BU GLOBAL DEVELOPMENT

CAPSTONE PROJECT

Monitoring IMF Advice on Managing Capital Flows

IMF Coding Manual

Contents

Appendix

Introduction

Managing Capital Flows and the IMF

For decades the International Monetary Fund prescribed capital account liberalization as a remedy for many macroeconomic ills in developing countries. In the wake of the global financial crisis however, IMF officials began to endorse the use of regulating cross-border capital flows to some degree. Indeed, in December of 2012 the IMF published an official “Institutional View” about capital account liberalization and the management of capital flows. This new “view” received significant attention in the global press, as the IMF now says it no longer recommends capital account liberalization in all circumstances and that the temporary regulation of capital inflows and outflows may be appropriate in some circumstances.

The purpose of this BU Global Development Capstone Project is to empirically examine the extent to which the IMF has changed its official policy advice to developing countries on this matter in the wake of the financial crisis. To answer this question, coders will have to analyze the IMF’s annual “Article IV” reports that document IMF country advice to countries on an annual basis. Article IV reports are written in descriptive prose, and thus a key task will be building a database that quantitatively codes this qualitative information so that statistical analysis can be performed to determine whether IMF advice has changed on this issue since the crisis of 2008.

This manual outlines some of the contours necessary to code in a manner that is suitable for quantitative analysis that is replicable and that eliminates bias among the researchers conducting the coding.

Research Question of Interest

Our research question centers on the IMF’s “new institutional view” regarding capital flows. Although the IMF claims to have changed its advice on capital controls, there is a lack of quantitative evidence on this. We are coding if it has explicitly made recommendations in favor of the controls in the IMF’s annual “Article IV” reports that document IMF country advice to countries on an annual basis.

Capital controls can be an important tool for developing countries in reducing the volatility of inflows and outflows that are often affected by developed countries’ policies. Indeed, researchers have found that surges do tend to be synchronized internationally, suggesting that global factors signal whether emerging markets experience surges. These factors include U.S. interest rates, general global risk aversion, and commodity price booms.

As an essential part of the IMF new institutional view project, the coding manual helps build the data set, interpreting the IMF’s attitude of capital flow management measures. Tracking and monitoring the IMF’s change in policy would provide insight on how the IMF makes recommendations, which could impact future capital flows in the global financial system.

Coding Instructions

Collection and Storage of Date Fields

Dates can be collected and stored in the traditional format (month, day, year [MMDDYYYY]), or the new date format, (year, month, day [YYYYMMDD]). Date fields are fixed-length and left-justified. Replace any missing component with spaces. If there are no known date components, the date field will be completely blank. For example:

• YYYYMMDD – when complete date is known and valid

• YYYYMM – when year and month are known and valid, and day is unknown

• YYYY – when year is known and valid, and month and day are unknown

• Blank – when no known date applies

IMF Initial Diagnose

Question: Are capital flows an issue?

Answer: Blank (0)/ Not mentioned (1)/ Mentioned (2)

Rule/Criteria and Key Words:

- Blank: No Article IV report or Public Information Notice (PIN) available;
- Not mentioned: Domestic issues such as inflation, domestic debt, public spending, taxes;
- Mentioned: capital flow measures, capital controls, financial stability, surge, sudden stop, unremunerated reserve requirement; capital account deficit; inflows/outflows; exchange rate risk; debts denominated in foreign currency.

If flows are mentioned as an issue —either positively or negatively—then we are coding it as a 1.[1] Other keywords include external shock, external instability, adverse shocks related to global stress, adverse spillovers arising from the global turmoil, external shocks, contagion, foreign exchange pressures, rising external imbalance, external financial environment, balance of payment pressure.

[1] If it is a positive mention (i.e., if flows are mentioned but are not problematic), we will note that separately in a comment. If it is a negative mention (i.e., capital flows are problematic), we will note that separately in a separate comment.

Policy Factors Coding

Each country's Article IV coding is stored in the table named as Country code Country name: IMF Advice Advocated by IMF on Staff Reports, 1998 to 2013. Refer to appendix A for the country code. The columns of the table include in the right order: Date, Article IV availability, IMF Initial Diagnose, Tighten Fiscal Policy, Exchange Rate Flexibility, Sterilization/Intervention in the FX market, Trade Liberalization, Tighten Prudential Regulation, Capital Flows Managements, Level of Support for Capital Controls, Title and Authors of Article IV as well as relationships with IMF.

Tighten Fiscal Policy

0 – Blank: not mentioned
Criteria: No fiscal policy advice given in relation to capital flows or macroeconomic stability. We code as a 0 if the report simply states what the authorities have done with no mention of policy advice, endorsement, or otherwise, by the IMF. We also code as a 0 if fiscal policy is mentioned but related to public debt, tax reform, infrastructure finance, pension reform.

