

**STICKY CAPITAL CONTROLS – NEW DATASET  
TECHNICAL APPENDIX**

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## I. PRESENTATION

In this technical appendix, we describe in detail the methodology used for coding our dataset. This appendix is organized as follows. First, we set forth the definitions, general rules and criteria that guided our coding. Second, we summarized the rules used for estimation of the tax equivalent. Third, we show the crosscheck validation of our database and other data on the literature. Fourth, we present a table summarizing the notation used throughout the dataset. Fifth, we explain the clarifications and exceptions thereof. Finally, we show descriptive statistics regarding observations coded.

## II. SOURCES, GENERAL RULES AND CRITERIA

This section summarizes the rules followed in the coding of the intensive measures of the dataset.

### 1. Definitions.

We build a novel cross-country panel data set on *de jure* measures of capital controls. We consider capital controls to be legal measures that may restrict the free flow of capital across national borders. We add information documenting quantitative (priced-based) as well qualitative (or non-price based) administrative measures. Then, we focus on the price-based measures and on the intensive margin. Additionally, we complement with other macro prudential instruments as we detail below.

#### 1.1. Capital Controls: Quantitative Measures.

- 1.1.1. *Unremunerated reserve requirements to cross-border flows* ("URR") are requirements to constitute a compulsory deposit of a non-zero fraction of the intended transaction for a legally mandated period.
- 1.1.2. *Taxes* are compulsory contributions that are levied on transactions that imply cross-border flows and are payable to the national tax authorities.
- 1.1.3. *Quantitative Limits or restrictions* are any restrictions on quantities, maturity or percentages that affect cross-border flows.
- 1.1.4. *Prohibitions* are explicit allusions that indicates that certain activity was not allowed at all.

#### 1.2. Capital Controls: Qualitative Measures.

- 1.2.1. *Authorizations* are special permits that are required to perform certain flow under the precept that is done case by case.
- 1.2.2. *Others* are the residual category and includes specific cases for each country

#### 1.3. Other macroprudential instruments

1.3.1. *Reserve requirements to the financial sector* are the compulsory reserves that may not be used in credit operations by the financial sector agents (ordinarily, banks). These requirements are not deemed to be capital controls. The macroprudential tool that we consider is reserve requirements on domestic deposits (in local and foreign currency):

## 2. Sources of information

- 2.1. The main source is the International Monetary Fund's *Annual Report on Exchange Arrangements and Exchange Restrictions* (hereinafter, 'AREAER'). We used the information contained in the AREAERs from 1995 (published in 1996) to 2014 (published in 2015).
- 2.2. We first focus on the AREAERS narratives coded as “controls” by Fernandez, et al. (2016). Therefore, the information from the Capital Account section of the AREAERS was taken into account.
- 2.3. For every quantitative coded measure, we searched for national sources (legal instruments -e.g. decrees- or country-specific economic literature) to confirm, complement or correct information found in the AREAERs and other non-national sources (*See section VI for additional sources*).
- 2.4. Auxiliary sources include, but do not limit to:
  - 2.4.1. Federico, Vegh and Vulentin (2014)
  - 2.4.2. Reinhart and Renihart (2008)
  - 2.4.3. Cerutti, et al. (2016)
  - 2.4.4. Chantapacdeponga and Shim (2015)
  - 2.4.5. Magud, Reinhart and Rogoff (2018)
- 2.5. Whenever a discrepancy arises between national sources and the AREAERs (or other non-national source) we code the information from national sources. If no national sources are available, and there remains a discrepancy between non-national sources, we make an analysis on a case-by-case basis. These are recorded in the country-specific notes.

## 3. Methodology for collecting data for the quantitative and qualitative capital controls data classification

3.1.1. This section summarizes the rules followed for the disaggregation of the extensive capital controls database in six (6) categories: URR, Taxes, Quantitative Limits, Prohibitions, Authorizations and Others.

3.1.2. We only focus on the AREAERS narratives coded as “controls” by Fernandez, et al. (2016). Therefore, only the information from the *Capital Account* section of the AREAERS was taken into account.

3.1.3. We do not explicitly nor mechanically incorporate the information on the Section “Changes” at the end of the AREAER reports.

3.1.4. We do not use the information contained in the headers of each category.

3.1.5. The following coding rules were considered:

3.1.5.1. When coding each subcategory, we first jointly look at the information in columns three of the report for the years 1999 onwards (before that year there is only one column). Column three includes narrative information. We follow these criteria:

- If there is no narrative information in the third column, we code based on the information in Fernandez, et al. (2016), where they assign a 0 in all the categories (types or controls) for 0 or 1.
- If there is no narrative information in the third column and there is an “n.a” or “n.r” in the second column we report them as that in the dataset. If there is no information whatsoever in either columns (not even n.a or n.r) we report as “d.n.e” (does not exist) and a blank space is coded in all the categories.
- If there is information in the third column, we code based on the narrative information in that column, explained bellow.

3.1.5.2. A 1 or 0 is coded for each of the following types of controls:

- Unremunerated reserve requirements to cross-border flows (“URR”): when the narrative column has a mention to “reserve”, “requirement”, “deposit in the central bank”, then it is automatically coded as an URR (i.s. to 1).
- Taxes: a mention to “tax”, “taxable”, or “levy” are a first indication of a tax. They were classified as taxes (i.s. to 1), the ones that includes an explicit reference to differential treatment.
- Quantitative Limits or Restrictions.
  - Restrictions on the quantities of flows that are allowed are seen as quantitative limits (i.s. to 1)
  - Restrictions on minimum or maximum allowable percentages are also encoded as quantitative limits (i.s. to 1)
  - If there is an allusion to a quantitative limit that subsequently proceeds to an authorization (i.e. when the limit is exceeded), prevalence was taken over the quantitative control.
- Prohibitions: when in the third column a mention to “not allowed”, “is prohibited”, then it is automatically coded as a Prohibition (i.s. to 1).

- Authorizations: when in the third column there is an explicit requirement for “authorization”, for “approval”, for “permission” or “clearance” from a public institution, then it is automatically coded as an authorization (i.e. a 1).
- Others: the residual category.

#### **4. Methodology for collecting data for the intensive margin of quantitative capital controls**

##### ***4.1. For reserve requirements to cross-border flows***

- 4.1.1. We consider as potential information regarding intensive measures of capital controls whenever any of the following words is used in the AREAER: "unremunerated", "non-remunerated", "URR" or "reserve".
- 4.1.2. An allusion is relevant if it has the potential to affect capital cross-border flows.
- 4.1.3. Allusions to any of the aforementioned words may not be coded in this category, if found in one of the sections relevant to reserve requirements to the financial sector as these are coded separately (see rule 3.2.1).
- 4.1.4. The columns labeled "1.1 Equity" through "1.9 Direct Investment" follow the different asset classification of the AREAERs. We follow these definitions.
- 4.1.4.1. *Shares or other securities of a participating nature (equity)*. Includes transactions involving shares and other securities of a participating nature if they are not effected for acquiring a lasting economic interest in the management of the enterprise concerned. Investment for acquiring a lasting economic interest is addressed under foreign direct investment.
- 4.1.4.2. *Bonds or other debt securities*. Refers to bonds and other securities with an original maturity of more than one year. The term “other debt securities” includes notes and debentures.
- 4.1.4.3. *Money market instruments*. Refers to securities with an original maturity of one year or less and includes short-term instruments, such as certificates of deposit and bills of exchange. The category also includes treasury bills and other short-term government paper, bankers’ acceptances, commercial paper, interbank deposits, and repurchase agreements.
- 4.1.4.4. *Collective investment securities*. Includes share certificates and registry entries or other evidence of investor interest in an institution for collective investment, such as mutual funds, and unit and investment trusts.
- 4.1.4.5. *Derivatives and other instruments*. Refers to operations in other negotiable instruments and no secured claims not covered under the above subsections. These may include operations in rights, warrants, financial options and futures, secondary market operations in other financial claims

(including sovereign loans, mortgage loans, commercial credits, negotiable instruments originating as loans, receivables, and discounted bills of trade), forward operations (including those in foreign exchange), swaps of bonds and other debt securities, credits and loans, and other swaps (e.g., interest rate, debt/equity, equity/debt, foreign currency, and swaps of any of the instruments listed above). Controls on operations in foreign exchange without any other underlying transaction (spot or forward trading on the foreign exchange markets, forward cover operations, etc.) are also included.

4.1.4.6. *Commercial credits.* Covers operations directly linked with international trade transactions or with the rendering of international services.

4.1.4.7. *Financial credits.* Includes credits other than commercial credits granted by all residents, including banks, to nonresidents, or vice versa.

4.1.4.8. *Guarantees, sureties, and financial backup facilities.* Includes guarantees, sureties, and financial backup facilities provided by residents to nonresidents and vice versa. It also includes securities pledged for payment or performance of a contract—such as warrants, performance bonds, and standby letters of credit—and financial backup facilities that are credit facilities used as a guarantee for independent financial operations.

4.1.4.9. *Direct investment.* Refers to investments for the purpose of establishing lasting economic relations both abroad by residents and domestically by nonresidents. These investments are essentially for the purpose of producing goods and services, and, in particular, to allow for investor participation in the management of an enterprise. The category includes the creation or extension of a wholly owned enterprise, subsidiary, or branch and the acquisition of full or partial ownership of a new or existing enterprise that results in effective influence over the operations of the enterprise.

4.1.5. Columns 1.10 through 1.12 add, respectively, information on the holding period, maturity (of flows) and remuneration rate (if any). If the column labeled as "Maturity" displays an "ALL" entry, it means that it applies without any distinction by maturity.

4.1.6. We extended our core sample (1995 to 2014) in exceptional cases to identify the start and finish of episodes where URR measures were used. These cases are noted in the country-specific notes.

## 4.2. For taxes

- 4.2.1. We consider as potential information regarding intensive measures of capital controls whenever the word “tax” (or some other form thereof - e.g. "taxable"-) is used in the AREAER.
- 4.2.2. An allusion to the word "tax" is automatically discarded:
  - 4.2.2.1. Whenever the word “tax” is used in the context of trade activities.
  - 4.2.2.2. Whenever it appears in: Sections, "Imports and Import Payments" or "Exports and Export Proceeds"; Subsection, "Trade-related payments"; Or, Subsubsections, "Controls on external trade", "Controls on trade in gold (coins and/or bullion)".
  - 4.2.2.3. Whenever it involves credit card transactions, as this implies trade in goods and/or services.
- 4.2.3. An allusion to the word "tax" is discarded if used in the context of an income tax, profit tax, or withholding tax, unless:
  - 4.2.3.1. There is a differential treatment between residents and nonresidents. We consider that there is differential treatment:
    - 4.2.3.1.1. Whenever there is an explicit mention that the tax applies unequally to residents and nonresidents.
    - 4.2.3.1.2. Whenever we can infer that the tax is exclusively directed at nonresidents.
  - 4.2.3.2. There used to be differential treatment at some point during the time span of the sample.
- 4.2.4. An allusion to the word "tax" is included in the context of taxes on transactions made on foreign exchange only if there is evidence of a potential impact on cross-border flows.
- 4.2.5. Where a prohibitions comes from or turns on a tax (or any quantitative measure), a 100% tax was coded.
- 4.2.6. We extended our core sample (1995 to 2014) in exceptional cases where we identify episodes that start in less than 20 quarters before the end of the main sample. These cases are noted in the country-specific notes.

