00	0.00	0.03	0.01	0.05	0.07
	(i)NS'(iDP	19.17	18.43	18.60	21.11	18.65	21.46	19.20	19.79	19.51	18.03	17.87	18.64
II.	(i)DS'GDP	20.12	19.39	19.59	22.01	19.52	22.87	20.72	21.40	21.78	20.71	21.09	22.71
	RB/GDP	0.42	1.72	1.58	1.23	5.87	3.97	2.40	0.67	1.19	2.05	2.25	0.38
	(i)DI/CiDP	20.54	21.12	21.17	23.24	25.39	26.84	23.12	22.07	22.97	22.76	23.35	23.08
III.	IS(iDP(-CAD)	1.98	3.33	2.89	2.72	7.20	5.67	4.29	2.90	3.51	4.66	5.45	4.46
	PI S (iDP	1.03	2.38	1.94	1.80	6.33	4.25	2.77	1.29	1.19	1.97	2.17	0.32
		1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
I	(i)I)S (iDP	20.43	19.10	21.36	24.35	21.56	25.57	27.91	27.95	23.16	20.89	22.39	21.40
	Ni I (iDP	-5.13	-5.83	-5.68	-5.33	-4.46	-3.78	-4.00	-3.02	-2.58	-2.57	-2.29	-2.39
	N(TP (iDP		0.05	0.08	0.06	0.03	0.04	0.03	0.05	0.17	0.37	0.50	0.33
	(i)NS (iDP	15.30	13.31	15.76	19.09	17.13	21.83	23.95	24.98	20.75	18.69	20.61	19.35
II.	(i)I)S(iDP	20.43	19.10	21.36	24.35	21.56	25.57	27.91	27.95	23.16	20.89	22.39	21.40
	RH (iDP	0.66	-2.41	-5.62	-5.15	-2.46	-3.27	-5.20	-3.19	-1.67	-2.00	-3.32	-2.18
	(i)I)I (iDP	21.09	16.68	15.74	19.20	19.09	22.30	22.72	24.76	21.49	18.90	19.08	19.22
III.	I S (iDP(-CAD)	5.79	3.36	-0.02	0.12	1.98	0.49	-1.26	-0.23	0.79	0.35	-1.53	0.13
	M S (iDP	0.67	-2.47	-5.70	-5.21	-2.48	-3.29	-5.26	-3.24	-1.79	-2.23	-3.82	-2.26

Table 1 (cont'd)

Chile		1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
I.	GDS/GDP	19.79	16.20	11.29	8.65	25.52	14.99	20.02	15.54	17.69	18.23	20.47	16.44
	NFI/GDP	-5.21	-3.88	-3.61	-3.36	-1.68	-4.01	-3.30	2.86	-3.29	-3.37	-3.73	-4.89
	NCTP/GDP	0.02	0.03	0.04	0.05	0.05	0.06	0.32	0.60	0.49	0.42	0.23	0.11
	GNS/GDP	14.61	12.35	7.72	5.34	23.89	11.04	17.05	19.01	14.88	15.29	16.97	11.67
II.	GDS/GDP	19.79	16.20	11.29	8.65	25.52	14.99	20.02	15.54	17.69	18.23	20.47	16.44
	RB/GDP	-0.59	<b>1.00</b>	3.41	1.81	-0.68	1.97	-4.33	1.80	3.34	2.83	4.16	10.34
	GDI/GDP	19.20	17.20	14.70	10.47	24.84	16.97	15.69	17.35	21.03	21.06	24.63	26.78
III.	FS/GDP(-CAD)	1.08	1.88	3.82	2.63	2.64	6.78	-1.50	4.12	7.06	5.74	7.15	14.50
	PFS/GDP	-4.13	-2.01	0.21	-0.73	0.96	2.77	-4.80	6.99	3.77	2.37	3.42	9.61
		1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
I.	GDS/GDP	9.39	12.54	12.59	19.63	21.94	25.11	29.73	30.03	29.71	28.46	28.25	26.48
	NFI/GDP	-8.36	-9.08	-10.8	-12.6	-10.9	-8.47	-8.19	-7.05	-6.14	-5.38	-4.46	-3.41
	NCTP/GDP	0.17	0.27	0.24	0.77	0.21	0.31	0.26	0.21	0.18	0.12	0.17	0.13
	GNS/GDP	1.20	3.74	2.06	7.76	11.23	16.96	21.80	23.18	23.75	23.19	23.96	23.20
II.	GDS/GDP	9.39	12.54	12.59	19.63	21.94	25.11	29.73	30.03	29.71	28.46	28.25	26.48
	RB/GDP	1.90	-2.72	1.06	-2.43	-3.06	-2.87	-6.95	-4.53	-3.44	-3.95	-1.46	2.27
	GDI/GDP	11.29	9.82	13.65	17.19	18.88	22.24	22.78	25.50	26.27	24.51	26.79	28.75
III.	FS/GDP(-CAD)	9.47	5.65	<b>11.00</b>	8.58	6.73	3.91	0.69	2.50	2.13	-0.03	1.74	4.59
	TFS/GDP	1.10	-3.42	0.22	-4.05	-4.20	-4.56	-7.50	-4.55	-4.01	-5.42	-2.73	1.17

