

# DO IMF PROGRAMMES STABILIZE THE ECONOMY?

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### **Abstract**

This paper adopts a political-economy standpoint to shed some light on the ongoing debate about IMF lending. From an instrumental variables approach, we analyse the determinants of IMF loans as well as its consequences on growth and economic stabilization. We make use of the instruments proposed by Barro and Lee (2003) and also put forward new ones based on membership on the UN Security Council. Our results do not find evidence of an impact of IMF assistance on economic growth. However, past Fund involvement appears to reduce the probability of future currency crises. Banking and twin crises also seem not affected by IMF aid.

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# 1 Introduction

The International Monetary Fund (IMF or the Fund) is responsible for ensuring the stability of the international monetary and financial system. However, during the last decade, it has come under increasing criticism. Several voices from political and academic environments cast doubt on how the IMF handles financial crises, especially the one that hit Asia at the end of the last century. Its approach to economic stabilization and the effects of IMF lending on economic growth are also issues under debate.

IMF programmes are designed to achieve multiple goals. Therefore, a comprehensive and fair evaluation of their consequences must account for the different dimensions they encompass.

There is a huge amount of literature dealing with the performance of IMF assistance. Some studies restrict their attention to the effects on economic growth. Others extend the analysis to take into consideration the impact on other macro-economic variables such as investment, current account balance, inflation, rule of law and so on. Outcomes on duration of crises, debt rescheduling and external funding catalyzing have also been addressed.

In all these cases the evidence is confuse and controversial. The wide extent of results range from very positive to very negative effects<sup>1</sup>. Different methodologies, sample periods, countries considered or failing to take into account the endogeneity associated with IMF programmes may explain this divergence.

The aim of this paper is to provide a consistent view of the impact of IMF lending by analysing its effects both on economic growth and on the probability of undergoing future currency, banking and twin crises. That is, we examine the extent to which IMF programmes help stabilize the external and financial sectors and how they enhance growth.

Therefore, we improve the credibility of an evaluation of IMF performance by broadening the scope under which Fund lending is assessed. We do so examining the extent to which participation in IMF programmes fulfills two of the most important objectives IMF funding is intended to achieve: economic growth and economic stabilization.

One main problem a researcher faces when measuring the consequences of IMF participation is building the counterfactual. That is, the result that would have arisen had the country not followed an IMF arrangement. This is by definition not observed. Different methods have been proposed to overcome this difficulty. For example, the with-without approach contrasts outcomes on programme countries with outcomes on non-programme countries, which serve as a control group; the before-after approach compares a country's performance before and after the programme. Both methods, however, often ignore systematic differences between countries and periods, and then provide a misleading evaluation of IMF loans.

We use a regression-based analysis to derive our results. This is the most

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<sup>1</sup>For a review of the literature concerning the impact of IMF policies on borrowing countries see Haque and Khan (1998), Bird (2001) or Joyce (2004).

promising method, once the problem of the endogeneity of IMF-related variables is adequately taken into account. We solve this issue through an instrumental variables approach<sup>2</sup>. This allows us to ensure causal interpretations of our results.

We run a parallel analysis applying two different sets of instruments, both derived from treating the Fund as a political institution that grants loans based not only on economic criteria, but also on the achievement of geopolitical goals.

First, we make use of the instruments proposed by Barro and Lee, 2003 (henceforth Barro and Lee). These are, country's quota at the IMF, number of nationals among the IMF staff and political proximity to the major shareholders of the Fund.

Second, we employ two new instruments not applied in this context thus far. Our suggestion is to use membership on the United Nations Security Council (UNSC). Taking into account that the value of serving on the Council (in terms of negotiating power) varies from year to year, we are able to outline an exogenous variation in IMF participation. This is done through media coverage.

We obtain mixed results. No clear pattern on the effects of IMF-supported programmes on economic growth emerges. In assessing stabilization, currency crises seem to be less likely after involvement in IMF arrangements. No evidence of a significant impact on financial and twin crises is observed.

The rest of the paper is organized as follows. Section 2 provides a brief political-economy description of the IMF and the UN Security Council, in order to set the background from which the instruments are derived. Section 3 gives theoretical insights on the events of currency, banking and twin crises, a major focus of this study. Section 4 presents the empirical approach. In Section 5 we describe the data and the construction of key variables used in the analysis. Section 6 presents the results. Finally, Section 7 concludes and outlines caveats and extensions.

## 2 Characteristics of the IMF and the UNSC

To understand the rationale behind the instruments proposed by Barro and Lee and those based on the UN Security Council, it is worth to describe briefly how voting power and the decision-making process are established in these organizations. A comprehensive discussion of the variables used as instruments is postponed for Section 4.

### 2.1 The International Monetary Fund

Nowadays, the IMF is (perhaps) the most important financial institution in the international arena. It comprises 184 countries, and its lending capacities have

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<sup>2</sup>Matching methods, or a variation of Heckman's (1979) estimator may also be suitable to deal with the selection problem in IMF participation. Nevertheless, Heckman's estimator is suited best when the selection variable is dichotomous, something that is not the case in all our measures of IMF participation.

increased over time. During the last decades, almost all of the developing countries have participated in IMF programmes. The few exceptions include Botswana, Kuwait and Malaysia.

The Fund is intended to stabilize the international monetary and financial system, to promote economic stabilization and prevent crises, to help resolve crises when they do occur and to foster economic growth and alleviate poverty.

For meeting these objectives, the Fund possesses both ex-ante and ex-post instruments. The former include surveillance and technical assistance, the latter are reflected mainly in IMF programmes.

An IMF supported-programme is a financial credit granted to a country to be disbursed in tranches conditional on the adoption of severe economic policies and the achievement of certain quantitative performance criteria. This process, known as conditionality, is possibly the most controversial issue of all IMF actions. Its core components are three: securing external financing, adopting demand restraining measures and undertaking structural reforms.

Especially since the East Asian crisis unleashed in 1997, the process of conditionality has been strongly criticized from a political and an academic point of view<sup>3</sup>. Among the critics, it is argued that the IMF imposes the same *type* of policy recommendations, regardless of the peculiarities of countries and regions; that its approach to economic stabilization is dogmatic and misguided; that it induces a moral hazard problem in international lending and that it undermines the democratic process in recipient countries by imposing policies.

Be that as it may, countries usually resort to IMF help in the event of balance of payments crises. Two are the Fund facilities aimed to restore situations of international reserves shortfalls: the Stand-By Arrangements (SBA) and the Extended Fund Facilities (EFF). These, along with the Supplemental Reserve Facility (SRF), which supplements resources to the SBA and EFF, constitute the focus of our analysis.

The SBA is designed to help countries face short-term balance of payments problems and are the most common IMF programmes. The length of a SBA is typically 12-24 months and repayment is normally expected within  $2\frac{1}{4}$ -4 years. The EFF was established in 1974 to help countries address long-term balance of payments problems requiring fundamental economic reforms. They usually last 3 years and repayment is normally expected within  $4\frac{1}{2}$ -7 years.

Other facilities not belonging to the General Resources Account (GRA) such as the Structural Arrangement Facility (SAF), the Enhanced Structural Adjustment Facility (ESAF) and its successor the Poverty Reduction and Growth Facility (PRGF) are granted to very low income countries on concessional terms<sup>4</sup>. Therefore, they must be interpreted more as foreign aid rather than international

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<sup>3</sup>See, for example, Sachs (1997), Feldstein (1998) or Stiglitz (2002).

<sup>4</sup>The GRA is the principal account of the IMF. It consists of a pool of currencies and reserve assets which represent the paid subscriptions of member countries' quotas. The regular lending operations of the IMF are financed through this account. Resources of the programmes that are given on concessional terms are taken from the Special Disbursements Account (SDA).

lending, so we do not consider them in our study.

Table 1 shows the arrangements approved for the period 1970-2006 as well as the average size of the programmes. During this period, a total of 833 loans were granted, of which more than 75 per cent were stabilization programmes. These peaked in the early 1980s with the Latin American debt crisis. Although the number of programmes decline thereafter, the average size soared during the East Asian crisis and years after with the turmoils in Brazil, Argentina and Turkey.

As of December 31, 2005, the IMF employed 1,999 professional and managerial staff (about two thirds of whom were economists) and 694 staff at the assistant level (IMF, 2006).

Voting power at the IMF is an increasing function of the quota a country pays upon joining the Fund. This quota is one of the most important resources to develop the IMF lending capacity.

Most of the decision-making process is carried out by the Executive Board (the Board). It is comprised by 24 directors, five of them appointed directly by the five major shareholders, *i.e.* United States (16.83 percent of total IMF quotas), Japan (6.04), Germany (5.90), France (4.87) and United Kingdom (4.87). Majorities at the Board usually require 85 per cent of the votes. This means that the US along with three Western European countries may exercise veto power<sup>5</sup>.

In fact, there is ample evidence that the United States control the Fund. Thacker (1999) shows that governments aligned with the US on key issues in the United Nations General Assembly (UNGA) are more likely to participate in IMF programmes. Woods (2003) clearly documents the US influence on IMF decisions. Dreher and Jensen (2007) shows that IMF conditions are less stringent for countries politically close to the US.

## 2.2 The United Nations Security Council

The UN Security Council is the primary organ of the United Nations responsible for the maintenance of peace and security. Indeed, it is the only body entitled to issue binding resolutions to the member states and to take military action.

It comprises 15 members, 5 of them serving permanently (these are: United States, China, France, United Kingdom and Russia). Each of the 10 non-permanent members serve a two-year term, which cannot be immediately renewed.

Being a member of the Council is not random. Countries must be nominated by a regional caucus and then obtain two thirds of votes in the UN General Assembly. Usually, this ballot takes place three months before the country starts serving (on first January each year).

According to Kuziemko and Werker (2006), there is extensive competition for each of the non-permanent seats, as countries expect benefits of their tenure at

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<sup>5</sup>The quota not only determines voting power, but also the resources a country may draw from the Fund. A country is entitled to take credit up to 25 per cent of its quota without entailing any discussion or policy. Further tranches must be disbursed under an IMF programme, which implies a process of conditionality.

the UNSC. A government may put its votes at the disposal of the permanent members in exchange of international aid. Actually, Kuziemko and Werker (2006) find that US aid increases by 54 per cent on average, and UN development aid by 7 per cent when a country serves in the Security Council.

This increase in international aid may be channelled through participation in IMF programmes. Eldar (2004) provides case studies of IMF rewarding on temporary members. Dreher et al. (2006) demonstrate the existence of a positive association between IMF participation and temporary UNSC membership.

### **3 Currency, banking and twin crises**

One primary motivation of this paper is to look at the relationship between IMF participation and the probability of undergoing future currency, banking and twin crises. In this section we succinctly outline theoretical insights on the events of balance of payments and financial distress.

#### **3.1 Currency crises**

Currency crises may be defined as large depreciations of the nominal exchange rate or sudden losses of international reserves. They can occur either in fixed or floating exchange rate regimes. They usually take the form of a speculative attack stemming from a loss of confidence in the prevailing exchange rate.

Models of the first generation of currency crises (Krugman 1979) considered speculative attacks as the inevitable outcome of ongoing fiscal unbalances coupled with a fixed exchange rate regime.

Second generation models emphasized self-fulfilling expectations as determinants of speculative attacks. These models underline the political costs of defending the peg, such as high unemployment or foregone output. Eichengreen, Rose and Wyplosz (1995) provides a review.

Third generation models are driven by the observation that recent currency turmoils are associated with crises in the financial sector (like in the East Asian countries in 1997). These situations, termed twin crises, are briefly discussed below.

The above mentioned models give insights about what may be the underlying causes of currency crashes. Frankel and Rose (1996) review the most relevant among them. Later on we provide a discussion of the determinants of currency crises when describing the variables included in the regressions.

#### **3.2 Banking crises**

Banks are financial intermediaries whose balance sheet presents a maturity mismatch. Assets are usually short and long-term loans to consumers and firms. Liabilities mostly refer to short-term deposits.

When the value of the assets falls behind the value of the liabilities, a bank is insolvent. If this situation extends to several other banks, a systemic banking crisis occurs. This may happen because bank's borrowers are unable to service their debt (credit risk).

Therefore, shocks that undermine borrowers' capability to honour repayments are leading factors of banking crises. Among them, output downturns, high inflation rates or high short-term interest rates are positively correlated with systemic banking problems. Also, financial liberalization has been found to be a key determinant of banking sector distress (Kaminsky and Reinhart, 1999). Demirgüç-Kunt and Detragiache (1998) provides an extensive discussion of these factors. We explain some of them in more detail when addressing the covariates incorporated in the regression analysis.