## **5. Methodology for collecting data for the other macroprudential measures**

### ***5.1. For reserve requirements to the financial sector***

- 5.1.1. We use the information of the following two subsections of the AREAER: "Provisions specific to the financial sector, Provisions specific to commercial banks and other credit institutions, Differential treatment of deposit accounts in foreign exchange, Reserve requirements" (Section XII.A.6.a, as of the format of the AREAER in 2014) and "Provisions specific to the financial sector, Provisions specific to commercial banks and other credit institutions,



Differential treatment of deposit accounts held by nonresidents, Reserve requirements" (Section XII.A.7.a, as of the format of the AREAER in 2014).

- 5.1.2. We also heavily used the information available in Federico, Vegh and Vuletin (2014) and complement it with the information from Central Banks' websites.
- 5.1.3. Whenever several rates apply to the same type of account, these are added up. For instance, when there are primary and secondary reserve requirements. Whenever this occurs, we record it in the country-specific notes.
- 5.1.4. If local law disaggregates rates in a more comprehensive way than our classification, this is recorded in the country-specific notes. Typically, we use the median rate across all available rates.
- 5.1.5. We follow the same classification of reserve requirements by maturity proposed by Federico, Vegh and Vuletin (2014).
  - 5.1.5.1. "RR\_single" represents that reserve requirements apply all deposits regardless of the maturity thereof;
  - 5.1.5.2. "RR\_dem" represents the reserve requirement applicable to demand deposits. These types of deposits are deemed to have the shortest maturity;
  - 5.1.5.3. "RR\_sav" represents the reserve requirement applicable to savings deposits;
  - 5.1.5.4. "RR\_term" represents the reserve requirement applicable to term deposits. These types of deposits are deemed to have the longest maturity.
  - 5.1.5.5. "Re. rate" represents the remuneration rate of the reserve requirement. There are a blanks when there is no mention of this rate.
  - 5.1.5.6. "Marginal RR" represents the marginal or incremental reserve requirement that some countries had implemented. The country specific cases are mentioned in the notes.
  - 5.1.5.7. "Secondary RR" represents the secondary or supplementary reserve requirement that some countries had implemented. The country specific cases are mentioned in the notes.

## **6. Timing and frequency of coding**

- 6.1.** For the intensive capital controls and other macroprudential measures changes are recorded in the quarter that happened, even if they occurred at the end thereof.
- 6.2.** Whenever the exact date of a change is unknown, measures are assumed to change in the first quarter and remain into force until the last quarter.
- 6.3.** Multiple changes during the same quarter are recorded as the simple average of all the rates that were in force in that period, unless otherwise noted.

## 7. Miscellaneous rules

- 7.1. A blank may not be interpreted as zero, as it generally reflects that the measure did not exist at the time, or that the sources did not make any previous allusion thereto.
- 7.2. A question mark (?) is used whenever a measure is known to exist but its rate is unknown.
- 7.3. In determining the relevance of a measure, we disregard the fact that a given restriction may apply equally to residents and nonresidents, except for the cases set out by rules 3.3.3.1 and 3.3.3.2.
- 7.4. Whenever a conflict of rules arises, a case-by-case analysis is made. These cases are recorded in the country-specific notes.
- 7.5. We do not record restrictions that do not have the potential of having a substantial macroeconomic impact.
- 7.6. We do not record restrictions made to specific countries on the basis of political or national security reasons.

## III. TAX INTEREST RATE- EQUIVALENT COST OF THE URR

This section summarizes the rules followed for the implementation of the tax-equivalent methodology for the dataset following De Gregorio, Edwards and Valdes (2000).

### 1. Methodology

- 1.1. The tax-equivalent ( $\mu_k$ ) were derived following the proposal of De Gregorio, Edwards and Valdes (2000). Nevertheless, for this exercise we consider a cost of borrowing abroad ( $i_k^*$ ) for each maturity. The calculations are based on the following equations, which respond to definitions of short and long run investments.
- 1.2. **Short-run Investment:** In this case the maturity of the investment ( $k$ ) is less than the holding period ( $h$ ) [ $k < h$ ] established for the reserve requirement on capital inflows,

$$(1 + i_k^* + \mu_k)^{k/12} = \frac{(1 + i_k^*)^{k/12} - \mu (1 + i_k^*)^{(k-h)/12}}{1 - \mu}$$

- 1.3. **Long-run Investment:** In the case the maturity of the investment ( $k$ ) is more than the holding period ( $h$ ) [ $k > h$ ] established for the reserve requirement on capital inflows,

$$\mu_k = i_k^* \frac{\mu}{1 - \mu} \frac{h}{k}$$

- 1.4. For the cases in which the holding period was not specified, we assume a holding period equivalent to the maturity of the investment.

## 2. Sources

- 2.1. Given that the URR episodes take place in the period between 1991 and 2016, instead the USD swap curve, we use daily treasury yield curve rates that have the information available for the relevant maturities. (U.S. Department of the Treasury. Resource Center: Daily Treasury Yield Curve Rates. Recovered from: <https://www.treasury.gov/resource-center/datachart-center/interest-rates/Pages/TextView.aspx?data=yieldAll>.)
- 2.2. For each quarter we take the last price of the daily treasury yield curve rates for the maturities of 3 months, 1 year, and 2 years.

## IV. CONSISTENCY WITH OTHER DATASETS AND CROSSCHECK VALIDATION

In order to maintain consistency with the literature on capital controls and to complement the database, two articles were taken as a reference to complement the capital controls found in the AREAERs and national sources. Subsequently, this information was verified with local sources.

- ❖ Magud, Reinhart and Rogoff (2018)

**Table 2. Cross check with Magud, Reinhart and Rogoff (2018)**

|   | Number | Percentage |
|---|--------|------------|
| Mentions to controls on cross-border flows <sup>1</sup> | 33     | 100%       |
| Mentions to controls that reference URR or Taxes        | 24     | 57,6%      |

<sup>1</sup> Each mention refers to a narrative found in the paper; however, it does not refer directly to a control.

- ❖ Ghosh, Ostry and Qureshi (2017)

**Table 3. Cross check with Ghosh, Ostry and Qureshi (2017)**

|  | Number | Percentage |
|--|--------|------------|
| Mentions to controls on cross-border flows       | 7      | 100%       |
| Mentions to controls that reference URR or Taxes | 6      | 85,7%      |

## V. LIST OF ACRONYMS AND VARIABLES

**Table 1. List of acronyms and variables on the intensive margin of quantitative capital controls**

| <i>Variable</i>        | <i>Description</i>  |
|------------------------|---|
| urr_eq                 | Unremunerated reserve requirement to cross-border flows on equity (shares or other securities of a participating nature)                    |
| urr_bo                 | Unremunerated reserve requirement to cross-border flows on bonds or other debt securities   |
| urr_mm                 | Unremunerated reserve requirement to cross-border flows on money market instruments   |
| urr_ci                 | Unremunerated reserve requirement to cross-border flows on collective investment securities   |
| urr_de                 | Unremunerated reserve requirement to cross-border flows on derivatives and other instruments  |
| urr_cc                 | Unremunerated reserve requirement to cross-border flows on commercial credits   |
| urr_fc                 | Unremunerated reserve requirement to cross-border flows on financial credits  |
| urr_gs                 | Unremunerated reserve requirement to cross-border flows on guarantees, sureties, and financial backup facilities                            |
| urr_di                 | Unremunerated reserve requirement to cross-border flows on direct investment  |
| urr_average            | Simple average of the unremunerated reserve requirement to cross-border flows   |
| holdingperiod          | Holding period of the unremunerated reserve requirement to cross-border flows. <i>The country specific cases are mentioned in the notes</i> |
| maturity               | Maturity on which the unremunerated reserve requirement was applicable  |
| remuneration_urr       | Remuneration rate of the unremunerated reserve requirement to cross-border flows  |
| fx_encaje_single       | Reserve requirement to the financial sector on deposits in foreign exchange that apply all deposits regardless of the maturity thereof      |
| fx_encaje_dem          | Reserve requirement to the financial sector on deposits in foreign exchange applicable to demand deposits                                   |
| fx_encaje_sav          | Reserve requirement to the financial sector on deposits in foreign exchange applicable to savings deposits                                  |
| fx_encaje_term         | Reserve requirement to the financial sector on deposits in foreign exchange applicable to term deposits                                     |
| fx_remuneration_encaje | Remuneration rate of the reserve requirement to the financial sector on deposits in foreign exchange  |

|                     |   |
|---------------------|---|
| fx_second_encaje    | Additional reserve requirement on deposits in foreign exchange  |
| fx_encaje_marginal  | Marginal or incremental reserve requirement on deposits in foreign exchange   |
| fx_encaje_average   | Simple average of the reserve requirement to the financial sector on deposits in foreign exchange                                       |
| encaje_single       | Reserve requirement to the financial sector on deposits in domestic currency that apply all deposits regardless of the maturity thereof |
| encaje_dem          | Reserve requirement to the financial sector on deposits in domestic currency applicable to demand deposits                              |
| encaje_sav          | Reserve requirement to the financial sector on deposits in domestic currency applicable to savings deposits                             |
| encaje_term         | Reserve requirement to the financial sector on deposits in domestic currency applicable to term deposits                                |
| remuneration_encaje | Remuneration rate of the reserve requirement to the financial sector on deposits in domestic currency                                   |
| second_encaje       | Additional reserve requirement on deposits in domestic currency   |
| encaje_marginal     | Marginal or incremental reserve requirement on deposits in domestic currency  |
| encaje_average      | Simple average of the reserve requirement to the financial sector on deposits in domestic currency                                      |
| taxes_average       | Simple average of the taxes applicable to cross-border flows transactions   |

## VI. COUNTRY-SPECIFIC EXCEPTIONS AND CLARIFICATIONS

### VI.1 Argentina

#### Reserve requirements to cross-border flows

1. Reserve requirements data in both domestic currency and in foreign exchange come from Federico, Vegh and Vuletin (2014).

#### Taxes

1. Law 22.947 (Ley 22.947 - 14/Oct/83) sets forth the "Tax on banking credits and debits". This tax was set to be in force until 31/Dec/89. It was further extended to 31/Dec/92 by Law 23.549.
2. The "Tax on banking credits and debits" was reintroduced in 2001 by Law 25.413 and regulated by Decree 380/01 (Decreto 380/01 - 29/Mar/01)
3. The rate for the "Tax on banking credits and debits" as originally set forth by Decree 380/01 was 0.25%. However, Decree 503/01 (30/Apr/01) increased the rate to 0.4%. Pursuant our rules about timing, the rate of 0.25% is recorded in the first quarter of

2001, despite the fact that it was into force only for one month. This substitution is the one alluded in the AREAER.