1 – Yes: mentioned and IMF endorses
Criteria: We are interested in knowing the policy advice of the IMF regarding capital flows, and if it suggests tightening fiscal policy or fiscal consolidation in this context. Any recommendation to engage in fiscal tightening must be in response to macroeconomic factors.
Keywords: overheating economy; risk; ease burden on monetary policy; cushion to weather shock; response to a possible surge in capital inflows; inflation resulting from an external situation.

2 – No: mentioned, but IMF does not endorse
Criteria: This is rare while possible statements include expansion of fiscal policy.

Exchange Rate Flexibility

0 – Blank: not mentioned
Criteria: No policy advice given or exchange rate flexibility is mentioned but not related to flows.

1 – Yes: mentioned and IMF endorses
Criteria: We code 1 if it is recommended that the exchange rate must be allowed to respond to changes in external conditions, or that the flexible exchange rate should be the main shock absorber in the event of capital inflow surge.
Keywords: exchange rate risk; external shock; capital account; resilience to shocks; exchange system free of restrictions.

2 – No: mentioned, but not endorsed (still related to flows)
Criteria/keywords: pegged exchange rate; managed float.

<u>Sterilization/Intervention in FX Market</u>

0 – Blank: not mentioned
Criteria: No policy advice from the perspective of sterilization or intervention in the foreign exchange markets.

1 – Yes: mentioned and endorsed
Keywords: endorsement of a reserve build-up; higher reserve levels would help guard against capital account shocks; intervention in FX markets to smooth volatility and enhance liquidity; reserve accumulation; purchases of foreign exchange.

2 – No: mentioned, but not endorsed
Keywords: guard against intervention, less reliance on foreign exchange intervention.

<u>Trade Liberalization</u>

0 – Blank: not mentioned
Criteria: policy advice is not given as it relates to capital flows investments and macroeconomic stability.

1 – Yes: mentioned/endorsed
Criteria: Trade liberalization related with taxation and international trade policies.

2 – No: mentioned, but not endorsed. [RARE]

<u>Tighten Prudential Regulation</u>

0 – Blank: not mentioned
Criteria: No policy advice given.

1 – Yes: mentioned/endorsed
Keywords: capital requirements for banks; bank soundness; systemic risk; Basel III; improve supervision and regulation; guard against risk; measures to prevent liquidity crisis in banking

system; raising capital adequacy ratio; reinforcing financial soundness; promoting financial sector deepening.

2 -- No, mentioned, but not endorsed

<u>CAPITAL FLOW MEASURES (includes capital controls)</u>

0 – Blank, not mentioned
1 – Yes, mentioned
Keywords: capital controls[2], capital flow measures, CFM, unremunerated reserve requirement, impact of capital controls/ineffectiveness; capital account regulation of a prudential nature.

Type of control: quantitative measure on the repatriation of portfolio investments, exit levy, restrictions on the internationalization of the local currency; prohibition of foreign purchase or holding of domestic assets; requirements to obtain administrative permission for a foreign bond issue; minimum maturity period for foreign bond issues; a dual exchange rate for capital transactions; taxes on purchases of domestic assets by foreigners or on investment income earned by foreigners; reserve requirements on deposits held by foreigners.

<u>Level of Support for Capital Controls</u>

0—Not mentioned
1 – Not supportive
Criteria/keyword: phase out controls; controls are ineffective, drawbacks, elimination of controls as a positive step, negative effects of capital controls.
2 – Partially supportive
Criteria/keyword: management of temporary surge, "it could be an option"; "part of a transitory response".
3 – Supportive

<u>OTHER CODING</u>
Article IV Report Title and Authors
Country Relationship with IMF: Is there a loan?
0 – No
1 – Yes

[2] If controls are mentioned in the context of FDI, we still code it as a mention and add comments in separate column, specifying the type of capital flow (inflows or outflows) and the type of capital control.

Criteria: Determined by section of Article IV report entitled "Fund Relations," which typically appears in an annex.

Additional notes are required for further explanation on each column's country-time-specific definition.