### 3.3 Twin crises

The coincidence in time between currency and banking crises is termed a twin crisis. The episodes of this type in the East Asian countries in the late 1990s drew renewed attention to this phenomenon. Nevertheless, these events were not new. Some Latin American countries experienced them during the 1980s.

Causality between currency and banking crises may run in either direction, although Kaminsky and Reinhart (1999) found that banking crises often precede situations of balance of payments distress<sup>6</sup>.

Literature has also pointed to common causes that may give rise to twin crises. Among the most important, we can mention: international illiquidity (Chang and Velasco, 1999), financial liberalization (McKinnon and Pill, 1996), exchange-rate based stabilization plans, recessions, deterioration in the terms of trade, overvaluation of the exchange rate and rising cost of credit (Kaminsky and Reinhart, 1999).

## 4 Empirical approach

In this section, we describe in detail the empirical approach used to obtain the results. First, we explain the rationale behind the two set of instruments included in the regressions. Then, an explanation of the endogenous variables considered, that is, the different measures of IMF participation, follows. Finally, a brief description of the linear probability model used to evaluate the impact of IMF lending on currency, banking and twin crises concludes.

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<sup>6</sup>For a brief review on the directions of causality between the banking sector and external crises see Kaminsky and Reinhart (1999) and Glick and Hutchison (2000).



## 4.1 Instruments considered

When performing regression methods to assess the consequences of IMF lending, an immediate problem arises. Financial support is often given to countries experiencing balance of payments difficulties. Henceforth, Ordinary Least Squares (OLS) estimates may not reflect the consequences of the funding, but of the underlying crisis itself. The opposite is also possible. Foreign aid may be granted to countries that are successful recipients of the funding, and then OLS estimates would be positive. Note that neither of these relations would be causal. An instrumental variables approach seems therefore convenient to account for the endogeneity associated with IMF programmes.

However, meeting the orthogonality condition is not an easy task. Variables correlated with IMF participation and orthogonal to any determinant of economic performance are needed to derive causal interpretations. Concerning this, two collections of instruments are employed in this paper.

First, we make use of the set of instruments proposed by Barro and Lee. These are: country's quota at the IMF, number of nationals among IMF staff and political proximity to the US and Europe<sup>7</sup>. These variables may arguably be uncorrelated with economic performance, while at the same time are relevant determinants of IMF lending.

Country's quota is intended to reflect economic size, which could bias the estimates. However, quota allocations are very persistent over time and revisions mostly take the form of equi-proportional increases in the total amount of quotas. Therefore, differences between economic power and quota allocations are very prevalent across countries, as Barro and Lee document.

The other three instruments may reflect institutional similarities with the US. This would result in stronger economic growth and more likely IMF funding. However, Hansen test statistics show that this is not the case. We go back to this point in Section 6.

And second, we propose the use of two new instruments. By means of the United Nations Security Council we can identify an exogenous variation in IMF participation. The rationale is as follows. Being a member of the Security Council enhances the opportunity a country has to influence international decisions. Specifically, countries serving on the Council may use its tenure to trade votes for aid, for example, through the IMF. The US may exert pressure over the IMF to grant favourable loans, while the recipient country may comply with US interests at the UNSC. Dreher, Sturm and Vreeland (2006) show empirically this result.

The problem is that, as already mentioned, serving on the Council is by no means exogenous. The process of election above described makes that countries

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<sup>7</sup>Actually, they employ two additional instruments: bilateral trade with the US and Europe. These are the most doubtful to satisfy the orthogonality condition, as trade may be a significant determinant of growth. Besides, we lack the data for our sample period. Finally, an incremental Sargan test conducted on these two variables provided a p-value smaller than 0.1, thus rejecting exogeneity of bilateral trade. For these three reasons, we skip the use of these instruments in our analysis.

with regional power or politically close to the US tend to serve more. This could be correlated with economic performance.

In order to achieve orthogonality, the key idea is to notice that the value of serving on the UNSC varies from year to year. Sometimes the Council undergoes discussions of great relevance, while some other the repercussion is minor. Hence, the benefits of being a non-permanent member must fluctuate along the lines of the political importance of the year in question. Moreover, as countries running for the Council start their campaigns well beforehand they actually get elected, there is no way of foreseeing the international political environment when serving. As a result, the value of taking part on the Council is exogenous.

We then derive two additional instruments. Following Kuziemko and Werker (2006), the first one proxies the relevance of the political situation by means of the number of *The New York Times* articles containing the words "United Nations Security Council". Specifically, we define an index of political importance as the ratio of each year's number of articles to the maximum number in our sample. The second is a country-specific measure of media coverage during the tenure. This is approached by the number of *The New York Times* articles with the words "(Name of country) United Nations Security Council" divided by the political importance of the year as measured before.

This last instrument is not as clear to be exogenous as the first one. Media coverage may not be exogenously given if countries decide to be more assertive in order to get loans from the Fund. However, a non-intuitive sign of this variable in the first-stage regression and a Sargan test guarantee that the orthogonality condition is fulfilled.

Employing these two instruments makes us change the sample under analysis. The framework is borrowed from Angrist and Evans (1998). Regressions are carried out on the group of non-permanent members of the Security Council during the years of tenure (and the year after, as terms are not immediately renewable, which allows us to include time dummies). Political importance and country media coverage are used as instruments for the IMF related-variables. From now on, we will refer to this group of countries as the UNSC sample.

It might be argued that the sample is not random. Nations politically far from the US do not take part as they are not *permitted* to serve on the Council. While this holds, heterogeneity between countries belonging to the sample is low. Therefore, we are able to obtain a pure causal effect of IMF aid, although the results are not generalizable.

## 4.2 Measures of IMF participation

We employ four different measures of involvement in IMF programmes. The first three are taken from Barro and Lee. The fourth one accounts for the size of IMF loans. A brief description (mostly taken from Barro and Lee) follows. Note that the non-linear models presented in this subsection are used to study the determinants of IMF loans (Tables 5, 6 and 8). When addressing the issue of the

impact of IMF lending on economic growth and financial crises, we follow a linear approach, *i.e.* we run Two Stage Least Squares (2SLS) regressions.

#### 4.2.1 IMF loan GDP ratio

It shows the ratio of use of Fund credit (that coming from the General Resources Account) to GDP. It proxies the level of indebtedness of a country (outstanding loans) with the IMF.

Since this variable has mass probability in zero and then is continuous for positive values, a tobit model is implemented when studying the determinants of IMF loans.

That is,

$$L_{it}^* = \alpha + \beta X_{it} + \gamma Z_{it} + \delta time_t + u_{it} \quad (1)$$

$$L_{it} = \max[0, L_{it}^*] \quad (2)$$

where  $L_{it}$  is the IMF loan GDP ratio,  $X_{it}$  denotes specific economic factors that influence the demand of IMF programs<sup>8</sup>, and  $Z_{it}$  is a vector containing the political variables which serve as instruments. Time dummies are included to control for common effects of external factors.

#### 4.2.2 IMF participation rate

It is defined as the fraction of months in a specific period in which the country operated under an IMF programme.

Again, as this variable is constrained between zero and one, a censored framework is suitable.

$$F_{it}^* = \alpha + \beta X_{it} + \gamma Z_{it} + \delta time_t + u_{it} \quad (3)$$

$$F_{it} = \min[1, \max(0, F_{it}^*)] \quad (4)$$

where  $F_{it}$  is the share of months in a period in which a country is under an IMF programme and the rest of variables are defined as before.

#### 4.2.3 IMF loan approval

It is a dichotomous variable which takes value one if an IMF programme is approved any time during a given period.

To account for the binary nature of this measure, a probit model is stated.

$$I_{it}^* = \alpha + \beta X_{it} + \gamma Z_{it} + \delta time_t + u_{it} \quad (5)$$

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<sup>8</sup>These include international reserves, GDP per capita growth, GDP per capita at the beginning of the period *et cetera*.

$$\begin{aligned} I_{it} &= 1 \text{ if } I_{it}^* > 0, \\ &= 0 \text{ if } I_{it}^* \leq 0 \end{aligned} \quad (6)$$

where  $I_{it}$  is approval of new loans and the rest of variables are defined as before.

#### 4.2.4 IMF size of programmes

It is the ratio of the amount of funding approved to GDP. Therefore, it takes positive values when an arrangement is signed. Since then onwards it is zero until a new programme is granted.

Yet again, a tobit model is proposed.

$$S_{it}^* = \alpha + \beta X_{it} + \gamma Z_{it} + \delta time_t + u_{it} \quad (7)$$

$$S_{it} = \max[0, S_{it}^*] \quad (8)$$

where  $S_{it}$  is the ratio of the size of the programme to GDP and the rest of variables are defined as before.

The impact of IMF lending on economic growth is estimated by Two Stage Least Squares (2SLS). Here also the covariates mimic Barro and Lee<sup>9</sup>.

The effects of IMF aid on currency, banking and twin crises are also estimated by 2SLS. We pose a linear probability model that is briefly outlined in the next subsection.

### 4.3 Linear probability model

Although the dependent variable *crisis* is binary, the linear probability model may be a good approximation of the underlying response probability:

$$P(\text{crisis} = 1 \mid \mathbf{x}) \quad (9)$$

for common values of the vector of covariates  $\mathbf{x}$ . Indeed, it often gives good estimates of the partial effects on the response probability near the center of the distribution of  $\mathbf{x}$ .

The specification of the linear probability model is as follows:

$$P(\text{crisis}_{it} = 1 \mid \mathbf{x}) = \beta X_{it} + \gamma IMF_{it-1} + \delta time_t + \lambda c_i + \varepsilon_{it} \quad (10)$$

where  $\text{crisis}_{it}$  is either a currency, banking or twin crises in period  $t$  in country  $i$ ,  $X_{it}$  are (exogenous) determinants of these crises (containing a constant) and  $IMF_{it-1}$  is a lagged measure of IMF participation. We include time and country

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<sup>9</sup>A measure of schooling and the growth rate of the terms of trade, which are included in Barro and Lee, could not be used because of data availability.

dummies to control for external aggregate effects and fixed heterogeneity, respectively.

The choice of the explanatory variables included in the regressions reflects the literature as well as data availability. For currency crises, we include the growth rate of per capita GDP and the total domestic credit to account for possible speculative attacks. To control for external variables, we add international reserves and the share of external debt to GDP. Debt composition is proxied by total debt service, share of short-term debt, portfolio investment and Foreign Direct Investment.

Determinants of banking crises are the following. Per capita GDP growth rate and real interest rates measure the economic performance of bank borrowers. Inflation may proxy macroeconomic misconduct. Financial liberalization is captured by the domestic credit to the private sector and by the real change in total domestic credit (following Demirgüç-Kunt and Detragiache, 1998, we introduce one and two lags of this variable). The ratio of M2 to reserves gauges the foreign currency backing of the short-term domestic currency liabilities of the banking sector. To capture liquidity, we include the ratio of bank liquid reserves to bank assets. Finally, to test the extent to which financial distress may be the cause of excessive foreign exchange rate exposure, we add the rate of depreciation of the exchange rate.

As for twin crises, we include the significant determinants of currency and banking crises and then drop those that were clearly not significant. Recessions, losses of reserves and financial liberalization seem to lead to twin crises as we show below.

## 5 Data

Data were compiled on an annual basis from 1975 to 2003. The sample covers 130 countries, although this magnitude varies between regressions because of data availability. Both industrialized and developing countries are considered. Appendix A lists the countries included in the regressions as well as those which comprise the UNSC sample.

In order to eliminate the incidence of the business cycle, data are rearranged in five-year averages to estimate the growth regressions as well as the determinants of IMF loans. The analysis of the impact on currency, banking and twin crises is performed with annual observations, but the IMF-related variables are moving averages of the previous three years. This accounts for the fact that the effects from IMF participation may take time to emerge.

When performing regressions uniquely for the UNSC sample, the determinants of IMF loans employ data on an annual basis. Country-year observations are also used when performing the growth regressions for the UNSC sample. In this case, however, the dependent variable as well as the covariates (except the IMF-related variables) represent the average value of the variable for the next five years in

order to fit better the timing of the consequences of IMF involvement.