4. The rate for the "Tax on banking credits and debits" was further increased by Decree 969/01 (31/Jul/2001) to 0.6%.
5. There is a discrepancy between Decree 969/01 and the 2002 AREAER. As per our rules, we code the information contained in the national source. In this case, this means that the rate coded after 2001Q3 is 0.6% (instead of 0.4%).
6. Although there are no more allusions to the "Tax on banking credits and debits" in the AREAERs after 2002, we code it until the end of the sample since Decree 380/01 is still in force (as of 2018).
7. We conclude that the "Tax on banking credits and debits" affects both inflows and outflows, since article 3(d)(2) of Decree 380/01 (and its modifications set out by Decree 503/01, Decree 613/01, Decree 969/01) states that cross-border foreign exchange transactions are only exempted from the tax if the transaction is related to trade activities.
8. The "Tax on the Purchase of Foreign Exchange" was first introduced as a prohibition: *"The Government introduces the first controls through General Resolution 3210/11 of AFIP. The controls affected companies and individuals, who required permission from the AFIP to acquire foreign currency. Since then, the authorizations depended on the patrimonial status of each taxpayer; the Individuals could allocate up to 40% of their monthly income to buy foreign currency."* (Badosa, M. (2015). Los controles de cambio en la Argentina: El cepo cambiario. Recovered on June 26, 2018 from <http://www.capacitacion.bcr.com.ar/Documentos/EdicionesBCR/20/Badosa.pdf>) – (Administración Federal de Ingresos Públicos (AFIP), 2011. Resolución General 3210)
9. Then, article 1 of General Resolution 3583 of the Federal Tax Administration (24/Jan/14) established a 20% tax on purchases of foreign currency. However, this tax could be waived as long as the foreign exchange was deposited in account for a period greater than 365 days, pursuant Law 21526. This tax is not mentioned by the AREAER.
10. General Resolution No. 3819 (12/16/2015) - Art. 9. Repealed the General Resolution N ° 3.450 and its amendment and the General Resolution N ° 3.583. For purchases by individuals or legal entities for hoarding, the previous cap of 2 million dollars per month is returned.
11. Article 5 of General Resolution AFIP 3378/2012 (08/30/2012) introduced to tax of 15% for the operations of acquisition of goods and / or services carried out abroad by resident through credit cards (*"Tax surcharge on credit card purchases abroad"*). General Resolution AFIP N ° 3379/2012 (08/31/2012) incorporated into the aforementioned regime, the transactions with the same characteristics paid by debit cards, and purchases of goods and / or services made in foreign currency through portals or virtual sites or "Internet". This tax is not mentioned by the AREAER.
12. Considering that, the regulatory body carried out monitoring actions and in the development of these tax control actions, irregular operations were verified since

"they perfected the" foreign exchange leak "abroad". Then, the tax was increased 20% to ... operations of acquisition of goods and / or services, service locations and / or cash advances made abroad by subjects resident in the country, which are canceled through the use of debit and credit cards. Likewise, purchases made through portals or virtual sites in foreign currency are included.

13. General Resolution AFIP No. 3550/2013 (12/2/2013) increased the value of the "*Tax surcharge on credit card purchases abroad*" to 35%.
14. General Resolution No. 3819 (12/16/2015) - Art. 9. Repealed the General Resolution N ° 3.450 and its amendment and the General Resolution N ° 3.583. The "*Tax surcharge on credit card purchases abroad*" was eliminated.

#### Reserve requirements to the financial sector

1. Decree 616/2005, article 3, describes which transactions are affected by the unremunerated reserve requirement: "*(a) All inflows to the domestic market originated in foreign debt of physical or juridical persons of the private sector, excluding trade financing and primary issues of debt securities with public offer and listed in self-regulated markets. (b) All inflows from nonresidents channeled through the local exchange market, destined to: (i) Domestic currency holdings; (ii) Acquisition of any securities or liabilities of the financial, or nonfinancial, private sector, excluding foreign direct investment and primary issues of debt securities and shares with public offer and listed in self-regulated markets; (iii) Securities investments issued by the public sector acquired in the secondary market.*" (Free translation). This is interpreted to include, in terms of the AREAER: (i) equity, (ii) bonds, (iii) money market instruments, (iv) financial credits, (v) collective investments, (vi) guarantees, sureties and other financial backup facilities.  
Article 4th of the Decree 616/05 (6/9/2015) establish a nominative deposit, non-transferable and unpaid of the 30% of the amount involved in the corresponding transaction, during a term of 356 calendar days.
2. Resolution 3/2015 (16/Dec/2015) lowered the URR to zero and reduced the holding period to 120 calendar days. The rate was not previously modified.

## VI.2 Brazil

### Taxes

1. Law 5143/66 (Lei 5143 de 1966) creates the IOF tax (tax on financial operations). This tax applies in a broad sense to: (1) Credit operations, (2) Insurance operations, (3) Exchange operations. All the rates recorded correspond to provisions specific to exchange operations, as these are understood to imply cross-border flows under Brazilian law (mostly inflows). This also means that we excluded all other IOF provisions that only affect domestic transactions.
2. Law 8894 (21/Jun/94) established that authorities could not set the rate of the IOF any higher than 25%.
3. Decree 1071/94 (Decreto 1071/94) (2/Mar/94) established that loans, fixed-income securities and equity are subject to the IOF.
4. Ordinance MF 534/94 (Portaria do Ministério da Fazenda) (19/Oct/94) set forth the taxes applicable to the inflows of: loans (7%), fixed-income securities (9%) and equity (1%)
5. Ordinance MF 95/95 (9/Mar/95) modified rates applicable to the inflows of: loans (0%), fixed-income securities (7%) and equity (0%)
6. Decree 1591/95 (10/Aug/95) added inter-bank operations and short-term assets, and revoked Decree 1071/94.
7. Ordinance MF 202/95 (10/Aug/95) modified rates applicable to the inflows of: loans (5%), fixed-income securities (7%) and equity (0%). It also set the IOF rate for interbank operations (7%) and short-term asset holdings (7%).
8. Ordinance MF 205/95 (15/Aug/95) exempted external loans financing agricultural production projects.
9. Ordinance MF 224/95 (14/Sep/95) modified rates applicable to the inflows of: loans in accordance with its maturity, two-year (5%), three-year (4%), four-year (2%), five-year (1%); fixed-income securities (7%) and equity (0%)
10. Decree 1815/96 (8/Feb/96) added collective investments (fundos de privatização) and revoked Decree 1591/95.
11. Ordinance MF 28/96 (8/Feb/96) modified rates applicable to the inflows of: loans in accordance with its maturity, two-year (5%), three-year (4%), four-year (2%), five-year (1%), six-year or longer (0%); fixed-income securities (7%), equity (0%) and collective investments (5%)
12. Ordinance MF 149/96 (11/Jun/96) exempted from the IOF the exchange transactions of the National Economic and Social Development Bank (Banco Nacional de Desenvolvimento Econômico e Social - BNDES)
13. Ordinance MF 212/96 (5/Sep/96) modified rates applicable to the inflows of loans in accordance with its maturity: three-year or shorter (5%), three-year (4%), four-year (2%), five-year (1%), six-year or longer (0%)



14. Ordinance MF 241/96 (31/Oct/96) modified rates applicable to the inflows of loans in accordance with its maturity: three-year or shorter (3%), three-year (2%), four-year (1%), five-year or longer (0%).
15. Ordinance MF 85/97 (24/Apr/97) modified rates applicable to the inflows of loans (0%), fixed-income securities (2%), equity (0%), interbank operations (2%), short-term asset holdings (2%).
16. Decree 2219 (2/May/97) compiled all IOF regulation (also known as RIOF) and revoked Decree 1815/96. The IOF is set at 2% for fixed-income securities, interbank operations and short-term asset holdings. All other financial transfers to and from abroad are subject to a 0% IOF rate.
17. Ordinance MF 328/97 (4/Dec/97) set to 2% the IOF applicable to credit card operations.
18. Ordinance MF 341A/97 (19/Dec/97) set forth a 0.5 daily IOF tax on investment funds to be effective in 1/Jan/98.
19. Ordinance MF 57/98 (26/Mar/98) reduced to zero (0%) the IOF applicable to fixed-income securities.
20. Ordinance MF 348/98 (30/Dec/98) modified the rates of the IOF as follows: Fixed-income (2.38%), interbank operations (2.38%), short-term asset holdings (2.38%). The general rate was set at 0.38%.
21. Ordinance MF 56/99 (12/Mar/99) modified rates applicable to: fixed-income securities, interbank operations and short-term assets (0.5%) and credit card operations (2.5%).
22. Ordinance MF 157/99 (24/Jun/99) extended the application of the rates set out in Ordinance MF 56/99 (12/Mar/99) until 31/Dec/1999.
23. Ordinance MF 264/99 (30/Jun/99) modified rates applicable to: fixed-income securities (1%).
24. Ordinance MF 306/99 (18/Aug/99) modified rates applicable to: fixed-income securities, interbank operations and short-term assets (0%).
25. Ordinance MF 458/99 (9/Dec/99) reduced to 2% the applicable rate to credit card operations.
26. Ordinance MF 492/99 (29/Dec/99) increased the IOF applicable to loans: up to 90 days (5%), longer loans (0%).
27. Decree 4494 (3/Dec/02) revoked Decree 2219. The maximum rate remained at 25%.
28. Ordinance MF 434/05 (27/Dec/05) reduced the IOF to loans granted by banks with resources obtained abroad.
29. Decree 6306 (14/Dec/07) revoked Decree 4494. This Decree withdrew the Finance Minister's (Ministro do Estado da Fazenda) capacity to modify the IOF. The rate for loans remained constant at 5%, whereas all other exchange operations (including equity, fixed-income funds, interbank operations and short-term assets) had the rate reduced to zero.

30. Decree 6339 (3/Jan/08) increased the IOF applicable to loans up to 90 days (5.38%). In all other exchange operations (including equity, fixed-income funds, interbank operations and short-term assets), the IOF is 0.38%.
31. Decree 6345 (4/Jan/08) modified the IOF rates: credit cards obligations (2.38%); inter-bank operations (0%).
32. Decree 6391 (12/Mar/08) modified the IOF rate of equity (0%). This decree also established special rates to: exchange operations to and from abroad effected by investment funds in international markets (0%), liquidation of exchange operations destined to the financial or capital markets (0%), liquidation of exchange operations for the remittances of interest payments and dividends to a foreign investor (0%), liquidation of exchange operations for the inflow of capitals going towards buying shares in public offerings after 17/Mar/2008 (0%), repatriation of banking operations abroad liquidated after 17/Mar/2008 (0%).
33. Decree 6453 (12/May/08) increased the IOF to a 1.5% rate in all liquidations of exchange operations destined to the financial or capitals markets.
34. Decree 6613 (22/Oct/08) reduced the IOF to a 0% rate in all liquidations of exchange operations destined to the financial or capitals markets.
35. Decree 6983 (19/Oct/09) increased a 2% rate in all liquidations of exchange operations destined to the financial or capitals markets.
36. Decree 7011 (18/Nov/09) established a special rate of the IOF for depository receipts at 1.5%.
37. Decree 7323 (4/Oct/10) increased the applicable rate to the liquidation of exchange operations destined to the financial or capital markets (4%), equity (2%), public offering of shares (2%).
38. Decree 7330 (18/Oct/10) further increased the applicable rate to the liquidation of exchange operations destined to the financial or capital markets (6%).
39. Decree 7412 (30/Dec/10) revoked article 15 of Decree 6306 (the provision that indicates the rates of the tax for exchange operations) and added article 15-A in its place. The general rate of the IOF remained at 0.38%. The special rates are: loans with maturity inferior to 90 days (5.38%), interbank operations (0%), liquidations of exchange operations destined to the financial or capitals markets (6%), interest and dividends payments (0%), equity (2%), public offering of shares (2%), investment funds (2%), depository receipts (2%).
40. Decree 7454 (25/Mar/11) increased the applicable rate to credit card obligations (6.38%).
41. Decree 7456 (28/Mar/11) increased the applicable rate to loans of minimum 360 days (6%).
42. Decree 7457 (6/Apr/11) further increased the minimum maturity of loans to 720 days.
43. Decree 7632 (1/Dec/11) reduced the rate applicable to equity (0%), public offering of shares (0%), investment funds (0%), depository receipts (0%).

44. Decree 7683 (29/Feb/12) increased the minimum maturity of loans to 1080 days, liquidations of exchange operations destined to the financial or capitals markets (0%), Brazilian Depository Receipts (0%).
45. Decree 7698 (9/Mar/12) further increased the minimum maturity of loans to 1800 days.
46. Decree 7751 (13/Jun/12) reduced the minimum maturity of loans to 720 days.
47. Decree 7853 (4/Dec/12) further reduced the minimum maturity of loans to 360 days.
48. Decree 8023 (4/Jun/13) set the IOF rate of the liquidations of exchange operations destined to the financial or capitals markets (0%).
49. Decree 8263 (3/Jun/14) reduced the minimum maturity of loans to 180 days.
50. Decree 8325 (7/Oct/14) kept the 0.38 general IOF tax rate, with the following special rates: inter-bank operations (0%), interest and dividends payments (0%), loans of 180 days or more (6%), liquidations of exchange operations destined to the financial or capitals markets (0%)
51. We assume that Depository Receipts, Liquidations destined to the financial markets, Investment funds, Public offerings of shares followed the general IOF rate before the special rates were included in the regulations.

