# Global Financial Crisis: Did Exchange Rate Politics Help Emerging Countries To Be More Resilient?

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**ABSTRACT:** In this paper, we try to explain how exchange politics help emerging economies to escape global financial crisis. We conduct a comparative analysis between two periods: financial crises period of the 1990's and global financial crisis of 2007-2008. We attempt to outline the determinants of a successful exchange rate regime choice. The study is based on traditional analysis of exchange rate regime choice (Optimum Currency Area theory and financial integration approach) and on political economy approach. The results show that resilience to crisis in emerging countries is improved by the choice of adequate exchange rate regime. Greater trade openness, higher economic integration, low inflation and democratic institutions which are associated with faster recovery, are the principal determinants of exchange regime during the period of 2005-2010.

**Keywords:** Global crisis; exchange politics; currency crisis; exchange rate determinants.
**JEL Classifications:** D72; F33; F41

## 1. Introduction

Many studies show that during global financial crisis of 2007-2008 emerging economies experience the same or more severe growth collapses experienced by advanced countries. Nevertheless, emerging economies were recovered faster and more strongly. Opposing to the 1990's experience, emerging economies succeed to conduct countercyclical policies in order to moderate the impact of global crisis.

The reaction of a country to an external shock depends on its economic fundamentals state. In the majority of previous crisis, emerging economies suffered macroeconomic and financial vulnerabilities that constrained their ability to countercyclical policies. Instead, they undertook procyclical policy (by raising interest rates, cutting fiscal spending or raising taxes) in order to mitigate capital outflows, low international reserves levels and currency pressure. Emerging economies fared better recent global financial crisis compared to the 1990's ones, become more prepared and stronger to deal with external chocks. This is for several factors such as fiscal policy, solid external and financial fundamentals and development in monetary and exchange rate regime politics (Didier et al., 2011).

Concerning *fiscal policies*, during passed crisis episodes, emerging countries followed procyclical policies, but during the global financial crisis many of them undertook strong countercyclical policies, even larger than those adopted by advanced countries.

Regarding *financial factors* and compared to 1990's, in 2000's emerging economies reduced their vulnerabilities to external shocks thanks to the development of their financial account. Many countries become less dependent on foreign financing by improving their current account positions. More important, many countries change the structure of their external assets and liabilities which make balance sheet effects work in their favor, they not suffer currency mismatches problems as the case of 1990's crises[1]. Another key financial factor that makes emerging markets less vulnerable was the level of foreign reserves. High reserve can facilitate rollover of external debt, which reduces the probability of speculative attacks. Moreover, high reserves help self-insurance mechanism during the crisis. One of the common causes of crisis in emerging economies in 1990's was the denomination of

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[1] Didier et al. (2011) show that there was a switch of foreign liabilities from debt to equity; furthermore, debt assets in foreign currency level exceeded foreign debt liabilities.

debt: country borrows from a broad in foreign currency to lend in domestic one. This led to negative balance sheet effects when exchange rate depreciates. This wasn't the case in the recent global crisis since emerging economies shift country borrowing from foreign currency to domestic one. Another important financial factor that helps emerging market to recover global financial crisis was better regulation and better banking supervision.

About *monetary and exchange rate regime politics*, emerging economies increased interest rates in order to contain capital outflows and face speculative attacks during the 1990's experience of crises. Yet, in the recent global crisis, they succeed an active monetary policy given credibility, independence of central banks and financial institutions quality.

Exchange rate regime was a very important factor that permits emerging countries to lower interest rates, since the majority of them have moved to more flexible regimes after the 1990's. This change was allowed given the improvement of the quality of financial institutions and the lower of currency mismatches. The reduce of the later was the result of adopting local currency when borrowing abroad, which allows less negative impact on balance sheet after exchange rate fluctuations.

The recent financial crisis was significantly different from the experience of 1990's crises in emerging market; when depreciation of exchange rate has devastator impact on banking system and on economy. The exchange rate regime was the principal cause helping emerging countries to fare recent crisis, in particular in term of output losses and growth resilience.

In this paper, we try to explain how exchange politics help emerging economies to escape global financial crisis. We conduct a comparative analysis between two periods: financial crises period of the 1990's and global financial crisis of 2007-2008. Our objective is to know if the cause of faring recent crisis is based on a successful exchange rate regime choice; and by contrast, the main cause of failing to fare crises of 1990's was the choice of inadequate regime. Our study is based on exchange rate regime choice determinant.

Theoretical explanation of exchange rate regime is based on optimum currency area theory (OCA), the impossible trinity constraints in period of high capital mobility, the influence on economic and financial performance of a country and political economy theory.

The paper is organized as follow. In the second section we present the enhancement of resilience of emerging economies during global crisis. Third section describes theoretical determinant of exchange rate regime choice. A comparative study on exchange rate regime determinants of 1990's crises and recent global crisis is discussed in section four. Fifth section concludes.

## 2. Resilience of Emerging Economies During Recent Global Crisis

After the outbreak of financial crisis in 2007 in the majority of advanced countries, the crisis was transmitted to emerging markets in September 2008. Many studies show that emerging economies suffered less than advanced ones, by analyzing the GDP growth as an indicator of economic performance during the crisis, or by looking at collapses in GDP growth (Frankel and Saravelos, 2010; Rose and Spiegel, 2010; Rose, 2011; Claessens et al., 2010; and Lane and Milesi-Ferretti, 2010). Dedier et al., (2011) demonstrate that emerging markets fared better than advanced countries, based on the number of months under recessionary pressure.

Moreover, emerging markets fared better during recent global crisis than during crisis of 1990's. Given previous experiences during financial turmoil, emerging markets has better post-crisis performance in recent turmoil. Historical experiences suggest that emerging countries haven't the available policy tools to deal with financial crisis. Furthermore, their vulnerabilities and poor institutions frameworks amplified external shocks leading to more serious recession. However, recent global crisis experience show that the resilience of emerging economies has increased, explained by good policies, either policy space or policy frame-work, and structural characteristics (Kose and Prasard, 2010).

Improvement of policy frame-works and enhanced policy space can be analyzed for fiscal, monetary and exchange rate policies. Abiad et al., (2012) show that, according to policy frame-works, inflation targeting and countercyclical fiscal policy increase the length of expansions and hasten recoveries. In addition, not having a pegged exchange rate, can length expansions. Policy space seems to have a cushion, having low inflation rate and fiscal surplus lead to longer expansions. Economies that have low levels of public debt tend to recover much faster from downturns. Moreover, a strong

external position characterized by current account surplus, low external debt and high international reserves lengthens expansions and hastens recoveries.