- Tighten Fiscal Policy: Fiscal tightening is always mentioned related to macroeconomic stability. In connection to capital flows, it is mentioned as a requirement to keep the risk premium at manageable levels and to regain access to the international capital markets between 2001 and 2003. Between 2006 and 2007, the IMF considered that the Government was contributing to the appreciation of the peso. Since 2010 it is mentioned to further mitigate appreciation.
- Exchange Rate Flexibility: The IMF always highlighted the importance of the flexibility of the exchange rate to absorb external shocks.
- Sterilization/Intervention in the FX market: Between 1999 and 2003, there were quantitative targets for the international reserves and the staff recommended acquiring international reserves until getting the desired level. In 2003, the IMF recommended not to de-accumulate. Later saw risks of over-accumulation and showed disagreement with the mechanisms employed by the country. Since 2008 the IMF recommended further accumulation of international reserves.
- Tighten Prudential Regulation: The IMF recommended basically strengthening the access to liquidity. In general, IMF agreed with what the country was doing.
- Capital Controls: Only in case of a surge of capital inflows and if controls are price based and applied to a broad range of transaction.
- Level of Support for Capital Controls: In 2000, 2007 and 2008 it refers mainly to the unremunerated reserve requirement on foreign funding.

Macroeconomic Fundamental Factors in Country Level

Macroeconomic data reflects the development of country and are important for policymakers. These data are collected based on country level. In each table named as Country code Country name: Macroeconomics data from 1999 to 2013, there are a list of macro factors corresponding to the policy factors. Refer to appendix A for the country code. Data are downloaded from the World Bank's World Development Indicators database. The columns of the table include as follows:

A. GDP (current US dollars)
B. Official exchange rate (LCU per US$, period average)
C. Real effective exchange rate index (2005 = 100)

D. Real interest rate (%)
E. Foreign direct investment, net (BoP, current US$)
F. Foreign direct investment, net inflows (BoP, current US$)
G. Portfolio Investment, net (BoP, current US$)
H. Portfolio equity, net inflows (BoP, current US$)
I. Portfolio investment, bonds (PPG + PNG) (NFL, current US$)
J. Total reserves (% of total external debt)
K. Total reserves (includes gold, current US$)
L. Total reserves minus gold (current US$)
M. Short-term debt (% of total reserves)
N. Total reserves (includes gold, current US$)
O. Net capital account (BoP, current US$)
P. Current account balance (BoP, current US$)
Q. Central government debt, total (% of GDP)
R. Consumer price index (2005 = 100)
S. Inflation, consumer prices (annual %)
T. Cash surplus/deficit (% of GDP)
U. Debt service on external debt, total (TDS, current US$)
V. External debt stocks, short-term (DOD, current US$)

<u>Vulnerability Index</u>

(V1) Current account balance (% of GDP)

(V2) Short-term gross external debt plus external debt payments as % of foreign-exchange reserves

(V3) Domestic credit provided by banking sector (% of GDP)

(V4) Financial openness (Kaopen)

A summary of country's policy and experience of managing capital flows examples is in Appendix B.

<u>Code for Article IV Availability</u>

Code	Description
1	Article IV Available
2	Article IV Not Available
3	PIN Available

Code for IMF initial Diagnose

Code	Description
0	No Article IV report or Public Information Notice (PIN) available
1	Not mentioned
2	Mentioned

IMF Advice from Staff Reports: Policy Factors

Factors	Name	Description
1	Tighten Fiscal Policy	Yes/Not mention/No
2	Exchange Rate Flexibility	Yes/Not mention/No
3	Sterilization/Intervention in the FX market	Yes/Not mention/No
4	Trade Liberalization	Yes/Not mention/No
5	Tighten Prudential Regulation	Yes/Not mention/No
6	Capital Flows Measures	Yes/Not mention/No
7	Level of Support for Capital Controls	Not mention/Not supportive/Partially supportive/Supportive
8	Title of Article IV	
9	Authors of Article IV	
10	Country Relationship with IMF: Is there a loan?	Yes/No/Not available