#### Reserve requirements to the financial sector

1. In RR\_single 2008 qtr 1-2013 qtr 4, there are zeros since there is an explicit statement in the AREAERs 2008-2014 ("*There is no reserve requirement on foreign currency deposits.*")
2. The reserve requirements on domestic currency correspond to those of Federico, Vegh and Vuletin (2014)
3. As Federico, Vegh and Vuletin (2014) clarify "The rate applicable to demand and time deposits corresponds to non-remunerated deposits for Region A."
4. Data on marginal reserve requirement come from Banco Central do Brasil and corresponds to the average of additional reserve requirements rates applied to demand deposits, time deposits and saving deposits. The average was taken (Please see the Brazil spreadsheet for further details).
5. "New regulation (BCB Circular 3144 of 2002) established additional reserve requirements on demand deposits (to 3% from 0%), term deposits (to 3% from 0%) and saving deposits (to 5% from 0%)" (Cerutti et. al., 2017).

### **VI.3 Chile**

#### Reserve requirements to cross-border flows

1. In view that, as documented by De Gregorio, Edwards and Valdes (2000) -*Table 1*- there were not changes to the application of the URR (i.e. assets were not excluded or included in the meantime), it is assumed that the measure was in force at the same

time for all assets that explicitly have information thereof. In addition, as it is cited: *"June of 1991, 20% URR introduced for all new credit. Holding period (months) = min(max(credit maturity; 3); 12)"*

2. On January, there were changes on the Holding Period: *"Jan of 1992, 20% URR extended to foreign currency deposits with proportional HP."* (De Gregorio et. al., 2000).
3. Documented by De Gregorio, Edwards and Valdes (2000). *"May OF 1992, Holding period (months) = 12. URR increased to 30% for bank credit lines"* and *"Aug. of 1992, URR increased to 30%"*
4. On 1998, the URR was lowered: *"June of 1998, URR set to 10%"* (De Gregorio, Edwards and Valdes 2000).
5. Since the URR was eliminated in September 1998, and it has not been reinstated, from 1998 qtr 4, the rate is coded as zero: *"Sept. of 1998, URR set to zero"* (De Gregorio, Edwards and Valdes 2000).

### Taxes

1. There was no legal distinction between the "Tax on interest payments of loans granted by financial institutions" and "Tax on interest payments of loans granted by non-financial institutions", before 2001. The modification to the Income Tax Law first made this differentiation. The Chilean Internal Revenue Service (SII) Communication 4843 (Oficio 4843) made on 11/Dec/2001 clarifies this point.
2. There are no allusions of any of the taxes on interest payments in AREAERs after 2004. Although there are no further mentions in the AREAER, the provisions contained in article 59 of the Income Tax Law has not been revoked.
3. All the narratives contained in the AREAER mentioning the "Stamp duty" are disregarded, since these conflict with the information coming from national laws. In particular, note that the rate recorded in the AREAER (i.e. 1.2%) does not correspond to the rate of the tax, but rather it was the legal maximum rate that could be charged in a year.
4. The "Stamp duty" is not alluded in the AREAER further than 2001. Therefore, we coded the subsequent observations following the information contained in national laws (Decree-Law 3475 and modifications thereof). This tax was created by Decree-Law 3475 (29/Aug/1980). The first modification was introduced by Law 18682 (31/Dec/1987) where the monthly rate was set at 0.1% and the maximum that could be charged in a year was set at 1.2%. This rate was in force until January 1, 2002.
5. Law 19589 (14/Nov/1998) modified the monthly rate of the "Stamp duty" to 0.134% and set the yearly maximum at 1.608%. This was established to enter into force on January 1, 2002.
6. Law 20130 (6/Nov/2006) modified the monthly rate of the "Stamp duty" to 0.125% and set the yearly maximum at 1.5%. This change was effective during 2007.
7. Law 20130 (6/Nov/2006) modified the monthly rate of the "Stamp duty" to 0.1125% and set the yearly maximum at 1.35%. This change was intended to be effective during 2008.

8. Law 20259 (25/Mar/2008) modified the monthly rate of the "Stamp duty" to 0.1% and set the yearly maximum at 1.2%. This change was effective since its publication date.
9. Law 20326 (25/Mar/2008) set to 0% the rate of the "Stamp duty". This change was effective for the year 2009.
10. Law 20326 (29/Jan/2009) modified the monthly rate of the "Stamp duty" to 0.05% and set the yearly maximum at 0.3%. This change was effective from January 1, 2010 to June 30, 2010.
11. Law 20630 (29/Jan/2009) modified the monthly rate of the "Stamp duty" to 0.033% and set the yearly maximum at 0.4%. This change was effective in January 1, 2013.
12. Law 18657 (29/Sep/1987) creates the FICEs ('Fondos de Inversión de Capital Extranjero'). In article 15 thereof, it established a single income tax for the earnings of FICEs at 10%. Then, Law 20712 (7/Jan/2014) revoked Law 18756. Nevertheless, article 82 (B) (i) sets forth the same rate as in the previous law. We take into account the "Tax on profits of FICEs" in spite of the fact that it may be viewed as an income tax since we consider that it does affect directly the incentives to make portfolio investments in Chile.
13. Although in mm\_plbn 2001 there is a narrative reads: *"Effective April 19, 2001, all controls were abolished. Prior to that date, these acquisitions were authorized for nonresidents, but there were regulations governing the mode of inflow. The associated capital inflow liquidation and the subsequent repatriation of proceeds had to be effected through the formal exchange market, acquisitions through FICEs were subject to a minimum holding period of five years in addition to a 10% profit tax, and financial investments were subject to the general income tax law." We do not consider that this affects the "Tax on profits of FICEs" because the narrative in eq\_plbn of that year does not mention that the tax has been eliminated. There are, however, no mentions of this tax after 2003."*
14. A Special Regime of Income Tax for nonresidents is found in the AREAERs - Inward direct investment of 1995- : *"Capital contributions to new establishments or shares in existing ones are subject to a 1-year minimum holding period and a minimum amount of \$10,000. Projects of significant size may be undertaken; there is a minimum holding period of one year, and the investor enjoys favorable taxation treatment with regard to the choice between the general income tax law or the guaranteed payment profit tax of 42%. There is also guaranteed access to the formal exchange market for repatriation."* Decree Law 600 (09/3/1993). Art 7. Holders of foreign investments made under the terms of this Decree-Law are entitled to include in the contracts entered into a clause to the effect that, for a 1 year period from the commencement of the company's operations, they shall be subject to an effective fixed overall tax rate of 45% on taxable income, including taxes applicable under the Income Tax Law applicable at the time the contract is executed.
15. Tax Reform Law 20780, enacted in 2014 (the Tax Reform Act), repealed Decree Law 600 of 1974 (DL 600) effective 1 January 2016. Foreign investors will have the opportunity after January 1, 2016, to sign four-year contracts with the government.

They may then opt to pay a fixed overall tax rate of 44.45%. Previously this rate for foreigners was 42%; the general non-resident income tax rate for those not signing four-year contracts is 35%. The new law also specifies that new procedures will be adopted to exempt from value-added tax the imports of capital assets by foreign investors. (Chile: New Foreign Investment Law Enacted | Global Legal Monitor (Recovery from <http://www.loc.gov/law/foreign-news/article/chile-new-foreign-investment-law-enacted/>))

#### Reserve requirements to the financial sector

1. Domestic currency reserve requirements follow Federico, Vegh and Vuletin (2014)
2. Foreign exchange reserve requirements follow De la Cuadra and Valdes (1992) and Arraño, et al. (2016).
3. The Additional Reserve Requirement was coded by the comparison of Federico, Vegh and Vuletin (2014) and national sources. According to the Annual Memorial of the Central Bank of Chile, since December 9th of 1998, the reserve requirement was lowered to 19% for the short term (demand) deposits, and 13.6% for the term deposits. From that period and onwards the additional 10% of the remuneration rate was remunerated. (<http://www.bcentral.cl/web/guest/-/memoria-anual-1998>).
4. From the World Bank's 2003 Bank Survey spreadsheet, the additional 10% for foreign currency was eliminated.

## **VI.4 China**

#### Reserve requirements to the financial sector

1. There are different reserve requirements applicable to RMB and foreign exchange deposits made in domestic banks. There are also different reserve requirements applicable to foreign exchange deposits made in foreign financial institutions (depending on the maturity).
2. In this case, demand deposits are deemed to be those of less than three months. In contrast, savings deposits are those with maturity higher than three months.
3. Reserve requirements applicable to foreign exchange deposits after 2005 come from Cerutti, et al. (2016).
4. In this case, 'nonresidents deposits' reflects reserve requirements applicable to deposits in foreign exchange made in foreign funded financial institutions.
5. There is a discrepancy in 2005 between the information contained in the AREAER and that of Federico, Vegh and Vuletin (2014). The latter is recorded.
6. Reserve requirements data in 2005 qtr 2 through 2008 qtr4 come from Reinhart and Reinhart (2008).

## VI.5 Colombia

### Reserve requirements to cross-border flows

1. In accordance with Banco de la República's External Resolution 7/94 (15/Mar/94), article 3, that modifies article 30 External Resolution 21/93, all loans with maturities inferior to 36 months were subject to the URR. It was possible to choose an URR of 93% for 12 months, 64% for 18 months or 50% for 24 months.
2. In this context, loans are deemed to include bonds, money market instruments, commercial credits, financial credits and guarantees, sureties and other financial backup facilities.
3. Decree 2080/00 (18/Oct/00) established that portfolio investments were also subject to the URR. This is interpreted as equity assets.
4. Reserve requirement to cross-border flows and maturity between 1995-1998 is an average of the three choices available (93% for 12 months, 64% for 18 months or 50% for 24 months).
5. Maturity in 2007-2008 is an average of different required holding periods by asset categories.
6. The distinction between commercial credits and all other credits follows Banco de la República's External Resolution 2/07 (6/May/07), that distinguishes loans related with exports and those that are not.

### Taxes

1. The "surtax on remittances of earnings on existing non-oil foreign investments" and the "surtax on remittances of earnings from foreign investments made after 1993" are deemed to be allusions to the same measure. We code these two allusions as "Tax on Remittances of Nonresident's Dividends (Non-oil)" because we did not find any evidence that there was any special regime to investments made after 1993, other than the one that was set forth in the Colombian Tax Statute -which does allude explicitly to the fact that the regulation began in 1993-. See the comments for further detail.
2. Since we did not find evidence of having a differentiated treatment of oil and non-oil sectors in 1995, the "Tax on Remittances of Nonresident's Dividends (Oil sector investments)" and the "Tax on Remittances of Nonresident's Dividends (Non-oil sector investments)" are coded equally for this year. In 1996 onwards, we use the information contained in art. 246-1 of the Colombian Tax Statute.
3. The "Withholding tax on foreign exchange receipts from personal services and other transfers" and the "Tax on remittances of profits and payments for technical services abroad" are not taken into account because we believe that this taxes are measures intended to influence the trade of services. That is to say, pursuant rule 3.3.2.1, we discarded this information.

### Reserve requirements to the financial sector

1. Domestic reserve requirement comes from Federico, Vegh and Vuletin (2014). Please note that "Colombia's reserve requirements vary by both currency and maturity. However, given available data, we only use rates applicable to local currency demand deposits".

