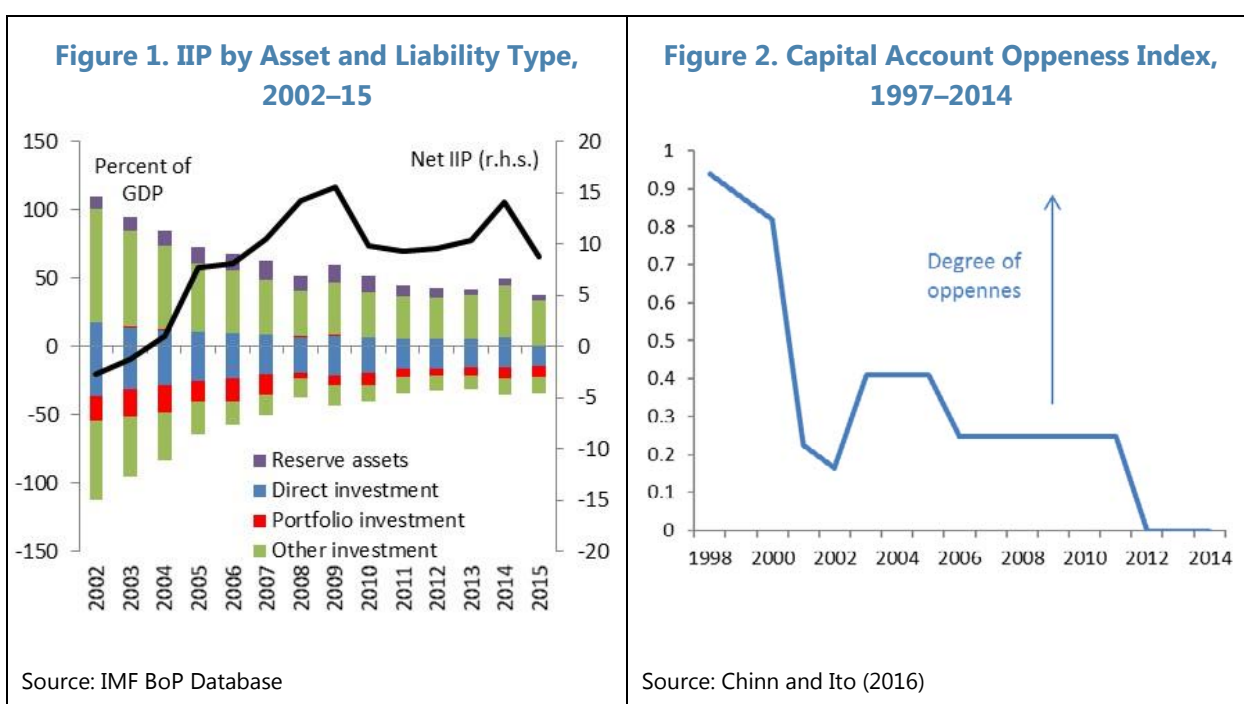


# MEDIUM TERM PROSPECTS FOR ARGENTINA'S EXTERNAL BALANCE SHEET<sup>1</sup>

## A. Introduction

1. **Following the 2001/2 crisis, Argentina has experienced a steady contraction in its external balance sheet.** After a build-up of external imbalances in the late 1990s, the 2001/2 crisis precipitated a collapse in the currency, sovereign default and large scale private sector debt restructuring: all of which led to significant external deleveraging (Figure 1). This trend of external balance sheet contraction continued for the proceeding decade, as capital account openness declined (Figure 2). An improvement in the terms of trade and a current account surplus meant that liabilities declined at a faster rate than assets, leading to the net International Investment Position (IIP) becoming positive and reaching 9 percent of GDP in 2014.



2. **Argentina's external balance sheet looks set to expand in coming years, with important implications for the economy.** The new administration has undertaken a number of measures that should allow greater integration into global financial markets. This includes—i) removing significant capital and current account restrictions; ii) reaching a settlement with sovereign holdout creditors; and iii) allowing the exchange rate to float. These measures are likely to generate an expansion of Argentina's external assets and liabilities, as foreign capital is used to fund domestic investment and support consumption, and to a lesser extent, domestic savers seek to diversify their portfolios abroad. In fact, there is already evidence of this balance sheet expansion in 2016—most

<sup>1</sup> Prepared by Alex Pienkowski and Jose Luis Saboin.

notably, significant general and local government international debt issuance. As of end-September 2016, gross external debt issuance has been US\$37.5 billion (7 percent of GDP), and this is likely to set the stage for greater private sector involvement in the future.

3. **The objective of this is to SIP is to analyze how Argentina’s external balance sheet might look like in the medium term.** To do so, an econometric model based on a panel of emerging markets is estimated that yields the external asset, liability and net external position that is consistent with the long-term values of their determinants. Once we have estimated the potential expansion of Argentina’s balance sheet, we look for countries that have experienced a similar transition over the last three decades. This event analysis identifies how these external balance sheet transitions have occurred, and considers potential risks associated with these events.

4. **The results of the analysis are twofold:**

- First, Argentina’s external balance sheet has the potential to change dramatically in coming years. External assets and liabilities have the potential to double in size relative to GDP; and the net IIP position is likely to become negative.
- Second, while this poses significant benefits in terms of investment funding and risk diversification, the event study analysis suggests that a balance sheet expansion of the size envisaged for Argentina could lead to a decline in external competitiveness and greater financial sector vulnerabilities.

