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Understanding Differences in Growth Performance in Latin America and Developing Countries between the Asian and Global Financial Crises

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Abstract

Latin American performance during the global financial crisis was unprecedented. Many developing and emerging countries successfully weathered the worst crisis since the Great Depression. Was it good luck? Was it good policies? In this paper we compare growth during the Asian and global financial crises and find that a looser monetary policy played an important role in mitigating crisis. We also find that higher private credit, more financial openness, less trade openness, and greater exchange rate intervention worsened economic performance. Our analysis of Latin American countries confirms that effective macroeconomic management was key to good economic performance. Finally, we present evidence from a sample of 31 emerging markets that high terms of trade had a positive impact on resilience.

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Keywords: Latin America, Emerging Markets, Developing Countries, Global Financial Crisis, Macroeconomic Policies

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1. INTRODUCTION

This time was different, very different. Compared to previous experiences Latin America's performance during the global financial crisis was quite impressive.

In figure 1 we show the evolution of average per capita GDP during around the three crises—the debt crisis (1980–87), the Asian crisis (1997–04), and the global financial crisis (2007–14)—for five Latin American countries: Brazil, Chile, Colombia, Mexico, and Peru.[1] These countries represent about 78 percent of the total output of Latin America and the Caribbean and share some common features in terms of macroeconomic policies. After the Asian crisis, they implemented flexible inflation target regimes and exchange rates. Peru has the most limited flexibility, as authorities there have attempted to provide greater short-term stability given the high degree of financial dollarization. However, they have also allowed their currency to adjust to international economic conditions.

These five countries are representative of many countries in the region that have some form of inflation target regime, such as Guatemala, Paraguay, and Uruguay. They are also representative of countries, mostly in Central America, that have been transiting to inflation targets and greater exchange rate flexibility but still have some way to go.[2]

We exclude Argentina and Venezuela, the other two large economies in the region, because they have followed policies with much greater exchange rate rigidity and lack of inflation control. Their fiscal policies are also much more dependent on high commodity prices (Adler and Sosa 2013). In recent quarters they have been subject to exchange rate tensions and implemented controls that segmented the foreign exchange market, while inflation runs at two digits and GDP is falling.[3]

Figure 1 shows that the economic performance of Latin America during the latest crisis was remarkable. We normalize per capita GDP two years before each crisis to 100. Five years after the debt crisis, output per capita was similar to that two years before the crisis. That was a lost decade in the region. During the Asian crisis these countries performed somewhat better, but their performance was poor. Asian countries faced a sharper recession, but recovered much faster.[4] During the global financial crisis, however, Latin America's recession was mild and its recovery fast.

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1. We do not weight by size in order to give an aggregate view that does not result in an excessive influence of the largest countries in the region. Brazil and Mexico represent about three quarters of the output of the five countries, hence the evolution of the weighted average (by size) would be basically the evolution of these two countries. In addition, by limiting the number of countries we also avoid giving excessive weight to small countries. For each crisis the year "0" is the year with the first decline in output, i.e., 1982 for the debt crisis, 1999 for the Asian crisis, and 2009 for the global financial crisis.

2. For details on monetary policy regimes in Latin America and the Caribbean, see IDB (2012, chapter 6).

3. Inclusion of Argentina and Venezuela would deteriorate average performance in the debt and Asian crises, while performance during the recent crisis would be similar until 2012.

4. For further discussion of the Asian crisis and policy responses see Fischer (2001).

The experience of a range of developing and emerging markets is quite varied. Figure 2 shows growth in these countries during the Asian crisis (1998–2002) and the global financial crisis (2008–12). Latin America did broadly better in the recent crisis. The correlation across crises is low in the whole sample. Countries that did well in the Asian crisis did not necessarily repeat that performance during the global financial crisis, so it is important, in order to understand these events, to find determinants of differences in growth outcomes. Such results can greatly inform public policy to help with future financial shocks.

To that end, we seek to answer the following questions. What are the factors that explain the performance of Latin America in particular and developing countries in general during the global financial crisis, especially compared with the Asian crisis? Was it just the result of good luck, given high commodity prices, or did policy responses matter? What explains the region's resilience?

In our empirical work we look at the role of terms of trade as well as financial and trade openness. We find that more financially open economies performed the worst, whereas those more open to trade had better performance. Our results represent associations rather than necessarily clear causations, with some initial variables that are not under the direct control of authorities (e.g., credit) or may have endogeneity problems difficult to solve (e.g., fiscal policy). However, our results are useful to understand performance and to provide policy lessons.

We look comparatively at economic performance during the Asian and global financial crises to assess some common factors across countries. We would have liked to extend this analysis to the debt crisis, but data availability limits this task.[5] In addition, macroeconomic frameworks during the debt crisis were radically different from those of the 1990s and 2000s, so other assumptions would have to be made in order to conduct an in-depth comparison. In contrast, macroeconomic conditions were not as different during the Asian and the global financial crises, although there were differences in the policy stance and external environment.

This paper continues in section 2 with a brief review of the literature. In section 3 we present econometric evidence on comparative economic performance during the two crises for a sample of developing and emerging-market economies. We look at the entire sample and then restrict it to emerging-market economies. Results are similar, although the number of observations declines significantly when we look only at emerging markets; unfortunately, there are not enough data to look exclusively at Latin America. For this reason, in section 4 we look in greater detail at the policy responses

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5. Some work has looked at the role of external and macroeconomic factors on economic growth instead of crises. Rebucci (2009) finds that Latin America was more vulnerable to external shocks due to weak macroeconomic policies in 1965–92. For the period 1960–85, it has been shown that credit played a negative role in economic growth in Latin America due to weaknesses in the financial system that led to crisis in the early 1980s (De Gregorio and Guidotti 1995).

and economic performance of Brazil, Chile, Colombia, Mexico, and Peru during the two crises. In section 5 we summarize our findings and conclusions.

2. LITERATURE REVIEW

In this article we attempt to provide econometric evidence and compare the policy responses during the two crises. Initial research looked at the determinants of the decline in output during 2009. Now that five years have passed since the worst year of the global financial crisis, we have enough data to conduct an empirical investigation of not just the fall but also the recovery.

An examination of the economic fall was initially done and updated by Andrew Rose and Mark Spiegel (2011), who did not find any robust indicator that could serve as a warning for the crisis. In contrast, Jeffrey Frankel and George Saravelos (2010) found that the level of international reserves and real exchange rate overvaluation are good leading indicators of crisis severity. Their findings indicate that exchange rate overvaluation is an early warning of a currency crisis. They also recognize the importance of having more information as time goes on to conduct empirical analysis of the crisis, and thus argue that their results are more promising since they include the first quarter of 2009. Martin Feldkircher (2012) examined 90 potential explanatory variables to predict the severity of the crisis in 2008–09, and found credit growth to be a key determinant of vulnerability. He also found that economies that were growing faster before the crisis were less resilient during it.

Taking a different approach, Pierre-Olivier Gourinchas and Maurice Obstfeld (2012) estimate the impact of different types of crises on several relevant variables. They use a discrete choice model and conclude, for the period 1973–2010, that the expansion of credit and the real appreciation of the exchange rate are the most robust predictors of financial crisis, regardless of whether the country is an emerging or advanced economy. For emerging economies, the level of reserves reduces the probability of crisis.

Another early cross-section study of the crisis was done by Olivier Blanchard and colleagues (2010). They looked at the relevance of trade and financial channels on unexpected growth in a sample of 29 countries and concluded that the financial channel was more relevant and that estimations were more robust particularly when measured by short-term debt. They also determined that it did not make a difference whether a country had a fixed or flexible exchange rate during 2008. This result is confirmed by Charalambos Tsangarides (2012), although he found that floating regimes did better during the recovery than fixed ones.[6] Atish Ghosh and colleagues (2013) also analyzed the economic consequences of different

6. Some other work has tried to look at the fall and recovery from the crisis, but lack of data has led to the use of forecasted growth for 2010 (e.g., Berkmen et al. 2012, Didier et al. 2012), which of course is a partial measure, especially given the significant changes in output forecast in recent years. Moreover, 2010 was just the beginning of the recovery.

exchange rate regimes. They found that the more rigid systems are more prone to macroeconomic and financial vulnerabilities, and hard pegs more prone to growth collapses.

Another key factor in the global economy before and after the crisis was the commodity price boom, which allowed commodity exporters to improve their current accounts and gave a boost to government revenues. This contrasts with the Asian crisis, when commodity prices plunged. Abdul Abiad and colleagues (2012) estimated resilience to external conditions for 100 countries in the past 60 years. They conclude that about three-fifths of the increased resilience of an economy is due to a country's improved policymaking, and the rest to a better external environment.

Indirect evidence of the role of external factors can be obtained by looking at the sensitivity of economic performance to world trade and global growth. Blanchard and colleagues (2010) showed that the elasticity of world growth to world trade has increased, which would suggest increased vulnerability for open economies. In contrast, looking at the response of Latin American economies to world growth, João Pedro Bumachar Resende and Ilan Goldfajn (2013) showed that the response of output to world growth has declined.

The role of policies in increasing resilience has been discussed for emerging markets (Kose and Prasad 2010) and for Latin America (De Gregorio 2014a, 2014b). A review of the output cost of crisis in a sample of 81 episodes presented an explanation of the difference in economic performance between Asia and Latin America during the Asian crisis (De Gregorio and Lee 2004). The results indicated that a good international environment, sound banking system, and high level of reserves lower the cost of a crisis and, in terms of policies, that real exchange rate depreciation and monetary policy helped in the recovery, whereas fiscal policy had a muted result.

3. DETERMINANTS OF DIFFERENCES IN ECONOMIC GROWTH DURING RECENT CRISES

In this section we aim to determine how differences in economic fundamentals and policy-related variables could explain economic performance differences during the two recent crises. Several of the studies reviewed above examined the role of various factors that could explain activity during the financial crisis across countries. Most of them, however, looked at a shorter period of time, focusing only on the latest global economic crisis. In addition, most previous studies focused on a particular crisis or did panel regressions.

Methodology and Data

We use a first-difference approach to investigate factors that can explain how GDP growth performed during the Asian and global financial crises. We estimate the determinants of differences in economic growth across countries in a five-year window for both crises.

Our approach contributes to the literature in two main dimensions. First, more time has passed since the global financial crisis, allowing for a better assessment of performance compared to previous studies. What happened during a few years may be contaminated by many idiosyncratic factors, so it is useful to look at a longer period. This is not a trivial point, since statistical analysis based on a short period of time may be incomplete. Take the cases of Brazil and Chile. During 2009–10, Brazil performed much better in terms of growth: in 2009 its output declined by only 0.3 percent, while Chile's output fell 1 percent; and in 2010 the Brazilian economy grew at 7.5 percent, while that of Chile grew at 5.8 percent. In contrast, during 2011 and 2012, Chile's economy grew at an average of 5.6 percent whereas Brazil's grew at only 1.8 percent. Thus a longer time period is useful to avoid the risk of incomplete or skewed analysis based on limited data

The second advantage of using the first-difference estimation is that it provides controls for country-specific factors that may affect growth and that are constant for each country over time. For example, there is no need to make assumptions regarding the level of long-term GDP growth, the appropriate level of reserves, or equilibrium inflation rates across countries. The only assumption is that those variables are the same across crises. The advantage of not looking too far into the past is that, although this assumption may not be plausible over a long time span, it can be justified for a ten-year period. We treat both episodes as being of a similar nature across countries.

In our empirical approach the dependent variable is the difference in the economic growth rate between the recent global financial crisis and the Asian crisis. Our explanatory variables are economic fundamentals that are important determinants of differences in economic performance. We estimate the following model:

$$\bar{g}_{i,fc} - \bar{g}_{i,ac} = \alpha + \beta(X_{i,bfc} - X_{i,bac}) + e_i$$

where $\bar{g}_{i,f,c}$ is the average rate of growth of GDP during the financial crisis (2008–12) and $\bar{g}_{i,ac}$ is the average during the Asian crisis (1998–2002). The variable $X_{i,bfc}$ is a vector of economic fundamentals before the financial crisis (2007) and $X_{i,bac}$ before the Asian crisis (1997). This set of variables also includes some contemporaneous policy responses in areas such as government expenditure, monetary policy, and international reserves.

The variables used are *international reserves over GDP*, *inflation rate*, *exchange rate regime*, *stock of public debt over GDP*, *private credit over GDP*, *trade openness* (imports plus exports over GDP), and *financial openness* (external assets plus external liabilities over GDP). We also include three contemporaneous variables—the log of *terms of trade*, *government expenditure over GDP*, and *monetary policy interest rate*—to evaluate how "good luck" and policy responses help to explain economic performance.[7] In contrast to previous variables that are measured before each crisis, these three variables are averaged during the crises.

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7. The variables, sources, and descriptive statistics are shown in the appendix.

In all of our regressions we include regional dummy variables using the World Bank's classification to control for potential common shocks that drive differences in regional economic growth. The only region without a dummy is East Asia and the Pacific. Therefore, all dummies are measured with respect to East Asia and the Pacific, and this region is represented in the constant.[8]

As explained below, we are aware of potential endogeneity problems in our regressions. Thus we interpret our results as associations, which do not necessarily represent causality, particularly for contemporaneous variables.

We estimate our equation for two different samples. First we analyze the group of *developing and emerging countries* (DECs) according to the IMF convention, then we consider only *emerging-market economies* (EMEs).[9] The empirical framework may be more appropriate for emerging markets, since the Asian and global financial crises both affected these economies despite the fact that the former was not a global crisis. However, the sample of emerging markets is relatively small, and for this reason we think it is useful to explore a broader sample to examine empirical regularities. Using DECs may be a reasonable sample since most countries were affected by the Asian shock. Moreover, there is no reason to think that the importance of fundamentals and policies depends on the level of development.

Comparison of the impacts of the Asian and global financial crises in the larger sample, the developing and emerging markets, allows comparison of initial conditions and policy responses in two periods when economic performance was quite different. Indeed, when correlating growth for the five years following each crisis for our sample, as shown in figure 2, we find a small correlation coefficient that is not significant. This shows weak evidence that poor performers during the Asian crisis were also poor performers during the recent global financial crisis and justifies our strategy of looking at within-country characteristics. Indeed, if the correlation across crises were high, little could be obtained in trying to explain different performance across countries due to changes in fundamentals and policies.

In principle, the Asian crisis was generated and transmitted across emerging markets, whereas the recent crisis was global with its epicenter in advanced economies. It could be conjectured that the latter might have been more damaging for emerging and Latin American markets, but this was not the case. The shock during the global financial crisis was larger and more global, and hence shock absorbers such as the exchange rate could have more limited effects, as depreciating countries would not gain competitiveness against each other.

During the Asian crisis, however, currencies were not allowed to float as much as was needed, and the crisis spread in stages. It started in Thailand with the collapse of the Thai baht in July 1997, followed by unprecedented crisis in East Asia. This caused a sharp decline in oil prices, which together with an

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8. The classification of countries is in http://econ.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20421402~menuPK:64133156~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html.

9. The list of countries used in the estimation is in the appendix.

overvalued fixed exchange rate and weak public finance triggered a financial crisis in Russia. This collapse took a toll on a US hedge fund (LTCM) that had to be rescued. Aftershocks spread across emerging markets, including, of course, those of Latin America. The Brazilian real collapsed in late 1998, followed by a currency collapse and financial crisis in Colombia in 1999. Then came the Argentinean convertibility crisis in early 2001.

On the external front, this was the period that popularized the idea of a sudden stop of capital flows, something that did not happen during the recent crisis despite a much larger financial shock. Economies' strength and quality of policy responses limited the external shock, unlike during the Asian crisis.

Main Results

In table 1, we show the results of our estimation for the sample of DECs. First, and as in all our basic regressions, we present univariate relationships between differences in each variable between crises and differences in economic performance (column 1).[10] Then we include all covariates jointly (column 2). And finally, using a stepwise general-to-specific estimation, we search for covariates that are statistically significant at 10 percent (column 3). We can thus check which variables are more robustly associated with differences in economic growth during both crises. (Columns 4 and 5 are discussed later as part of the extensions.)

For the sample of DECs, the univariate regressions show that lower private credit growth, interest rate reductions, and more favorable terms of trade are associated with higher economic growth during the global financial crisis. The multivariate regressions, show that, in addition to the previous variables, greater trade openness is positively associated with economic performance in this sample. Thus, greater trade openness is not related to greater vulnerability. Another difference with the univariate regressions is that the change in terms of trade is no longer statistically associated with economic performance differences across crises.

We show the results for the sample of EMEs in table 2. The sample size declines to 31 countries, but we obtain a large R-squared of about 0.8. Similar to previous estimations, we find that changes in private credit and interest rate cuts show a significant association with differences in economic growth. There are, however, some differences compared to the previous estimations.