Additionally to macroeconomic policies, structural characteristics of the economy can reinforce its capacity to deal with crisis in emerging countries. Increased trade openness helps reduce dependence on domestic demand and vulnerability to domestic shocks, but it's associated with more vulnerability to slowdown in external demand. Greater diversification across trading partners can help emerging markets to reduce vulnerability to slowdown in particular trading partners. According to financial openness, higher capital account openness can facilitate a risk diversification but can make countries more vulnerable to financial shocks or to sudden stops capital flows. Abiad et al., (2012) recommend that greater trade openness and diversification are associated with faster recoveries. Greater resilience of emerging countries is associated with many factors that can be related to determinants of exchange rate regime choice.

## 3. The Standard Theory of Choosing an Exchange Rate Regime

Exchange rate regime determinants theories can be divided in two categories: traditional theories and modern theories.

*Traditional theories* distinguish only two regimes, completely fixed regime or fully flexible one. These theories are based on the assumptions that prices of commodities are relatively related to exchange rate. This implies that foreign shock can led to fluctuations in economic activity. In this case, floating regime is the better choice that can provides a faster relative price adjustment (Friedman, 1953; Mundell, 1961, 1963; Fleming, 1962; McKinnon, 1963; Kenen, 1969). Besides, they explore the important role of capital mobility in the exchange rate regime choice. In an open economy with capital mobility and in the case of real shock, floating regime can help a quickly adjustment and restore the equilibrium, without changing price levels. In the opposite side, in the case of nominal shock, fixed exchange rate regime can help an automatically adjustment of money supplies to changes in money demands without changing interest rate or price levels.

This theory assumes that is impossible to achieve simultaneously the three domestic objectives: exchange rate stabilization, independent monetary policy and capital market integration; called as the impossible trinity.

Based on optimum currency area theory, Mundell (1961) determine the characteristics of area that can form single currency area. According to this point of view, the probability of adopting a fixed regime increase with the degree of economic integration among countries. Mckinnon (1963) argue that small and open economies are more likely to adopt fixed regimes than large and relatively closed economies.

Kenen (1969) argued that fixed exchange rate regime can be supported by countries with very concentrated production structures than countries with diversified production.

*Modern theories* are principally based on credibility aspects of monetary policy and exchange rate politics essentially to deal with inflation and currency crises.

Based on the work of Barro and Gordon (1983) on monetary policy credibility, many studies argued that peg arrangement can help to import credibility from foreign countries. An important number of them illustrate the credibility benefits of adopting a fixed exchange rate.

*Political economy approaches*

Political economists emphasize the impact of domestic political institutions on exchange rate regime choices. It is well known that the influence of political institutions works through two considerations: credibility and sustainability.

As fixed exchange rate regime induces credibility gains (Barro and Gordon, 1983; Giavazzi and Pagano, 1988; Drazen, 2000), governments unable to pursue responsible monetary and fiscal policies due to weak credibility may adopt a peg as a "policy crutch". To reduce inflationary expectations, governments having low institutional credibility may adopt a peg in order to convince the public of their commitment to nominal stability. In the same vein, fixed exchange regime may be adopted by weak governments to reduce expansionary pressures since they are more vulnerable to expansive and political pressures. In other words, the government credibility resulting from domestic political institutions gives incentives to set an external source of policy discipline.

According to Levy-Yeyati et al., (2010), the policy crutch hypothesis is related to the relationship between political strength and the exchange rate regime. It follows that countries with

weak and unstable governments will be more likely to adopt fixed exchange rate regimes. However, the political strength argument also gives incentives for weak or unstable governments to adopt flexible exchange rate regime (Edwards, 1996; Poirson, 2002). From a policymaking capabilities point of view, a lack of political strength or stability reduces the ability to conduct domestic adjustments required to sustain the fixed exchange rate. Weak or unstable governments are often unable to agree on stabilization programs. In addition, they are discouraged from implementing unpopular measures which lead to further political support weakening. Since the sustainability hypothesis contradicts the policy crutch hypothesis, there is no unambiguous effect of political strength on exchange rate regime choice.

The political economy literature also argues that configuration of domestic political institutions influence the exchange rate regime choice. Broz (2002) argues that regime choices depend on the degree of transparency in the political system. When the decision-making process is opaque, governments must provide for a commitment technology more transparent than the government itself to tame inflationary expectations. As commitment to a fixed exchange rate is easily observed, autocracies have incentives to peg. Frieden and Stein (2001) also suggest that dictatorship and autocracies are more willing to adopt fixed exchange rate regime since they are more likely to employ the necessary instruments to sustain it. According to Bernhard and Leblang (1999), democratic institutions are more likely to implement a flexible regime to allow the government to conduct monetary policy toward domestic stabilization purposes.

The political business cycle literature suggests that governments may choose the exchange rate regime to produce short-term macroeconomic conditions allowing them to win the next election (Bernhard and Leblang, 1999; Carmignani et al., 2008; Hossain, 2009). Prior to elections, a government has incentives to let exchange rate float to manage independent monetary policy in order to achieve short-term economic growth for electoral gain. After elections, fixed exchange rate regime is attractive as an external source of policy discipline allowing the control of the inflation's rise.

### 3.1. Fail of bipolar solutions in emerging economies

Countries choose their exchange rate arrangement according to their outcomes: credibility, flexibility or stability.

***Hard peg:*** In order to gain credibility in their fight against inflation, monetary authorities can adopt super fixed exchange rates. Currency board or dollarization can provide credibility, transparency, low inflation and financial stability (Calvo, 1999). By reducing speculation and devaluation risk, domestic interest rates will be low and stable. Moreover, super-fixed regimes led economies to be less vulnerable to contagion; countries with more credible regimes are less prone to external shocks, if the nature of the latter is not independent of the exchange rate regime.

So, low and stable exchange rate, associated with financial stability has a positive impact on long term growth. Nevertheless, super-fixed exchange rate regime cannot be successful if the country has not a sustainable fiscal policy. The latter is one of important advantages of hard peg or currency board. Moreover, it is difficult for the country in question to sustain fiscal policy if it has not well-run fiscal institutions to allow it to face fiscal policies. Furthermore, super fixed rate require a large international reserves, an amount that must exceeds the monetary base.

The lender of last resort function is not provided by central bank like the case under flexible and intermediate regimes, but must be delegated to another institution (foreign banks, foreign country or multilateral institution). If this is not the case, the domestic banking sector has to be solid and well developed in order to avoid banking and financial crisis. According to the traditional OCA theory, one of limitation of super-fixed regimes is that external shocks can be amplified, and then can be transmitted to real economy, with economic slowdown and high unemployment. The importance of this effect depends on the economic structure and the degree of market labor-flexibility.

Argentina and Panama are two examples of emerging countries that adopted hard peg.

By adopting a currency board, Argentina not succeeded to eliminate completely the exchange rate risk. Real interest rates and country risk has also been high and volatile even after the currency board has been consolidated. Large fiscal deficit and difficulties to improve structural reforms (example labor market legislation) in Argentina since 1996 was causes of low credibility and instability.

