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**Globalization in the Periphery:
Monetary Policy: What is Gained, What is Lost**

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**Graciela Laura Kaminsky
George Washington University**

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Institute for International Economic Policy
1957 E St. NW, Suite 502
Voice: (202) 994-5320
Fax: (202) 994-5477
Email: iiep@gwu.edu
Web: www.gwu.edu/~iiep

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Graciela Laura Kaminsky
Department of Economics
George Washington University and NBER
Washington, DC 20052
Email: graciela@gwu.edu
<http://home.gwu.edu/~graciela>

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I. Introduction

There is a long-standing debate on the benefits and drawbacks of financial globalization. Among the benefits, academics and practitioners emphasize that with globalization capital flows to its most attractive destination, increasing productivity and growth. Yet, since financial globalization spread around the world in the last three decades, many have brought to the attention that capital flows tend to be excessive and end up in crises. They also highlight that capital flows are mostly triggered by cyclical monetary policies in the financial center that lead to macroeconomic instability and procyclical monetary policy in the periphery as well as high inflation in episodes of capital inflows.¹

Most of the research on macroeconomic instability just focus on the episodes of capital inflows.² However, to examine the trade-offs of financial globalization we also need to look at the episodes of financial repression. To capture both episodes of financial repression and globalization, I look at a long sample spanning almost 60 years and study a group of selected countries in Latin America and Asia that during globalization have experienced large capital inflows. Most of the research on macroeconomic instability in episodes of financial globalization focuses on the fluctuations of foreign exchange reserves. I will continue with this tradition with a twist. Instead of just focusing on foreign exchange reserves, I examine the evolution of the balance sheet of central banks and its composition as well as its relationship with inflation during both episodes of financial repression and financial globalization. Using this data, I also examine whether central bank credibility is affected by financial globalization.

In Section II, I present evidence that indicates that the drivers of monetary growth and the evolution of inflation and credibility change across episodes of financial repression and financial globalization. The question is whether there is a causal relationship from globalization to monetary policy and credibility. While further research on a larger number of countries is needed, the evidence in Section III suggests that globalization in the periphery unleashes forces towards better institutions, central bank independence, less monetization of the fiscal deficit, countercyclical monetary policy, and central bank credibility. Section IV concludes.

¹ See, for example, Reinhart and Reinhart (2008).

² See, for example, Calvo, Leiderman, and Reinhart (1996).

II. Money Growth Fluctuations, Inflation and Credibility

To examine whether there is a time-varying pattern of inflation, money growth and credibility, I separate episodes of financial repression and financial liberalization (globalization) using a variety of *de jure* measures of deregulation. I use the database I collected jointly with Sergio Schmukler.³ This database creates a composite index of financial liberalization that captures the deregulation of the domestic financial sector, the capital account, and the stock market.⁴ I complement this database with the Chinn and Ito (2008) measure of financial integration that is based on information reported in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*.

To examine the evolution of the composition of assets of central banks, I use data from the IMF's *International Financial Statistics* as well as data reported by the central banks of a group of nine emerging economies that have been recipients of large capital inflows. Since the sample spans almost 60 years, some of the original developing countries are now members of the selected group of OECD countries. The sample focuses in two regions, Latin America and East Asia. The countries in Latin America are Argentina, Chile, Colombia, Mexico, and Peru. The countries in East Asia are Korea, Malaysia, Philippines, and Thailand.

I decomposed gross assets of central banks into domestic and foreign currency assets. I also decompose domestic assets into government debt holdings and holdings of assets of banks and other non-financial institutions. The share of foreign assets in the balance sheet of central banks changes with fluctuations in the exchange rate. Thus, I also estimate the movements in central banks' gross assets due to exchange rate fluctuations.⁵ Figure 1 shows this decomposition for two of the countries in my sample: Korea and Mexico. This figure shows the annual growth rate of gross assets of the central bank, the blue line, as well as its composition, the stacked bars.

³ See Kaminsky and Schmukler (2008).