In the sample of EMEs, we find that four new variables are significant in explaining differences in economic growth. Our results suggest that higher economic growth in the recent crisis is positively associated with lower inflation before the crisis and with improvements in terms of trade. The combination of low inflation and good luck due to the rise of commodity prices was important for the

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10. For the univariate regressions we also include dummy variables by region, but given that we show the parameter for each covariate in a single column, they are not reported. The same applies for R-squared and the number of observations.

successful performers in the later period. An unexpected but not robust result is that higher public debt is positively associated with better relative economic performance during the financial crisis. Finally, in this smaller sample of countries, we find that capital account openness is negatively correlated with differences in economic growth.

It is interesting to note that the only regional dummies that are significant in both tables, and with a negative coefficient, are those for emerging Europe. The dummies are not significant in Latin America, indicating that, beyond the effects of the explanatory variables, no other factors account for differences in economic performance across crises between Latin America and East Asia and the Pacific.

In sum, these regressions show that differences in growth performance are associated with some economic fundamentals. Also, and consistent with previous findings by Rose and Spiegel (2011), results tend to differ depending on the sample used. Nonetheless, there are some interesting and robust findings that we can highlight. First, in most of our regressions, the evidence suggests that *better performance is positively associated with lower private credit growth, trade openness, and monetary policy loosening*. Second, for the sample of emerging markets there is some *evidence for "good luck" as an explanation of good performance, as improvements in the terms of trade were associated with better performance in the recent crisis*. There is also evidence that *countries with lower financial openness performed better in the recent crisis*.[11]

The positive relationship between economic growth and changes in terms of trade is consistent with a cursory look at Latin America's performance, but the regression results suggest that they were not the most important factor. In the extension, we use a dummy variable for commodity exporters to check the robustness of this result across country samples.

Regarding the role of reserves, our regressions show that the change between crises does not play a role in explaining cross-country differences in resilience. However, as we discuss in the next section, this evidence should not be surprising given that countries might "overaccumulate" reserves in periods of strong exchange rate pressures. Therefore, the lack of significance of reserves cannot be used as evidence that they play no role in resilience, but may indicate that they are in excess of the amount required for protection against curtailment of capital inflows.

Finally, recognizing that we cannot make causal implications, we note a positive correlation between expansionary monetary policies during the crisis, and economic performance, without any correlation with fiscal policy. That said, if there were a bias due to the endogeneity of monetary policy, it should tend to reduce the parameter's estimate in absolute value. If countries that grew less had more expansionary monetary policies, the estimate on the interest rate would be biased, in absolute value, downward. This

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11. In a previous version of this paper we estimated these regressions for a sample including advanced economies. We found that exchange rate flexibility significantly helped to reduce the effects of the global financial crisis. But these results were mostly driven by countries in the eurozone. We have excluded this analysis here since advanced economies were not as affected by the Asian crisis.

result highlights the role of monetary policy in reducing the negative impact of an external crisis on output.

The results for fiscal policy are somewhat more difficult to interpret. We do not find that increased government expenditure during the crisis resulted in higher growth. Here, the problem of endogeneity could be more serious, since countries with low growth could have had more expansionary fiscal policy, biasing the result toward zero.[12] We used several alternative specifications to look in more detail at the impact of fiscal variables. We looked at fiscal deficit and the index of procyclicality calculated by Frankel and colleagues (2013) and did not find any significant relationships between these variables and differences in economic growth. Consideration of interactions between government expenditure changes before and during the crisis did not change our results. It would have been better to look at structural balances but data are not available for the Asian crisis.

Nevertheless, we cannot conclude from this evidence that fiscal policies are not relevant for explaining differences in economic growth. The endogeneity problem may be relevant. Additionally, some studies show that expansionary fiscal policy was an important response. Anusha Chari and Peter Blair Henry (2013) show that fiscal stance is important in understanding the differences in the paths of Asia and Europe following the two recent crises. It is also the main idea behind the analyses of Luis Felipe Céspedes and Andrés Velasco (2013) and Frankel and colleagues (2013) both of which present evidence that stronger institutions led to less fiscal procyclicality and, indirectly, although not tested, to higher resilience during the last crisis.

Robustness

We did several robustness checks of our results.[13]

Commodity Exporters

To explore whether commodity exporters were less affected during the recent crisis than in the previous one, we replace the terms of trade shocks variable with a dummy for countries classified as commodity exporters. The results are shown in columns 4 and 5 of tables 1 and 2 for the two samples. Column 4 shows all regressors and column 5 indicates the covariates that are significant at 10 percent. For the sample of DECs, this dummy, although positive, is not statistically significant (table 1). This is consistent with the finding of no significant effects for terms of trade. Its inclusion does not change the main results reported in previous estimations.

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12. To deal with endogeneity, we could follow Corsetti, Meir, and Muller (2012) using deviations from policy rules for looking at the impact of discretionary changes in fiscal and monetary policy, but data are not available for the large sample of developing and emerging countries in our analysis. This procedure is also debatable in terms of the specification of the fiscal policy rule.

13. Here we discuss only the main findings from these additional estimations. Details of the results are in the appendix.

In contrast, the dummy is positive and statistically significant for the sample of EMEs, suggesting that EME commodity exporters performed better during the recent crisis (table 2). This result indicates that EMEs that experienced greater terms of trade gains' terms did better. As shown in table 2, the inclusion of this dummy variable for commodity exporters does not affect our findings of a positive association between economic growth and lower financial openness and a reduction in the interest rate. The positive effect of trade openness for EMEs becomes significant. In contrast, inflation rates, private credit, and public debt become insignificant. The dummy for Latin America is still not significant.

Components of Capital Account Openness

For the sample of EMEs we find that more financially open economies grew less during the global financial crisis compared to the Asian one. In the case of DECs, the parameter is also negative but not significant. Consistent with our specification, this result suggests that countries that increased their financial openness between these two periods performed worse during the global crisis because they were more exposed to financial turmoil, so the decline in global asset prices resulted in a larger external shock.

In table 3, we show the results of multivariate regressions for the two samples. We divide assets between reserves and other assets, then separate liabilities into their three main components: portfolio and equity, foreign direct investment (FDI), and banking. As in previous estimations, higher international reserves are not related to differences in economic performance for any of the analyzed samples. In all cases, it seems that higher levels of other external assets are responsible for the negative relationship between financial openness and economic growth. This can be explained by the fact that a large stock of international assets resulted in a larger negative wealth shock as asset prices significantly declined all around the world, particularly investments in advanced economies.

As can be observed in table 3, our previous results for private credit, trade openness, and interest rates are robust to the inclusion of external assets and liability components. The exchange rate regime becomes significant for EMEs, indicating again that greater flexibility mitigated the effects of the global crisis.

Extent of Exchange Rate Intervention

In previous estimations we found no effects of the de jure exchange rate regime, but the extent of intervention was a de facto proxy for flexibility. To determine whether the extent of international reserve use could have reduced the cost of the crisis, we include the change in the extent of intervention during both crises, measured as the difference between the level of reserves at the beginning of the crisis and the minimum during it.

Countries may have intervened to compensate for a sudden stop of foreign capital, mitigating the financial effects of a reduction in foreign financing or avoiding a depreciation of their currency due to the

fear of floating. Again, we are aware of potential endogeneity problems. This could be more relevant if our dependent variable were, for example, a currency crisis. Since we look at growth over a five-year period, we think this problem is not serious.

The results for the two samples of countries are presented in table 4. In contrast with what could have been expected if reserves were used as insurance for a decline in foreign inflows, our findings indicate that the extent of intervention is negative and significantly related to differences in economic performance in both crises. This evidence suggests that foreign exchange intervention was contractionary. For the sample of EMEs there is no significant relationship between economic growth and intervention; most of them became floaters over time.

For both samples, exchange rate flexibility turns out to not be significant. This suggests that reserve intervention would be a proxy for the de facto exchange rate regime. Reserve use that limits exchange rate adjustments would not be an appropriate method to reduce the negative impact of the financial crisis and would not contribute to resilience. This result supports the idea that letting the exchange rate adjust increases resilience, but says nothing about intervention in the other direction, which could blur the definition and potential effects of the exchange rate regime. Indeed, the results are silent regarding reserves accumulation when facing an appreciation. This is consistent with the fact that the level of reserves is not significant in our regressions. In contrast, other variables such as trade and financial openness and the extent of interest rate cuts remain significant and have the same signs as in the baseline regressions.

Additional Robustness Checks

There are two main concerns that need to be addressed. First, differences in economic performance between crises could be partly due to improved banking regulation and supervision, better legal systems, and more transparency. In such cases, institutional factors can be used to explain the differences among countries, and their effects might be captured by other variables, such as the extent of leverage, when these factors are not included.

Second, it could be argued that differences in economic growth during both crises could be a function of differences in their precrisis growth rates. The better performance of these countries during the recent crisis would thus simply reflect a bounce back to precrisis growth trends.

To address both concerns, we included two additional variables in our regressions. In the first case, we controlled for institutional changes by considering an available and well-known indicator of institutional quality provided by the International Country Risk Guide.[14] Following Alberto Chong and Mark Gradstein (2007), we took the average of the most commonly used institutional dimensions:

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14. Unfortunately, direct measures of banking regulation and supervision, as reported by Barth et al. (2004), are not available for the period before the Asian crisis.

(1) government stability, (2) law and order, (3) corruption, (4) democratic accountability, and (5) bureaucracy quality. As with the other variables, we introduced this variable as the difference before both crises. To address the second concern, we introduced precrisis growth as the GDP growth average in the three-year period before each crisis and included the difference of this variable in our regressions.

The estimations show that both variables are not statistically significant and their inclusion does not change the main results. There are some differences when we include institutional change in terms of private credit, but trade openness and interest rate reductions are still robustly associated with differences in economic performance. This allows us to conclude that our results are not driven by institutional improvements after the Asian crisis or by previous differences in economic growth.

We also explore the robustness of our results to a different definition of precrisis variables. Instead of using a single year before the crisis onset, we take the average of the three-year period before each crisis. We find some changes for the sample of DECs: Higher capital account openness appears to be negatively and significantly associated with economic growth, a finding that previously applied only to the EMEs. In contrast, there was robust evidence that lower private credit, greater trade openness, lower interest rates, and dependence on commodities are positively associated with economic growth. For the sample of EMEs, we found robust evidence of a positive and significant association between interest rate reductions and economic growth. We also confirmed that EME commodity exporters experienced a better economic performance during the recent crisis.

We included interactions between fiscal positions before the crises, using fiscal deficit and the procyclicality index and the dummy for commodity exporters to analyze whether the effect of the commodity boom was more or less important for countries with better fiscal positions. The interaction terms were not significant for both samples.

4. LATIN AMERICA NOW AND THEN

In this section we look more closely at economic performance in Latin America in light of our findings. Specifically, we look at policy responses and the influence of the external environment for Brazil, Chile, Colombia, Mexico, and Peru during both crises.[15]

As we have discussed, economic performance in Latin America was much better during the recent crisis compared to previous ones. Figure 1 shows the remarkable differences. At the country level, 2012 output in Brazil, Chile, Colombia, and Peru was 11, 17, 17, and 25 percent, respectively, above the 2008 GDP levels. These figures were significantly lower for the Asian crisis: In 2002 GDP in Brazil, Chile, Colombia, and Peru was only 9, 10, 3, and 9 percent above the 1998 levels.

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15. For further discussion of policies in Latin America during the global financial crisis see De Gregorio (2014a).

By all accounts, economic performance was much worse during the Asian crisis than the global financial one, except for Mexico, whose economic performance was similar during both crises due to its exposure to the US economy. Additionally, Mexico in the late 1990s was strongly emerging from the Tequila crisis and enjoying the benefits of having signed the North American Free Trade Agreement (NAFTA) in early 1994. In contrast and as documented below, Mexico did not enjoy a surge in terms of trade and was negatively affected in the 2000s by the accession of China to the WTO and competition in US markets.

In the following sections we discuss other relevant differences in both episodes regarding specific policy variables.

Exchange Rates and Monetary Policy

At the core of Latin America's poor past performance are rigidities of the exchange rate regime, which subordinated monetary policy to the exchange rate and needed to be supported by intervention. Figure 3 shows the behavior of exchange rates during the global financial crisis (panel a) and the Asian crisis (panel b) for Brazil, Chile, Colombia, Mexico, and Peru. We consider the years with more intense currency pressures in both episodes (1998–99 and 2008–09) and set the average within-periods at 100. We use the same scale in both panels to have a convenient comparison of exchange rate evolutions in both episodes. These countries let their exchange rate fluctuate and play the role of shock absorber. Monetary policy, in turn, was significantly loosened. Peru is the only one that pursued more exchange rate stability during the global financial crisis, but over the whole period there were no other significant differences.

During the global financial crisis the currencies of Brazil, Chile, Colombia, and Mexico weakened about 60 percent. During the Asian crisis, only Brazil experienced a larger depreciation, but that was the result of a currency crisis that occurred after authorities fiercely attempted to avoid an exchange rate adjustment.

When comparing both panels, two observations are relevant. First, during the global financial crisis currency fluctuations were highly synchronized, revealing a common source of currency weakening and a common response—there were minor differences in policy responses, but flexibility was the rule. Second, during the Asian crisis currency weakening was gradual, except for Brazil that had an abrupt adjustment, but finally the currencies adjusted. At the end of the two periods, exchange rates had depreciated more during the Asian crisis (with the exception of Mexico) because of significant terms of trade decline after the Asian crisis and the need for currency realignment despite the efforts of central banks and governments.

During the Asian crisis there was significant fear of floating (Calvo and Reinhart 2002). The causes for this fear were twofold. First, there was serious concern about the impact of currency weakening on

inflation: It was thought that allowing the exchange rate to depreciate would lead to high inflation. Second, there was a fear that large currency mismatches in the banking and corporate sectors could lead to severe financial distress, as was the case in the past. The recent experience with the global financial crisis shows that the two reasons for fear of floating were overcome, most likely in a process that started in the 1990s.[16]

Throughout the Asian crisis the impact of currency depreciation on inflation was muted, except in Brazil. The economic downturn dominated the behavior of prices, and in the other four countries inflation was lower after the crisis. There was no reason to fear a large inflationary outburst.

During the global financial crisis, the adoption of flexible exchange rates helped limit the pass-through of exchange rates into inflation and generated the space for monetary policy loosening. Indeed, flexible exchange rates are accompanied by less persistent currency adjustments, which reduce the frequency of price adjustments, lowering the pass-through (Taylor 2000). Moreover, in a low- and credible inflation environment, the impact of the exchange rate on inflation also declines. The evidence shows that exchange rate pass-through did decline in emerging market economies.[17]

On the financial front, Latin American financial systems were resilient to the large currency fluctuations of the recent crisis. Despite some problems with a few large corporations in Brazil and Mexico that were engaged in exchange rate speculation through the use of complex derivatives, the overall financial systems did not experience serious distress.

All the Latin American countries surveyed in IDB (2005) have regulations on currency mismatches in the banking system. Those regulations range from quantitative limits to currency exposure and implications for capital requirements. Regarding corporate risk, banking regulation requires internalizing the currency exposure risk of borrowers and has consequences on provision requirements. Hermann Kamil (2012) shows that after currencies started floating in Latin America, corporations' currency exposure declined significantly.

The differences in monetary policy between crises are remarkable. Interest rates not only were higher but also were raised during the Asian crisis in order to avoid sharp depreciations. In contrast, monetary loosening was the rule during the global financial crisis. Monetary policy was used as a countercyclical tool thanks to its success in containing inflation and the implementation of credible inflation target

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16. In the case of Chile, post–Asian crisis evidence shows that in the late 1990s Chilean corporations and banks had very limited exchange rate exposure, so a sharp depreciation would not have caused financial problems (Herrera and Valdes 2005).

17. See, for EMEs, Mihaljek and Klau (2008). For Latin America, Ghosh (2013) and De la Torre et al. (2013) report significant declines in pass-through.

regimes.[18] Colombia and Mexico had inflation rates over 15 percent a year before the Asian crisis, whereas all five countries entered the global financial crisis with single-digit inflation. Moreover, it is important to recall that this happened in a much more challenging period since commodity prices experienced a significant boom starting in the mid-2000s. In particular, the increase in food prices had consequences for inflation in most EMEs, whose economies were growing strongly and yet simultaneously facing an inflationary shock.

The evolution of monetary policy in both periods is shown in figure 4. We normalize the monetary policy interest rates to 100 for the period average and present them in the same scale, although their levels were much lower in the recent crisis.[19] As the figure shows, most of the loosening started in early 2009, somewhat later than in advanced economies. This may be because Latin American economies were still struggling with the sharp inflationary shocks stemming from commodity prices. In most countries, monetary policy was being tightened until late 2008 as inflation was rising. Then, all five countries in figure 4 sharply loosened monetary policy as the crisis deepened and inflationary pressures abated.