Most of the variables are taken from the International Financial Statistics Cdrom (IFS April 2004), the World Development Indicators (2005) and the Barro and Lee (2003) dataset, extended to match the sample period of this study. Appendix B gives details of the definition and source of each variable.

As already stated, we only consider those IMF programmes aimed at solving balance of payments problems, namely Stand By Arrangements and Extended Fund Facilities.

Political proximity to the major shareholders of the Fund is proxied by means of voting patterns in the UN General Assembly. We create an index ranging from zero (no coincidence in any vote) to one (full coincidence). This index takes into account abstentions and absences<sup>10</sup>. For each country, we calculate political proximity to the US and Europe (simple average of the index values for Germany, France and United Kingdom)

Currency crises are dated using *large* changes in the country-specific monthly Currency Pressure Index proposed by Kaminsky and Reinhart (1999). This takes the form:

$$I = \frac{\Delta_e}{e} - \frac{\sigma_e}{\sigma_R} \frac{\Delta_R}{R} \quad (11)$$

where  $\frac{\Delta_e}{e}$  is the rate of change of the nominal exchange rate,  $\frac{\Delta_R}{R}$  is the rate of change of the international reserves and  $\sigma_e$  and  $\sigma_R$  are the standard deviations of the rates of change of the exchange rate and the reserves, respectively.

This index is a weighted-average of exchange rate changes and reserves changes with weights such that the two components of the index have equal sample volatilities. This incorporates the fact that countries may resort to either devaluations or interventions in the currency market to fight a speculative attack due to, for example, different exchange rate regimes. Therefore, the index gives more weight to the component of less variation. A limitation is that interest rates are not considered. Countries may sharply rise interest rates to restore confidence in the domestic currency and this is not taken into account. Monthly data on interest rates is poor for developing countries.

Crisis are defined as values of the index greater than the mean plus 2.5 standard deviations. A crisis is dated in a given year if the condition is satisfied for any month of that year. Following Kaminsky and Reinhart (1999), the sample is divided to account for periods of hyperinflation (those in which prices increase more than 150 per cent in 6 months). A different country-specific index is calculated for each subsample.

Finally, for the purposes of not following the same currency crisis across years, we impose a 24-month window. Once a crisis is dated, identification of new crises

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<sup>10</sup>It gives value 1 if the country of interest votes *yes* or *no* and the country votes the same, 0 if it votes the opposite and 0.5 if it abstains. For each year, the sum is divided by the number of times in that year that the country of interest voted *yes* or *no*. Literature has considered other possibilities. For example, Thacker (1999) only accounts for votes coded as "key" by the US State Department. See Dreher and Sturm (2006) for a discussion.

only starts two years after that episode. Monthly observations in between are considered part of the same currency turmoil.

Identification of banking crises is more difficult because of data limitations. Actually, there is no consensus among experts about a list of banking sector distress for annual data. This is due to several reasons. Financial crises may respond to different factors, and not all of them need to be present. These factors are not directly observable, and once a bank-run or a large public intervention occurs, this situation is likely to be preceded by a continuous deterioration in banking assets. Indicators of the quality of assets of the banking system are usually lacking.

Therefore, most studies stress events and expert opinions for dating episodes of financial sector distress. Closures, mergers, bank-runs or large-scale government interventions are usually focused.

We use the criteria of Caprio and Klingebiel (2003) to identify banking crises, which is widely used in literature. If these authors document an episode of financial turbulence, it is included in our sample. Both systemic and borderline financial crises are considered.

Twin crises are defined as banking crises associated with currency turmoils one year before, the same year or one year after. We depart from alternative definitions of twin crises as that of Kaminsky and Reinhart (1999). They consider that a twin crisis occurs when a balance of payments crisis follows the beginning of a banking crisis within the next 48 months. As we mentioned, causality from banking to currency crises can be of either direction. Therefore, a currency distress episode may precede or succeed a financial crisis.

## 6 Results

We now turn to the main findings of our study. In this section, we first give descriptive results of the crises we identify in our sample. Secondly, we analyze the determinants of IMF lending, focusing on the significance of its political dimension. That is, we estimate the models of equations (1) to (8) for the full and UNSC samples. Then, we address the impact of IMF assistance on economic growth accounting for the two sets of instruments described above. Finally, we evaluate the extent to which IMF programmes affect the probability of undergoing future currency, banking and twin crises.

### 6.1 Descriptive analysis of currency, banking and twin crises

Table 2 shows the number and frequency of currency, banking and twin crises we identify according to our definitions<sup>11</sup>. We also disaggregate the data in five-year intervals. For a sample of 103 industrialized and developing countries during the

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<sup>11</sup>See Appendix C for a complete list of the crises in our sample.

period 1976-2002 (those for which observations for both banking and currency crises exist), we document 216 currency crises, 122 banking crises and 51 twin crises. That is, balance of payments crises are twice as frequent as banking crises. Of the 122 episodes of financial distress, 41 per cent of them correspond to a twin crisis.

Observe that the number and frequency of banking crises have increased along with financial liberalization. Twin crises have also risen in step with bank difficulties. Currency crises have been more steady across time although also peaked at the beginning of the 1990s with the turmoil of the European Monetary System.

A geographic distribution of financial and external distress is displayed in Table 3. Currency crises have been pervasive in Europe and Africa in the early 1990s, in Latin America in the 1980s (debt crisis), and in Asia in the late 1990s (East Asian crisis).

Disorder in the banking sector has been more prevalent in developing and emerging economies than in industrialized countries. Twin crises show a similar pattern. Note the high frequency of twin crises in Asia during the period 1995-1999. Although this is a remarkable figure, twin crises were not an unknown event, as Europe and Africa in the early 1990s and Latin America in the 1980s document.

Table 4 presents frequency statistics on the relationship between IMF programmes, banking and currency crises. Notice that the frequency of banking crises associated with currency crises is greater than the frequency of currency crises accompanied by banking crises. The cumulative frequency for these events show the percentage of times a banking crisis in year  $t$  is related to a currency crisis either in  $t - 1$ ,  $t$  or  $t + 1$  and vice versa. For banking crises, this figure is 43 per cent, whereas for currency crises is only 24 per cent.

In our sample, a banking crisis in year  $t$  is coupled with a contemporaneous balance of payments crisis 15 per cent of the time, and also 15 percent of the time with a currency crisis in  $t + 1$ . However, only 13 per cent of the time a banking crisis in  $t$  is preceded by a currency crisis in  $t - 1$ . This provides weak evidence that episodes of financial distress tend to lead currency turmoils. This result also arises in Kaminsky and Reinhart (1999) and Glick and Hutchison (2000).

As for IMF programmes, in 27 per cent of the cases an IMF arrangement responded to a balance of payments crisis in  $t - 1$  or  $t$ . Only in 6 per cent of the occasions, an IMF loan granted in year  $t$  was followed by a currency crisis one period after.

The relationship between contemporaneous currency crises and IMF programmes is more indicative. More than four out of ten currency crises in year  $t$  were followed by an IMF agreement either in  $t$  or  $t + 1$ . That is, although not all episodes of currency turmoils prompt an IMF programme, the frequency is rather high.



## 6.2 Determinants of IMF loans

We estimate the models described in equations (1)-(8) in order to check for the significance of the political dimension of IMF lending. Tobit and Probit models are applied to the panel data allowing for within-country correlation of the error terms over time. Covariates included mimic those of Barro and Lee for the purposes of comparison. Remember that data are five-year averages.

Table 5 presents the results. Each column corresponds to a different model. The four measures of IMF participation are regressed against factors that determine the demand of Fund assistance as well as the political variables.

Per capita GDP growth and international reserves have significant negative coefficients in all specifications. These reflect the fact that weak fundamentals lead to IMF help.

There seems to be a non-linear relationship between per capita GDP and IMF participation as the coefficient on the level is significantly positive whereas on the square is significantly negative. Thus, IMF support initially increases with per capita GDP and later on decreases. Coefficients of the second column indicates that the turning point takes place at \$3339 (US dollars 2000), which is above the sample median (\$1682). However, it is below the sample mean (\$5806), for which the estimated effect is therefore negative.

The political variables are jointly significant in all specifications. This can be seen from the p-value at the bottom of the table, which reflects the significance level associated with a test of the null hypothesis that the estimated coefficients of these variables are jointly equal to zero<sup>12</sup>. They have positive and in cases individually significant coefficients, except those of political proximity to Europe, which are always not statistically different from zero. However, when political proximity to the US is excluded from the regressions, it turns positive and individually significant. Therefore, bigger quota at the IMF, more nationals among the IMF staff and closer political views with the major shareholders of the Fund increase significantly IMF assistance.

These results mirror those of Barro and Lee. However, slight differences arises. The coefficients of IMF staff and quota are roughly of the same order of magnitude, but political proximity to the US seems to play a bigger role in our findings (the estimated coefficients are greater and more significant than those found by Barro and Lee). On the contrary, these authors find a positive and individually significant effect of political similarity to Europe. In any case, conclusions are the same. Political motivations seem relevant to explain how IMF lending decisions are taken.

Table 6 considers additional possible determinants of IMF loans. Some of them have been studied in previous research, as for instance Conway (1994) and

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<sup>12</sup>We also report the R-squared and the number of observations and countries for each regression. Missing R-squared refers to negative values of this statistic. This does not make sense but may happen because of computational issues. For Tobit models, it is calculated as a ratio of likelihoods. For 2SLS, the Residual Sum of Squares is not constrained to be smaller than the Total Sum of Squares.

Przeworski and Vreeland (2000). Each additional lagged covariate is included one at a time to the regressions of Table 5.

We find evidence that total debt service is a significant regressor in explaining IMF funding. Also, a decline in Foreign Direct Investment seems to lead to more IMF participation.

A larger ratio of external debt to GDP as well as a decline in the quality of the legal system (rule of law) increase the size of IMF loans. Current account deficits and expansionary domestic credit significantly augment the IMF loan to GDP ratio.

Finally, once per capita GDP and reserves are accounted for, we find that inflation, international openness, quality of the democratic institutions and the share of short term debt are not significant economic determinants of IMF participation.

In order to analyse further the political motivations underlying IMF decisions, we address the question whether service on the UN Security Council leads to increasing participation in IMF programmes.

This is done in Table 7, where we compare sample averages of the distinct measures of participation for membership and non-membership country-year observations. To test if the sample averages are statistically different, we perform equal mean  $t$  tests allowing for unequal variances.

For each measure of participation, the first column of the  $t$  test stands for the p-value associated with the null hypothesis that the sample mean is statistically not different from the sample mean of non-membership (for the first three lines) or other non-member years (for the next four lines). Note that other non-member years denote non-membership periods excluding the year before and after service. The second column compares the sample mean of one year before and after membership with the two years of tenure. A p-value greater than 0.1 means that the two sample means are not statistically different.

Looking at the results, we see that countries participate more during membership years (p-value equals 0.033) in comparison to non-membership periods.

IMF loan approvals are of greater frequency during Council tenures in contrast with other non-member years. There is no statistical difference between IMF new arrangements for one year before and after membership compared to other non member years (p-values greater than 0.5).

Participation increases the year before membership and during the term, whereas it declines the year after. We find no statistical evidence that the Council leads to IMF programmes of bigger size, perhaps only marginally the two years of tenure (p-value equals 0.113).

When focusing only in non-permanent members of the Council, participation in IMF programmes is not statistically different during the tenure compared to the year before and after service. The p-values of the last column illustrate this result.

To end this subsection, we perform the same analysis of Table 5 but for the UNSC sample. That is, we check the relevance of the second set of instruments considered. Estimates are shown in Table 8. Note that this regressions utilize

annual data (country-year observations) rather than the five-year averages used in Table 5.

As can be seen, political importance of the year when serving is positive and statistically significant in three out of four specifications. That is, years of diplomatic relevance significantly help approve more and bigger loans.

Interestingly, country media coverage enters with a significant negative sign. Hence, countries which are less in the news seem to exert more influence on IMF decisions. Perhaps, media target those nations which are ex-ante aligned with the permanent members of the Council. Governments rewarded with IMF programmes, therefore, have smaller presence in public opinion.

The p-values below show that both instruments are jointly significant except for the IMF loan GDP ratio. Therefore, they constitute an exogenous and relevant variation in IMF participation. Then, we use both as instruments to account for the impact of IMF lending on economic growth.

