

Financial Crises in Latin America: Policy or Bad (Good) Luck?

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Abstract

The events of the Subprime crisis are novel for Latin America. Most countries recovered growth after a year following recessions and economic contractions caused by the crisis, and none suffered financial distress. With few exceptions, such as the cases of Ecuador and Jamaica, there were no severe balance of payments problems in this region. The situation, however, was the opposite in the past. How much of this good performance can be attributed to sound economic fundamentals and economic policy, and how much due to external factors? Examining financial crises for eighth Latin American countries during the last century, I evaluate the role of policy and external factors (luck) in these events. Results are very conclusive finding that large macroeconomic imbalances and an excess of fiscal debt contributed to generate crises. Even though, external factors played a meaningful role, either in the crisis generation or during its resolution. My results show that policy can explain more than 60 percent of exiting a banking crisis and exiting an external default.

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I. Introduction

The events of the Subprime crisis are novel for Latin America. Most countries recovered growth after a year following recessions and economic contractions caused by the crisis, and none suffered financial market distress. With few exceptions, such as the cases of Ecuador and Jamaica, there were no severe balance of payment problems in this region. How much of this good performance can be attributed to sound fundamentals and economic policy, and how much due to external factors?

The Latin American economies experienced unique favorable conditions the years before the crisis and during its aftermath¹. There was a boom in the prices of the main export commodities, stabilization policy has succeeded in most countries, and they have accumulated large international reserves. Indeed, after suffering successive crises during the last century, with large macroeconomic imbalances, Latin America seemed to have achieved higher stability toward the end of the last decade. These facts and a better regulation of financial markets may have reduced the vulnerability of the regional economies with respect to the past. However, considering five big crises² that threatened Latin America and the OECD countries between 1980 and 2010, we observe a greater output contraction in Latin America on average and a larger spread of crises (see Table A.1). Because in most of these events, with the exception of the Subprime crisis, the distress was generated in emerging markets, there is no surprise to observe these values. Nevertheless, considering variations in GDP growth³ instead of the rates of GDP growth, losses in Latin America in the recent crisis seem to be larger than those of the OECD countries during other episodes; the debt crisis of 1982 and the Asian crisis of 1998. These facts may be suggesting that the contagious phenomenon—the spread of the crisis—is greater for Latin American than for the OECD countries.

The role of economic policy has been one of the key targets for discussion in the aftermath of the Subprime crisis. Delays in recovering and persistent unemployment in

¹ Ishi, Stone, and Yehoue (2009).

² The debt crisis of 1982, the Mexican crisis of 1994-1995, the Asian crisis of 1997-1998, the crisis of Argentina of 2001, and the Subprime crisis, dated in 2009.

³ Variation with respect to the average between 1980 and 2009.

mature economies of Europe and the U.S. have caused disagreement between economists and policy-makers about the type of government intervention the economy needs to deal with these events⁴. On the one hand, there is a perception that the government support was not enough to rescue financial institutions during the critical moments of the crisis, or to restore growth and employment in the following years (Krugman 2009a, 2009b; Caballero and Kurlat, 2009). On the other hand, there is skepticism about the effectiveness of these interventions and the costs they can carry for the future (Posen, 2009; Reinhart and Rogoff, 2010; Cottarelli and Schaechter, 2010). Examining several recessions occurred in the latest century in this sense, Kehoe and Prescott (2001) find that at a certain point, the Keynesian medicine to stimulate the aggregate demand (interest rate reductions and fiscal support) would reduce the adjustment capacity of the economy and delay recovery. With respect to the costs, Reinhart and Rogoff (2010) emphasize the hidden costs of the debt⁵ caused by increases in fiscal spending during a crisis, and the strong connection between debt cycles and crises. Thus, they argue, accumulating large amounts of debt would limit the extensive use of countercyclical fiscal policies during crises, as it has occurred in some European countries⁶ and the U.S. in the recent years.

These lines of thinking highlight the role of policy, mainly monetary policy and fiscal policy, among other types of government interventions, to deal with crises, to restore growth and macroeconomic fundamentals. Under this perspective, we could name policies that are effective either preventing or dealing with a crisis in its aftermath as being “good.” In opposition, policies that contribute⁷ to crises or delay recovery are “bad.” With respect to macroeconomic fundamentals, the recent experiences suggest that the traditional macroeconomic soundness has proven to be not enough to prevent or to avert big crashes (Blanchard et al., 2010). The experience of the Latin American countries is interesting in this regard; for many years, the literature argued that due to their volatile nature, these countries were more prone to suffer crises and recessions than other regions. Nevertheless, analyzing financial crises since the eighteenth century for a

⁴ Blanchard, Dell’Ariccia, and Mauro (2010).

⁵ This includes domestic public debt and private debt that becomes public after intervention (Reinhart and Rogoff, 2010).

⁶ Especially, in the cases of Greece, Ireland, and Portugal.

⁷ Even though, many crises may have been generated abroad, *bad* policies would have deepened them, delaying recover.

large group of countries, Reinhart and Rogoff (2008, 2009) find a similar frequency of crises between high-income and middle-to-low income economies. In a comparison of eight Latin American economies and the U.S. during the period from 1900 to 2009, a larger frequency of external defaults is found within the former on average, but the U.S. shows a greater frequency of banking crises.

With respect to the contagion phenomena, economic integration has been deepened in Latin America in the last decades following economic reforms, both with the rest of world and within the region. Although faster growth recovery in the recent events might suggest a certain decoupling from the business cycles of Europe and the U.S., the evidence is not conclusive, as shown in Table A.2.

Financial integration is a different story. Emerging market economies have been going through successive booms of capital inflows during the last decades; most of these have ended abruptly, usually accompanied by severe financial distress. Nevertheless, as Kaminsky (2010) points out, the access of Latin American countries to international capital markets the recent years is not much larger than that observed at the beginning of the last century. Beyond other favorable factors, a lower degree of financial integration with the main centers of Europe and the U.S. than other regions⁸ would have reduced the exposition of Latin America to the last crisis. Nevertheless, as open economies they cannot avoid the contagion in the productive sector, neither to escape from the volatile international markets. This is especially important because most of these economies are deepening their financial integration with the rest of the world. How to deal with these events is thus crucial for emerging markets of Latin America. In the aftermath of the Subprime collapse, there was a surge of support for government intervention, countercyclical policies and non-conventional monetary policy similar to those applied in Europe and the U.S. Yet there are concerns about whether these measures have been effective. Consequently, we must ask: how much of the recovery in growth can be attributed to them and how much to external conditions?

⁸ Emerging Asia and Eastern Europe.

To continue with this research in Section II, I will examine financial crises in Latin America during the past century. In Section III, I develop the research methodology, and Section IV is devoted to analyzing results. Conclusions are summarized in Section V.

II. Financial Crises in Latin America

Financial crises have been common phenomena in the world since Napoleonic times. In Latin America, they started soon after the region achieved independence from Spain; in fact, the region's debt crisis of 1825 was the largest episode at that time (Marichal, 1989). These crises were the result of macroeconomic imbalances and capital dependence, and were connected to currency collapses, inflation, problems in capital flows, and excess government debt. Latin American governments used to obtain external loans to finance military adventures and infrastructure developing, in the process accumulating large amounts of foreign debt, and defaulting when the conditions turned adverse (Marichal, 1989). With the development of banking and financial markets, phenomena such as panic and investors' expectations became more relevant. The events around the Great Depression, considered one of the largest crises of modern capitalism, were a combination of these problems, macroeconomic imbalances, debt, and market panic. A vast literature has arisen since then characterizing crises according to causes, common features, and the stage of development of affected countries. Based on the experience of the Latin American countries, I will consider two types of crises; external default and banking crises. Whereas external default is connected with macroeconomic imbalances, exchange rates, and debt, banking crises are attributed to "innate" conditions of the financial markets and financial excesses. In both cases, informational problems play a role.

Formally, a banking crisis is defined as systemic and significant bank runs, or financial distress in the banking system that leads to large capital losses, bank liquidations, and government intervention (Reinhart and Rogoff, 2009; Laeven and Valencia, 2010). Reinhart and Rogoff (2009) differentiate between systemic bank runs and financial distress. Whereas the former are banking crises that occur mainly in poor developing

countries with repressed financial systems, the latter may occur with or without bank runs, and should be more common in more advanced financial markets. A sovereign government is in default when it fails to meet its debt payments⁹ on the due date, including a grace period and debt rescheduling (Reinhart and Rogoff, 2009). Connected with currency crashes in developing countries, external defaults occurred when a debtor country that had pegged its exchange rate to its main foreign currency was unable to repay its foreign debt¹⁰ and defaulted (Kaminsky, 2006; Reinhart and Rogoff, 2009). A serial default might arrive via this process if the country has suffered multiple defaults on its external debt. Therefore, the government can be obliged to devalue or to abandon the parity of the exchange rate triggering a currency crisis.

II.1 Financial Crises in Latin America

As it is shown in Picture 1, Latin American countries experienced successive external defaults and banking crises during the last century. Although it was common in other regions as well, there are several periods when the frequency of crises was much higher in Latin America than elsewhere. This was especially remarkable during the Great Depression and the debt crises of early 1980s. At the time of the Great Depression, most Latin American countries were open economies¹¹ and primary-good exporters that faced high levels of foreign debt, and large fiscal deficits. Highly indebted, despite governments' accumulation of large trade surpluses and international reserves in the previous years, the huge payments and debt services drained most of the foreign resources. This situation was worsened by the decline of commodity prices that preceded these events, having the governments to acquire new loans to finance deficits. Combined with several social problems¹², Latin America was very exposed to this crisis, which had devastating effects on its economies; output losses reached until thirteen percent in the crisis year and most domestic financial markets suffered contagion (see Picture A.1 in the Appendix). At the beginning, when almost six percent of the world's economies were

⁹ That includes the principal and interest payments.

¹⁰ This can include also domestic debt (Reinhart and Rogoff, 2010).

¹¹ To foreign trade and many of them financially integrated with the main centers of Europe and the U.S. (Marichal, 1989).

¹² Large asymmetries between urban and rural areas, poor income distribution, and weak institutions.

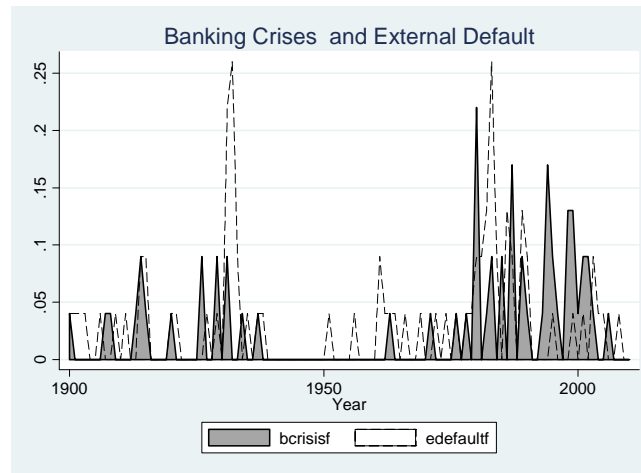
experiencing banking crises, thirteen percent of the Latin American economies suffered a banking crisis. In the critical moments, between 1931 and 1932, 26 percent of Latin America was in default, compared to 23 percent in the rest of the world.

