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Capital Controls and Implications for Surveillance and Coordination: Brazil and Latin America

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Abstract

Brazil has been one of the most active country in intervening in FX markets though several forms: sterilized interventions and foreign reserves accumulation, controls on capital inflows and FX interventions through domestic derivatives markets. During the golden phase of the commodity super-boom generated by China, the goal of the FX interventions was to deter real exchange rate appreciation. With the Brazilian experience in mind, we extract lessons for surveillance and coordination. We argue that capital controls were not a very useful tool to deter real exchange rate appreciation. Comparing Brazil with Chile, the poster child of capital controls in the nineties that decided not to use them again during the commodity super-boom of this century, we conclude that an adequate fiscal policy stance could provide much better results than the use of capital controls. Furthermore, we claim that the use of capital controls in Brazil helped to avoid necessary changes in the fiscal policy stance. Analyzing the recent experiences of Colombia and Peru also do not bring much support to capital controls. Therefore, when analyzing the implications for surveillance and coordination, international institutions, as the IMF, should take into consideration that, no matter how many caveats are listed before its guidelines, capital controls may serve mainly to bypass needed changes in macroeconomic policy, thereby jeopardizing better economic performance.

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I. Introduction

Capital Controls have recently received a veil of respectability, with several papers showing they may play a useful role in managing the macroeconomic and prudential risks associated with capital flows (e.g. Engel 2013, Korinek 2011, and Rey 2013). Even the International Monetary Fund (IMF) has praised their use (Ostry et al 2010, 2012).

The recent Brazilian experience, from 2009 to 2012, provides an unprecedented context to study capital controls. Never before, has a country as open as contemporary Brazil so actively experimented with capital controls/restrictions. Brazil has arguably the most sophisticated capital markets in emerging markets (EMs), with deep and liquid instruments to gauge effectiveness of capital controls in segmenting markets. There is no significant credit risk (as measured at the time), and, since 2008, Brazil has been an investment grade country.

To contrast the Brazilian experience with capital controls with other Latin-American (LA) countries´ is interesting at many different levels. One important question is what drove the country to the decision of being hyperactive with capital controls. Chile, for example, had probably the most successful experience with capital controls during the previous cycle of capital inflows, in the 1990s (De Gregorio 2014, De Gregorio, Edwards and Valdés 2000, and Forbes 2007). Nevertheless, having gone through similar exchange rate appreciation pressure coming from higher commodity prices coupled with capital inflows after the 2008 crisis, Chilean authorities opted not to resort to capital controls. Why? Was it due to the smaller industrial base of the Chilean economy, with fewer and less vocal losers from exchange rate appreciation? Was it because the Chilean much better fiscal stance avoided much of the real appreciation (which, somewhat ironically, is one of the IMF and G20[2] precondition for the use of capital controls)? Was it an attempt to differentiate itself among EMs? Colombia, on the other hand, has resorted again to capital controls, in the form of unremunerated reserve requirements, with mixed results.[3] Peru, having a heavily dollarized financial system, adopted measures pertaining to Foreign Exchange (FX) management, not necessarily classified as capital controls.[4]

[2] "Capital flow management measures may constitute part of a broader approach to protect economies from shocks. In circumstances of high and volatile capital flows, capital flow management measures can complement and be employed **alongside, rather than substitute for**, appropriate monetary, exchange rate, foreign reserve management and prudential policies." (G20 2011, emphasis mine)

[3] Clements and Kamil's (2009) results "(…) suggest that the controls were successful in reducing external borrowing, but had not statistically significant impact on the volume of non-FDI as a whole." They also did not find any evidence that the controls "(…) moderated the appreciation of Colombia's currency, or increased the degree of independence of monetary policy". However, they found that the controls have increased the volatility of the exchange rate. Other studies found different results, as will be analyzed in Section 3.

[4] According to Rossini, Quispe and Serrano (2013), the Peruvian response to the perceived appreciation of the currency involved the increase of sterilized interventions, as well as the use of reserve requirements on local banks foreign currency liabilities. These measures do not discriminate based on the residency of the parties involved in the capital transaction; therefore, they do not constitute capital controls, as defined by Ostry et al. (2012).

A thorough analysis of the effectiveness of Brazilian controls on capital inflows has been conducted by Chamon and Garcia (2014),[5] from which we will draw the main results regarding the effects of Brazilian experimentation with capital controls. They showed that the capital controls indeed affected markets, creating wedges between onshore and offshore prices of similar assets (when foreign investors create buying pressure). However, controls/measures did not have much effect on the exchange rate (at least not on impact or immediate aftermath). Under the most generous interpretation (and treating all estimated effects on the exchange rate as permanent), the 12 measures considered would have depreciated BRL by about 10%. Capital controls likely brought prudential benefits, as it probably moderated credit growth (Forbes et al. 2012), and there was substantial increase in maturity of external debt flows, although it is hard to assess how much of this increase would remain true if a crisis hit.[6] On the downside, one should take into account that, given the very low saving rate of Brazil (around meager 16% of GDP), to discourage external savings in general may not be the best way to increase investment and to achieve growth in the long run. In addition, during the whole period, fiscal policy remained expansionary, and so did para-fiscal policy, i.e., subsidized credit via federal banks, even after the effects of the 2008 crisis were over. Capital controls acted, in large measure, as a substitute to fiscal and para-fiscal policies, while they should have been a temporary help until a more adequate fiscal policy stance was put in place. These lessons must be taken into account when advising countries about the potential benefits of capital controls, as will be discussed in Section 4.

During the high tide period of large capital inflows, Brazil became famous because of its complaints. Former Finance Minister Mantega coined the expression “currency wars”. During the low tide period of the Taper Tantrum, calls for international monetary policy coordination were also made, together with other EMs, most strikingly by India’s Central Bank governor Raghuram Rajan. Nevertheless, Brazilian capital controls were never coordinated with its local partners. In any case, the episodes raise very pertinent issues regarding international macro policy coordination and surveillance.

Having mainly the recent Brazilian experience as background, but also contrasting it with other LA countries (Chile, Colombia and Peru), this paper aims to tackle the following questions:

1. What does the Brazilian experience teaches us about the effects of capital controls?

2. Comparing Brazil and Chile, why did they chose opposite ways regarding the use of capital controls after 2008?

3. What other experiences in Latin America (LA), like Colombia and Peru, can bring to bear regarding the desirability of capital controls?

[5] See also Forbes et al. (2012) and Jinjarak et al. (2013).

[6] Financial institutions often make use of hidden clauses that may significantly change contracts. For example, a long maturity loan may be subject to margin calls if certain events take place, actually requiring early repayment of the loan. For example, the Tequila crisis of 1994 revealed a much more fragile structure than Mexican policy makers envisaged before the crisis (Garber and Lall, 2011). Therefore, without a crisis, one may be misled by the lengthening of maturities of fixed income capital inflows, undertook to avoid the controls on capital inflows.

4. Does the use of capital controls constitute a diversion from sound macroeconomic policy-making?

5. Is the current thinking about capital controls, as expressed in the guidelines set out by Ostry et al. (2012), adequate?

Section 2 reviews the main results of the Brazilian experimentation with controls on capital inflows and massive sterilized intervention *cum* foreign reserves accumulation, during the high tide period of capital inflows, from 2009 to 2011, as well as the significant foreign exchange (FX) interventions on the other direction, during the low tide period of capital inflows, after the taper tantrum (May, 2013). Section 3 compares the Brazilian and Chilean reactions to capital inflows, and also provides comments regarding the Colombian and Peruvian experiences with capital controls. Section 4 discusses the adequacy of the current thinking about capital controls, as expressed in the guidelines put forward by Ostry et al. (2012). Finally, Section 5 presents policy conclusions.

II. Brazilian Activism in FX Markets

Brazil has a long history of intervention in foreign exchange markets. Until the late eighties, the capital account (and the current account) was very closed. In the nineties, Brazil began to liberalize as it fought hyperinflation. High interest rates together with inflation stabilization (Real Plan of July, 1994) brought much capital inflows, which helped to accumulate foreign reserves, an important element to build the anti-inflation Real Plan credibility. It also caused the real exchange rate to appreciate, which served as an important anchor to low inflation. However, short-term capital inflows were deemed excessive, to the point that controls on capital inflows were put in place (Cardoso and Goldfajn 1998 and Carvalho and Garcia 2008).

At the same time, other Latin American countries were also experimenting with controls on capital inflows, including the Chilean Unremunerated Reserve Requirement (URR) adopted in 1991-98 (De Gregorio 2014, De Gregorio, Edwards and Valdés 2000, and Forbes 2007), and the Colombian URR adopted in 1993-98 (Cardenas and Barrera 1997 and Ocampo and Tovar 2003).

The empirical analyses of the LA experimentation with controls on capital inflows indicate, although not unanimously, that they were not effective to substantially depreciate the exchange rate, neither to significantly decrease capital inflows. However, they were able to increase the maturity of debt flows.

The better prospects of LA countries in the new century, much aided by the increase in commodities prices, and buttressed by a much stronger macroeconomic policy stance, attracted again large capital inflows. However, this time, Chile, precisely the poster child for controls of capital inflows during the previous cycle, in the nineties, decided not to resort to

capital controls, while Brazil and Colombia did. [7] [8] We now review the Brazilian experience with controls on capital inflows.

II.1 Brazilian FX Interventions when Capital is Flowing In

No country has gone to a greater length than Brazil, among financially open emerging markets, in experimenting with controls on capital inflows. On October20, 2009, Brazil started to introduce what would become an extensive set of controls on inflows of foreign capital (Chamon and Garcia 2014). The series of measures started with a 2% tax on financial transactions on foreign investments in portfolio debt and equity, collected at the initial currency conversion, similar to a Tobin tax. Eleven more measures followed. Since 2012, most of the controls have been relaxed or eliminated, as the cycle of capital inflows ended with the European crisis, and, later, with the Taper Tantrum.

How did the Brazilian experimentation in this century differ from the previous one? In 1993-98, carry trade was the main pull factor, given the combination of high domestic interest rate and predetermined exchange rate (crawling peg). The carry trade involved borrowing in strong currencies with low interest rates and investing those funds in Brazil, at much higher interest rates. In contrast with the earlier experience, the capital flows that resumed after the recovery from the 2008 crisis were much more diversified, since Brazilian interest rates were not as high as in the past,[9] the Brazilian economy was more developed and had investment-grade status, and the exchange rate was floating.

Chamon and Garcia (2014) analyze the recent Brazilian experience with controls on capital inflows. They start by comparing prices for similar financial assets available in Brazil and in the US. The shares traded in Brazil are compared with their respective American depositary receipts (ADRs), which are based on the same underlying shares but are traded in the US market. If the controls had been effective, a premium as large as the magnitude of the tax on financial transactions (2%) should have appeared. They find such a premium, but only at times of positive net foreign demand for Brazilian shares. They also show that the size of the premium between the underlying share and the ADRs is associated with the issuance of new ADRs. In the fixed-income market, the spread between the interest rate in dollars in Brazil (Cupom Cambial) and in the US is lower than the tax rate on financial transactions (6%), and temporary spikes following some of the controls tend to be short lived. They conclude that capital controls did produce a partial segmentation between the Brazilian and international financial market.

[7] The Colombian experience is reviewed in Clements and Kamil (2009), among other (see Section 3).
[8] As mentioned in footnote 3, the interventions in FX markets in Peru do not constitute capital controls, because they do not discriminate on the basis of investors' residency.
[9] Nevertheless, as shown in Table 5, the real interest rate in Brazil is still much larger than in most other countries, even in LA.