**Table 1 (cont'd)**

Mexico	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
I. (i)DS'GDP	18.69	17.13	17.43	18.13	18.88	19.02	18.79	20.62	20.70	22.30	24.89	24.85
Ni I (i)DP	-1.18	-1.16	-1.67	-1.41	-1.63	-2.02	-2.36	-2.55	-2.68	-2.85	-3.43	-4.13
NCTPGDP	0.07	0.06	0.49	0.49	0.46	0.43	0.45	0.52	0.48	0.40	0.14	0.34
CiNS (i)DP	17.58	16.03	16.25	17.21	17.71	17.43	16.87	18.59	18.50	19.85	21.60	21.07
II (ii)S (i)DP	18.69	17.13	17.43	18.13	18.88	19.02	18.79	20.62	20.70	22.30	24.89	24.85
RB (i)DP	2.58	1.80	1.56	1.86	2.91	3.28	2.18	1.00	1.65	2.39	2.27	2.53
(i)I (i)DP	21.27	18.93	18.99	19.99	21.79	22.30	20.97	21.63	22.35	24.69	27.16	27.38
III. I S (.I)P(-CAD)	2.79	1.98	1.15	1.29	2.98	3.76	2.67	0.64	1.34	1.94	5.49	6.60
PI S (i)DP	1.61	0.81	-0.51	-0.12	1.35	1.73	0.31	-1.92	-1.34	-0.92	2.06	2.48
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
I. (i)I S (i)DP	27.92	30.33	27.69	26.26	22.88	25.37	21.95	21.24	20.72	19.30	17.69	15.90
NI I (i)DP	-7.31	-6.23	-5.73	-4.82	-5.95	-4.95	-4.29	-3.90	-3.16	-2.40	-2.91	-3.16
N(TP (i)DP	0.51	0.68	0.67	0.98	1.06	1.20	1.10	1.01	1.42	0.96	0.92	0.78
CiNS (i)DP	21.13	24.79	22.63	22.41	17.99	21.62	18.76	18.34	18.98	17.86	15.69	13.51
II (i)DS (i)DP	27.92	30.33	27.69	26.26	22.88	25.37	21.95	21.24	20.72	19.30	17.69	15.90
KB (i)DP	-5.02	-9.58	-7.83	-5.08	-4.58	-6.11	-1.54	0.18	1.17	3.06	5.58	5.84
(i)I (i)DP	22.91	20.75	19.86	21.17	18.30	19.26	20.41	21.41	21.89	22.36	23.27	21.74
III. I S (i)DP(-CAD)	3.56	-3.68	-2.19	-0.58	1.28	-2.93	1.61	2.85	3.32	5.18	7.53	6.81
PI S I DP	-3.74	-9.90	-7.92	-5.41	-4.67	-7.87	-2.69	-1.02	0.16	2.79	4.62	3.65

Table 1 (cont'd)

