Journal of International Economics 27 (1989) 199–220. North-Holland

EXTERNAL DEBT, CAPITAL FLIGHT AND POLITICAL RISK

Alberto ALESINA

Harvard University, Cambridge, MA 02138, USA
National Bureau of Economic Research and Center for Economic Policy Research

Guido TABELLINI*

University of California, Los Angeles, CA 90024, USA
National Bureau of Economic Research and Center for Economic Policy Research

Received April 1988, revised version received December 1988

This paper explains the simultaneous occurrence of large external debts, private capital outflows and low domestic capital formation. We consider a general equilibrium model in which two government types with conflicting distributional goals randomly alternate in office. Uncertainty over the fiscal policies of future governments generates capital flight and small domestic investment, and induces the government to overaccumulate external debt. The model also predicts that left-wing governments are more inclined to restrict capital outflows than right-wing governments. Finally, we examine how political uncertainty affects the risk premium and how debt repudiation may occur after a regime change.

1. Introduction

In the 1970s and 1980s, while the public sectors of many developing countries were accumulating large external debts, the private sectors of those same countries were accumulating large external assets. The extent of this phenomenon is documented in table 1. It is most evident in Argentina, Mexico, Venezuela, Uruguay and, to a lesser extent, in Peru and the Philippines. Massive capital outflows also occurred in Peru and Chile in the early 1970s, which are not included in table 1 [see Ascher (1984)]. In addition, Dornbusch (1985) emphasizes that large accumulation of imported

*We would like to thank the editor, an anonymous referee, the participants of the 1987 NBER Summer Institute and of seminars at the Federal Reserve Board, the University of Rochester, Georgetown University, MIT, Tel Aviv University, the University of Pittsburgh and Carnegie-Mellon University, for useful comments, Susanne Lohmann for excellent research assistance, and the UCLA Academic Senate for financial support. We are responsible for any remaining mistakes.

Table 1

Capital flight and domestic capital formation.[a]

	Capital flights as a percentage of change in external debt			Percentage change in gross domestic capital formation
	(1)	(2)	(3)	(4)
Argentina	69	62	45	−36
Brazil	22	12	0	−20
Chile	N.A.	0	−19	−34
Mexico	67	44	58	−27
Peru	N.A.	29	20	−17
Philippines	19	20	N.A.	−12
Uruguay	N.A.	N.A.	52	−17
Venezuela	103	94	45	−23

[a]A more detailed discussion of alternative measures of capital flight is in Cumby and Levich (1987).

Sources: (1) Morgan Guaranty Trust (1986), recomputed by Cumby and Levich (1987). Period: 1976–84.
(2) Dooley et al. (1983). Period: 1974–82.
(3) Cuddington (1986). Period: 1974–84.
(4) Economic Commission on Latin American Countries, reported in Eaton (1987). Period: 1980–81 average to 1982–84 average. Data for the Philippines and Uruguay are taken from the IFS yearbook of the IMF, and are computed as the percentage change in gross fixed capital formation (scaled to GDP).

durable consumption goods in Chile in 1979–82 had the same effects of capital flight. Domestic investment in productive capital in all of these countries has generally declined, particularly from the late 1970s onward [see Dornbusch and Fischer (1986)].

Because of the adverse terms of trade shocks of the late 1970s and early 1980s, this peculiar intermediation of the U.S. banks has contributed to expose the Latin American public sectors to very high real interest rates (evaluated in domestic currencies). Moreover, the private external assets are generally not being repatriated. As Diaz-Alejandro (1984), Dornbusch (1985) and Edwards (1987) pointed out, this has increased the burden of generating the foreign exchange needed to service the external debt.

This paper seeks to explain this apparent form of collective irrationality as the result of political polarization and instability. It also suggests why several governments did not attempt to prevent the capital flight, by imposing restrictions on capital outflows, by avoiding sharp appreciations of their exchange rates and by restricting their own public external borrowing. This behavior is explained as the rational response of policymakers who maximize the welfare of their own constituency or social group as opposed to collective welfare, in politically and socially polarized economies.

We consider an economy with two groups of agents identified by their

Table 2

Income distribution and political regimes.

	Ratio of compensation of employees over GDP (averages) (1)	Ratio of operating surplus over GDP (averages) (2)	Index of minimum wage (nonagricultural) 1970=100 (3)
Argentina			
1967–72 right	0.44[a]	0.44[a]	92.2
1973–75 left	0.44	0.47	116.7
1976–83 right	0.31	0.57	51.2[b]
Chile			
1967–73 left	0.45[c]	0.37[c]	92.6
1974–84 right	0.39	0.36	72.1[d]
Peru			
1967–68	N.A.	N.A.	90.5
1970–76 left	0.37	0.50	97.9
1977–84 right	0.32	0.53	92.4[e]
Uruguay			
1967–72 left	0.43[f]	0.39[f]	100.2
1973–76 right	0.40	0.43	65.5[g]
1977–81 center/right	0.32	0.49	

[a]Average 1970–72.
[b]Average 1976–80.
[c]Average 1971–73.
[d]Average 1974–80.
[e]Average 1977–80.
[f]Average 1970–72.
[g]Average 1973–81.

Sources: (1) and (2) United Nations, *National Account Statistics: Main Aggregates.* (3) *Statistical Abstract of Latin America*, Vol. 24, ch. 14, table 1407. The classification of political regimes is obtained from Banks (1986).

productive role: the 'workers' (wage earners) and the 'capitalists' (owners of physical capital and profit earners). The two groups have their own political representatives ('parties') that alternate in office. Each party, when in office, attempts to redistribute income in favor of its constituency. Some support for this hypothesis is provided in table 2. This table shows that, indeed, in at least four countries (Argentina, Chile, Peru and Uruguay) income distribution is correlated to the political orientation of the government. These countries have been selected from the larger sample of table 1 because they have experienced the more clearly identifiable changes of regimes in the period in which reliable data are available. Table 2 shows that left-wing governments have generally increased the labor share of national income, and reduced the operating surplus; the opposite holds for right-wing regimes. In addition minimum wages have been much higher (lower) during left-wing (right-wing) regimes. Broadly speaking, even though this table does not

provide a formal test of our hypotheses, it suggests that ideological polarization may have been associated with polarization of redistributive policies.[1]

Under this specification of the government goals, political uncertainty about future governments generates economic uncertainty about future policies. Private capital flight is explained in this paper as an insurance against the risk of future taxation, as in Khan and Haque (1986) and Eaton (1987) among others. The partisan goals of the government explain why capital controls have not been extensively used. Specifically, we show that the desirability of capital controls for the government depends on its political nature: the government representing the capitalist constituency never finds it optimal to impose capital controls; conversely, the government representing the interests of the workers always imposes some restrictions on capital outflows.