### 6.3 Growth regressions

We investigate now the effects of IMF aid on economic growth. To account for the endogeneity of IMF programmes, we instrument them by means of the political variables described in Section 4. We repeat the analysis for the UNSC sample, using as instruments the political importance of the year when serving and the country media coverage, as above stated.

In Table 9 we show the results of regressing the rate of growth of per capita GDP on (exogenous) covariates and the IMF-related variables. We consider different specifications by combining contemporaneous, lagged and different measures of IMF participation.

Columns (i) to (vi) treat IMF assistance as exogenous, whereas columns (vii) to (xii) instrument it with current and lagged values of the political variables. In all the regressions we instrument the log of per capita GDP, investment and consumption with lagged values of themselves. Inflation is instrumented with dummies of colonial past. This is done because these covariates are the most likely to be affected by the IMF variables. Hence, we must instrument them in order to account for potential simultaneity.

P-values displayed below show the significance level associated with a test of the null hypothesis that the estimated coefficients of the included IMF variables are jointly equal to zero. P-values (contemporaneous) have the same meaning but excluding lagged IMF covariates.

The coefficients obtained when the IMF-related variables are treated as exogenous (columns (i) to (vi)) are negative and significant for the contemporaneous measures of IMF participation. This result is likely to reflect the fact that some IMF programmes are given to countries facing a crisis or an economic downturn, as already discussed. Lagged values are not significant.

However, when the endogeneity of the IMF variables is tackled, results change dramatically, as can be seen in columns (vii) to (xii). 2SLS coefficients of the cur-

rent IMF variables are positive and statistically not different from zero. Therefore, there is no evidence that involvement in IMF programmes is harmful to economic growth.

This result differs substantially from that of Barro and Lee. They find a significant negative effect of the IMF participation rate on per capita GDP growth. Given that the approaches are very similar, this difference is rather surprising.

However, several reasons may explain this discrepancy. First, the sample of countries diverges. Barro and Lee consider only developing countries, while our emphasis is on a sample of industrialized and developing nations (those listed in Appendix A). Second, the estimation method is slightly distinct: 2SLS as opposed to 3SLS. Third, we abstract from using as instrument bilateral trade, which is rejected by an incremental Sargan test (see footnote 7). Finally, and perhaps essential, we include time and country dummies, whereas Barro and Lee only add time dummies. Actually, when regressions of Table 9 are carried out without country fixed effects, 2SLS estimates are negative, although not statistically significant. In any case, controlling for country heterogeneity seems crucial to isolate the effect of IMF participation on per capita GDP growth.

There is the concern that the no significance found in the endogenous regressors might be due to a problem of weak instruments. To check that, we conduct OLS regressions of the IMF variables on the political instruments alone and then examine the R-squared. This is done in order to assess how much of the variation of the former is explained by the latter. Results are: 0.17 for IMF loan GDP ratio, 0.26 for IMF participation rate, 0.32 for approval of new loans and 0.14 for IMF size of loans. Therefore, it appears that weak instruments is not the issue behind the imprecise estimates.

Table 10 contains the same regressions of Table 9 except that we substitute the IMF loan GDP ratio and the IMF participation rate for IMF loan approval and IMF size of programmes. We only report the estimates of the IMF covariates when these are instrumented through the political variables, as the coefficients when treated as exogenous are similar as those showed in columns (i) to (vi) of Table 9.

2SLS regressions also provide the same conclusions derived from Table 9. Coefficients of the IMF variables are positive but highly not statistically significant. Lagged values are also of no importance.

We now turn to the alternative set of instruments considered. For the observations corresponding to the UNSC sample, we perform 2SLS growth regressions using as instruments the variables based on *The New York Times* articles.

Table 11 presents the results. Columns (i) to (vi) treat IMF participation as exogenous, whereas columns (vii) to (xii) use as instruments the political importance and the country media coverage.

Columns (i) to (vi) show that estimates are positive although not significant for IMF participation rate and IMF loan approval. This result is the opposite of that found in Table 9, where coefficients were negative and significant. Therefore, for the UNSC sample, it seems that IMF loans do not respond to economic crises,

but to other motivations like signaling or catalyzing external funding. Countries serving on the UN Security Council seem to be "good" recipients of IMF funding, in the sense that they enhance economic performance when they receive those funds.

The coefficient of IMF size (contemporaneous and lagged) is however negative, although still not significant. Then, higher amount of lending goes to countries facing economic downturns. This result, unlike the one of approval and participation, is in line with the one obtained for the full sample of countries.

Causal relationships must be derived from the 2SLS estimates found in columns (vii) to (xii). When instrumenting the IMF-related variables, coefficients for participation rate and IMF loan approval turn negative, although not significant (p-values are 0.12 and 0.1, respectively). Therefore, there is weak evidence that involvement in IMF programmes could hinder growth, although this finding is not conclusive. Perhaps with more observations a clearer pattern would emerge<sup>13</sup>.

Finally, we address the issue of the compatibility of the instruments. As the variable political importance seems clearly exogenous, it is worth to test the compatibility of the rest of instruments to ensure that the orthogonality condition is satisfied. We perform two Hansen J tests, one for the variables based on *The New York Times* articles, and then another one adding the political variables. In all specifications, compatibility is not rejected.

In short, we do not find evidence that IMF lending affects growth, at least in a direct way. When taking the whole sample (with country fixed effects) the effect is positive. Restricting to the UNSC sample, it turns negative. In both cases coefficients are not statistically different from zero.

## 6.4 Impact on currency, banking and twin crises

We evaluate the outcomes of IMF lending in stabilizing the external and financial sectors by estimating the linear probability model described in equation (10). We perform 2SLS regressions, using as instruments the political variables. Data are arranged on an annual basis but the IMF loan GDP ratio and IMF size of programmes represent moving-averages of the previous three years, the spell of time a characteristic programme lasts. IMF loan approval and IMF participation rate refer also to the preceding three years. This accounts for the fact that the effects from IMF participation may take time to emerge.

Note that, after a crisis, the behaviour of some of the explanatory variables is likely to be affected by the crisis itself. Hence, we must eliminate those observations from the sample. For currency and twin turmoils, we drop the two years following the crisis. For financial distress, we remove every year of continuing

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<sup>13</sup>We also test the relevance of the two instruments by doing OLS regressions of the IMF variables on the two instruments alone. R-squared for the different measures of IMF participation turned to be: 0.06 for IMF loan to GDP ratio, 0.18 for IMF participation rate, 0.09 for IMF loan approval and 0.02 for IMF size of loans. Therefore, there may be an issue of weak instruments for some endogenous covariates

banking crisis, except the onset year. P-values shown at the bottom of the tables have the same interpretation as in the growth regressions.

We start with the estimation of the linear probability model for currency crises, presented in Table 12. The (exogenous) covariates have the expected sign. We find that economic downturns, declining reserves, high indebtedness, a greater amount of short-term debt and poor Foreign Direct Investment increase significantly the probability of future balance of payments problems.

As for the IMF-related variables, 2SLS coefficients are negative and statistically significant, except those of IMF size of programmes. Therefore, greater involvement in IMF arrangements appears to significantly reduce the probability of future currency turmoils. The Fund, then, may succeed in avoiding episodes of currency market turbulence. It is participation itself what seems to matter and not the amount of lending granted.

The estimation of the effects of IMF assistance on banking crises is shown in Table 13. We find that a decline in the growth rate of per capita GDP rises the probability of financial sector distress. High real interest rates and raising ratios of M2 to reserves also lead to financial turmoils. Finally, augmenting rates of change of the domestic credit precede episodes of troubles in the banking sector. Nevertheless, this effect takes time to materialize.

Participation in IMF programmes appears to have no impact. 2SLS estimates are found to be negative, but unlike those of currency crises, they are not statistically different from zero.

Results for twin crises are presented in Table 14. We find that recessions, losses of international reserves and expansionary domestic credit are significant determinants of twin crises. The rest of covariates are statistically not different from zero.

No evidence is found on a genuine impact of IMF participation on twin crises. Coefficients are positive and highly not significant, as can be seen from the p-values below.

Finally, we also estimate the linear probability model for the UNSC sample (not reported). Due to the small sample size (we lack sizeable data for most covariates) the estimation is not precise enough and no coefficient is found to be significant. In any case, for currency and twin crises the coefficients of the IMF-related variables do not switch sign. For banking crises, 2SLS estimates of the measures of participation become positive.

## 7 Conclusions

Starting from the political-economy approach to the IMF proposed by Barro and Lee, we address the issue of how IMF assistance affects economic performance. Specifically, we analyse the determinants of IMF lending and then, the successfulness of Fund programmes in enhancing economic growth and stabilizing the external and financial sectors.

From an instrumental variables standpoint, we also provide a new framework to derive an exogenous variation in IMF lending. Two additional instruments are proposed. Taking the sample of non-permanent members of the UN Security Council, IMF variables may be instrumented with the political importance of the membership years as well as with the country's media coverage during the term. These variables satisfy the conditions of relevance and orthogonality.

Geopolitical motivations seem to underlie IMF decisions. We find that greater voting power at the Fund, more nationals among the IMF staff and increasing political proximity to the US improve the number and size of IMF programmes. This confirms Barro and Lee's results. Moreover, we find that agreements are more frequent when countries serve on the UN Security Council. Also, participation increases the year a country is elected and decreases the year after the term. Of the non-permanent members of the Council, those whose tenure matched years of key diplomatic events obtained more and larger IMF loans.

There is no clear pattern on the effects of IMF lending on economic growth. This is in disagreement with Barro and Lee's findings. Involvement in IMF programmes does not appear to significantly reduce or increase growth. Several reasons may explain this controversy. Different time periods, countries considered, methodology or the account for fixed heterogeneity could be some of them.

The probability of future currency crises seem to fall after involvement in IMF programmes. Also financial sector distress is less likely after countries operate under IMF programmes. However, this last result is not statistically significant. No evidence is found on an impact of IMF lending over future twin crises.

Therefore, results are somewhat mixed. The Fund appears to success in preventing balance of payments crises, but countries do not benefit from increasing economic growth. Nevertheless, these conclusions must be nuanced. We are considering direct effects, but Fund assistance may improve several economic factors which may influence growth in an indirect way. Saving rates, debt rescheduling, institutional reform and so on could be enhanced by IMF involvement and simultaneously exert positive benefits in living standards.

Fund assistance, consequently, must be assessed in several dimensions, as it does not pursue a unique goal. Also, discrimination among the countries by their degree of compliance could lead to a more accurate view of the effects of IMF programmes. In addition, differentiation should be put in place among distinct type of borrowers as outcomes of IMF funding may differ substantially for very low income countries in comparison to emerging economies. Non linear models to account for the dichotomous nature of the variable crisis could determine quantitatively the impact of the IMF stabilization process. Finally, larger databases may exploit to a greater extent the exogeneity introduced by the sample of non-permanent members of the UN Security Council.

These caveats provide useful insights to enlarge the scope under which IMF lending is appraised and suggest useful extensions. A meticulous building of the counterfactual for IMF assistance, the use of adequate instruments to solve the endogeneity problem, a careful accounting of country heterogeneity and a broad

view on the different objectives encompassed in IMF programmes seem crucial to evaluate IMF aid.

Although this work provides some results to shed some light on this debate, further research needs to be done. Until then, the question whether IMF programmes stabilize the economy seems to remain an open one.



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**Table 1. Arrangements approved during financial years ended April 30, 1970-2006**

Number of programmes (Average size of programmes, in millions of SDRs)						
Period	Stabilization programmes			Structural programmes		
	SBA	EFF	SBA & EFF	SAF	ESAF/PRGF	SAF & PRGF
1970-1974	82 (59.91)		82 (59.91)			
1975-1979	83 (97.00)	7 (270.71)	90 (110.51)			
1980-1984	116 (176.90)	26 (872.77)	142 (304.31)			
1985-1989	90 (156.86)	3 (425.67)	93 (165.53)	29 (50.17)	7 (136.43)	36 (66.94)
1990-1994	79 (189.54)	12 (1206.58)	91 (323.66)	8 (16.25)	27 (122.56)	35 (98.26)
1995-1999	61 (1107.28)	20 (1454.85)	81 (1193.10)	1 (182.00)	49 (128.98)	50 (130.04)
2000-2004	46 (2420.74)	7 (1052.43)	53 (2240.02)		53 (111.04)	53 (111.04)
2005-2006	11 (865.82)	1 (9.00)	12 (794.42)		15 (186.73)	15 (186.73)

Source: IMF Annual Report 2006 (Appendix Table II.1)

Stabilization programmes refer to those which belong to the General Resources Account (GRA). SBA stands for Stand-By Arrangement and EFF for Extended Fund Facility. Structural programmes are granted on concessional terms. SAF is Structural Arrangement Facility, ESAF is Enhanced Structural Arrangement Facility and PRGF is Poverty Reduction and Growth Facility, which replaced the ESAF in 1999.