During the years of Bretton Woods¹³, crises were almost eliminated around the world as governments adopted more restrictive financial regulations and Latin America was following an import-substitution strategy. Nevertheless, financial turmoil continued in some countries, such as Argentina, Brazil, and Chile¹⁴ (see Picture A.1a in the Appendix). The oil shocks of 1973 and 1979 created conditions for a new wave of crises in Latin America in the early 1980s. After years of financial repression and inward-oriented policies, most countries acquired large amounts of foreign debt, allocated in part to finance oil imports, while another part financed country-specific indulgences, such as development projects (in Mexico), public expenditures (in Brazil), and private consumption (in Chile) (Edwards, 1995). Again, the huge debt, large current account deficits and a sharp drop in the prices of the main export commodities contributed to the severity of the debt crisis. Between 1982 and 1983, 21 percent of the countries experienced banking crises and 40 percent of them defaulted. Even though banking crises had been less frequent than external default during the first half of the past century in Latin America, this pattern changed dramatically after the debt crisis of the 1980s. Since then, increased the frequency of banking crises and decreased the frequency of external default (see Picture 1).

¹³ Between 1945 and 1971 (Bordo et al., 2001).

¹⁴ Argentina defaulted twice in the 1950s, Brazil had a banking crisis and defaulted in the earlier 1960s, and Chile defaulted five times between 1961 and 1974.

Picture 1 - Frequency of Crises in Latin America



II.2 Causes of Crises

In spite of the fact that there are many records of financial crises dating hundred years the past, most of the modern theory about this field is concerned with events beginning the 1900. Thus, studies based on banking crises of the earliest 1900s and the years of the Great Depression explained financial crises as being unexpected events that threatened the economy with a certain frequency. Some authors concentrated on their randomness, explaining crises as a phenomenon of panic that triggered financial distress in special circumstances. Other authors linked crises to the real business cycle and noted the cyclical behavior of financial markets when they interacted with the real economy. Thus, adverse productivity shocks lay behind of these events, making them avoidable and predictable up to a point (Allen and Gale, 2007). In their models of bank runs, Bryant (1980), and Diamond and Dybvig (1983) attribute banking crises to uncertainty and the innate nature of financial intermediaries. The triggering mechanism in this case, was held to be a liquidity shock that affects intertemporal consumer preferences. This literature was popular as an explanation for banking crises of the 1970s and 1980s, especially those that took place in developing countries. Following the financial turmoil of early and mid-1990s in Europe and Mexico, new theoretical models appeared, pointing to uncertainty, incomplete markets, and informational problems, as the main causes of banking crises. For these authors, distress was caused by the speculative behavior of firms and banks

making loan contracts in a context of asymmetric information (Holmstrom and Tirole, 1997). Moral hazard problems would lead these agents to take excessive risk with a consequent financial crash if they have received liquidity shocks or have suffered large losses in the values of their collateral. This literature connects bubbles in housing and financial markets to the distress in banking and other intermediaries, explaining in part the events of the Subprime crisis. Some recent developments stress the role of uncertainty and financial innovation in these events (Gertler et al., 2010; Faia, 2010; Caballero and Kurlat, 2009).

Motivated by the external defaults and currency crises that occurred in the second half of the last century, the theory of balance of payment crises evolved in three generations of models. The first generation, represented by Krugman (1979), linked crises such as external defaults and currency crises to fiscal imbalances and the mismanagement of exchange rates. Having pegged the exchange rate, a government that had experienced successive fiscal deficits could lose international reserves when deficits turned out to be unsustainable. A speculative attack could push the government to abandon its peg, causing a crisis (Krugman, 1979). Although, this type of model well explained balance of payment crises that took place through the early 1980s and the case of Argentina in 2001, they did not fit well in other events. Therefore, a second generation of models appeared in the 1990s to explain crises such as the collapse of European Monetary System in 1992 and the Mexican crisis in 1994. In such a case, the economy can be the target of a speculative attack even though it has solid fundamentals. When the government faces a trade-off between the fixed exchange rate and other objectives, changes in expectations, failures in common knowledge or a combination of informational problems would lead to self-fulfilling crises (Flood and Marion, 2001).

With the exception of Morris and Shin (1998), these models were focused on multiple equilibria being the speculative attack an adverse outcome between another one of no crisis. The third generation of models connected balance of payment problems with banking crises. Emphasizing the role of financial markets and the “excesses” observed in the experiences of Mexico in 1994 and in Asia during 1997-1998, this generation of

models explain sovereign defaults through two different mechanisms. The first one is a combination of large capital inflows with abrupt changes in international liquidity that, followed by a reversal of flows—sudden stops, causes massive depreciations and leads to a default (Calvo, 1998, Kaminisky, 2003). The second mechanism links balance of payment problems with financial turmoil, where the latter would cause the former.

Therefore, based on the crisis literature and the experiences of Latin American and other developing countries until the Subprime crisis of 2007, we can identify six common factors that may cause or trigger a crisis: abrupt financial liberalizations, macroeconomic imbalances, productivity drops, exchange rates, financial excesses (lending booms with subsequent sudden-stops), and uncertainty (Kaminsky and Reinhart, 1998; Blejer and Skreb, 2002; Eichengreen and Arteta, 2002; Tornell and Westermann, 2005).

II.3 Crisis Resolution

There is agreement among the authors in identifying the restoration of economic growth and liquidity in the financial system as the main indicators of a crisis resolution, but there is a concern about the quality of this recovery. Beyond that, there are different degrees of government intervention to reduce the costs of a crisis; some type of intervention and demand-oriented policy would be successful for fast recovery but not in promoting growth in the long term. The foregoing seems to have been the experience of many Latin American countries decades ago, where large inflation and macroeconomic imbalances preceded and followed these episodes (See Table A.4). In several cases, productivity drops leave economic growth stagnant for many years. Even though these results are commonly explained by excesses of market regulation and the inward-looking strategies applied since the mid-1950s, the quality of policy seems to have played a role as well. Indeed, as shown in Table A.4, in many cases, inflation was accompanied by large monetary expansion and credit losses. In this sense, a “good” policy should be one that reduces the costs of the crisis in both the short and long term. On the opposite, a “bad” policy may lead to increases in the costs of the crisis in the short term, the long term, or both.

External factors also matter, either by creating conditions for financial distress and external defaults or by contributing to crisis resolution. Among external factors, the most important ones according to the literature are prices of commodities, terms of trade, foreign interest rates, and foreign incomes. Having large endowments of natural resources, the export-oriented economies of Latin America have been historically highly sensitive to the cycle of commodity prices and the terms of trade. In this way, for better or for worse, the business cycle of these countries evolves closely to these conditions. The same occurs with the evolution of foreign incomes and the regional business cycles. On the other hand, with a tradition of low saving rates, these countries have been highly dependent on flows of foreign capitals, thereby making the foreign interest rate¹⁵ a good predictor of these transactions.

III. Empirical Methodology

To find regularities in the crisis experiences of Latin America during the last century, I examine the role of policy and external factors in these events. I employ two strategies for this purpose. The first one evaluates the direct effect of these factors on crises and crisis resolution. The second approach analyzes the indirect effect through the aggregate demand and policy evaluation, in particular monetary policy. Beyond that, in the recent years, governments have applied a vast set of policy tools to deal with the financial crisis, using non-conventional measures of monetary policy as quantitative easing, low interest rates and foreign exchange injections; this was not frequent in the past. For this reason, I will consider just two types of economic policy, fiscal expending as fiscal policy, and conventional monetary policy.

I apply econometric analysis, combining the conceptual framework discussed in Section II with the empirical approach of Clarida et al. (1997), and Clarida (2001). A panel data is built for this purpose, with a sample of eight Latin American countries, Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay, and Venezuela, and data between 1900 and 2010. To analyze co-movements of business cycles and compare country

¹⁵ On average, from their main

experiences, I include the U.S. and seven European countries¹⁶, which have some common cultural roots with Latin America or have been linked by trade, politics, and finance with this region. In addition, I include China, which has driven economic growth for developing countries the recent years.

III.1 Financial Crises

Identifying some of the factors mentioned in Section II.2 as given by policy and others by external conditions, I estimate the probability of banking crisis and external default. Whereas abrupt liberalizations and exchange rates can be attributed to policy and external factors, macroeconomic imbalances are mainly consequences of policy. In opposition, although productivity drops and sudden stops can be a combination of both policy and external conditions, uncertainty is assumed to arrive as an exogenous shock. Besides the fact the literature considers output lost as a cost of crises, the evidence for Latin America shows that in many cases, a recession preceded a crisis. In this sense, there is some degree of endogeneity between a crisis and output contractions or recessions. On the other hand, as Reinhart and Rogoff and (2009) suggest, there is a relationship between banking crises or financial stress and defaults. Given these considerations, the regression analysis is detailed here for the two types of crises.

Banking Crisis

Based on policy and external factors of Section II.2, the probability of a banking crisis is described by a pooled Probit model with endogenous variables of the type

$$Prob\{B.Crisis=1|X\} = \beta'X + u \quad (1)$$

$$X = [Ex.Default, \Delta \ln GDP, policy, exf]$$

$$\Delta \ln GDP = f(B.Crisis, X_1, \varepsilon)$$

¹⁶ Germany, France, Italy, Netherlands, Spain, Portugal, and the U.K.

Where equation (1) tells us that the probability that a country suffers a banking crisis, conditioned by a set of explanatory variables in vector X , will be a function of the regressors of these variables and the random vector u . Vector X contains a dummy variable for external default (*Ex.Default*), output variations ($\Delta \ln GDP$), policy variables (*policy*) and external factors (*exf*). Similarly, output variation will be a function $f(\cdot)$ of the banking crisis and a subset X_I of exogenous variables, which may include some of those that bears equation (1). Random variables u and ε are assumed to be normally distributed with zero mean and constant variance.

External Default

Analogously, the pooled Probit model to estimate the probability of external default will be

$$Prob\{Ex.Default = 1|Z\} = c'Z + \varpi \quad (2)$$

$$Z = [B.Crisis, \Delta \ln GDP, policy, exf]$$

$$\Delta \ln GD = f(Ex.Default, Z_I, \chi)$$

Here, the probability of external default, conditioned by vector Z containing the set of explanatory variables, will be a function of the regressors of these variables and the random variable ϖ . Such as in equation (1), vector Z here includes banking crisis, output variation, policy and external factors. In spite of, due to the different nature of crises, policy variables and external factors may differ between vectors Z and X . As before, random variables ϖ and χ are assumed to be “well behaved¹⁷”.