Political uncertainty also explains the overaccumulation of public external debt. Overborrowing occurs because the current government does not fully internalize the future costs of servicing the debt. The government that borrows (say the capitalist one) also controls how the proceeds of the debt issue are allocated: they are transferred to the capitalist constituency. If there is a change of government, however, the debt will be repaid by the opponent, by reducing the transfers to the workers constituency. Since these costs are not internalized, the capitalist government overborrows. Moreover, the capitalists use their increased disposable income to consume and optimally allocate their savings between external assets and domestic investment. Thus, political polarization leads at the same time to overaccumulation of public debt and private capital flight.[2]

These results hold even if each government has the option of repudiating the debt inherited by its predecessor. Following Cohen and Sachs (1985) and Sachs (1985a), we model reputation costs as a loss to the country's output. In addition we consider the possibility that the external assets held by the citizens of the defaulting government may be seized. These repudiation costs have redistributional implications and they are evaluated differently by the two types of governments. As a result, repudiation can be observed in equilibrium if the government with the lowest repudiation costs unexpectedly gains access to office and if the outstanding external debt is high enough.

[1]Political polarization and instability in Latin America is a well-documented fact [see, for instance, Dornbusch and de Pablo (1987), Kaufman (1986), Haggard (1986) and the references quoted therein]. In addition to the political conflict amongst factors of production that is the focus of this paper, many of the countries under examination also have a conflict across sectors of the economy (such as agricultural, industrial and commercial). See, for instance, Sachs (1985b) and Frieden (1987).

[2]In several developing countries some of the external borrowing was undertaken by the private sector. This paper does not address this issue [see Eaton (1987)]. However, most of the privately issued debt was later publicly guaranteed and ultimately became a liability of the public sector. This paper may contribute to explain this government intervention.

Under reasonable assumptions, one prediction of the model is that debt repudiation is more likely if a left-wing government unexpectedly gains office. This result is also consistent with the empirical observation that left-wing governments have been more outspoken in criticizing IMF adjustment plans which attempt to guarantee the solvency of debtor countries. Since the interest rate demanded by the lenders correctly takes this risk into account, there is a precise link between the cost of external borrowing and political risk.

The explanation for private capital outflows given in this paper is meant to be a complement (rather than an alternative) to other explanations such as the risk of expected devaluation of the exchange rate emphasized by Dornbusch (1985) and Cuddington (1986, 1987). We also do not exclude that 'policy mistakes' and 'mismanagement', in addition to political instability, may contribute to explain excessive government borrowing and private capital flight, as suggested for instance by Sachs (1985b), Dornbusch (1985) and Dornbusch and de Pablo (1987).

The paper is organized as follows. Section 2 describes the model. Section 3 characterizes the equilibrium and shows the coexistence of public borrowing and private capital flight. Section 4 discusses capital controls. Section 5 considers endogenous repudiation risk. The main results of the paper are summarized in the conclusions.

2. The model

We consider a small open economy lasting two periods and producing one good. There are two groups of agents – 'workers' and 'capitalists'. To simplify notation and with no loss of generality we assume the two groups to be of equal size. The workers supply inelastically one unit of labor in each period of their life and are prevented from acquiring shares of capital: they cannot become capitalists.[3] The assumption about labor supply can be easily generalized, without any qualitative change in our results. The capitalists own the capital stock and hire labor. The production technology of each capitalist is given by a production function:

$$Y_t \equiv F(K_t, L_t), \tag{1}$$

where subscripts denote time periods and where $Y_t \equiv$ output; $K_t \equiv$ capital stock at the beginning of the period; $L_t \equiv$ employment. $F(\cdot)$ is homogeneous of degree one. By setting $L_t = 1$, and indicating the wage with w_t, from (1) we obtain:

[3]Alternatively one might capture a difference between 'rich' and 'poor' due to different endowments rather than by their productive role.

$$y_t = f(k_t), \tag{2}$$

$$w_t = f(k_t) - f'(k_t)k_t, \tag{3}$$

where lower case letters denote units per worker. Without loss of generality, we assume that the stock of capital does not depreciate, and k_1, the stock of capital at the beginning of period 1, is exogenously given.

The 'representative worker' maximizes his expected utility function,

$$E[u(c_1) + \beta u(c_2)], \tag{4}$$

subject to the following budget constraints:

$$c_1 \leqq w_1(1-\tau_1) + g_1^w + e^w - \frac{1}{1+r} b_2^w, \tag{5}$$

$$c_2 \leqq w_2(1-\tau_2) + g_2^w + b_2^w, \tag{6}$$

where c_t is worker's consumption; $1 \geqq \tau_t \geqq 0$ are taxes on labor income; $g_t^w \geqq 0$ are government transfers to the worker; b_2^w are external assets (tax exempt) held by the worker at the beginning of period 2; e^w is tax exempt nonstorable endowment available to the worker at the beginning of period 1; and r is the world real interest rate. The function $u(\cdot)$ satisfies the usual properties, $u'(\cdot) > 0$ and $u''(\cdot) < 0$, plus the Inada conditions. We also assume that the rate of time preference is identical to the interest rate, r, so that:

$$\beta = \frac{1}{1+r}. \tag{7}$$

This assumption is adopted purely for simplicity to eliminate any additional incentive to borrow or lend other than those which are the focus of the present paper. In particular, this assumption implies that a 'social planner' would not borrow abroad to redistribute domestic consumption over time.

The 'representative capitalist' maximizes his expected utility function

$$E[v(x_1) + \beta v(x_2)]. \tag{8}$$

Using (7) the budget constraints can be written as:

$$x_1 \leqq (f(k_1) + k_1 - w_1)(1-z_1) - k_2 - \beta b_2^c + e^c + g_1^c, \tag{9}$$

$$x_2 \leqq b_2^c + (f(k_2) + k_2 - w_2)(1-z_2) + g_2^c, \tag{10}$$

where x_t is capitalist consumption; $0 \leqq z_t \leqq 1$ are taxes on capital and capital income; b_t^c are external assets (tax exempt) of the capitalist at the beginning of period t; $g_t^c \geqq 0$ are government transfers to the capitalist; and e^c is a tax exempt nonstorable endowment available at the beginning of period 1.[4] The function $v(\cdot)$ satisfies the usual properties, $v'(\cdot) > 0$ and $v''(\cdot) < 0$, and the Inada conditions.