⁴ The liberalization of the capital account over the sample is evaluated by following the regulations on offshore borrowing by domestic financial institutions and non-financial corporations, multiple exchange rate markets, and controls on capital outflows. The liberalization of the domestic financial system is assessed by analyzing regulations on deposit and lending interest rates, allocation of credit, and foreign currency deposits. Since monetary authorities have frequently used changes in reserve requirements to control bank credit, the index of financial liberalization is also based on the evolution of reserve requirements as additional information to evaluate the degree of restrictions imposed on the banking sector. The liberalization of stock markets, is assessed following the evolution of regulations on the acquisition of shares

⁵ Central banks' foreign assets are valued at the exchange rate of the day at which gross assets are reported.

Both countries show higher growth rates in the earlier decades (the episode of financial repression). During these decades, the growth rate of assets is dominated by increases in the stock of domestic assets held by the central bank. For Korea, the most important component is loans to the financial and non-financial private sector while for Mexico lending to the government predominates. Importantly, during the last decades, fluctuations in the growth rate the central banks' assets are dominated by movements in foreign assets. These are mostly the decades with financial globalization. The decomposition in Figure 1 also shows the effects of exchange rate fluctuations on total assets. Since valuation effects do not affect the money base and only affect the capital of the central bank, I now examine the composition of the changes in assets of the Central Bank excluding the effects of exchange rate changes.

Table 1 shows this decomposition during episodes of financial repression and financial globalization for the selected countries in Asia and Latin America. The first four columns show the decomposition during financial globalization. The average growth rate central banks' assets during this episode is 14 percent of which 63 percent is explained by changes in foreign reserves (8.9 percent average annual growth rate), with the remainder being explained by loans to governments as well as domestic private financial and non-financial institutions. On average, the contribution of foreign reserves to the growth of assets is larger for our sample of East Asian countries. The higher contribution of domestic assets to the growth of the balance sheet of the Central Banks of Argentina and Mexico reflects the monetization of the deficits in the early episodes of liberalization in the 1970s and beginning of the 1980s leading to the debt crisis in 1982 and the reversal of deregulation during the so-called lost decade of the 1980s.

The episode of financial repression is quite different. Overall, the rate of expansion of central banks' assets is far larger in Latin American countries with overall rates of expansion almost 6 times higher than those during globalization. At the core of this expansion is the monetization of fiscal deficits. Naturally, the dramatic monetary easing is accompanied by far higher levels of inflation and even hyperinflation in Argentina and Peru. With the exception of Thailand, monetary expansion is also higher in the Asian countries under financial repression. In Korea and the Philippines most of the monetary expansion is driven by financing the domestic sector; lending to the banking and non-financial sector in Korea and also financing the fiscal deficit in the Philippines. Only in these two countries, inflation is far larger during financial repression than during financial globalization. Inflation in Malaysia and Thailand is somewhat similar to that

during globalization, with the growth of money accompanying the high growth rate of those countries in the earlier decades.

While Table 1 indicates that on average inflation falls during financial globalization, it is still not clear whether this is just the product of the lower growth rate of the balance sheet of the central bank or whether lower inflation also reflects gains in central bank's credibility. Unfortunately, there are no long term series on inflation expectations for the countries in the sample. Thus, to assess whether there are gains in credibility during the episode of financial globalization, I take an indirect approach. I follow Sargent & Surico (AER, 2011) who examine the time-varying correlations between money growth and inflation for the United States in the sample 1900-2005. The question they want to examine is whether the quantity theory of money holds, that is whether money growth is reflected one-to-one into inflation. As in Lucas (1980), they use low-frequency correlations since the quantity theory is only expected to hold in the long run. Naturally, for it to hold, it must be expected the maintenance of the monetary policy in place. They find that the regression coefficient of inflation on money growth is only close to one in the period 1955-75 but is substantially larger than one during 1900-1928, flatter during 1929-1954 and even negative during 1984-2005.

They further ask what triggers these changes in slopes. To answer this question, they estimate a traditional DSGE model with various exogenous shocks and monetary policy rules and examine whether changes in monetary policy parameters can explain the changing slope. These simulations indicate that a credible future move to an anti-inflationary stance can bring these correlations close to zero or even negative. But if the monetary rule implies persistent increases in money growth, the correlation increases to one or even larger than one.