Code for Factors 1 - 6

Code	Description
0	Not mention
1	Yes
2	No

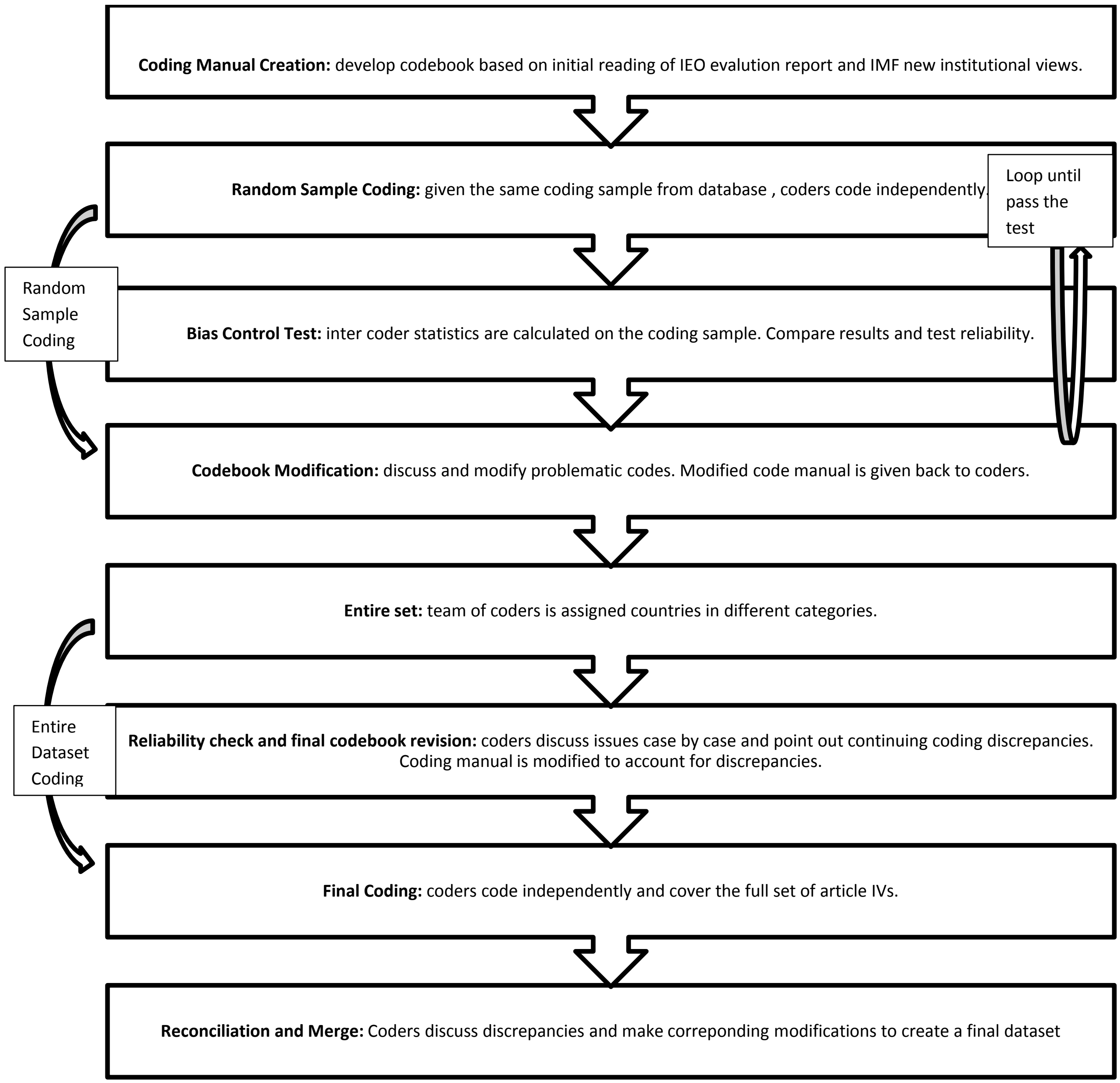
Code for Factors 7

Code	Description
1	Not supportive
2	Partially supportive
3	Supportive
0	Not mentioned

Code for Factors 10

Code	Description
0	Not available
1	No
2	Yes

Coding Process Summary



Sources and References

Coding documents sources

- "The IMF's Approach to Capital Account Liberalization". Evaluation Report by Independent Evaluation Office 2005. http://www.ieo-imf.org/ieo/files/completedevaluations/04202005report.pdf
- IMF Article IV Consultation Reports and Public Information: http://www.imf.org/external/np/sec/aiv/index.aspx
- Chinn-Ito index: http://web.pdx.edu/~ito/Chinn-Ito_website.htm
- Macroeconomic data: http://databank.worldbank.org/data

References for bias control tests

1. Lin, Lawrence I-Kuei(2000). “A Concordance Correlation Coefficient to Evaluate Reproducibility”, Biometrics, Vol. 45, No.1, pp. 255-268;
2. Hruschka, D. J., Schwartz, D., St. John, D.C., Picone-Decaro, E., Jenkins, R.A., &Carey, J. W. (2004). “Reliability in coding open-ended data: Lessons learned from HIV behavioral research”. *Field Methods*, 16, 307-331;
3. Viera, Anthony J., Garrett, Joanne M. (2005). “Understanding Interobserver Agreement: The Kappa Statistic”. *Research Series*, Vol. 37, No. 5, 360-364;
4. McBride, G.B. (2005). Using Statistical Methods for Water Quality Management: Issues, Problems and Solutions. Wiley, New York.