III.2 Policy Evaluation

To evaluate the effects of policy, fiscal and monetary, on the aggregate demand, I follow Bernanke et al. (1999), where a small open economy in aggregate terms can be described

¹⁷ Normal, with zero mean and constant variance.

through a system of three equations, the aggregate demand, the Phillips curve, and a Taylor rule

Aggregate Demand

$$y_{it} = a_{0i} + \phi_1 rr_{it} + \phi_2 g_{it} + \phi_3 s_{it} + \phi_4 y_{it}^* + \phi_5 fin_t + v_{it} \quad (3)$$

$$rr_{it} = h(rr_t^*, \pi_t, \pi_t^*, E_t(\Delta e_{it+1}))$$

Phillips Curve

$$\pi_{it} = a_{1i} + \delta E_t\{\pi_{it+1} | \Omega_t\} + \lambda x_{it} + \xi_{it} \quad (4)$$

$$\Omega_t = \{\pi_{it-1}, y_{it-1}, e_{it-1}, s_{it-n}\}$$

Taylor Rule

$$r_{it} = (1-\rho)\alpha_i + (1-\rho)\beta E_t\pi_{it+1} + (1-\rho)\gamma x_{it} + \rho r_{it-1} + \theta e_{it} + \psi_{it} \quad (5)$$

Where y , in equation (3), is the log of output (GDP) of country i at time t , a is the country-fixed effect, rr denotes its domestic real interest rate, g is the log of government spending (fiscal policy), and s represents the terms of trade of this country at time t . According with Galí and Monacelli (2005), the terms of trade are defined as $s_t = e_t + p_t^* - p_t$, being e the nominal exchange rate, p^* the log of foreign prices and p the log of domestic prices. On the other hand, y^* is the log of foreign income, rr^* is the foreign real interest rate, $E_t(\Delta e_{it+1})$ are the expectations of nominal devaluation at time t , and fin are financial conditions that affects aggregate demand. The random variable v_{it} represents an error term, with zero mean and constant variance. The Phillips curve of equation (4) is a forward-looking Phillips curve, with conditional expectations based on past inflation, and other relevant information contained in Ω_t . By using this notation, both the role of expectations and inflation persistency can be examined in the inflation behavior. Output gap x in equation (4) is defined as Clarida et al. (1999), with $x = \ln(Y/Y_n)$, being Y the level of current output and Y_n the level of natural output. As before, ξ is a normal random variable, “well behaved”. Equation (5) describes a simple forward-looking Taylor rule in

the spirit of Clarida et al. (1999) and Clarida (2001). Following Clarida (2001), the term ψ_{it} is a linear combination of the gap of inflation predictions plus an error term.

III.3 Crisis Resolution

I use duration analysis to examine crisis resolution, estimating the hazard ratio of exiting a crisis, conditioned on a group of policy variables and external factors. Applying the specification of Cox (1972) and Wooldridge (2002), the hazard function with time-varying covariates will be

$$\lambda [t; x (t)] = \exp [x(t)\beta] \lambda_0(t) \quad (6)$$

The hazard function $\lambda_0 (t)$, in equation (6), indicates the unconditional probability to leave the crisis at time t , and x is the set of policy variables and external factors that explain exiting. Based on the results of the Probit models of crises, these variables could contribute to a crisis resolution or to delay recovery.

III.4 Variables and Data

Because the study involves a large period of time, exceeding the coverage of the main multilateral organisms that collect international data, it was difficult to obtain homogenous time series for the full sample of countries. Even though in many cases the data was collected from central banks and official organisms, the dramatic structural changes that afflicted Latin American countries during the last century greatly affected the quality of this data. This was the case of money and interest rates, where most of the central banks were created between 1920 and 1930. Before these dates, national banks used to print money and bank notes for transaction purposes without regard to contemporary concepts¹⁸ of monetary policy. For this reason, some regressions were estimated with shorter series, in particular those that include money and domestic interest rates. Table A.3 of Appendix summarizes the explanation of variables and sources of data.

¹⁸ As well as regulation.

IV. Econometric Analysis

The crisis experiences for the eight Latin American countries and the U.S. are analyzed here according with the methodology of Section III. Divided in four parts, this section is devoted to examine co-movements of business cycles, regularities of crises, and the effect of policy and external factors on crises and crisis resolution.

IV.1 Co-movements of business cycles

To analyze the effect of foreign output on crises for the eight Latin American countries, the co-movements with the business cycles of the U.S., Europe, and China are examined. I obtained output gaps by using a simple filter¹⁹ as a benchmark and the band pass filter of Christiano and Fitzgerald (1999) with five frequencies²⁰: 2-3 years, 2-5 years, 2-8 years, 8-20 years, and 20-40 years. HP is commonly applied in business cycle analysis, but due to it considers a single frequency based on the U.S. business cycle, sometimes it can be biased and restrictive. Having the advantage of using different frequencies, the band pass filter permits us to identify co-movements of a variety of business cycles, differentiated by their length.

The results of this analysis are displayed in Table A.2 of the Appendix, where the first column contains correlations of classical recessions, and the following columns the output gap correlations. Although, the degree of correlation changes at different frequencies, the value of the coefficients show commonality with the business cycles of the U.S. and Europe between 1900 and 2009 on average. The same is observed between 1990 and 2009. In special cases, we observe negative correlations during most recent decades, but coefficients vary at different frequencies, as shown for Uruguay and Venezuela. Other countries like Chile and Mexico show increasing commonality at different frequencies. A different behavior is observed for China, where little correlation is found between 1900 and 2009 for the sample of countries on average, but an increasing

¹⁹ Hodrick Prescott (HP).

²⁰ Each frequency represents the length of the business cycle.

correlation is observed during the last decade. This is especially remarkable for countries such as Colombia and Peru, suggesting that China is acting as a driver of the business cycles of these countries. A change in trade and financial partnerships would explain these facts, but establishing that is beyond the scope of this analysis. However, based on this evidence we cannot sustain the decoupling hypothesis for these eight Latin American countries.

IV.2 Regularities of Financial Crises

Table A.4 shows regularities of financial crises for this group of countries and the U.S. between 1900 and 2010. To compare events, recessions are included in the last column. As the table indicates, crises have been more frequent in countries of higher per capita income, such as Argentina, Chile, Brazil, and Mexico. Besides this fact, we observe similar frequencies of banking crises and recessions between the U.S. and the group of eight Latin American countries (LA), the former did not suffer external defaults during the last century. On the other hand, the group of eight LA countries has on average crisis durations similar to the U.S., but the costs of the crisis differ, both in terms of output and credit losses. Whereas output lost would reach three percent in the U.S. during a banking crisis on average, it would reach 17 and 14 percent in countries such as Uruguay and Peru (See Picture 1). Similarly, although credit losses would be nothing in the U.S.²¹ during a banking crisis, they reached 18 percent in Argentina. Macroeconomic conditions differ largely among the eight LA countries and the U.S., explaining in part the crisis exposition. With the exceptions of Mexico and Colombia, where inflation was more moderate, the group of countries experienced huge inflationary processes during the crisis years. In many cases, large monetary expansions and increases in the central government debt accompanied these processes.

²¹ Excluding credit losses experienced during the financial distress of the Great Depression.

IV.3 Probability and Frequency of Crises

As policy variables, I use central government debt as a proxy of fiscal policy and money variation as monetary policy. Considering that government spending is financed in part by taxes and in part by debt, the latter is a good approximation of fiscal deficits. I also included the variation of exchange rates in nominal and real terms. Among the external factors, I include the index of commodity prices (*Commodity Index*), the real U.S. interest rate (*For. Interest Rate*), and financial conditions (see definition in Table A.3 of the Appendix). Control variables were also added for analytical purposes about the structural changes occurred during the century.

Tables 1 and 2 display the estimations of equations (1) and (2). To compare results, I apply fixed effects with instrumental variables (FE-IV), a Probit model with random effects, and a Probit model with instrumental variables (IV-Probit). In general, I obtain the best fit using IV-Probit models, with and without restrictions. In each case, Model 1 does not include financial conditions and Model 2 does include them. Because money variation was highly collinear with other key explanatory variables, it was dropped from the main equations. The coefficients of Table 1 and Table 2 show a positive correlation between *B.Crisis* and *Ex.Default*, although the latter was not always significant in the estimations of Table 1. On the other hand, I found negative and significant coefficients for $\Delta \ln GDP$ in the regressions of *B.Crisis*, in particular by using Probit models. The effect of $\Delta \ln GDP$ on default is less clear, achieving the coefficients of this variable less significance. These findings may suggest that adverse productivity shocks contributed to financial distress in the region, but the effect on default is not much direct. In both cases, the coefficients of *B.Crisis* and *Ex.Default* in the reduced-form equation of $\Delta \ln GDP$ were negative and significant, capturing them the output lost because of the crisis.

In line with Reinhart and Rogoff (2010), debt variation (Δ *Central Gov Debt*) was positive and significant in the equations of banking crises. The coefficient is especially large in the IV-Probit models. Similar result is found for the ratio of this debt in the default equations of Table 2, although the interpretation of these findings may differ. In

the estimations of Table 1, results may indicate that debt increases leave countries more exposed to financial distress. In those of Table 2, it would mean that the default was caused by the debt. The effect of *Commodity Index* is not clear at all; it was positive, but no significant in the linear equations of Table 1 and negative and significant in the IV-Probit regressions. For this reason, it was replaced by terms of trade variations in the default estimations of Table 2, where we obtained negative and significant coefficient values in the Probit models. Beyond that, the meaning of the negative signs might vary between banking crises and default. In the former they would be indicating the phase of the business cycle and in the latter, a causality effect, given that a drop in the terms of trade affects directly the conditions that lead to these events. The coefficients of foreign interest rates were positive but only significant in the Probit estimations (see tables 1 and 2). We can infer from this evidence that crises are more probable in a context of international economic contraction, and reinforce the hypothesis of sudden stops that have threatened Latin American countries. The sign of financial conditions in the IV-Probit equations of Table 1 and Table 2 confirms that bubbles or financial excesses lead to crises. As we could expect, Δ *Exchange Rate* was always significant and positive in the default regressions of Table 2.

To examine robustness, I repeat the estimations of equations (1) and (2) considering the frequency of crises and crisis duration. Due to the frequency of crises covers the events of the whole region, by doing this exercise; we can examine the interaction among countries in periods of financial distress and defaults. By estimating duration, we are testing crisis persistency. The results of these estimations are summarized in tables A.5 and A.6 of the Appendix, for crisis frequency and duration, respectively.

In general, the results of Table A.5 show a good fit for the two types of crises, confirming some of the findings of the preview estimations. Even though, some effects are emphasized and other smoothed when we use regional indicators instead of country indicators to estimate frequency of crises. Thus, the incidence of crisis, output variation, interest rates and financial conditions are emphasized in these estimations and policy variables, terms of trade and exchange rates are smoothed. In many cases, the

coefficients also change sign. In such a way, *Ex. Default* was always significant in the estimations of banking crises and also *B. Crisis* in the estimations of external default. In the latter, the coefficient reached values until 0.5 in the IV-Probit models, suggesting a contagious effect at regional level. A similar behavior is observed for $\Delta \ln GDP (LA)$, being its coefficient negative and significant in almost all of the estimations. The influence of foreign interest rates and financial conditions seem to be stronger also at regional level, where some coefficients were especially large. It is the case of *For. Interest Rate* and *Financial Conditions* in the IV-Probit models, although the negative coefficients of the last variable would suggest a different effect on defaults to banking crises. Among the variables with smoothened effects, country-debt variations seem to have less influence over frequency of banking crises, but the impact of country-debt ratios over default is not much clear, maintaining these coefficients significance and large values in some Probit estimations. In opposition, the coefficients of $\Delta Terms\ of\ Trade$ and $\Delta Exchange\ Rate$ were almost nulls and barely significant. The commodity index was always significant, but it reached small values in all of the estimations of Table A.5.