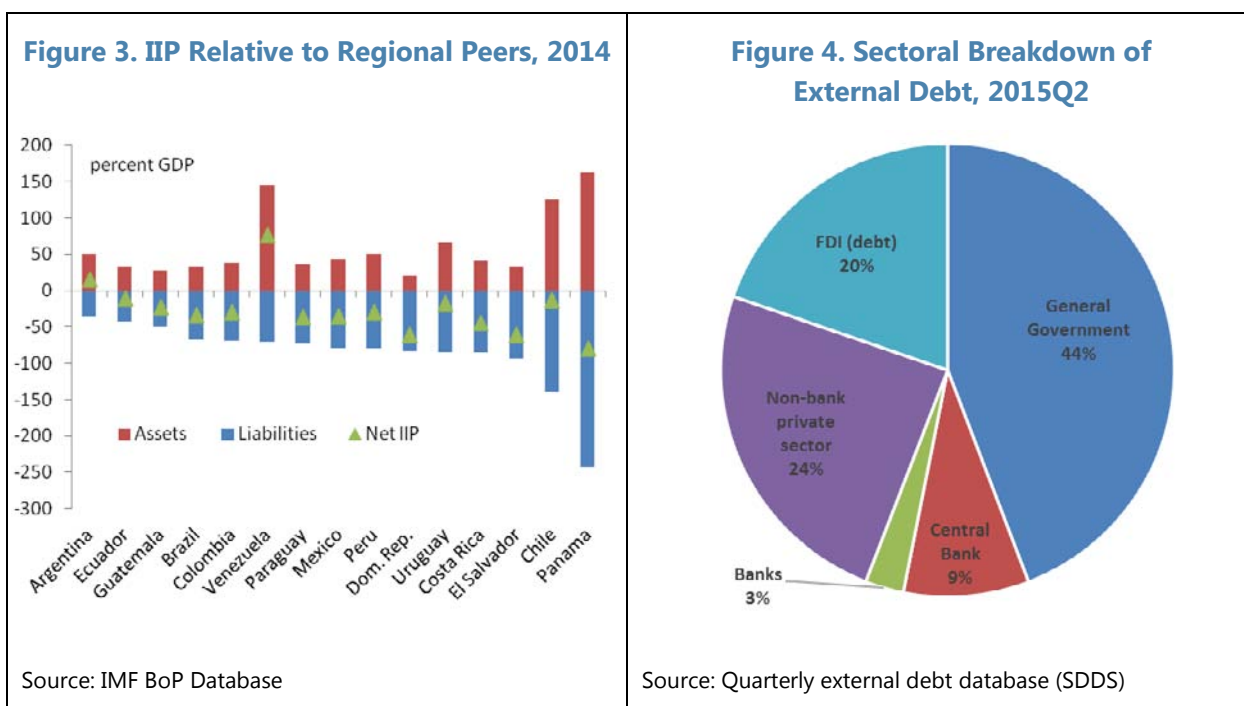
## B. The External Balance Sheet Today

5. **Compared to its regional peers, Argentina stands out as having both a small gross external balance sheet and a positive net position.** Figure 3 shows that Argentina’s external liabilities as a share of GDP is the smallest of all Latin American EMs. Assets as a share of GDP are closer to the Latin America EM average, and hence the net IIP is positive. This positive net position is unusual for an EM, where typically a high marginal product of capital relative to advanced economies attract net inflows. It is important to note, however, that some caution is required when considering data on the external balance sheets. Some balance sheet components are derived from accumulated flows data, which may be inaccurate or subject to subsequent valuation changes. This is particularly the case for Argentina’s external assets, where private financial wealth may have been converted to less liquid real assets or consumed abroad. This could mean that Argentina’s external assets may be overestimated in size.<sup>2</sup>

6. **Leverage ratios are not high, and most external debt is issued by the official sector.** Around one-third of liabilities are in the form of equity, which is typically viewed as safer than capital-flight-prone debt instruments. This is similar to the ratio for other Latin America EMs. Similarly, Argentina’s reserve assets-to-liabilities ratio (16 percent) is close to the regional average.

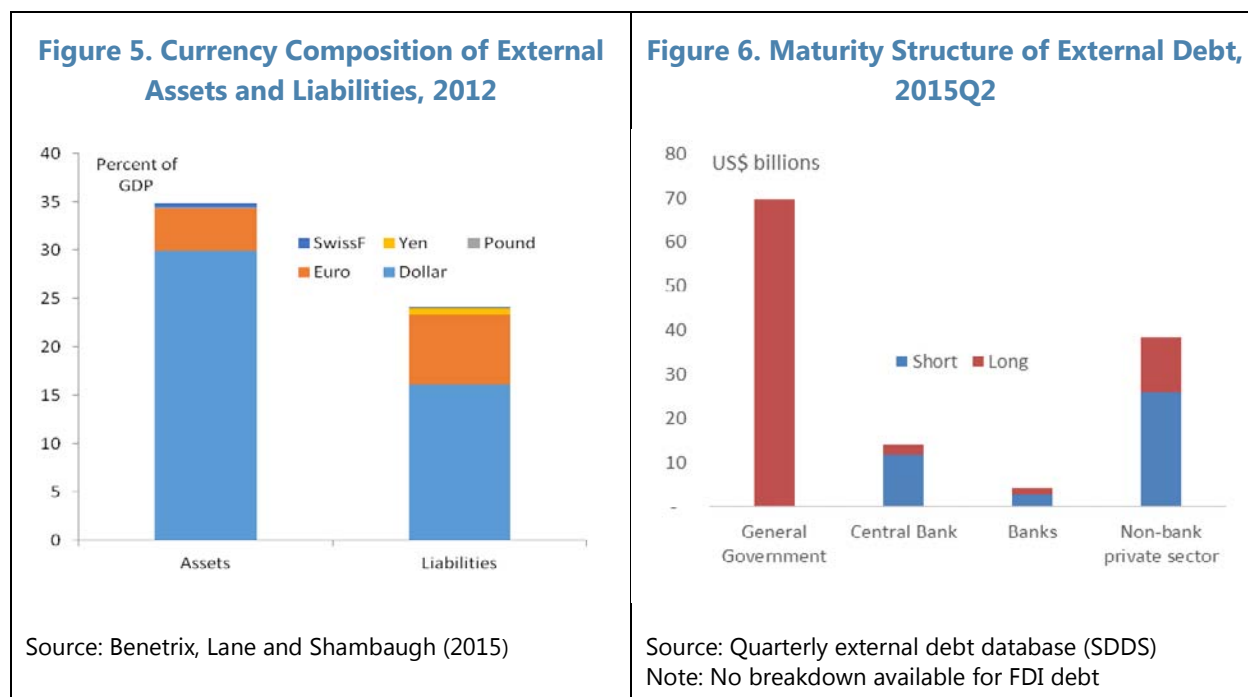
<sup>2</sup> For instance, Argentina’s IIP statistics suggest that it has ‘other investment assets’ from the non-bank private sector of around US\$200 billion. To put this in perspective, this is equivalent to 10 percent of all external ‘other investment liabilities’ of the US banking system.

Such leverage ratios, along with Argentina’s overall positive net IIP position, suggests that at present the economy is not overly reliant on debt financing to fund investment and consumption. The general government and central bank account for over 50 percent of external debt. In contrast, the banking sector has borrowed very little from abroad, implying very little intermediation through the banking sector. Part of this is due to strict regulatory controls imposed on the cross border operations of banks, including limits on overall exposure. Instead, the non-bank private sector seems to borrow directly from abroad (Figure 4). This borrowing is concentrated in the petroleum and industrial manufacturing industries; and predominately associated with credit lines for import financing. Given that the non-bank private sector makes up over 70 percent of GDP, its share of overall external debt is relatively small.



7. **The external balance sheet is robust to currency risk, but is more vulnerable to liquidity risks.** Estimates of the currency composition suggest that virtually all external assets and liabilities are denominated in foreign currencies (Figure 5). Given the positive net IIP position, a currency depreciation will, all things being equal, boost the net wealth of residents. This provides a natural buffer to external shocks. There may, however, be currency mismatches within particular sectors or agents within the economy, whereby exchange rate shocks could still cause balance sheet problems that affect the real economy. In terms of maturity risks, around one-third of total external debt is short-term.<sup>3</sup> Furthermore, this short-term debt seems to be concentrated in the non-bank private sector (Figure 6). This result is perhaps not surprising, given that such borrowing is often associated with import financing. However, the reliance on this form of financing still has the potential to increase liquidity risks for the non-bank private sector.