However, according to Brazilian senior economic authorities at the time, the main objective of the controls on capital inflows was to deter the appreciation of the currency, the Brazilian real (BRL). Therefore, it is only natural to use the exchange rate as the main criteria to evaluate the effectiveness of the controls. Chamon and Garcia (2014) constructed counterfactuals for the exchange rate, based on econometric models without capital controls, and compared the results with those that actually occurred (Chart 1). They also compared the real exchange rate with other currencies of similar countries (Chart 2), as well as performed event study analyses. All the methodologies suggest that the first measures (from late 2009 to mid-2011) had very limited success in containing the appreciation of the real. However, the exchange rate seemed to respond strongly in the aftermath of the last restrictions adopted, with several different specifications pointing to an effect 10 percent or more. It is not likely that those last measures would have been so effective if taken in isolation. Such strong response may, instead, reflect a combined effect: the last measures complemented previous ones, shutting down the main remaining channels to avoid the initial taxes on inflows. The response of the exchange rate was also supported by the beginning of a monetary policy easing cycle, which reduced the Brazilian interest rate by 525 basis points, from 12.5% to 7.25%. That is, portfolio flows may have abated both because, eventually, it became too cumbersome and expensive to bypass the controls and because the interest rate differential fell substantially.

Next, we look at the FX interventions when capital started to leave Brazil.

II.2 Brazilian FX Interventions when Capital is Flowing Out

The taper tantrum of May 2013 caused massive turbulence in global markets. Risky assets suffered greatly and many emerging markets currencies depreciated heavily, including the BRL. To mitigate the inflationary impact of exchange rate depreciation, the Brazilian central bank (BCB) decided to intervene in the foreign exchange markets in the opposite side it used to during the previous cycle of capital inflows. That is, the BCB started to sell exchange rate. After an ad hoc beginning, from August 2013 on, the BCB announced a program of sales of $2bn of exchange rate swaps every week, and a weekly auction of US$1bn in short term dollar credit lines to the banks.

Chart 3, from Garcia and Volpon (2014), shows that the announcement of intervention was accompanied by a strong appreciation of the exchange rate (that is, a sharp fall in the rate of R$ per US$). In December, the BCB extended its program to 2014, with a substantial reduction in the weekly sales of swaps to US$1bn.Yet this second announcement, as the chart shows, seems not to have had the same effect as the first one. In mid-2014, the BCB again announced a further extension of the program until the end of 2014, and, by the end of 2014, announced a further extension for a quarter, while reducing the speed of new net placements.

The amount of the FX sales by the BCB is the largest among EMs, as shown in Table 1, from Garcia and Volpon (2014). The overall assessment of the program is that, at its inception, after the taper tantrum, it was important to restore liquidity to the FX markets in Brazil. However, as it seems to happen often with FX interventions, they tend to outlive its usefulness, at least regarding its original purpose. The renewals in 2014, already in a context of low FX volatility, seemed to have been associated with the fear that the program end could cause a large devaluation of the BRL, with deleterious inflationary impact, possibly upsetting the incumbents' position in the presidential and legislative elections in Brazil, in October of 2014.

III. Different Reactions to Capital Inflows

With China fast recuperation from the 2008 crisis, commodity prices raised to new highs, and, with them, the prospects for Latin American commodity exporters. This scenario prompted the return of large capital inflows, starting in 2009. It is rather puzzling why Chile, the poster child for controls on capital inflows in the nineties, did not resort to them when similar circumstances materialized after the Lehman crises.

José de Gregorio, governor of the Central Bank of Chile, from 2007 until 2011, offers an answer, which, given his position at the time, represents much more than a mere opinion. "The reason [why Chile has not used capital controls for 15 years] is that they have not been needed in the current macroeconomic framework. Indeed, progress in macroeconomic and financial management can dispense with the need for capital controls. However, they are a valid tool, and for this reason Chile´s central bank and the government have intentionally maintained the bank´s legal authority to impose controls in free trade agreements" (De Gregorio, 2014).

Therefore, according to the Chilean Central Bank governor at the time, the economic policy stance was so strong that capital controls were not needed. Indeed, if one examines the relative appreciation of the real effective exchange rate in Brazil and in Chile, displayed in Chart 4, it is clear that the real exchange rate appreciation was much larger in Brazil than in Chile, during the period when Brazil deployed capital controls.[10] In principle, this could be a result of the better fiscal and monetary stances of the Chilean economy.

Notwithstanding these caveats, it is also possible that the decision not to use capital controls in Chile was caused by political economy reasons. For example, given the smaller industrial base of the Chilean economy, with fewer and less vocal losers from exchange rate appreciation, real exchange rate appreciation did not hurt as badly as in Brazil? Another possibility is that Chile tried to differentiate itself among Latin American countries.

[10] Exchange rates in Latin America are quoted in domestic currency per unit of foreign currency. Therefore, an appreciation means a fall in the REER indices displayed in Chart 4. The comparison with Colombia and Peru also shows that the Brazilian real exchange rate was the one that suffered the largest appreciation.

In any case, it is puzzling that precisely when both the academia and the multilateral institutions become much friendlier to the adoption of capital controls, the country whose previous experience with those controls was deemed the most successful decides not to make use of them in a new episode of excessive real appreciation.

The most likely reason, therefore, is that having followed a much better economic policy, based on a solid fiscal stance, Chile was able to do away with capital controls. Therefore, the current fad favoring the use of capital controls as a prudential policy should take into account that EM countries, particularly in Latin America, have, for very long time, made widespread use of interventionist policies, like capital controls, high reserve requirements and all sorts of financial market interventions, now called macroprudential policies. These policies have not produced overall good results for most of these countries.

For Brazil, the use of capital controls to deter real exchange rate appreciation during the high-tide phase of the cycle was a poor substitute for proper fiscal policy. As Chart 5 makes clear, since the stabilization from hyperinflation, in 1994, Brazil has followed a relentless path of increase in primary expenditures financed by increasing tax burden. This ultimately unsustainable fiscal policy created all sort of distortions, including excessive real exchange rate appreciation. Trying to tackle this distortion with capital controls alone was not the proper policy response, and has also probably helped to avoid the economic policy consequences that would conceivably have contributed to correct the distorted fiscal policy in the first place.

This is completely different from developed countries perspective, where the lack of proper financial regulation has engendered the conditions for the great financial crisis. Not having properly taken into account the very different regulatory frameworks with which developed and Latin American EM countries faced the 2008 crisis, many analysts went on to praise capital controls and macroprudential policies for LA countries, treating those as if they had the same lack of regulation and intervention as developed countries. Thus, the Chilean example provides a very good example that if proper macroeconomic and regulatory policies are followed, capital controls may not be needed.

The experiences of two other successful LA countries, Colombia and Peru, seem to corroborate the rather limited usefulness of capital controls. Unlike Chile, Colombia has, once more, made use of the reserve requirements that it had already used in the nineties. However, there is scant evidence that those controls have significantly reduced the total amount of flows, or prevented overvaluation of the Colombian Peso. Nevertheless, as also happened in the nineties, when there were both negative (Cardenas and Barrera 1997) and positive (Ocampo and Tovar 2003) results, the literature is not unanimous regarding the effects of the Colombian capital controls. Clements and Kamil (2009) find that the new round of capital controls in the 21st century was successful in reducing external borrowing, but had not statistically significant impact on the volume of non-FDI as a whole. They also did not find any evidence that the controls "(…) moderated the appreciation of Colombia's currency, or increased the degree of independence of monetary policy". However, they found that the controls have increased the volatility of the exchange rate. Concha and Galindo (2008) found that "(…) capital controls used since 1998 have been ineffective in reducing capital flows and the trend of the Colombian peso to

appreciate. In addition there is no evidence suggesting a change in the composition of capital flows induced by capital controls." They found, however, "(…) some evidence in favor of capital controls reducing nominal exchange rate volatility at high frequencies". Rincón and Toro (2010), on the other hand, found that, capital controls were able to enhance the effectiveness of sterilized FX purchases: "(…) during the period 2008-2010 when both policies were used simultaneously, a statistical significant effect was obtained by which the interaction of capital control and intervention in the foreign exchange market were effective to produce a daily average depreciation of the exchange rate, without increasing its volatility." Maybe the few favorable empirical results found for Colombia may be related to its renewed use of capital controls.

As already mentioned, Peru intervened heavily in its FX markets. Nevertheless, it did not utilize capital controls, i.e., measures that discriminate on the basis of investor's residency. The Peruvian response to the perceived appreciation of the currency involved the increase of sterilized interventions, as well as the use of reserve requirements on local banks foreign currency liabilities (Rossini, Quispe and Serrano 2013).

Tables 2 to 8 display a series of comparative macroeconomic indicators of the four countries. Table 2 shows that Brazil's GDP is much larger than the other three South-American countries. Table 3 shows that in terms of GDP growth, Brazil has, in the last four years, been lagging behind the other three. Notwithstanding its poor growth performance, Brazil has also been exhibiting the larger inflation rate of the group, as shown in Table 4. The already mentioned very high real rates in Brazil are displayed in Table 5. With so high real interest rates and low growth, the dismal Brazilian inflation performance is certainly an indication that other factors, probably related to the uncertainty created by economic policy gyrations, are jeopardizing the country's economic performance. Table 6 shows that the poor growth performance in Brazil is most likely associated with the Brazilian low investment to GDP ratio, which has also lagged significantly behind the other countries'. More directly related to the issues addressed in this paper, Tables 7 and 8 show that the four countries have been able to significantly expand their use of external savings, financed by capital inflows. Despite the end of massive capital inflows, these tables show that the four South-American countries are still able to finance large current account deficits. The end of QE in the US may prove to be a challenge, especially for Brazil, that has not used the foreign saving to increase investment and growth, but to finance consumption and government expenditures.

Capital flows to Brazil, Chile, Colombia and Peru are detailed in Charts 6 to 21[11]. We display both annual and quarterly data, comparing the main components of capital flows, as well the total levels, among the four countries. Brazil, per its size, dominates the picture. However, as already noted, in percentage of GDP, all four countries have developed large current account deficits in recent years.

As shown in Table 7, except for Colombia, the other three countries exhibited current account surpluses. After the 2008 crisis, only Chile reverted to a current account surplus, but only until

[11] A negative sign represents a positive influx of capital, i.e., a reduction in net assets owned by residents.

2009. Starting in 2010, all countries had current account deficits. When it had current account surpluses, Chile was able to diversify its macroeconomic risk by conducting net positive portfolio investment abroad, another sign of its better policy stance. Charts 8 and 9 document the sizeable Chilean portfolio investment abroad, until 2009. FDI has been strong in all four countries (Charts 14 and 15), with Brazil receiving the bulk of it. This is even truer with Portfolio Investment (Charts 16 and 17).

IV. Is the New Thinking and Acting about Capital Controls adequate?

The new wisdom regarding capital controls is well described by Ostry et al. (2012). They state: "For countries whose currencies were on the strong side, where reserves were adequate, where overheating concerns precluded easier monetary policy, and where the fiscal balance was consistent with macroeconomic and public debt considerations, capital controls were a useful part of the policy toolkit to address inflow surges."

The list of caveats is long and leaves little room to criticism. Indeed, if a country fulfills all these prerequisites and still exhibits overvalued exchange rate due to temporary excessive capital inflows, capital controls will be in order.

However, as I have argued in this paper, at least in the case of Brazil, capital controls acted as substitute, not as complement, to the proper macroeconomic policy, especially fiscal policy. In the Brazilian case, precisely the wrong combination of fiscal and monetary policy was adopted. In lieu of a contractionary fiscal policy that would leave room to lower interest rates, which would abate capital inflows, Brazil has for too many years resorted to a non-sustainable combination of expansionary fiscal policy with extremely high real interest rates. This perverse combination, together with large and liquid financial and capital markets, increased the country's sensitivity to capital flows gyrations.

Therefore, despite of all the caveats, the IMF policy change had the practical effect to serve as a support to Brazilian bad macroeconomic policies.[12] Brazilian policy makers tended to enjoy the

[12] In its annual policy evaluations of Brazil, under Article IV, the IMF statements regarding Brazilian capital controls were the following:

- "While recognizing the need for a temporary tax on portfolio capital inflows, Directors suggested that consideration be given to a long-term response that combines a tightening of fiscal policy, a lower interest rate, and prudential measures. "' (IMF 2010); and
- "Directors took note of the authorities' pragmatic use of the policy toolkit for managing capital inflows. Macroeconomic policies have been appropriately tightened, the exchange rate has appreciated substantially, and official foreign exchange reserves have increased. Directors considered that the authorities' use of capital flow management measures has been appropriate. However, a number of Directors cautioned that these measures are prone to circumvention, while many Directors noted that attendant costs should also be taken into account and pointed to their distortionary effects. Many Directors recommended that further macroeconomic policy adjustment be part of the response to large capital inflows." (IMF 2011)

apparent support provided by the IMF's policy change, while lambasting the adherence to any "code of conduct" that could restrict their ability to expand fiscal policy even further.[13]

Issues pertaining to international policy coordination are very tough, as the IMF duly recognizes (Ostry and Gosh 2013). Nevertheless, the Brazilian example shows that a change in policy, however so abundantly supported by high-level academic research (Jeanne, Subramanian and Williamson 2012, Korinek 2011, and Ostry et al. 2010), may, instead, open more room for policy slippages.