The analysis of duration in Table A.6 performed well for banking crises, but not much for default. An explanation for that is the length of crisis episodes; according to the data, banking crises are more persistent than external defaults. However, some periods of successive short defaults can be confounded with longer periods when the country was unable to pay its debts. Beyond that, the results of Table A.6 permit us to validate most of the preview results, finding positive and significant coefficients for the lags of banking crisis (*B.Crisis_{.1}*) and external defaults (*Ex.Default_{.1}*), indicating crisis persistency. I found the largest differences with respect to the preview results for the two financial variables, *For.Interest Rates* and *Financial Conditions-1*. In the estimations of duration of banking crises, the coefficient of *For.Interest Rates* was especially large in the IV-Probit regressions, and *Financial Conditions-1* was negative.

Summarizing the results obtained in the three types of crisis estimations, I find a positive and significant relationship between banking crises and external default using the three types of measures, probability of crisis, crisis frequency, and duration. The foregoing

would suggest that countries are more prone to default in periods of financial distress, but the conditions that lead to a default would trigger a banking crisis as well. The coefficients of $\Delta \ln GDP$ were negative and significant in the reduced-form of the IV-Probit models for the two types of crises, indicating the costs of crises in terms of output lost. Nevertheless, the crisis estimations show that a recession would also lead to a crisis. According with the results, the policy variable $\Delta Central Gov Debt$, foreign interest rates and financial conditions are among the main factors that may trigger a banking crisis. In the case of external defaults, they are the ratio of debt, financial conditions, and exchange rates. Other things equal, the effect of debt may differ between banking crises and defaults. In periods of financial distress, debt tends to increase because of government intervention (crisis resolution), but during defaults, a large debt would indicate imbalances that lead to a crisis. Beyond that, external factors also matter, especially those connected with financial conditions, and commodity prices. Even if the role of financial conditions can differ between banking crises and defaults, they are meaningful for Latin American economies. Indeed, many episodes of crises in this region were accompanied by large spreads between the premium of sovereign bonds and risk-free bonds²².

²² Edwards (1995).

Table 1 - Probability of Banking Crises

	Model 1			Model 2		
	FE-IV	Probit	IV-Probit	FE-IV	Probit	IV-Probit
Ex. Default	0.06 (0.033)	0.01 (0.003)	0.02 (0.003)***	0.08 (0.039)*	0.01 (0.003)	0.03 (0.003)***
Δ ln GDP	-0.39 (0.127)**	-0.04 (0.013)***	-0.06 (0.018)***	-0.44 (0.144)**	-0.05 (0.014)***	-0.07 (0.017)***
Δ Central Gov Debt	0.84 (0.165)***	0.05 (0.016)**	0.72 (0.010)***	0.01 (0.0020)***	0.05 (0.016)**	0.72 (0.010)***
Commodity Index	0.03 (0.013)*	0.00 (0.001)*	-0.01 (0.002)***	0.03 (0.015)*	0.00 (0.002)	-0.01 (0.002)***
For. Interest Rate	0.16 (0.122)	0.03 (0.013)*	0.25 (0.009)***	0.19 0.14	0.03 (0.013)*	0.26 (0.009)***
Financial Conditions-1				0.00 (0.009)	0.17 (0.208)	1.45 (0.252)***
Observations	810	816	810	670	816	810
Chi ²	61	39	105435	154	40	106277
R ²	7%			14%		

IV-Probit: Estimated with restrictions.

Standard Deviations in brackets

* p < .05; ** p < .01; *** p < .0001

Table 2 - Probability of External Default

	Model 1			Model 2		
	FE-IV	Probit	IV-Probit	FE-IV	Probit	IV-Probit
B. Crisis	0.09 (0.037)*	0.01 (0.003)**	0.01 (0.003)*	0.09 (0.037)*	0.01 (0.003)**	0.01 (0.003)*
Δ ln GDP	-0.30 (0.148)*	0.00 (0.018)	0.00 (0.024)	-0.31 (0.149)*	-0.01 (0.020)	-0.01 (0.024)
Central Gov Debt	0.03 (0.008)**	0.94 (0.011)***	0.95 (0.011)***	0.03 (0.009)***	0.94 (0.011)***	0.96 (0.011)***
For. Interest Rate	0.15 (0.088)	0.05 (0.011)***	0.04 (0.011)***	0.13 (0.089)	0.05 (0.011)***	0.04 (0.011)***
Δ Terms of Trade	0.00 (0.001)	-0.02 (0.002)***	-0.02 (0.003)***	0.00 (0.001)	-0.03 (0.002)***	-0.02 (0.003)***
Financial Conditions -1				0.02 (0.018)	0.38 (0.220)	0.49 (0.208)*
Δ Exchange Rate	0.02 (0.008)**	0.48 (0.161)**	0.47 (0.155)**	0.02 (0.008)**	0.44 (0.166)**	0.38 (0.153)*
Observations	670	675	670	670	675	670
Chi ²	71	100913	104338	73	16740	106077
R ²	6%			6%		

Standard Deviations in brackets

* p < .05; ** p < .01; *** p < .0001

IV.4 Policy Evaluation

I estimate here aggregate demand and inflation based on equations (3) and (4), respectively, applying Fixed Effects with Instrumental Variables (FE-IV) and a Panel-Corrected Standard Error (PCSE) model. I follow the same approach to estimate equation (5) using data of the eight Latin American countries. To obtain country-level estimations of equation (5) I use a VAR approach. As before, I added control variables to examine structural changes. Tables A.7 and A.8 of Appendix contain the results of aggregate demand and inflation. The forward-looking reaction functions based on equation (5) are summarized in tables 3 and 4.

IV.4.1 Aggregate Demand-Fiscal Policy

Because a long time series of domestic interest rate was not available for the full sample of countries, to estimate equation (3) I replace this variable by the foreign interest rate. Despite the fact the latter is considered an external factor, policy decisions can affect the degree it intervenes in the domestic economy. As external factors, I include three general indexes, *Foods*, *Metals*, and *Manufactures*, and the composed index, *Commodity Index* (see Table A.3 for details). On the other hand, I added GDPs of the U.S., Europe, and China, and financial conditions. To analyze the impact of shocks on aggregate demand, I use dummy variables for external default and banking crises, applying instrumental variables in the estimations.

As shown in Table A.7, the impact of fiscal policy on aggregate demand, measured by the ratio of debt, was positive and significant, reaching the coefficient values until 0.32 in the IV-FE models and until 0.14 in the PCSE-type models. Apparently, this evidence would be inconsistent with the previous results; however, it would be confirming a not trivial role of government debt in crisis events. As debt contributes to demand expansion, output rises in the short term, but large fiscal imbalances lead the economies more prone to receive external shocks.

The coefficient of *For. Interest Rate* was also significant, reaching values until -0.31 in the IV-FE models and until -0.19 in the PCSE models. In such a way, the two “policy” variables²³ seem to play a key role on aggregate demand. The same is observed when I use the three general indexes and the *Commodity Index* as external factors. In spite of, I use variations in prices of commodities as proxy variables for adverse liquidity shocks (see Aghion et al. (2005)). The results are very consistent and show a positive correlation between the levels of prices and output. Among the three measures of foreign output, I find the highest value for the U.S., whereas the coefficient of China was not significant. Even if the dummy variables of crises were no significant, they were usually negative. The incidence of financial conditions on aggregate demand is not much clear: the coefficient was only marginally significant in most of the estimations and sometimes negative. In both situations, crises and financial conditions are highly correlated with other explanatory variables in the demand equation. In particular, the S&P 500 index closely tracks the behavior of the U.S. stock market.

IV.4.2 Monetary Policy

With of the region’s tradition of macroeconomic imbalances, monetary policy was very expansive in Latin America for many years, where central banks used to issue money to finance public debt. In most of the cases, these practices were accompanied by large inflationary periods, and so the contribution of money expansion was largely to trigger inflation, as shown in Table A.8. After economic reforms of the 1990s, the group of countries analyzed in this study increasingly has adopted more strict monetary rules to control inflation. The latter include inflation targeting and nominal interest rates as the main tools of monetary policy in a context of floating exchange rates and open capital accounts.

Thus, estimating forward-looking reaction functions at group level and individual level, I obtained the monetary policy parameters of equation (5). The results presented in tables 3 and 4 are in line with other findings that suggest that Latin America in general allocated

²³ Even though the foreign interest rate is exogenous, its effects on the domestic economy can be affected by monetary policy.

less importance than mature economies to control inflation. I calculated long-term real interest rates for the eight countries, using the policy parameters obtained in the estimations of equation (5) and the rates of natural²⁴ inflation. At group level, the interest rates estimated are close to the values we observe in the data on average, but at individual level, I found more discrepancies. In such a way, if the parameters estimated were “robust” and the discrepancy between interest rates is positive, it would be indicating that the government was not worried about inflation. The opposite if the discrepancy is negative.

Parameters	Basic Model		Adding Exchange Rates	
	FE-IV	PCSE	FE-IV	PCSE
γ	0.11 (0.090)	0.37 (0.33)	0.02 (0.006)**	0.52 (0.22)*
ρ	0.43 (0.050)***	0.55 (0.06)***	0.30 (0.049)***	0.03 (0.02)*
β	0.39 (0.044)***	0.55 (0.21)***	0.60 (0.140)**	0.80 (0.07)***
θ			0.07 (0.010)**	0.93 (0.20)***
α	0.59 (0.226)	0.56 (1.53)	0.42 (2.298)	0.39 (0.96)
π_e^{lr}	0.06	0.06	0.06	0.06
rr_{Ob}	0.44	0.44	0.44	0.44
rr_e	0.55	0.53	0.40	0.40

Control Variables: Population, openness.

Instrumental Variables: Lagged inflation, lagged GDP growth, food's price variation.

Standard Deviations in brackets

* p < .05; ** p < .01; *** p < .0001

e: estimated, lr: long run, ob: observed.

²⁴ Coincident with zero output gaps, they were estimated according to Clarida et al. (2001).

Table 4 - Forward Looking Reaction Function by Country
Basic Model with Control Variables (VAR Approach)

	γ	β	ρ	α	π_e^{lr}	π_{ob}	π_e
Argentina	2.01 (0.426)	1.61 (0.173)***	0.63 (0.131)***	0.40 (1.335)	0.08	1.56	0.45
Brazil	1.94 (11.250)	2.42 (0.782)*	0.24 (0.119)*	2.13 (4.517)	0.07	2.28	2.23
Chile	0.26 (0.077)	0.26 (0.010)***	0.66 (0.049)***	0.05 (0.008)	0.03	-0.12	0.02
Colombia	1.67 (0.405)*	1.03 (0.082)**	0.71 (0.090)***	0.05 (0.017)	0.07	0.07	0.05
Mexico	11.45 (0.530)*	1.12 (0.050)***	0.71 (0.072)***	0.11 (0.030)	0.06	0.11	0.12
Peru	0.14 (0.293)	0.14 (0.026)**	0.46 (0.143)**	0.59 (0.596)	0.05	-0.60	0.54
Uruguay	0.08 (0.015)***	0.19 (0.075)	0.43 (0.153)**	0.17 (0.050)	0.06	-0.08	0.12
Venezuela	1.31 (0.236)*	0.18 (0.035)*	0.62 (0.119)***	0.04 (0.013)	0.09	-0.03	-0.03

Control Variables: Population, openness, exchange rate.