<sup>3</sup> Defined as remaining maturity of one year or less.



### C. Estimating the Medium-Term Position

8. **Argentina has the potential to substantially increase the size of its external balance sheet in coming years.** The removal of virtually all capital and current account restrictions, the settlement with sovereign holdout creditors and perceived improvements in the investment climate will all contribute to greater capital flows, and a build-up of asset and liability stocks. In order to “predict” the external position that Argentina could reach over a medium-term horizon, we estimate a reduced-form model of the determinants driving the net IIP, external assets and external liabilities. By speculating on the medium-term values of the explanatory variables in the model, medium-term projections of the external balance sheet are derived.

9. **Panel regression models are constructed to estimate the net IIP position and the gross level of assets and liabilities.** Lane and Milesi-Ferretti (2001)<sup>4</sup> were the first to systematically estimate external assets and liabilities for a large sample of countries through time. This analysis explored trends in gross and net positions, and the composition of balance sheets, but did not attempt to estimate predicted values based on a range of explanatory variables. Instead, the analysis presented here draws upon the methodology used in the IMF’s External Balance Assessment. This predicts ‘current account norms’ based on country specific characteristics—many of which should also apply to the *stock* position of external capital flows. In the analysis employed here, a sample of 43 EMs over the period 1991–2014 is used to estimate three models to explain the net IIP position, and gross assets and liabilities. A range of estimation strategies and explanatory variables are tested, with a random effects model (corrected for AR(1) disturbances) chosen for the final specification.

<sup>4</sup> *The external wealth of nations: measures of foreign assets and liabilities for industrial and developing countries*, Journal of International Economics

These equations include the following explanatory variables (see Appendix for a summary of the model):

- *GNDI per capita*<sup>5</sup>—richer countries should be able to sustain higher levels of gross saving and borrowing, as agents in such economies have greater disposable income to save or service debt. As incomes rise, the marginal product of capital should decline, leading to less *net* borrowing i.e. the net IIP should increase with incomes. In addition, this variable should capture a number of ‘omitted variables’ related to aspects of financial development or institutional capacity, not captured below.
- *Real per capita GNDI growth*—stronger growth is typically associated with a larger current account deficit, as residents borrow to consume and invest. This suggests a negative relationship between growth and the net IIP position. The relationship with gross assets and liabilities is more ambiguous.
- *Public debt*—A higher public debt to GDP ratio is likely to imply larger external liabilities and hence a smaller/negative net IIP position.<sup>6</sup> The impact on assets is ambiguous.
- *Global interest rates*—global interest rates influence the cost of borrowing and the opportunity cost of saving, and so should influence the stock of external assets (positively) and liabilities (negatively). An increase in global rates should improve the overall IIP position.<sup>7</sup>
- *Savings rate*—A higher national savings rate will likely increase the net IIP position (i.e. through current account surpluses), and have an ambiguous impact on gross external assets and liabilities.
- *Old age dependency ratio*—the ratio of dependents to workers is likely to influence the saving rate. A high ratio would suggest a greater tendency to run down savings or borrow, therefore the relationship with the net IIP position is likely to be negative.
- *Financial development*—A more developed financial market<sup>8</sup> is likely to increase the ability to intermediate cross border capital flows, and thus increase the size of external balance sheets. The impact on the net position is not clear.

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<sup>5</sup> This variable is denoted in real U.S. dollars, and is calculated relative to the cross-country average to ensure stationarity.

<sup>6</sup> While it is acknowledged that some public debt will take the form of external liabilities, the variable is included because the drivers of government borrowing are likely to be very different from those that drive private sector borrowing and lending decisions. The results are robust if this variable is excluded, but the model fit declines. Lane and Milesi-Ferretti (2001) find a strong inverse correlation between public debt and the net IIP.

<sup>7</sup> The global interest rate is proxied by the U.S. T-bill rate deflated by U.S. GDP deflator minus its fitted time trend estimate, which ensures stationarity.

<sup>8</sup> Based on an index from ‘[Introducing a New Broad-based Index of Financial Development](#)’, Svirydzhenka (2016).

- *Investor protection*—Countries with strong investor protection<sup>9</sup> are more likely to attract capital inflows (external liabilities), but should not have a direct impact on external assets.
- *Currency and sovereign debt crises*— Currency crises will have an immediate impact through the exchange rate by increasing foreign currency denominated assets and liabilities relative to GDP. Sovereign debt crises can have a direct effect of reducing external liabilities following a default or restructuring.<sup>10</sup>

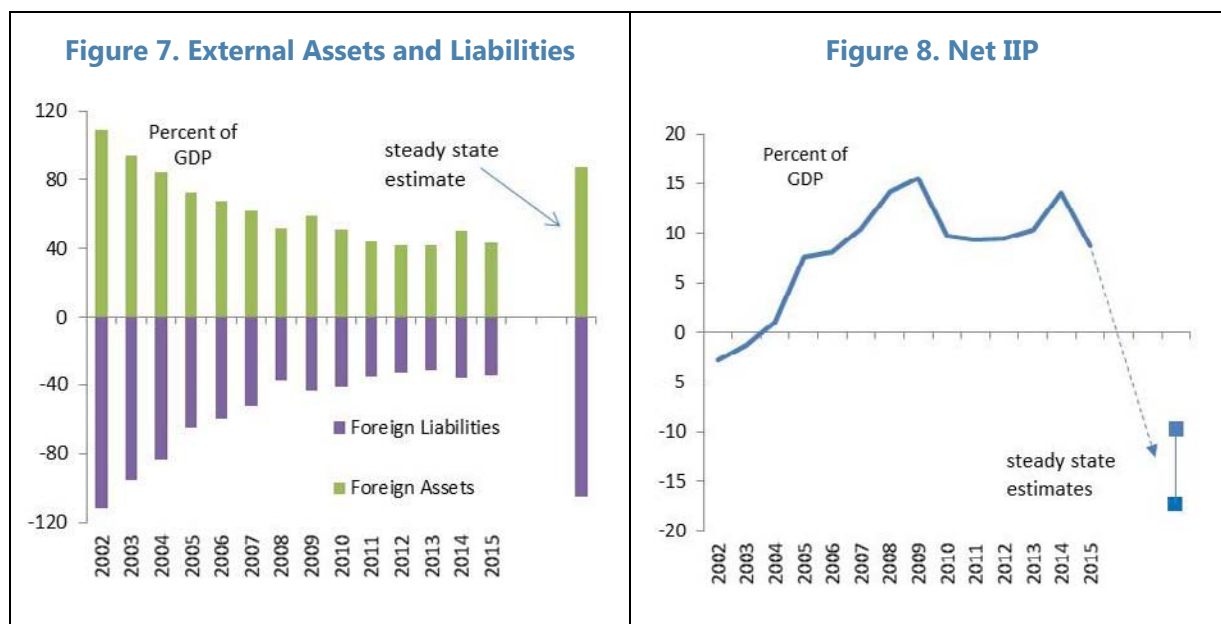
10. **The model predicts that the external balance sheet will double in size, and the net IIP position will become negative.** Using the model estimated coefficients, medium-term levels are derived for gross assets, gross liabilities and the net IIP. For most variables, WEO projections for 2021 are used to characterize the ‘medium-term’.<sup>11</sup> Where this is unavailable (financial development, dependency ratio, investor protection), the current growth trend is extrapolated (see Table A1). The implied level of assets for Argentina is estimated to be around 90 percent of GDP, compared to 50 percent of GDP today. Liabilities are estimated to increase by even more—from 35 percent in 2014 to 105 percent in the medium term (Figure 7). Combined, this implies a shift in the net position to -15 percent of GDP (from +9 percent in 2015). The net IIP model predicts a medium term level of -10 percent of GDP, very similar to the estimates derived from gross assets and liabilities (Figure 8).