Appendix A – Country Codes and Categories

Country Categories:

Region	Region Code	Corresponding Country Code
Emerging Asia	1	1-3, 5-10
Emerging Latin America and Caribbean	2	12-23
Emerging Europe	3	24-28
Emerging Others	4	29-33
Advanced Economies	5	4,11

Country Code:

1. ***China***
2. ***India***
3. ***Indonesia***
4. Japan
5. Korea
6. ***Malaysia***
7. ***Philippines***
8. Singapore
9. ***Sri Lanka***
10. ***Thailand***
11. USA
12. ***Brazil***
13. ***Chile***
14. ***Colombia***
15. ***Costa Rica***
16. ***Dominican Republic***
17. ***Ecuador***
18. ***El Salvador***
19. ***Guatemala***
20. ***Mexico***
21. ***Panama***
22. ***Peru***
23. ***Uruguay***
24. Czech Republic
25. Hungary
26. Poland
27. ***Romania***
28. ***Turkey***
29. ***Egypt***
30. Israel

31. ***Jordan***
32. ***Russia***
33. ***South Africa***

Note: Countries in Italics have data on Capital Vulnerability Index(CVI) (modified capital-freeze index based on Economist http://www.economist.com/news/finance-and-economics/21586569-error-apology-and-revision-spreadsheet-different). Data on the vulnerability to a sudden stop in capital inflows in emerging markets are collected for the above 25 countries from 1998 to 2011.

CVI are calculated based on the macroeconomic fundamental factors.
V1: Current account balance (% of GDP)
V2: Short-term gross external debt plus external debt payments as % of foreign-exchange reserves
V3: Domestic credit provided by banking sector (% of GDP)
V4: Chinn-Ito Index

Appendix B - Coding Examples

Notation: All examples are excerpted from IMF Article IV reports for specific country and specific year. Examples are sorted by time and the source in the brackets means the page number and the paragraphs number from the report. For example: Columbia 1998 (1#1) means the statements come from the first page and the first paragraph of IMF Executive Board Concludes 1998 Article IV Consultation with Columbia. Article IVs in some years are not available so we also read PINs of that year as a reference. There are some examples selected from the PINs.

Here are a selection of examples from Columbia, Guatemala and Malaysia Article IVs and PINs. Further examples of other countries and reference sources can be provided under request.

<u>Capital Flows Mentioned as an Issue:</u>

- Guatemala 2006: "Money and credit expansion has been rapid as a result of high liquidity associated with strong capital inflows"(2#3); "short-term goal is to maintain macroeconomic stability" (13#15).
- Colombia 2007: "The authorities concurred that overheating pressures remained a key challenge" (18#18).
- Colombia 2010: "It would be advisable to consider possible responses to a surge in private capital inflows" (11#16).

<u>Capital Flows Not Mentioned as an Issue:</u>

- Guatemala 2012: "Capital inflows" are mentioned but "vulnerabilities remain limited", no problems are foreseen relating to capital inflows or outflows (2#2).

<u>POLICY FACTORS</u>

<u>Tighten Fiscal Policy as a Mention:</u>

- Colombia 2001: "In the near term, a strong fiscal position is necessary to prevent rising interest rates from threatening the recovery and aggravating the situation of the financial institutions" (29#42).
- Colombia 2002: "The immediate priority in the economic area is to strengthen macroeconomic policies to help Colombia regain market access, reduce vulnerability, and avoid disruptive exchange rate fluctuations. The measures taken by the new government to rein in the fiscal imbalances are designed to achieve these objectives and are cast in a wider framework for controlling the civil conflict" (8#15).
- Colombia 2006: "IMF supports tightening fiscal policy as the economy begins to overheat… fiscal policy may have to take a more prominent role in containing near-term demand pressures" (15#16).
- Colombia 2007: "The staff encouraged the authorities to incorporate fiscal adjustment into the policy mix. Staff suggested that fiscal consolidation could help alleviate overheating pressures…This policy mix would also help reduce upward pressures on the currency associated with monetary tightening and capital inflows" (18#19).

- Colombia 2010: "If the recovery is firm, fiscal tightening should also be considered." (1 Executive Summary).
- Colombia 2011: "Staff emphasized…that a tighter fiscal stance would have to be the main element of the policy response in that scenario [use of CFMs to manage unexpected surge in inflows]" (18#19).