## **VI.6 Czech Republic**

### Taxes

1. Despite the fact that the "Foreign Exchange Transaction Fee" applied to both purchase and sale of foreign exchange, this tax is considered to be a measure restricting inflows as recognized by Miškovský (2014) and Magud, Reinhart and Rogoff (2018). This tax is coded starting in 1995Q2, since it began in April 24 according to the previous sources.

*"The Central Bank introduced a fee of 0.25% on its foreign exchange transactions with banks, with the aim of discouraging short-term speculative flows."* (Magud et al., 2018)

*"(...) in an effort to mitigate the inflow of short-term capital from abroad has been since 24 April a spread of 0.25% was introduced for the purchase and sale of foreign exchange fixings."* Miškovský (2014) -Original in Czech-

2. On the sections of Changes of the AREAER of 1997: "May 25: *"The fee of 0.25 percent that was levied on foreign exchange transactions with banks was eliminated."*

### Reserve requirements to the financial sector

1. Reserve requirement on domestic currency comes from Federico, Vegh and Vuletin (2014).
2. According to Czech National Bank, ""Since 12 July 2001, the funds on this account have been remunerated at the CNB two-week repo rate up to the pre-specified volume of minimum reserves (before this date they were not remunerated)". Data on rate remuneration come from Czech National Bank statistics.

## **VI.7 Ecuador**

### Taxes

1. Although the "Tax on Remittances Abroad" includes import payments starting in December 2008, we disregard this fact since we do not take into account taxes levied in the context of trade activities.
2. The information for the "Tax on Remittances Abroad" in the "Purchase abroad by residents" subcategories of the 2012 AREAER is disregarded since the narrative contradicts national sources, namely, Trávez Molina (2015) ("Impuesto a la salida de divisas e impuesto a los activos en el exterior frente a la seguridad jurídica en materia



de inversiones", Universidad Andina Simón Bolívar, Sede Ecuador) and article 19 of the Addenda to Official Register 583.

3. The Modificatory Law for Tax Fairness in Ecuador (29/Dec/2007) (Ley Reformatoria para la Equidad Tributaria en el Ecuador) created the tax on outflows (Impuesto a la Salida de Divisas - ISD). This Law was published in the Third Addenda to Official Register 242. Then, in article 8 of the Official Register 497 (Registro Oficial No. 497) (30/Dec/2008), the tax rate was increased.
4. In article 42 of the Addenda to Official Register 94 (Suplemento al Registro Oficial No. 94) (23/Dec/2009), the "Tax on Remittances Abroad" rate was further increased.
5. The information for the "Tax on Remittances Abroad" in the 2011 AREAER is taken into account for 2012, as it records changes that occurred in the latter. In article 19 of the Addenda to Official Register 583 (Suplemento al Registro Oficial No. 583) (24/Nov/2011), the tax rate was increased once more.
6. Despite the fact that the "Tax on Remittances Abroad" is alluded in 2013 in many more categories than all other years, we did not find any evidence that this implied any change in the regulation
7. We record the "Tax on Foreign Assets Holding" as: The Official Register 497 (Registro Oficial No. 497) (30/Dec/2008), created a monthly tax for financial institutions (entidades vigiladas por Superintendencia de Bancos y Seguros y por las Intendencias del Mercado de Valores de la Superintendencia de Compañías) on their assets held abroad.
8. We do not record the differential tax rate of the "Tax on Foreign Assets Holding" that is applicable to assets held at jurisdictions deemed to be tax havens by Ecuadorian authorities.
9. In article 2(c) of the Addenda to Official Register 847 (Suplemento al Registro Oficial No. 847) (10/Dec/2012), the tax rate ("Tax on Foreign Assets Holding") was increased to 0.25%.
10. After considering the information in Trávez Molina (2015) and in article 2(c) of the Addenda to Official Register 847, we decided not to record the change that appears in the AREAER for the "Tax on Foreign Assets Holding" because there is no allusion to this change happening in the alluded national sources.

#### Reserve requirements to the financial sector

1. Reserve requirements in both local and foreign currency come from Federico, Vegh and Vuletin (2014).
2. There are discrepancies in the rates shown in the AREAER and in Federico, Vegh and Vuletin (2014). However, in accordance with Regulation 180/2009 -Official Register 570, 15/Apr/09- of the Directory of the Ecuadorian Central Bank that establishes the reserve requirements, the rates are the same for deposits in US dollars and other foreign exchange. The rate has not been modified so far.
3. In accordance with Regulation No. 054-00: *"Since January 27, 2000, the unified reserve of 9% was established for all deposits and deposits of banks and other*

*financial institutions, a percentage that could be constituted up to 2% in cash (cash), 1.6% with CFN obligations , 1.6% in CETES, 0.4% in BREs and the difference in current accounts maintained by the institutions in the ECB. Validity: Jan 27 2000. RDBCE no. 054-00, Jan 26 2000" (Banco Central del Ecuador, 2000).*

## **VI.8 Hungary**

### Reserve requirements to the financial sector

1. Reserve requirements information on domestic and foreign currency come from Federico, Vegh and Vuletin (2014).
2. Pursuant Art. 2, MNB Decree 10/2005. (VI. 11.) of the Governor of the Magyar Nemzeti Bank, Federico, Vegh and Vuletin (2014) no distinction is made between foreign and local currency deposits. Therefore, we coded these deposits identically.
3. The rate of remuneration to the reserves required between 2001 qtr 4 and 2014 qtr 4 was completed using the statistical series of the Central Bank of Hungary. The central bank establishes that "Since Hungary's accession to the European Union the interest rate on minimum reserves is identical to the prevailing central bank base rate" (MNB Decree 1/2012).
4. We modified the yes/no in 1995 qtr1 to 2001 qtr 4 column in differential treatment for accounts in foreign exchange to reflect that in fact there was a differential treatment in the remuneration rate.

## **VI.9 India**

### Reserve requirements to the financial sector

1. Data missing from Federico, Vegh and Vuletin (2014) in 2003 qtr 2 - 2006 qtr 4 was completed using the information contained in the handbook of statistics on the Indian economy of Reserve Bank of India 2014-15.
2. The AREAER is explicit in that reserve requirements apply to local and foreign currency and residents and nonresidents alike.
3. The AREAER also states that the same reserve requirements apply to demand and time (term) deposits.
4. For the case of reserve req. in foreign currency, the AREAER notes that India is a member of the Asian Clearing Union -ACU- That is defined as "*a payment arrangement whereby the participants settle payments for intra-regional transactions among the participating central banks on a net multilateral basis. The main objectives of the clearing union are to facilitate payments among member countries for eligible transactions, thereby economizing on the use of foreign exchange reserves and transfer costs, as well as promoting trade and banking relations among the participating countries*". From 2002 to 2006 a 3% reserve requirement in US Dollars

applied to funds related to ACU accounts; these accounts have been exempted from reserve requirements since 2007.

5. In accordance with Cerutti, et al. (2016), the change from 4.75% to 5% occurred in 2004 qtr 4.
6. According with the Reserve Bank of India there is an incremental reserve requirements (ICRR) on NDTL Data. The central bank has not used this instrument in our target period. Incremental Cash Reserve Ratio has been used in the following cases: (i) March 6, 1960 to November 10, 1960, (ii) January 14, 1977 to July 30, 1981; (iii) November 12, 1983 to April 16, 1993, and (iv) 2017.

## **VI.10 Indonesia**

### Taxes

1. The "Tax on Revenue Gained from Nonresident Accounts" was created by the Government Regulation on The Republic of Indonesia, Number 51 (Year 1994): *"Article 3 The amount of Income Tax to be withheld from the income referred to in Article 1 is 15% (fifteen percent) of the gross amount, except for the Foreign Taxpayer other than a permanent establishment withheld the Income Tax of 20% (Twenty percent) of the gross amount or rates under applicable double tax avoidance treaties."*
2. In 2000, there was a legal change of the regulation of this tax. The Government Regulation of the Republic of Indonesia Number 131 (Year 2000) reads: *"At the time this Government Regulation comes into force, Government Regulation Number 51 of 1994 on Income Tax on Deposit and Savings Interest and Discount Certificate of Bank Indonesia (State Gazette of Republic of Indonesia Year 1994 Number 80, Supplement to State Gazette Number 3582) shall be declared null and void. The imposition of Income Tax on interest from deposits and savings and discounts of Bank Indonesia Certificates as referred to in Article 1 shall be as follows: a. subject to final tax of 20% (twenty percent) of gross amount, against domestic taxpayer and permanent establishment. b. subject to final tax of 20% (twenty percent) of gross amount or with tariff under applicable Double Tax Avoidance Agreement, against a resident Taxpayer."* We consider that this change implicitly revokes the tax that was applicable to accounts held by nonresidents. This point is also noted in the AREAER as there are no further mentions of this tax. In fact, from 2000 to 2009 there are ""n.r"" entries, indicating that this situation is not regulated. From 2009 onwards, it is explicitly stated that there is no differential treatment with regards to an account that is to be held by a resident. For these reasons, we conclude that the tax was implicitly eliminated on the year 2000.
3. Note that we do not code the tax applicable to accounts held by residents, as we consider that this is a purely domestic measure that does not affect cross-border flows of capitals, as required by rule 3.3.4.

### Reserve requirements to the financial sector

1. Reserve requirements in foreign exchange come from Policy action table of the Bank for International Settlements ([www.bis.org/publ/qtrpdf/r\\_qt1309i\\_appendix.xls](http://www.bis.org/publ/qtrpdf/r_qt1309i_appendix.xls)).
2. According to Arena, Reinhart and Vasquez (2006), "in 1997 the statutory reserve requirement for foreign currencies deposits was reduced from 5% to 3%."
3. Data missing from Federico, Vegh and Vuletin (2014) in 2000 qtr 1 - 2009 qtr 3 (and 2014 qtr 4) was completed using the information contained in the AREAER.
4. In the AREAER 2004, it is established that: "Effective June 28, 2004, accounts in rupiah are subject to a reserve requirement in the range of 5% to 8%, depending on the total amount of deposits (previously, 5% of total deposits)". The minimum rate was coded (5%). This change is mentioned in the 2004 Economic Report on Indonesia of Bank Indonesia and the Annual Financial Statements of the Bank Indonesia (2005-2008).
5. Data in 1995 qtr 1 - 1999 qtr 4 comes from Reinhart and Reinhart (2008).
6. Federico, Vegh and Vuletin data on reserve requirements applicable to domestic currency reflect the sum of primary and secondary reserve requirements, it does not reflect an additional reserve requirement that depends on the loan-to-deposits ratio. For instance, see Bank of Indonesia Regulation 15/15/PBI/2013 on how the additional reserve requirement is computed.
7. Data on reserve requirements applicable to domestic currency (single/secondary) in 2008 qtr 3 - 2014 qtr 4 come from Policy action table of the Bank for International Settlements ([www.bis.org/publ/qtrpdf/r\\_qt1309i\\_appendix.xls](http://www.bis.org/publ/qtrpdf/r_qt1309i_appendix.xls)) and Cerutti et al. (2017).

## **VI.11 Israel**

### Reserve requirements to cross-border flows

1. URR was introduced in January 2011 and it applies to shekel-foreign exchange swaps and forwards with nonresidents. It was eliminated in October 2014.
2. In accordance with the AREAER: "Effective January 27, 2011, banking corporations in Israel must meet a reserve requirement for foreign exchange derivative transactions by nonresidents. A 10% reserve requirement applies to shekel-foreign exchange swap transactions and shekel-foreign exchange forwards."
3. On January 20th, 2011, the Bank of Israel voted to append Section 39 of the Bank of Israel Law 5770-2010 to include a reserve requirement of 10 percent imposed on FX derivative transactions (both swaps and forwards) with nonresidents. The Bank of Israel did not pay interest to banks on these required reserves or on surplus reserves. This law went into practice on January 27th, 2011. (Bank of Israel, recovery from <http://www.boi.org.il/en/Markets/ReserveRequirement/Pages/Default.aspx>).
4. "Pursuant to section 38(b) of the Bank of Israel Law, 5770-2010, the Monetary Committee approves the decision of the Governor to cancel the reserve requirement

on swap and forward transactions with nonresidents”. (Bank of Israel, Secretary of the Monetary Committee and the Supervisory Council, Press Release. October 26, 2014).