By adopting dollarization, Panama succeeds to eliminate devaluation risk, illustrated by low cost of capital in international financial markets. However, the country has been vulnerable to risk and

contagion. The Brady bonds of Panama have been volatile after political shocks and after financial Russian crisis in 1998.

Therefore, dollarization does not assure fiscal solvency and prudence on its own, but must be accomplished with the creation of budget-related institutions.

***Floating regimes:*** Many studies argue that floating exchange rate regimes cannot be adopted successfully by emerging countries. This is for many raisons, excessive volatility of floating exchange rate can have dangerous impact on the emerging economies (inflation and corporate debt) that don't have the institutional requirements to undertake effective monetary policy.

Calvo and Reinhart (2002) argue that emerging economies suffer from what so called "fear of floating" phenomenon, in a world characterized by financial integration, incomplete information and dollar denominated liabilities. Consequently, countries who announce floating regime try to avoid large fluctuations exchange rate by manipulating interest rates. Countries with flexible regime are characterized by low nominal exchange rate volatility and high nominal interest rates volatility. Haussman et al., (2001) argue that the ability to float is closely associated with the level of development. Mussa et al., (2000) determine that developing countries adopting flexible exchange rate arrangement use interest rate and official interventions to influence the exchange rate.

Mexico provides an example of "fear of floating" syndrome. Depreciation of the Mexican peso has been followed by a rise in interest rates, which reflect government intervention. Many studies argue that contrary to what the Mexican authority announce, the central bank intervene to stabilize the peso. They illustrate clearly that such intervention lead to lack of transparency and credibility on the authorities that would leave this country open to speculation based on rumors (Calvo, 1999).

### 3.2. Must emerging countries move toward intermediate solutions?

If historical experiences show that bipolar solutions lead to inevitable collapses, what about intermediate regimes?

Two proposals try to provide a degree of policy and exchange rate flexibility in order to insure greater exchange market stability.

The first proposal is the Williamson one: Baskets, Bands and Crawling pegs (BBC). The idea is to encourage a country to peg their currency to a basket of foreign currencies in order to produce greater stability in the effective exchange rate. Emerging markets must take their pegged exchange rate within a fixed band, in order to limit exchange rate movements. A country must take a target band, which be allowed to crawl progressively over time. This crawling peg would give the market some useful guidance on the future evolution of exchange rate. Inconvenient of this proposal is that it can confront many of the same problems of the Bretton Woods. It's difficult to decide on the midpoint of the band and the future level of the crawling peg. A few countries have experience a similar system, such as Chile, Israel and Colombia.

The second proposal is the Goldstein one: the managed floating plus (MFP). This system identifies a middle position that would give the monetary authority some independence but eliminate the excessive volatility that can be associated to freely float. According to this proposal, monetary authorities are allowed to intervene on the exchange market, but their action must not compromise their inflation target.

## 4. Empirical Test

Our empirical study is based on a comparative analysis; we test if the improvement of exchange rate regime determinants can helps emerging countries to practice the more adequate regime that can more resist to financial crisis.

Our estimation includes 28 emerging countries; the list of countries is given in table 1. The study is based on two periods: 1990-2002 which cover the first period of emerging markets crisis and 2005-2010 which cover the global recent crisis.

The dependent variable is a discrete variable which is extracted from the *de facto* course classification of exchange rate regime (IIzetzki et al., 2010). It takes one of the following values: 1 if *de facto* peg, 2 if *de facto* crawling peg, 3 if *de facto* crawling band or managed floating and 4 if freely floating. Since we are interested to long run determinants of exchange rate regime choice, we confine our estimations to cross country regressions. Our regressions are based on *ordred logit*.

**Table 1. List of countries**

| Algeria | India | Philippines |
|---|---|---|
| Argentina | Indonesia | Singapore |
| Bangladesh | Iran | South Africa |
| Bolivia | Israel | Sri Lanka |
| Brazil | Korea | Thailand |
| Bulgaria | Malaysia | Turkey |
| Chile | Mexico | Uruguay |
| China | Pakistan | Venezuela |
| Ecuador | Panama | |
| Hong Kong | Peru | |

We initially run regressions of exchange rate regime on a large set of potential determinants including economic and political ones. To avoid potential endogeneity we include lags of the independent variables.

### 4.1. Explanatory variables

The list of indicators capturing potential determinants of exchange rate regimes considered in our empirical analysis cover Optimum Currency Area variables, macroeconomic and external variables and political economy variables. The data are drawn from the *World Development Indicator* from *World Bank* and *Database of Political Institutions*.

*OCA theory variables*

• Trade openness (TOPEN): the GDP share of the average of exports plus imports, we expect that more open economies will tend to adopt fixed exchange rate regime.

• Economic size (LGDP): the proxy chosen is the logarithm of country's GDP in US dollars, expected to be negatively correlated with pegged exchange rate regime.

M*acroeconomic variables*

• Inflation (INF): computed as the logarithm of one plus the percentage of change in consumer price index. To sustain a fixed exchange rate, similar rates of inflation in the pegging and anchoring countries are required. Otherwise, high inflation causes appreciation of real exchange rate which can lead to speculative attack. This situation cans forces government to devaluate its currency. Inflation is expected to be negatively correlated with pegged exchange rate regime.

• Foreign reserves (RES): proxied by the ratio total foreign reserves over money supply (M2). Lack of reserves increases the probability of adjusting or abandoning the peg. We expect a high value of reserves to be associated with fixed regimes.

• Economic Globalisation (ECONG): measured by the sum of financial and commercial integration. According to the "hollowing of the middle" hypothesis, several authors argue that countries with an open capital account should tend to have either hard peg or pure float.

• Liability dollarization: captured by the ratio of external debts to GDP (EXTD). Excessive external debts is a threat to a sustainability of a fixed exchange rate regime, since large interest payment can reduce foreign reserves, increasing the probability of speculative attacks and then increase the probability of abandoning the peg.

• Financial depth (QUASM): computed by the ratio of quasi money reported to money. Domestic financial system maturity is an important factor to deal with negative effects of currency fluctuations. In this case it is less necessary to fix exchange rate, so we expect a positive correlation between financial depth and flexible exchange rate regime.

*Political variables*

Testing the political strength view needs to select indicators reflecting the inherent political strength of the government and its political strength resulting from the role of legislature in the decision-making process.

The duration of the incumbent government's tenure may be considered as an indicator of the inherent government political strength. According to Levy-Yeyati et al., (2010), it reflects the executive ability to control the local political process since governments with long-tenure are

associated to successful governments and to long-lasting and/or totalitarian regimes. To capture this feature, we use three variables evaluating the duration of the tenure and regime:

- the number of years that the incumbent administration has been in office (YRSOFFC, dpi database),
- a dummy variable indicating a finite term in office (FINITTRM, dpi database),
- the regime durability (DURABLE, polity IV database).