Colombia started this trend with a 50 basis point rate cut in December 2008, followed by Brazil, Chile, and Mexico in January 2009 and Peru in February. The cuts were rapid and intense. The minimum was reached in Chile with a monetary policy rate of 0.5 percent in July 2009. As economies recovered, gradual tightening started for all countries during 2010, with the exception of Mexico.

During the global financial crisis not only was monetary policy loosened, but also measures to alleviate short-term financial tightening were implemented in most of the countries through significant repo operations.[20] Brazil, Chile, Mexico, and Peru broadened the range of collateral for open market operations to improve access to liquidity facilities and to align interbank rates with monetary policy rates. Brazil, Colombia, and Peru lowered reserve requirements. Chile implemented a longer-term liquidity facility to signal its commitment to low rates for a prolonged period of time.

The response of monetary policy helps to explain why the region's economic performance was worse in the 1990s and also explains part of the difference in economic performance between Asian and Latin American countries in the late 1990s (De Gregorio and Lee 2004).[21] Even though both crises had external

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18. Végh and Vuletin (2013) have shown that "average" Latin American countries have graduated in terms of fiscal and monetary policy, as they were no longer procyclical during the recent crisis.

19. The actual range of panel (a) goes from 0 to 16 percent, while the scale for panel (b) goes from 0 to 50 percent. Thus in terms of percentage points, fluctuations were much sharper and volatile during the Asian crisis. Comparisons on a country-by-country basis for a number of relevant variables are available in the appendix.

20. For discussion of these measures see Jara et al. (2009).

21. See also Corbo and Schmidt-Hebbel (2013, page 46), who claim that "the 1998–1999 recession was largely homemade, while the 2008–09 recession was significantly caused by the global financial crisis and the world recession."

causes, the policy responses during the Asian crisis—specifically the subordination of monetary policy to the objective of exchange rate stability—aggravated domestic impacts.

Role of International Reserves

Another tool used to contain the depreciation during the Asian crisis was exchange rate intervention. Figure 5 presents the evolution of reserves during both crises. During the Asian crisis Brazil, Chile, Colombia, and Peru intervened in the foreign exchange market, and by the end of 1999 they had fewer reserves than at the beginning of 1998. Only Mexico, which was recovering from its own 1994 financial crisis, did not intervene as heavily since it was in the process of building up its international reserves.

Before the global financial crisis the same four countries were steadily accumulating reserves. As currency tensions intensified, this process was interrupted. Some reserves declined in the last quarter of 2008, but the process of accumulation resumed. Brazil and Mexico intervened to stabilize their currencies after some corporations had serious financial problems due to their large exposure to currency risk. However, as indicated, the behavior of the Brazilian real and the Mexican peso was not very different from that of the Chilean and Colombian pesos. Thus, intervention was mostly effective in providing international liquidity, but it did not fundamentally change exchange rate trends.

The fear of a sudden stop and severe tightening of financial conditions in emerging markets led several central banks to implement special measures to provide international liquidity without using intervention. In late October 2008 the central banks of Brazil and Mexico (along with those of South Korea and Singapore) established liquidity swap lines with the US Federal Reserve, amounting to US$30 billion per country, to alleviate strains in global short-term funding markets. In addition, Brazil and Chile implemented swap operations in their foreign exchange markets, and Peru reduced its reserve requirement on dollar deposits. Direct intervention was limited, but reserves supported the creation of special liquidity facilities in dollars. These measures reduced tensions in the most challenging times of the crisis.

Despite high levels of reserves in Latin American countries at the beginning of the global financial crisis, these reserves were not largely used, as they had been in the Asian crisis. As our econometric evidence shows, allowing exchange rate depreciation without massive intervention in the foreign exchange market helps to explain the success of Latin America in the latest crisis.

After the intensity of the crisis abated, reserve accumulation resumed. This raises the issue of the role of international reserves. They are accumulated for insurance and mercantilist reasons (Aizenman and Lee 2007). The insurance aspect is the creation of a buffer of foreign exchange liquidity to protect against sharp falls in capital inflows. The mercantilist aspect is the foreign exchange intervention used to contain appreciation and promote exports.

Evidence from the global financial crisis indicates that credit constraints were not severe for this group of countries. It also supports the mercantilist motive in the years prior to the crisis. The rise in terms of trade strengthened currencies in many emerging market economies. The most common policy response among commodity exporters was to intervene in the foreign exchange market to protect exportable noncommodity sectors. However, having high reserve levels and not using them does not rule out the role of insurance. When foreign creditors see a high level of foreign exchange reserves, they are more reluctant to withdraw international financing and speculate against that currency.

According to some econometric evidence, the economies that had higher reserves were better prepared to weather the crisis. Frankel and Saravelos (2010), Gourinchas and Obstfeld (2012), and Kathryn Dominguez and colleagues (2012) find that countries with higher reserves suffered less during the global financial crisis and also had a lower probability of facing a national financial crisis. But Rose and Spiegel (2011) and the evidence presented in the previous section do not find significant effects. However, econometric evidence at cross-country reserve levels, as discussed in the previous section, could be masked by the fact that most countries may have had reserves that were above reasonable adequacy levels for insurance reasons, since mercantilist motives also led to an increase in reserves. Therefore, linear regressions cannot take into account "excess" reserves, which may vary significantly across countries. Robust results might be obtained using either panel data such as those in Gourinchas and Obstfeld (2012) or a nonlinear technique devised to analyze this specific case.

Fiscal Policy, Financial Markets, and the External Environment

Regarding fiscal policy and terms of trade, in figure 6 we compare the evolution of government expenditure and the terms of trade in Brazil, Chile, Columbia, Mexico, and Peru during crises in a 7-year window. The year "0" is 1999 for the Asian crisis and 2009 for the global financial one. The left panel is the evolution of government expenditure and the right panel, terms of trade. Indices normalized to 100 for the average of the whole period 1989–2011, so we are able to examine not only their evolution but also differences in levels across both crises.

On the fiscal front, all five Latin American countries expanded government expenditure during the global financial crisis, as year "0" shows an expansion,[22] whereas during the Asian financial crisis Brazil and Mexico ran contractionary policies, and Chile and Colombia had smaller expansion than during the global financial crisis. This contrast in fiscal policies during the two crises is noteworthy.

Different degrees of expansions were applied during the global financial crisis. Frankel and colleagues (2013), looking at the cyclicality of fiscal policies, show that Brazil, Chile, and Mexico changed their fiscal policies from procyclical during the 1990s to countercyclical in the 2000s. Similarly, Céspedes

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22. Peru is the only country for which we do not have complete data for government expenditure during the Asian crisis.

and Velasco (2013) show that the elasticity of the fiscal balance to commodity prices has increased over time for Brazil, Chile, Colombia, and Mexico, which is also an indication that fiscal policy has become less expansionary with increasing commodity prices.

The figures show these expansions by looking at the increase in government expenditure. Consideration of the cyclically adjusted fiscal balance, which is available only for the recent crisis, yields a more accurate assessment. Figure 7 shows the cyclically adjusted primary balance for our country group and the EME aggregate for the latest episode.

The five Latin American countries reduced their cyclically adjusted primary balances in 2009. However, the withdrawal of fiscal stimulus since then has been rather incomplete. Brazil has kept the same fiscal stance, while Colombia has further increased its primary deficit. Chile, Mexico, and Peru have only partially withdrawn their fiscal stimulus. Public finances were in a stronger position before the crisis. The pattern for emerging-market economies has been similar: a strong fiscal expansion in 2009, but only a partial withdrawal afterward. This pattern reveals a "fiscal stickiness" that can be gauged from figure 7, which shows that expenditure expansions were not reversed to the same extent

There may be a number of reasons for fiscal stickiness. The first is that around the time of the crisis, countries were implementing permanent fiscal expansions by increasing social and other expenditures. Stickiness may also be the result of constraints to reduce expenditures that were supposed to be transitory. Regardless of the country-by-country explanation, fiscal stickiness seems to be quite usual among emerging markets.

The lesson is that the active use of fiscal policy as a countercyclical tool has some limits, and over time the policy could fail if it is used recurrently. This behavior may also be behind the weakness of our econometric results regarding fiscal policy. A review of the time-series behavior of fiscal policies and economic activity, as done by Chari and Blair Henry (2013), may provide a more accurate assessment.

The good international environment that Latin America has enjoyed in recent years is apparent in its favorable terms of trade, which were central to the resilience of the region's economies. As seen in figure 6, the only exception was Mexico, a country that not only lacked a terms of trade boom but also suffered competition from China in its main export market, the United States. However, Mexico was also able to run expansionary macroeconomic policies during the recent crisis.[23]

As these five countries are commodity producers, the commodity boom represented a significant income windfall. In most of the Latin American countries, terms of trade declined in 2009, but then recovered and kept growing. This was a very positive development, as it indicated that despite the serious

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23. In Mexico government revenues depend strongly on oil revenues, so although the country did not enjoy terms of trade gains, public finances received a boost.

economic crisis in the advanced world, international conditions faced by Latin American economies were sanguine.

Low international interest rates also added to the good international environment for Latin American, as most advanced economies aggressively pursued expansionary monetary policies, not only reaching the zero lower bound but also implementing nonconventional monetary expansions.

Latin American countries have gone through a number of credit booms and financial crises. But during the global financial crisis, Latin America exhibited much more prudent behavior compared to other regions. Emerging markets in Latin American and elsewhere (with the exception of those in Europe) did not have credit booms before the global financial crisis and were therefore better able to contain the negative effects from the most recent crisis.[24]

5. CONCLUSIONS

Five years after the worst global financial crisis since the Great Depression, most emerging and developing countries have fully recovered (with the exception of some countries in emerging Europe). Most emerging-market economies are now concerned about how to manage a slowdown and foster long-term growth, but the resilience of many of them during the crisis was unprecedented.

In Latin America, past international crises were often magnified by policy mismanagement, as was evident during the Asian crisis, when shocks from Asia and Russia were met with macroeconomic policy tightening and unrealistic exchange rate policies. This response led to currency crises and financial vulnerabilities that caused, for example, the first financial crisis in Colombia. In fact, the performance of Latin America during the Asian crisis was much worse than that of the Asian countries themselves.

As we have explained in this paper, the policy responses during the recent global financial crisis were quite different. There were significant monetary and fiscal expansions. Exchange rates were allowed to float, and financial systems were resilient. In addition, the international environment facilitated the recovery. Economic activity further benefited from high terms of trade and low foreign interest rates.

We econometrically analyzed the factors underlying differences in economic performance between the Asian and global financial crises. We conducted first-difference estimations for a cross section of countries, examining a broad sample of emerging and developing countries and then looked at a subgroup of emerging-market economies.

By examining a large number of variables across samples and specifications, we found that better performance is positively associated with greater exchange rate flexibility, lower private credit growth, and monetary policy loosening, and negatively associated with more financial openness. The effect of the exchange rate regime is insignificant, but the extent of exchange rate intervention negatively affected

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24. For discussion of the evidence as well as prudential policies see Tovar et al. (2012) and De Gregorio (2014a, chapter 4).

performance in the broad sample of DECs. It is difficult to classify exchange rate regimes, but the extent of intervention is a de facto indicator of rigidity. Prior to the crisis, most Latin American countries intervened when their currencies were appreciating. What our evidence suggests is that it is more helpful to let the exchange rate float when there is pressure to depreciate. Vulnerabilities arise when there is fear of depreciation.

Contrary to other research and conventional wisdom among policymakers our regressions show no effects of government expenditures. Endogeneity problems, lack of better indicators of fiscal impulse, and the dynamics of the partial withdraw of fiscal stimulus may mask the effects of fiscal expansion.

There is some evidence for "good luck" as an explanation of good performance but only for EMEs, particularly when countries are separated according to whether they are commodity exporters. There is also some evidence that increased trade openness helped to mitigate the effects of the crisis. Most of this econometric evidence is consistent with the particular analysis of the main Latin American countries' performance during both crises.

We think that looking at economic performance in the five-year period during and after a crisis provides more information than just looking at the fall in output in the first few years. Cross-country regressions do not provide the final answer, but our results reinforce the idea that good macroeconomic policies are key to mitigating the effects of sharp negative global shocks. These policies are not enough to spur long-term growth but provide resilience to avoid excessive dependence on external conditions.

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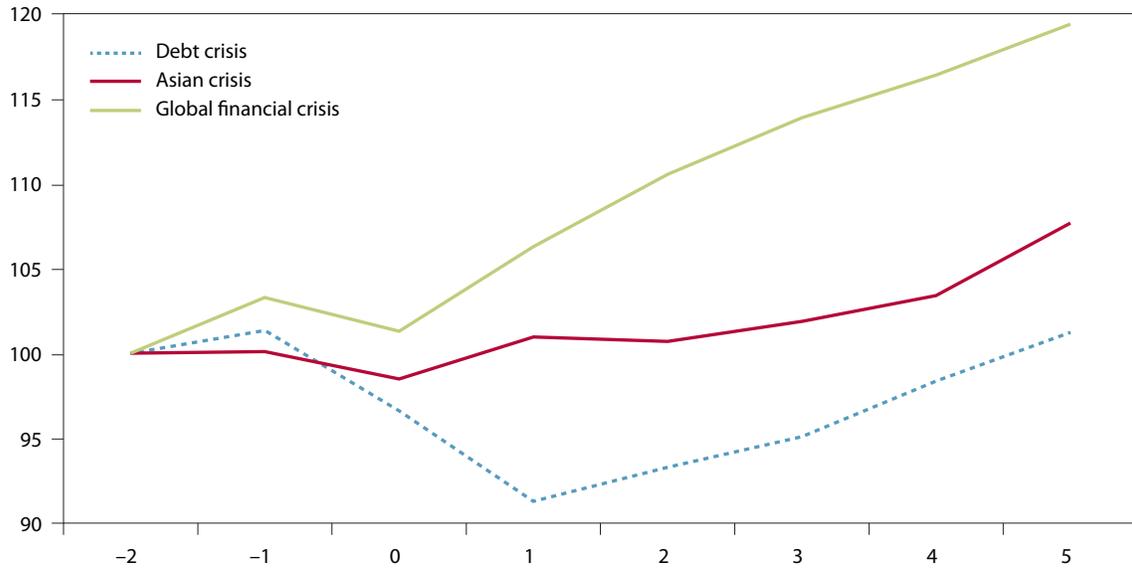
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Figure 1 Per capita GDP during three crises in LATAM-5

index = 100 two years before the crisis

Note: LATAM-5 comprises Brazil, Chile, Colombia, Mexico, and Peru. The figures are simple, unweighted averages. Periods for the debt crisis: 1980–87, Asian crisis: 1997–2004, global financial crisis: 2007–14. The data for 2013 are provisional and for 2014 forecast.

Source: IMF, *World Economic Outlook*, April 2014.

Figure 2 Economic growth rate during the global financial and Asian crises:
Developing and emerging-market economies

economic growth: financial crisis

economic growth: Asian crisis
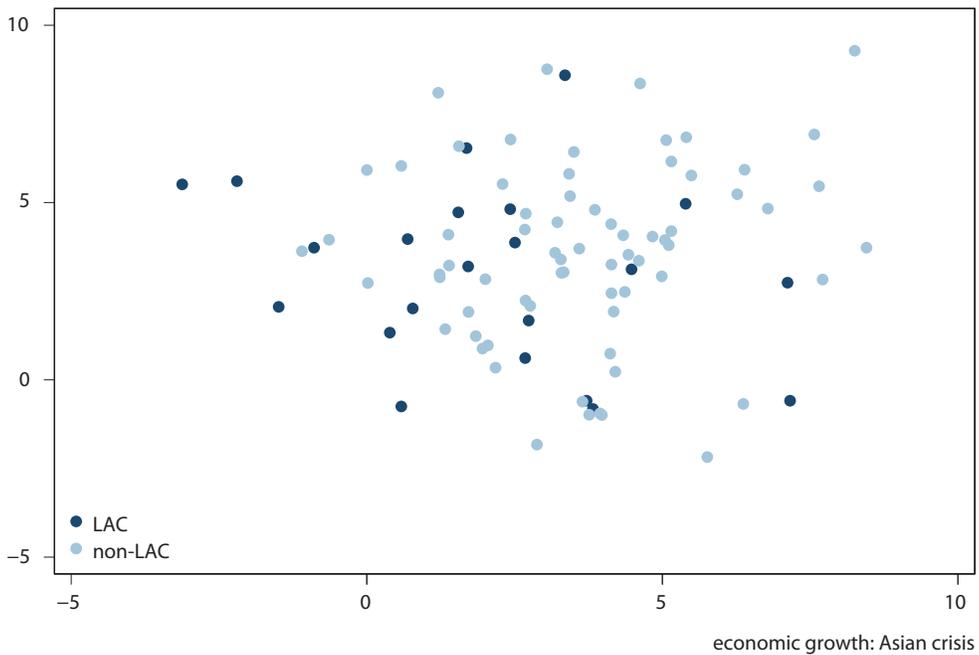
LAC = Latin America and the Caribbean

Source: IMF, *World Economic Outlook* database.