Standard Deviations in brackets.

* p < .05; ** p < .01; *** p < .0001

e: estimated, lr: long run, ob: observed.

IV.5 Crisis Resolution

To examine the role of policy variables and external factors on crisis resolution, I apply St-Cox to estimate equation (6). As policy variables, I consider the ratio of debt (*Central Gov Debt*) and its variation (Δ *Central Gov Debt*), money variation (Δ *MI/GDP*), domestic interest rate (*Interest Rate*), and devaluation (Δ *Exchange Rate*). As external factors, I included *Commodity Index*, foreign interest rates, gaps of interest rates (*Gap of IR*), variations of terms of trade, the index of prices of foods (*Foods*), and foreign incomes. I estimated four models for each type of crises, varying them by the combinations of policy tools and external factors. Tables A.9 and A.10 of the Appendix contain the main findings of this exercise, obtaining significant coefficients for the three policy variables²⁵ in the estimation of exiting a banking crisis. According to these results,

²⁵ *Central Gov Debt*, Δ *MI/GDP*, and *Interest Rate*.

the most important external factors were *Commodity Index* and foreign interest rates. In the case of exiting a default, the policy variables, debt, interest rates, and devaluation were significant, but not money. The external factors were little significant, with the exception of *Foods* (see Table A.10). Based on equation (6), a negative coefficient implies the variable affect directly the crisis resolution and a positive one, an inverse relationship. Thus, whereas an expansive fiscal policy would contribute to exiting a banking crisis, the effect is the opposite during defaults. In such a case, conducting monetary policy through interest rates, seem to be more relevant for exiting a default. Summarizing these findings in Table 5, we have that policy can explain between 45 and 69 percent of exiting a banking crisis, with the other proportion explained by external factors. On the other hand, exiting an external default can be explained between 20 and 92 percent by policy. Note that the confidence interval of the role of policy on exiting is larger for defaults than banking crises. In the former, a 20 percent would imply “little is possible to do for exiting” and a 92 percent, “almost everything is done by policy”. A sample of data of default episodes more accurate would be required to obtain results more conclusive.

Table 5 - Contribution to Crisis Resolution

	Banking Crisis			
	Model 1	Model 2	Model 3	Model 4
Policy	67%	45%	49%	69%
External Factors	33%	55%	51%	31%

	External Default			
	Model 1	Model 2	Model 3	Model 4
Policy	93%	20%	48%	61%
External Factors	7%	80%	52%	39%

V. Conclusions

Examining banking crises and external defaults for eight Latin American countries and the U.S. between 1900 and 2010, I find that although in many of these events external factors (luck) played a role either in triggering a crisis or in promoting contagion,

economic policy contributed to create conditions for these events. Whereas banking crises would be related with periods of financial “excesses,” external defaults would be connected with macroeconomic imbalances, with policy playing a different role. Considering government debt as fiscal policy, we see in the former that debt would surge because of government intervention during financial distress. In the latter, debt would lead a country to defaults in certain conditions. Examining monetary policy through forward-looking reaction functions at group and country level, I find less monetary control for the group of countries than that observed in mature economies. This factor would explain largely inflationary process in these countries. Analyzing crisis resolution, the results show that policy would explain up to 69 percent of exiting a banking crisis and up to 93 percent of exiting a default. Even though that, external factors (luck) may play a significant role in crisis resolution, there is a room for governments in applying good policy, and to reduce the effect of adverse shocks during times of financial distress.

VI. References

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Appendix

Table A.1 - Crises and Growth in Latin America

Country	GDP Growth		Debt Crisis		Mexican Crisis		Asian Crisis		Argentinean Crisis		Subprime Crisis	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Argentina	2.3	2.4	-3.1	-3.2	-2.8	-2.8	-3.4	-3.4	-10.9	-10.9	0.9	-0.5
Bolivia	2.5	2.4	-4.0	-4.4	4.7	4.7	-2.6	0.4	2.5	2.5	3.3	0.6
Brazil	2.7	2.7	-3.4	-3.4	4.2	4.2	0.0	0.3	2.7	2.7	-0.2	0.0
Chile	4.6	4.6	-13.6	-13.6	10.6	10.6	-0.4	-0.8	2.2	2.2	-1.5	-0.4
Colombia	3.4	3.4	0.9	1.0	5.2	5.2	-4.2	-4.2	2.5	2.5	0.1	-0.1
Costa Rica	3.9	3.9	-7.3	-7.0	3.9	3.9	1.8	8.2	2.9	2.9	-1.1	-1.5
Dominican Republic	4.6	4.5	1.7	1.8	5.5	5.5	7.0	6.7	1.8	5.8	3.5	0.5
Ecuador	3.0	2.8	-2.8	-2.1	1.1	1.7	-5.3	-6.3	3.4	4.2	0.4	-0.2
El Salvador	1.9	-	-6.3	-	6.4	-	3.4	-	2.3	-	-3.5	-
Guatemala	2.7	2.8	-3.5	-3.5	4.4	4.9	3.7	3.8	3.9	3.9	0.6	0.4
Honduras	3.2	-	-1.4	-	4.1	-	-1.9	-	3.8	-	-1.9	-
Jamaica	1.4	1.2	3.1	1.3	1.0	2.5	-1.2	-1.2	1.3	1.1	-2.8	-3.6
Mexico	2.6	2.7	-3.5	-4.3	-6.2	-6.2	3.9	3.8	0.8	0.8	-6.5	-1.5
Nicaragua	1.8	-	-4.1	-	5.9	-	3.7	-	0.8	-	-1.5	-
Panama	4.4	-	-4.5	-	1.8	-	2.7	-	2.2	-	2.4	-
Paraguay	2.8	-	-3.0	-	5.5	-	-3.3	-	0.0	-	-4.5	-
Peru	3.0	2.8	-9.3	-13.4	8.6	8.6	3.0	-0.7	5.0	5.0	0.9	0.3
Uruguay	2.4	2.5	-9.3	-9.5	-1.4	-1.4	-3.0	-2.8	-7.1	-11.0	2.9	0.1
Venezuela	2.2	2.1	-5.5	-3.8	4.0	4.0	-6.0	-6.0	-8.9	-8.9	-3.3	-0.2
Latin America	2.9	2.9	-4.2	-4.6	3.5	3.2	0.2	-0.1	0.6	0.2	-0.6	-0.4
Variation	0.0	0.0	-2.4	-2.6	0.2	0.1	-0.9	-1.1	-0.8	-0.9	-1.2	-1.1
USA	2.7	2.7	-1.9	-1.9	2.5	2.5	4.4	4.4	1.1	1.1	-2.4	-2.5
Europe	1.9	2.0	1.7	1.1	2.5	2.5	3.0	3.0	2.2	2.2	-4.2	-4.0
OECD Countries	2.4	2.5	0.1	0.1	2.2	2.2	2.7	2.8	1.2	1.9	-3.4	-3.5
Variation	0.0	0.0	-1.0	-1.0	-0.1	-0.1	0.1	0.2	-0.5	-0.5	-2.4	-2.5

(1): Real GDP growth in local currency between 1980 and 2009.

(2): Real GDP growth between 1980 and 2009, expressed in constant US\$ dollars of 1990 at Purchasing Parity Power (PPP).

Note: The first two columns correspond to the average growth rates between 1980 and 2009. The following columns contain the rates of growth in the crisis year.

Source: World Bank (2010), The Conference Board (2010), OECD (2010).

- : This data is not available.

Table A.2 - Comovements of Output Cycles in Latin America

Country	Classical Recession		Hodrick Prescott		Band Pass Filter									
					2-3 years		2-5 years		2-8 years		8-20 years		20-40 years	
	$\rho_{1900-2009}$	$\rho_{1990-2009}$	$\rho_{1900-2009}$	$\rho_{1990-2009}$	$\rho_{1900-2009}$	$\rho_{1990-2009}$	$\rho_{1900-2009}$	$\rho_{1990-2009}$	$\rho_{1900-2009}$	$\rho_{1990-2009}$	$\rho_{1900-2009}$	$\rho_{1990-2009}$	$\rho_{1900-2009}$	$\rho_{1990-2009}$
USA- Output Cycle														
Argentina	0.16	0.02	0.07	0.07	0.23	-0.02	0.16	0.24	0.24	0.57	0.17	-0.51	0.27	0.43
Brazil	0.10	0.27	-0.04	-0.21	-0.08	0.00	0.16	0.35	0.25	0.01	0.03	-0.27	0.17	0.87
Chile	0.27	0.32	0.16	0.18	0.12	0.49	0.10	0.48	0.36	0.06	0.40	-0.55	0.44	-0.87
Colombia	0.17	0.21	-0.04	0.04	-0.15	0.14	0.07	0.46	0.00	0.02	-0.09	-0.71	-0.14	0.90
Mexico	0.19	0.13	0.24	0.61	0.30	0.67	0.23	0.72	0.41	0.82	0.47	-0.07	0.65	0.76
Peru	0.04	0.07	0.07	-0.07	0.14	0.46	0.20	-0.14	0.23	-0.22	0.22	0.02	-0.17	0.89
Uruguay	-0.12	-0.26	0.00	-0.07	-0.39	0.39	-0.06	0.12	0.16	0.52	0.23	-0.50	-0.29	-0.66
Venezuela	-0.01	-0.08	-0.09	0.07	-0.07	0.00	0.02	-0.14	-0.08	0.48	-0.01	-0.67	-0.32	-0.81
Latin America-8	0.11	0.11	0.07	0.08	0.02	0.30	0.12	0.32	0.24	0.25	0.20	-0.37	0.13	0.33
Europe - Output Cycle														
Argentina	0.23	0.14	0.20	0.23	0.09	0.08	0.21	0.32	0.28	0.06	0.03	-0.54	0.09	0.42
Brazil	0.23	0.09	0.24	0.11	0.30	0.59	0.24	0.43	0.41	0.53	0.05	-0.55	-0.29	0.16
Chile	0.10	0.44	0.25	0.29	0.01	0.22	0.25	0.49	0.31	0.42	0.41	-0.38	0.11	0.71
Colombia	0.45	0.32	0.23	0.18	0.16	-0.10	0.10	0.43	0.25	0.54	0.28	-0.32	-0.12	-0.32
Mexico	0.13	0.24	0.17	0.65	0.05	0.81	0.11	0.46	0.19	0.53	0.25	0.58	-0.69	0.38
Peru	0.15	0.18	0.15	0.05	0.16	0.81	0.24	0.32	0.20	0.40	0.23	-0.57	0.27	0.11
Uruguay	-0.02	-0.21	0.13	0.29	-0.06	0.06	0.07	0.25	0.04	0.16	0.30	-0.41	0.08	-0.50
Venezuela	0.18	0.40	0.19	0.55	0.25	-0.09	0.26	0.25	0.08	0.46	0.30	-0.22	0.48	-0.22
Latin America-8	0.18	0.17	0.19	0.26	0.10	0.35	0.17	0.39	0.24	0.38	0.22	-0.31	-0.08	0.14
China - Output Cycle														
Argentina	-0.10	-0.16	-0.02	-0.20	-0.17	-0.28	-0.07	-0.11	-0.07	-0.61	-0.13	0.67	-0.40	0.55
Brazil	0.03	0.31	0.00	0.60	0.16	-0.19	0.05	-0.12	0.04	0.49	-0.18	0.57	-0.22	0.92
Chile	-0.03	-0.08	-0.12	0.33	-0.30	0.40	-0.24	0.10	-0.06	0.23	-0.13	0.82	-0.46	-0.86
Colombia	0.12	0.54	0.04	0.57	0.05	0.45	0.09	-0.02	0.03	0.39	0.36	0.95	-0.04	0.96
Mexico	-0.01	-0.12	-0.05	-0.60	-0.08	-0.72	-0.04	-0.48	0.03	-0.62	-0.29	-0.45	-0.51	0.80
Peru	0.10	0.39	0.04	0.67	0.02	0.14	0.03	0.18	0.04	0.68	-0.05	0.34	0.32	0.93
Uruguay	-0.06	-0.14	0.03	-0.21	0.13	-0.46	0.03	-0.24	0.04	-0.44	-0.06	0.57	-0.22	-0.69
Venezuela	-0.10	0.28	0.12	-0.23	0.24	0.29	0.12	-0.13	0.10	-0.42	0.04	0.85	0.04	-0.79
Latin America-8	0.00	0.13	0.01	0.12	0.01	-0.05	0.00	-0.10	0.02	-0.04	-0.05	0.54	-0.19	0.23