11. **The estimated net IIP can also be used for the ‘external stability’ component of the exchange rate assessment.** Annex I considers Argentina’s current exchange rate relative to its equilibrium level. One of the approaches used to assess exchange rate valuation is the ‘external stability’ approach, which considers whether the current account is consistent with a sustainable net IIP. This analysis provides a consistent and robust means to estimate this ‘steady-state’ net IIP position, and implies a current account of [-2.5] percent of GDP to reach this level over the medium term.

<sup>9</sup> This is proxied by the ‘[Index of Economic Freedom](#)’ published by the Heritage Foundation.

<sup>10</sup> Dummy variables for currency and sovereign debt crises are included from ‘[Systemic Banking Crises Database: An Update](#)’, Valencia and Laeven (2012).

<sup>11</sup> While the year 2021 is used as a benchmark for the medium-term, Section D will consider the pace and characteristics of a potential transition in more detail.



### Transition and risks

12. **The analysis above implies significant changes to the balance sheet positions of residents over the medium term, but does not provide insight into the pace and characteristics of any potential transition.** This will be considered below.

13. **Event study analysis is used to consider the experience of other EMs that went through large external balance sheet transitions.** The parameters of this analysis balance the need to match Argentina's transition characteristics with the need to have an adequate sample coverage. As such, events are identified if they meet two criteria – i) the absolute size of the external balance sheet (gross external assets plus liabilities) grows by than 50 percentage points of GDP or more, over a 5-year period, and; ii) the net IIP position declines by 20 percentage points of GDP, also over a 5-year period.<sup>12</sup> Countries that experienced a currency crisis and those that are major oil exporters are excluded. The event analysis considers the macroeconomic characteristics during the 5 years of external balance sheet expansion, and the period following the expansion episode (5 years after, where data is available). In the charts and tables below, time 't' refers to the point in time when the 2 criteria for the event analysis were first met. From the sample of 43 EMs, 17 event episodes are identified—these are listed, along with the initial external balance sheet characteristics, in Table 1. Seven of these countries received IMF supported programs during this external balance sheet expansion (Armenia, Bulgaria, Croatia, Georgia, Jordan, Romania, and Ukraine). And virtually all countries experienced an increase in capital account openness during the balance sheet expansion episodes (Figure 9).

<sup>12</sup> Such criteria often lead to several sequential events being identified in the overall sample. Only the first episode for each country is used in this analysis.

**Table 1. Initial Conditions for Event Analysis Episodes**

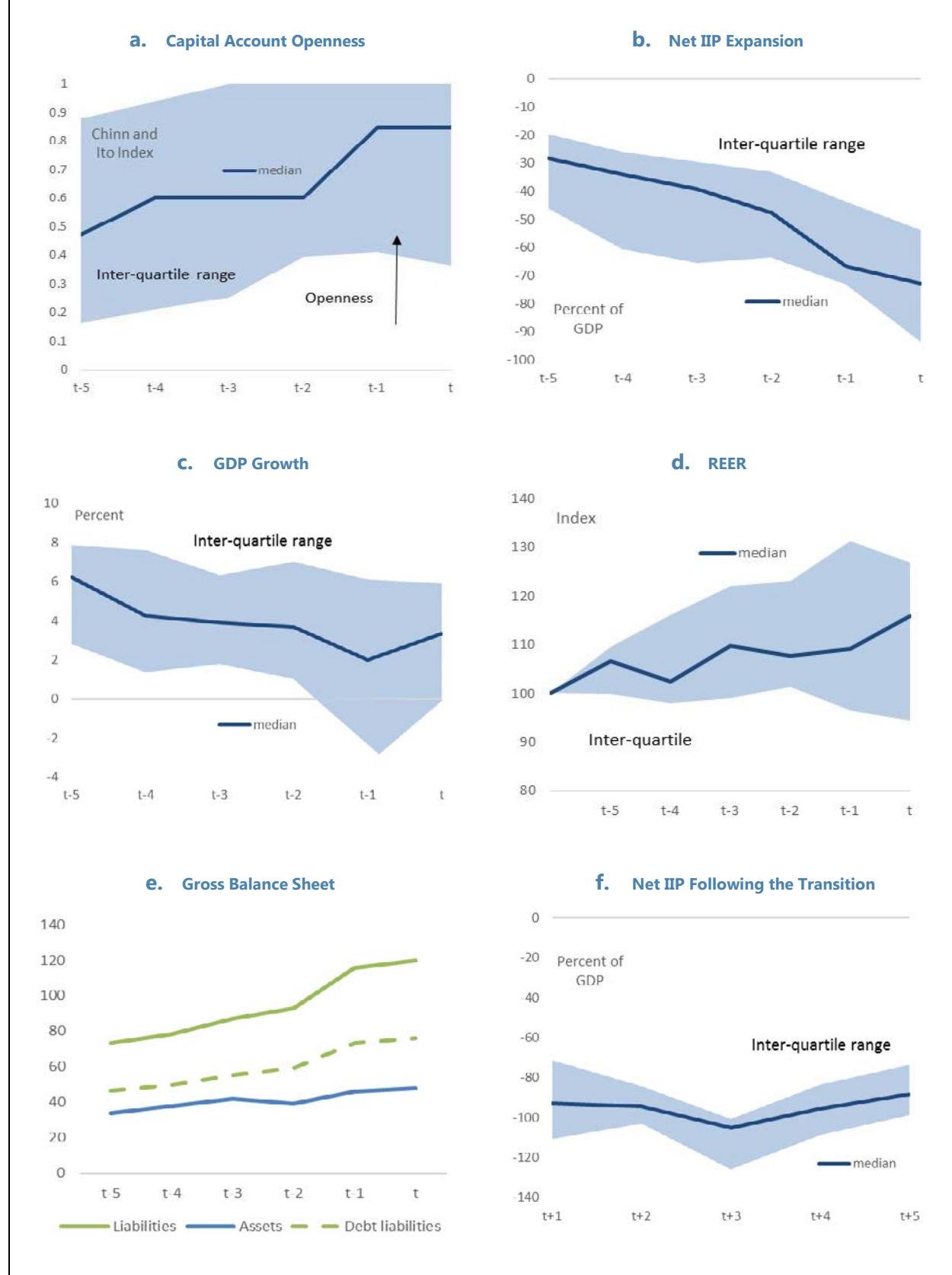
	Date = t-5	Net IIP	Assets	Liabilities
		<i>percent of GDP</i>		
Albania	2007	-20.3	33.8	54.0
Armenia	1996	-19.6	21.2	40.8
Armenia	2005	-39.9	21.2	61.1
Azerbaijan	1995	-12.1	16.1	28.2
Bulgaria	2002	-29.0	59.6	88.7
Croatia	1999	-28.3	36.3	64.5
Fiji	2005	-21.6	28.2	49.9
Georgia	2004	-66.6	21.1	87.6
Hungary	2001	-66.4	43.4	109.9
Jordan	1999	-65.5	99.8	165.3
Mauritius	2006	1083.7	1169.0	85.3
Paraguay	1991	-4.4	29.9	34.3
Poland	2008	-46.1	27.3	73.4
Romania	2005	-29.3	29.3	58.6
Serbia	2008	-63.0	40.5	103.5
Trinidad and Tobago	2008	-3.3	79.4	82.7
Ukraine	2008	-21.7	56.2	78.0