With no loss of generality we assume that at the beginning of period 1 both workers and capitalists do not have assets or liabilities abroad, i.e. $b_1^w = b_1^c = 0$. However, both workers and capitalists have a positive tax-exempt endowment. Thus, they have some income which cannot be expropriated and allows them to make investment/consumption decisions. The case in which workers have no access to international capital markets can be easily addressed as a special case of this model.[5] Moreover, the qualitative results can be extended to an infinite horizon version of the model, using techniques similar to those of Alesina and Tabellini (1987).

The government can raise taxes, borrow abroad and make lump-sum transfers to its citizens. Lump-sum taxes are unavailable, and there are no public goods to be supplied. We also assume, for simplicity, that the government does not issue domestic bonds. In section 3 we argue that our results generalize to the case in which the government could choose to borrow domestically. Thus, given (7) the budget constraints of the government are:

$$g_1^c + g_1^w + \leqq \tau_1 w_1 + z_1(k_1 + f(k_1) - w_1) + \beta d_2, \tag{11}$$

$$g_2^c + g_2^w \leqq \tau_2 w_2 + z_2(k_2 + f(k_2) - w_2) - d_2, \tag{12}$$

where d_2 is external debt issued by the government in period 1.

Throughout the paper we assume that the government cannot borrow more than a certain amount, $\bar{d}$, exogenously given:

$$d_2 \leqq \bar{d}. \tag{13}$$

In section 6 the credit limit is endogenously derived when we explicitly consider the possibility of repudiation; until then we assume no repudiation.

The government can be of two types: type 'w', that maximizes the workers' welfare [eq. (4)]; and type 'c', that maximizes the capitalists' welfare [eq. (10)]. Irrespective of which government is in office in period 1, type c is in

[4] An alternative specification which leads to analogous results is to have transfers proportional to wages and capital rather than lump sum. This would imply letting $\tau_t \gtreqless 0$ and $z_t \gtreqless 0$, and setting $g_t^w = 0$ and $g_t^c = 0$.

[5] In particular, the qualitative results of the model survive the imposition of either of these two additional constraints on workers' behavior: (a) $b_2^w = 0$, and (b) $b_2^w \geqq 0$. In case (a) all the results of this model are strengthened. (The proof is available from the authors.) Since we show below that in equilibrium we obtain $b_2^w > 0$, the constraint (b) would never be binding.

office in period 2 with probability P and type w with probability $(1-P)$. P is exogenously given throughout this paper. If the country is a democracy, we can interpret this assumption as saying that the voters' turnout is random. Thus, P here is just the probability that the actual number of capitalist voters exceeds the number of working-class voters. Alesina (1988a), Alesina and Tabellini (1987) and Tabellini and Alesina (1989) in a related context show how to extend the political equilibrium to a model with a more general distribution of voters' preferences. If the country is not a democracy, P represents the likelihood that, say, type 'w' government is overthrown by type 'c' government. The likelihood of overthrowing a nondemocratic government may be affected by current and expected economic outcomes; however, this link is not considered in this paper.

3. Public external debt and private capital flights

First we characterize the behavior of workers and capitalists by solving their optimization problems and taking the government actions as given. In order to simplify the solution we establish the following result. If

$$\bar{d} \leqq \min [w_2, f(k_2)+k_2-w_2], \tag{14}$$

then it follows that $\tau_t = g_t^c = 0$ and $z_t = 1$ if type 'w' is in office in period t, for $t=1,2$, and $z_t = g_t^w = 0$ and $\tau_t = 1$ if type 'c' is in office in period t, for $t=1,2$.

Thus, if the workers are in office they expropriate the capitalists and do not tax labor, and vice versa. In addition, each government does not make any transfers to its opponent's constituency. This result follows from the fact that each government does not attribute any weight to its opponent's constituency and from the fact that, ex post, the taxes of this model are nondistortionary. The labor income tax is nondistortionary because the labor supply is inelastic.[6] The capital income tax is nondistortionary ex post, since in period 2 k_2 is predetermined.

Condition (14) implies that each government can always repay its external debt in full without taxing its own group. This condition is assumed to hold throughout the paper. If it did not hold, then, if in period 2, say, type 'c' were in office, it would set $\tau_2 = 1$, $g_2^w = 0$ and z_2 equal to the minimum value necessary to satisfy the government budget constraint. Thus, condition (14) is adopted purely for notational simplicity, and with no loss of generality.

The workers' optimization problem can then be rewritten as follows:

$$\max_{c_1, b_2^w} u(c_1)+\beta[Pu(b_2^w)+(1-P)u(w_2+b_2^w+g_2^w)] \tag{16}$$

[6] If the labor supply were elastic, the capitalist government would not set $\tau_1 = 1$. It would choose the tax rate which maximizes tax revenue.

subject to (5). The first-order condition is:

$$-u'(c_1)+Pu'(b_2^w)+(1-P)u'(w_2+g_2^w+b_2^w)=0. \tag{17}$$

By the Inada conditions on $u(\cdot)$, (17) implies that, if $P>0$, then the workers hold some external assets, $b_2^w > 0$.

Using (8)–(10), we can rewrite the capitalists' problem as:

$$\max_{x_1, b_2^g, k_2} v(x_1)+\beta[Pv(b_2^c+k_2+f(k_2)-w_2+g_2^c)+(1-P)v(b_2^c)] \tag{18}$$

subject to (9). The first-order conditions are:

$$-v'(x_1)+(1-P)v'(b_2^c)+Pv'(b_2^c+k_2+f(k_2)-w_2+g_2^c)=0, \tag{19a}$$

$$-(1-P)v'(b_2^c)+Pv'(b_2^c+k_2+f(k_2)-w_2+g_2^c)[\beta(1+f'(k_2)-1]=0. \tag{19b}$$

According to (19), if $P<1$, then the capitalists hold external assets ($b_2^c>0$) and the rate of return on domestic capital exceeds the world rate of interest [i.e. $\beta(1+f'(k_2))>1$]. Thus, political uncertainty generates capital flight and reduces domestic capital formation.

Let us now turn to the governments. In the last period, if the type c government is in office it sets $z_2 = g_2^w = 0$ and $\tau_2 = 1$. With the tax revenues it services the debt inherited (if any) and uses the residual to make a transfer to the capitalists ($g_2^c > 0$). The type w government behaves in the opposite way: $\tau_2 = g_2^c = 0$, $z_2 = 1$, $g_2^w > 0$.