Exchange Rate Flexibility as a Mention

- Colombia 2002: "Colombia's floating exchange rate regime, with limited and rules-based intervention by the central bank, is appropriate and offers the country flexibility in responding to shocks" (21#69).
- Colombia 2006: "The staff and the authorities agreed that the flexible exchange rate regime adopted in September 1999 had served Colombia well" (11#16)
- Colombia 2007: "Staff commended the BdR's decision to refrain from discretionary foreign exchange intervention and allow for more exchange rate flexibility" (22#33); "it would be important that the exchange rate continue to be allowed to move flexibly to help the economy respond rapidly to changes in external conditions" (27#45).
- Colombia 2010: "The exchange rate should continue to be the main shock absorber in the event of a surge in capital inflows. If the recovery is firm, fiscal tightening should also be considered" (1 Exec summary); "They considered that, in such a scenario, exchange rate flexibility would continue to be the first line of defense, possibly supported by rules-based intervention to smooth volatility" (12#16).

Sterilization/Intervention in FX Market as a Mention:

- Colombia 2010: "Higher reserve levels may help lessen remaining external vulnerabilities. The authorities considered that the current level of reserves is broadly adequate for "normal" times and that the FCL had served them well during the global crisis. They acknowledged, however, that higher reserve levels would be desirable as additional protection against large shocks. In this connection, staff noted that the authorities could take advantage of the projected strengthening of the balance of payments to gradually build reserves. The authorities agreed in principle, emphasizing that they would make sure that any intervention to build reserves is carried out transparently and is fully consistent with exchange rate flexibility and the monetary policy objectives" (19#28); "There is scope to strengthen further Colombia's reserve position." (23#39)
- Colombia 2011: "Staff welcomes that the recent buildup in reserves has been carried out in a transparent fashion… a larger reserve buffer could help mitigate costs of unexpected financial or capital account shocks" (30#41).
- Colombia 2012: "Intervention in FX market to smooth volatility and provision of liquidity through central bank facilities" (6 Matrix); "The central bank's intervention policy is geared at containing exchange rate volatility and strengthening external buffers. Staff supported the goals of reducing volatility and gradually building international reserves in line with the growth of trade and economic activity, and noted that those objectives were consistent with the inflation targeting framework" (8#20).

Trade Liberalization as a Mention:

- Colombia 2002: "Colombian exports are competitive at the current exchange rate, and the outlook for nontraditional exports is good, which is key to offset the decline in oil exports. The staff recognizes the advances but have been made in liberalizing Colombia's trade regime and will encourage the authorities to phase out the remaining import restrictions" (21#69).
- Colombia 2005: "In this regard, the staff agrees that continued trade liberalization would strengthen export competitiveness further" (16#34).

Tighten Prudential Regulation as a Mention:

- Colombia 2001: "The staff is encouraged of the banking system that has taken place in 2000, [and the resolute way in which the authorities are dealing with the loss-making public banks]".
- Colombia 2002: "The staff representatives noted that regulation of securities firms and brokerages remains significantly weaker than that of banks. The authorities shared this view and indicated that there are plans to strengthen supervision and regulation of capital market institutions through the securities commission, and enhance coordination with banking supervision. They expected these plans to be implemented progressively during the program period. (12#31)
- Colombia 2005: "The authorities agreed with staff that it would be important to continue to facilitate the development of market-based hedging mechanisms. While hedging has increased significantly since 1997, the market is very short term, with 80 percent of forward contracts maturing one month. The staff suggested several steps to strengthen the use of hedging instruments. The establishment of a single reference interest rate would allow for more credible valuation of derivatives contracts and improve disclosure in the financial statements. Also easing the limit on banks' foreign currency cash position (which has not been allowed to be in a negative balance since March 2004) would give banks more flexibility to take forward positions with offsetting spot transactions." (13#20)
- Colombia 2006: "The authorities agreed with staff on the importance of continuing to facilitate the development of market-based hedging mechanisms" (22#25).
- Colombia 2007: "The government's intention to improve the framework for the regulation and supervision of derivatives markets is appropriate" (25#39) & "Efforts to strengthen the financial system are continuing. The introduction of countercyclical provisioning in the banking system, and plans for further strengthening the authorities' capacity for risk-based supervision, are welcome" (27#48).
- Colombia 2008: "A review and strengthening of the crisis prevention framework is important in light of the turmoil in global financial markets. Staff welcomes recent efforts to strengthen monitoring and financial safety nets, as well as measures to prevent liquidity problems in the banking system" (26#43) & "There is scope to strengthen structural reforms. In the financial sector, progress on expanding the derivatives markets and improving the regulatory framework has continued, and the proposed development of a multi-tier pension system is welcome. The reform agenda could nevertheless be further expanded to encompass a strengthening of creditor rights and greater independence for financial sector supervisors" (27#48)