As in Sargent and Surico (2011), I estimate the regressions of inflation on money growth at low frequencies.⁶ However, I do not look at the broad monetary aggregates as in those articles. Instead, I estimate the links between inflation and the growth rate of the assets of the central bank. The results are shown in Figure 2. This figure shows the scatter plots of filtered inflation and filtered growth of assets of the central bank for episodes of financial repression and episodes of financial globalization. The red circles show the combination of annual assets growth rate and inflation in episodes of financial repression while the blue circles show this relationship for episodes of financial globalization. The lines show the regression of inflation on growth rates of

⁶ To estimate the low frequency correlations, I apply the Hodrick-Prescott filter to both series.

assets of the central banks. The red lines show the regression line for the episode of financial repression while the blue lines show the regression for the episode of financial globalization. β shows the coefficient of this regression. Again, I use red to identify the coefficient during financial repression and blue to identify the coefficient during globalization. Almost all coefficients during episodes of financial globalization are significantly smaller than those during financial repression. In some cases, such as Colombia, the regression coefficient is negative. These estimations suggest that in the midst of globalization, monetary authorities responded more strongly to inflationary pressures with credibility increasing. Only the slope coefficients for Argentina under repression and globalization are quite similar. These slopes seem to reflect the frequent reversals in financial liberalization: Financial repression is eliminated in 1977, reintroduced in 1982 following the crisis of 1981, eliminated in the early 1990s, and reintroduced again in the 2000s following the 2001 crisis. In these reversals, monetary policy reverts to a regime of fiscal dominance and even seems to lead to a loss of credibility in the midst of financial deregulation.

The question is whether in fact financial globalization triggers credibility and stabilizing monetary policy or whether reforms implemented prior to the deregulation of financial markets are at the core of low inflation policies and credibility. I examine these links in the next section.

III. The Sequencing of Reforms and Financial Globalization⁷

The links between financial liberalization and crises in emerging markets have prompted many to question the benefits of financial globalization and to recommend the imposition of capital controls. Overall, there is consensus that at the core of the link between crises and liberalization is the lack of good public and corporate governance. Thus, many conclude that governments should sequence reforms, first improving government institutions and better regulating domestic financial institutions and only then deregulating the financial industry and opening the capital account, otherwise a crisis will follow (see, for example, Stiglitz, 2000).

Still, as we argued in Kaminsky and Schmukler (2008), the argument that liberalization should be preceded by institutional reforms may be irrelevant if the timing is such that reforms never predate liberalization, with institutional improvements happening mostly as a result of financial deregulation. In fact, there is an extensive literature on the obstacles for governments to promote reforms in countries with repressed financial sectors and on how financial globalization

⁷ The discussion in this Section is based on Kaminsky and Schmukler (2008).

triggers reforms. For example, Rajan and Zingales (2003) argue that well-established firms (and therefore public officials) may in general oppose reforms that promote financial development because it breeds competition. These firms can even be hurt by financial development and liberalization as they imply better disclosure rules and enforcement (reducing the importance of these firms' collateral and reputation) and permit newcomers to enter and compete away profits. However, opposition to reforms may be weaker in more open economies with abundant trade and cross-border flows. In this case, free access to international capital markets allows the largest and best-known domestic firms to tap foreign markets for funds, with their support for the policies that favor financial development and liberalization becoming stronger. Also, Stulz (2005) shows that financial globalization can lead to a reduction in the importance of the twin agency problems, that is, the incentive of governments and corporate insiders to expropriate outside investors. For example, open borders can "shackle the government grabbing hand" as they give resident investors an exit. Financial globalization also creates incentives for firms to improve their governance: since these reforms are costly, firms will be more likely to do so when these costs are offset by less costly external finance.