#### Reserve requirements to the financial sector

1. Data come from Federico, Vegh and Vuletin (2014).
2. The following narrative remains almost unchanged during the entire sample: *"The same reserve requirement ratios apply to bank accounts held by residents and nonresidents. Reserve requirements against resident foreign exchange accounts are denominated in local currency, whereas reserve requirements against nonresident foreign exchange accounts are denominated in foreign currency"*. Therefore, the same rates are applied to nonresidents.
3. Following Federico, Vegh and Vuletin (2014) and the Financial Statements of the Bank of Israel (1999-2014), the reserve requirements are only differentiated by maturity.
4. Term deposits corresponds to deposits with maturities of between 1 week and 3 months.
5. The AREAER mentions from the start of the sample, up to 2003, the existence of a secondary reserve requirement applicable to FX accounts. Information on the rate of the secondary reserve requirement is only available starting in 1998, when it was 10% and remained constant until August 2002. We assume that until this date, the secondary reserve requirement is unchanged. Primary and secondary reserves are added up.
6. In the Financial Statements of the Bank of Israel (בנק ישראל), a description of the elimination of the secondary reserve requirement is found: *"In December 2001 the secondary reserve requirement against the public's foreign-currency deposits was 10 percent. At least half of this, i.e., 5 percent, had to be deposited in the Bank of Israel, and the rest could be deposited abroad. In August 2002 a process of reducing the secondary requirement by one percentage point a month was started, which continued until the elimination of the requirement in May 2003."*

## **VI.12 Korea**

### *Taxes*

1. According to the AREAER. (...) Tax privileges may be granted to foreign-financed projects that are accompanied by advanced technology (...). The "Tax privileges for foreign-funded technology projects" was coded using National Sources: the "Korean Taxation 2001" of the Ministry of Finance and Economy of Korea. As is cited: *"Prior to the enactment of the FIPA (Foreign Investment Promotion Act) in 1998, the government granted the following exemptions on individual and corporate income taxes: Full exemption for first 5 years.; 50% reduction for next 3 years."*

2. The “Withholding tax on foreigners’ interest and capital gains from holdings of sovereign debt” was part of the early implementation of foreign exchange liberalization plan: (...) Reduction of tax rates from 25% to 14% on interest income from domestic bonds held by foreigners." (Theillis, Marble and Tanner 2009)

*"The tax rate on interest income for nonresidents was reduced from 25% to 14%, effective January 2007, to bring it in line with the tax rate for residents. Combined taxes result in an effective tax rate of 15.4%"* Cited from <https://asianbondsonline.adb.org/>. This tax is not mentioned by the AREAER.

#### Reserve requirements to the financial sector

1. Data come exclusively from the AREAER. Federico, Vegh and Vuletin (2014) does not include this country.
2. Reserve requirements 'single' are those of deposits of residents and nonresidents made in foreign currency accounts.
3. It is assumed that no changes happened during 1997.
4. In 2000, deposits of residents in foreign range from 2% to 5%. An average rate of 3.5% is coded.
5. Similarly, after 2001 deposits of residents in foreign exchange range from 1% to 5%. An average rate of 3% is coded.
6. Reserve requirements apply to demand, savings and term accounts in domestic currency.
7. The data come from Arena, Reinhart and Vasquez (2006) and the Policy action table of the Bank for International Settlements ([www.bis.org/publ/qtrpdf/r\\_qt1309i\\_appendix.xls](http://www.bis.org/publ/qtrpdf/r_qt1309i_appendix.xls)).
8. There is a Reserve Requirement by residency according to the OECD (O'Brien 2007). There is no record in our database.

### **VI.13 Malaysia**

#### Taxes

1. In October 1994, the tax on interest earned by foreign investors in the Ringgit Bond Market was reduced from 20% to 15% (Central Bank of Malaysia Website. Please see: <https://fast.bnm.gov.my/fastweb/public/MainPage.do?mode=INTRO&page=Fiscal.jsp>). The tax is coded as “Tax on interest income received by nonresidents (Withholding tax)”
2. On the AREAER the “Withholding tax” is mentioned on (bo\_plbn, 2001). “When interest on bonds is paid to a nonresident investor, the issuer is required to deduct a withholding tax—currently 15%—within one month of paying or crediting the interest, whichever is earlier.”

3. According to the Central Bank of Malaysia Website (Please see: <https://fast.bnm.gov.my/fastweb/public/MainPage.do?mode=INTRO&page=Fiscal.jsp>) the abolishment of the withholding tax on interest income derived by non-resident companies from: Ringgit denominated Islamic securities and debentures, other than convertible loans stocks, approved by Securities Commission, and Securities issued by the Government of Malaysia. There are not further mentions in the AREAER of the withholding tax.
4. A “Tax on repatriation of profits” was mentioned on the AREAER (Changes, 1998): *“Nonresidents sellers of Malaysian securities were required to hold on to their ringgit proceeds for at least one year and to carry out all purchases and sales of ringgit securities through authorized depository institutions.”*
5. According to Johnson, et al. 2006, “The authorities imposed controls on portfolio outflows, particularly a one-year holding period on nonresidents’ repatriating proceeds from the sale of Malaysian securities and a prior approval requirement—above a certain limit—for residents to transfer capital abroad. (...) 9/1/1998 A twelve-month waiting period for nonresidents to convert ringgit proceeds from the sale of Malaysian securities held in external accounts (excluding FDI, repatriation of interest, dividends, fees, commissions, and rental income from portfolio investment). No such restrictions previously.”
6. *“For shares purchased after 15 February 1999, realized profits would attract 30% levy if repatriated before within one year of purchase, or 10% levy if repatriated on or after a year.”* (Bank Negara Malaysia, Clarification on the new ACM notices - 11). An allusion of this change was mentioned on the AREAER (eq\_siln, 2000): *“Nonresidents must undertake all purchases and sales of ringgit securities through authorized depository institutions. Nonresident sellers of Malaysian securities were previously required to hold on to their ringgit proceeds for at least 12 months before the investment is repatriated. On February 15, 1999, this requirement was eliminated, and a graduated system of exit taxes was introduced: for investments made prior to February 15, 1999, capital is taxed at 30% if repatriated less than seven months after entry; at 20% if repatriated after seven months; and at 10% if repatriated 9 to 12 months after entry. Capital repatriated more than one year after entry is not taxed. For investments made on or after February 15, 1999, the original capital is not taxed, but the repatriated capital gains are as follows: capital gains repatriated within 12 months after the gain is realized are taxable at 30%, and for those repatriated after more than 12 months are taxable at 10%. Effective September 21, 1999, nonresident sellers of Malaysian securities may repatriate the proceeds at any time. A 10% exit levy on profits is required. Profits made from investments in MESDAQ (Malaysian stock exchange) are exempted from the exit levy regulations.”*
7. With effect from 1 February 2001, the 10% levy will apply only on profits made from portfolio investments that are repatriated 12 months or less from the month the profits are realized (Bank Negara Malaysia, Clarification on the new ECM Notices - 17)
8. With effect from 2 May 2001, the 10% levy imposed on profits from portfolio investments that are repatriated within 12 months from the month the profits are

realized, is abolished. (Bank Negara Malaysia, Clarification on the new ECM Notices - 21)

#### *Reserve requirements to the financial sector*

1. Data come from Federico, Vegh and Vuletin (2014).
2. In accordance with the Statutory Reserve Requirement of the Bank Negara Malaysia (Central Bank of Malaysia): "As of 1 September 2007, the eligible liabilities (EL) base consists of ringgit denominated deposits and non-deposit liabilities, net of interbank assets and placements with the Bank."
3. In accordance with Malaysian regulations (BNM/RH/GL 007-01, section 6.1) reserve requirements apply to ringgit denominated deposits.

### **VI.14 Mexico**

#### *Reserve requirements to the financial sector*

1. Mexico eliminated its reserve requirements in September 1991, as explained by the Annual Report of the Central Bank of Mexico (Banco de México) of 1991. The central bank Banxico has a instrument called Depósitos de Regulación Monetaria since 1999 (Circular-Telefax 9/1999).
2. The dataset reports a zero throughout 1997, despite the fact that the narrative in the AREAER 1997 reads as follows: "Credit institutions must keep as liquid assests denominated in foreign currency an amount determined by a formula based on the maturity structure of their debts payable in foreign currency." We do not consider this measure as reserve requirements from the additional information gathered from national sources. In particular, Circular-Telefax 75/97 of the Bank of Mexico motivates this regulation by setting up requirements in terms of the assets and liabilities of financial institutions, not related to reserve requirements.

### **VI.15 Peru**

#### *Taxes*

1. In December 2009, Law 29492 (effective as of 2010) amended Article 10 of the "Texto único ordenado de la ley del impuesto a la renta" and defined that the results from derivative financial instruments contracted by non-domiciled parties should be considered as an income of Peruvian source. (Ley del impuesto a la renta – Capitulo II). There was a allusion on the AREAER (Changes, 2010): "03/22/2010 An income tax at a rate of 30% was levied on earnings from financial derivative operations by no domiciled operators, quoting the underlying asset at the exchange rate of the domestic currency to a foreign currency, provided its effective maturity is less than 60 calendar days."



2. Although there are no further mentions of this tax in the AREAERs, we note that the law of the “Tax on derivatives earnings” has not been revoked as 2018.

#### Reserve requirements to the financial sector

1. Reserve requirements data come from the official documents of the Central Bank of Peru (In Spanish known as Circulares BCRP) (<http://www.bcrp.gob.pe/transparencia/normas-legales/circulares.html>).
2. There are special regimes of reserve requirements depending on the banks' liabilities (see Circular 017-2015-BCRP). Data reflect the "general" regime.
3. Peruvian monetary authorities established a marginal reserve requirements scheme. Until February 2008 the marginal reserve requirement was applicable exclusively for accounts in foreign currency. After said date, a differential reserve requirement applied to domestic currency, in accordance to the residence of the account holder. Federico, Vegh and Vuletin (2014) reflect only the marginal reserve requirement for deposits in foreign exchange, and reflect minimum legal reserve requirements (until 2010), from that year onwards, data reflect marginal reserve requirements applicable to local currency deposits.
4. When applicable, we use the domestic currency marginal reserve requirement for resident account holders.
5. For the target period, the minimum legal reserve requirement was the same for local and foreign currency.
6. Peruvian authorities also remunerated different types of deposits in a differentiated manner. The remuneration was typically computed using a formula that depends on the LIBOR.
7. There is a Marginal Reserve Requirement Ratio on obligations in non-residents in domestic currency (Policy action table of the Bank for International Settlements and the Circulares BCRP). The instrument has been used since 2008.

## **VI.16 Philippines**

#### Reserve requirements to the financial sector

1. The data come from the Policy action table of the Bank for International Settlements ([www.bis.org/publ/qtrpdf/r\\_qt1309i\\_appendix.xls](http://www.bis.org/publ/qtrpdf/r_qt1309i_appendix.xls)), Cerutti et. al (2017) and <https://www.ceicdata.com/en>.
2. Data in 1995 qtr 1 through 1998 qtr 2 was verified with Reinhart and Reinhart (2008).
3. Data in 1998 qtr 3 through 1999 qtr 1 was verified with the Central Bank of the Philippines.
4. Data in 2000 qtr 1 through 2003 qtr 4 was verified with the AREAER.
5. The AREAERs are explicit in saying that the reserve requirement only applies to deposits in local currency.