Table A.3 - Variables and Data

Banking Crisis	Dummy variable that takes a value equal to one if the country was experiencing a banking crisis at year t and zero otherwise. The source of data is Reinhart and Rogoff (2010), and Laeven and Valencia (2010).
Commodity Index	Composed commodity index with the prices of twenty six main commodities exported by Latin American countries between 1900 and 2010. To build the index the commodity prices were weighted by the trade coefficients of each country. The source of data is Oxford Latin American History Economic Database (2010), Comtrade (2010), and IMF (2010).
Devaluation	Nominal exchange variation adjusted by inflation. The source of data is Oxford Latin American History Economic Database (2010), IMF (2010), and Global Financial Database (2010).
External Default	Dummy variable that takes a value equal to one if the country was experiencing an external default and zero otherwise. The source of data is Reinhart and Rogoff (2010).
Exchange Rate	Index of nominal exchange rate, adjusted by domestic inflation. The source of data is Oxford Latin American History Economic Database (2010), IMF (2010), and Global Financial Database (2010).
Financial conditions 1	Log of S&P 500 index adjusted by the US inflation. The source of data is Global Finance Database (2010).
Financial conditions 2	Variation of the log of the S&P 500 index adjusted by the US inflation. The source of data is Global Finance Database (2010).
Foods	Composed commodity index with the prices of the main primary goods exported by Latin American countries between 1900 and 2010. The source of data is Oxford Latin American History Economic Database (2010) and IMF (2010).
Foreign Interest Rate-US	US real interest rate, central bank or overnight rate adjusted by inflation. The source of data is Global Finance Database (2010).
Foreign Interest Rate-UK	UK real interest rate, central bank or overnight rate adjusted by inflation. The source of data is Global Finance Database (2010).
Foreign Growth - US	Annual variation of the natural log of the US real GDP. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
Foreign Growth - EU	Annual variation of the natural log of the UK real GDP. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
Foreign Growth - China	Annual variation of the natural log of the UK real GDP. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
Foreign Income-US	US Gross Domestic Product in per capita terms, in purchasing parity power of 2005. Annual data between 1900 and 2010. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
Foreign Income-EU	US Gross Domestic Product in per capita terms, in purchasing parity power of 2005. Annual data between 1900 and 2010. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
Foreign Income-China	China Gross Domestic Product in per capita terms, in purchasing parity power of 2005. Annual data between 1900 and 2010. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
Gap of Interest Rate	Difference between the US and the UK real interest rate, considering central banks or overnight rates. The source of data is Global Finance Database (2010).
GDP	Gross Domestic Product in constant dollars of 2000, adjusted by dollars of 2005, annual data between 1900 and 2010. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
GDP per capita	Gross Domestic Product in per capita terms, in purchasing parity power of 2005. Annual data between 1900 and 2010. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
Gov Consumption	Ratio of government consumption to GDP. The source of data is Penn World Tables 6.1
Gov Debt	Central government debt over GDP. The source of data is Oxford Latin American History Economic Database (2010), and Reinhart and Rogoff (2010).
Inflation	Consumer price index variation, based on prices of 2000 and adjusted to prices of 2005. The source of data is Oxford Latin America History Economic Database (2010), and IMF (2010).
Interest Rate	Nominal interest rate, money market or interbank interest rate for each country as a proxy of the central bank interest rate. The source of data is Central Bank of Argentina, Central Bank of Brazil, Braun et al. (2000), ITAM (2010), and Global Financial Database (2010).
Manufactures	Composed commodity index with the prices of the main manufactured goods exported by Latin American countries between 1900 and 2010. The source of data is Oxford Latin American History Economic Database (2010), and IMF (2010).
Metals	Composed commodity index with the prices of the main metals exported by Latin American countries between 1900 and 2010. The source of data is Oxford Latin American History Economic Database (2010), and IMF (2010).
M1/GDP	Ratio of money (M1) over GDP, annual series. The length of the series differ for the sample of countries. The source of data is Oxford Latin America History Economic Database (2010), Braun et al. (2000), Central Bank of Argentina, Central Bank of Brazil, ITAM (2010), and IMF (2010).
Openness	Ratio of foreign trade to GDP. The source of data is Groningen Growth Development Centre (2010), Penn World Table 6.1, and IMF (2010).
Population	Total population in millions of persons. The source of data is Groningen Growth Development Centre (2010), World Bank (2010), and IMF (2010).
Terms of Trade	Real exchange rate variations, adjusted by oil prices. The source of data is Oxford Latin American History Economic Database (2010), IMF (2010), and Global Financial Database (2010).

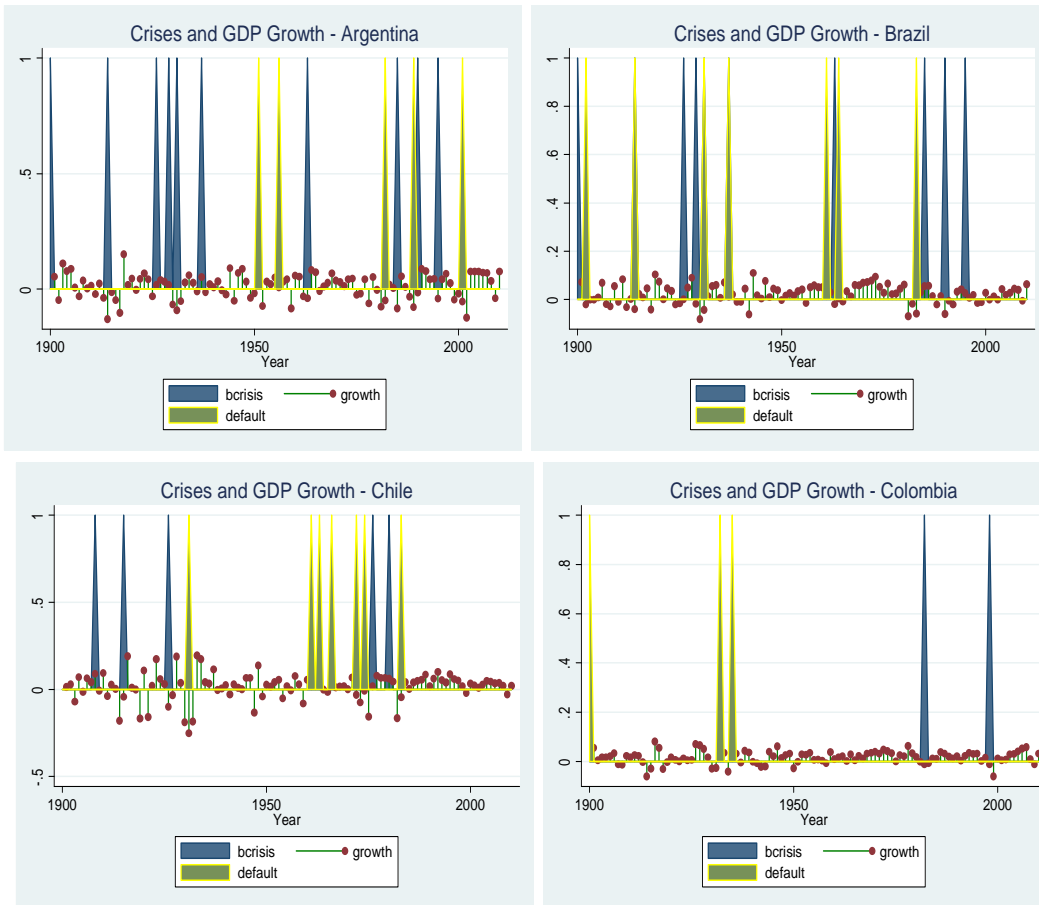
Table A.4 - Regularities of Financial Crises Since 1900

		Banking Crisis	Ex. Default	Recession
Argentina	Frequency	7%	5%	37%
	Duration (years)	2.3	0.8	-
	Output loss	11%	2%	3%
	Credit loss	18%	37%	4%
	Inflation	479%	659%	194%
	Central Gov Debt Var.	1%	-21%	2%
	Money (M1) Var.	654%	598%	168%
	Stress 1	477%	659%	191%
	Stress 2	-114%	-332%	-37%
Brazil	Frequency	9%	6%	29%
	Duration (years)	2.1	1.1	-
	Output loss	2%	1%	1%
	Credit loss	14%	6%	2%
	Inflation	364%	35%	173%
	Central Gov Debt Var.	60%	6%	-9%
	Money (M1) Var.	304%	34%	145%
	Stress 1	362%	35%	170%
	Stress 2	5886%	-19%	1689%
Chile	Frequency	5%	6%	28%
	Duration (years)	1.8	1.4	-
	Output loss	4%	6%	1%
	Credit loss	-16%	2%	1%
	Inflation	55%	97%	56%
	Central Gov Debt Var.	-4%	0%	2%
	Money (M1) Var.	11%	12%	14%
	Stress 1	52%	96%	56%
	Stress 2	-26%	-63%	-41%
Colombia	Frequency	2%	3%	23%
	Duration (years)	2.0	1.7	-
	Output loss	2%	4%	1%
	Credit loss	14%	-	5%
	Inflation	22%	23%	5%
	Central Gov Debt Var.	9%	-23%	4%
	Money (M1) Var.	9%	-	16%
	Stress 1	18%	-10%	4%
	Stress 2	2%	-	-1%