**Table 2. Number and frequency of banking, currency and twin crises**

	1976-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2002	1976-2002
Currency crises							
Number	24	44	40	66	29	13	216
Frequency*	6.11	8.71	7.97	12.89	5.78	4.74	8.04
Banking crises							
Number	7	23	32	38	18	4	122
Frequency*	1.72	4.47	6.21	7.38	3.50	1.29	4.40
Twin crises							
Number	3	9	9	17	11	2	51
Frequency*	0.74	1.75	1.75	3.30	2.14	0.65	1.84

\* Number of crises divided by the total sum of country-year observations for the period

Analysis performed for the countries in the sample with both observations for currency and banking crises

**Table 3. Frequency of banking, currency and twin crises. Geographic distribution**

	1976-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2002	1976-2002
Currency crises							
Industrialized	11.36	10.00	3.64	16.36	3.00	2.94	8.51
Africa	3.42	6.84	6.81	15.98	4.69	4.39	7.40
Asia	5.77	10.00	4.29	8.57	15.71	7.14	8.82
Latin America	4.21	10.00	16.38	8.13	4.00	5.33	8.26
Banking crises							
Industrialized	2.27	3.41	6.82	7.95	0.00	0.00	3.03
Africa	1.30	3.59	7.18	9.23	3.59	0.00	4.57
Asia	0.00	5.71	7.14	5.71	7.14	2.38	5.08
Latin America	2.00	6.40	4.80	7.20	4.80	4.00	5.04
Twin crises							
Industrialized	0.00	0.00	0.91	4.55	0.00	0.00	1.01
Africa	0.65	2.56	1.54	4.10	2.05	0.00	2.00
Asia	0.00	0.00	1.43	1.43	7.14	2.38	2.14
Latin America	1.00	2.40	2.42	2.40	1.60	1.33	1.93

Analysis performed for the countries in the sample with both observations for currency and banking crises

**Table 4. Relationship between IMF programmes, banking and currency crises**

		Frequency of accompanying currency crises			
	Number	$t - 1$	$t$	$t + 1$	Cumulative frequency <sup>a</sup>
Banking crisis $t$	121	0.13	0.15	0.15	0.43
		Frequency of accompanying banking crises			
	Number	$t - 1$	$t$	$t + 1$	Cumulative frequency <sup>b</sup>
Currency crisis $t$	216	0.09	0.08	0.07	0.24
		Frequency of accompanying currency crises			
	Number	$t - 1$	$t$	$t + 1$	Cumulative frequency <sup>c</sup>
IMF programme $t$	411	0.13	0.14	0.06	0.27
		Frequency of accompanying IMF programmes <sup>d</sup>			
	Number	$t - 1$	$t$	$t + 1$	Cumulative frequency
Currency crisis $t$	256	0.11	0.23	0.20	0.43

<sup>a</sup>Frequency with which a banking crisis in year  $t$  is accompanied by a currency crisis in year  $t-1$ ,  $t$  or  $t+1$

<sup>b</sup>Frequency with which a currency crisis in year  $t$  is accompanied by a banking crisis in year  $t-1$ ,  $t$  or  $t+1$

<sup>c</sup>Frequency with which an approval of an IMF programme in year  $t$  is accompanied by a currency crisis in year  $t-1$  or  $t$

<sup>d</sup>Frequency with which a currency crisis in year  $t$  is accompanied by a new IMF programme in year  $t$  or  $t+1$

**Table 5. Determinants of IMF lending**

	<i>Dependent variable</i>			
	<i>Loan GDP ratio</i>	<i>Participation</i>	<i>Approval</i>	<i>Size</i>
GDP per capita growth (lagged)	-0.158 (0.058)***	-2.826 (0.880)***	-4.847 (2.188)**	-0.149 (0.068)**
International reserves	-0.004 (0.001)***	-0.039 (0.016)**	-0.093 (0.035)***	-0.004 (0.001)***
GDP per capita	0.0003 (0.002)	0.070 (0.036)*	0.149 (0.079)*	0.008 (0.003)***
GDP per capita squared	-0.0002 (0.0002)	-0.010 (0.003)***	-0.024 (0.007)***	-0.001 (0.0002)***
Log GDP	-0.015 (0.013)	-0.005 (0.137)	-0.012 (0.296)	-0.025 (0.013)*
Log GDP squared	-0.0003 (0.0006)	0.003 (0.007)	0.003 (0.015)	0.001 (0.001)
OECD	-0.018 (0.013)	-0.359 (0.198)*	-0.710 (0.424)*	-0.019 (0.015)
Log share of quota	0.005 (0.002)**	0.045 (0.068)	0.161 (0.140)	0.021 (0.007)***
Log share of staff	0.030 (0.012)**	0.038 (0.026)	0.084 (0.058)	0.003 (0.002)
Log political proximity to US	0.027 (0.001)***	0.439 (0.172)**	0.958 (0.386)**	0.022 (0.012)*
Log political proximity to Europe	-0.022 (0.016)	-0.138 (0.279)	-0.521 (0.521)	0.008 (0.020)
P-value	0.004	0.029	0.022	0.006
Pseudo R-squared		0.272	0.274	
Observations	657	657	657	657
Number of countries	126	126	126	126

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Time dummies included (not reported)

The table shows the estimation of the models described in equations (1) to (8) in order to account for the significance of the political dimension of IMF lending. Data are five-year averages of the periods 1975-1979, 1980-1984, 1985-1989, 1990-1994, 1995-1999 and the four-year period 2000-2003. Each column corresponds to a different measure of IMF participation. For IMF loan GDP ratio, IMF participation rate and IMF size of programmes, a Tobit model to the panel data is applied. For IMF loan approval, a Probit model is considered. The estimation allows for within-country correlation of the error terms over time. The p-value represents the significance level associated with a test of the null hypothesis that the estimated coefficients of the political variables are jointly equal to zero. See Appendix B for the definition of each covariate.

**Table 6. Additional determinants of IMF lending**

	<i>Dependent variable</i>			
	<i>Loan GDP ratio</i>	<i>Participation</i>	<i>Approval</i>	<i>Size</i>
Current account (lagged)	-0.010 (0.050)**	-0.517 (0.573)	-0.587 (1.369)	-0.023 (0.045)
Inflation (lagged)	0.0002 (0.0005)	-0.001 (0.008)	0.027 (0.023)	0.001 (0.0004)
International openness (lagged)	-0.002 (0.010)	-0.058 (0.162)	-0.238 (0.331)	-0.008 (0.012)
Democracy index (lagged)	0.004 (0.004)	0.026 (0.054)	0.097 (0.127)	0.004 (0.004)
Rule of law index (lagged)	-0.003 (0.002)	-0.034 (0.028)	-0.032 (0.066)	-0.005 (0.002)**
External debt (lagged)	0.016 (0.009)*	0.049 (0.051)	0.072 (0.100)	0.011 (0.006)*
Total debt service (lagged)	0.163 (0.055)***	2.037 (0.828)**	3.855 (1.689)**	0.136 (0.054)**
Domestic credit (lagged)	0.022 (0.001)**	0.049 (0.122)	0.255 (0.254)	0.016 (0.011)
Short-term debt (lagged)	0.0315 (0.049)	-0.062 (0.389)	0.387 (0.940)	0.042 (0.034)
Foreign Direct Investment (lagged)	-0.203 (0.057)***	-2.036 (0.619)***	-4.026 (1.572)**	-0.162 (0.064)**

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Time dummies and exogenous covariates included (not reported)

Each additional lagged covariate is included one at a time to the regressions of Table 5. All notes there apply.



**Table 7. IMF participation and UNSC membership**

		Obs.	Mean	Std. Dev.	Equal mean t test	
					Other non-member years Ha: $\neq$	Membership years Ha: $\neq$
Approval	Total sample	4236	0.10	0.31		
	Non-member	3960	0.10	0.30		
	Member	279	0.15	0.36	0.171	
	Other non-member years	3689	0.10	0.30		
	1 year before member	135	0.12	0.32	0.528	0.452
	Years of membership	276	0.14	0.35	0.043	
	1 year after member	136	0.12	0.32	0.545	0.435
Participation	Total sample	4236	0.15	0.32		
	Non-member	3960	0.14	0.32		
	Member	279	0.22	0.36	0.033	
	Other non-member years	3689	0.14	0.31		
	1 year before member	135	0.23	0.39	0.010	0.738
	Years of membership	276	0.21	0.36	0.001	
	1 year after member	136	0.17	0.34	0.230	0.298
Size	Total sample	4236	0.25	1.04		
	Non-member	3960	0.24	1.00		
	Member	276	0.37	1.45	0.225	
	Other non-member years	3689	0.23	0.97		
	1 year before member	135	0.40	1.65	0.230	0.850
	Years of membership	276	0.37	1.45	0.113	
	1 year after member	136	0.30	0.99	0.427	0.552

The table shows sample averages of the different measures of IMF participation (IMF loan approval, IMF participation rate and IMF size of programmes) for UNSC membership and non-membership country-year observations. Other non-member years stand for non-membership years apart from the year before and after tenure. The equal mean t tests allow for unequal variances. The first column of the t test represents the p-value associated with the null hypothesis that the sample mean is statistically not different from the sample mean of non-membership and other non-member years for the first three lines and the next four, respectively. The second column corresponds to the p-value associated with the null hypothesis that the sample mean of years of membership is statistically not different from the sample mean of 1 year before and after tenure, correspondingly.

**Table 8. First stage regressions of political importance and country media coverage**

	<i>Dependent variable</i>			
	<i>Loan GDP ratio</i>	<i>Participation</i>	<i>Approval</i>	<i>Size</i>
GDP per capita growth	-0.129 (0.074)*	-0.072 (0.023)***	-0.045 (0.022)**	-0.287 (0.113)**
International reserves	-0.416 (0.212)**	-0.033 (0.043)	-0.105 (0.064)*	-0.387 (0.252)
GDP per capita	0.002 (0.459)	0.033 (0.108)	-0.008 (0.091)	-0.120 (0.390)
GDP per capita squared	-0.067 (0.034)**	-0.010 (0.007)	-0.005 (0.005)	-0.012 (0.016)
Log GDP	-3.483 (3.532)	-0.017 (0.534)	0.422 (0.555)	-0.142 (2.987)
Log GDP squared	0.192 (0.172)	0.015 (0.027)	-0.007 (0.028)	0.068 (0.150)
OECD	0.570 (3.209)	-1.147 (0.783)	-1.255 (0.816)	-9.497 (4.361)**
Political importance	-0.254 (1.012)	0.880 (0.371)**	1.815 (0.457)***	5.080 (2.169)**
Country media coverage	-11.011 (8.946)	-7.451 (3.744)**	-12.099 (4.611)***	-61.458 (25.646)**
P-value	0.192	0.059	0.0004	0.028
Pseudo R-squared	0.134	0.256	0.265	0.163
Observations	330	335	278	330
Number of countries	77	77	77	77

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Time dummies included (not reported)

Estimation of the models described in equations (1) to (8) is carried out on a cross-sectional basis for the country-year observations during the UNSC membership and the year after (UNSC sample). That is, we take annual data as opposed to Table 5, where five-year averages are employed. Each column corresponds to a different measure of IMF participation. For IMF loan GDP ratio, IMF participation rate and IMF size of programmes, a Tobit model is applied. For IMF loan approval a Probit model is considered. The estimation allows for within-country correlation of the error terms over time. The p-value represents the significance level associated with a test of the null hypothesis that the estimated coefficients of the political variables are jointly equal to zero. See Appendix B for the definition of each covariate.