- Colombia 2010: "The Colombian authorities have been ahead of most countries in implementing countercyclical prudential regulations, a pillar of the ongoing global financial reforms…Further enhancements should be considered. The recent changes strike a balance between reducing systemic credit risk and accommodating the use of provisions by financial institutions" (p.22 box3)
- Colombia 2011: "Colombia's financial sector oversight is solid, and plans to strengthen crossborder and consolidated supervision are welcome. Staff recommends adopting a more ambitious timetable for completing the analysis of the composition of bank capital and liquidity under Basel III. Close monitoring of foreign borrowing activities by banks and corporates is also necessary" (30#43)

<u>CAPITAL FLOW MEASURES (includes capital controls)</u>

<u>Level of Support for Capital Controls</u>
<u>Examples of Not Supportive:</u>

- Malaysia 2001: "Directors also welcomed the recent removal of the remaining levy on profit repatriation of portfolio capital, and a few Directors urged the authorities not to resort to capital controls in the event of a deteriorating external position in the future." (p.3, PIN)
- Malaysia 2003: "They supported the authorities' approach to gradually liberalize the remaining administrative measures on capital flows" (p.5, PIN)
- Malaysia 2011: "There is also no evident need for capital controls to dampen the volatility of flows." (7#14)
- Colombia 2007: "[Capital] controls are unlikely to be effective over the longer term and are at odds with the government's desire to deepen Colombia's financial markets through the increased participation of foreign capital. The staff's preliminary assessment is that in the short run, the controls reduced portfolio inflows and borrowing" (22#34) & in regard to exchange rate, "Staff welcomes the relaxation of capital controls undertaken in December, and recommends that the authorities consider a complete phasing out of the controls in the near term, given their limited effectiveness" (26#45)
- Colombia 2008: "The controls were also associated with a significant increase in exchange rate volatility. In light of their limited effectiveness and adverse effects on volatility and asset market development, staff saw significant drawbacks to the controls" (23#33)

<u>Examples of Partially supportive:</u>

- Malaysia 2000: "Several Directors observed that a move towards a more flexible exchange rate should be timed to coincide with the lifting of the remaining capital controls, and the authorities should consider taking advantage of the current favorable conditions to act soon on both fronts." & "Directors felt that once prudential regulation was in place, cap controls could be lifted." (p.3, PIN)
- Malaysia 2002: "While recognizing that capital controls have played a role in helping Malaysia to regain financial stability, and that most of the remaining measures are mainly capital account

regulations of a prudential nature, a few Directors encouraged the authorities to further relax them" (p.5, PIN)

- Malaysia 2012: "Dealing with capital flows. Malaysia has been exposed to volatile capital flows, and this is likely to continue in the near term. The policy response so far, characterized by two-way exchange rate flexibility while smoothing excessive exchange rate fluctuations, has been successful. This policy should continue going forward, and could be complemented with MPPs if needed to mitigate potential risks." (16#37)
- Colombia 2010: "Staff noted that, in general, the effectiveness of controls is rather limited as a permanent measure, although they could be useful to manage a temporary surge in capital flows" (12#16) & "If the response were also to include some type of capital controls, these should be price-based and applied to a wide range of transactions". (23#37)
- Colombia 2011: "Staff noted that the current coverage of macro prudential measures was broad and adequate and that CFMs could be useful as part of a transitory response to an unexpected surge in inflows. Staff emphasized, however, that a tighter fiscal stance would have to be the main element of the policy response in that scenario." (18#19) & "Staff welcomes the authorities' plans to consider other policies (including strengthened macroprudential regulations and capital flow management policies) if capital inflows are seen as likely to endanger financial stability. Staff also underscores that a tightening of the fiscal stance would have to be part of the policy response to a possible surge in capital inflows." (31#40)

Examples of Supportive:

- Malaysia 1999: "Directors broadly agreed that the regime of capital controls--which was intended by the authorities to be temporary--had produced more positive results than many observers had initially expected. They welcomed the pragmatic and flexible way in which Malaysia had implemented and adjusted the controls" (pp.3-4, PIN)
- Turkey 1999: "Directors also considered it appropriate for the Central Bank...to counter capital inflows by allowing interest rates to fall. In this context, Directors considered the proposed reduction in the ceiling on banks' net open foreign exchange positions to be a positive step that would help curb capital inflows and reduce banking sector risk." (p. 4, PIN)

Appendix C – Tests on Bias Control

Inter-coder Agreement Test

To control the coding bias among different coders, we apply the kappa and concordance methods. These methods are widely used in survey and coding literature, especially medical science. The estimators are inter-coder agreement measure describing the reliability of the coding. What all inter-coder agreement measures do is adjust for this level of chance in some way.

The standards for what suffices in terms of an acceptable 'threshold' (e.g. 60% inter-coder agreement) are well defined based on specific cases and not fixed. The higher the agreement estimators are, the more consistent the coding is. They give feedback on whether and how to adjust the coding. In addition, this helps the team of coders to be on the same page and make precise quantitative coding.