Table 1 Developing and emerging countries (DECs)

Variable	(1)	(2)	(3)	(4)	(5)
Reserves	0.0390	-0.00784		−0.00841	
	(0.0280)	(0.0338)		(0.0311)	
Inflation	−0.000416	−0.000362		−0.000289	
	(0.00166)	(0.00115)		(0.00113)	
Exchange rate regime	0.00552	0.158		0.135	
	(0.105)	(0.113)		(0.123)	
Public debt	−0.00790	0.00532		0.00122	
	(0.00537)	(0.0113)		(0.0106)	
Private credit	−0.0317***	−0.0149	−0.0233***	−0.0152	−0.0233***
	(0.00879)	(0.0109)	(0.00702)	(0.0107)	(0.00702)
Trade openness	0.0151	0.0317**	0.0314**	0.0297*	0.0314**
	(0.0110)	(0.0159)	(0.0146)	(0.0152)	(0.0146)
Capital account openness	−0.144	−0.104		−0.111	
	(0.132)	(0.274)		(0.257)	
Public expenditure	0.0475	−0.0369		−0.0321	
	(0.0476)	(0.0531)		(0.0514)	
Interest rate	−0.0770**	−0.155***	−0.141***	−0.144***	−0.141***
	(0.0372)	(0.0218)	(0.0193)	(0.0242)	(0.0193)
Terms of trade	1.388*	1.145			
	(0.754)	(1.039)			
Commodity exporter				0.753	
				(0.620)	
ECA		−5.355***	−4.324***	−5.074***	−4.324***
		(1.409)	(0.598)	(1.549)	(0.598)
LAC		−1.754		−1.660	
		(1.391)		(1.443)	
MENA		−2.117		−1.926	
		(1.290)		(1.371)	
SA		−0.309		−0.972	
		(1.359)		(1.432)	
SSA		−1.182		−1.408	
		(1.510)		(1.540)	
WE		−2.656		−2.650	
		(1.817)		(1.765)	
Constant	1.243	−0.0287	0.977	−0.0287	
	(1.249)	(0.434)	(1.416)	(0.434)	
Observations	92	92	92	92	
R-squared	0.493	0.431	0.491	0.431	

ECA = developing Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, SA = Southern Asia, SSA=sub-Saharan Africa, and WE = Western Europe

Note: The dependent variable is the difference in the economic growth rate between the recent global financial crisis (2008–12) and the Asian crisis (1998–2002). Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 2   Emerging-market economies (EMEs)

Variable	(1)	(2)	(3)	(4)	(5)
Reserves	−0.0248	−0.0207		−0.0183	
	(0.0423)	(0.0463)		(0.0419)	
Inflation	−0.000466	−0.00324	−0.00518***	−0.00231	
	(0.00131)	(0.00215)	(0.00128)	(0.00198)	
Exchange rate regime	0.0881	0.0944		0.0855	
	(0.109)	(0.143)		(0.105)	
Public debt	0.0131	0.0417	0.0688***	0.0292	
	(0.0195)	(0.0302)	(0.0213)	(0.0240)	
Private credit	−0.0454***	−0.0347*	−0.0333**	−0.0221	
	(0.0146)	(0.0196)	(0.0126)	(0.0186)	
Trade openness	0.0128	0.0348		0.0450	0.0656**
	(0.0299)	(0.0274)		(0.0302)	(0.0241)
Capital account openness	−1.834***	−1.626**	−1.457*	−1.697**	−1.831***
	(0.575)	(0.736)	(0.707)	(0.749)	(0.562)
Public expenditure	−0.0816	0.0563		0.0618	
	(0.109)	(0.0932)		(0.0666)	
Interest rate	−0.152***	−0.125**	−0.104**	−0.0934*	−0.0872**
	(0.0389)	(0.0455)	(0.0465)	(0.0501)	(0.0383)
Terms of trade	0.943	1.441	1.574*		
	(1.242)	(1.389)	(0.852)		
Commodity exporter				2.383*	2.764***
				(1.218)	(0.943)
ECA		−3.323	−3.493*	−2.337	−3.788***
		(2.452)	(1.733)	(2.465)	(1.108)
LAC		0.134		0.338	
		(2.548)		(2.108)	
MENA		−1.098		−1.151	−2.655***
		(2.106)		(1.835)	(0.919)
SA		0.857		−0.882	−2.135**
		(1.459)		(1.669)	(0.837)
SSA		0.337		−0.619	−2.874***
		(2.456)		(2.224)	(0.833)
Constant		0.752	1.357**	−0.734	−0.472
		(1.530)	(0.602)	(1.468)	(0.747)
Observations		31	31	31	31
R-squared		0.841	0.794	0.873	0.828

ECA = developing Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, SA = Southern Asia, and SSA = sub-Saharan Africa

Notes: The dependent variable is the difference in the economic growth rate between the recent global financial crisis (2008–12) and the Asian crisis (1998–2002). Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 3   Components of capital account openness

Variable	DECs		EMEs	
	Multivariate	**Only significant**	**Multivariate**	**Only significant**
Reserves	−0.0239		−0.0174	
	(0.0342)		(0.0650)	
Other assets	−0.0216*		−0.0665*	−0.0160*
	(0.0117)		(0.0341)	(0.00923)
Portfolio equity liability	0.0223		−0.0990	
	(0.0275)		(0.0625)	
FDI liability	0.0120		0.0336	
	(0.0168)		(0.0387)	
Banking liability	0.0204*		0.0640	
	(0.0119)		(0.0402)	
Inflation	0.000446		−0.00277	
	(0.00128)		(0.00329)	
Exchange rate regime	0.171		0.150	0.240**
	(0.109)		(0.193)	(0.101)
Public debt	−0.00717		0.0260	
	(0.0125)		(0.0362)	
Private credit	−0.0256**	−0.0233***	−0.0422*	−0.0251**
	(0.0122)	(0.00702)	(0.0227)	(0.0117)
Trade openness	0.0361*	0.0314**	0.0703*	0.0447**
	(0.0201)	(0.0146)	(0.0376)	(0.0191)
Public expenditure	−0.0455		−0.0157	
	(0.0533)		(0.119)	
Interest rate	−0.161***	−0.141***	−0.221***	−0.180***
	(0.0239)	(0.0193)	(0.0598)	(0.0261)
Terms of trade	1.509		2.739	
	(1.175)		(1.922)	
ECA	−6.019***	−4.324***	−9.438**	−5.131***
	(1.592)	(0.598)	(3.661)	(0.837)
LAC	−1.845		−1.557	
	(1.527)		(2.808)	
MENA	−2.486*		−2.992	−1.045*
	(1.282)		(2.287)	(0.556)
SA	−0.425		−0.0629	
	(1.361)		(1.512)	
SSA	−1.104		1.366	
	(1.467)		(2.964)	
WE	−1.383			
	(1.479)			
Constant	1.525	−0.0287	2.620	0.103
	(1.212)	(0.434)	(2.071)	(0.444)
Observations	92	92	31	31
R-squared	0.516	0.431	0.851	0.773

DECs = developing and emerging countries, ECA = developing Europe and Central Asia, EMEs = emerging-market economies, FDI = foreign direct investment, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, SA = Southern Asia, SSA = sub-Saharan Africa, and WE = Western Europe

Notes: The dependent variable is the difference in the economic growth rate between the recent global financial crisis (2008–12) and the Asian crisis (1998–2002). Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 4   International reserves intervention

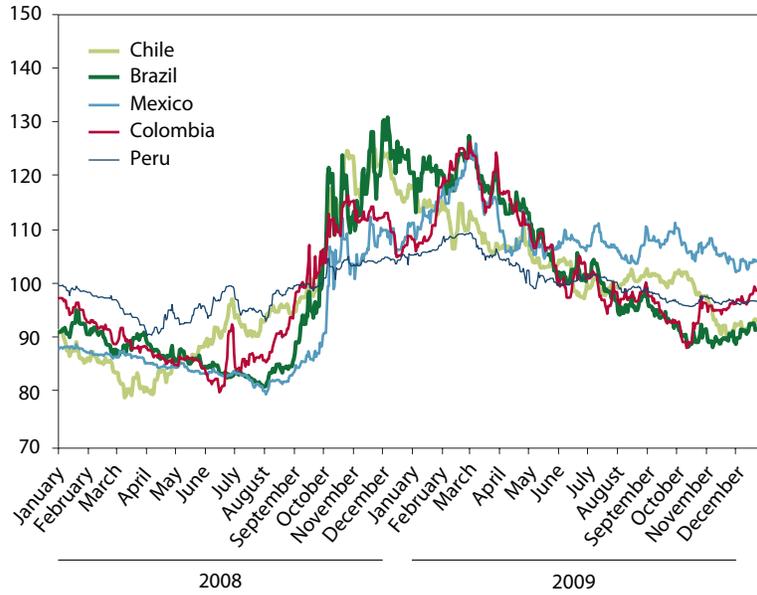| Variable	DECs		EMEs	
	Multivariate	**Only significant**	**Multivariate**	**Only significant**
Reserves intervention	−0.132**	−0.131***	−0.0325	
	(0.0500)	(0.0381)	(0.0903)	
Inflation	−0.00134		−0.00338	−0.00518***
	(0.000974)		(0.00212)	(0.00128)
Exchange rate regime	0.111		0.117	
	(0.119)		(0.143)	
Public debt	0.0138		0.0447	0.0688***
	(0.00977)		(0.0276)	(0.0213)
Private credit	−0.00900		−0.0353*	−0.0333**
	(0.0118)		(0.0193)	(0.0126)
Trade openness	0.0302*	0.0388***	0.0281	
	(0.0153)	(0.0138)	(0.0255)	
Capital account openness	−0.404	−0.440***	−1.594**	−1.457*
	(0.284)	(0.0943)	(0.736)	(0.707)
Public expenditure	−0.0671	−0.0793*	0.0493	
	(0.0550)	(0.0451)	(0.0958)	
Interest rate	−0.143***	−0.132***	−0.117**	−0.104**
	(0.0225)	(0.0185)	(0.0432)	(0.0465)
Terms of trade	1.377		1.583	1.574*
	(0.959)		(1.644)	(0.852)
ECA	−4.702***	−3.935***	−2.761	−3.493*
	(1.393)	(0.685)	(1.857)	(1.733)
LAC	−1.879		0.450	
	(1.323)		(2.143)	
MENA	−2.272*	−1.168*	−0.641	
	(1.320)	(0.639)	(1.480)	
SA	−0.203		1.255	
	(1.243)		(1.190)	
SSA	−1.107		0.790	
	(1.386)		(1.732)	
WE	−0.526			
	(1.680)			
Constant	1.508	0.358	0.429	1.357**
	(1.138)	(0.430)	(1.069)	(0.602)
Observations	91	91	31	31
R-squared	0.545	0.488	0.841	0.794

DECs = developing and emerging countries, ECA = Developing Europe and Central Asia, EMEs = emerging-market economies, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, SA = Southern Asia, SSA = sub-Saharan Africa, and WE = Western Europe.

Notes: The dependent variable is the difference in the economic growth rate between the recent global financial crisis (2008–12) and the Asian crisis (1998–2002). Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

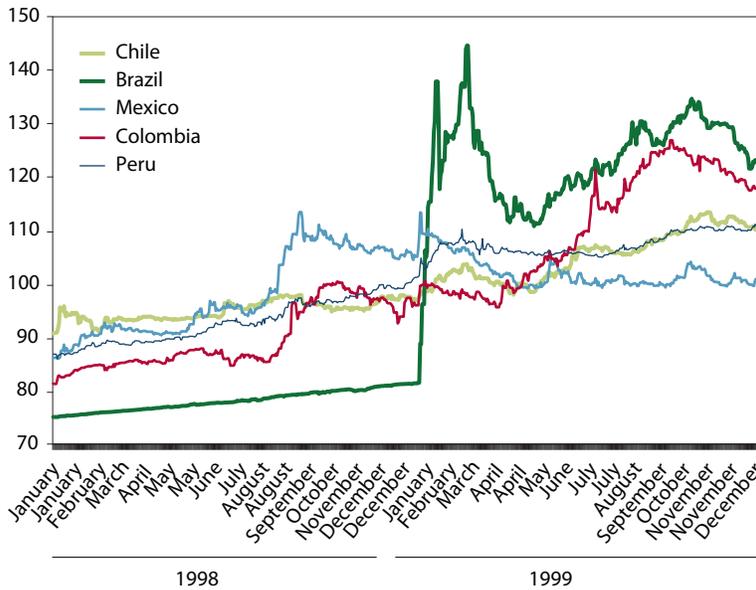**Figure 3　Exchange rates in selected Latin American countries**

a. Global financial crisis

index, period average = 100

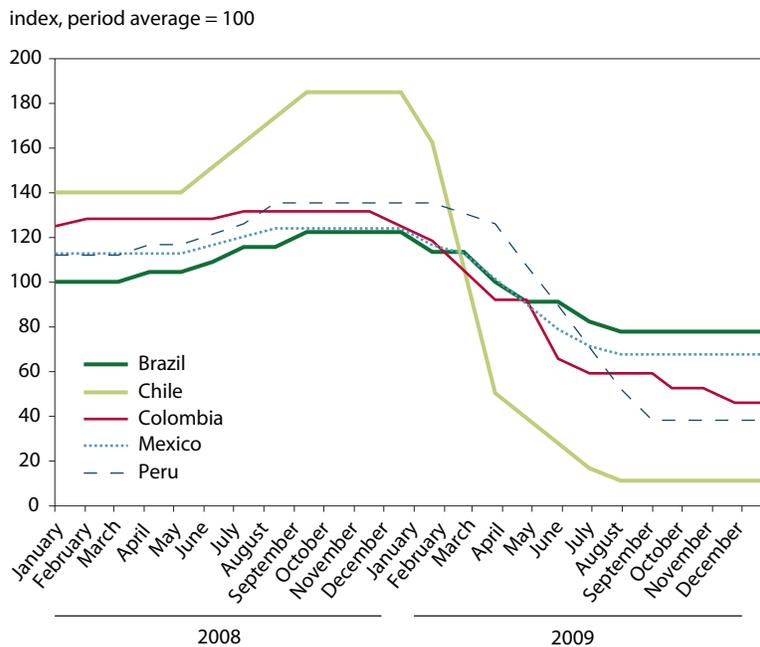2008　　　2009

b. Asian crisis

index, period average = 100

1998　　　1999

Source: Bloomberg.

29

Figure 4   Monetary policy in selected Latin American countries

a. Global financial crisis

index, period average = 100
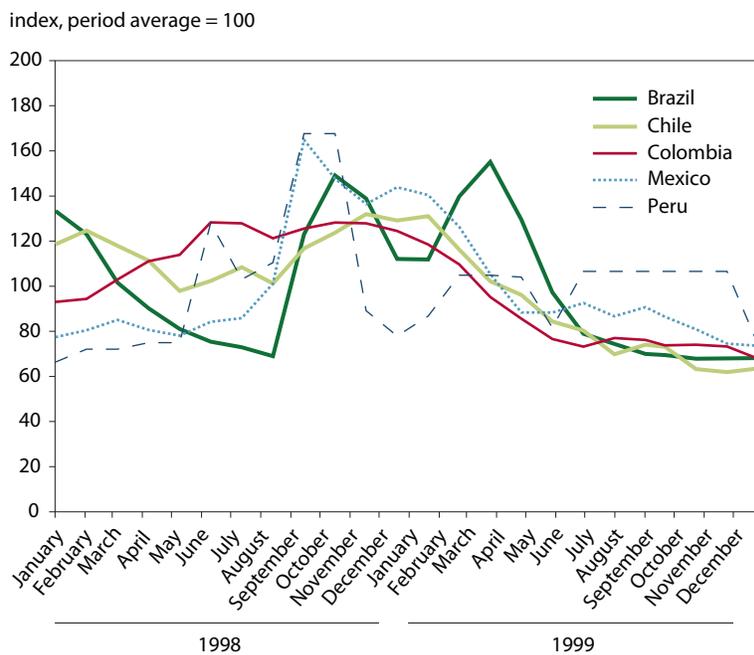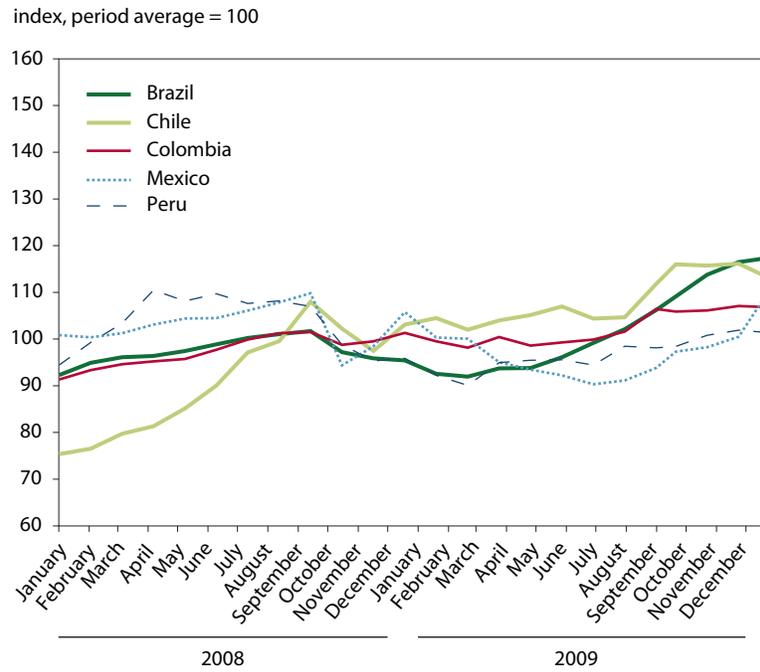

b. Asian crisis

index, period average = 100

Source: Bloomberg.