These two opposing views would suggest different interpretations on the changing behavior of monetary aggregates, inflation, and credibility. If governments introduce reforms prior to deregulating the financial sector and the capital account, the changes in monetary policy, credibility, and inflation could be the result of the overall improvement in institutions and not the effect of financial globalization. If changes in institutions do not predate financial globalization and, as suggested by Rajan and Zingales (2003), and Stulz (2005), are, in fact, promoted by the end of financial repression, then the changes in monetary policy, inflation, and credibility are fueled by financial globalization. To examine these alternative hypotheses, in my work with Sergio Schmukler (Kaminsky and Schmukler, 2008), we compare the timing of financial liberalization and institutional reforms. To do so, we collect data on the quality of institutions as well as on the laws governing the proper functioning of financial systems. In that article, the information on the quality of institutions is captured with the index of law and order published in the International Country Risk Guide (ICRG). This index assesses the strength and impartiality of the legal system as well as the popular observance of the law. Also, to better assess the functioning of the financial system, we use information on the existence and enforcement of insider trading laws constructed by Bhattacharya and Daouk (2002). Table 2 reproduces the results in that paper

for fourteen emerging markets. It shows the probabilities that financial liberalization occurs conditional on reforms having already been implemented. In particular, in that paper, we look at whether reforms to institutions occur prior to the *partial* or *full* liberalization of the financial sector. If governments improve the quality of institutions prior to start deregulating the financial sector, one would expect the probability of *partial* liberalization conditional on improvements in institutions to be close to one. In contrast, if liberalization triggers reforms, those probabilities would be close to zero. In this case, we would also expect the probabilities of *full* liberalization conditional on reforms to institutions to be close to one since *full* liberalization on average occurs after five and a half years following the start of financial deregulation.

Table 2 indicates that reforms to institutions occur mostly after financial liberalization starts. Institutions that protect property rights, as captured by the index of law and order, only improve in 18 percent of the cases prior to the partial liberalization of financial markets. Similarly, institutions that facilitate contracting between citizens, as captured by insider trading prosecution laws, seem to improve also after financial liberalization starts. For example, while in 62 percent of the cases laws prosecuting insider trading exist prior to the start of financial liberalization, insider trading starts to be prosecuted in only 11 percent of the cases. Interestingly, both the institutions that protect property rights and those that regulate contracting improve substantially following the partial liberalization of financial markets. By the time the financial sector becomes fully liberalized (on average about five and a half years from the beginning of the deregulation episode), law and order have improved in 64 percent of the cases and insider trading prosecution is enforced in 44 percent of the cases. This evidence casts doubts on the notion that governments in emerging markets tend to implement institutional reforms before they start deregulating the financial sector. On the contrary, the evidence suggests that liberalization fuels institutional reforms, as argued by Stulz (2005).

To complement this result, I also examine the timing of improvements in Central Bank Independence. Figure 2 reports the evolution of central bank independence for a similar sample of countries used to study the sequencing of reforms and deregulation in Table 2.⁸ The indices of Central Bank Independence are from Cukierman, Webb, and Neyapti (1992) and Crowe and Meade (JEP, 2007). The so-called CWN index of central bank independence reflects legal

⁸ The only missing central banks' independence indices in Figure 2 are those for Hong Kong and Taiwan. The sources I use do not report the evolution of those indices.

independence, as captured by measures of independence of the governor of the central bank, its independence in policy formulation, its mandate, and the stringency of limits on its lending to the government. The estimations for the 1950s, 1960s, 1970s, and 1980s are from Cukierman, Webb, and Neyapti (1992). Crowe and Meade (2007) extended this index for 2003. Unfortunately, there is not information for the 1990s. Still, this figure suggests that independence increased significantly in the 1990s for most of the countries in the sample after they deregulated financial markets and reduced capital controls.

IV. Reflections

Globalization has been blamed for the loss of monetary policy independence and macroeconomic instability in the emerging periphery. It has been also argued that, with globalization, cycles of monetary easing and contracting in the financial centers trigger procyclical monetary policies in the periphery, thus exacerbating the underlying business cycle (the so-called “when it rains, it pours phenomenon). Yet, the evidence presented above suggests that globalization has brought better institutions and policies in developing economies. Also, monetary policies in the periphery are now less tied to financing fiscal deficits. High and chronic inflation has disappeared in many countries and central banks’ credibility has improved. Also, as shown in Vegh and Vuletin (2012), many emerging market countries are now following countercyclical monetary policies. Their results indicate that with better institutions, central banks have been able to overcome the fear of floating and are using policy interest rates for countercyclical purposes.