[13] In an official statement, former Finance Minister Guido Mantega declared: "We oppose any guidelines, frameworks or "codes of conduct" that attempt to constrain, directly or indirectly, policy responses of countries facing surges in volatile capital inflows. Governments must have flexibility and discretion to adopt policies that they consider appropriate, including macroeconomic, prudential measures and capital controls." (Mantega 2011)

V. Conclusion

Brazil has been one the most active country in intervening in FX markets though several forms like sterilized interventions and foreign reserves accumulation, controls on capital inflows and FX interventions through domestic derivatives markets. With the Brazilian experience in mind, we try to extract lessons for surveillance and coordination.

Drawing from Chamon and Garcia (2014), we argue that capital controls do not seem to be a very useful tool to deter real exchange rate appreciation. The comparison between Brazil and Chile is quite telling. Despite being the poster child for capital controls in the nineties, Chile decided not to use them in conditions very much similar to those prevailing in Brazil, specifically regarding real exchange rate appreciation. This is probably due to the Chilean much stronger fiscal stance. The experience of Colombia and Peru, two other commodity-exporter-South-American countries, also do not support the use of capital controls. Colombia decided to make use of the unremunerated reserve requirements on capital inflows, as it had done in the nineties, with mixed results. Peru, on the other hand, kept its intervention in FX markets away from capital controls, using only prudential policies that did not discriminate on the base of investors' residency. Therefore, it is not clear that capital controls may bring the benefits raised in the academic literature, while serving as an escape to the implementation of politically unpleasant macroeconomic adjustment.

Therefore, when analyzing the implications for surveillance and coordination, international institutions, as the IMF, should take into consideration that, no matter how many caveats are listed before its guidelines, capital controls may serve mainly to bypass needed changes in macroeconomic policy, thereby jeopardizing better economic performance.

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Table 1. FX Interventions by Major EM Countries (from May 2013 to June 2014)

FX intervention by major EM countries (May'13 - Jun'14)		
	US$ bn	% of 2013 GDP
Turkey	-24.2	-3.1
Singapore	-27.1	-9.4
Brazil	-92.1	-4.1
Russia	-68.2	-3.4
Philippines	-4.6	-1.9
Malaysia	-17.2	-5.6
Indonesia	-9.9	-1.1
india	15.6	0.9
Taiwan	7.0	1.5
Thailand	-12.9	-3.5
S Korea	43.6	3.6
Israel	9.4	3.6
Colombia	5.5	1.5
Czech	11.5	5.9
China	345.2	4.2
South Africa	-0.7	-0.2
Note: Mexico, Poland, Chile & Turkey did not intervene in the market		

Source: Bloomberg; Nomura Securities.

Table 2.

GDP in US$ billions				
Date	**Brazil**	**Chile**	**Colombia**	**Peru**
2005	882.19	124.40	146.52	74.96
2006	1,088.91	154.67	162.77	87.99
2007	1,355.82	173.01	207.52	102.17
2008	1,653.82	179.86	244.06	121.57
2009	1,620.19	172.32	233.82	121.20
2010	2,143.07	217.50	287.02	148.52
2011	2,476.69	251.16	335.42	170.56
2012	2,248.78	266.26	370.33	192.63
2013	2,245.67	277.20	378.42	202.35
Source: World Bank				

Table 3.

GDP growth (%)				
Date	**Brazil**	**Chile**	**Colombia**	**Peru**
2005	3,16	5,56	4,71	6,29
2006	3,96	4,40	6,70	7,53
2007	6,10	5,16	6,90	8,52
2008	5,17	3,29	3,55	9,14
2009	-0,33	-1,04	1,65	1,05
2010	7,53	5,76	3,97	8,45
2011	2,73	5,84	6,59	6,45
2012	1,03	5,38	4,05	5,95
2013	2,49	4,07	4,68	5,79
Source: World Bank				

Table 4.

Inflation (%)				
Date	**Brazil**	**Chile**	**Colombia**	**Peru**
2005	5,69	3,70	5,05	1,62
2006	3,14	2,60	4,30	2,00
2007	4,46	7,80	5,54	1,78
2008	5,90	7,10	7,00	5,79
2009	4,31	-1,40	4,20	2,94
2010	5,91	3,00	2,28	1,53
2011	6,50	4,40	3,41	3,37
2012	5,84	1,50	3,18	3,65
2013	5,91	3,00	2,02	2,82
2014	6,41	4,6	3,66	3,29
Source: World Bank, Central Bank of Chile and IMF				

Table 5.

Real Monetary Policy-Related Interest Rate				
Date	**Brazil**	**Chile**	**Colombia**	**Peru**
2005	11,65	0,77	0,91	1,61
2006	9,80	2,58	3,07	2,45
2007	6,50	-1,67	3,75	3,16
2008	7,41	1,07	2,34	0,68
2009	4,26	1,93	-0,67	-1,64
2010	4,57	0,12	0,71	1,45
2011	4,23	0,81	1,29	0,85
2012	1,33	3,45	1,04	0,58
2013	3,86	1,46	1,20	1,15
2014	5,02	-0,81	0,81	0,20
Source: International Financial Statistics				

Table 6.

Gross Capital Formation (% of GDP)				
Date	**Brazil**	**Chile**	**Colombia**	**Peru**
2005	16,21	23,30	20,22	16,22
2006	16,76	21,11	22,40	19,19
2007	18,33	21,23	23,03	22,27
2008	20,69	25,96	23,49	27,47
2009	17,84	20,28	22,44	20,86
2010	20,24	22,38	22,13	25,17
2011	19,73	23,71	23,88	25,73
2012	17,52	25,09	23,92	26,71
2013	17,89	23,92	24,64	28,29
Source: World Bank				

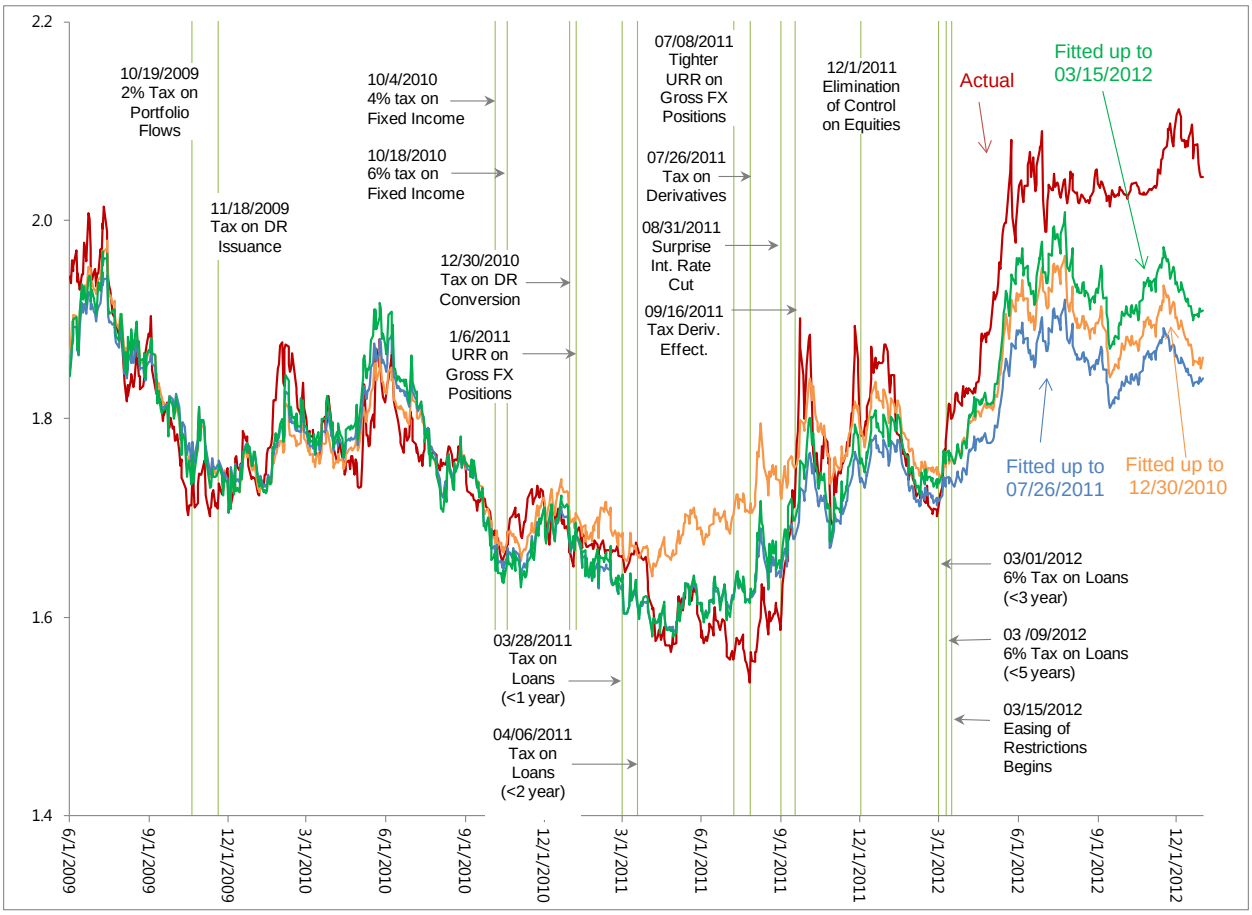
Table 7.

Current Account (% of GDP)				
Data	**Brazil**	**Chile**	**Colombia**	**Peru**
2005	1,59	1,16	-1,29	1,53
2006	1,25	4,63	-1,79	3,26
2007	0,11	4,31	-2,90	1,43
2008	-1,70	-1,84	-2,65	-4,37
2009	-1,50	2,04	-1,99	-0,60
2010	-2,21	1,65	-3,02	-2,55
2011	-2,12	-1,22	-2,90	-1,86
2012	-2,41	-3,41	-3,05	-3,26
2013	-3,61	-3,42	-3,24	-4,51
Source: World Bank				

Table 8.