Consider now the problem faced by government c in period 1. By using the results just established and by substituting the government's budget constraint into the objective function, we obtain this problem:

$$\max_{b_2^g, k_2, d_2, b_2^w} v(f(k_1)+k_1+e^c-\beta b_2^c-k_2+\beta d_2)$$

$$+\beta[Pv(k_2+f(k_2)+b_2^c-d_2)+(1-P)v(b_2^c)]$$

subject to (13) and the private sector's first-order conditions, (17) and (19). Define γ as the Lagrange multiplier associated with the government borrowing constraint, (13). The appendix shows that the first-order conditions of this problem imply:

$$\gamma = \beta v'(x_1)-\beta P v'(f(k_2)+k_2+b_2^c-\bar{d}). \tag{21}$$

Using (19a) and (21) it follows that

$$\gamma=(1-P)v'(b_2^c). \tag{22}$$

Thus, if $P<1$, then $\gamma>0$ and, as a result, $d_2=\bar{d}$: The government borrows as much as it can. Eq. (21) provides the intuition for this result. The first term on the right-hand side, $\beta v'(x_1)$, is the marginal gain of issuing one more unit of government debt, evaluated in terms of period 1 utility: by issuing one more unit of external debt, the government obtains an amount β of real resources which can be transferred to the capitalists, yielding a marginal utility of $v'(x_1)$. The second term on the right-hand side of (21), $-\beta P v'(f(k_2)+k_2+b_2^c-\bar{d})$, is the expected marginal disutility of repaying the debt tomorrow, discounted to the present by β. Specifically, it is the marginal disutility of curtailing the transfers to the capitalists, $\beta v'(\cdot)$, weighted by the probability of being in office tomorrow. If the c government type is not reappointed, then the marginal disutility of debt is zero, since the capitalists would receive no transfer anyway, irrespective of the size of the debt. Thus, (21) implies that the shadow value of relaxing the government borrowing constraint, γ, is equal to the algebraic sum of the marginal utility of issuing public debt today and the expected marginal disutility of repaying it tomorrow. Eq. (22) shows that this sum is always positive if $P<1$.

If the type w government is in office in period 1 it solves:

$$\max_{d_2, b_2^w, k_2, b_2^c} u(k_1+e^w+f(k_1)+\beta d_2-\beta b_2^w)$$

$$+\beta[Pu(b_2^w)+(1-P)u(k_2+f(k_2)+b_2^w-d_2] \tag{23}$$

subject to (13) and the private sector's first-order conditions (17), (18) and (20). The solution of this problem is analogous to that of problem (20). In particular, here too government borrowing is as large as possible as long as $P>0$.

We can summarize this discussion in the following:

Proposition 1. If $1>P>0$, *the government in office sets* $d_2=\bar{d}$. *If type* c *is in office it also sets:* $z_1=g_1^w=0$; $\tau_1=1$; $g_1^c>0$. *If type* w *is in office it also sets* $\tau_1=g_1^c=0$; $z_1=1$; $g_1^w>0$. *The workers and the capitalists set:* $x_1>0$, $b_2^c>0$, $k_2>0$, $c_1>0$, $b_2^w>0$.

Thus, if, for instance, the type c government is in office, it borrows from abroad as much as it can, in order to increase current transfers to the capitalists. The latter in turn optimally use these transfers to (a) increase consumption, (b) acquire foreign assets sheltered from fiscal expropriation, and (c) increase domestic investment. In equilibrium the government borrows from abroad while the private sector acquires foreign assets, despite the fact

that they face the same world interest rates. Note that Proposition 1 hinges on the fact that the two governments are always at a corner with respect to tax rates and transfers. For instance, if elected in period 2, the w government sets $z_2=1$ and chooses g_2^w so as to satisfy the government budget constraint. Thus, any change in external debt inherited from the past affects the size of transfers but *not* the level of taxation, which is always at its maximum. This feature of the equilibrium follows from the extreme preferences of the two governments: they only care about one group, and completely disregard the second group. The same result could also be easily derived from less extreme assumptions about the government preferences, as long as the political and administrative costs of changing taxes are larger than those of changing the size of transfers [see also Alesina and Tabellini (1987) for some discussion of this point in a related framework].

It can be shown (the proof is available upon request) that if the workers had no access to the international financial market (i.e. if we impose the constraint $b_2^w=0$), then in equilibrium the w government would set

$$\bar{d}\geqq d_2>0. \tag{24}$$

The reason is that if $b_2^w=0$ the workers cannot smooth consumption across time. Thus, their government would not want to tilt their consumption profile too much: an excessive public borrowing in period 1 could imply an excessively low expected consumption in period 2.

Finally, by applying the implicit function theorem to the first-order conditions of the governments' optimization problem, the following results can be proved:

Proposition 2. Irrespective of which government is in office in the first period we have:

$$\frac{\partial k_2}{\partial \bar{d}}>0; \quad \frac{\partial b_2^w}{\partial \bar{d}}>0; \quad \frac{\partial b_2^w}{\partial P}>0; \quad \frac{\partial b_2^c}{\partial P}<0.$$

Moreover, $\partial b_2^c/\partial \bar{d}>0$ *if type* c *is in office in period 1, and* $\partial b_2^c/\partial \bar{d}\gtrless 0$ *if type* w *is in office in period 1, depending on parameter values.*

This proposition highlights that an increase in the political risk faced by the capitalists (i.e. a reduction of P), reduces domestic investment and leads to more capital flight by the capitalists and to a reduction of the capital flight of the workers. Under the realistic assumption that the capital flight of the workers is much smaller than that of the capitalists, this result implies that capital flight should be particularly high when right-wing regimes are expected to collapse.

Proposition 2 also implies that relaxing the government borrowing constraint (i.e. increasing $\bar{d}$) leads to more domestic investment, but it can also lead to more capital flight. Thus, if the intervention of international organizations such as the World Bank or the IMF in the world financial markets enables the government of a developing country to borrow more, one should observe an increased volume of capital flight away from this country. This result is consistent with some empirical evidence provided by Cuddington (1987).

Before closing this section, we argue that the basic results also apply to a model with domestic government debt. Suppose first that domestic government debt is taxable, like domestic capital. Thus, from the point of view of the public, domestic debt is an asset subject to political risk. For this reason, capital flight would still occur in period 1 as an insurance against risk. In addition, a 'risk premium' would be demanded to hold domestic debt. Since the governments in period 1 are at a corner, in the sense that they would like to redistribute to their constituency as much as they can, they would still borrow up to $\bar{d}$ (at the risk-free interest rate). In addition, they may go beyond this point and issue some domestic debt. Consider instead the case in which a certain amount of domestic debt cannot be expropriated and has to be serviced. Then up to that level, domestic government debt becomes a perfect substitute of external asset for the public in the first period. Depending upon the relative magnitude of the 'safe' domestic debt relative to the size of the investment in safe assets desired by the public, private agents may hold external assets or external liabilities. The government in any case would always borrow as much as it can.