Still, after about 30 years of financial globalization, the wheels are turning again, with many supporting the re-introduction of capital controls. In a world that is moving more and more towards financial repression, we should not forget the lessons of emerging markets.

References

- Bhattacharya, Utpal and Hazem Daouk, 2002, "The World Price of Insider Trading," *Journal of Finance* 57(1), 75-108.
- Calvo, Guillermo, Leonardo Leiderman, and Carmen Reinhart, 1996, Inflows to Capital to Developing Countries in the 1990s, *The Journal of Economic Perspectives*, Vol. 10 No. 2 (Spring, 1996), 123-139.
- Chinn, Menzie and Hiro Ito, 2008, "A New Measure of Financial Openness," *Journal of Comparative Policy Analysis*, 10(3), 307-320.
- Crowe Christopher and Ellen Meade, 2007, "The Evolution of Central Bank Governance around the World," *Journal of Economics Perspectives*, Vol. 21, No. 4, Fall 2007, 69-90.
- Cukierman, Alex, Steven Webb, and Bilin Neyapti, 1992, Measuring the Independence of Central Banks and Its Effect on Policy Outcomes, *World Bank Economic Review*, Volume 6, Issue 3, 353-398.
- Kaminsky, Graciela and Sergio Schmukler, "Short-Run Pain, Long-Run Gain: Financial Liberalization and Stock Market Cycles," *Review of Finance*, Vol. 12, 2008, 253-292.
- Lucas, Robert E., Jr., 1980, "Two Illustrations of the Quantity Theory of Money," *American Economic Review*, 70, 1005-1014
- Rajan, Raghuram and Luigi Zingales, 2003 The Great Reversals: The Politics of Financial Development in the Twentieth Century, *Journal of Financial Economics* 69(1), 5-50.
- Reinhart Carmen and Vincent Reinhart, 2008, "Capital Flow Bonanzas: An Encompassing View of the Past and Present," in Jeffrey Frankel and Christopher Pissarides (eds) *NBER International Seminar on Macroeconomics 2008*, 9-62.
- Sargent, Thomas and Paolo Surico, 2011, "Two Illustrations of the Quantity Theory of Money: Breakdowns and Revivals," *American Economic Review* 101, (February), 109-128.
- Stiglitz, J. (2000) Capital Market Liberalization, Economic Growth, and Instability, *World Development* 28(6), 1075-1086.
- Stulz, R. (2005) The Limits of Financial Globalization (Presidential Address to the American Finance Association), *Journal of Finance* 60(4), 1595-1638.
- Vegh, Carlos and Guillermo Vuletin, 2012, "Overcoming the Fear of Free Falling: Monetary Policy Graduation in Emerging Markets," NBER Working Paper 18175, June.

Table 1
The Balance Sheet of the Central Bank and Inflation

Country	Globalization				Financial Repression			
	Assets Growth	Foreign Exchange Reserves Growth	Growth in Lending to Government, Banks, and Non-Financial Institutions	Inflation	Assets Growth	Foreign Exchange Reserves Growth	Growth in Lending to Government, Banks, and Non-Financial Institutions	Inflation
Asia	11.9	10.1	1.8	4.0	16.3	8.8	7.5	7.8
Korea	12.6	10.9	1.8	3.5	22.0	5.4	16.6	11.3
Malaysia	10.9	8.0	2.9	3.3	15.3	15.1	0.2	3.0
Philippines	10.3	10.1	0.2	5.3	16.5	7.2	9.3	11.9
Thailand	13.7	11.3	2.5	4.0	11.5	7.6	3.9	5.0
Latin America	16.0	7.9	8.0	21.7	92.6	5.5	87.1	155.1
Argentina	26.3	4.7	21.6	58.1	182.9	4.3	178.6	238.2
Chile	5.4	5.3	0.1	9.1	121.2	4.1	117.1	83.9
Colombia	9.9	8.8	1.1	11.2	21.0	6.4	14.6	18.4
Mexico	19.6	8.0	11.6	13.6	30.1	2.9	27.2	31.4
Peru	18.6	12.9	5.7	16.7	107.9	9.9	98.0	403.5
All Countries	14.1	8.9	5.3	13.8	58.7	7.0	51.7	89.6

Notes: Growth Rates of Assets do not include valuation changes.