30

**Figure 5   International reserves in selected Latin American
          countries**

a. Global financial crisis

index, period average = 100

Legend:
- Brazil
- Chile
- Colombia
- Mexico
- Peru

2008   2009

b. Asian crisis

index, period average = 100

Legend:
- Brazil
- Chile
- Colombia
- Mexico
- Peru

1998   1999
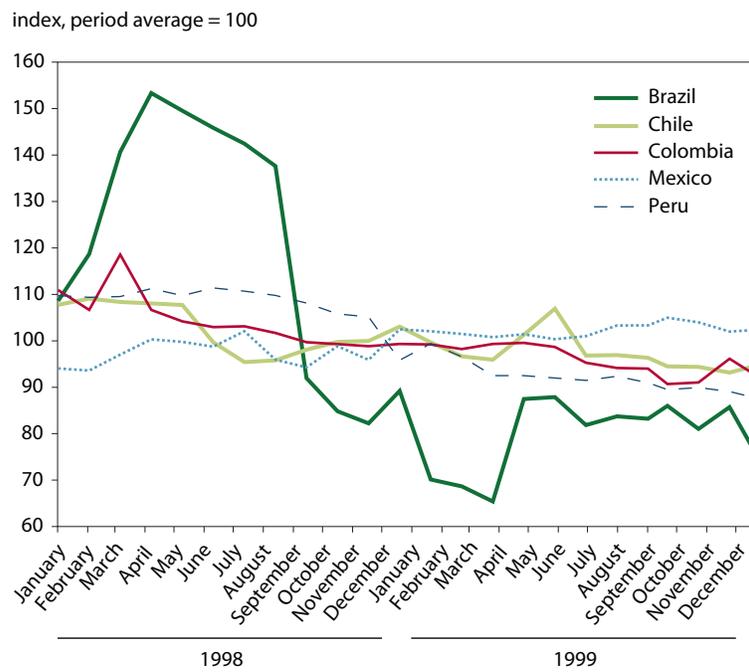
Source: IMF, *International Financial Statistics*.

Figure 6 **Government expenditure (change year-on-year, percent of GDP) and terms of trade (index, 1998–2011=100): Brazil, Chile, Colombia, Mexico, and Peru**
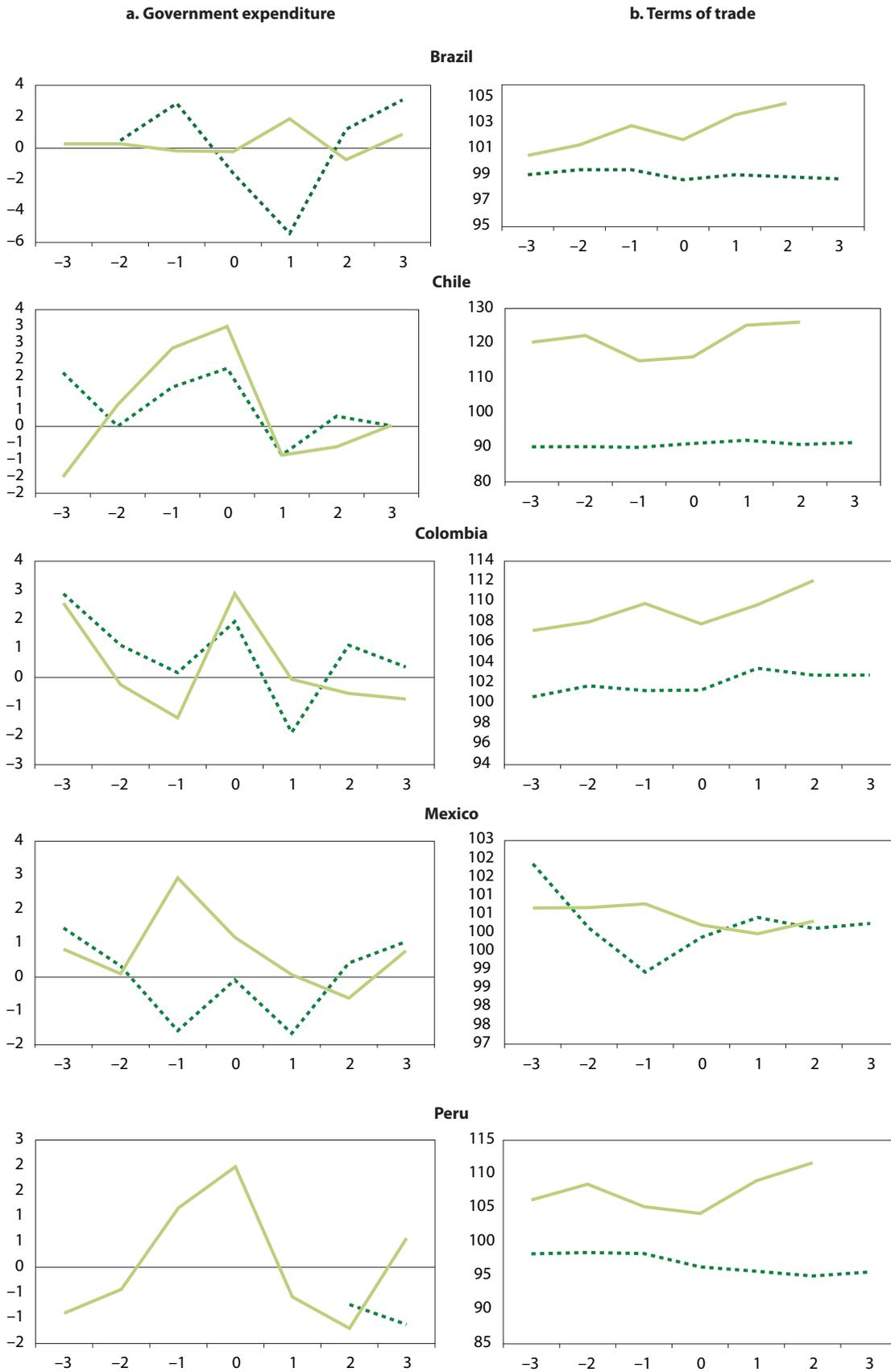
a. Government expenditure

b. Terms of trade

Brazil

Chile

Colombia

Mexico

Peru

Dotted line = Asian crisis, solid line = global financial crisis

Sources: IMF, *World Economic Outlook* and *International Financial Statistics*.

Figure 7   General government cyclically adjusted primary balance

percent of potential GDP
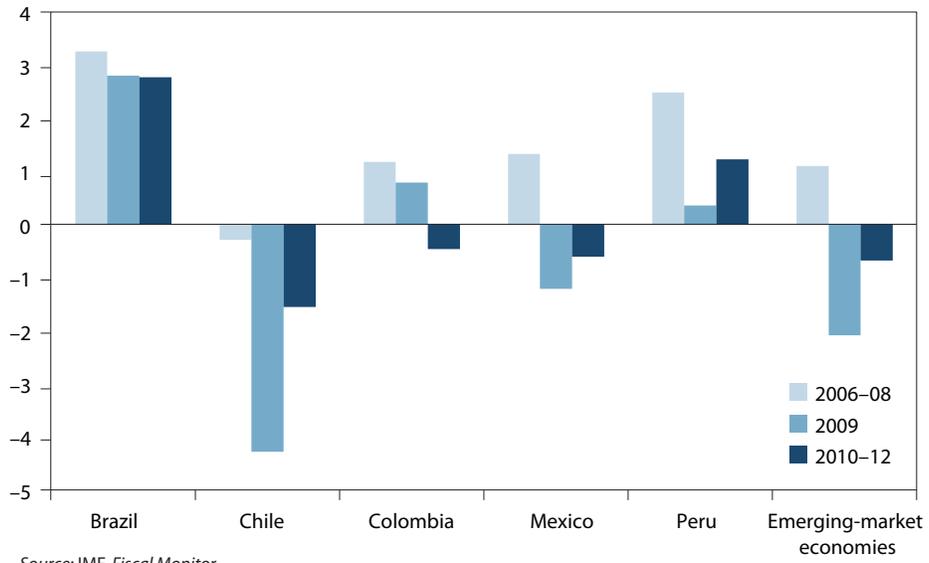
Source: IMF, *Fiscal Monitor*.

Data sources and descriptive statistics

Variable	Source	Observations	Mean	Standard deviation	Minimum	Maximum
GDP growth	WEO	93	0.1	3.4	−7.9	8.6
International reserves/GDP	WEO	93	7.7	11.9	−30.7	64.6
Inflation rate	WEO	93	−15.3	109.4	−1053.6	12.9
Exchange rate regime	Reinhart and Rogoff*	93	−0.2	3.2	−11.0	9.0
Public debt/GDP	IMF**	93	−13.9	35.7	−163.7	66.9
Private credit/GDP	WDI	93	11.6	35.7	−53.9	243.4
Trade openness: (exports + imports)/GDP	WDI	93	13.7	22.6	−41.1	95.0
Financial openness: (external assets + external liabilities)/GDP	Lane and Milesi Ferretti***	93	0.7	2.0	−1.4	12.3
Government expenditure/GDP	WEO	93	2.7	5.7	−12.2	19.4
Interest rate: Discount or money market rate	IMF IFS	93	−6.8	9.3	−55.4	4.4
Terms of trade: Change in logs	WDI	93	0.1	0.4	−1.1	1.1

* See www.carmenreinhart.com/user_uploads/ERA-Monthly%20fine%20class.xls
** See www.imf.org/external/pubs/ft/wp/2010/wp10245.pdf
*** See www.philiplane.org/EWN.html

All variables are expressed in differences between the average of both crises.

Data from WEO: *World Economic Outlook*, IMF: International Monetary Fund, WDI: *World Development Indicators*, IMF IFS: International Monetary Fund, *International Financial Statistics.*

Country List: Developing and Emerging-Market Economies

Country		Country	
Albania	0	Lebanon	0
Algeria	0	Lesotho	0
Argentina	1	Macedonia	0
Azerbaijan	0	Madagascar	0
Bahrain	1	Malawi	0
Bangladesh	1	Malaysia	1
Belize	0	Maldives	0
Bolivia	0	Mali	0
Botswana	0	Mauritius	0
Brazil	1	Mexico	1
Bulgaria	1	Moldova	0
Burkina Faso	0	Mongolia	0
Burundi	0	Morocco	1
Cameroon	0	Nepal	0
Central African Republic	1	Nigeria	1
Chad	0	Pakistan	1
Chile	1	Panama	0
China	1	Papua New Guinea	0
Colombia	1	Paraguay	0
Congo, Republic of the	0	Peru	1
Costa Rica	0	Philippines	1
Côte d'Ivoire	0	Poland	1
Croatia	0	Russian Federation	1
Cyprus	0	Saudi Arabia	0
Czech Republic	0	Senegal	0
Dominica	0	Singapore	0
Dominican Republic	0	Slovak Republic	0
Ecuador	0	Slovenia	0
Egypt	1	South Africa	1
El Salvador	0	Sri Lanka	0
Estonia	1	St. Kitts and Nevis	0
Gabon	0	St. Lucia	0
Georgia	0	St. Vincent and the Grenadines	0
Ghana	0	Swaziland	0
Hungary	1	Switzerland	0
Iceland	0	Tanzania	0
India	1	Thailand	1
Indonesia	1	Togo	0
Israel	0	Trinidad and Tobago	0
Jamaica	0	Tunisia	0
Jordan	0	Turkey	1
Kazakhstan	0	Uganda	0
Korea, Republic of	1	Ukraine	1
Kuwait	1	Uruguay	0
Kyrgyz Republic	0	Venezuela	1
Latvia	1	Zambia	0

Emerging-market economies = 1

A. Additional Regressions

Table A.1   Developing and emerging economies (DECs), institutional change

Variable	(1)	(2)	(3)	(4)
Institutions	−0.276		−0.158	
	(0.861)		(0.820)	
Reserves	−0.00577		−0.00275	
	(0.0393)		(0.0361)	
Inflation	−0.00207		−0.00172	
	(0.00151)		(0.00157)	
Exchange Rate Regime	0.0709		0.0513	
	(0.116)		(0.144)	
Public Debt	0.0206		0.0118	
	(0.0143)		(0.0130)	
Private Credit	−0.00794		−0.00786	
	(0.0131)		(0.0127)	
Trade Openness	0.0472*	0.0493**	0.0438	0.0493**
	(0.0265)	(0.0210)	(0.0268)	(0.0210)
Capital Account Openness	−0.246	−0.377***	−0.274	−0.377***
	(0.333)	(0.0862)	(0.314)	(0.0862)
Public Expenditure	−0.0716		−0.0852	
	(0.0735)		(0.0727)	
Interest Rate	−0.154***	−0.152***	−0.145***	−0.152***
	(0.0358)	(0.0244)	(0.0362)	(0.0244)
Terms of Trade	1.894			
	(1.180)			
Commodity Exporter			0.903	
			(0.856)	
ECA	−6.455***	−5.325***	−6.221***	−5.325***
	(1.578)	(0.811)	(1.774)	(0.811)
LAC	−1.267		−1.202	
	(1.556)		(1.579)	
MENA	−2.091		−1.915	
	(1.269)		(1.347)	
SA	0.364		−0.860	
	(1.349)		(1.339)	
SSA	−0.148		−0.708	
	(1.853)		(1.664)	
WE	−2.040		−2.089	
	(2.422)		(2.314)	
Constant	0.922	−0.122	0.697	−0.122
	(1.512)	(0.591)	(1.702)	(0.591)
Observations	67	67	67	67
R-squared	0.472	0.352	0.449	0.352

ECA = Developing Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, NA = North America, SA = Southern Asia, SSA = Sub-Saharan Africa, and WE = Western Europe

Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.2   Developing and emerging economies (DECs), precrisis growth

Variable	(1)	(2)	(3)	(4)
Precrisis Growth	0.0707		0.0749	
	(0.0566)		(0.0588)	
Reserves	−0.00643		−0.00673	
	(0.0334)		(0.0307)	
Inflation	4.49e−05		0.000128	
	(0.00123)		(0.00120)	
Exchange Rate Regime	0.164		0.147	
	(0.114)		(0.121)	
Public Debt	0.00592		0.00280	
	(0.0112)		(0.0106)	
Private Credit	−0.0153	−0.0233***	−0.0156	−0.0233***
	(0.0108)	(0.00702)	(0.0106)	(0.00702)
Trade Openness	0.0326**	0.0314**	0.0311**	0.0314**
	(0.0159)	(0.0146)	(0.0155)	(0.0146)
Capital Account Openness	−0.104		−0.109	
	(0.268)		(0.254)	
Public Expenditure	−0.0484		−0.0454	
	(0.0554)		(0.0542)	
Interest Rate	−0.157***	−0.141***	−0.149***	−0.141***
	(0.0236)	(0.0193)	(0.0267)	(0.0193)
Terms of Trade	0.894			
	(1.090)			
Commodity Exporter			0.572	
			(0.659)	
ECA	−5.589***	−4.324***	−5.389***	−4.324***
	(1.425)	(0.598)	(1.589)	(0.598)
LAC	−1.731		−1.657	
	(1.396)		(1.422)	
MENA	−2.113		−1.966	
	(1.284)		(1.341)	
SA	−0.311		−0.817	
	(1.334)		(1.372)	
SSA	−1.026		−1.190	
	(1.501)		(1.495)	
WE	−2.647		−2.642	
	(1.735)		(1.696)	
Constant	1.139	−0.0287	0.931	−0.0287
	(1.240)	(0.434)	(1.372)	(0.434)
Observations	92	92	92	92
R-squared	0.499	0.431	0.497	0.431