4. Capital controls

Suppose that the private acquisition of foreign assets can be constrained by the government in a nondiscriminatory fashion, namely the constraint must be the same for every individual. Hence, we add the following constraints to the private sector optimization problems:

$$b_2^{\mathrm{w}} \leqq q, \qquad b_2^{\mathrm{c}} \leqq q. \tag{25}$$

where $q \geqq 0$ is the limit to foreign assets holding allowed by the government. Whenever these constraints are binding, the first-order conditions of workers and capitalists can be obtained by solving problems (16) and (18) with the additional constraint (25).

It can be easily shown, by repeating the same steps described in section 3, that the c government will still set $d_2 = \bar{d}$, and will never impose any capital controls. Such controls would impose an additional binding constraint on the capitalists' optimum problem and would force the workers to redistribute

differently their consumption over time. But the time path of workers' consumption does not affect the capitalists' welfare in any way, so controls always make the capitalists worse off. On the other hand, capital controls have both costs and benefits for the government w. The costs are due to the additional constraint on the workers' problem. But capital controls also have the effect of forcing the capitalists to invest more domestically. Thus, by restricting the access to foreign capital markets, the w government obtains the benefit of a larger domestic capital formation, and a larger tax base in period 2.

These considerations provide the basic intuition for the following result, which is formally proved in section A.2 of the appendix:

Proposition 3. If in the absence of capital controls $b_2^{\mathrm{c}} > b_2^{\mathrm{w}}$, *then the* w *government always imposes capital controls that are binding on both the workers and the capitalists. The* c *government never imposes capital controls.*

The level of the controls imposed by the w government depends on the workers' degree of risk aversion. If the $u(\cdot)$ function is very concave, then the workers find it very costly to restrict their means of intertemporal consumption smoothing in exchange for a higher domestic capital stock. In this case even a type w would tolerate a substantial amount of capital flight. Conversely, the smaller is the worker's degree of risk aversion, the tighter are the controls imposed by the w type (i.e. the smaller is q). In the extreme case of risk neutrality, the workers' government would always choose $q=0$, thereby completely prohibiting capital outflows.[7]

This finding, namely that left-wing governments are more inclined to impose capital controls than right-wing governments, is roughly consistent with the empirical evidence contained in table 3. As explained at the bottom of this table, a higher value of the index implies more capital controls. In Argentina, Chile and Peru the observed pattern is consistent with the model. In Mexico and Venezuela there is less volatility in the political orientation of the government and the policy of capital controls has also been relatively stable. In Brazil and the Philippines, center left democratic governments have recently been established following a long period of right-wing dictatorships. It is still too early to identify the directions which these two governments will take in terms of capital controls. Naturally the evidence of table 3 is merely suggestive; more empirical research on this topic is called for.

[7]These results about capital controls should be only slightly qualified if the labor supply were elastic. In this case the imposition of capital controls on the workers would in general affect their intertemporal allocation of both consumption and leisure.

Table 3

Political regimes and capital controls (1967–86).

Country	Time period	Political regime	Level of capital restrictions
Argentina	1967–72	right-wing	0.67
	1973–75	Peronist	2
	1976–83	military dictatorship	1.25
	1984–86	center-left	1
Brazil	1967–78	right-wing	1.67
	1979–84	center-right	2
	1985–86	center-left	2
Chile	1967–70	center-left	2
	1970–73	radical-left	2
	1974–86	military dictatorship	1.54
Mexico	1967–86	center-left	0.34
Peru	1967–68	center-right	0.5
	1969–76	'left' military	1.75
	1977–79	'right' military	1.67
	1980–84	transition to democracy	1
	1985–86	center-left	2
Philippines	1967–72	right-wing democratic	0.5
	1973–85	right-wing dictatorship	1
	1986	center-left democratic	1
Venezuela	1967–69	center-left	0
	1969–73	center-right	0.2
	1974–78	center-left	0.6
	1979–83	center-right	0.8
	1984–86	center-left	1.67
Uruguay	1967–72	center-left	0.83
	1973–76	'right' military	2
	1977–81	'center' military	1.2
	1982–84	transition to democracy	0
	1985–86	center-left	0

Construction of the table: Each IMF report 1967–87 contains a summary table of exchange arrangements and exchange restrictions in all countries of the world. For each year, the countries in this table are assigned 0, 1 or 2 points, depending on whether they have no capital restrictions (0 points), either 'separate exchange rates for some or all capital transactions' or 'restrictions on payments for capital transactions' (1 point), or both (2 points). To calculate the restrictiveness of a political regime with respect to capital transactions, these points are summed over and divided by the number of years the regime is in power. Thus, a higher value may be interpreted as characterizing a more restrictive regime. If a regime ends early in a year, this year is counted for the following regime. When uncertain about the attribution of a transition year to two regimes, this year is assigned to both regimes with weights 1/2, 1/2.
Sources: Banks (1986), IMF (1967–86).

5. Debt repudiation

Let us now assume that the government has the option of repudiating the debt in the final period. If the government chooses to repudiate, it suffers a loss, which takes two forms. First of all, the country loses a fraction of its national output, as in Sachs (1985a) and Cohen and Sachs (1985).[8] This loss of income can be justified as the result of retaliation against the defaulting country, such as trade restrictions, seizure of public goods (planes, ships, etc.) or the withdrawal of foreign private investments [Aizenman (1987)]. Throughout the paper we allow the fraction of income that is lost in the event of a debt repudiation to depend on which government is in office at the time of the repudiation. Specifically, we denote with θ^i the fraction of output lost if the i government repudiates, $i=\mathrm{c},\mathrm{w}$, and we assume that $1>\theta^{\mathrm{c}}\geqq\theta^{\mathrm{w}}>0$. This weak inequality is meant to capture the fact that presumably economic and financial exchanges with the rest of the world are more important for the welfare of right-wing governments and their constituencies than for socialist governments. Right-wing governments may be more likely to rely on foreign investments and foreign trade for the success of their policies than left-wing governments are. As such, the economic costs of the trade disruption that would follow a repudiation are not larger for the w than for the c type. In any case, the qualitative features of the results on repudiation also hold in the case $\theta^{\mathrm{w}}=\theta^{\mathrm{c}}$.

Secondly, if the country repudiates its external debt, a fraction $1>\phi>0$ of its external assets are seized by foreign creditors. All the parameters of the model including ϕ and θ^i are perfectly known to both governments and to the risk-neutral lenders.