The role of legislature in the decision-making process depends on its political independence vis-à-vis the executive power and its institutional functioning. The first aspect may be capturing by the ability of party belonging to government to control all relevant houses and by the degree of legislature competitiveness. So, we introduce two variables reflecting the executive control over the legislature:

- a dummy variable indicating control of all legislative houses by party of executive (ALLHOUSE, dpi database),
- the legislative index of electoral competitiveness (LIEC, dpi database).

The institutional functioning of the legislature affects the government political strength in two ways. First, the political fragmentation of legislative houses induces incentives to extract from the common resources and therefore reduces the government political strength (Levy-Yeyati et al., 2010). Second, the legislature results from electoral system that affects the government political strength. According to Bernhard and Leblang (1999), proportional representation systems produce weaker and less durable governments more often than majoritarian systems. Two variables are employed in our studies to assess the impact of legislature institutional functioning on the government political strength:

- the Herfindahl index of congressional politics (HERGOV, dpi database)
- a dummy variable indicating the electoral rule (proportional representation or plurality) governing the election of the majority of House seats (HOUSESYS, dpi database)

To test the influence of the electoral timing on the exchange rate regime choice, we use two variables:

- the number of years chief executive has left in current term (YRCURNT, dpi database),
- a dummy variable indicating if an executive election will occur (EXELEC, dpi database).

Finally to take into the configuration of domestic political institutions, we introduce a variable which measures the level of democracy (DEMOC, Polity IV database).

Summary statistics are illustrated in table 2.

**Table 2. Summary statistics**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| EXTD | 588 | 0.3778873 | 0.2755891 | 0 | 1.586945 |
| LGDP | 588 | 11.01693 | 0.5874186 | 9.687313 | 12.77309 |
| INF | 541 | 0.8336486 | 0.5957005 | -1.777028 | 3.873998 |
| RES | 562 | 0.3288235 | 0.2475 | 0.0321263 | 1.6805 |
| QUASM | 578 | 3.655296 | 2.924857 | 0.0545836 | 15.26103 |
| TOPEN | 514 | 84.69646 | 81.3782 | 13.75305 | 456.6461 |
| ECONG | 516 | 53.20665 | 17.14807 | 8.01332 | 97.38827 |
| YRSOFFC | 498 | 4.481928 | 4.655612 | 1 | 31 |
| FINITTRM | 499 | 0.9759519 | 0.1533523 | 0 | 1 |
| YRCURNT | 493 | 2.052738 | 1.458525 | 0 | 5 |
| ALLHOUSE | 490 | 0.4571429 | 0.498669 | 0 | 1 |
| EXELEC | 501 | 0.1157685 | 0.3202669 | 0 | 1 |
| LIEC | 501 | 6.540918 | 1.185252 | 1 | 7 |
| HOUSESYS | 453 | 0.4525386 | 0.4982926 | 0 | 1 |
| HERFGOV | 490 | 0.28318 | 0.287868 | 0 | 0.892915 |
| DEMOC | 567 | 5.924162 | 7.529652 | -88 | 10 |
| DURABLE | 567 | 18.54674 | 17.15397 | 0 | 81 |

### 4.2. Estimations and results

Table 3 reports estimation's results relative to 1990-2002 and 2005-2010 periods. In the first period, the majority of emerging countries adopted a fixed exchange regime (figure 1). Our results show that high inflation, low international reserves and high trade openness make pressure on countries to devaluate and to move toward a floating regime. Associated with financial vulnerabilities, exchange rate pressure was the main cause of exchange rate and banking crisis in the majority of cases in emerging countries in the 1990's.

Historical experience shows that the standard theory of choosing exchange rate regime is based on a number of implicit assumptions that cannot be applied to emerging countries. The standard theory assumes that there is coherence in the time of the exchange rate regime choice, but in many countries the exchange regime can frequently shift. Several studies, such as Calvo and Mishkin (2003) prove that emerging economies are extremely vulnerable to high inflation and currency crisis because of weak fiscal, financial and monetary institutions. Economic theory shows that irresponsible fiscal policy puts pressure on the government to monetize the debt, producing high inflation and pressure on the exchange rate by the rapid money growth that is created. Weak financial institutions illustrated by poor regulation and supervision of the financial system can lead to large losses in bank balance sheets that make impossible for the monetary authorities to raise interest rate in order to reduce inflation or to manage exchange rate (because doing so can lead to financial collapse). Moreover, the fail of banking system can produce fiscal instability, high inflation and devaluation. Firms and individuals use foreign currency for many transaction by anticipating a dramatically change in domestic money value.