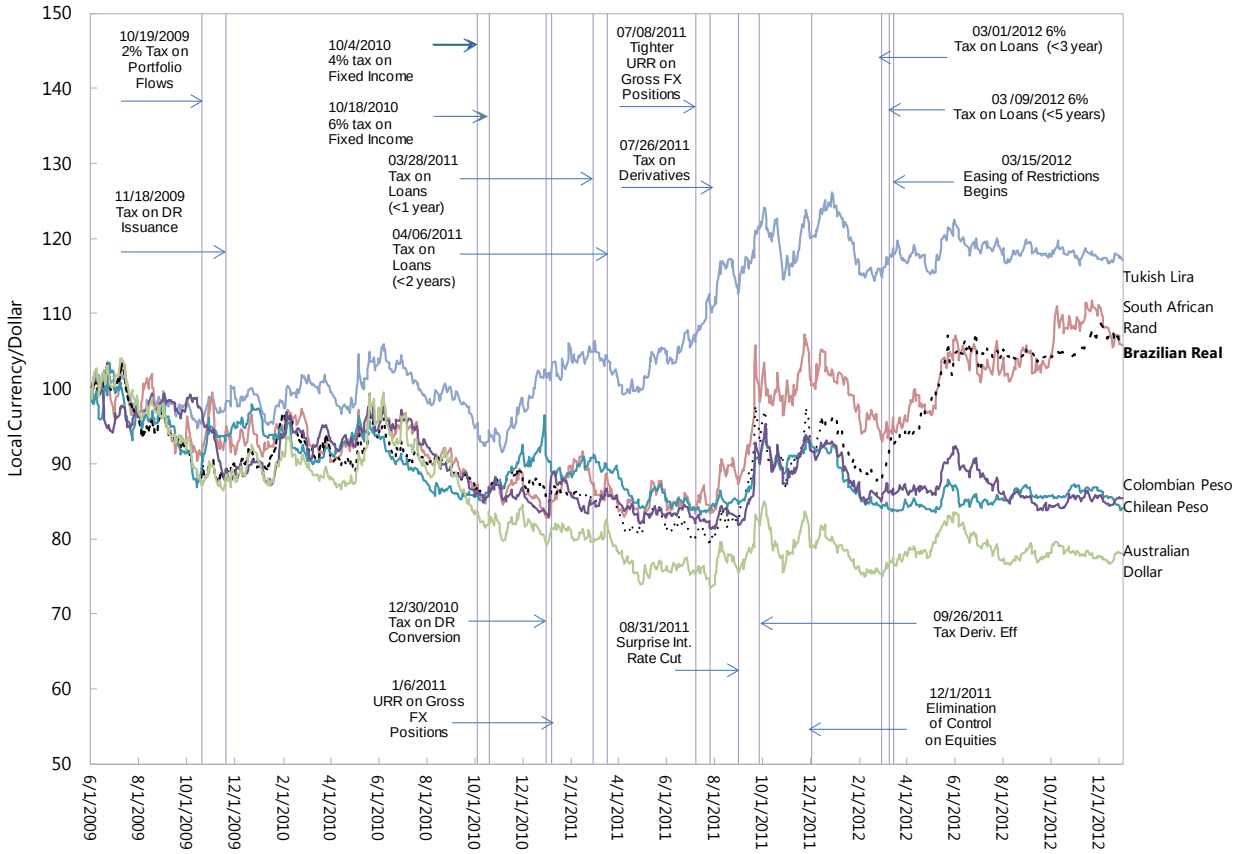
Financial Account (% of GDP)				
Date	**Brazil**	**Chile**	**Colombia**	**Peru**
2005	1,64%	0,13%	-1,03%	1,93%
2006	1,42%	3,65%	-1,76%	2,69%
2007	-0,06%	4,06%	-2,73%	1,23%
2008	-1,53%	-1,20%	-2,80%	-4,53%
2009	-1,45%	2,42%	-2,20%	-1,12%
2010	-2,32%	4,12%	-3,11%	-1,63%
2011	-2,11%	-1,45%	-2,64%	-2,36%
2012	-2,48%	-3,53%	-3,07%	-2,60%
2013	-3,51%	-3,96%	-3,10%	-4,20%
Source: World Bank				

Chart 1. Real-Dollar Exchange Rate and Counterfactual from Regressions.



Notes: Red line corresponds to the actual real-dollar exchange rate (an increase denotes a depreciation of the real); Remaining lines plot the results of a regression of the log of the exchange rate on the log of the interest rate differential, onshore dollar rate, local stock market, commodity prices, dollar currency index and VIX. Orange line is based on a regression sample up to the last tightening of controls on portfolio inflows (Tax on DR Conversion on 12/30/2010); Blue line on a regression up to the announcement of the tax on the notional amount of derivatives (07/26/2011); Green line on a regression up to the end of our sample in Table 2 (when the restrictions begin to be eased on 03/15/2012).

Chart 2. Real-Dollar Exchange Rate and Other Currencies.



Note: Increase in the exchange rate (June 1, 2009 = 100) denotes a depreciation of the respective currency. Source: Bloomberg and Central Bank of Brazil.

Chart 3. Brazilian Central Bank FX Interventions

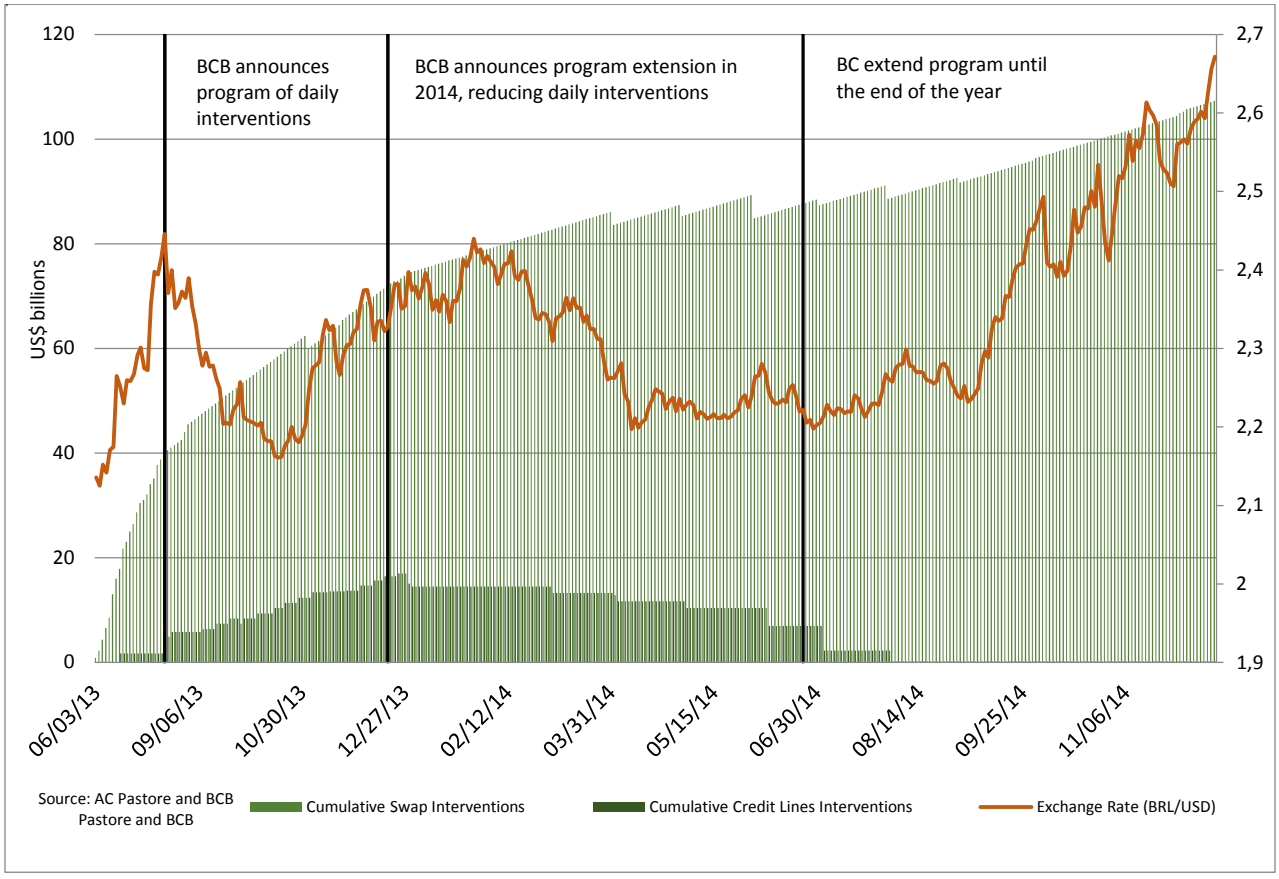
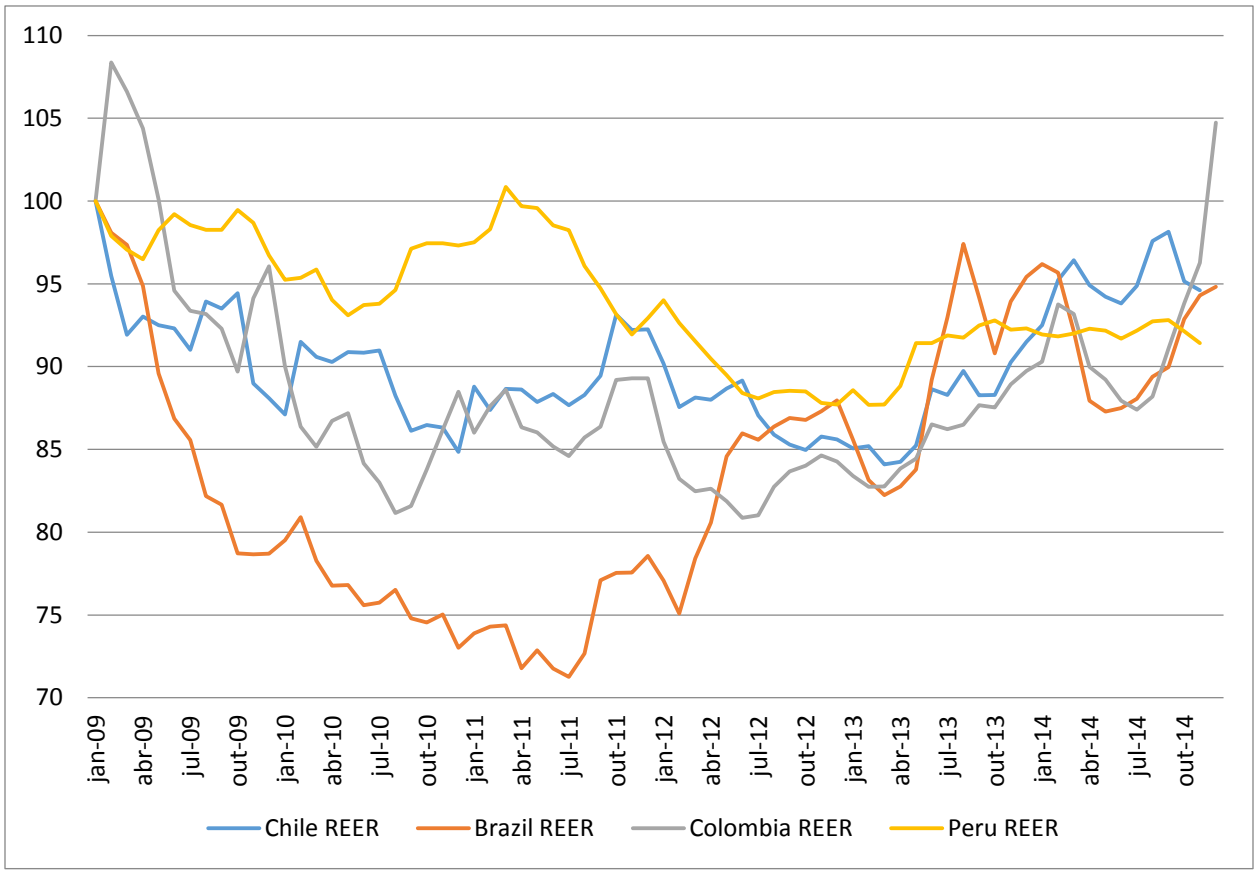
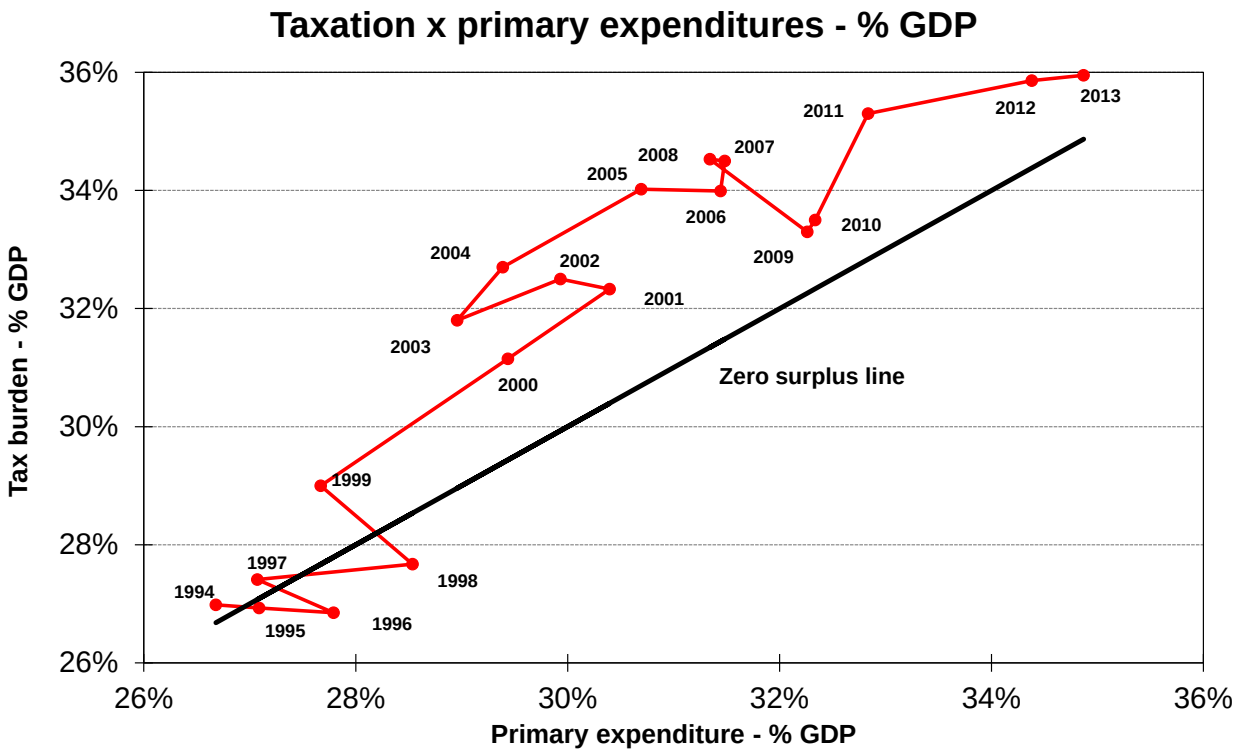