6. The reserve requirement applicable to the financial system has two parts: a regular reserve requirement, and a liquidity reserve requirement. In accordance to the Bank of International Settlements: *"On 6 April 2012, the central bank unified the statutory/legal/regular reserve requirements and liquidity reserve requirements, and reduced the combined reserve requirement ratio on peso-denominated CTFs and such other managed peso funds of universal banks and commercial banks by 3%p from 21% to 18%"*.
7. The change to 16% in the reserve requirement (9% regular and 5% liquidity) was effective on October 13, 2000 (<http://www.bsp.gov.ph/publications/media.asp?id=1323&yr=2000>).
8. Effective July 2, 1999 the reserve requirement was lowered from 14% to 12% (<http://www.bsp.gov.ph/publications/media.asp?id=1432&yr=1999>).

## VI.17 Poland

### Reserve requirements to the financial sector

1. Data for the reserve requirement applicable to the financial sector come from Federico, Vegh and Vuletin (2014).
2. As noted in the statistics compiled by the Polish Central Bank, reserve requirements apply only to term and demand deposits (<http://www.nbp.pl/homen.aspx?f=/en/statystyka/instrumenty/instrumenty.html>).
3. We disregard the statement of the AREAER (appearing from 1997 until 2005) *"The reserve requirement on foreign currency accounts differs from that on zloty accounts."*, since in accordance with the statistics of the Polish Central Bank, the reserve requirements applicable to domestic and foreign currency have been equal since September 1999 (<http://www.nbp.pl/homen.aspx?f=/en/statystyka/instrumenty/instrumenty.html>).

## VI.18 Russia

### Reserve requirements to cross-border flows

1. In 2003-2006 the AREAER notes that nonresident investors may hold different types of accounts, in accordance to their purpose and foreign exchange controls (Nonresidents Accounts, 2004): *"Effective June 18, 2004, nonresidents may open and maintain five types of accounts: (1) S accounts for transactions by nonresidents with residents relating to ruble-denominated federal government securities; (2) A accounts for transactions by nonresidents with residents relating to ruble-denominated stocks or shares in mutual funds; (3) O accounts for transactions by nonresidents with residents relating to internal securities issued by residents, except federal government securities; (4) V1 accounts for ruble-denominated loans from residents to nonresidents, or for primary placement of stocks, bonds, or promissory notes classified as internal securities; (5) V2 accounts for ruble-denominated loans*

*to residents and purchases or sales by nonresidents of internal securities (except promissory notes) that are not publicly issued. All nonresident non-cash transactions with a maturity of less than three years must be channeled through one of these types of accounts. Previously, nonresident juridical persons could open and maintain six types of accounts: (1) K accounts, whose balances could be converted into foreign currency; (2) N accounts, whose balances could be converted into foreign currency not less than 365 days after presentation of a currency purchase order to an authorized bank; (3) F accounts, which could be freely opened by nonresident natural persons and whose balances could be freely converted into foreign currency; and (4) three categories of S accounts, which were (i) conversion accounts, whose balances were convertible into foreign currency; (ii) investment accounts, whose balances could not be converted into foreign currency; and (iii) project accounts, whose resources were used for domestic investments, which require CBR permission. Funds credited to project accounts could be transferred freely to S (conversion) accounts and converted into foreign currency. The time requirement for holding funds from S accounts in transit accounts was 30 days and that for holding securities from S accounts was 60 days. K, N, and F accounts could be freely opened at authorized banks. S accounts could be freely opened only at authorized banks that have special approval of the CBR to maintain these accounts. There were no restrictions on the purchase of foreign currency with balances in K, F, or S (conversion) accounts. On June 18, 2004, K, N, and S were abolished and the remaining balances were required to be transferred. Effective July 1, 2004, nonresidents are allowed to transfer freely funds from K, F, and S accounts abroad or to other domestic accounts in their name, subject to reserve requirements. Effective August 1, 2004, the following reserve requirements apply: 20% for 365 calendar days for S accounts; 3% for 365 calendar days for O accounts; 50% for 15 calendar days for V1 accounts; and 3% for 365 calendar days for V2 accounts."*

2. In 2004-2006 the AREAER alludes to similar requirements to resident investors (Residents Accounts, 2005): *"Effective June 7, 2004, residents are required to open the following special accounts with authorized banks for certain foreign exchange transactions with nonresidents: (1) F accounts, which are used for foreign currency loans (with a maturity of less than three years) and for purchases from and sales to nonresidents by resident individuals of foreign currency securities; (2) R1 accounts, which are used by resident legal persons for settlements and transfers of proceeds of foreign exchange loans and credits from nonresidents, for the receipt of proceeds from primary placements to nonresidents of shares and bonds defined as external securities, and for the receipt of proceeds from sales of external securities that are not recorded on the special deposit accounts of nonresidents; and (3) R2 accounts, which are used by resident legal persons for settlements and transfers related to the granting of foreign exchange loans and credits to nonresidents, for the purchase of external securities from nonresidents, and for the receipt of the proceeds from sales of external securities that are recorded on the deposit accounts to nonresidents. Credit and loans of more than three years' maturity may be made without the use of special accounts, as may securities transactions between resident individuals and*

*nonresidents of up to \$150,000 a year. Previously, a CBR permit was required for all deposits of proceeds from capital transactions except for (1) credits of foreign exchange received from a nonresident as payment for shares in the authorized capital of a resident to a resident foreign currency account; (2) credits of foreign exchange received from a nonresident under a participatory contract to a resident foreign currency account; and (3) repayments of funds previously received from a nonresident as payment for shares in the authorized capital of a resident juridical person under a participatory contract effected in rubles to the nonresident's account. Effective August 1, 2004, a reserve requirement of 3% for 365 calendar days was established on R1 accounts and a reserve requirement of 50% for 15 calendar days was established on R2 accounts".*

#### Taxes

1. The "Taxes on foreign currency purchases" is deemed a control on outflows as we assume that the foreign currency is bought by nonresidents to be used in transactions abroad.
2. On the AREAER (Exchange tax, 1997). "In July 1997, the President signed into law a bill imposing a 0.5% tax on purchases of foreign currencies and foreign payment instruments."
3. The AREAER introduces a change on the tax (Exchange tax, 1998). "There is a 1% tax on purchases of foreign currencies and foreign payment instruments."
4. "Effective January 1, 2003, the 1% tax on purchases of foreign currencies and foreign payment instruments by natural persons was eliminated." AREAER (Exchange tax, 2002)

#### Reserve requirements to the financial sector

1. Reserve requirements to the financial sector come from the Central Bank of the Russian Federation (Центральный банк Российской Федерации).
2. In 1999-2000 the AREAER mentions that "Banks are subject to a 100% reserve requirement on the funds held in the transit accounts of nonresidents."

### **VI.19 South Africa**

#### Taxes

1. Although there is evidence (see 1997) that during this year there was a quantitative limit on the amount that an emigrant could transfer abroad, there is no available information about the value of such limits. A 100% tax is recorded.
2. According to the Speech (February 26 2013) of the Minister of Finance the following new dispensation were apply with immediate effect. The distinction between the settling-in allowance for emigrants and the private individual foreign investment allowance for residents is to fall away and there will now be a common foreign allowance for both residents and emigrants of R750,000 per individual (or R1,5

million in respect of family units). This information is found on the AREAER (Controls on personal capital transactions - Transfer abroad by emigrants, 2003): “Effective February 26, 2003, emigrants are allowed to transfer up to R 1.5 million a family unit or R 750,000 an individual, inclusive of any assets previously transferred abroad. As a further dispensation, emigrants are allowed to transfer abroad funds in excess of the aforementioned limits, subject to a transfer tax of 10% of the amount in excess of the limit. All other assets remain blocked in South Africa.”

3. From 15 February 2006, the offshore capital investment allowance for individuals was increased from R750,000 to R2 million per person. (South African Reserve Bank, Tax chronology of South Africa: 1979 -2015) – (Minister of Finance, Budget speech 2006). The tax remained on 10%.
4. From 27 October 2009, the R2 million limit was increased to R4 million. (South African Reserve Bank, Tax chronology of South Africa: 1979 -2015). The tax remained on 10%.
5. From 5 November 2010, the one-off limit was replaced with an annual limit. Exchange Control Circular No. 37/2010 stipulates Treasury proposes releasing emigrants’ blocked assets without any exit levy applying to free those assets. (South African Reserve Bank, Tax chronology of South Africa: 1979 -2015) - (South African Reserve Bank, Exchange Control Circular No. 37/2010)
6. On the AREAER (Controls on personal transactions - Transfer abroad by emigrants, 2011): *“Effective November 5, 2010, emigrants may transfer up to the equivalent of R 8 million a family or R 4 million an individual, a year, inclusive of any assets previously transferred abroad. Emigrants are also allowed to transfer abroad funds in excess of the aforementioned limits, on application to the SARB. Effective November 5, 2010, emigrants’ blocked assets may be released without an exit levy.”*

#### Reserve requirements to the financial sector

1. Data come from Federico, Vegh and Vuletin (2014).
2. AREAERs clarify that the same rates apply to residents and nonresidents alike. No distinction is made in accordance to the currency.

## VI.20 Thailand

### Reserve requirements to cross-border flows

1. URR was introduced December 18 2006 by Bank of Thailand's Circular Wor.70/2549. It was abolished February 29 2008 by Bank of Thailand's Circular C.37/2551.
2. *“Authorized juristic persons shall have an agreement with persons selling or exchanging foreign currency consenting to the withholding of the 30 percent of the amount as reserve requirements”* (Bank of Thailand, 18 December 2006, No. ECD. (02) Wor.70/2549 Re: Issuance of the Notice of the Competent Officer on Rules and Practices Regarding the Reserve Requirement)
3. *“A URR of 30% was put in place for certain types of capital inflows, except for FDI and amounts not exceeding USD 20,000. A full refund of the principal may be obtained if the funds remain in Thailand at least one year. For shorter periods, BOT approval is required to refund two-thirds of the URR”*. (Chantapacdeponga and Shim 2015)- (Bank of Thailand, 18 December 2006. Bank of Thailand news No. 51/2006)
4. Three days later from its entry into force (December 22, 2006), the Bank of Thailand's Circular Wor.73/2549, exempted equity, derivatives and foreign direct investments.

### Reserve requirements to the financial sector

1. Data for the reserve requirements to the financial sector come from Reinhart and Reinhart (2008), the World Bank Banking Regulation Surveys (2003, 2007), and the IMF Surveys to Central Banks (2008).
2. We did not use Federico, Vegh and Vuletin (2014) as it is contradicted by the sources previously mentioned.
3. Current accounts deposits at the BOP and cash at the central cash centers of commercial banks are not remunerated. This may not be less than 1% to comply with the overall 6% reserve requirement.

## VI.21 Turkey

### Taxes

1. We consider that the "Tax on foreign exchange sale by banks and insurance companies" is on inflows because "The Bank, the Banker and the Insurance Company are taxpayers in the amount they receive in cash or in arrears as a result of their transactions and the general tax rate." (Official Gazette No: 23450 - 01/Sep/1998).
2. On the AREAER (Exchange tax, 2002): *“Prior to August 1, 2002, when it was eliminated, a 0.1% banking and insurance tax applied to interbank sales of foreign exchange against the Turkish lira.”*

3. The “Tax on banking external loans for the Resource Utilization Support Fund (RUSF)” was created by Central Bank of Turkey Law 1211 (14/Jan/70 - as amended in 1988).
4. On the AREAER (Provisions specific to the financial sector - Borrowing abroad, 1998): *“Credits obtained by banks from abroad are subject to a 4% tax, which is earmarked for the Resource Utilization Support Fund (RUSF). Effective December 17, 1998, the rate of tax was reduced to 3%.”*
5. On 2001, there was created an attachment to the Decree No: 88/12944 about the decision on RUSF, its attachments and amendments were abolished (The Council of Ministers’ decision 2001/2698).