**Figure 1. Evolution of exchange rate regimes**



Graphs by countries
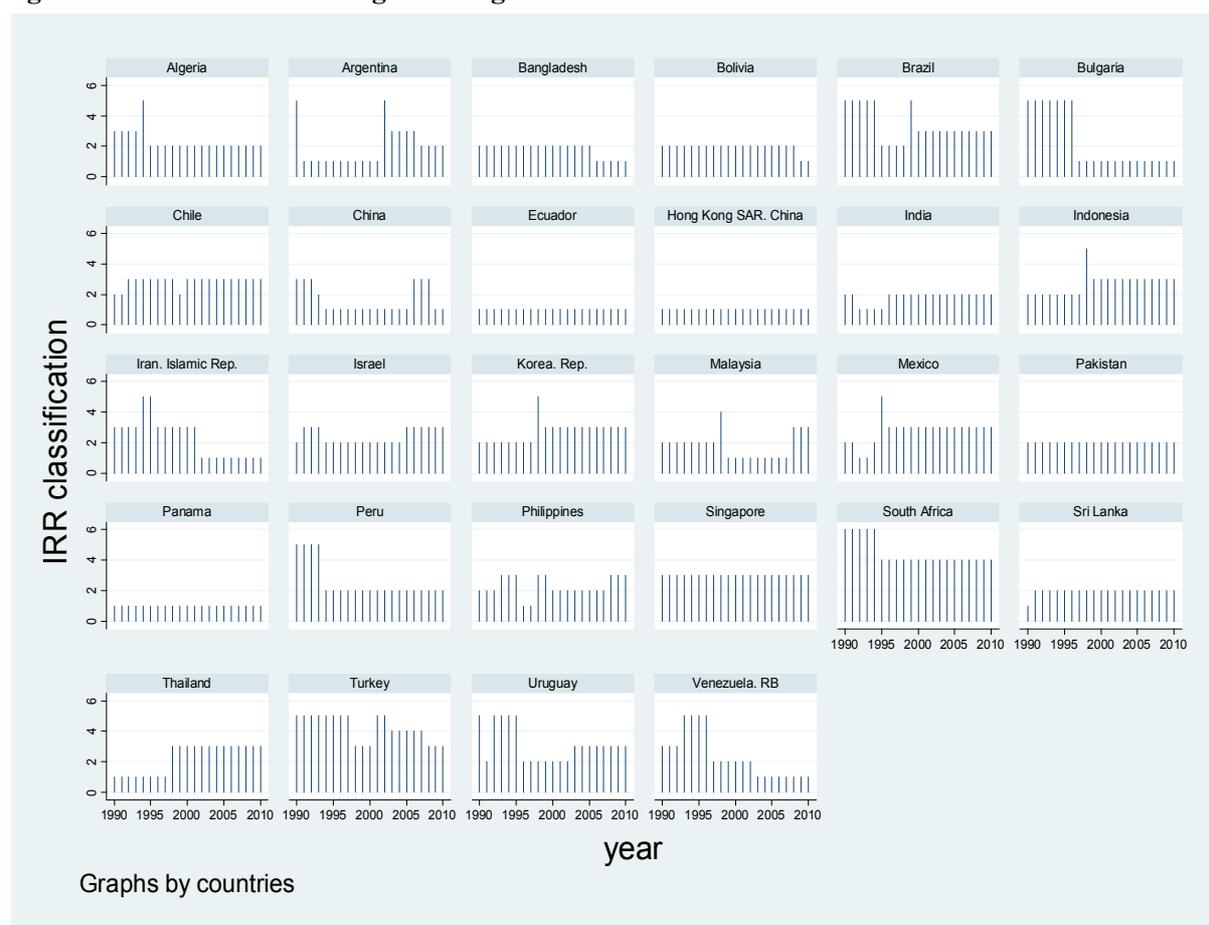
Note: Graphs are based on *de facto* course classification of exchange rate regime (IIzetzki et al., 2010). It takes one of the following values: 1 if *de facto* peg, 2 if *de facto* crawling peg, 3 if *de facto* crawling band or managed floating, 4 if freely floating and 5 if freely falling.

**Table 3. Ordred Logit estimation of exchange rate regimes**

| | 1990-2002 | | | | 2005-2010 | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| EXTD | -0.7457 (1.19) | | -1.1044 (-1.54) | -0.1168 (-0.15) | -6.241*** (-3.36) | | -5.307** ( -2.12) | -4.841* (-1.86) |
| LGDP | -0.1269 (-0.50) | | 0.0688 (0.22) | 0.50524 (1.50) | 0.7883* (1.64) | | 1.2432* (1.66) | 1.287 (1.53) |
| INF | 1.956*** (8.27) | | 1.6973*** (6.24) | 1.594*** (5.73) | 2.374*** (2.68) | | 2.994** (2.24) | 2.796** (2.05) |
| RES | -1.718** (-2.05) | | -3.568*** (-3.23) | -4.923*** (-4.09) | -1.815** (-2.17) | | -4.441*** (-3.11) | -6.531*** (-3.12) |
| QUASM | -0.0984* (-1.89) | | -0.0670 (-1.03) | -0.1126 (-1.61) | -0.0316 (-0.27) | | -0.0437 (-0.29) | -0.0802 (-0.42) |
| TOPEN | -0.0036 (-0.99) | | 0.0141*** (2.74) | 0.023*** (4.04) | -0.011*** (-2.89) | | 0.0011 (0.12) | -0.0041 (-0.36) |
| ECONG | 0.0332*** (2.95) | | 0.0168 (1.11) | 0.0111 (0.70) | 0.128*** (4.87) | | 0.0629 (1.22) | 0.0891* (1.65) |
| YRSOFFC | | -0.076*** (-3.31) | | -0.162*** (-4.53) | | 0.0619 (0.59) | | 0.3228 (1.54) |
| FINITTRM | | 1.659 (1.55) | 1.3447 (1.32) | 1.6682 (1.59) | | -0.0649 (-0.40) | | |
| YRCURNT | | 0.1254 (1.56) | 0.1614* (1.74) | 0.0985 (0.95) | | 0.4354 (0.92) | -0.2116 (-0.89) | 0.1398 (0.47) |
| ALLHOUSE | | 0.0906 (0.31) | | 0.0832 (0.21) | | -1.0586 (-1.35) | | 1.3087 (1.54) |
| EXELEC | | -0.3264 (-0.92) | | 0.0846 (0.1) | | -1.3833 (-1.57) | -1.5016 (-1.28) | -1.0657 (-0.86) |
| LIEC | | -0.977*** (-3.99) | 0.0362 (0.09) | -0.7197* (-1.65) | | -0.5341 (-1.28) | -8.14*** (-3.23) | -10.36*** (-3.51) |
| HOUSESYS | | -0.626*** (-2.66) | -1.407*** (-3.16) | -2.092*** (-4.33) | | -2.733*** (-3.18) | -2.789*** (-3.26) | -2.6035* (-2.58) |
| HERFGOV | | -0.3845 (-0.81) | -0.0735 -0.12 | -0.0738 (-0.11) | | 0.0699 (0.08) | | -0.07965 (-0.05) |
| DEMOC | | -0.0366** (-2.39) | -0.029** (-2.05) | -0.041*** (- 2.83) | | 0.629*** (4.73) | 0.667*** (2.81) | 0.829*** (2.99) |
| DURABLE | | -0.0124* (-1.71) | -0.041*** (-3.8) | -0.034*** (-3.08) | | -0.033*** (-2.90) | -0.081*** (-3.45) | -0.08*** (-3.03) |
| Number of observations | 278 | 288 | 233 | 233 | 96 | 104 | 85 | 80 |
| R2 | 0.1882 | 0.0599 | 0.2604 | 0.2993 | 0.2718 | 0.1605 | 0.5118 | 0.5231 |

Note: Dependent variable is a discrete variable witch takes one of the following values: 1 if de facto peg, 2 if de facto crawling peg, 3 if de facto crawling band or managed floating, 4 if freely floating and 5 if freely falling.
All regressions include year dummies.
Robust standard errors are in parentheses.
* Significant at 10%; ** significant at 5%; *** significant at 1%.

This situation lead the monetary authority to allow banks to offer foreign exchange deposit, inducing banks to offer loans denominated in foreign currency, which is called "liability dollarization". In 1990's and in several emerging countries, liabilities dollarization was the principal cause of bankruptcies, loans defaults, lending decline and economic contraction. In the case of important currency devaluation, those who have borrowed in foreign currency board are unable to repay. They earn in local currency, but their debts are in foreign one. Nevertheless, the problem of liability dollarization touches emerging economies in different way. Countries with stronger monetary, fiscal and financial institutions can escape the problem (for example Chile and South Africa), for this reason our indicator of liability dollarization, EXTD, is not significant in the 1990-2002 periods.