ECA = Developing Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, NA = North America, SA = Southern Asia, SSA = Sub-Saharan Africa, and WE = Western Europe

Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.3   Developing and emerging economies (DECs), precrisis: 3-year period

Variable	(1)	(2)	(3)	(4)
Reserves	−0.0176		−0.0210	
	(0.0384)		(0.0350)	
Inflation	0.00138		0.000870	
	(0.00462)		(0.00419)	
Exchange Rate Regime	0.158		0.130	
	(0.118)		(0.128)	
Public Debt	−0.00383		−0.00392	
	(0.00607)		(0.00576)	
Private Credit	−0.0122	−0.0167**	−0.0133	−0.0151*
	(0.00931)	(0.00826)	(0.00962)	(0.00822)
Trade Openness	0.0339*	0.0399**	0.0313*	0.0374**
	(0.0193)	(0.0178)	(0.0178)	(0.0164)
Capital Account Openness	−0.139		−0.0941	
	(0.241)		(0.252)	
Public Expenditure	−0.0253		−0.0231	
	(0.0505)		(0.0486)	
Interest Rate	−0.152***	−0.135***	−0.138***	−0.121***
	(0.0208)	(0.0202)	(0.0213)	(0.0188)
Terms of Trade	1.010			
	(1.005)			
Commodity Exporter			1.137*	1.228**
			(0.588)	(0.558)
ECA	−5.651***	−4.801***	−5.200***	−4.188***
	(1.244)	(0.633)	(1.403)	(0.646)
LAC	−1.880		−1.828	
	(1.399)		(1.424)	
MENA	−2.175*		−1.913	
	(1.305)		(1.394)	
SA	−0.433		−1.113	
	(1.202)		(1.233)	
SSA	−1.690		−1.765	
	(1.294)		(1.302)	
WE	−3.091*	−1.862*	−3.114*	−1.687*
	(1.774)	(0.980)	(1.690)	(0.986)
Constant	1.372	−0.0836	0.890	−0.789
	(1.212)	(0.429)	(1.382)	(0.549)
Observations	97	97	97	97
R-squared	0.462	0.405	0.473	0.432

ECA = Developing Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, NA = North America, SA = Southern Asia, SSA = Sub-Saharan Africa, and WE = Western Europe

Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.4   Emerging-market economies (EMEs), precrisis: 3-year period

Variable	(1)	(2)	(3)	(4)
Reserves	0.00672		0.0179	
	(0.0676)		(0.0576)	
Inflation	−0.00960	−0.00950*	−0.0104	−0.0119*
	(0.00909)	(0.00497)	(0.00801)	(0.00611)
Exchange Rate Regime	0.150	0.243*	0.148	
	(0.193)	(0.119)	(0.183)	
Public Debt	0.0431	0.0277*	0.0352	0.0547***
	(0.0354)	(0.0155)	(0.0257)	(0.0186)
Private Credit	−0.0386	−0.0331**	−0.0274	−0.0315*
	(0.0265)	(0.0147)	(0.0256)	(0.0162)
Trade Openness	0.0155		0.0212	
	(0.0432)		(0.0420)	
Capital Account Openness	0.0714		0.157	0.252**
	(0.189)		(0.189)	(0.110)
Public Expenditure	0.00551		0.0133	
	(0.0978)		(0.0772)	
Interest Rate	−0.134**	−0.154***	−0.106*	−0.0966**
	(0.0470)	(0.0263)	(0.0524)	(0.0382)
Terms of Trade	1.253			
	(1.812)			
Commodity Exporter			2.304	2.296**
			(1.504)	(1.030)
ECA	−4.849	−5.325***	−3.746	−4.594***
	(3.021)	(1.172)	(2.995)	(1.377)
LAC	0.983		1.409	
	(2.958)		(2.412)	
MENA	−0.0577		0.403	
	(2.390)		(2.009)	
SA	1.366		0.112	
	(1.653)		(1.593)	
SSA	0.701		0.318	
	(2.467)		(2.189)	
Constant	−0.186	0.477	−1.988	−0.737
	(1.551)	(0.456)	(1.740)	(0.883)
Observations	31	31	31	31
R-squared	0.779	0.747	0.813	0.774

EAC = Developing Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, NA = North America, SA = Southern Asia, SSA = Sub-Saharan Africa, and WE = Western Europe

Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.5 Developing and emerging economies (DECs), fiscal interactions

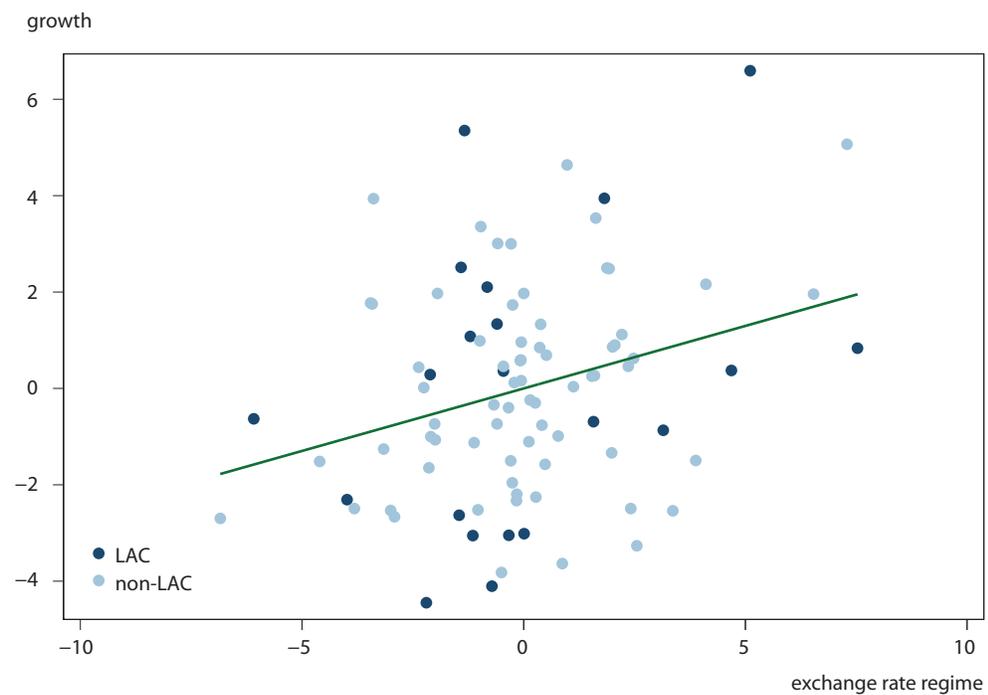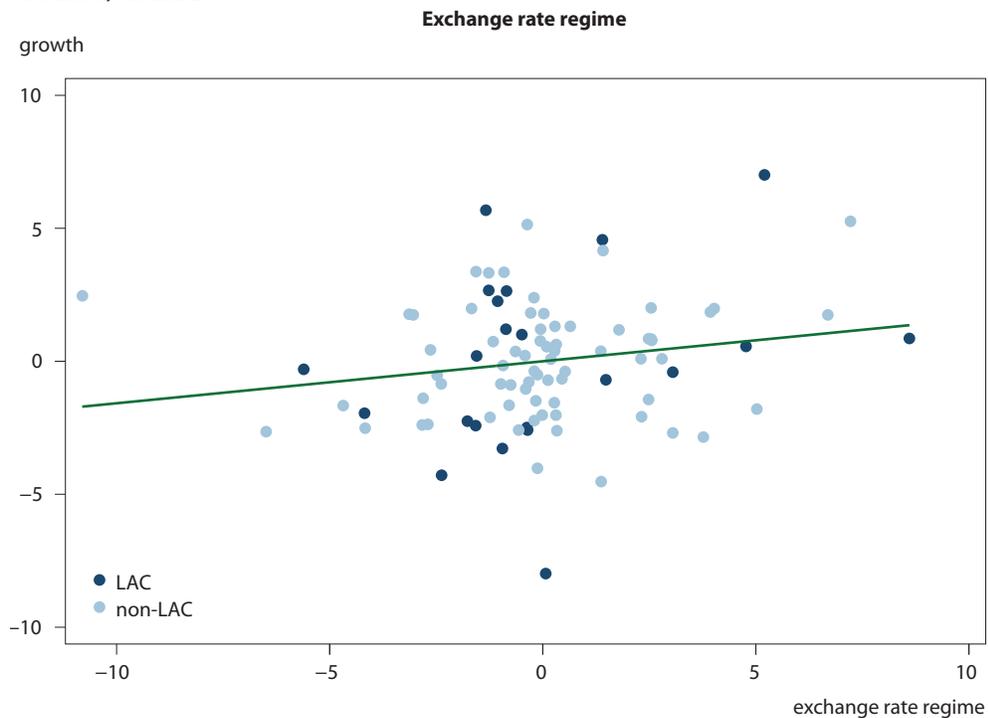| Variable	(1)	(2)	(3)	(4)
Reserves	−0.0158		0.00469	
	(0.0275)		(0.0459)	
Inflation	0.0403		0.00986	
	(0.0541)		(0.0309)	
Exchange Rate Regime	0.178		0.181	0.242**
	(0.106)		(0.192)	(0.118)
Public Debt	−0.00217		0.0151	
	(0.0147)		(0.0173)	
Private Credit	−0.0109	−0.0265*	−0.0217	
	(0.0117)	(0.00482)	(0.0208)	
Trade Openness	0.0109		0.0284	
	(0.0175)		(0.0314)	
Capital Account Openness	−0.0198		−0.822	
	(0.264)		(1.212)	
Public Expenditure	−0.00302		−0.0653	
	(0.0746)		(0.0912)	
Interest Rate	−0.127	−0.0907***	−0.146**	−0.140*
	(0.0819)	(0.0519)	(0.0550)	(0.0181)
Commodity Exporter	2.541**	2.007**	1.023	1.458***
	(1.059)	(0.763)	(0.853)	(0.817)
Fiscal Deficit	0.378***			
	(0.207)			
Fiscal Deficit*Com. Exp	−0.332			
	(0.238)			
Fiscal Procyclicality			0.386	
			(0.759)	
Fiscal Procyclicality*Com Exp			−0.762	
			(1.189)	
ECA	−4.673*	−3.111*	−3.661***	−3.842*
	(1.537)	(1.114)	(1.869)	(0.560)
LAC	−1.348		0.210	
	(1.314)		(1.809)	
MENA	−3.241***	−2.558*	−0.438	
	(1.739)	(0.922)	(1.446)	
SA	−2.024		1.459	
	(1.358)		(1.876)	
SSA	−0.740		0.397	
	(1.675)		(1.971)	
WE	−4.826**		4.775	
	(2.281)		(7.778)	
Constant	−0.0341	−0.181	−0.735	−1.077
	(1.659)	(0.629)	(1.714)	(0.682)
Observations	64	64	57	57
R-squared	0.572	0.457	0.352	0.287

ECA = Developing Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, NA = North America, SA = Southern Asia, SSA = Sub-Saharan Africa, and WE = Western Europe

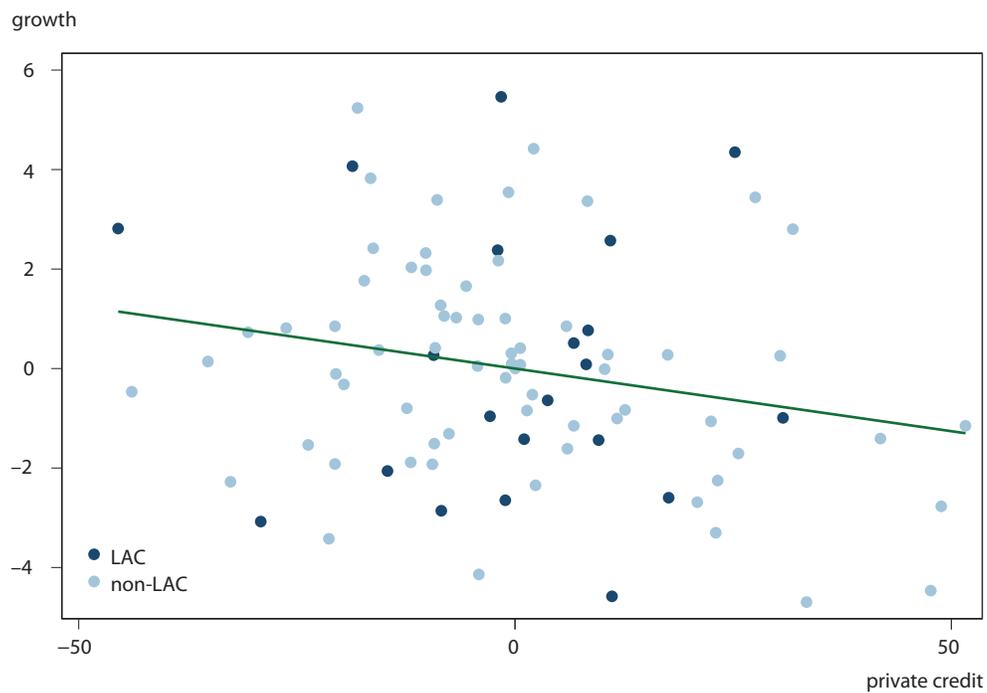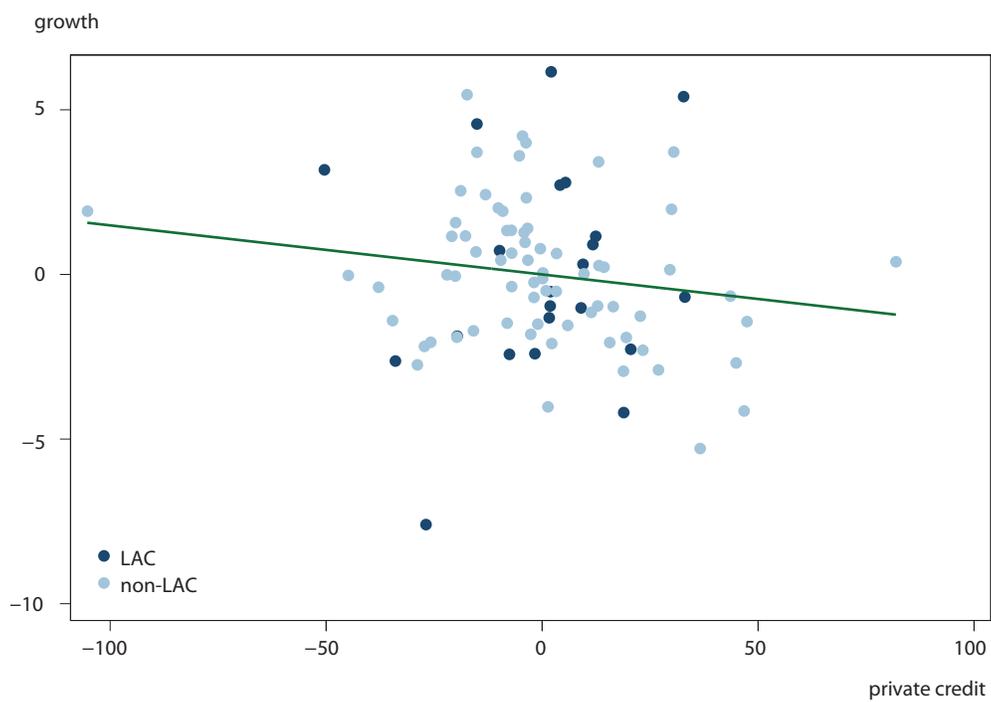Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.6   Emerging-market economies (EMEs), fiscal interactions