**Table 9. Impact of IMF lending on economic growth (I). 2SLS**

Dependent variable: GDP per capita growth						
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Log per capita GDP	-0.072 (0.024)***	-0.072 (0.025)***	-0.070 (0.024)***	-0.070 (0.024)***	-0.072 (0.024)***	-0.072 (0.024)***
Log life expectancy	0.051 (0.053)	0.050 (0.053)	0.040 (0.052)	0.040 (0.052)	0.054 (0.054)	0.053 (0.054)
Log total fertility rate	-0.023 (0.015)	-0.023 (0.015)	-0.023 (0.014)	-0.023 (0.014)	-0.023 (0.012)	-0.023 (0.015)
Investment	-0.160 (0.135)	-0.159 (0.137)	-0.131 (0.122)	-0.132 (0.134)	-0.174 (0.133)	-0.171 (0.139)
Inflation rate	-0.005 (0.004)	-0.005 (0.004)	-0.005 (0.004)	-0.005 (0.004)	-0.005 (0.004)	-0.004 (0.004)
Openness measure	0.066 (0.018)***	0.066 (0.018)***	0.061 (0.017)***	0.061 (0.018)***	0.066 (0.018)***	0.066 (0.019)***
OECD	0.249 (0.150)*	0.192 (0.142)	0.238 (0.151)	0.238 (0.145)	0.064 (0.026)**	0.006 (0.016)
Rule of law index	0.004 (0.002)*	0.004 (0.002)*	0.004 (0.002)**	0.004 (0.002)**	0.004 (0.002)**	0.004 (0.002)**
Democracy index	-0.052 (0.036)	-0.052 (0.034)	-0.047 (0.034)	-0.047 (0.033)	-0.054 (0.034)	-0.054 (0.032)*
Democracy index squared	0.024 (0.016)	0.024 (0.015)	0.021 (0.015)	0.021 (0.014)	0.024 (0.015)	0.024 (0.014)*
Contemporaneous IMF loan GDP ratio	-0.173 (0.078)**	-0.175 (0.097)*			-0.137 (0.073)*	-0.136 (0.087)
Lagged IMF loan GDP ratio		0.007 (0.133)				-0.018 (0.131)
Contemporaneous IMF participation rate			-0.014 (0.008)*	-0.014 (0.008)*	-0.009 (0.008)	-0.009 (0.007)
Lagged IMF participation rate				-0.0004 (0.010)		0.003 (0.009)
P-value	0.030	0.080	0.065	0.171	0.062	0.213
P-value(contemporaneous)						0.109
R-squared	0.428	0.431	0.438	0.436	0.434	0.444
Observations	441	441	441	441	441	441
Number of countries	100	100	100	100	100	100

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Country and time dummies included (not reported)

**Table 9. Impact of IMF lending on economic growth (I). 2SLS (continued)**

	(vii)	(viii)	(ix)	(x)	(xi)	(xii)
Dependent variable: GDP per capita growth						
Instruments include political variables (contemporaneous and lagged)						
Log per capita GDP	-0.086 (0.021)***	-0.099 (0.033)***	-0.0905 (0.0237)***	-0.061 (0.029)**	-0.088 (0.023)***	-0.071 (0.041)*
Log life expectancy	-0.010 (0.083)	0.011 (0.099)	-0.0108 (0.0732)	-0.047 (0.088)	-0.023 (0.084)	-0.032 (0.010)
Log total fertility rate	-0.022 (0.017)	-0.022 (0.021)	-0.0222 (0.0174)	-0.015 (0.016)	-0.022 (0.017)	-0.016 (0.016)
Investment	-0.090 (0.203)	-0.189 (0.364)	-0.0638 (0.2388)	0.134 (0.263)	-0.029 (0.262)	0.059 (0.371)
Government consumption	-0.247 (0.276)	-0.385 (0.557)	-0.2449 (0.2926)	0.131 (0.333)	-0.244 (0.285)	0.014 (0.467)
Inflation rate	0.0003 (0.002)	0.001 (0.003)	0.0005 (0.0021)	-0.002 (0.003)	0.0002 (0.002)	-0.002 (0.003)
Openness measure	0.054 (0.023)**	0.068 (0.043)	0.0551 (0.0213)**	0.034 (0.028)	0.051 (0.027)*	0.045 (0.045)
OECD	0.046 (0.033)	0.058 (0.050)	0.048 (0.0361)	0.033 (0.040)	0.041 (0.042)	0.041 (0.056)
Rule of law index	0.005 (0.002)**	0.005 (0.003)*	0.0047 (0.0020)**	0.004 (0.002)	0.005 (0.002)**	0.004 (0.003)
Democracy index	-0.085 (0.045)*	-0.096 (0.060)	-0.0856 (0.0424)**	-0.045 (0.051)	-0.079 (0.049)	-0.055 (0.062)
Democracy index squared	0.039 (0.019)**	0.043 (0.026)*	0.0387 (0.0175)**	0.022 (0.022)	0.036 (0.020)*	0.026 (0.026)
Contemporaneous IMF loan GDP ratio	0.160 (0.392)	0.227 (0.479)			0.105 (0.407)	0.030 (0.451)
Lagged IMF loan GDP ratio		-0.338 (0.794)				-0.214 (0.594)
Contemporaneous IMF participation rate			0.0257 (0.0559)	-0.012 (0.054)	0.023 (0.058)	-0.007 (0.054)
Lagged IMF participation rate				0.082 (0.058)		0.076 (0.062)
P-value	0.684	0.307	0.6475	0.332	0.862	0.597
P-value(contemporaneous)						0.988
R-squared	0.574	0.438	0.559	0.328	0.567	0.435
Observations	435	435	435	435	435	435
Number of countries	100	100	100	100	100	100

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Country and time dummies included (not reported)

### Notes to Table 9

The dependent variable, GDP per capita growth, is regressed on (exogenous) covariates and the IMF-related variables. Data are five-year averages and estimation is performed by 2SLS allowing for within-country correlation of the error terms over time. The log of per capita GDP, government consumption and investment are instrumented with lagged values of themselves. Inflation is instrumented with dummies of colonial past. This is done in order to account for potential simultaneity. In columns (i) to (vi), the IMF-related covariates are instrumented with current values of themselves, which amounts to treat them as exogenous, whereas in columns (vii) to (xii) they are instrumented with current and lagged values of the political variables. P-values (contemporaneous) displayed below show the significance level associated with a test of the null hypothesis that the estimated coefficients of the (contemporaneous) IMF variables are jointly equal to zero. Columns differ in the IMF-related variables included in each regression.

**Table 10. Impact of IMF lending on economic growth (II). 2SLS**

	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Dependent variable: GDP per capita growth						
Instruments include political variables (contemporaneous and lagged)						
Log per capita GDP	-0.090 (0.025)***	-0.096 (0.057)*	-0.090 (0.027)***	-0.095 (0.033)***	-0.090 (0.027)***	-0.121 (0.113)
Log life expectancy	-0.010 (0.063)	-0.006 (0.093)	-0.035 (0.077)	-0.033 (0.081)	-0.037 (0.075)	-0.023 (0.148)
Log total fertility rate	-0.022 (0.018)	-0.022 (0.019)	-0.016 (0.020)	-0.015 (0.022)	-0.016 (0.020)	-0.015 (0.037)
Investment	-0.039 (0.215)	-0.080 (0.566)	-0.069 (0.165)	-0.110 (0.305)	-0.034 (0.226)	-0.271 (1.140)
Government consumption	-0.246 (0.303)	-0.318 (0.895)	-0.443 (0.398)	-0.528 (0.678)	-0.411 (0.391)	-0.910 (2.207)
Inflation rate	0.0001 (0.002)	0.001 (0.007)	0.001 (0.002)	0.001 (0.004)	0.0004 (0.003)	0.003 (0.015)
Openness measure	0.057 (0.016)***	0.063 (0.064)	0.054 (0.018)***	0.062 (0.043)	0.053 (0.018)***	0.083 (0.121)
OECD	0.042 (0.038)	0.046 (0.076)	0.040 (0.034)	0.045 (0.049)	0.036 (0.042)	0.058 (0.136)
Rule of law index	0.005 (0.002)**	0.005 (0.002)*	0.006 (0.003)**	0.006 (0.003)**	0.006 (0.003)**	0.006 (0.004)
Democracy index	-0.077 (0.046)*	-0.083 (0.080)	-0.077 (0.045)*	-0.085 (0.067)	-0.072 (0.051)	-0.098 (0.156)
Democracy index squared	0.036 (0.018)**	0.039 (0.033)	0.036 (0.018)*	0.040 (0.029)	0.034 (0.020)*	0.045 (0.065)
Contemporaneous IMF loan approval	0.023 (0.033)	0.027 (0.037)			0.010 (0.033)	0.029 (0.071)
Lagged IMF loan approval		-0.008 (0.075)				-0.051 (0.189)
Contemporaneous IMF size of programmes			0.640 (0.727)	0.768 (0.897)	0.537 (0.695)	0.756 (1.543)
Lagged IMF size of programmes				-0.205 (1.019)		0.174 (1.899)
P-value	0.487	0.716	0.381	0.671	0.668	0.951
P-value(contemporaneous)						0.763
R-squared	0.514	0.429	0.404	0.271	0.410	
Observations	435	435	435	435	435	435
Number of countries	100	100	100	100	100	100

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Country and time dummies included (not reported)

### Notes to Table 10

This table contains the same set of regressions as those of Table 9 but we use different definitions of IMF involvement: IMF loan approval and IMF size of programmes instead of IMF loan GDP ratio and IMF participation rate. Data are five-year averages and estimation is performed by 2SLS, allowing for within-country correlation of the error terms over time. The log of per capita GDP, government consumption and investment are instrumented with lagged values of themselves. Inflation is instrumented with dummies of colonial past. The IMF-related covariates are instrumented with current and lagged values of the political variables (results from the instrumentation with current values of themselves are not reported for being similar as those of Table 9). P-values (contemporaneous) displayed below show the significance level associated with a test of the null hypothesis that the estimated coefficients of the (contemporaneous) IMF variables are jointly equal to zero. Columns differ in the IMF-related variables included in each regression.

**Table 11. Impact of IMF lending on economic growth. 2SLS. UNSC sample**

Dependent variable: GDP per capita growth						
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Log per capita GDP	-0.011 (0.004)***	-0.011 (0.004)***	-0.011 (0.004)***	-0.010 (0.004)***	-0.011 (0.004)***	-0.011 (0.004)***
Log life expectancy	0.0076 (0.030)	0.006 (0.030)	0.007 (0.030)	0.007 (0.030)	0.007 (0.030)	0.007 (0.030)
Log total fertility rate	-0.024 (0.011)**	-0.024 (0.011)**	-0.025 (0.011)**	-0.025 (0.011)**	-0.026 (0.011)**	-0.026 (0.011)**
Investment	0.115 (0.057)**	0.119 (0.057)**	0.113 (0.053)**	0.115 (0.055)**	0.109 (0.053)**	0.108 (0.055)*
Government consumption	-0.036 (0.051)	-0.034 (0.051)	-0.038 (0.050)	-0.036 (0.051)	-0.036 (0.051)	-0.036 (0.051)
Inflation rate	-0.002 (0.001)*	-0.002 (0.001)*	-0.002 (0.001)*	-0.002 (0.001)*	-0.002 (0.001)*	-0.002 (0.001)*
Openness measure	0.006 (0.006)	0.006 (0.006)	0.006 (0.006)	0.006 (0.006)	0.006 (0.006)	0.006 (0.006)
OECD	0.0004 (0.009)	0.001 (0.009)	-0.0005 (0.009)	-0.0003 (0.009)	-0.001 (0.009)	-0.001 (0.009)
Rule of law index	0.003 (0.002)	0.003 (0.002)	0.003 (0.002)	0.003 (0.002)	0.003 (0.002)	0.003 (0.002)
Democracy index	-0.015 (0.023)	-0.015 (0.023)	-0.016 (0.022)	-0.016 (0.023)	-0.018 (0.023)	-0.019 (0.022)
Democracy index squared	0.007 (0.010)	0.007 (0.010)	0.008 (0.010)	0.007 (0.010)	0.009 (0.010)	0.009 (0.001)
Contemporaneous IMF participation rate	0.003 (0.005)	0.001 (0.005)				
Lagged IMF participation rate		0.003 (0.004)				
Contemporaneous IMF loan approval			0.001 (0.003)	0.001 (0.003)		
Lagged IMF loan approval				0.002 (0.003)		
Contemporaneous IMF size of programmes					-0.069 (0.056)	-0.067 (0.057)
Lagged IMF size of programmes						-0.024 (0.066)
P-value	0.584	0.672	0.762	0.896	0.217	0.348
R-squared	0.544	0.546	0.546	0.546	0.547	0.548
Observations	295	295	295	295	295	295
Number of countries	71	71	71	71	71	71

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Time dummies included (not reported)