Another important factor that contributes to vulnerabilities and financial crisis in emerging economies is the large unanticipated fluctuations in capital inflows: sudden stops phenomenon. This reversal capital inflow is associated with important currency devaluation (the case of Russia in 1998). Our results show that economic globalization indicator- which includes both financial and commercial integration- can be associated with the abandon of the fix, but the results are not stable over estimations[2].

In the 2005-2010 periods, the majority of emerging countries move to more flexible regimes. Our results show that this choice is explained by low external debt to GBP ratio, low inflation and high international reserves levels (table 3). In fact, good policy space, characterized by low inflation[3] and amelioration of fiscal and external position, help these countries to deal better with exchange rate pressure and escape exchange crisis.

**Figure 2. Evolution of inflation rate**
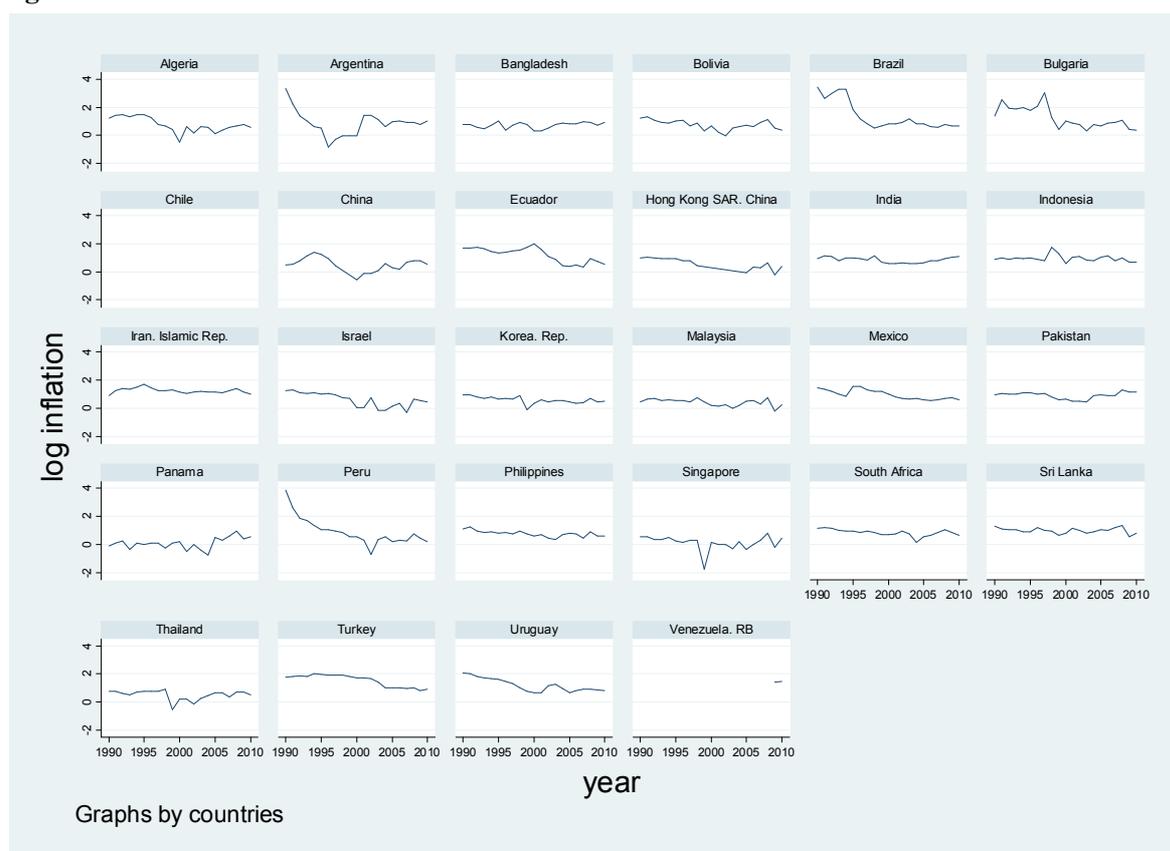


Associated with more flexible regimes, high level of international reserves, low level of external debt and increase of current account surplus reinforce the capacity of emerging economies to manage exchange rate pressure and financial chocks caused by sudden stop capital flows[4]. In addition and by contrast to 1990-2002 period, emerging countries are characterized by less financial vulnerabilities and better institutions frameworks.

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[2] See table 4 for robustness check.
[3] Figure 2 illustrate the evolution of inflation rate.
[4] Figure 3 and Figure 4 illustrate the evolution of external debt and international reserves.

**Figure 3. Evolution of external debt**



Graphs by countries
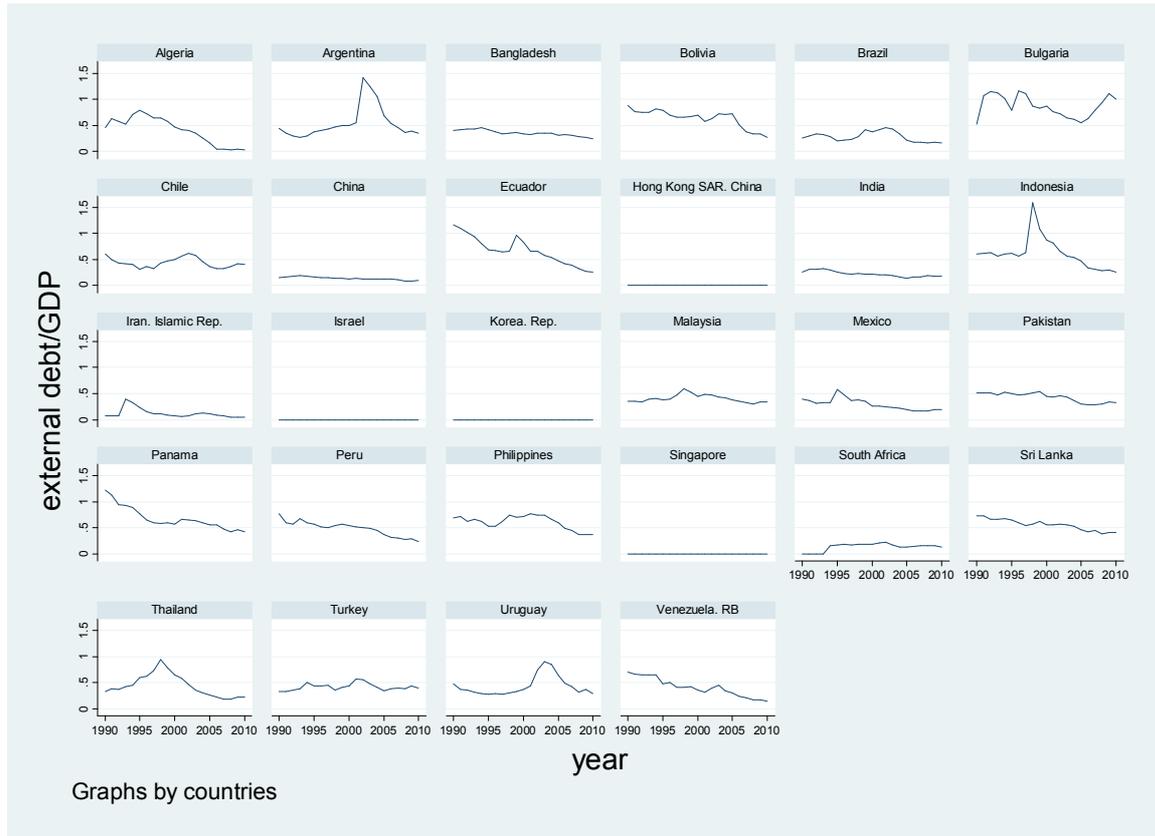
**Figure 4. Evolution of international reserves**