Chart 4. Real Effective Exchange Rate: Brazil, Chile, Colombia and Peru



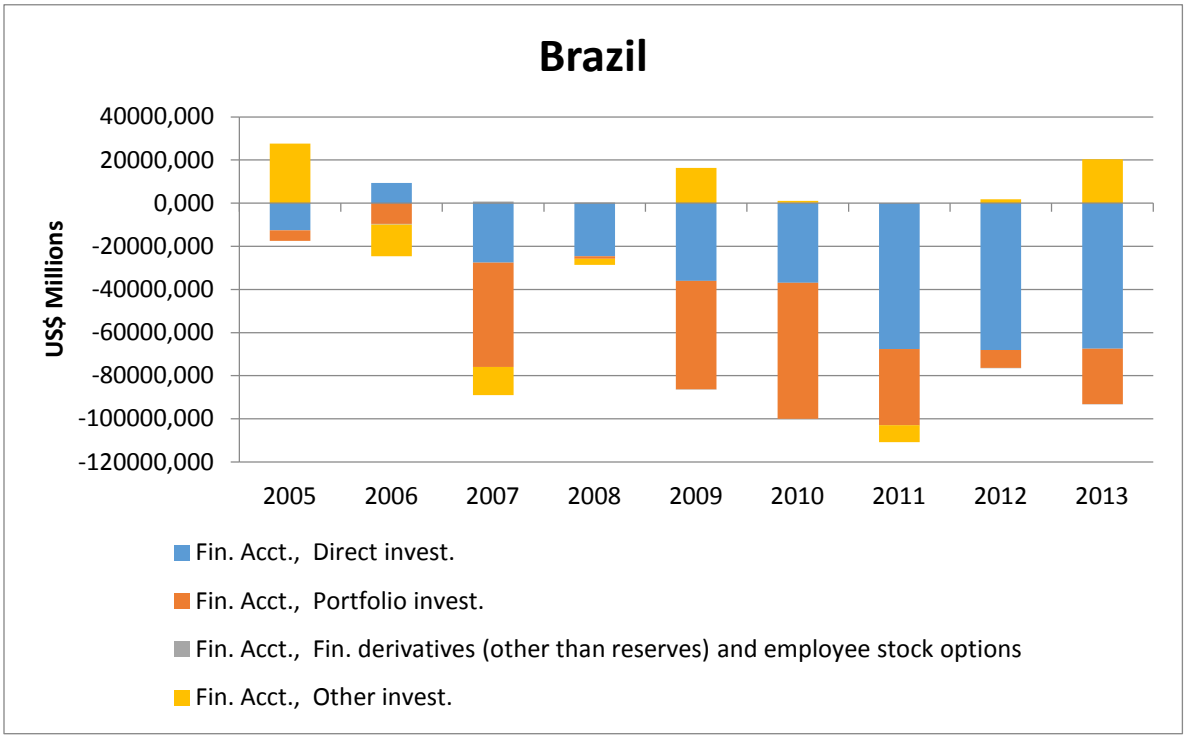
Source: Federal Reserve Economic Data and Central Bank of Brazil

Chart 5. Brazil: Primary Expenditures and Total Tax Burden (% of GDP), 1993-2013



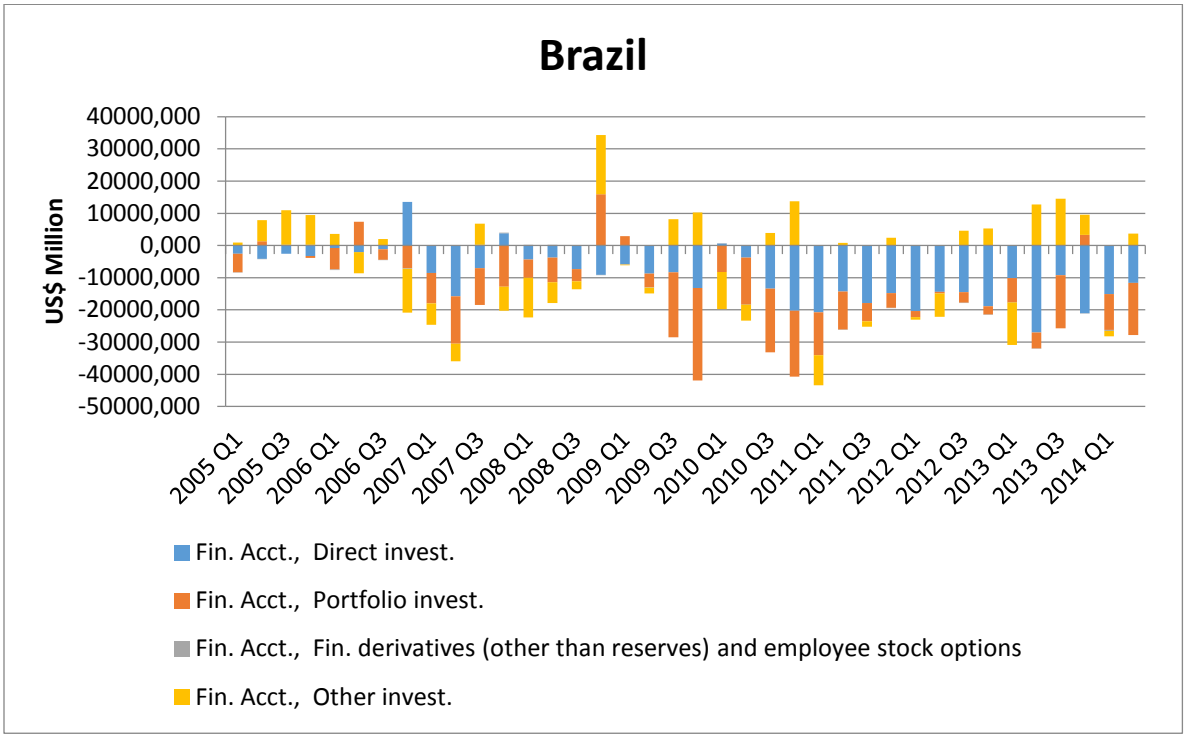
Source: Alexandre Schwartman´s estimates based on official numbers.

Chart 6.



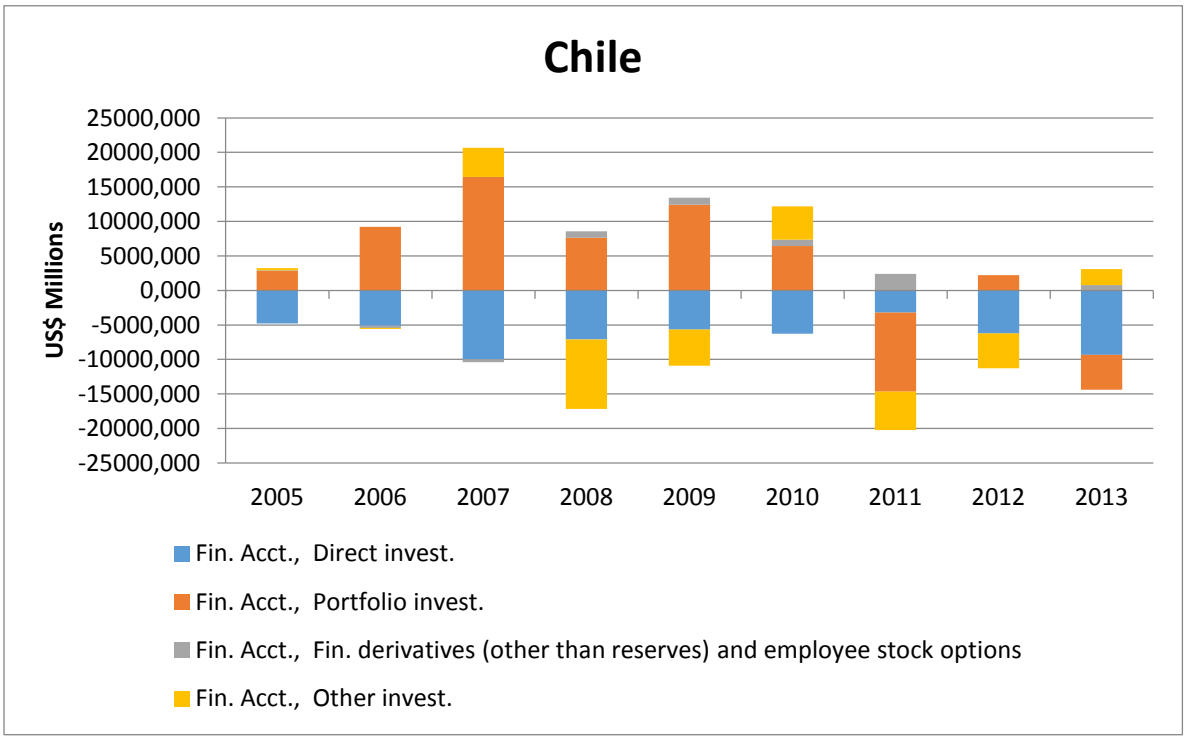
Source: International Financial Statistics.

Chart 7.



Source: International Financial Statistics.

Chart 8.



Source: International Financial Statistics.