Table A.4 - Regularities of Financial Crises Since 1900

		Banking Crisis	Ex. Default	Recession
Mexico	Frequency	6%	4%	21%
	Duration (years)	2.1	1.3	-
	Output loss	3%	0%	2%
	Credit loss	11%	23%	14%
	Inflation	16%	16%	27%
	Central Gov Debt Var.	-4%	22%	3%
	Money (M1) Var.	23%	31%	47%
	Stress 1	10%	14%	27%
	Stress 2	-19%	-7%	-16%
Peru	Frequency	2%	5%	27%
	Duration (years)	2.0	1.2	-
	Output loss	14%	2%	2%
	Credit loss	7%	7%	10%
	Inflation	57%	43%	407%
	Central Gov Debt Var.	10%	-2%	3%
	Money (M1) Var.	59%	55%	354%
	Stress 1	55%	40%	404%
	Stress 2	-38%	-58%	-757%
Uruguay	Frequency	3%	5%	29%
	Duration (years)	4.0	1.2	-
	Output loss	17%	5%	5%
	Credit loss	16%	17%	6%
	Inflation	34%	48%	24%
	Central Gov Debt Var.	81%	4%	18%
	Money (M1) Var.	40%	51%	35%
	Stress 1	27%	45%	22%
	Stress 2	72%	-45%	-7%
Venezuela	Frequency	2%	4%	38%
	Duration (years)	2.5	1.3	-
	Output loss	3%	1%	3%
	Credit loss	16%	4%	2%
	Inflation	23%	32%	15%
	Central Gov Debt Var.	-2%	-8%	-3%
	Money (M1) Var.	14%	30%	33%
	Stress 1	17%	29%	11%
	Stress 2	-16%	-27%	-22%
USA	Frequency	5%		27%
	Duration (years)	2.2		-
	Output loss	3%		3%
	Credit loss	0%		24%
	Inflation	2%		3%
	Central Gov Debt Var.	-12%		3%
	Money (M1) Var.	0%		7%
	Stress 1	-		-
	Stress 2	0%		-2%

Picture A.1a - Financial Crises and GDP Growth



Picture A.1b - Financial Crises and GDP Growth

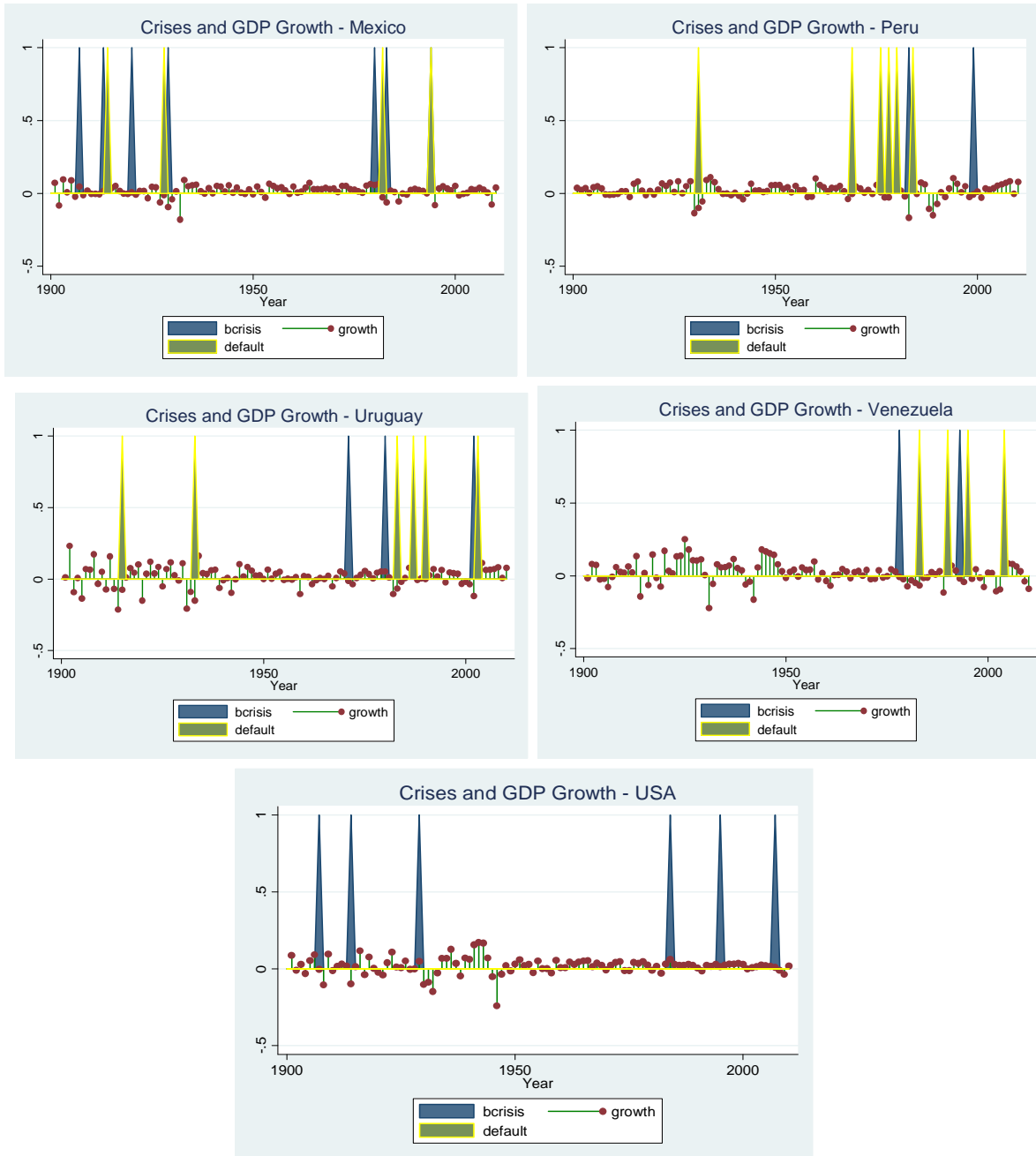


Table A.5 - Frequency of Financial Crises

	Banking Crises						External Default					
	Model 1			Model 2			Model 1			Model 2		
	FE-IV	Probit	IV-Probit	FE-IV	Probit	IV-Probit	FE-IV	Probit	IV-Probit	FE-IV	Probit	IV-Probit
B. Crisis							0.12 (0.041)**	0.04 (0.012)**	0.50 (0.011)***	0.17 (0.042)***	0.04 (0.013)**	0.50 (0.011)***
Ex. Default	0.02 (0.007)***	0.01 (0.002)**	0.01 (0.003)**	0.02 (0.006)**	0.01 (0.025)*	0.01 (0.003)**						
Δ ln GDP (LA)	-0.21 (0.051)**	-0.10 (0.018)***	-0.01 (0.040)	-0.18 (0.050)***	-0.13 (0.024)***	-0.01 (0.038)	-0.76 (0.062)***	-0.07 (0.018)***	-0.22 (0.031)***	-0.70 (0.064)***	-0.09 (0.020)***	-0.05 (0.033)
Central Gov Debt							0.00 (0.002)	0.94 (0.014)***	0.13 (0.001)***	0.00 (0.002)	0.93 (0.015)***	0.13 (0.007)***
Δ Central Gov Debt	0.09 (0.032)**	0.02 (0.013)	0.03 (0.013)*	0.08 (0.031)**	0.03 (0.014)*	0.03 (0.014)						
Commodity Index	0.02 (0.003)***	0.00 (0.001)***	0.01 (0.001)***	0.01 (0.003)***	0.00 (0.001)**	0.00 (0.001)**	0.01 (0.003)*	0.00 (0.001)	-0.04 (0.003)***	0.02 (0.004)***	0.00 (0.001)*	-0.02 (0.003)***
For. Interest Rate	0.07 (0.024)**	0.02 (0.009)**	0.03 (0.009)***	0.04 (0.023)	0.03 (0.010)**	0.02 (0.009)*	0.09 (0.029)**	0.02 (0.009)*	0.37 (0.009)***	0.14 (0.030)***	0.03 (0.010)***	0.37 (0.009)***
Δ Terms of Trade							0.00 (0.001)	-0.02 (0.017)	-0.03 (0.022)	0.00 (0.001)*	-0.02 (0.020)	-0.07 (0.003)***
Δ Exchange Rate							0.00 (0.001)	0.02 (0.017)	0.01 (0.023)	0.00 (0.001)*	0.02 (0.018)	0.05 (0.021)*
Financial Conditions 1				0.02 (0.003)***	0.61 (0.124)***	0.74 (0.129)***				-0.03 (0.005)***	-0.27 (0.129)*	-4.54 (0.290)***
Observations	810	816	810	810	810	810	672	778	782	672	778	782
Chi ²	468	131	104	545	170	137	646	14002	22772	4718	14387	5385
R ²	18%			24%			31%			33%		

	Endogenous Variable - Δ ln GDP		Endogenous Variable - Δ ln GDP	
	IV-Probit	IV-Probit	IV-Probit	IV-Probit
B. Crisis			-0.13 (0.020)***	-0.12 (0.021)***
Ex. Default	-0.02 (0.004)***	-0.02 (0.004)***		
Δ ln GDP ₋₁ (LA)	0.24 (0.030)***	0.23 (0.029)***	0.24 (0.029)***	0.24 (0.029)***
Central Gov. Debt			0.02 (0.008)*	0.02 (0.008)*
Δ Central Gov Debt	-0.02 (0.019)	-0.02 (0.019)		
Ln Foods	4.90 (0.006)***	5.16 (0.006)***	5.30 (0.543)***	5.41 (0.542)***
For. Interest Rate	-0.02 (0.016)	-0.01 (0.016)	-0.02 (0.016)	-0.01 (0.017)
Δ ln For. GDP (Euro)	21.01 (0.024)***	20.44 (0.024)***	20.17 (2.386)***	20.13 (2.385)***
Observations	819	810	782	782
Chi ²	104	137	22772	5385
R ²	36%	36%	40%	41%

Control Variables: Population, relative income, openness.

Instrumental Variables: Lagged GDP growth, foreign growth, food's price variation.