Variable	(1)	(2)	(3)	(4)
Reserves	0.0171		−0.0252	
	(0.126)		(0.0319)	
Inflation	0.147	0.173*	0.168**	0.181**
	(0.123)	(0.0517)	(0.0559)	(0.0687)
Exchange Rate Regime	0.266	0.364*	0.155	
	(0.357)	(0.110)	(0.196)	
Public Debt	−0.00644		0.00107	
	(0.0437)		(0.0240)	
Private Credit	−0.0346	−0.0374**	−0.0207	−0.0332*
	(0.0467)	(0.0128)	(0.0215)	(0.0101)
Trade Openness	0.0413		0.0467	0.0858*
	(0.0358)		(0.0428)	(0.0279)
Capital Account Openness	−2.240	−1.844*	−1.419	−1.451***
	(2.705)	(0.342)	(0.833)	(0.726)
Public Expenditure	0.0141		0.174	
	(0.309)		(0.104)	
Interest Rate	−0.164	−0.137**	−0.334**	−0.422*
	(0.196)	(0.0541)	(0.126)	(0.117)
Commodity Exporter	0.640		3.459	
	(4.917)		(2.259)	
Fiscal Deficit	−0.335			
	(1.492)			
Fiscal Deficit*Com. Exp	0.334			
	(1.526)			
Fiscal Procyclicality			1.635	
			(1.363)	
Fiscal Procyclicality*Com Exp			−1.974	
			(1.883)	
ECA	−0.104		1.929	
	(4.594)		(6.742)	
LAC	1.942	2.050**	−0.0235	
	(3.652)	(0.943)	(1.409)	
MENA	−0.936		−2.035	−2.194*
	(3.568)		(1.374)	(0.525)
SA	0.190		−0.378	
	(2.896)		(2.257)	
SSA	−0.224		−1.086	
	(3.682)		(1.961)	
Constant	−0.193	0.547	−2.900	−0.348
	(5.170)	(0.477)	(2.203)	(0.787)
Observations	23	23	24	24
R-squared	0.886	0.838	0.917	0.705

ECA = Developing Europe and Central Asia, LAC = Latin America and the Caribbean, MENA = Middle East and North Africa, NA = North America, SA = Southern Asia, SSA = Sub-Saharan Africa, and WE = Western Europe

Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

B. Partial Correlations: Latin America and Outliers

For each explanatory variable there are two graphs: the first one distinguishes Latin American countries with dark dots and the second one eliminates outliers. LAC stands for Latin America and the Caribbean.
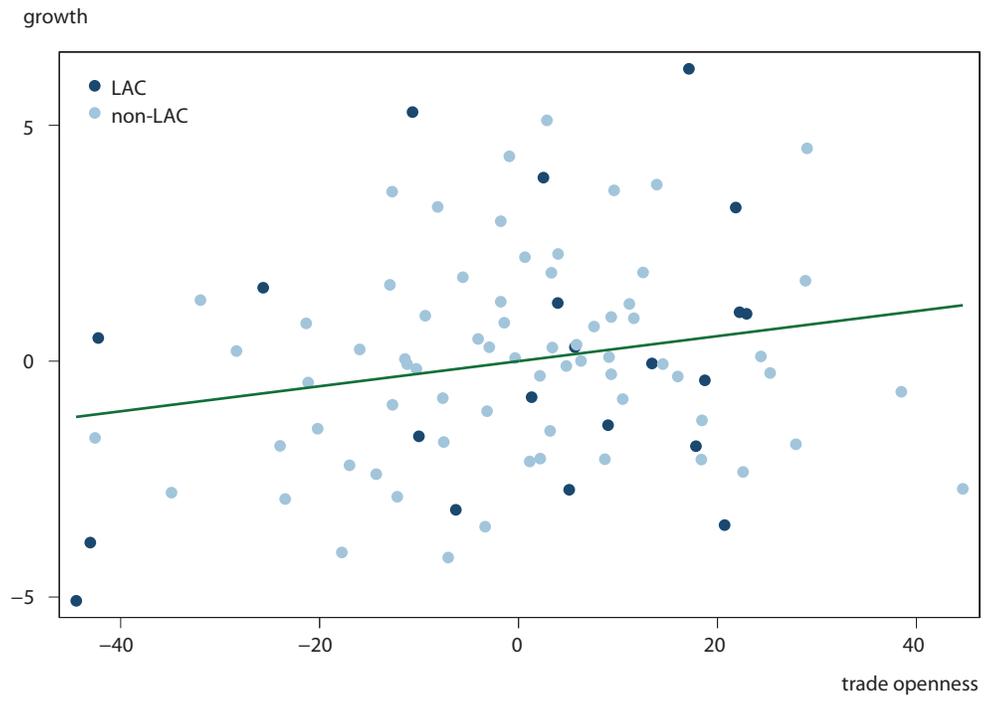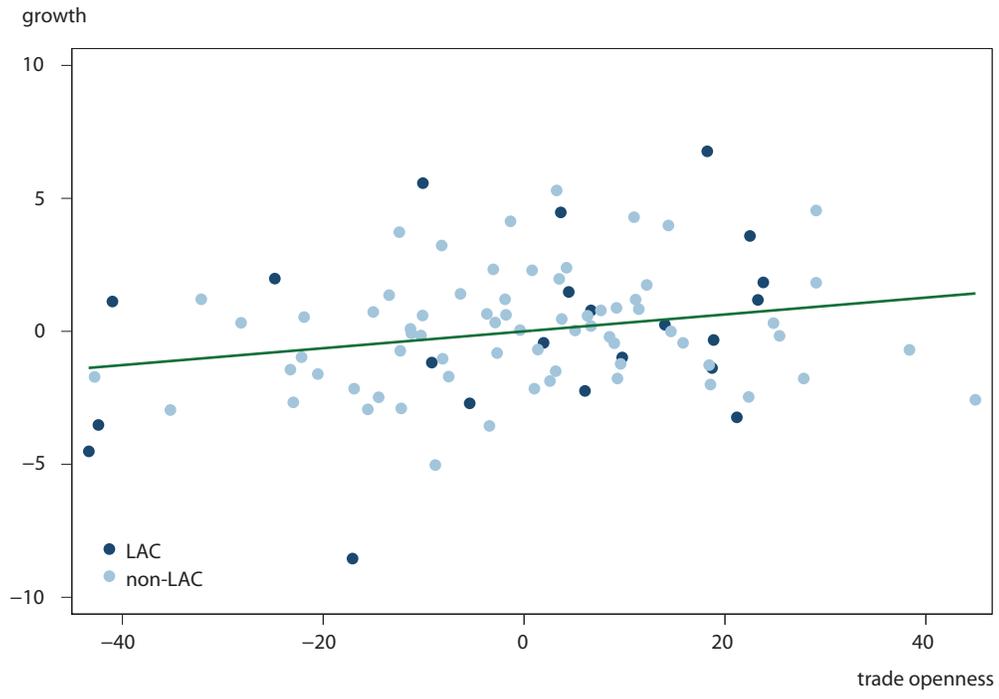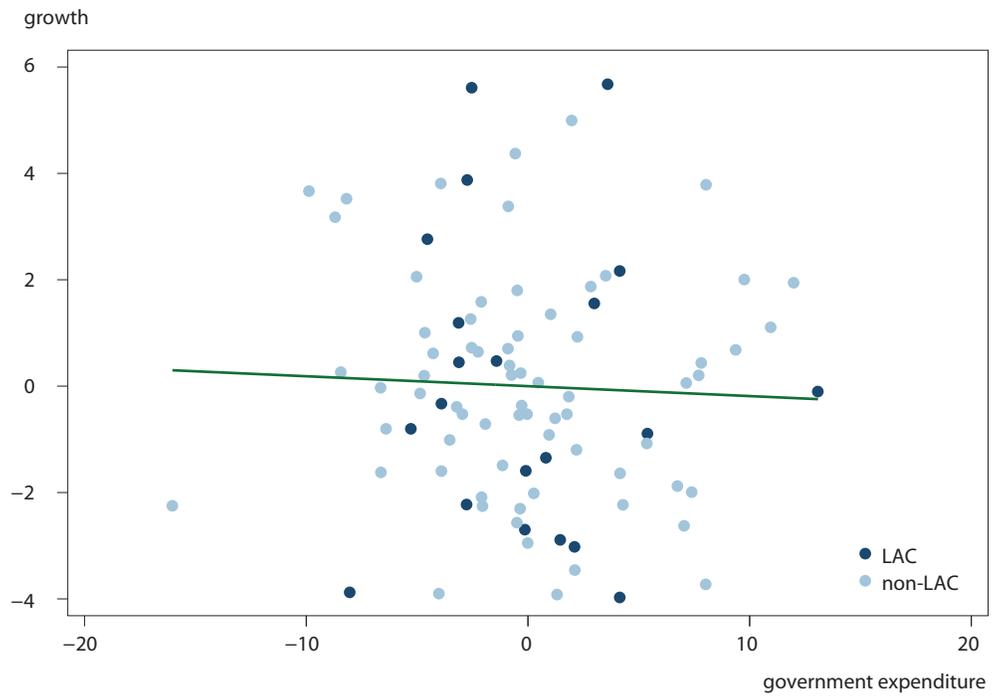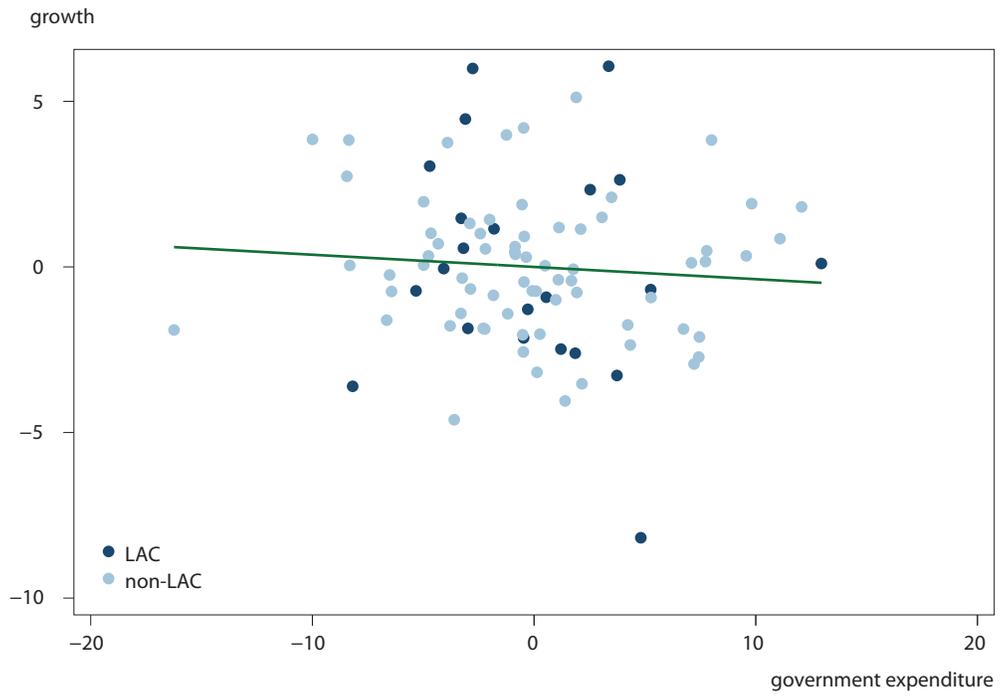
a. Table 1, column 2

Exchange rate regime

Private credit

growth

private credit

growth

private credit

Trade openness

growth

trade openness

growth

trade openness

Government expenditure

Interest rate

b. Table 1, column 3

Exchange rate regime

growth

exchange rate regime

growth

exchange rate regime
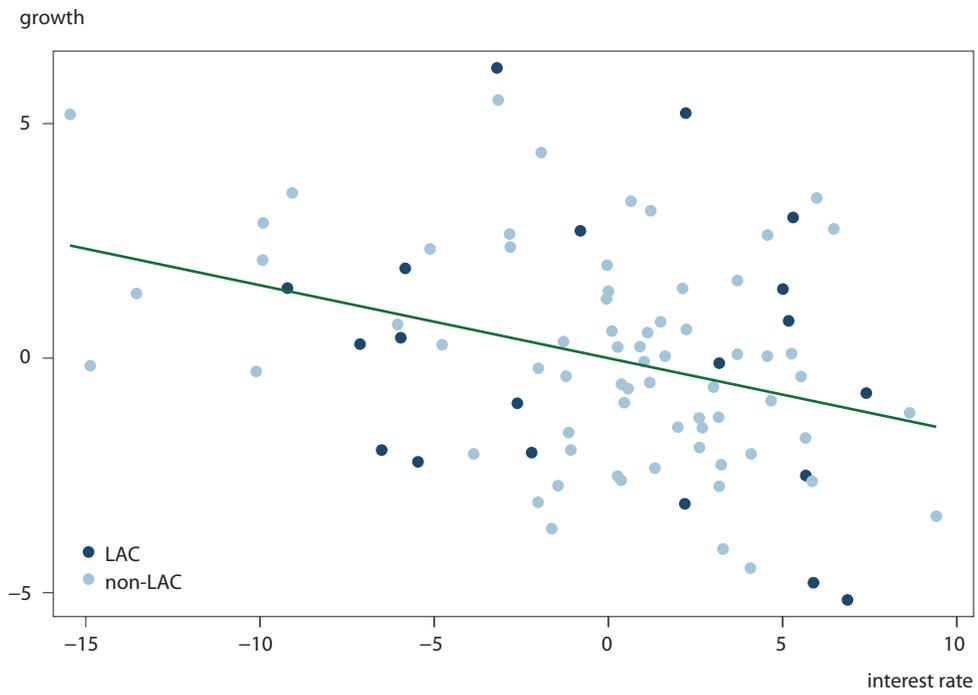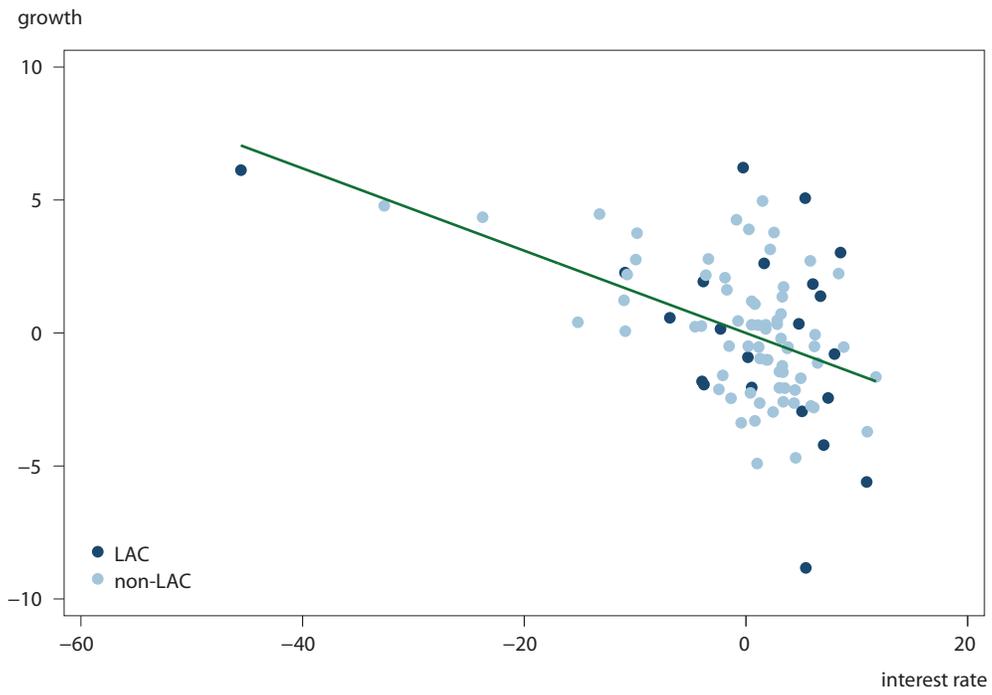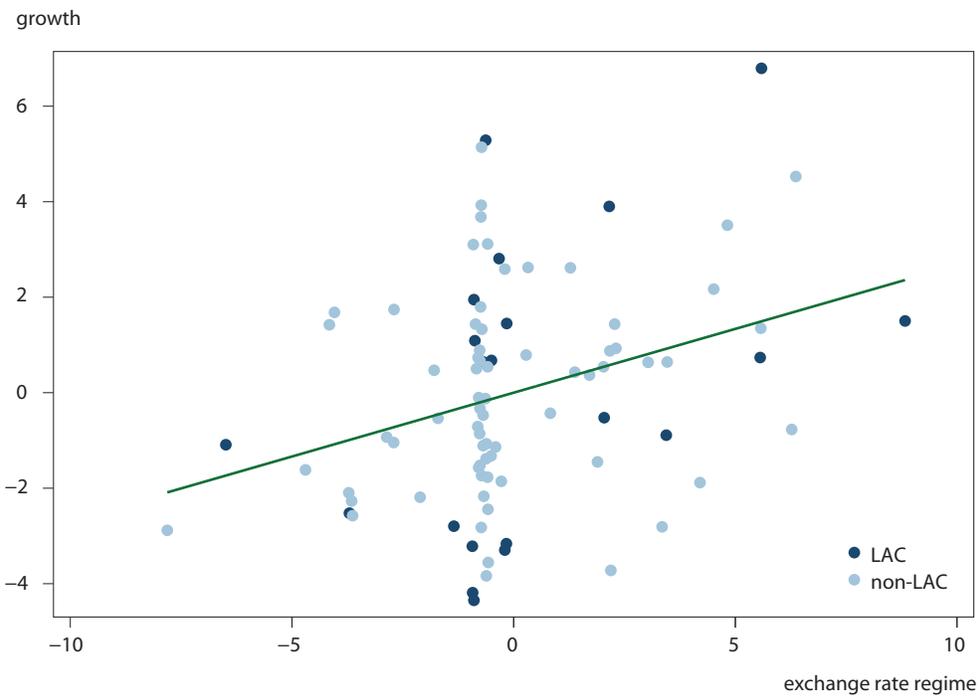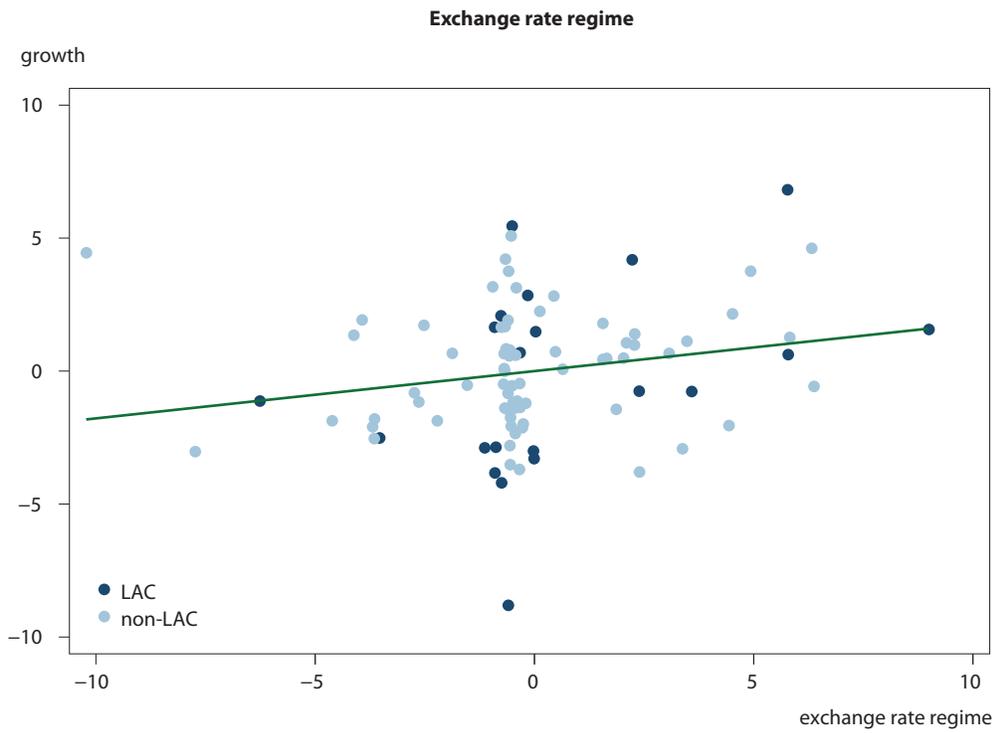
Private credit