**Table 11. Impact of IMF lending on economic growth. 2SLS. UNSC sample (continued)**

	(vii)	(viii)	(ix)	(x)	(xi)	(xii)
Log per capita GDP	-0.010 (0.006)*	-0.011 (0.007)	-0.011 (0.005)**	-0.015 (0.006)**	-0.008 (0.005)*	-0.006 (0.006)
Log life expectancy	0.004 (0.037)	0.024 (0.045)	0.008 (0.035)	0.012 (0.041)	0.005 (0.036)	0.013 (0.049)
Log total fertility rate	-0.038 (0.017)**	-0.035 (0.018)*	-0.030 (0.013)**	-0.041 (0.020)**	-0.020 (0.014)	-0.012 (0.025)
Investment	0.038 (0.085)	-0.014 (0.128)	0.076 (0.063)	0.042 (0.092)	0.160 (0.059)***	0.213 (0.129)
Government consumption	-0.062 (0.060)	-0.089 (0.067)	-0.063 (0.055)	-0.091 (0.074)	-0.086 (0.059)	-0.079 (0.075)
Inflation rate	-0.002 (0.001)	-0.002 (0.001)	-0.002 (0.001)*	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Openness measure	0.002 (0.009)	0.0001 (0.010)	0.005 (0.007)	0.010 (0.008)	0.005 (0.007)	-0.002 (0.014)
OECD	-0.016 (0.016)	-0.023 (0.021)	-0.005 (0.012)	-0.002 (0.014)	0.011 (0.012)	0.013 (0.015)
Rule of law index	0.002 (0.003)	0.003 (0.003)	0.002 (0.002)	0.002 (0.004)	0.004 (0.004)	0.005 (0.005)
Democracy index	-0.021 (0.026)	-0.010 (0.034)	-0.023 (0.025)	-0.038 (0.029)	0.004 (0.037)	0.017 (0.051)
Democracy index squared	0.009 (0.012)	0.003 (0.016)	0.010 (0.011)	0.014 (0.012)	-0.002 (0.016)	-0.009 (0.023)
Contemporaneous IMF participation rate	-0.045 (0.029)	-0.005 (0.038)				
Lagged IMF participation rate		-0.059 (0.043)				
Contemporaneous IMF loan approval			-0.036 (0.022)	0.023 (0.062)		
Lagged IMF loan approval				-0.084 (0.0686)		
Contemporaneous IMF size of programmes					1.052 (0.896)	0.732 (0.869)
Lagged IMF size of programmes						1.282 (2.449)
P-value	0.124	0.280	0.101	0.434	0.244	0.567
R-squared	0.215		0.349		0.019	
Sargan test	0.641	0.991	0.483	0.887	0.530	0.827
Observations	295	295	295	295	295	295
Number of countries	71	71	71	71	71	71

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Time dummies included (not reported)

### Notes to Table 11

The dependent variable, GDP per capita growth, is regressed on (exogenous) covariates and the IMF-related variables. Data is arranged on an annual basis but for each year the dependent variable as well as the covariates reflect the average values of the variable for the next five years. For instance, datum on a specific year of the dependent variable represents the average growth of per capita GDP during the next five-years. This also concerns the covariates except OECD, for being dichotomous, and log of per capita GDP and the IMF-related variables, which take the current year value. Estimation is performed by 2SLS for the countries which comprise the UNSC sample, allowing for within-country correlation of the error terms over time. The log of per capita GDP, government consumption and investment are instrumented with lagged values of themselves. Inflation is instrumented with dummies of colonial past. This is done in order to account for potential simultaneity. In columns (i) to (vi), the IMF-related covariates are instrumented with current values of themselves, which amounts to treat them as exogenous, whereas in columns (vii) to (xii) they are instrumented with current and lagged values of political importance and country media coverage (see Appendix B for a definition on these variables). P-values displayed below show the significance level associated with a test of the null hypothesis that the estimated coefficients of the IMF variables are jointly equal to zero. Columns differ in the IMF-related covariates included in each regression..

**Table 12. Impact of IMF lending on currency crises. 2SLS.**

Dependent variable: Currency crisis						
Instruments include political variables (contemporaneous and lagged)						
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Per capita GDP growth rate (lagged)	-0.442 (0.189)**	-0.438 (0.196)**	-0.433 (0.210)**	-0.477 (0.195)**	-0.428 (0.180)**	-0.569 (0.257)**
International reserves (lagged)	-0.012 (0.005)**	-0.011 (0.005)**	-0.010 (0.006)	-0.012 (0.005)**	-0.011 (0.005)**	-0.015 (0.007)**
External debt	0.106 (0.034)***	0.090 (0.029)***	0.070 (0.058)	0.091 (0.028)***	0.093 (0.028)***	0.045 (0.075)
Total debt service	0.817 (0.274)***	0.900 (0.270)***	0.963 (0.336)***	0.827 (0.266)***	0.761 (0.279)***	0.853 (0.395)**
Short term debt (lagged)	0.261 (0.127)**	0.127 (0.157)	-0.007 (0.329)	0.124 (0.157)	0.260 (0.138)*	-0.145 (0.345)
Portfolio investment	-0.086 (0.258)	-0.041 (0.263)	0.009 (0.274)	-0.027 (0.280)	-0.066 (0.255)	0.292 (0.442)
Foreign Direct Investment (lagged)	-0.261 (0.098)***	-0.261 (0.103)**	-0.254 (0.110)**	-0.293 (0.115)**	-0.167 (0.072)**	-0.333 (0.168)*
Total domestic credit (lagged)	0.055 (0.051)	0.069 (0.059)	0.080 (0.074)	0.065 (0.063)	0.048 (0.062)	-0.119 (0.239)
IMF loan GDP ratio	-0.491 (0.270)*		0.652 (1.342)			
IMF participation rate		-0.195 (0.085)**	-0.398 (0.431)			
IMF loan approval				-0.139 (0.061)**		-0.661 (0.447)
IMF size of programmes					-0.603 (1.685)	11.930 (9.726)
P-value	0.073	0.024	0.171	0.026	0.721	0.198
R-squared	0.140	0.120	0.044	0.117	0.131	
Observations	1605	1606	1605	1607	1665	1607
Number of countries	93	93	93	93	93	93

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Country and time dummies included (not reported)

### **Notes to Table 12**

The dependent variable, currency crisis, is regressed on (exogenous) covariates and the IMF-related variables. Data are arranged on an annual basis but the IMF loan GDP ratio and IMF size of programmes represent moving-averages of the previous three years. IMF loan approval and IMF participation rate refer also to the last three years. This accounts for the fact that the effects from IMF participation may take time to emerge. Estimation procedure is 2SLS, allowing for within-country correlation of the error terms over time. The IMF-related covariates are instrumented with current and lagged values of the political variables. P-values displayed below show the significance level associated with a test of the null hypothesis that the estimated coefficients of the IMF variables are jointly equal to zero. Columns differ in the IMF-related variables included in each regression.

**Table 13. Impact of IMF lending on banking crises. 2SLS.**

Dependent variable: Banking crisis						
Instruments include political variables (contemporaneous and lagged)						
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Per capita GDP growth rate (lagged)	-0.656 (0.247)***	-0.694 (0.241)***	-0.709 (0.225)***	-0.718 (0.230)***	-0.572 (0.245)**	-0.541 (0.264)**
Real interest rate	0.391 (0.165)**	0.481 (0.135)***	0.253 (0.214)	0.474 (0.135)***	0.369 (0.166)**	0.243 (0.282)
Inflation (lagged)	-0.001 (0.095)	0.006 (0.092)	0.012 (0.105)	0.013 (0.090)	0.040 (0.095)	0.059 (0.110)
OECD	0.013 (0.111)	0.083 (0.115)	-0.086 (0.146)	0.082 (0.114)	-0.003 (0.124)	-0.138 (0.268)
Change in total domestic credit (t-1)	0.003 (0.002)	0.002 (0.003)	0.0004 (0.004)	0.001 (0.003)	0.004 (0.003)	0.001 (0.004)
Change in total domestic credit (t-2)	0.009 (0.003)***	0.008 (0.003)**	0.008 (0.003)**	0.007 (0.003)**	0.009 (0.003)***	0.007 (0.004)
M2 / International reserves	0.082 (0.024)***	0.059 (0.021)***	0.107 (0.032)***	0.057 (0.019)***	0.080 (0.032)**	0.106 (0.061)*
Domestic credit to the private sector	0.068 (0.055)	0.042 (0.058)	0.113 (0.069)	0.044 (0.058)	0.088 (0.058)	0.162 (0.132)
Reserves / Banking assets (lagged)	-0.003 (0.012)	-0.014 (0.011)	0.012 (0.024)	-0.014 (0.012)	-0.015 (0.016)	-0.009 (0.025)
Change in exchange rate (lagged)	0.092 (0.079)	0.077 (0.076)	0.095 (0.079)	0.073 (0.074)	0.084 (0.080)	0.083 (0.088)
IMF loan GDP ratio	-0.969 (0.616)		-2.251 (1.660)			
IMF participation rate		-0.098 (0.169)	0.439 (0.483)			
IMF loan approval				-0.014 (0.094)		0.241 (0.325)
IMF size of programmes					-4.972 (3.842)	-10.679 (11.068)
P-value	0.120	0.563	0.333	0.881	0.199	0.584
R-squared	0.103	0.119		0.131	0.052	
Observations	1079	1079	1079	1082	1098	1082
Number of countries	86	86	86	86	86	86

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Country and time dummies included (not reported)

The estimation procedure is similar to that of Table 12 but we use banking crisis as the dependent variable. Covariates differ, but data on the IMF-related variables is arranged the same way: IMF loan GDP ratio and IMF size of programmes represent moving-averages of the previous three years. IMF loan approval and IMF participation rate refer also to the last three years. Columns differ in the IMF-related variables included in each regression. Notes to Table 12 apply.

**Table 14. Impact of IMF lending on twin crises. 2SLS.**

Dependent variable: Twin crisis						
Instruments include political variables (contemporaneous and lagged)						
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Per capita GDP growth rate (lagged)	-0.287 (0.133)**	-0.265 (0.122)**	-0.310 (0.168)*	-0.276 (0.123)**	-0.301 (0.144)**	-0.328 (0.180)*
International reserves (lagged)	-0.006 (0.002)***	-0.006 (0.002)***	-0.005 (0.003)*	-0.006 (0.002)***	-0.006 (0.002)***	-0.006 (0.002)***
Foreign Direct Investment (lagged)	-0.067 (0.062)	-0.067 (0.060)	-0.057 (0.076)	-0.065 (0.060)	-0.059 (0.065)	-0.051 (0.075)
Real interest rate	0.105 (0.064)	0.079 (0.055)	0.176 (0.125)	0.082 (0.056)	0.101 (0.067)	0.125 (0.087)
Change in total domestic credit (t-1)	-0.0004 (0.002)	0.001 (0.002)	-0.002 (0.004)	0.0001 (0.002)	-0.0001 (0.002)	-0.0003 (0.002)
Change in total domestic credit (t-2)	0.002 (0.002)	0.004 (0.002)**	0.0004 (0.004)	0.003 (0.002)*	0.003 (0.002)*	0.003 (0.002)
M2 / International reserves	0.013 (0.019)	0.018 (0.020)	0.003 (0.03)	0.017 (0.018)	0.008 (0.017)	0.001 (0.017)
Inflation (lagged)	0.005 (0.003)*	0.005 (0.003)	0.006 (0.003)**	0.005 (0.003)	0.005 (0.003)*	0.005 (0.003)*
IMF loan GDP ratio	0.327 (0.306)		1.230 (1.421)			
IMF participation rate		0.019 (0.056)	-0.172 (0.260)			
IMF loan approval				0.032 (0.033)		-0.038 (0.083)
IMF size of programmes					1.364 (1.331)	2.783 (3.069)
P-value	0.289	0.737	0.639	0.343	0.309	0.483
R-squared	0.087	0.1		0.085	0.069	0.014
Observations	1187	1187	1187	1190	1201	1190
Number of countries	76	76	76	76	76	76

Robust standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Country and time dummies included (not reported)

The estimation procedure is similar to that of Table 12 but we use twin crisis as the dependent variable. Covariates differ, but data on the IMF-related variables is arranged the same way: IMF loan GDP ratio and IMF size of programmes represent moving-averages of the previous three years. IMF loan approval and IMF participation rate refer also to the last three years. Columns differ in the IMF-related variables included in each regression. Notes to Table 12 apply.