With a convenient change in notation relative to the previous sections, suppose that if an amount d_2 is borrowed today by the government, the amount due for repayment next period is $R(d_2)d_2$, $R(d_2)$ being the gross real interest rate. Thus, we allow R to depend on the amount borrowed, d_2. The value of d_2 that leaves the government of type i just indifferent between repudiating or repaying the debt is defined by

$$\bar{d}^i=[\theta^i f(k_2)+\phi b_2^i]\,\frac{1}{R(\bar{d}^i)},\quad i=\mathrm{w},\mathrm{c}. \tag{26}$$

If $d_2>\bar{d}^i$, the government of type i prefers to repudiate. Conversely, if $d_2<\bar{d}^i$, type i prefers to repay the debt.

This formulation of the problem highlights the fact that the costs of debt repudiation are different for the two governments, if either $\theta^{\mathrm{c}}\neq\theta^{\mathrm{w}}$ or $b_2^{\mathrm{w}}\neq b_2^{\mathrm{c}}$. This feature of the model goes well beyond the specific example considered in this paper; it captures the general idea that the costs of repudiation are not

[8] As in Sachs (1985a) and Cohen and Sachs (1985), we assume that the severity of the 'punishment' is independent of the amount of repudiation. This feature of the model eliminates partial repudiation as a rational choice. This is a highly simplified treatment of repudiation risk, since repudiation costs are not endogenously derived from the lender's behavior. For a different treatment of external debt repudiation see Grossman and Van Huyck (1988) and Bulow and Rogoff (1989).

uniformly distributed, so that different groups have different preferences regarding this issue.[9]

Let us assume that, for all parameter values, $b_2^c > b_2^w$. This implies that the nontaxable endowment of the capitalists, e^c, is sufficiently larger than the nontaxable endowment of the workers, e^w. Under this realistic hypothesis, it is easy to show that in equilibrium the type c government never repudiates. In fact, letting $\bar{d}$ denote the maximum amount lent by financial markets, in equilibrium we obtain:

$$\bar{d} \leqq \bar{d}^c. \tag{27}$$

This result can be easily proven by contradiction.[10]

We are left with two cases:

(a) In the first one, $\bar{d} = \bar{d}^c > \bar{d}^w$. Here, the c type never repudiates; but the w type repudiates if in equilibrium $d_2 > \bar{d}^w$. Hence, $\bar{d}^w$ carries the risk-free interest rate: $R(\bar{d}^w) = 1/\beta$, whereas $\bar{d}^c$ carries a risk premium: $R(\bar{d}^c) = 1/\beta P$. Using (26), this case applies if the following condition holds:

$$P[\theta f(k_2) + \phi b_2^c] > \theta^w f(k_2) + \phi b_2^w. \tag{28}$$

(b) The second case implies $\bar{d} = \bar{d}^w$ and occurs if (28) is violated. Here in equilibrium neither type repudiates the debt: the government borrows at the risk-free rate up to $\bar{d}^w$ and cannot borrow at all beyond this point.

The value of P discriminates between the two cases: there exists a value of P, say $\bar{P}$, such that if $P > \bar{P}$ case (a) occurs.[11]

In case (b), in which $\bar{d} = \bar{d}^w$, the analysis of the previous sections applies almost identically. Since both governments repay the debt, there is no repudiation risk. Hence, the private sector first-order conditions and the optimization problem faced by both government types are identical to those of the previous sections, except in one respect. Namely, here both types take into account that, by increasing k_2 and b_2^w, they can partially relax their borrowing constraint (since they can shift $\bar{d}^w$). Under a very plausible condition, this aspect does not make any difference.[12] As in the previous sections, both types always borrow as much as they can, setting $d_2 = \bar{d}^w$.

Case (a), where $\bar{d} = \bar{d}^c > \bar{d}^w$, is more interesting. Now the private sector and both governments must take into account the possibility of debt repudiation. Moreover, because of the risk premium, the interest rate faced by the government varies with the size of its external debt: it is $R = 1/\beta$ in the interval $[0, \bar{d}^w]$; it jumps to $R = 1/\beta P$ if $d_2 > \bar{d}^w$.

We know from the discussion of case (b) and of the previous sections that neither government type would ever set $d_2 < \bar{d}^w$. If $d_2 > \bar{d}^w$, then the government debt will be repudiated with probability $(1-P)$. Hence, the private sector first-order conditions for $d_2 > \bar{d}^w$ are no longer given by (17) and (19). Instead, for the workers it is the following:

$$-u'(c_1) + Pu'(b_2^w) + (1-P)(1-\phi)u'(w_2 + g_2^w + b_2^w(1-\phi)) = 0, \tag{29}$$

and for the capitalists they are:

$$-v'(x_1) + (1-P)(1-\phi)v'(b_2^c(1-\phi)) + Pv'(b_2^c + k_2 + f(k_2) - w_2 + g_2^c) = 0, \tag{30}$$

$$-(1-P)(1-\phi)v'(b_2^c(1-\phi)) + Pv'(b_2^c + k_2 + f(k_2) - w_2 + g_2^c)(\beta(1+f'(k_2)) - 1) = 0. \tag{31}$$

Consider the optimization problem faced by the type w government in the interval $\bar{d} \geqq d_2 > \bar{d}^w$, subject to these new constraints. It can be easily shown that the solution to this problem yields $d_2 = \bar{d}$. Thus, the government of type w sets either $d_2 = \bar{d}^w$ or $d_2 = \bar{d}$. The same result holds for the c government. Thus, the two governments choose either $\bar{d}^w$ or $\bar{d}$, depending on which one delivers a higher utility for their constituency. In general this comparison is ambiguous.

If in period 1 the government chooses $\bar{d}$, then the debt is repudiated if the w government is in office in period 2. The following proposition establishes the conditions under which repudiation is observed. (The details of the proof are available upon request.)

Proposition 5. (i) *If $d_2 = \bar{d}^w$, then no debt repudiation occurs in equilibrium.* (ii) *If $d_2 > \bar{d}^w$, the debt is repudiated if and only if type* w *is in office in period 2. If*

[9] Debt repudiation affects differently different groups of the population for many other reasons besides those considered in the paper. For instance, Diaz-Alejandro (1984) argues that the traded goods and financial sectors are more likely to be harmed than the nontraded goods sectors. Alesina (1988b) discussed related issues for the case of the internal debts of several European countries in the interwar period.

[10] Suppose that (27) were violated: then it must be that $\bar{d}^w \geqq \bar{d} > \bar{d}^c$. Thus, $\bar{d}^c$ carries the risk-free interest rate, $R(\bar{d}^c) = 1/\beta$, whereas $\bar{d}^w$ carries a risk premium. If type c is in office in period 2 (which happens with probability P) and $d_2 = \bar{d}^w$, then the debt will be repudiated. Hence, $R(\bar{d}^w) = 1/[\beta(1-P)] > R(\bar{d}^c)$. Inserting these expressions for $R(\bar{d}^w)$ and $R(\bar{d}^c)$ in (26) contradicts the assumption that $b_2^c > b_2^w$.