Turkey	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
I. GDS/GDP	17.46	14.32	18.05	16.82	15.23	15.04	18.25	17.09	15.08	15.41	14.06	16.65
NFI/GDP	-0.62	-0.69	-0.73	-0.64	-0.61	-0.46	-0.72	-0.71	-0.84	-1.41	-1.96	-2.47
NCTP/GDP	2.51	3.98	4.74	5.91	4.98	3.89	2.67	2.23	2.07	2.59	3.78	4.44
GNS/GDP	19.34	17.62	22.06	22.08	19.60	18.47	20.20	18.61	16.31	16.60	15.88	18.61
II. GDS/GDP	17.46	14.32	18.05	16.82	15.23	15.04	18.25	17.09	15.08	15.41	14.06	16.65
RB/GDP	2.34	3.47	2.84	2.20	6.37	8.13	6.88	8.15	3.66	3.24	7.84	5.32
GDI/GDP	19.79	17.80	20.90	19.02	21.60	23.17	25.14	25.24	18.75	18.65	21.90	21.96
III. FSZGDP(-CAD)	0.35	-0.34	-1.29	-3.16	1.91	4.58	4.91	6.55	2.41	2.04	5.99	3.36
PFS/GDP	-0.27	-1.04	-2.02	-3.81	1.30	4.12	4.18	5.84	1.57	0.63	4.02	0.88
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
I. GDS/GDP	17.30	15.26	15.31	17.78	21.47	24.08	27.78	21.68	21.94	21.55	21.03	22.20
NFI/GDP	-2.81	-2.87	-2.90	-2.48	-2.84	-2.15	-2.66	-1.78	-1.25	-1.24	-1.34	-1.19
NCTP/GDP	4.13	3.03	3.80	3.34	2.92	2.37	2.01	2.93		1.89	1.98	1.74
GNS/GDP	18.62	15.42	16.21	18.65	21.56	24.31	27.13	22.83	22.91	22.20	21.66	22.75
II. GDS/GDP	17.30	15.26	15.31	17.78	21.47	24.08	27.78	21.68	21.94	21.55	21.03	22.20
RB/GDP	3.28	4.33	4.19	3.20	2.98	1.61	-1.62	0.80	3.55	1.92	>  j	4.94
GDI/GDP	20.59	19.59	19.50	20.99	24.45	25.70	26.16	22.48	25.49	23.47	23.14	27.14
III. FS/GDP(-CAD)	1.80	3.76	2.90	1.92	2.52	0.92	-1.76	-0.90	1.74	-0.18	0.59	3.66
PFS/GDP	-1.01	0.89	-0.00	-0.56	-0.32	1.76	-4.42	-2.68	0.49	-1.42	-0.75	2.47

Source: World Bank, *World Tables 1995*.

termed resource balance (RB) and indicates an external transfer (Frenkel *et al* 1993 and Agosin, 1994). A negative sign shows net transfer abroad and means that exports of goods and services are higher than imports.

Latin American countries, as seen in the second section of the table, had to make a considerable transfer abroad after the debt crisis of 1982. The primary reason of this transfer was the huge amount of the external debt which inhibited the use of new external credits. Before the crisis they could invest more than their domestic savings by using foreign resources from abroad.

Turkey, similar to the "before crisis" period of Latin American countries, continues to obtain foreign resources from abroad and to reach a higher level of domestic investment ratio than domestic saving ratio. In other words, the level of her external debt is still low enough to enable the imports to be more than the exports. But the RB slows down 1987, and is negative in 1988. After 1989, the utilization of foreign resources shows an upward trend in Turkey (and in Mexico). The main reason of this trend is the surge of speculative capital inflows toward these countries which appreciate the real exchange rate, therefore, raise the imports and diminish the exports.

### *3.2. Relations between foreign savings and domestic investment*

The third section of the table indicates foreign savings (FS). The first line I S/GDP is calculated from current account deficits. The second PFS/GDP can be accepted as a variable showing the primary foreign savings with the difference that, here the primary foreign savings is calculated as current account deficit minus net factor income instead of current account deficit minus interest payments. The reason is the lack of international data on interest payments. A negative sign shows a net resource transfer abroad.

Taking account PFS as an indication of resource transfer, one can see from the table that Latin American countries and Turkey experienced a systematic net transfer abroad after 1982 and 1985, respectively.

In order to test the hypothesis of "utilization of foreign savings to finance domestic investment", the relation between two variables in five countries will be analyzed for the period of 1970-1993. The test which will be used to find out the existence of a long term positive relation is the cointegration test. Two time series which are stationary of the same order are said to be cointegrated if the disturbance term is also stationary. Then, one can conclude that two time paths will tend to move roughly together (Charemza and Deadman, 1992: 143-8).

Domestic investment and foreign savings trends of Turkey, Argentina, Chile and Mexico are found to be stationary of order one (after running an augmented Dickey-Fuller test). For Brazil the stationary of two trends is not of the same order and therefore Brazil is left out of the examination. Results obtained by running Engle-Granger cointegration test (Engle and Granger, 1987) show that in all the four countries, foreign savings and domestic investment are not cointegrated since the Dickey-Fuller t statistics are lower than MacKinnon critical values given in Appendix 2.

#### 4. Conclusion

In Turkey, transfers abroad follow an upward trend and resources allocated for investment follow a declining one. The three reasons are as follows: the surge in the external debt burden, the shrinking in the workers' remittances, and the fact that foreign savings and domestic investment do not possess time paths which tend to move together.

In fact, in the econometric exercises carried out in this paper shows that in Turkey, as in Latin American countries, foreign savings and domestic investment are not cointegrated. Therefore, the main outcome of this paper is that relying on foreign savings, in order to reach a long-lasting increase in investment will not likely be sufficient for Turkey and Latin American countries.