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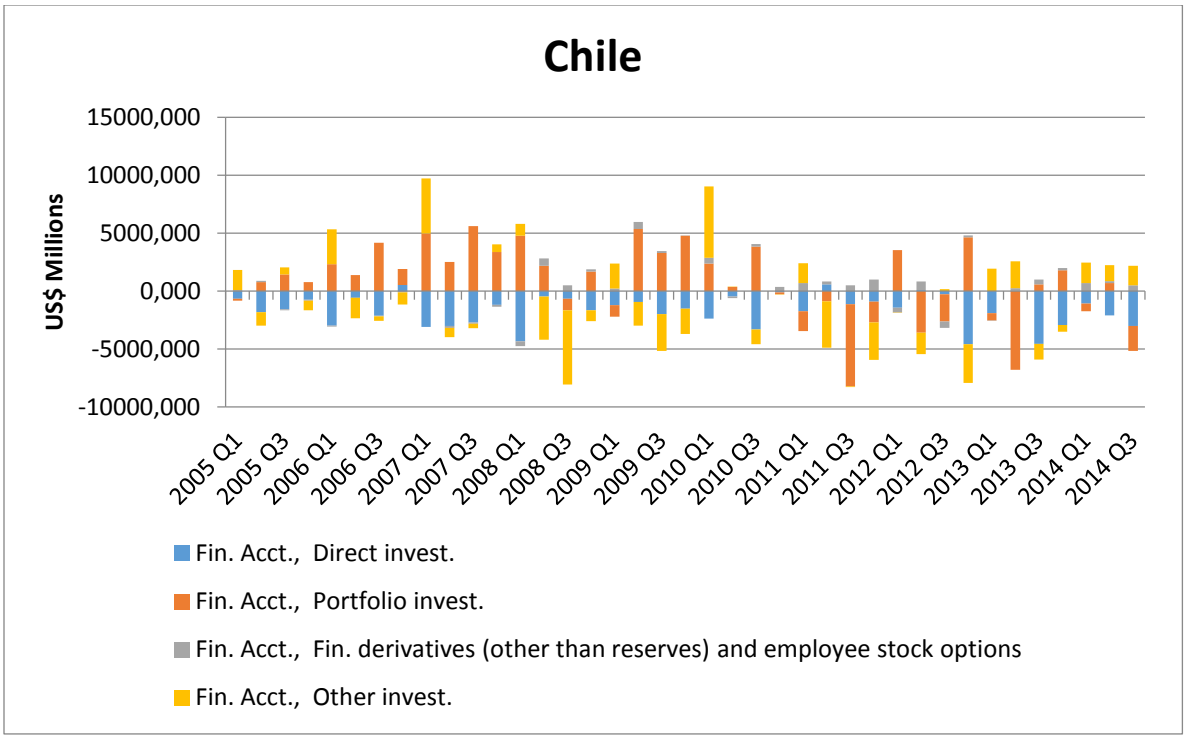
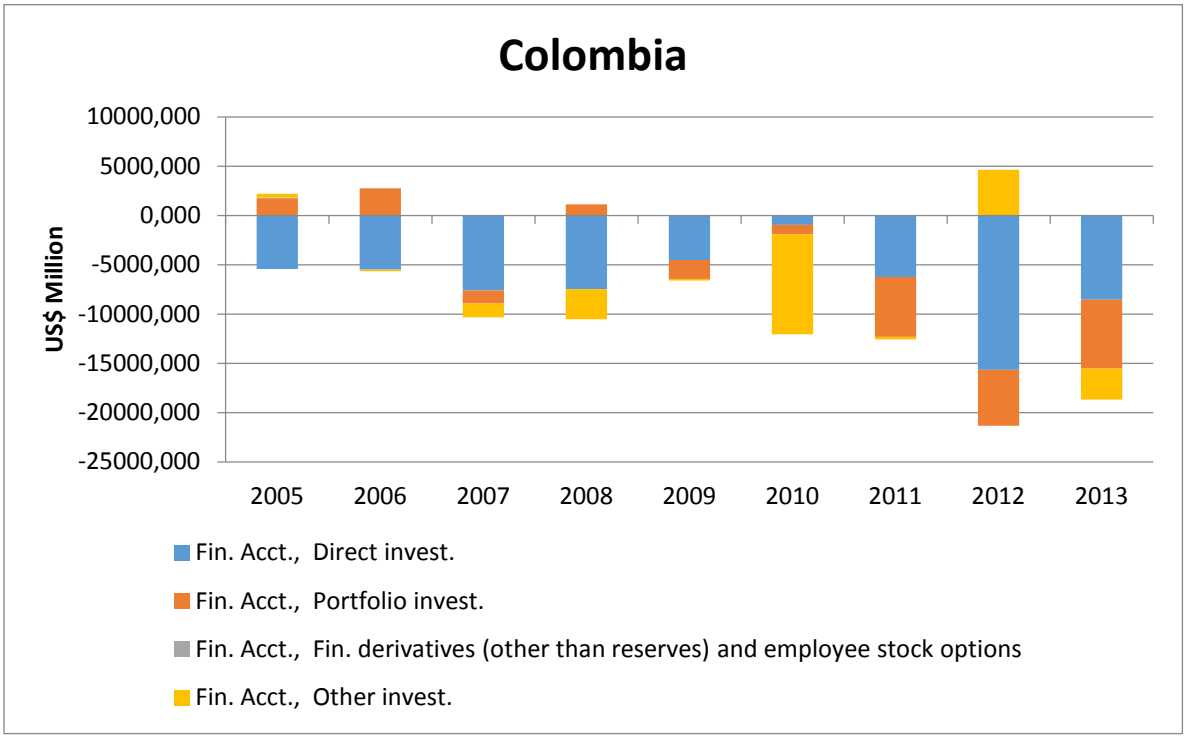


Source: International Financial Statistics.

Chart 10.



Source: International Financial Statistics.

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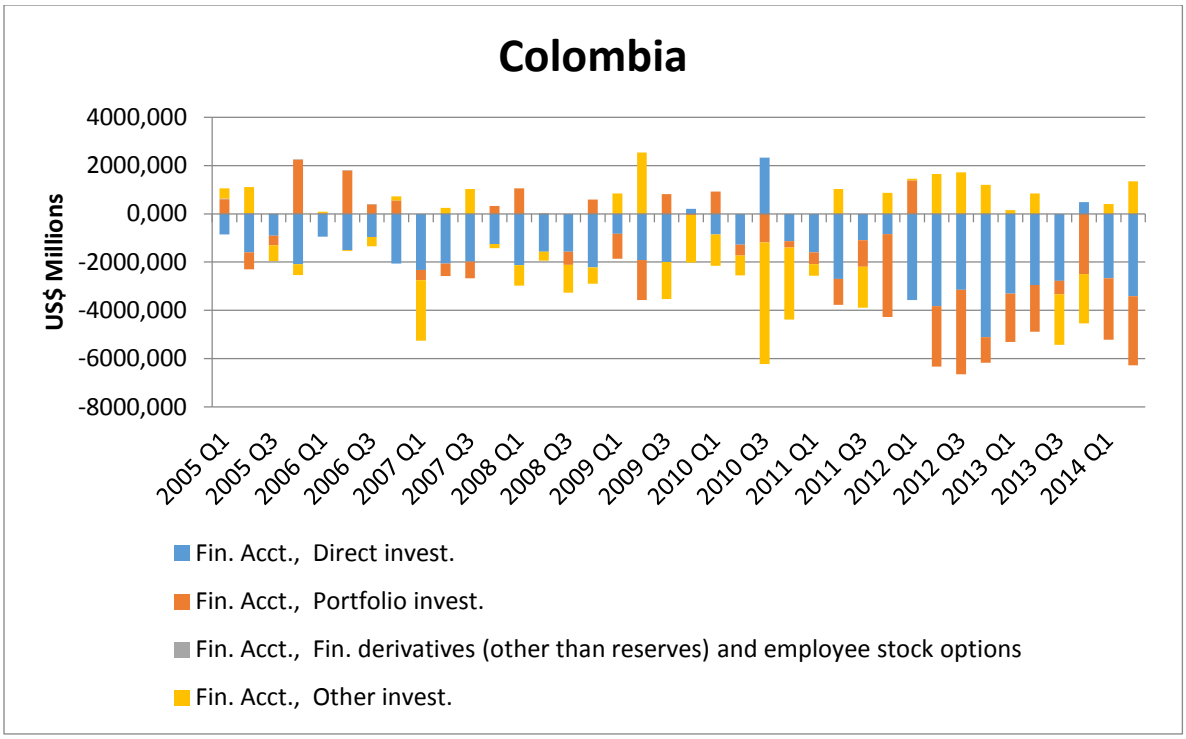
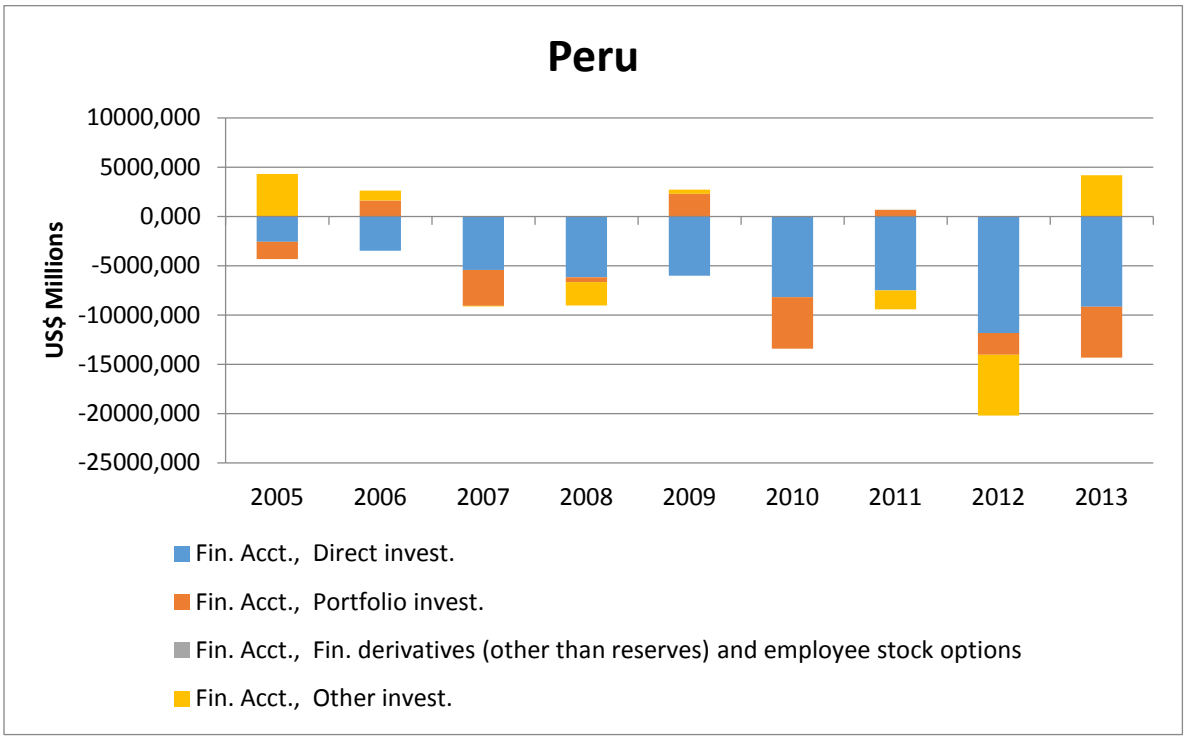


Source: International Financial Statistics.

Chart 12.



Source: International Financial Statistics.