[11] Define P^* as the value for which (28) holds as an equality:

$$P^* = \frac{\theta^w f(k_2(P^*)) + \phi b_2^w(P^*)}{\theta^c f(k_2(P^*)) + \theta b_2^c(P^*)}.$$

It can be easily shown that $1 > P^* > 0$. However, P^* may not be unique. Define $\bar{P}$ as the highest value of P^* and $\underline{P}$ as the lowest. Then case (a) occurs for $P > \bar{P}$ and case (b) for $P < \underline{P}$. For $\bar{P} > P > \underline{P}$ either case can occur depending on parameter values.

[12] The condition is that $\theta f'(k_2)\,\partial k_2/\partial g_1^c < 1$. If this condition is relaxed, it would no longer be true that the type w sets $g_1^c = 0$. The results concerning government debt are independent of this condition.

w is in office in period 1, then sufficient conditions for case (ii) *to occur are* (28) *and* $k_2(\bar{d}) \geqq k_2(\bar{d}^w)$. *If* c *is in office in period 1, then case* (ii) *can occur if, in addition to these two conditions,* $\theta^c > \theta^w$ *and* ϕ *is sufficiently small.*

In summary, the possibility of repudiating the debt does not eliminate the government incentive to overaccumulate external debt. Debt repudiation can occur in equilibrium if the left-wing government unexpectedly holds office in the final period.

6. Conclusions

This paper links the political instability of developing countries to their accumulation of public external debt, private capital outflow, income distribution, restrictions on capital outflows and repudiation of external debt. All these issues are considered in a simple dynamic model in which the crucial element is the existence of two social groups behaving noncooperatively. The uncertainty about which group will be in control in the future generates the 'political risk', which in turn influences the current economic decisions of private agents and of the government. Thus, this model formalizes the economic effects of political risk, and is consistent with the observation that capital flight and excessive government borrowing are more likely to occur in politically turbulent countries and time periods. Berg and Sachs (1988) have recently presented some interesting empirical evidence which is broadly consistent with the approach and the results of this paper. They find that the frequency of debt rescheduling is positively correlated with an index of income inequality in a large sample of developing countries.

We have presented the simplest possible version of the model. However, the qualitative results of the analysis are robust to generalizations of the model in several directions. For instance, the basic results generalize to: an infinite horizon (at least for some functional forms); an endogenous labor supply; a model in which the workers are prevented from holding external assets; a model in which government provides public goods; with certain caveats [described more in detail in Alesina and Tabellini (1987)] a model in which the preferences of the two governments and of the private sector are less extreme; a model in which voters vote directly on the policies (rather than on the government who then chooses the policies); and a model in which there exist upper bounds on tax rates so that the governments cannot completely expropriate their adversaries.

Several additional aspects of a complete politico-economic explanation of the external debt of developing countries have not been considered in this paper. For instance, we have focused only on one kind of social conflict: between owners of physical capital and owners of human capital. An additional important conflict is the one between the tradable versus nontradable goods sectors, which in several circumstances may imply a conflict between industry and agriculture or certain industrial sectors and others. Moreover, we have not explicitly included monetary variables in our model; thus, we have not addressed the politico-economic determinants of inflation and devaluation. An analysis of these issues is an important topic for future research.

Finally, it should be noted that a political explanation of government debt based upon political uncertainty and polarization is applicable not only to developing countries, but also to industrial democracies. For models that are more appropriate to the latter case, with no capital flight, see Alesina and Tabellini (1987), Persson and Svensson (1989) and Tabellini and Alesina (1989). We believe that the type of extreme political polarization with risk of confiscatory taxation and radical redistributive policies studied in this paper reflects better the political situation of developing countries (particularly South American) rather than that of less polarized industrial democracies.

Appendix

A.1. Derivation of eq. (22)

The type c government optimization problem in period 1 can be written as follows: maximize (20) subject to (13), (17), (19a) and (19b). Let us indicate (13), (19a) and (19b), respectively, as follows:

$$F(b_2^w, k_2, d_2) = 0, \tag{A.1}$$

$$H(b_2^c, k_2, d_2) = 0, \tag{A.2}$$

$$G(b_2^c, k_2, d_2) = 0, \tag{A.3}$$

The government maximizes with respect to k_2, b_2^c, b_2^w, d_2. Let ζ, λ and μ denote the Lagrange multipliers associated with the constraints (A.1), (A.2) and (A.3), respectively, and let F_i, G_i and H_i be the derivatives of F, G and H with respect to the variable i. Then, the first-order conditions imply:

$$\lambda H_{b_2^c} + \mu G_{b_2^c} = 0, \tag{A.4}$$

$$\zeta F_{b_2^w} = 0, \tag{A.5}$$

$$\lambda H_{k_2} + \mu G_{k_2} + \zeta F_{b_2^w} = 0, \tag{A.6}$$

$$\begin{aligned}\beta v'(f(k_1) + k_1 + e^c - \beta b_2^c - k_2 + \beta d_2) - \beta P v'(f(k_2) + k_2 + b_2^c - d_2) \\ + \lambda H_{d_2} + \mu G_{d_2} + \zeta F_{d_2} - \gamma = 0,\end{aligned} \tag{A.7}$$

$$\gamma(\bar{d}-d_2)=0. \tag{A.8}$$

Since $F_{b_2^w}\neq 0$, (A.5) implies $\zeta=0$. Since $H_{b_2^c}$, $G_{b_2^c}$, H_{k_2}, $G_{k_2}\neq 0$, (A.4) and (A.6) imply $\lambda=\mu=0$. As a result, (A.7) implies eq. (22) in the text.

A.2. Proof of Proposition 3

The proof of the statement concerning the c government is immediate. Consider the w government, and suppose that the capital controls are binding for both groups, i.e. $q=b_2^c=b_2^w$, and the two Lagrange multipliers associated with (23), λ^c and η^w, are positive. The problem of the w type is:

$$\max u(y_1+k_1+e_1-\beta q+\beta d_2)+\beta[Pu(q) +(1-P)u(k_2+f(k_2)+q-d_2)] \tag{A.9}$$

subject to (13) and the following first-order conditions of the private sector:

$$\bar{H}\equiv -v'(x_1)+(1-P)v'(q)+Pv'(f(k_2)+k_2+q-d_2)-\eta^c=0, \tag{A.10}$$

$$\bar{G}\equiv -(1-P)v'(q)+\eta^c +Pv'(f(k_2)+k_2+q-d_2)[\beta(1+f'(k_2)-1]=0, \tag{A.11}$$

$$\bar{R}\equiv -u'(c_1)+Pu'(q)+(1-P)u'(k_2+f(k_2)+q-d_2)-\eta^w=0. \tag{A.12}$$

Let $\bar{\lambda}$, $\bar{\mu}$ and $\bar{\zeta}$ be the multipliers associated with these constraints. $\bar{\gamma}$ is the Lagrange multiplier of (13). The first-order conditions imply:

$$\bar{\gamma}=\beta Pu'(q)+\beta(1-P)(1+f'(k_2))u'(k_2+f(k_2)+q-d_2)B-\eta^w \tag{A.13}$$

where $B\equiv -(\bar{H}_{d_2}+\bar{G}_{d_2})(\bar{H}_{k_2}+\bar{G}_{k_2})^{-1}$.