Graphs by countries
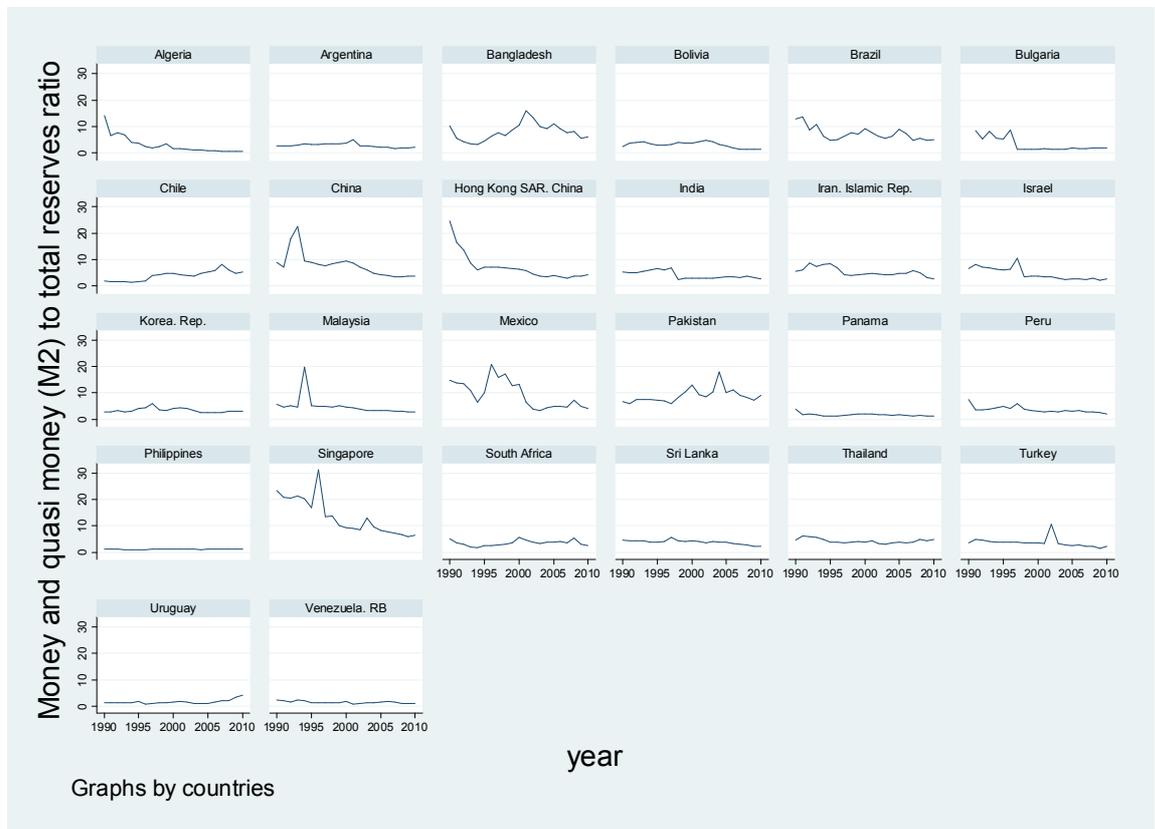
**Table 4. Additional robustness checks: 1990-2002**
*Ologit* estimations

|  | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| EXTD | 0.4916 (0.68) | 0.4914 (0.68) | -1.1292 (-1.58) | -0.1012 (-0.13) | -1.1044 (-1.54) | -0.1168 (-0.15) |
| LGDP | 0.5456 (1.61) | 0.5398 (1.60) | 0.1303 (0.42) | 0.5268 (1.58) | 0.0688 (0.22) | 0.50524 (1.50) |
| INF | 1.91*** (5.99) | 1.906*** (5.95) | 1.705*** 6.31) | 1.6072*** (5.81) | 1.6973*** (6.24) | 1.594*** (5.73) |
| RES | -3.841*** -(3.29) | -3.879*** -(3.29) | -3.051*** (-2.74) | -4.735*** (-3.99) | -3.5684*** (-3.23) | -4.923*** (-4.09) |
| QUASM | -0.159** (-2.36) | -0.1692** (-2.43) | -0.1053 (-1.56) | -0.1182*** (-1.75) | -0.0670 (-1.03) | -0.1126 (-1.61) |
| TOPEN | 0.016*** (3.06) | 0.016*** (3.04) | 0.0147*** (2.87) | 0 .0222*** (3.97) | 0.0141*** (2.74) | 0.0229 (4.04) |
| ECONG | 0.0265* (1.76) | 0.0252* (1.67) | 0.0181 (1.20) | 0.0144 (0.93) | 0.0168 (1.11) | 0.0111 (0.70) |
| YRSOFFC | -0.1613*** -(4.62) | -0.162*** -(4.64) |  | -0.1641*** (-4.67) |  | -0.1617*** (-4.53) |
| FINITTRM | 1.0413 (1.00) | 1.0348 (1.00) |  |  | 1.3447 (1.32) | 1.6682 (1.59) |
| YRCURNT | 0.0665 (0.64) | 0.0672 (0.65) |  |  | 0.1614* (1.74) | 0.0985 (0.95) |
| ALLHOUSE | 0.2971 (0.78) | 0.3649 (0.92) | -0.412 (-1.10) | 0.1341 (0.35) |  | 0.0832 (0.21) |
| EXELEC | 0.1230 (0.25) | 0.1242 (0.25) |  | -0.0657 (-0.15) |  | 0.08468 (0.18) |
| LIEC | -0.877** (-2.23) | -0.958** (-2.28) | -0.0207 (-0.05) | -0.6892* (-1.73) | 0.0362 (0.09) | -0.7197* (-1.64) |
| HOUSESYS | -1.6145*** (-3.57 ) | -1.608*** (-3.56) | -1.459*** (-3.30) | -2.099*** (-4.46) | -1.407*** (-3.16) | -2.092*** (-4.33) |
| HERFGOV |  | -0.3958 (-0.61) | 0.1108 (0.17) |  | -0.0735 (-0.12) | -0.0738 (-0.11) |
| DEMOC |  |  | -0.029** (-1.99) | -0.039*** (-2.74) | -0.0289** (-2.05) | -0.041*** (- 2.83) |
| DURABLE |  |  | -0.0397*** (-3.69) | -0.032*** (-2.90) | -0.041*** (-3.80) | -0.034*** (-3.08) |
| Number of observations | 233 | 232 | 234 | 235 | 233 | 233 |
| R-squared | 0.2876 | 0.2879 | 0.2549 | 0.2938 | 0.2604 | 0.2993 |