**14. The decline in the net IIP tends to be prolonged and is accompanied by slowing growth.**

The median decline in the net IIP position over the 5-year expansion period is 45 percentage points of GDP, and this typically occur gradually over this time horizon (Figure 9b). This transition is also associated with a decline in the pace of GDP growth (Figure 9c). A possible explanation is that the episodes identified here tend to be associated with a loss of external price competitiveness caused by an appreciation of the REER. Across the sample median, the REER appreciated by around 15 percent during the balance sheet expansion (Figure 9d), perhaps driven by high capital inflows. Investment rates also decline over this period. These results are consistent with analysis of capital flows surges by Cardarelli, Elekdag and Kose (2009). They find that such events are associated with an initial acceleration of growth, followed by weaker activity, associated with real exchange rate appreciation. Median holdings of reserve assets remained largely constant for the event analysis sample, at around 20 percent of GDP. However, given that Argentina is below its optimal level of reserves (see Annex I), the accumulation of such assets could help mitigate any loss of exchange rate competitiveness and provide buffers in case capitals inflows suddenly stop.



**Figure 9. Selected Indicators from External Balance Sheet Expansion Episodes**



**15. The expansion of external liabilities does not imply an overreliance on debt financing.**

The median increase in external liabilities is 45 percentage points of GDP within the event analysis sample, while assets grew by an average of 15 percentage points of GDP. Given the parameters of event analysis, it is not surprising that liabilities grow at a faster pace than assets (Figure 9e).<sup>13</sup> More interesting, however, is that the proportion of debt as a share of overall liabilities remains very close to the sample average (60 percent of total liabilities) during the entire balance sheet expansion process i.e. equity finance expands at the same pace as debt accumulation. This suggests that residents typically do not need to resort to excessive debt financing in order to access capital markets during expansion episodes. Following the balance sheet expansion ‘event’, the growth of assets and liabilities stabilizes, and the net IIP remains largely stable (Figure 9f).

**16. The increase in liabilities during the expansion is largely driven by the private sector.**

During these external balance sheet expansions episodes, average public-debt-to-GDP ratios actually decline from around 47 to 41 percent of GDP, implying that this expansion was primarily driven by the private sector. Perhaps not surprisingly, therefore, two countries subsequently experienced banking crises (Hungary 2008 and Ukraine 2015) following the expansion—a much higher incidence than the sample average (12 percent compared to 2 percent overall). A *further* three countries received IMF supported packages during the subsequent two years (Armenia 2010, Croatia 2004 and Romania 2011). Following these episodes, growth fell, liabilities increased and the net IIP worsened (presumably due to valuation effects). The small sample size means that inferences from this result need to be approached cautiously. However, Cardarelli et al (2009) find that around one-third of capital inflow surges end in a ‘sudden stop’ or currency crisis. And it is clear that any rapid expansion of external balance sheets, especially from a low base, poses risks to financial stability.

## D. Conclusion

**17. After a decade of isolation from international capital markets, Argentina’s has a small external balance sheet with few vulnerabilities.** With the smallest external liability-to-GDP ratio of all Latin American EMs and a positive net IIP, Argentina is broadly resilient to external shocks, especially exchange rate risk. However, there may be pockets of vulnerability from short-term debt in the non-bank private sector.

**18. External assets and liabilities have the potential to grow substantially in coming years, and the net position is likely to turn negative.** Cross country panel regression analysis implies that the external balance sheet has the potential change dramatically. Gross assets and liabilities could more than double in size; and the net IIP position is likely to become negative.

**19. The expansion is likely to be gradual, but dominated by the private sector, increasing vulnerabilities in this area.** Event study analysis suggests that this transition may occur at a gradual pace, and does not need to be overly dependent on debt finance. However, the expansion is likely

<sup>13</sup> When the event analysis parameters are solely determined by an expansion of the balance sheet (and not the decline of the net IIP position), then the growth of assets and liabilities is broadly proportional.

to be driven by the private sector, which implies the need for vigilance in this sector. The authorities should be particularly focused on an overly rapid expansion of the currently small banking sector, which has little experience in intermediating international capital flows.

20. **Policy considerations from this analysis include:**

- Is the concentration of short-term debt in the non-bank private sector a risk to the real economy? As balance sheets grow, what prudential measures could be used to prevent liquidity risks growing?
- What measure can be taken to avoid an overvalued exchange rate as the net IIP position grows? Potential policy measures include – i) reserve accumulation to lean against real appreciation and build buffers; ii) fiscal consolidation to limit external financing and reduce crowding-out; iii) supply side policies to improve non-price competitiveness.
- How can the ‘right sort’ of capital flows be attracted? Given that long-term, local currency or equity based finance provides for more resilient balance sheets, what policy can be pursued to *attract* such inflows? Could measures (including capital controls) be needed to *prevent* riskier inflows?
- Is the banking sector ready to scale-up its external balance sheet? What prudential measures could be used to ensure that banks are not overly exposed to currency and liquidity risks, whilst allowing them to access international markets? What structural and institutional reforms can be adopted to build long-term resilience to external shocks?