Standard Deviations in brackets

* p < .05; ** p < .01; *** p < .0001

Table A.6 - Crisis Duration

	Banking Crisis						External Default					
	Model 1			Model 2			Model 1			Model 2		
	FE-IV	Probit	IV-Probit	FE-IV	Probit	IV-Probit	FE-IV	Probit	IV-Probit	FE-IV	Probit	IV-Probit
B. Crisis ₋₁	0.45 (0.031)***	0.02 (0.02)***	0.05 (0.002)***									
B. Crisis							0.12 (0.038)**	0.01 (0.003)*	0.10 (0.329)	0.12 (0.038)**	0.01 (0.003)*	0.54 (0.372)
Ex. Default-1							0.30 (0.036)***	1.26 (0.248)***	1.04 (0.295)***	0.30 (0.036)***	1.25 (0.250)***	1.15 (0.247)***
Ex. Default	0.09 (0.040)*	0.00 (0.003)	0.04 (0.003)***	0.14 (0.044)**	0.01 (0.003)*	0.04 (0.003)***						
Δ ln GDP	-0.90 (0.152)***	-0.06 (0.013)***	-0.08 (0.020)***	-0.94 (0.169)***	-0.07 (0.013)***	-0.01 (0.013)	-0.41 (0.149)**	-0.03 (0.016)**	-0.13 (0.037)***	-0.41 (0.150)**	-0.03 (0.017)*	-0.05 (0.069)
Central Gov Debt							0.00 (0.001)	0.02 (0.007)*	0.01 (0.006)*	0.00 (0.001)	0.02 (0.007)*	0.01 (0.007)
Δ Central Gov Debt	0.68 (0.198)***	0.02 (0.012)*	0.59 (0.009)***	0.45 (0.218)*	0.01 (0.012)	0.61 (0.008)***						
Commodity Index				0.08 (0.020)***	0.01 (0.002)***	0.02 (0.002)***	0.00 (0.001)	0.00 (0.002)*	-0.23 (0.131)	0.00 (0.001)	0.00 (0.002)*	-0.23 (0.181)
For. Interest Rate	0.23 (0.141)	0.02 (0.012)	0.37 (0.009)***	0.08 (0.165)	0.01 (0.013)	0.35 (0.008)***	0.10 (0.142)	0.03 (0.016)*	0.53 (1.451)	0.11 (0.142)	0.03 (0.016)*	1.71 (1.567)
Δ Exchange Rate							0.03 (0.008)***	0.49 (0.166)**		0.03 (0.008)***	0.49 (0.163)**	0.45 (0.166)***
Financial Conditions 1				0.04 (0.024)	0.49 (0.222)*	-1.14 (0.200)***				0.00 (0.022)	-0.22 (0.305)	-0.23 (0.331)
Observations	810	816	810	810	816	810	684	684	822	684	684	703
Chi ²	449	130	121640	224	79	156310	168	76	111	168	77	55
R ²	30%			13%			16%			16%		
	Endogenous Variable - Δ ln GDP						Endogenous Variable - Δ ln GDP					
	IV-Probit			IV-Probit			IV-Probit			IV-Probit		
B. Crisis									-3.45 (0.934)***			-3.42 (0.973)***
Ex. Default			-0.03 (0.926)**			-0.03 (0.009)**						
Δ ln GDP ₋₁			0.14 (0.035)***			0.13 (0.034)***			0.17 (0.034)***			0.12 (0.037)**
Central Gov Debt									0.01 (0.019)			0.02 (0.019)
Δ Central Gov Debt			-0.15 (0.045)**			-0.16 (0.045)**						
Ln Foods			5.35 (1.265)***			4.76 (1.266)***			5.10 (1.22)***			6.43 (1.342)***
For. Interest Rate			-0.07 (0.036)			-0.09 (0.038)*			-1.87 (0.352)			-0.84 (3.894)
Δ Exchange Rate												-0.57 (0.206)**
Δ ln For. GDP (Euro)						24.99 (5.544)***						
Financial Conditions												1.65 (0.548)**
Observations			810			810			668			703
Chi ²			121640			156310			43			55
R ²			9%			12%			11%			11%

Control Variables: Population, relative income, stress, openness.

Instrumental Variables: Lagged GDP growth, foreign growth, food's price variation.

Standard Deviations in brackets

* p < .05; ** p < .01; *** p < .0001

Table A.7 - Aggregate Demand

		Model 1		Model 2		Model 3		Model 4	
		FE-IV	PCSE	FE-IV	PCSE	FE-IV	PCSE	FE-IV	PCSE
For. Interest Rate	ϕ_{11}	-0.30 (0.112)**	-0.06 (0.029)*	-0.30 (0.120)*	-0.06 (0.027)*	-0.19 (0.093)*	-0.16 (0.029)***	-0.31 (0.082)***	-0.19 (0.037)***
Devaluation Ex.	ϕ_{12}			-0.02 (0.013)	0.00 (0.002)	-0.04 (0.011)***	0.00 (0.002)	-0.04 (0.009)***	0.00 (0.002)
Central Gov Debt	ϕ_2	0.27 (0.016)***	0.04 (0.008)***	0.30 (0.017)***	0.03 (0.007)***	0.32 (0.013)***	0.10 (0.009)***	0.31 (0.012)***	0.14 (0.009)***
Exchange Rate	ϕ_{31}	0.02 (0.004)***	0.00 (0.001)*	0.06 (0.015)***	0.01 (0.004)*	0.02 (0.003)***	0.00 (0.001)***	0.02 (0.003)***	0.01 (0.001)***
Foods	ϕ_{32}					0.25 (0.012)***	0.10 (0.008)***	0.24 (0.011)***	0.12 (0.008)***
Metal	ϕ_{33}					0.05 (0.013)***	0.02 (0.006)***	0.00 (0.011)	0.03 (0.008)***
Manufactures	ϕ_{34}					0.16 (0.012)***	0.03 (0.006)***	0.15 (0.011)***	0.06 (0.008)***
Commodity Index	ϕ_{35}	0.09 (0.0101)***	0.03 (0.006)***	0.06 (0.011)***	0.02 (0.006)***	0.11 (0.010)***	0.06 (0.006)***	0.07 (0.008)***	0.07 (0.007)***
Foreign Income -US	ϕ_{41}							0.17 (0.010)***	0.03 (0.011)*
Foreign Income - EU	ϕ_{42}							-0.02 (0.010)*	0.02 (0.009)*
Foreign Income - Ch	ϕ_{43}							0.01 (0.011)	0.00 (0.003)
BCrisis	φ_1	-0.05 (0.067)	-0.02 (0.014)	-0.07 (0.072)	-0.01 (0.011)	-0.04 (0.056)	-0.01 (0.012)	0.05 (0.049)	-0.01 (0.013)
Ex. Default	φ_2	-0.02 (0.065)	0.00 (0.012)	-0.03 (0.070)	0.00 (0.011)	-0.02 (0.053)	-0.01 (0.011)	-0.04 (0.047)	-0.01 (0.012)
Financial Conditions 2	φ_3	0.06 (0.034)	0.04 (0.019)*	0.05 (0.037)	0.04 (0.017)*	-0.25 (0.033)***	0.03 (0.017)	-0.01 (0.027)	0.03 (0.018)
Observations		770	770	770	770	770	770	770	770
Chi ²		350964	54	289847	41	495736	252	630653	430
R ²		37%	98%	36%	97%	48%	96%	53%	99%

Control Variables: Population, relative income, openness.

Instrumental Variables: Lagged GDP growth, oil prices, stress of inflation.

Standard Deviations in brackets

* p < .05; ** p < .01; *** p < .0001

		Table A.8 - Inflation							
		Model 1		Model 2		Model 3		Model 4	
		FE-IV	PCSE	FE-IV	PCSE	FE-IV	PCSE	FE-IV	PCSE
Inflation _{t+1}	δ	0.43 (0.027)***	0.52 (0.040)***	0.53 (0.029)***	0.52 (0.040)***	0.52 (0.029)***	0.51 (0.027)***	0.11 (0.017)***	0.12 (0.038)***
HP - Output Gap	λ	0.00 (0.001)**	0.00 (0.001)**	0.00 (0.001)***	0.00 (0.001)**	0.00 (0.001)***	0.00 (0.001)**	0.00 (0.019)**	0.00 (0.022)**
Inflation _{t-1}	θ_1	0.49 (0.031)***	0.72 (0.055)***	0.23 (0.029)***	0.72 (0.054)***	0.23 (0.020)***	0.72 (0.021)***	0.15 (0.021)***	0.17 (0.043)***
Inflation _{t-2}	θ_2	-0.14 (0.031)***	-0.29 (0.053)***	-0.05 (0.019)*	-0.29 (0.053)*	-0.05 (0.020)*	-0.29 (0.019)***	-0.05 (0.018)***	-0.07 (0.041)***
Δ Central Gov Debt	θ_3	0.05 (0.018)**	0.04 (0.015)*	0.03 (0.015)**	0.04 (0.015)	0.03 (0.011)**	0.04 (0.011)*	0.02 (0.016)*	0.02 (0.018)*
Δ Exchange Rate	θ_4			0.14 (0.064)*	0.00 (0.001)	0.15 (0.064)*	0.00 (0.060)	0.13 (0.058)**	0.11 (0.082)**
Commodity Index	θ_5					0.09 (0.092)**	0.02 (0.097)*	0.13 (0.238)	0.14 (0.373)*
Δ Money (M1/GDP)	θ_6							0.86 (0.027)***	0.85 (0.055)***
Observations		772	772	772	772	771	772	443	443
Chi ²		648	546	677	286	690	585	2752	3012
R ²		46%	76%	50%	76%	54%	76%	86%	87%

Control variables: Population, year of central bank creation.

Instruments: Oil price variation, U.S. Output Gap, Euro Output Gap, financial conditions.

Standard Deviations in brackets

* p < .05; ** p < .01; *** p < .0001

Table A.9 - Crisis Resolution

		Banking Crisis							
		Model 1		Model 2		Model 3		Model 4	
		Haz. Ratio		Haz. Ratio		Haz. Ratio		Haz. Ratio	
Policy Tools									
Fiscal	Central Gov Debt	-0.76	0.47	-0.93	0.39	-1.87	0.15	-4.07	0.02
		(0.148)*		(0.123)**		(0.099)**		(0.019)***	
Monetary	Δ M1/GDP	-1.85	0.16	-1.47	0.23	-2.68	0.07	-4.58	0.01
		(0.119)*		(0.156)*		(0.063)**		(0.011)***	
	Interest Rate					0.02	1.02		
						(0.008)**			
External Factors	Com. Index	-1.14	0.32	-1.20	0.30	-2.19	0.11	-2.60	0.07
		(0.139)**		(0.130)**		"(0.056)***		(0.083)*	
	Foreign Growth-EU			-11.98	0.00				
				(0.000)					
	For. IR					-3.57	0.03		
						(0.027)***			
	Gap of IR							0.02	1.02
								(0.011)*	
	Observations	27		27		22		22	
	Chi ²	29		34		32		56	

Time varying: Rates of growth of population and Foods.

Control variables: Index of exchange rate, inflation.

Standard Deviations in brackets.

* p < .05; ** p < .01; *** p < .0001

Table A.10 - Crisis Resolution

		External Default							
		Model 1		Model 2		Model 3		Model 4	
		Haz. Ratio		Haz. Ratio		Haz. Ratio		Haz. Ratio	
Policy Tools									
Fiscal	Central Gov Debt	0.11 (0.052)*	1.11	0.22 (0.985)**	1.24	0.20 (0.102)*	1.23	0.05 (0.040)	1.05
Monetary	Δ M1/GDP	0.15 (0.105)	1.16						
	Interest Rate					0.55 (0.342)**	1.73	0.02 (0.006)***	1.02
Devaluation	Δ Exchange Rate							-1.87 (0.099)**	0.15
External Factors	Δ Terms of Trade			-0.03 (0.016)*	0.97	-0.02 (0.020)	0.98		
	Δ Com. Index							0.03 (0.014)*	1.03
	Δ Ln Foods	0.02 (0.008)**	1.02	0.02 (1.015)*		0.03 (0.019)	1.03		
	Foreign Growth-US	-8.16 (0.001)*	0.00	-3.22 (0.088)	0.04	-10.37 (0.000)	0.00	-0.82 (1.325)	0.44
	Observations	24		33		22		22	
	Chi ²	13		11		13		20	

Time varying: Rates of growth of population and Foods.

Control variables: Index of exchange rate, inflation.

Standard Deviations in brackets.

* p < .05; ** p < .01; *** p < .0001