### Appendix 1

GDP: Gross Domestic Product

GDS: Gross Domestic saving = Gross Domestic Product

- Total Consumption

NFI Net Factor Income = Includes net property and entrepreneurial income components and the net compensation of employees (workers' remittances are not included) with less than one year residence in the host country.

NCTP: Private current transfers, net (the major component is workers' remittances)

CINS: Gross National Savings = GDS + NFI + NCTP

RB: Resource Balance = Export of goods and non-factor services less imports of goods and nonfactor services

GDI: Gross Domestic Investment = Gross domestic fixed investment and changes in stocks

FS: Foreign Savings = Current account deficit x (-1)

PES: Primary Foreign Savings = FS + NFI

Source: World Bank (1994: xiv-xviii)

Notes: 1) "Conversion Factor" of the World Tables is used to convert the NCTP and FS to local currency.

2) The definition of GNS = GDS + NFI + NCTP is taken from World Bank, World Tables. There is no inconsistency between this definition and the results of the Table 1.

3) The definition of GDS = RB + GDI is taken from Frenkel *et al.* (1993) and Agosin (1994). There is an inconsistency between the definition and the data given in Table 1 for Argentina (see Agosin (1994) for this inconsistency).

**Appendix 2**  
Results of Engle-Granger Cointegration Test

1966-1993	With Trend			Without Trend		
Lag (years)	2	4	6	<i>I</i>	4	6
MacKinnon						
critical values, % 1	-5.0	-5.1	-5.2	-4.4	-4.4	-4.5
% 5	-4.2	-4.2	-4.3	-3.6	-3.6	-3.7
Dickey-Fuller						
t statistics						
DTDIGDP, DTFSGDP	-3.6	-2.4	-1.7	-3.5	-2.4	-1.7
DMDIGDP, DMFSGDP	-3.3	-2.2	-1.9	-3.2	-1.9	-1.6
DCDIGDP, DCFSGDP	-3.7	-3.0	-2.0	-3.4	-2.6	-1.8
DADIGDP, DAFSGDP	-3.3	-1.9	-1.5	-3.2	-1.8	-1.3

DTFSGDP: Turkey, Foreign savings / GDP (P\* difference)

DMFSGDP: Mexico, Foreign savings / GDP (P\* difference)

DCFSGDP: Chile, Foreign savings / GDP (P<sup>1</sup> difference)

DAFSGDP: Argentina, Foreign savings / GDP (1<sup>st</sup> difference)

DTDIGDP: Turkey, Domestic investment / GDP (P<sup>1</sup> difference)

DMDIGDP: Mexico, Domestic investment / GDP (1<sup>st</sup> difference)

DCDIGDP: Chile, Domestic investment / GDP (P<sup>1</sup> difference)

DADIGDP: Argentina, Domestic investment / GDP (1<sup>st</sup> difference)

*Note:* Cointegration test is carried on with first differences of the variables, since foreign savings and domestic investment of the countries were stationary of the first order, I(1).

*Sources of Data:* 1966-1970: World Bank, *World Tables* 1995 on CD-ROM:

1970-1993: World Bank, *World Tables* 1995 on Diskette.



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## Özet

### Sermaye girişinin tasarruf ve yatırımlar üzerindeki etkileri: Türkiye ve Latin Amerika ülkeleri karşılaştırması

Bu çalışmada, esas olarak, yabancı sermaye girişinin gelişmekte olan ekonomilerin tasarruf ve yatırımları üzerindeki etkileri incelenmiştir. Bu amaçla, faiz oranı, tasarruf ve yatırım ilişkisi konusundaki tartışmalar incelendikten sonra, Türkiye ve Latin Amerika ülkeleri için vahana tasarruf, yerli tasarruf ve yatırım trendleri arasındaki ilişkiler ele alınmıştır.

Son yıllarda, Türkiye'den yurt dışına yapılan kaynak transferi bir artış transferi göstermekte ve yatırımlara dönüşen kaynaklar azalmaktadır. Bunun üç temel nedeninden söz etmek mümkündür: Dış borç yüküne paralel olarak dışarıya yapılan kaynak transferi giderek artmakta, işçi döviz girişi giderek azalmakta. ve yabancı tasarruflarla yurtiçi yatırımları zaman içinde birlikte hareket eden bir trend göstermemektedirler. Nitekim, çalışmada Türkiye ve Latin Amerika ülkeleri için yapılan testler yabancı tasarruflarla yurtiçi yatırımlar arasında bir "cointegration" olmadığını göstermektedir.

Bu çalışma, gerek Türkiye gerekse Latin Amerika ülkeleri için yatırımları artırmakta tümüyle yabancı tasarruflara güvenmenin yersiz olduğu sonucuna ulaşmaktadır.