Table 2
Financial Liberalization and Institutional Reforms

Type of Financial Liberalization	Probabilities of Liberalization Conditional on		
	Insider Trading Laws Existence	Insider Trading Laws Enforcement	Improvement in Law and Order
Partial Liberalization	62 ***	11	18
Full Liberalization	77 ***	44 **	64 ***
Hypothesis Test (P-Value)			
Partial Liberalization = Full Liberalization	0.17	0.08	0.02

Notes: This Table is reproduced from Kaminsky and Schmukler (2008). It shows the probability of financial liberalization conditional on the existence and enforcement of insider trading laws and on permanent improvement in law and order. The sample includes 14 countries in Asia and Latin America: Hong Kong, Indonesia, Korea, Malaysia, Philippines, Taiwan, Thailand, Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela. *, **, *** mean significance at 10, 5, and 1 percent, respectively.

Figure 1

Growth Rate of Central Bank Assets and Its Composition

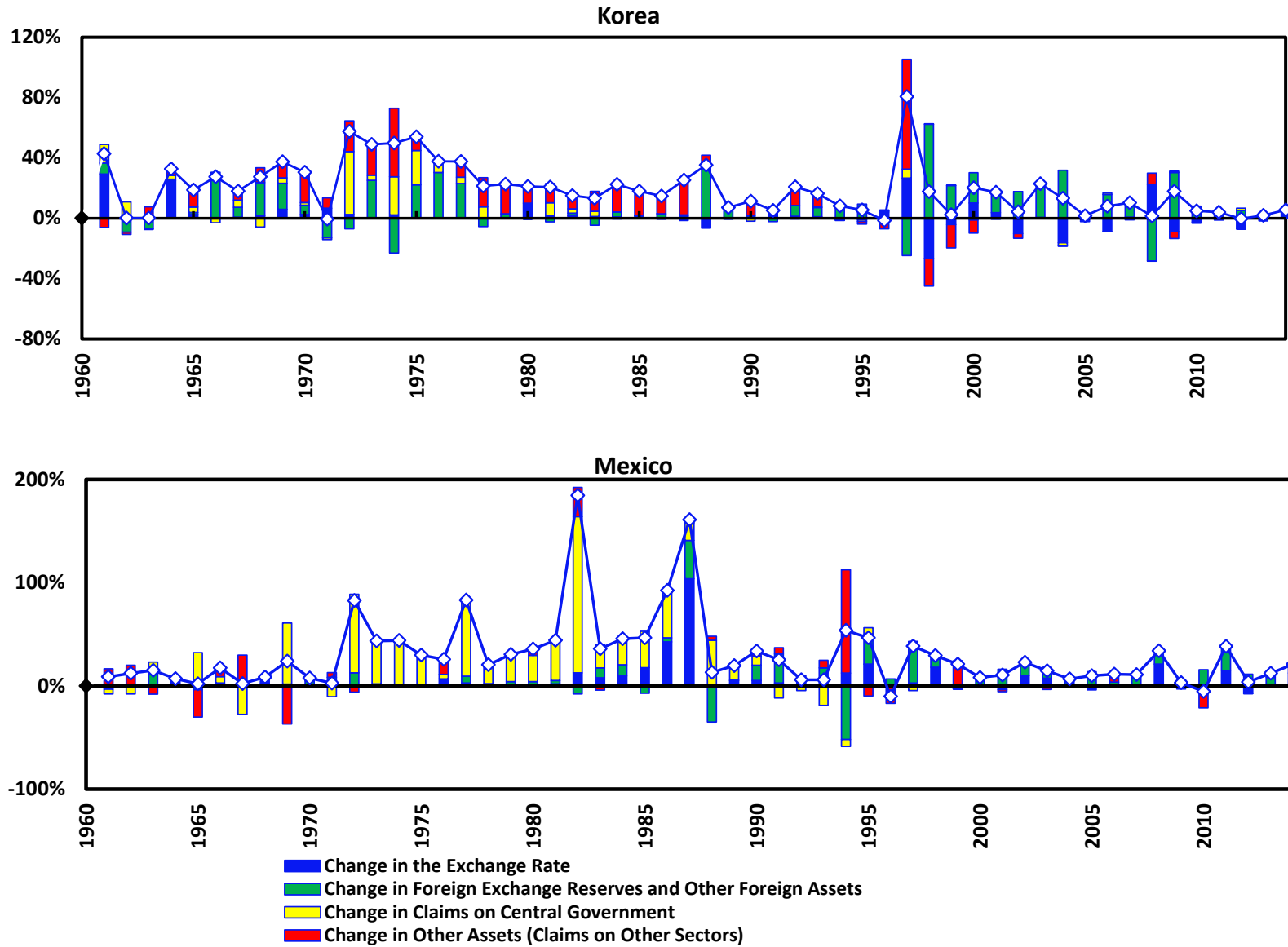
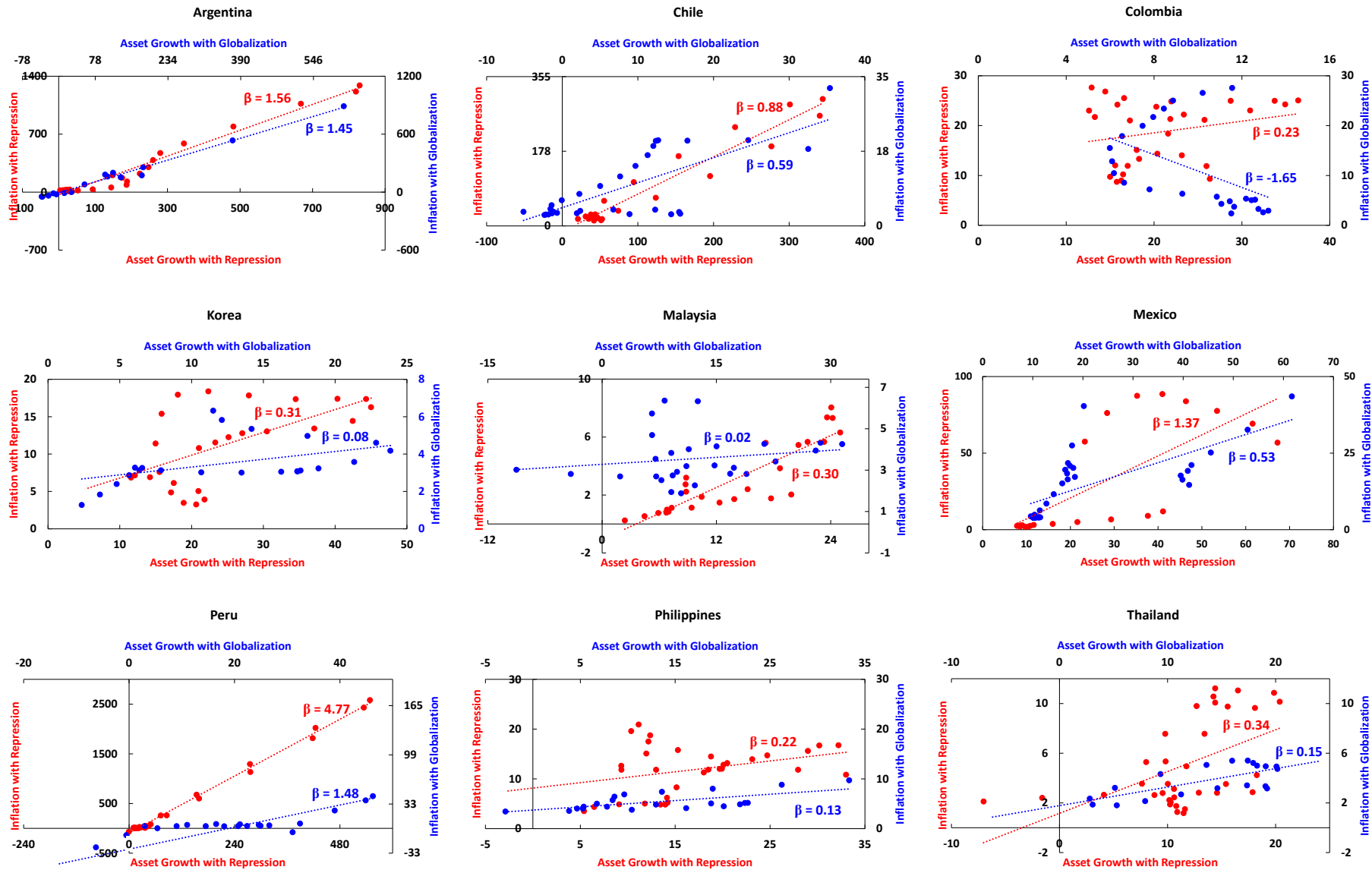
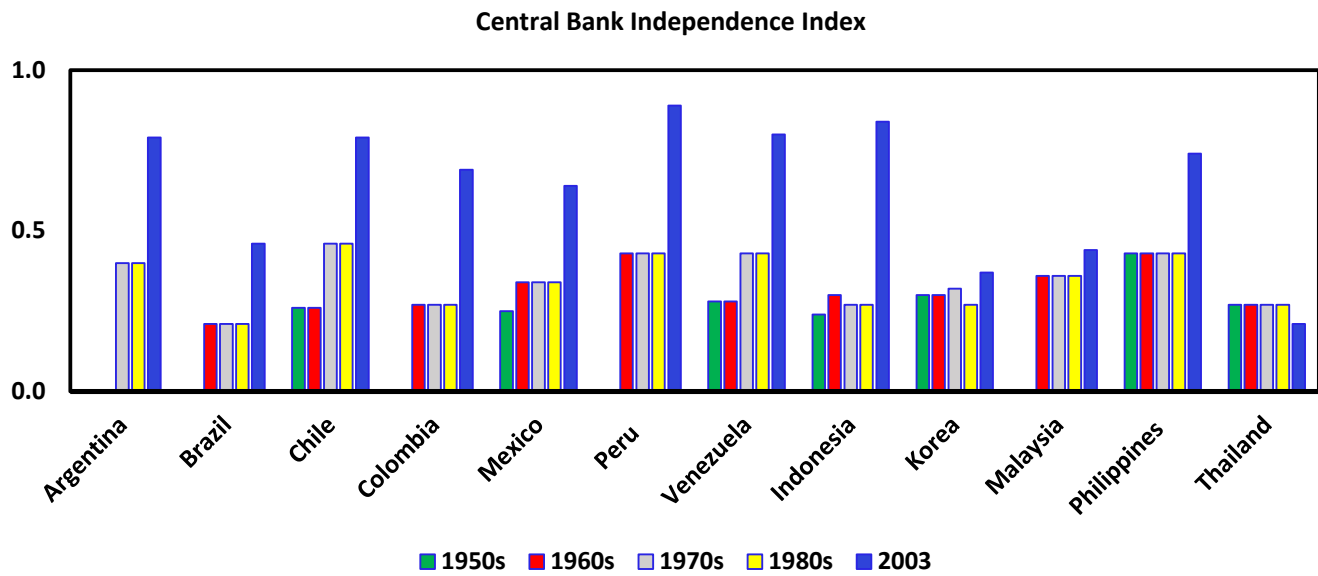


Figure 2
Money Growth and Inflation: Breakdowns or Continuity?



Notes: This figure shows scatter plots of filtered series of inflation and asset growth rates as well as the trending line of the regression of inflation on asset growth rates. β shows the coefficient of the regression. Episodes of financial repression are shown in red and episodes of financial globalization are shown in blue.

Figure 3
The Evolution of Central Bank Independence



Notes: This figure shows the index of Central Bank Independence from Cuckierman Webb, and Neyapti (1992) updated by Crowe and Meade (2007).