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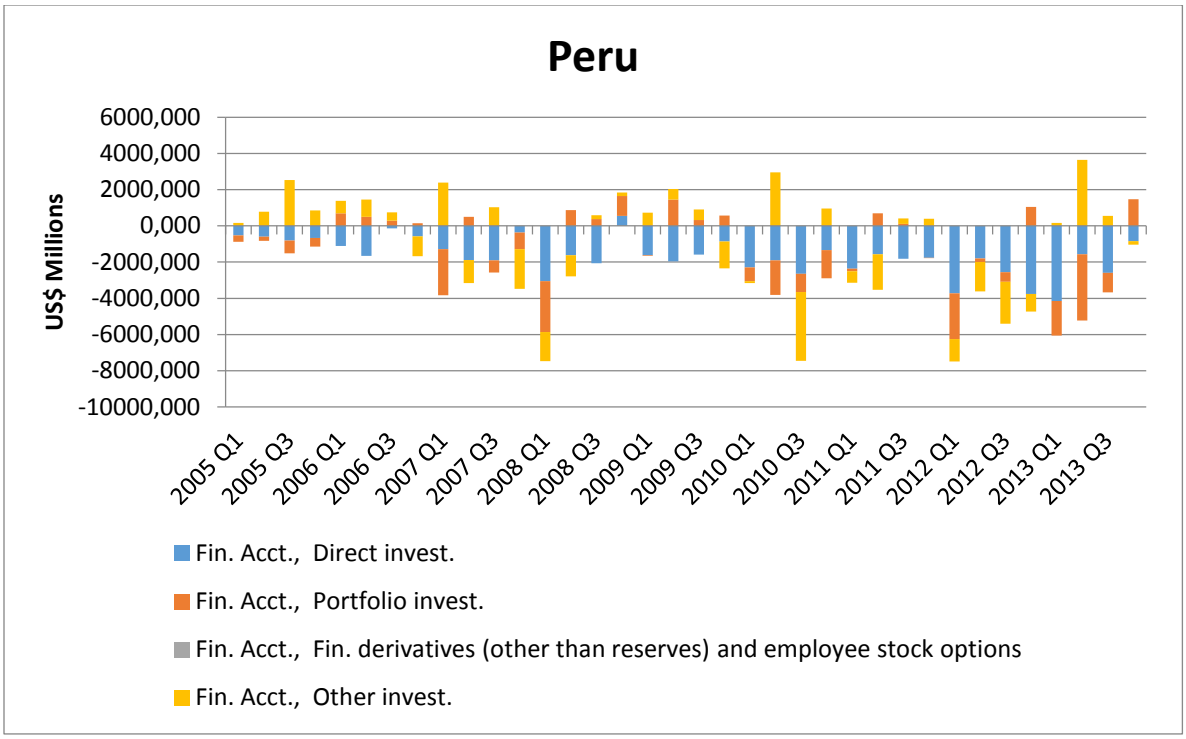
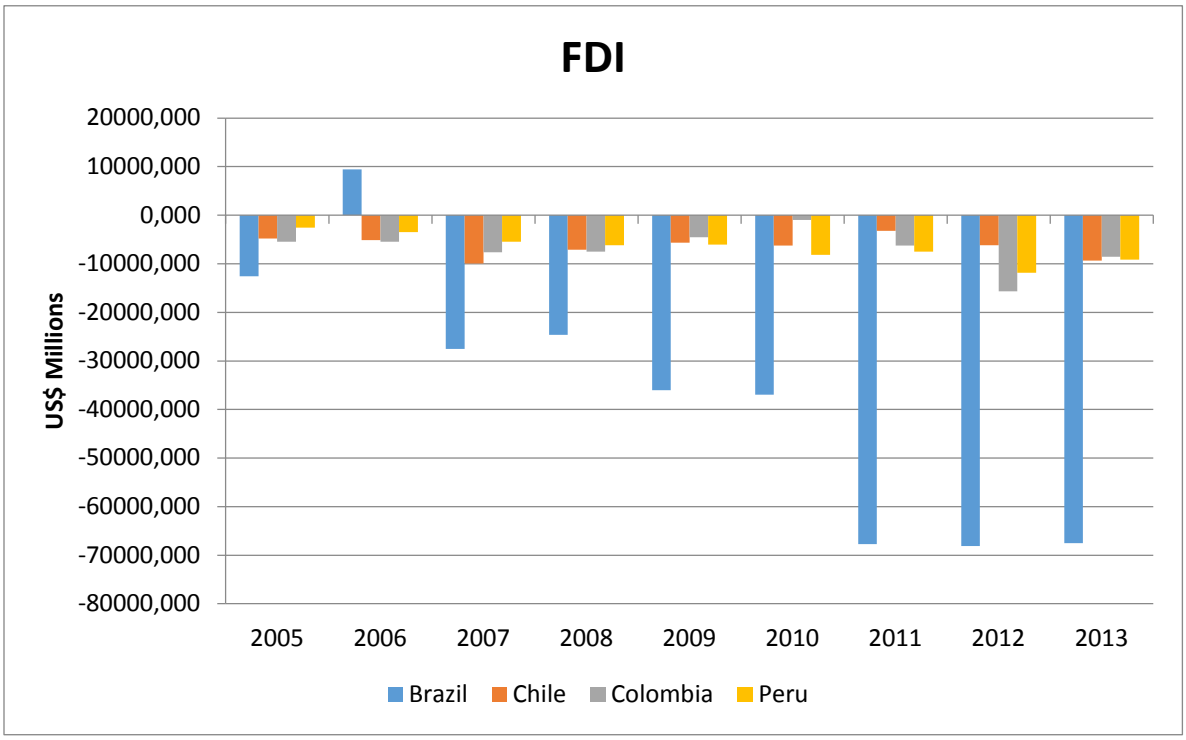


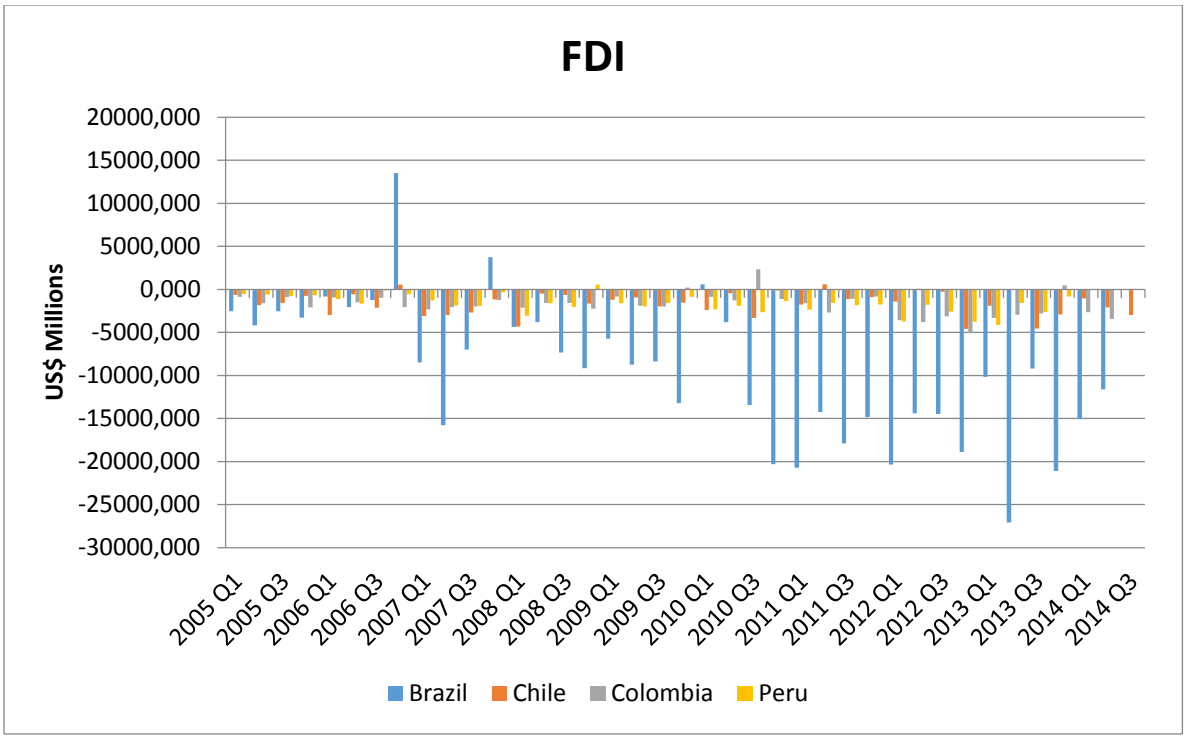
Source: International Financial Statistics.

Chart 14.



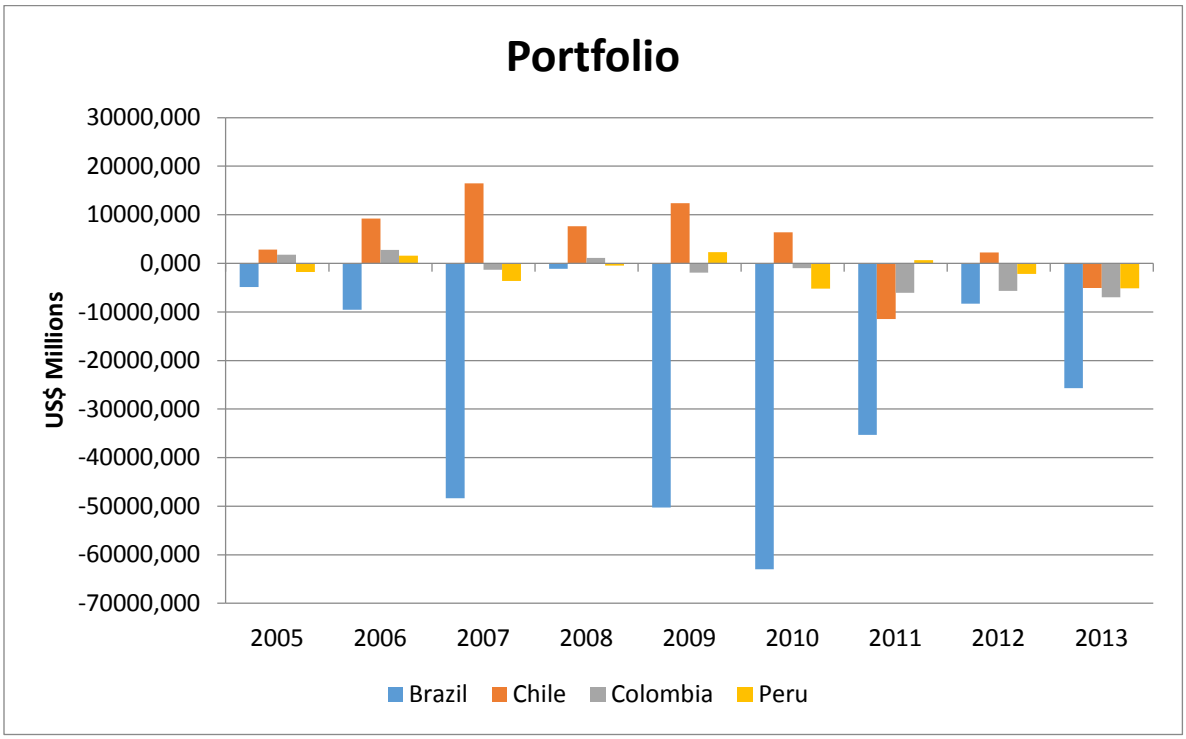
Source: International Financial Statistics.

Chart 15.



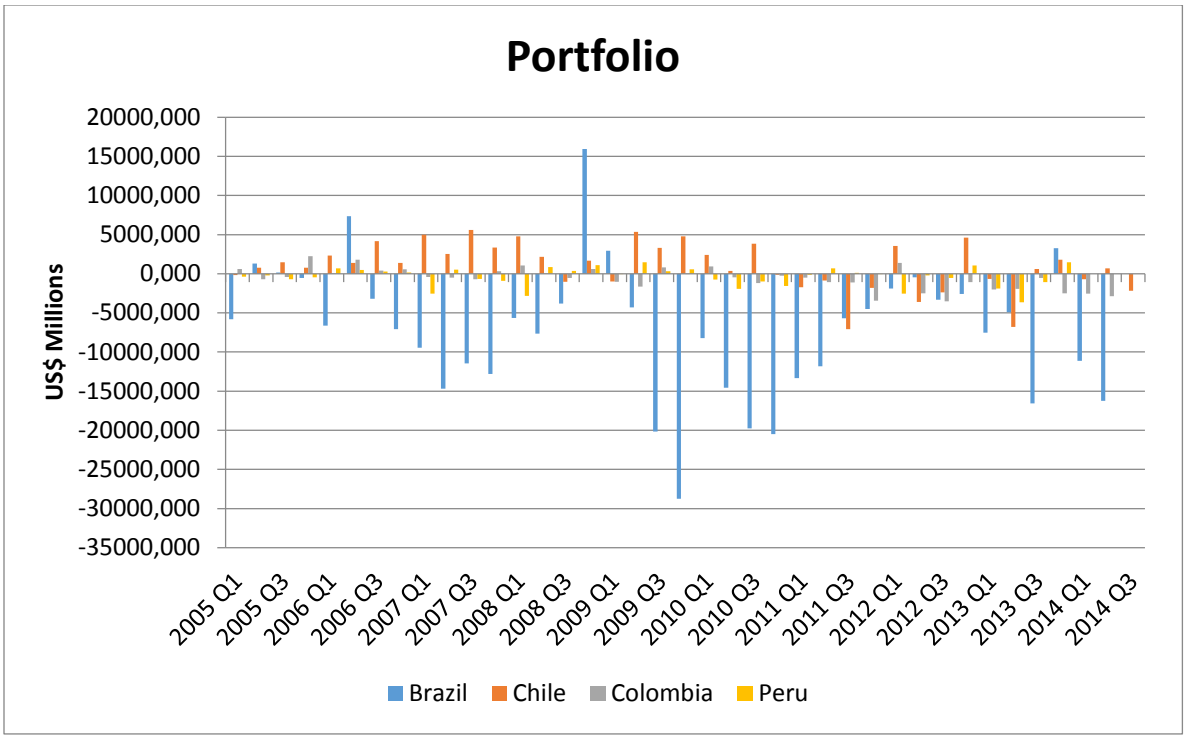
Source: International Financial Statistics.