Trade openness

Government expenditure

growth

growth
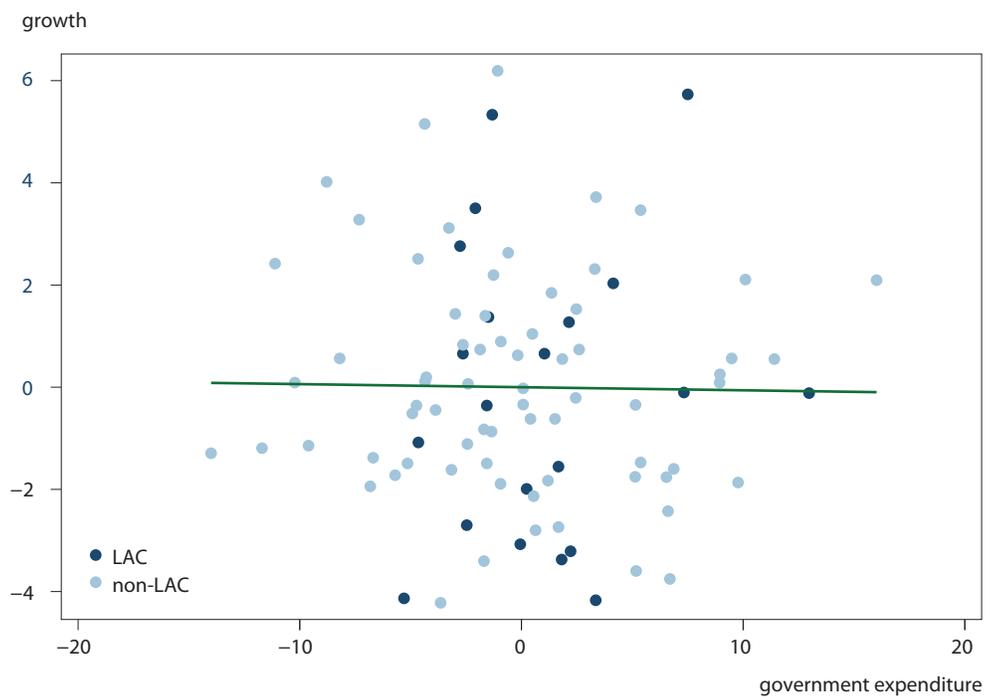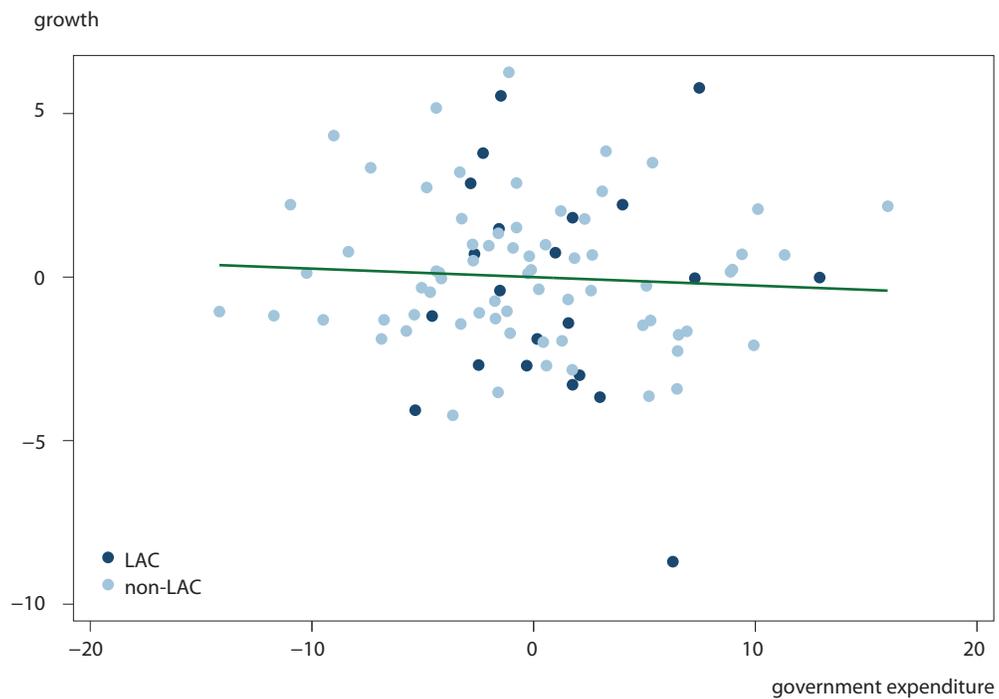
Interest rate
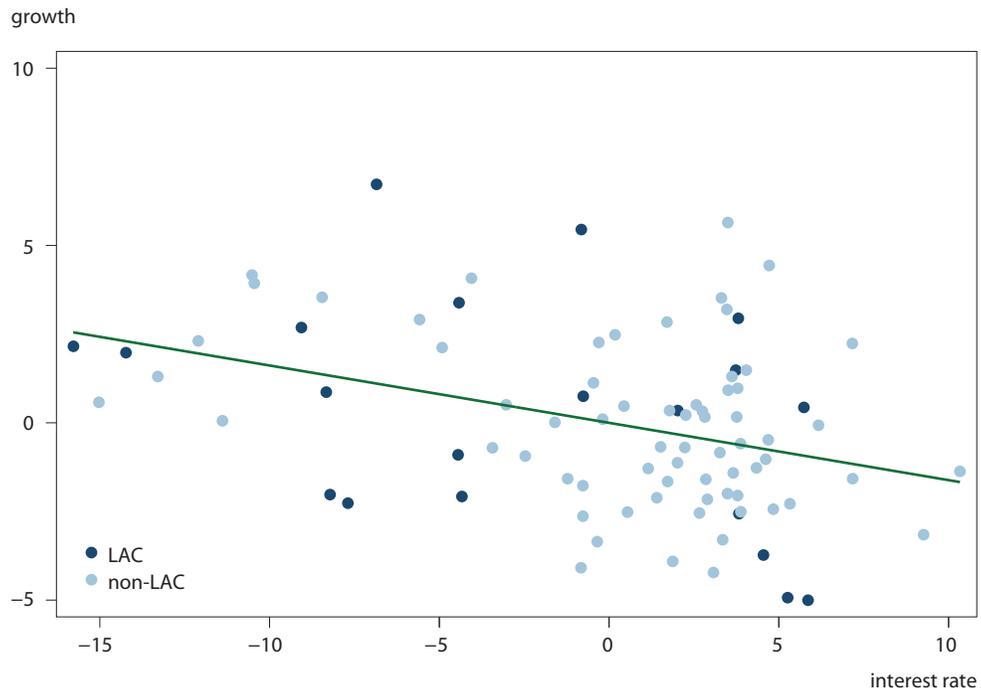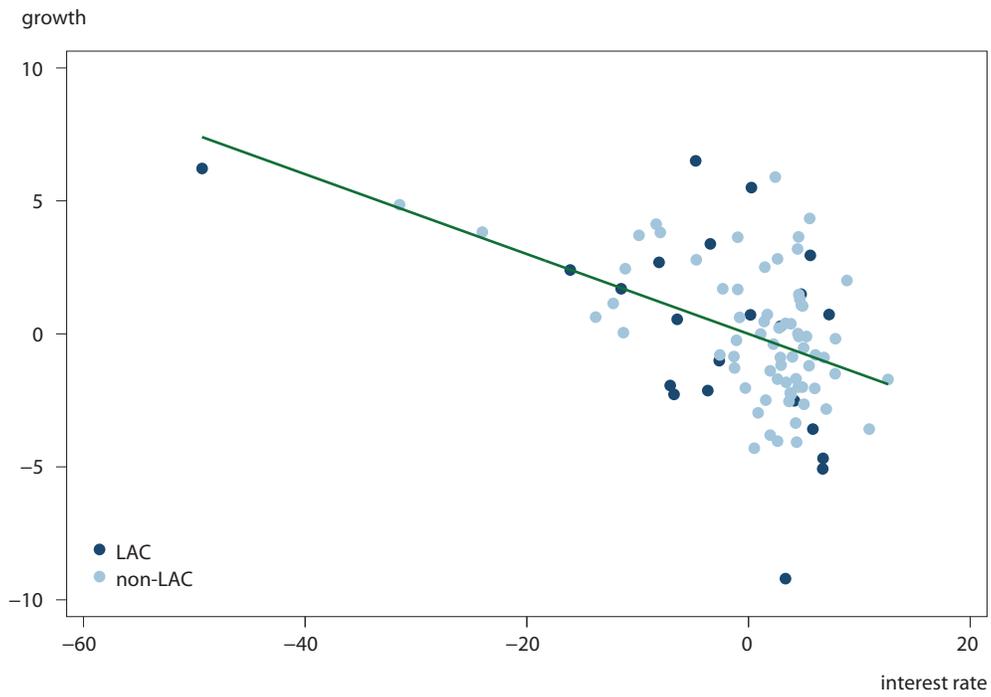
C. Evolution of Macroeconomic Variables in LATAM-5

Year 0: Asian crisis, 1999; global financial crisis, 2009
Month 0 (when currency tensions intensified): Asian crisis, July1997; global financial crisis, October 2008.

Dotted line: Asian crisis, solid line: Global financial crisis

Sources: IMF, *World Economic Outlook* and *International Financial Statistics.*
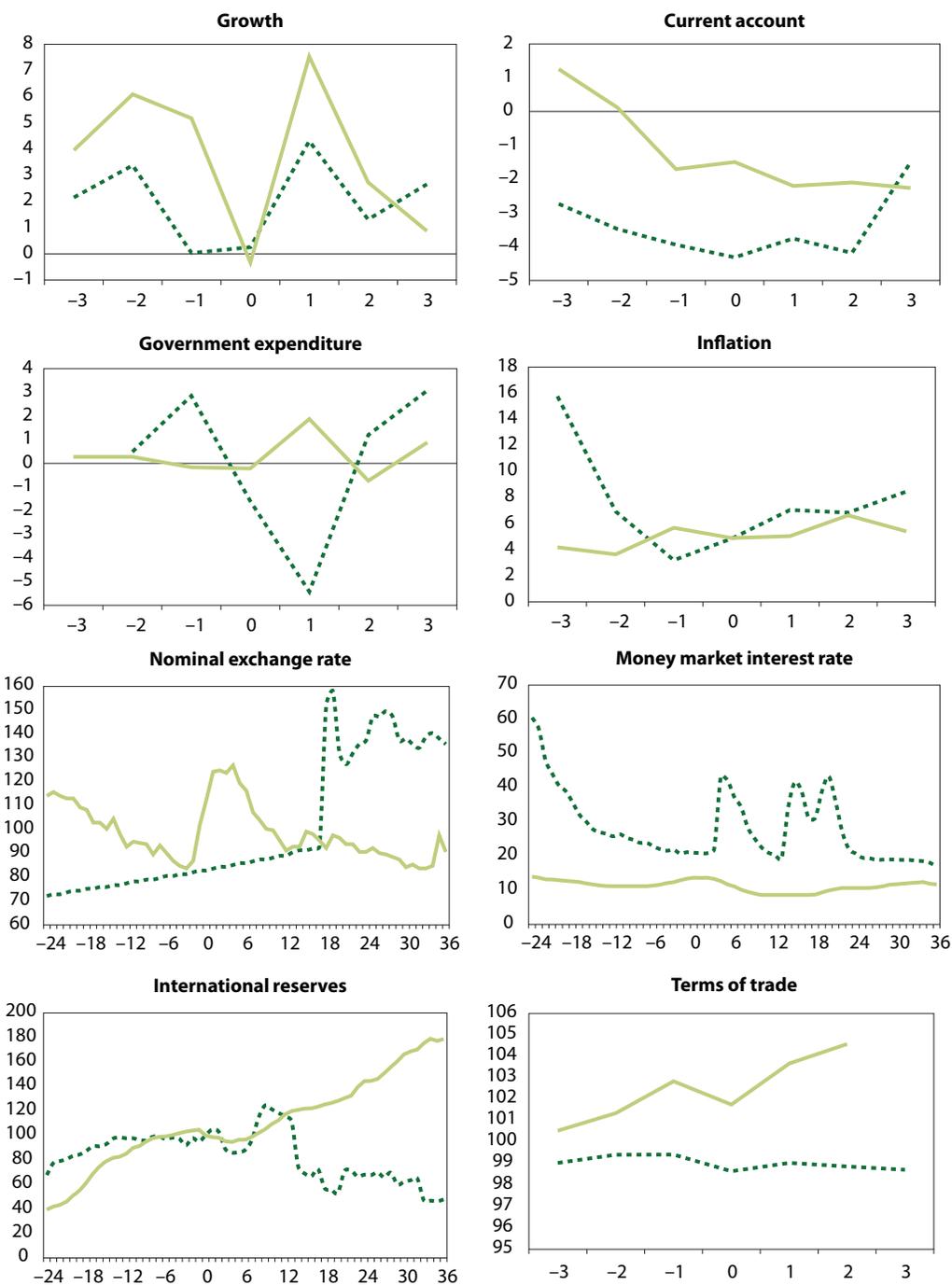
Figure C.1   Brazil

Growth

Current account

Government expenditure

Inflation

Nominal exchange rate

Money market interest rate

International reserves

Terms of trade

Figure C.2 Chile

Growth

Current account

Government expenditure

Inflation

Nominal exchange rate

Discount rate

International reserves

Terms of trade

53

Figure C.3 Colombia

Growth

Current account

Government expenditure

Inflation

Nominal exchange rate

Discount rate

International reserves

Terms of trade

Figure C.4   Mexico

Growth

Current account

Government expenditure

Inflation

Nominal exchange rate

Money market interest rate

International reserves

Terms of trade

Figure   C.5 Peru

Growth

Current account

Government expenditure

Inflation

Nominal exchange rate

Discount rate

International reserves

Terms of trade