## Appendix

I. This appendix provides more details on the empirical strategy used to panel regression models used to predict ‘steady-state’ values for the net IIP, assets and liabilities.  $Y_{i,t}$  denotes the dependent variable which is modeled as:

$$Y_{i,t} = \alpha + bX_{i,t} + \mu_{it}$$

II. Where  $X_{i,t}$  includes exogenous (and in some cases endogenous and/or predetermined) covariates for country  $i$  at time  $t$ ,  $b$  is a relative coefficient, and  $\mu_{it}$  is a mean zero error term that incorporates unobserved heterogeneity. Three equations are modeled using this approach to estimate – i) the net IIP; ii) gross external assets, and iii) gross external liabilities. All three are expressed as a ratio of GDP.

III. In line with previous literature<sup>1</sup>, we include the following variables as regressors for a *baseline* model specification:

- demeaned log of real per capita disposable income (GNDI) (IMF WEO database)
- real growth rate of per capita GNDI (IMF WEO database)
- public debt to GDP ratio (IMF WEO database)
- trend-demeaned global interest (IMF WEO database)
- old age dependency ratio (World Bank WDI database)

IV. At a second stage, this set of regressors is complemented by other variables, namely:

- gross national savings rate (IMF WEO database)
- financial development index (Index number from X to X –from [Introducing a New Broad-based Index of Financial Development](#), Svirydzhenka, 2016)
- inflation (a bounded, 0 to 1 indicator) (IMF WEO database)
- percent change in terms of trade (IMF WEO database)
- current account openness (measured as exports and imports over GDP) (IMF WEO database)
- index of capital account openness (a bounded, 0 to 1 from Chinn and Ito, 2015)
- financial crisis event time dummies ([‘Systemic Banking Crises Database: An Update’](#), Valencia and Laeven, 2012)
- an index of political risk (from X to X – International Country Risk Group database)
- an index of economic freedom (as proxy for investor protection) (from X to X, from [‘Index of Economic Freedom’](#) database published by the Heritage Foundation), and
- an increasing time trend from the first to the last year of the sample.

<sup>1</sup> Lane and Milesi-Ferretti (2001), IMF EBA (2013).

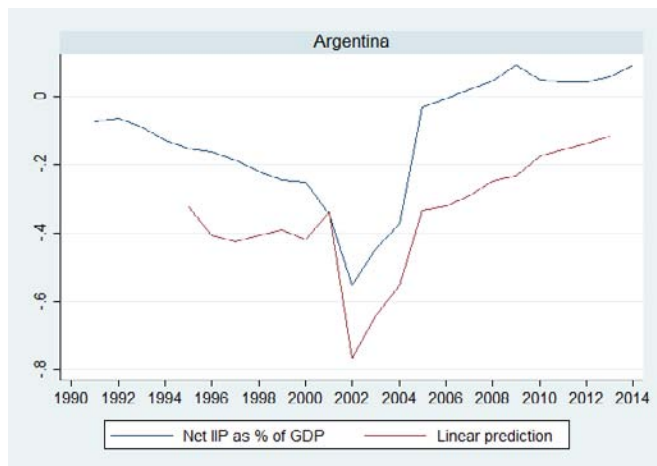
V. All variables rejected the null hypothesis of non-stationarity using the panel unit root tests for unbalanced datasets of Im Pesaran Shi (2003) and Choi (2001).<sup>2</sup> We then proceeded to estimate a series of static models. First, we estimate a static model using ordinary least squares (OLS) applied to both a cross-section sample of country averages for the time of the sample and a pooled panel sample, correcting standard errors for heteroskedasticity and autocorrelation. Results are shown in columns 1 and 2 of Tables A2, A3 and A4. As OLS estimations suffer from potentially severe econometric problems (omitted variable bias due to absent country- and time-fixed effects, endogeneity of the variables, lack of dynamics, etc.) we then estimated fixed and random effects models (columns 3 and 4 in the tables). Hausman tests were performed to the three specifications and results indicated that, for the Net IIP, the random effects model was more appropriate, while for the stocks the coefficients of the fixed effects and random effect models were not statistically different from each other.

VI. As the random effects model was preferred, a Breusch-Pagan test was performed to test the null hypothesis of no panel effect. The test's results revealed that in all cases the null hypothesis was rejected, indicating the viability of the random effects estimator as our baseline model. Such baseline models were also tested and corrected for heteroskedasticity and autocorrelation (column 5) as well as for common time effects (column 6). Finally, column 7 shows our preferred model, which is the same model as in column 6 but eliminating the statistically insignificant regressors' coefficients.

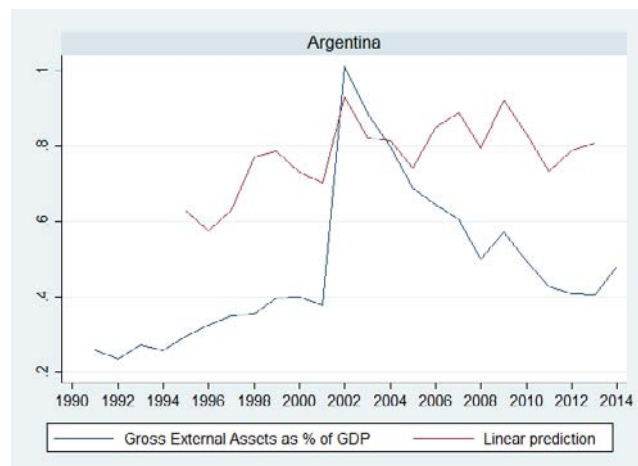
Variable	Steady state value	Contribution to Predicted Value			Note
		Net IIP	Assets	Liabilities	
Global real interest rate (%)	1.3	9.9	2.2	-7.9	WEO forecast
Real GNDI per capita (index)	140	15.8	16.4	6.7	WEO forecast (2.1% pa average from 2015-2021)
GNDI growth (%)	2.9	-1.0	-2.1	-1.2	WEO forecast
Public debt to GDP (% GDP)	46	-15.1	8.0	23.6	WEO forecast
Dependency ratio (%)	20	-78.3	-30.6	48.0	Extrapolation of existing growth rate
Financial development (index)	36	-15.6	23.9	39.8	Extrapolation of existing growth rate
Investor protection (index)	51	-38.4	1.3	41.0	Extrapolation of existing growth rate
Savings rate (%)	16	2.2	1.3	-1.0	WEO forecast
Currency crisis	0	0	0	0	
Sovereign crisis	0	0	0	0	
Constant	1	110.8	67.3	-44.0	
<b>Predicted value</b>		<b>-9.7</b>	<b>87.7</b>	<b>105.0</b>	

<sup>2</sup> We acknowledge that this results can be tested for robustness as their alternative hypotheses call for some panels to have unit roots. However, the rejection of the null allows us to continue with stationary analysis in a reduced form model.