#### Reserve requirements to the financial sector

1. Data on reserve requirements to the financial sector come from Federico, Vegh and Vuletin (2014), which in turn relies on Binici and Koksal (2011).
2. We use Binici and Koksal (2011) to code the reserve requirement applicable to savings accounts, taking the median reserve requirement applicable to maturities inferior to one year, except for the rate applicable to accounts with maturities of less than one month, since this is used to code the rate of accounts deemed as demand accounts. We exclude the "other liabilities" category. Note that the applicable rates are almost identical.
3. We used the Turkish Central Bank's website for information after 2011 (<http://www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Main+Menu/MONETARY+POLICY/Reserve+Requirement+Ratios>).
4. Reserve requirements rates for term deposits in local currency are those applicable to deposits with maturities of 3 months-1 year. For those in foreign exchange, maturity is greater than 1 year.
5. Note that in 1995, marginal reserve requirements applied to: Foreign exchange accounts (13%), and Turkish lira accounts (9%). These marginal requirements were eliminated in the third quarter of 1996.
6. Data on remuneration rate to reserves requirements come from the Central Bank of Turkey. (<http://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Statistics/Banking+Data/Required+Reserve/>). The remuneration to the reserve requirements on deposits in foreign currency corresponds to the average of the rate in dollars and in euros.
7. The AREAER notes that *“Required reserves for domestic currency are maintained on a two-week-average basis, whereas required reserves for foreign currency must be held in special accounts with the CBRT, but 3 percentage points of the foreign reserve requirement may be maintained on a two-week-average basis.”* T (Federico, Vegh and Vulentin 2014) *he former narrative is present until 2008. After 2008, “banks are allowed to carry over 10% of excess or deficiency of their lira required reserves*

*in a maintenance period, to be used or made up only in the following maintenance period".*

## VII. DESCRIPTIVE STATISTICS OF THE INTENSIVE MARGIN

In this section, some descriptive statistics of the database are shown: number of observations per instrument, number of controls per country, and number of changes of the controls. A table with the controls is also include.

**Table 4. Number of observations by instrument**

|                     | <b>Total<sup>1</sup></b> | <b>With obs.</b> | <b>Without obs.</b> |
|---------------------|--------------------------|------------------|---------------------|
| Obs. URR            | 1712                     | 286              | 1426                |
| Obs. Taxes Inflows  | 1680                     | 378              | 1302                |
| Obs. Taxes Outflows | 1680                     | 445              | 1235                |

<sup>1</sup> Considers all the quarters verified in the database for the 21 countries in the sample.

**Table 5. Number of controls consider per country**

|         |                  | <b>Average</b> | <b>Median</b> | <b>Average</b> | <b>Median</b> | <b>Min</b> | <b>Max</b> |
|---------|------------------|----------------|---------------|----------------|---------------|------------|------------|
|         |                  | <b>when</b>    | <b>when</b>   |                |               |            |            |
|         |                  | <b>used</b>    | <b>used</b>   |                |               |            |            |
| Per     | URR <sup>1</sup> | 5.2            | 6             | 1.5            | 0             | 0          | 7          |
| country | Taxes Inflows    | 3.2            | 1.5           | 0.9            | 0             | 0          | 10         |
|         | Taxes Outflows   | 1.4            | 1             | 0.7            | 0             | 0          | 3          |

<sup>1</sup> The count considers a URR for each type of asset: equity, bonds, money market instruments, collective investment securities, derivatives, commercial credits, financial credits, guarantees, and direct investment.

**Table 6. Number of changes by instrument**

|                        | <b>Total</b> | <b>From 0 to ≠0</b> | <b>From ≠0 to 0</b> | <b>Within the series</b> |
|------------------------|--------------|---------------------|---------------------|--------------------------|
| Changes URR            | 27           | 7                   | 7                   | 13                       |
| Changes Taxes Inflows  | 39           | 3                   | 6                   | 33                       |
| Changes Taxes Outflows | 40           | 9                   | 8                   | 23                       |



**Table 7. Quantitative Controls included in the database**

| <b>Control</b>                                | <b>Country</b> | <b>Period</b>   | <b>Description</b>   |
|---|----------------|-----------------|--|
| Unremunerated Reserve Requirement             | Argentina      | 2005q3 - 2015q4 | Unremunerated foreign currency deposits (in U.S. dollars) must be established covering % of the U.S. dollar equivalent of the total amount of the underlying transaction involving the entry of foreign exchange into the exchange market in various instances.  |
| Unremunerated Reserve Requirement             | Chile          | 1991q2 - 1998q2 | URR introduced for all new credit.   |
| Unremunerated Reserve Requirement             | Colombia       | 1993q3 - 2000q1 | A deposit for credits with a term equal to or less than maturity established.  |
| Unremunerated Reserve Requirement             | Colombia       | 2007q2 - 2008q3 | Any portfolio investment must be registered with the previously URR. Banking corporations in Israel must meet a reserve requirement for foreign exchange derivative transactions by nonresidents. A % reserve requirement applies to shekel–foreign exchange swap transactions and shekel–foreign exchange forwards. |
| Unremunerated Reserve Requirement             | Israel         | 2011q1 - 2014q3 | Reserve requirements that apply for special types of accounts (S, O, V1, V2, R1 and R2 accounts).  |
| Unremunerated Reserve Requirement             | Russia         | 2004q3 - 2006q2 | A URR for certain types of capital inflows, except for FDI and amounts not exceeding USD 20,000.   |
| Unremunerated Reserve Requirement             | Thailand       | 2006q4 - 2008q1 | Tax applied on the debits in current account of the entities included in the Law of Financial Institutions, in credits accounts and in check accounts of the National Savings and Insurance Fund.  |
| Tax on Banking Credits and Debits             | Argentina      | ALL SAMPLE      | The controls affected companies and individuals, who required permission from the AFIP to acquire foreign currency.  |
| Tax on the Purchase of Foreign Exchange       | Argentina      | 2011q4 - 2015q4 | Tax for the operations of acquisition of goods and/or services carried out   |
| Tax surcharge on credit card purchases abroad | Argentina      | 2012q3 - 2015q4 |  |

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| Tax on Financial Operations "IOF" (Equity)   | Brazil | ALL SAMPLE | abroad by resident through credit cards.<br>IOF tax (tax on financial operations). This tax applies in a broad sense to: (1) Credit operations, (2) Insurance operations, (3) Exchange operations. All the rates recorded correspond to provisions specific to exchange operations, as these are understood to imply cross-border flows under Brazilian law (mostly inflows). |
| Tax on Financial Operations "IOF" (Loans)  | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |
| Tax on Financial Operations "IOF" (Fixed-income securities)                        | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |
| Tax on Financial Operations "IOF" (Inter-bank operations)                          | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |
| Tax on Financial Operations "IOF" (Short-term asset holdings)                      | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |
| Tax on Financial Operations "IOF" (Depository Receipts)                            | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |
| Tax on Financial Operations "IOF" (Liquidations destined to the financial markets) | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |
| Tax on Financial Operations "IOF" (Investment funds)                               | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |
| Tax on Financial Operations "IOF" (Public offerings of shares)                     | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |
| Tax on Financial Operations "IOF" (General rate for exchange operations)           | Brazil | ALL SAMPLE | IOF tax (tax on financial operations).  |

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| Stamp duty   | Chile          | ALL SAMPLE      | Nonresidents may invest in domestic securities through loans. These may also be used to finance the purchase of securities in the country. They are subject to a stamp duty.  |
| Tax on interest payments of loans granted by a financial institution       | Chile          | ALL SAMPLE      | Commercial credits may be contracted with foreign banks and financial entities, subject to a tax on interest if loans are provided by a financial institution.  |
| Tax on interest payments of loans granted by a non-financial institution   | Chile          | ALL SAMPLE      | Commercial credits may be contracted with foreign banks and financial entities, subject to a tax on interest if the creditor is not a financial institution.  |
| Tax on profits of FICES  | Chile          | ALL SAMPLE      | Nonresidents may invest in domestic securities by the acquisition of FICES ( <i>Fondos de Inversión de Capital Extranjero</i> ).  |
| Special Regime of Income Tax for nonresidents                              | Chile          | ALL SAMPLE      | On capital contributions to new establishments or shares in existing ones, the investor enjoys favorable taxation treatment with regard to the choice between the general income tax law or the guaranteed payment profit tax of 42%. |
| Tax on Remittances of Nonresident's Dividends (Non-oil sector investments) | Colombia       | - 2006q4        | Surtax on remittances of earnings on existing non-oil foreign investments.  |
| Tax on Remittances of Nonresident's Dividends (Oil sector investments)     | Colombia       | - 2006q4        | Surtax on remittances of earnings on existing foreign investments in the oil sector.  |
| Foreign Exchange Transaction Fee   | Czech Republic | 1995q2 - 1997q1 | Fee on its foreign exchange transactions with banks, with the aim of discouraging short-term speculative flows.   |
| Tax on Remittances Abroad  | Ecuador        | 2008q1 -        | Tax on remittances abroad, with the following exceptions: import payments, profit repatriation, debt service, credit card transactions, and reinsurance premiums.   |
| Tax on Foreign Assets Holding  | Ecuador        | 2008q4 -        | Monthly tax on foreign assets held abroad by financial institutions   |

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| Tax on Revenue Gained from Nonresident Accounts   | Indonesia    | - 2009q4        | regulated by the Superintendency of Banks and the Securities Intendency of the Superintendency of Companies.<br>Tax on the revenues gained from interest of nonresident deposit accounts.   |
| Tax privileges for foreign-funded technology projects                                     | Korea        | ALL SAMPLE      | Tax privileges granted to foreign-financed projects that are accompanied by advanced technology.  |
| Withholding tax on foreigners' interest and capital gains from holdings of sovereign debt | Korea        | 2006q2 -        | Tax on interest income from domestic bonds held by foreigners.  |
| Tax on interest income received by nonresidents (Withholding tax)                         | Malaysia     | - 2003q4        | Tax on interest earned by foreign investors in the Ringgit Bond Market.<br>For shares purchased after 15 February 1999, realized profits would attract a percentage levy if repatriated before within one year of purchase, or if repatriated on or after a year.                                   |
| Tax on repatriation of profits  | Malaysia     | 1998q3 - 2001q1 | Income tax on earnings from financial derivative operations by nondomiciled operators, quoting the underlying asset at the exchange rate of the domestic currency to a foreign currency, provided its effective maturity is less than 60 calendar days.   |
| Tax on derivatives earnings   | Peru         | 2010q1 -        | Tax on purchases of foreign currencies and foreign payment instruments.<br>At first, it was a quantitative limit on the amount that an emigrant could transfer abroad, there is no available information about the value of such limits. Then, a transfer tax of the amount in excess of the limit. |
| Tax on purchases of foreign currencies  | Russia       | 1997q3 - 2002q4 |   |
| Tax on the transfer abroad by emigrants   | South Africa | 1996q1 - 2010q4 |   |

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| Tax on foreign exchange sale by banks and insurance companies                  | Turkey | 1998q3 - 2002q2 | Tax applied to sales of foreign exchange against the Turkish lira. |
| Tax on banking external loans for the Resource Utilization Support Fund (RUSF) | Turkey | - 1998q4        | Tax on credits obtained by banks from abroad.                      |

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