Note that since $\eta^w>0$ because the capital controls are binding, $\bar{\gamma}$ is not necessarily positive. Thus, if the capital controls are binding, d_2 is *not* necessarily equal to $\bar{d}$. Let $z(q)$ be the indirect utility function associated to this problem and L the Lagrangian. By the envelope theorem it follows that

$$\frac{\partial z(q)}{\partial q}=\frac{\partial L}{\partial q}=\beta\eta^w+\beta\bar{\lambda}[v''(e^c-k_2-q) +Pv''(f(k_2)+k_2+q-d_2)(1+f'(k_2))]. \tag{A.14}$$

The first term on the right-hand side of (A.14) is positive, the second is

negative (since $\bar{\lambda}>0$). Consider eq. (A.14) at the point in which q is just binding for the workers and strictly binding for the capitalists. Thus, if q^* is this point, it follows that $q^*=b_2^w<b_2^c$, where b_2^w and b_2^c are the external assets that would be chosen without capital controls. (A.14) implies that $\partial L/\partial q<0$ for $b_2^c>q\geqq q^*$. In fact, one obtains that $\beta\eta^w=0$ for $q\geqq q^*$, while the second term remains negative for $q<b_2^c$ (i.e. if the capital controls are binding for the capitalist). If $q\geqq b_2^c$, capital controls are not binding for anyone so they do not affect anybody's welfare. Since the function $z(q)$ is continuous, it follows that it has a maximum for $q<q^*$, that is for a value of q such that the controls are binding on *both* the capitalists and the workers.

References

Aizenman, Joshua, 1987, Investment, openness and country risk, IMF Working paper.

Alesina, Alberto, 1988a, Credibility and policy convergence in a two-party system with rational voters, American Economic Review 78, Sept., 798–806.

Alesina, Alberto, 1988b, The end of large public debt, in: Giavazzi–Spaventa, eds., Surviving with a high public debt (Cambridge University Press).

Alesina, Alberto and Guido Tabellini, 1987, A positive theory of fiscal deficits and government debt in a democracy, NBER Working paper, no. 2308, Aug.

Ascher, William, 1984, Scheming for the poor: The politics of redistribution in Latin America (Harvard University Press, Cambridge).

Banks, Arthur, ed., 1986, Political handbook of the world (Binghampton, New York).

Berg, Andrew and Jeffrey Sachs, 1988, The debt crisis: Structural explanations of country performance, NBER Working paper, no. 2607, June.

Bulow, Jeremy and Kenneth Rogoff, 1989, A constant recontracting model of external debt, Journal of Political Economy, Feb., 155–178.

Cohen, Daniel and Jeffrey Sachs, 1985, LDC borrowing with default risk, Kredit und Kapital (special issue on international banking).

Cuddington, John, 1986, Capital flight: Issues, estimates and explanations, Princeton Essays in International Finance 58, Dec.

Cuddington, John, 1987, Macroeconomic determinants of capital flight: An econometric investigation, in: Lessard–Williamson, eds., Capital flight and third world debt (Institute for International Economics, Washington, DC).

Cumby, Robert and Richard Levich, 1987, On the definition of magnitude of recent capital flight, NBER Working paper, no. 2275, June.

Diaz-Alejandro, Carlos, 1984, Latin American debt: I don't think we are in Kansas anymore, Brookings Papers on Economic Activity 2, 335–389.

Dooley, Michael, William Helkie, Ralph Tyron and John Underwood, 1983, An analysis of the external debt position of eight developing countries through 1930, Journal of Development Economics 22, 283–318.

Dornbusch, Rudiger, 1985, External debt, budget deficits and disequilibrium exchange rates, in: Gordon Smith and John Cuddington, eds., International debt and the developing countries (World Bank, Washington, DC).

Dornbusch, Rudiger and Juan Carlos de Pablo, 1987, Argentine debt and macroeconomic instability, NBER Working paper, no. 2378, Sept.

Dornbusch, Rudiger and Stanley Fischer, 1986, Third world debt, Science 234.

Eaton, Jonathan, 1987, Public debt guarantees and private capital flights, World Bank Economic Review 1, 337–395.

Edwards, Sebastian, 1987, Structural adjustment policies in highly indebted countries, Mimeo (UCLA, Los Angeles, CA).

Frieden, Jeff, 1987, Winners and losers in the Latin American debt crisis, Paper presented at the Sept. 1987 meeting of the APSA.

Grossman, Herschel and John Van Huyck, 1989, Sovereign debt as a contingent claim: Excusable default, repudiation and reputation, American Economic Review 79, 1088–1097.
Haggard, Stephen, 1986, The politics of adjustment: Lessons from the IMF's extended fund facilities, in: Miles Kahler, ed., The politics of international debt (Cornell University Press, Ithaca, NY).
IMF, 1967–1986, Annual report on exchange arrangements and exchange restrictions (Washington, DC).
Ize, Alain and Guillermo Ortiz, 1987, Fiscal rigidities, public debt and capital flight, IMF Staff Papers, June, 311–332.
Kaufman, Robert, 1986, Democratic and authoritarian responses to the debt issue: Argentina, Brazil and Mexico, in: Miles Kahler, ed., The politics of international debt (Cornell University Press, Ithaca, NY).
Khan, Moshin and Naderi Ul Haque, 1986, Foreign borrowing and capital flight: A formal analysis, IMF Staff Papers 32, 606–628.
Persson, Torsten and Lars Svensson, 1989, Why a stubborn conservative would run a deficit: Policy with time-inconsistent preferences, Quarterly Journal of Economics, May, 325–345.
Sachs, Jeffrey, 1985a, Theoretical issues in international borrowing, Princeton Studies in International Economics.
Sachs, Jeffrey, 1985b, External debt and macroeconomic performance in Latin America and East Asia, Brookings Papers on Economic Activity 2, 523–573.
Tabellini, Guido and Alberto Alesina, 1989, Voting on the budget deficit, American Economic Review, forthcoming.