**Figure A1. Model Fit: Net IIP**



**Figure A2. Model Fit: External Assets**



**Figure A3. Model Fit: External Liabilities**

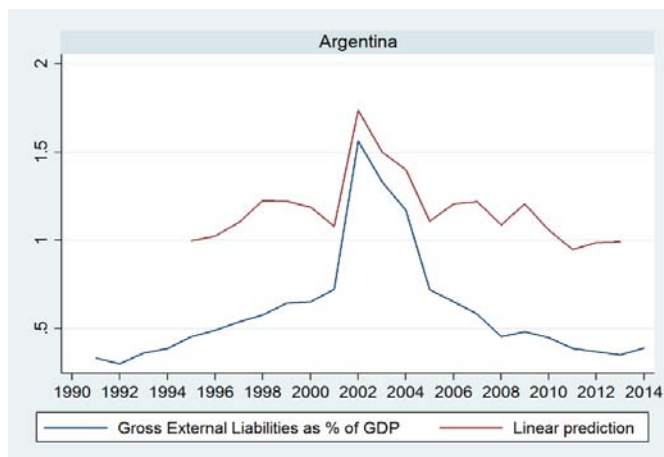


Table A. Model Result: Net IIP

	Dependent variable: Net IIP						
	OLS	Pooled OLS	FE	RE	RE_AR	TWO WAY	PREFERRED
r_ln_rgndi_pc_usd	0.420*** (0.140)	0.392*** (0.031)	0.109 (0.095)	0.307*** (0.074)	0.225*** (0.064)	0.271*** (0.068)	0.154** (0.062)
dln_rgndi_pc_usd	0.727 (1.429)	-1.142*** (0.331)	-0.400*** (0.134)	-0.394 (0.279)	-0.423*** (0.098)	-0.539*** (0.109)	-0.331*** (0.069)
pubdebt_gdp	0.263 (0.505)	-0.135 (0.090)	-0.393*** (0.069)	-0.308** (0.153)	-0.331*** (0.075)	-0.307*** (0.077)	-0.327*** (0.067)
dtot	5.434 (5.237)	0.232 (0.224)	-0.126 (0.085)	-0.128* (0.072)	-0.092* (0.052)	-0.082 (0.054)	
infl	3.139 (2.641)	-0.046 (0.419)	-0.047 (0.194)	-0.112 (0.281)	0.028 (0.169)	-0.118 (0.186)	
us_rint_d	0.000 (.)	0.285 (1.284)	0.693 (0.486)	0.723 (0.640)	0.258 (0.500)	11.554** (5.044)	22.628* (12.444)
save_rate	3.204* (1.621)	2.980*** (0.263)	0.686*** (0.180)	0.572 (0.367)	0.512*** (0.177)	0.483*** (0.181)	0.141 (0.102)
old_dep	-4.711** (2.067)	-2.167*** (0.385)	0.947 (1.816)	-2.783* (1.503)	-3.609*** (0.919)	-3.604*** (0.927)	-3.989*** (0.860)
ca_open	-0.172 (0.252)	-0.307*** (0.056)	0.031 (0.079)	0.041 (0.134)	-0.006 (0.069)	-0.072 (0.075)	
fd_index	-0.589 (0.816)	-0.339** (0.171)	-1.054*** (0.171)	-0.969*** (0.325)	-0.562*** (0.158)	-0.557*** (0.166)	-0.433*** (0.143)
free	-0.007 (0.022)	-0.010*** (0.004)	-0.009*** (0.003)	-0.009*** (0.002)	-0.008*** (0.003)	-0.009*** (0.003)	-0.007*** (0.002)
int_conf	0.024 (0.073)	-0.009 (0.012)	0.017** (0.007)	0.017 (0.015)	0.005 (0.007)	0.004 (0.008)	
TT		0.008 (0.006)	0.012*** (0.004)	0.018*** (0.006)	0.013*** (0.004)		
bnk_cri	0.949 (4.423)	-0.122 (0.122)	-0.051 (0.047)	-0.063 (0.052)	-0.048 (0.034)	-0.052 (0.035)	
cur_cri	-4.828 (4.537)	-0.303* (0.158)	-0.228*** (0.061)	-0.246*** (0.072)	-0.115*** (0.041)	-0.104** (0.042)	-0.074** (0.030)
sov_cri	-1.687 (1.855)	0.162 (0.138)	0.153*** (0.052)	0.157** (0.062)	0.083** (0.037)	0.084** (0.037)	0.049* (0.029)
L.bnk_cri		-0.050 (0.135)	-0.001 (0.052)	-0.004 (0.056)	-0.051 (0.036)	-0.050 (0.036)	
L.cur_cri		-0.327** (0.136)	-0.181*** (0.052)	-0.191*** (0.068)	-0.094*** (0.035)	-0.091** (0.036)	-0.049* (0.026)
L.sov_cri		-0.028 (0.132)	0.020 (0.052)	0.022 (0.052)	0.021 (0.035)	0.025 (0.036)	
ka_open	0.149 (0.379)	-0.015 (0.075)	-0.211*** (0.051)	-0.180* (0.108)	-0.070 (0.053)	-0.088 (0.055)	
Constant	-0.419 (1.729)	0.331 (0.310)	0.327 (0.228)	0.602* (0.348)	0.691*** (0.226)	0.993*** (0.237)	1.108*** (0.194)
r2	0.650	0.569	0.398				
r2_a	0.456	0.552	0.320				
N	43.000	541.000	541.000	541.000	541.000	541.000	789.000

Standard errors in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table A3. Model Result: External Assets