Dependent variable is a discrete variable witch takes one of the following values: 1 if de facto peg, 2 if de facto crawling peg, 3 if de facto crawling band or managed floating, 4 if freely floating and 5 if freely falling.
All regressions include year dummies.
Robust standard errors are in parentheses.
* Significant at 10%; ** significant at 5%; *** significant at 1%.

In addition to economic features, political considerations play a key role in the regime choice during the 1990's period. Political variables contribute systematically to abandon the fix exchange rate regime. The number of year chief executive has been in office, the electoral rule, the democracy level, the regime durability and the legislature competitiveness act in this way. The coefficients for YRSOFFC, HOUSESYS, DEMOC, DURABLE and LIEC are statistically significant. Moreover, these results are statically robust except for the latter[5].

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[5] Robustness checks are performed to see whether these results change under different specifications, table 4 and 5.

**Table 5. Additional robustness checks: 2005-2010**
*Ologit* estimation

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| EXTD | -4.425* (-1.85) | -3.907* (-1.79) | -4.4527* (-1.77) | -5.3076** (-2.12) | -4.8407* (-1.86) |
| LGDP | 0.9408 (1.36) | 1.2923** (2.32) | 1.1164 (1.59) | 1.2432* (1.66) | 1.287 (1.53) |
| INF | 2.5822** (2.39) | 2.6753*** (2.71) | 2.254* (1.90) | 2.994** (2.24) | 2.7965** (2.05) |
| RES | -3.1164** (-2.07) | -2.3223** (-2.18) | -5.6203** (-3.09) | -4.4414*** (-3.11) | -6.531*** (-3.12) |
| QUASM | 0.0987 (0.59) | -0.0941 (-0.69) | -0.0923 (-0.57) | -0.0437 (-0.29) | -0.0802 (-0.42) |
| TOPEN | -0.0018 (-0.29) | -0.0035 (-0.70) | 0.0131 (1.35) | 0.0011 (0.12) | -0.0041 (-0.36) |
| ECONG | 0.1029** (2.44) | 0.1322*** (3.67) | 0.0811 (1.60) | 0.0629 (1.22) | 0.0891* (1.65) |
| YRSOFFC | | 0.0619 (0.54) | 0.1614 (1.18) | | 0.3228 (1.54) |
| FINITTRM | | | | | |
| YRCURNT | | | | -0.2116 (-0.89) | 0.1398 (0.47) |
| ALLHOUSE | 1.6181** (2.43) | | 0.8851 (1.17) | | 1.3087 (1.54) |
| EXELEC | | | -0.8006 (-0.80) | -1.5016 (-1.28) | -1.0657 (-0.86) |
| LIEC | -0.6236 (-0.97) | | | -8.1405*** (-3.23) | -10.35*** (-3.51) |
| HOUSESYS | | | -2.5405*** (-2.81) | -2.7895*** (-3.26) | -2.6035 (-2.58 * |
| HERFGOV | 0.5989 (0.46) | | | | -0.07965 (-0.05) |
| DEMOC | 0.3602* (1.87) | 0.1754* (1.76) | 0.4091** (2.03) | 0.6672*** (2.81) | 0.8296*** (2.99) |
| DURABLE | -0.0426** (-2.18) | -0.0258* (-1.85) | -0.0619*** (-2.67) | -.0810*** (-3.45) | -0.0803*** (-3.03) |
| Number of observations | 84 | 89 | 80 | 85 | 80 |
| R-squared | 0.3710 | 0.3349 | 0.4445 | 0.5118 | 0.5231 |

Note: Dependent variable is a discrete variable witch takes one of the following values: 1 if de facto peg, 2 if de facto crawling peg, 3 if de facto crawling band or managed floating, 4 if freely floating and 5 if freely falling.
All regressions include year dummies.
Robust standard errors are in parentheses.
* Significant at 10%; ** significant at 5%; *** significant at 1%.

In other words, the executive political strength, and configuration of domestic political institutions (democracy/autocracy) can't help emerging economies to sustain fixed exchange rate regime because of incapacity to conduct macroeconomic stabilization programs due to political weakness. It is worth noting that electoral timing has no influence on the regime choice in the 1990's.

In the second period, from 2005 to 2010, the executive political strength as captured by the electoral rule and the regime durability, and configuration of domestic political institutions continue to act in favor of more flexible exchange rate regime (table 3). In contrast with the 1990's, the number of years chief executive has been in office no longer affects the regime choice.

### 5. Concluding Remarks

Emerging markets are affected by the contagion of recent global crisis in September 2008. Compared to advanced economies, they fare better and sooner. Furthermore, impact of recent crisis is less devastator than those of 1990's experiences. Many studies are interested to the improvement of resilience of emerging markets to domestic and external shocks, explained by good policy and structural characteristics.

This study tries to test how increase of resilience in emerging countries has positive impact on the exchange rate regime choice. By consequence, exchange politics based on good performance is the more adequate one, it can resist in period of crisis. Experience of 1990's crises shows that the majority of emerging markets adopted fixed regimes, but they haven't adequate instruments to defend it when a speculative attack produces (currency mismatches problem and insufficient level of official reserves). In recent period the majority of emerging markets moved to more flexible regimes that resist to global financial crisis of 2007-2008.

We conduct a comparative study on the evolution of exchange rate regime determinants between two periods: 1990-2002 and 2005-2010. The first period is associated to emerging markets crisis of the 1990's, where the second one is associated to the global financial crisis of 2008-2009. Our objective is to demonstrate how exchange politics can participate to make emerging countries more resilient to crisis. The study is based on traditional theory of exchange regime as the Optimum Currency Theory, financial integration theory and political economy approach. Our main results show that resilience to the global financial crisis in emerging countries is improved by the choice of adequate exchange rate regime. Lower currency mismatch problem, lower inflation and higher international reserves are associated with robust exchange politics. These determinants make exchange regime less prone to speculative attacks and more resilient to global crisis.

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