## Appendix A: sample of countries

**Table A1. Countries included in the regressions**

Algeria*	Egypt*	Lesotho	Saudi Arabia
Argentina*	El Salvador	Liberia	Senegal*
Australia*	Ethiopia*	Luxembourg	Seychelles
Austria*	Fiji	Madagascar*	Sierra Leone
Bahamas	Finland*	Malawi	Singapore*
Bahrain*	France	Malaysia*	Solomon Islands
Bangladesh*	Gabon*	Mali*	South Africa
Barbados	Gambia, The*	Malta*	Spain*
Belgium*	Germany*	Mauritania*	Sri Lanka
Benin*	Ghana*	Mauritius*	St. Lucia
Bolivia*	Greece	Mexico*	St. Vincent & Grenadines
Botswana*	Grenada	Morocco*	Sudan
Brazil*	Guatemala	Mozambique	Swaziland
Burkina Faso*	Guinea*	Myanmar	Sweden*
Burundi	Guinea-Bissau*	Nepal*	Syria*
Cameroon*	Guyana*	Netherlands*	Tanzania*
Canada*	Haiti	New Zealand*	Thailand*
Cape Verde*	Honduras*	Nicaragua*	Togo*
Central African Republic	Hungary*	Niger*	Trinidad & Tobago*
Chad	Iceland	Nigeria*	Tunisia*
Chile*	India*	Norway*	Turkey
China	Indonesia*	Oman*	Uganda*
Colombia*	Iran	Pakistan*	United Arab Emirates*
Comoros	Iraq*	Panama*	United Kingdom
Congo, Dem. Rep.*	Ireland*	Papua New Guinea	United States
Congo, Republic of*	Israel	Paraguay	Uruguay
Costa Rica*	Italy*	Peru*	Vanuatu
Cote d'Ivoire*	Jamaica*	Philippines*	Venezuela*
Cyprus	Japan*	Poland*	Yemen
Denmark*	Jordan*	Portugal*	Zambia*
Dominica	Kenya*	Romania*	Zimbabwe*
Dominican Republic	Korea, Republic of*	Rwanda*	
Ecuador*	Kuwait*	Samoa	

Countries marked with an asterisk comprise the UNSC sample

## Appendix B: definitions and data sources

Variable	Source	Definition
IMF loan GDP ratio	IFS (2004) & WDI (2005)	Use of Fund credit from the GRA over GDP
IMF participation rate	IFS (2004) & IMF webpage	Fraction of months in which the country operated under an IMF programme
IMF loan approval	Dreher (2006)	Dummy equals one if an IMF programme is signed
IMF size of programmes	IFS (2004) & IMF webpage	Ratio of IMF lending approved to GDP
Staff	Barro and Lee (2003) & IMF Diversity Annual Report 2005	Share of own nationals among IMF economists (professional and managerial)
Quota	IFS (2004)	Share of a country's quota over IMF total quotas
Political proximity to the US	Voeten (2004)	Index of voting patterns at the UNGA.
Political proximity to Europe	Voeten (2004)	Index of voting patterns at the UNGA.
UNSC membership	UN webpage	Dummy equals one if the country was member of the UNSC
Political importance	New York Times webpage	Index of <i>NYT</i> articles with the words "United Nations Security Council"
Country media coverage	The New York Times webpage	Index of <i>NYT</i> articles with the words "(Country) United Nations Security Council"
Currency crisis	IFS (2004)	Dummy equals one if the value of the Currency Pressure Index is greater than the mean plus 2.5 standard deviations.
Banking crisis (onset)	Caprio and Klingebiel (2006)	Dummy equals one if a banking crisis starts any time during the period
Banking crisis (continuing)	Caprio and Klingebiel (2006)	Dummy equals one if a banking crisis is continuing any time during the period
Twin crises		Dummy equals one if a banking crisis in $t$ is accompanied by a currency crisis in $t-1$ , $t$ or $t+1$
OECD	Barro and Lee (2003)	Dummy equals one if country is member of the OECD group of economies
Per capita GDP growth rate	WDI (2005)	Per capita GDP growth rate
Per capita GDP	WDI (2005)	Per capita GDP (2000 US thousand dollars)
GDP	WDI (2005)	Total GDP (2000 US millions dollars)
Life expectancy	WDI (2005)	Life expectancy at birth (years)
Fertility	WDI (2005)	Fertility rate (births per woman)



Investment	WDI (2005)	Ratio of Gross Capital Formation to GDP
Consumption	WDI (2005)	Ratio of government consumption to GDP
Inflation	WDI (2005)	Variation in Consumption Price Index
Openness measure	WDI (2005)	Ratio of sum of exports and imports to GDP
Rule of law	Economic Freedom of the World (2004)	Index of quality of the legal system and enforcement of property rights
Democracy	Polity4 (2004)	Quality of the democratic institutions
Spain	Rose (2004)	Dummy equals one if the country has a colonial past with Spain
Portugal	Rose (2004)	Dummy equals one if the country has a colonial past with Portugal
United Kingdom	Rose (2004)	Dummy equals one if the country has a colonial past with United Kingdom
France	Rose (2004)	Dummy equals one if the country has a colonial past with France
Region		Region of the country (Industrialized, Africa, Asia, Latin America, Others)
Reserves	WDI (2005)	International reserves in months of imports
Current account	WDI (2005)	Ratio of Current Account balance to GDP
External debt	WDI (2005)	Ratio of total external debt (except use of IMF credit) to GDP
Total debt service	WDI (2005)	Ratio of total debt service to GNI
Short-term debt	WDI (2005)	Short-term debt share of total external debt
Portfolio investment	WDI (2005)	Ratio of portfolio investment to GDP
FDI	WDI (2005)	Ratio of Foreign Direct Investment net inflows to total external debt
Total domestic credit	WDI (2005)	Ratio of domestic credit provided by the banking sector to GDP
Real interest rate	WDI (2005)	Real interest rate
Change in total domestic credit	WDI (2005)	Real change in domestic credit
Ratio of M2 to reserves	WDI (2005)	Ratio of Money and quasi money (M2) to gross international reserves
Domestic credit to the private sector	WDI (2005)	Ratio of domestic credit to the private sector to GDP
Ratio of bank reserves to bank assets	WDI (2005)	Ratio of bank liquid reserves to bank assets
Change in exchange rate	WDI (2005)	Rate of depreciation of the exchange rate

## Appendix C: list of crises

Country	Currency crises	Banking crises (onset)	Twin crises
Algeria	1990, 1994	1990	1990
Argentina	1975, 1982, 1989	1980, 1985, 1989, 1995, 2001	1989
Australia	1976, 1983, 1986	1989	
Austria	1991		
Bahamas		not available	
Bahrain		not available	
Bangladesh	1987		
Barbados	1975	not available	not available
Belgium	1980, 1991		
Benin	1994	1988	
Bolivia	1982, 1985	1986, 1994	1986
Bostwana	1984	1994	
Brazil	1982, 1990, 1999	1990, 1994	1990
Burkina Faso	1994	1988	
Burundi	1976, 1983, 1991, 1997, 2000, 2002	1994	
Cameroon	1994	1987, 1995	1995
Canada	1976, 1980, 1992, 1998	1983	
Cape Verde	1991	1993	
Central African Republic	1975, 1994	1976, 1988	1976
Chad	1975, 1979, 1994	1980, 1992	1980
Chile	1975, 1982, 1985	1976, 1981	1976, 1981
China	1980, 1986, 1989, 1992	1990	1990
Colombia	1985, 1995, 1998, 2002	1982	
Comoros	1991	not available	not available
Congo, Dem. Rep	1981, 1983, 1993	1980, 1991, 1994	1980, 1994
Congo, Republic of	1994	1992	
Costa Rica	1981	1987, 1994	
Cote d'Ivoire	1994	1988	
Cyprus	1978, 1991, 1993		
Denmark	1980, 1991	1987	
Dominica		not available	
Dominican Republic	1985		
Ecuador	1982, 1985, 1988, 1999	1980, 1986, 1998	1998
Egypt	1979, 1989	1980, 1991	1980
El Salvador	1986, 1990	1989	1989
Ethiopia	1992	1994	
Fiji	1987, 1998		

Finland	1991	1991	1991
France	1982, 1991, 1993	1994	1994
Gabon	1978, 1994	1995	1995
Gambia, The	1986	1985	1985
Germany	1991	1978	
Ghana	1983, 1987	1982, 1997	1982
Greece	1983, 1985	1991	
Grenada			
Guatemala	1986	1991	
Guinea		1993	
Guinea-Bissau	1996	1995	1995
Guyana	1987	1989	
Haiti	1991, 1994, 2000		
Honduras	1990		
Hungary	2003	1991	
Iceland	1975, 1978, 1982, 1993	1985, 1993	1993
India	1991	1993	
Indonesia	1975, 1978, 1986, 1997	1994, 1997	1997
Iran	not available	not available	not available
Iraq	not available	not available	not available
Ireland	1991, 1997		
Israel	1977, 1983	1977, 1983	1977, 1983
Italy	1975, 1991	1990	1990
Jamaica	1983, 1991	1994, 1995	
Japan	1979, 1990	1992	
Jordan	1988	1989	1989
Kenya	1975, 1981, 1993, 1995, 1997	1985, 1992	1992
Korea, Republic of	1980, 1997	1997	1997
Kuwait	1975, 1978, 1987, 1990	1980	
Lesotho	1984, 2001	1988	
Liberia			
Luxembourg	1992		
Madagascar	1986, 1994	1988	
Malawi	1985, 1992, 1994, 1998		
Malaysia	1997	1985, 1997	
Mali	1994	1987	
Malta	1978, 1991, 1997		
Mauritania	1985, 1992, 1998	1984	1984
Mauritius	1979, 1997	1996	1996
Mexico	1976, 1982, 1994	1981, 1994	1994
Morocco	1983, 1990	1980	

Mozambique	1995	1987	
Myanmar	1975	1996	
Nepal	1975, 1981, 1984, 1991	1988	
Netherlands	1978, 1991		
New Zealand	1975, 1985	1987	
Nicaragua	1979, 1993	1988	
Niger	1994	1983	
Nigeria	1986, 1992, 1999	1993	1993
Norway	1978, 1986, 1991, 1997, 2001	1987	1987
Oman	1986	not available	not available
Pakistan	1993, 1995, 1998, 2000		
Panama		1988	
Papua New Guinea	1983, 1990, 1994, 1998, 2001	1989	1989
Paraguay	1984, 1986, 1989	1995, 2001	
Peru	1976, 1987	1983	
Philippines	1983, 1986, 1997	1981, 1997	1997
Poland	1986, 1989, 1991	1990	1990
Portugal	1977, 1982, 1991	1986	
Romania	1990, 1997	1990	1990
Rwanda	1990, 1994	1991	1991
Samoa	1983, 1988	not available	not available
Saudi Arabia	1978, 1986	not available	not available
Senegal	1994	1988	
Seychelles	1989	not available	not available
Sierra Leone	1983, 1986, 1990	1990	1990
Singapore	1975, 1980, 1997	1982	
Solomon Islands	1982, 1987, 2002	not available	not available
South Africa	1975, 1984, 2001	1977, 1985, 1989	1985
Spain	1980, 1983, 1991	1977	
Sri Lanka	1977, 1998	1989	
St. Lucia		not available	not available
St. Vincent & Grenadines	1987	not available	not available
Sudan	1985, 1991	not available	not available
Swaziland	1975, 1982, 1984, 1998, 2001	1995	
Sweden	1977, 1991	1990	1990
Syria	not available		
Tanzania	1983, 1986, 1988, 1992	1987	1987
Thailand	1978, 1997	1983, 1997	1997
Togo	1994	1993	1993
Trinidad & Tobago	1985, 1988, 1993	1982	
Tunisia	1991	1991	1991
Turkey	1980, 1994, 2001	1982, 1991, 1994, 2000	1994, 2000

Uganda	1987, 1989	1994	
United Arab Emirates	1975	not available	not available
United Kingdom	1976, 1991	1984	
United States		1984	
Uruguay	1982, 1985, 2002	1981, 2002	1981, 2002
Vanuatu	1985, 1989	not available	not available
Venezuela	1984, 1986, 1989, 1994, 2002	1978, 1994	1994
Yemen	1995	1996	1996
Zambia	1985, 1994	1995	1995
Zimbabwe		1995	

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