Chart 16.



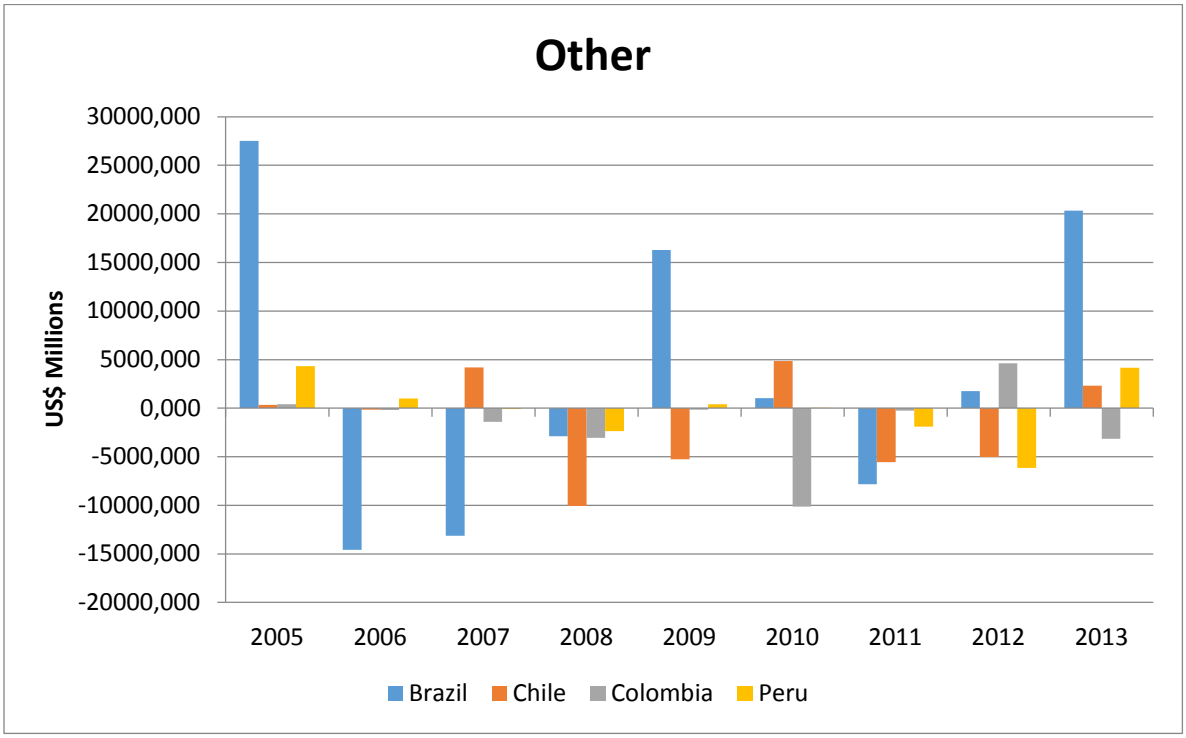
Source: International Financial Statistics.

Chart 17.



Source: International Financial Statistics.

Chart 18.



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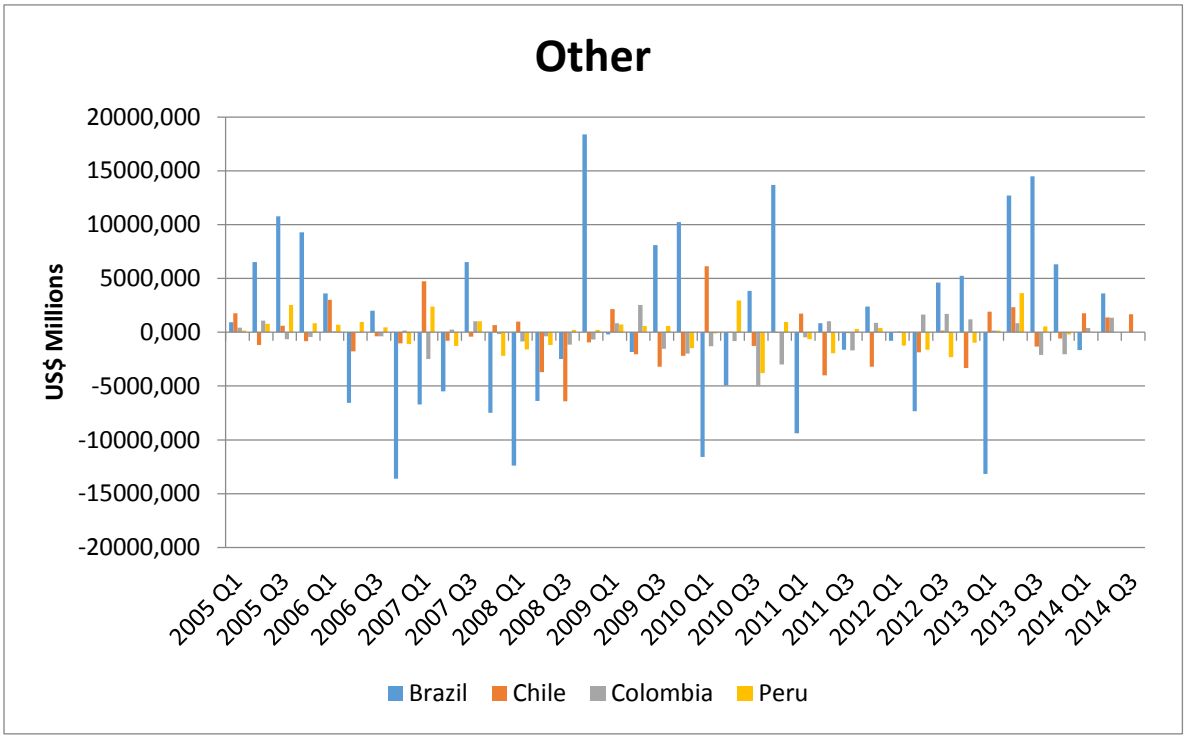

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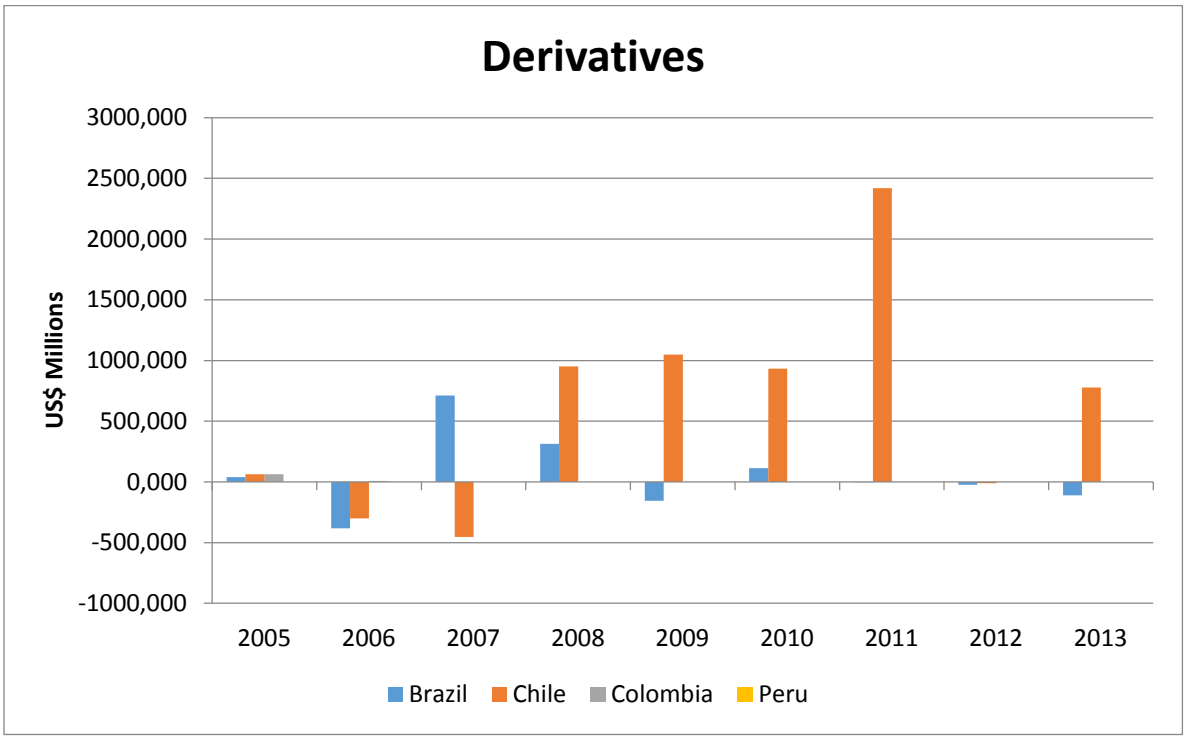

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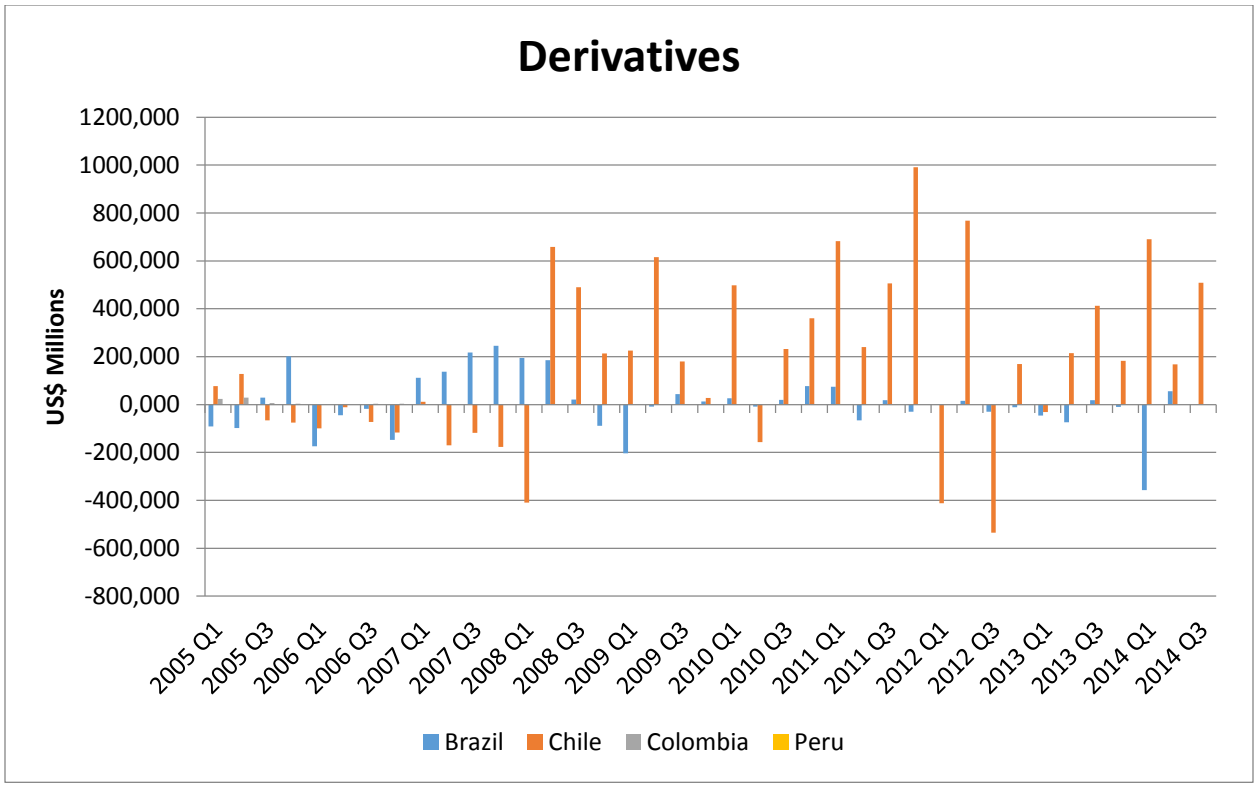

Source: International Financial Statistics.

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