	Dependent variable: External Assets						
	OLS	Pooled OLS	FE	RE	FE_AR	TWO WAY	PREFERRED
r_ln_rgndi_pc_usd	1.071*** (0.336)	0.776*** (0.084)	-0.141 (0.207)	0.310* (0.165)	-0.335 (0.290)	-0.548 (0.356)	0.160 (0.145)
dlh_rgndi_pc_usd	4.560 (3.425)	-0.748 (0.895)	-1.056*** (0.291)	-0.982*** (0.296)	-0.568** (0.240)	-0.490* (0.281)	-0.701*** (0.148)
pubdebt_gdp	-0.716 (1.209)	0.207 (0.244)	-0.078 (0.150)	0.084 (0.147)	0.232 (0.195)	0.240 (0.206)	0.173 (0.142)
dtot	-20.716 (12.548)	-0.634 (0.606)	-0.097 (0.184)	-0.113 (0.188)	-0.087 (0.119)	-0.017 (0.122)	
infl	2.980 (6.328)	-2.022* (1.134)	-0.685 (0.422)	-0.854** (0.429)	-0.201 (0.449)	-0.149 (0.488)	
us_rint_d	0.000 (.)	2.771 (3.475)	2.627** (1.056)	2.569** (1.077)	2.447** (1.159)	14.583 (19.543)	4.960 (26.219)
save_rate	2.362 (3.884)	-1.126 (0.711)	0.439 (0.391)	-0.138 (0.378)	0.282 (0.469)	0.381 (0.496)	0.081 (0.215)
old_dep	-2.114 (4.953)	-4.606*** (1.041)	16.759*** (3.947)	2.415 (2.476)	16.626** (7.901)	14.775* (8.120)	-1.556 (2.079)
ca_open	1.885*** (0.603)	1.880*** (0.151)	0.015 (0.173)	0.326** (0.166)	-0.469** (0.193)	-0.481** (0.206)	
fd_index	-0.165 (1.956)	-1.452*** (0.462)	0.929** (0.371)	0.822** (0.366)	1.004** (0.411)	1.055** (0.435)	0.662** (0.304)
free	0.022 (0.052)	0.019* (0.010)	-0.006 (0.006)	-0.004 (0.005)	-0.004 (0.006)	-0.004 (0.007)	0.000 (0.004)
int_conf	-0.356* (0.175)	-0.154*** (0.033)	-0.046*** (0.015)	-0.037** (0.015)	-0.043** (0.018)	-0.046** (0.018)	
TT		0.026* (0.016)	-0.015* (0.008)	0.004 (0.007)	-0.001 (0.014)		
bnk_cri	-0.973 (10.597)	-0.140 (0.330)	0.085 (0.103)	0.025 (0.105)	-0.010 (0.083)	-0.016 (0.084)	
cur_cri	-16.072 (10.870)	-0.219 (0.427)	-0.054 (0.133)	-0.073 (0.136)	-0.002 (0.098)	-0.014 (0.098)	-0.015 (0.063)
sov_cri	3.106 (4.444)	0.434 (0.373)	0.029 (0.114)	0.044 (0.116)	-0.003 (0.084)	0.033 (0.084)	-0.022 (0.062)
L.bnk_cri		0.098 (0.366)	0.213* (0.113)	0.174 (0.115)	0.085 (0.083)	0.059 (0.083)	
L.cur_cri		-0.186 (0.368)	0.045 (0.113)	0.021 (0.116)	0.025 (0.084)	0.009 (0.086)	0.008 (0.055)
L.sov_cri		0.294 (0.356)	0.105 (0.113)	0.103 (0.116)	0.046 (0.082)	0.060 (0.083)	
ka_open	0.031 (0.908)	0.036 (0.202)	0.013 (0.110)	0.090 (0.111)	0.124 (0.138)	0.103 (0.143)	
Constant	1.081 (4.144)	0.382 (0.838)	-0.300 (0.495)	0.565 (0.499)	-0.473* (0.275)	-0.124 (0.316)	0.673 (0.433)
r2	0.620	0.475	0.159				
r2_a	0.409	0.455	0.050				
N	43.000	541.000	541.000	541.000	498.000	498.000	789.000

Standard errors in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



Table A4. Model Result: External Liabilities

	Dependent variable: External Liabilities						
	OLS	Pooled OLS	FE	RE	FE_AR	TWO WAY	PREFERRED
r_ln_rgndi_pc_usd	0.651* (0.318)	0.384*** (0.080)	-0.249 (0.202)	0.092 (0.154)	-0.089 (0.290)	-0.311 (0.352)	0.065 (0.144)
dlh_rgndi_pc_usd	3.833 (3.242)	0.395 (0.848)	-0.657** (0.284)	-0.592** (0.290)	-0.226 (0.232)	-0.170 (0.282)	-0.397*** (0.147)
pubdebt_gdp	-0.979 (1.145)	0.343 (0.232)	0.315** (0.146)	0.425*** (0.144)	0.639*** (0.192)	0.606*** (0.207)	0.512*** (0.140)
dtot	-26.150** (11.879)	-0.866 (0.575)	0.029 (0.180)	0.015 (0.185)	-0.015 (0.120)	0.069 (0.124)	
infl	-0.159 (5.991)	-1.976* (1.076)	-0.638 (0.412)	-0.771* (0.421)	-0.271 (0.455)	-0.113 (0.496)	
us_rint_d	0.000 (.)	2.486 (3.296)	1.934* (1.031)	1.866* (1.056)	2.444** (1.170)	31.135 (21.060)	-17.982 (25.993)
save_rate	-0.841 (3.677)	-4.106*** (0.675)	-0.247 (0.382)	-0.769** (0.368)	-0.438 (0.462)	-0.267 (0.499)	-0.065 (0.213)
old_dep	2.597 (4.689)	-2.439** (0.988)	15.812*** (3.854)	3.671 (2.263)	12.048* (6.698)	12.925 (7.899)	2.445 (2.075)
ca_open	2.057*** (0.571)	2.187*** (0.144)	-0.016 (0.169)	0.322** (0.160)	-0.368* (0.195)	-0.332 (0.208)	
fd_index	0.424 (1.852)	-1.113** (0.438)	1.983*** (0.362)	1.780*** (0.356)	1.573*** (0.406)	1.695*** (0.439)	1.102*** (0.301)
free	0.028 (0.049)	0.029*** (0.010)	0.003 (0.005)	0.005 (0.005)	0.004 (0.006)	0.003 (0.007)	0.008* (0.004)
int_conf	-0.380** (0.166)	-0.146*** (0.031)	-0.063*** (0.014)	-0.054*** (0.015)	-0.049*** (0.018)	-0.052*** (0.018)	
TT		0.019 (0.015)	-0.027*** (0.008)	-0.011* (0.007)			
bnk_cri	-1.922 (10.032)	-0.018 (0.313)	0.137 (0.100)	0.080 (0.103)	0.041 (0.084)	0.049 (0.085)	
cur_cri	-11.244 (10.291)	0.085 (0.405)	0.174 (0.130)	0.167 (0.134)	0.091 (0.099)	0.069 (0.100)	0.058 (0.063)
sov_cri	4.793 (4.208)	0.271 (0.354)	-0.123 (0.111)	-0.109 (0.114)	-0.082 (0.085)	-0.052 (0.086)	-0.071 (0.061)
L.bnk_cri		0.148 (0.347)	0.214* (0.110)	0.175 (0.113)	0.150* (0.084)	0.127 (0.084)	
L.cur_cri		0.140 (0.349)	0.226** (0.111)	0.208* (0.114)	0.108 (0.085)	0.094 (0.088)	0.057 (0.055)
L.sov_cri		0.322 (0.338)	0.085 (0.111)	0.081 (0.113)	0.015 (0.083)	0.027 (0.084)	
ka_open	-0.118 (0.859)	0.052 (0.192)	0.223** (0.108)	0.284*** (0.108)	0.166 (0.138)	0.179 (0.143)	
Constant	1.500 (3.923)	0.050 (0.794)	-0.626 (0.484)	0.067 (0.478)	-0.491* (0.275)	-0.334 (0.328)	-0.440 (0.430)
r2	0.568	0.436	0.263				
r2_a	0.327	0.414	0.167				
N	43.000	541.000	541.000	541.000	498.000	498.000	789.000

Standard errors in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$