The process of coding at its initial stage is an iterative process. After adapting the codebook and communicating together as a group to perfect the procedure of coding, we reach an inter-coder reliability scores of 88.7%.

The Kappa Statistic

To measure the inter coder variation so that two or more independent coders are evaluation the same thing, we use kappa statistic as a numerical rating of the degree to which the coding is consistent. First, five coders are coding independently on the same country--- Columbia 1998-2012 Article IVs. Each coder codes 15 observations on policy indicators and capital control measures. Second, coders discuss the differences and compare each coding results with the corresponding sources. Disagreements are settled on specific issues and the team comes up with the first draft of coding manual. Then, coders are re-coding again based on the manual. After several rounds of discussion and review, the coding results are pooled together and kappa statistics are calculated.

The calculation is based on the difference between how much agreement is actually present compared to how much agreement would be expected to be present by chance alone. Kappa is a measure of the difference between the observed and expected agreement, standardized to lie on a -1 to 1 scale.

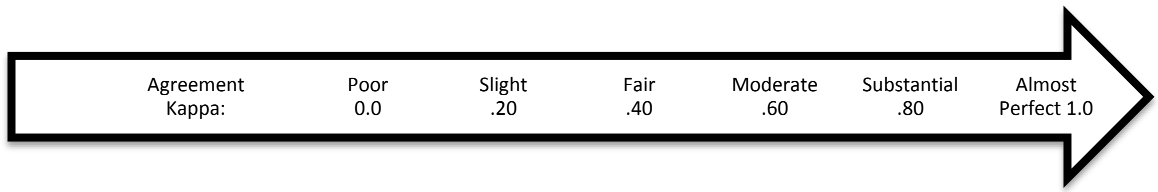
Table 1: Inter Coder Variation on Level of Supports in Capital Controls

Outcome	**Kappa Statistic**	**Z**	**Prob>Z**
0	0.5076	5.31	0.0000
1	0.3647	3.45	0.0003
2	0.4663	6.08	0.0000
3	0.0119	0.16	0.5617
Combined	0.4280	6.58	0.0000

Table 1 indicates the average outcomes obtained from the pool of five coders. Based on the general criteria as shown in Graph 1, the kappa statistic scores for 0 and 2 are moderate, 1 is fair while 3 is poor.

The kappa-statistic measure of agreement is scaled to be 0 when the amount of agreement is what would be expected to be observed by chance and 1 when there is perfect agreement.

Graph 1: Interpretation of Kappa



The estimated kappa itself could be due to chance. The P value and z statistics of kappa reports the variance of kappa. We eliminate the case of estimated kappa due to chance with statistically significant kappa above 0.

To evaluate the quality of coders' coding, we also calculate the correlation and apply the concord commend in STATA for any two coders. Concordance correlation coefficient (Lin, 1989, 2000) reflects a statistic comparison between different raters. This helps to find the difference between two coders. Here we report the correlation coefficient of 5 coders on coding Columbia Article IVs in Table 2. We find rater1 and rater3 has the highest correlation while there are disagreements among rater2 and rater4. Rater 2's coding has the relative poor quality and the group discussion solves the disagreement term by term.

Table 2: Correlation between raters on all coding observations

Correlation	Rater0	Rater1	Rater2	Rater3	Rater4
Rater0	1.0000				
Rater1	0.6035	1.0000			
Rater2	0.3671	0.1364	1.0000		
Rater3	0.7493	0.8870	0.3155	1.0000	
Rater4	0.6187	0.5581	0.1527	0.6954	1.0000

After recoding the disagreement term together, we calculate the concordance correlation between coders again. The reason to introduce Lin's concordance method is that it is robust on as few as 10 pairs of data, which is more suitable in our coding situation. The results are summarized in Table 3. We reach an agreement with concordance correlation coefficient (>0.8: substantial; >0.6: moderate). The average of differences between coders is controlled under 0.2.

Tests on bias control are helpful in amendments and give suggestions on revising. It's important to detect the difference before generating to other countries. On the other hand, case study also plays an important role in the coding process. It provides efficient coding process.

In sum, the final coding manual passes the moderate level of inter coder agreement statistically. Our coding results among all countries across time are consistent and the team has the unified criteria on quantifying the policy factors. The level of supports on capital controls are coded neutrally according the reports sentence by sentence. The evaluation from 5 coders is on the same level statistically, taking into consideration the variation by chance.

Table 3: Concordance Correlation Coefficient

Comparison Pairs		**Concordance Correlation Coefficient**			**Difference Statistics**	
Coder #	**Coder #**	rho_c	SE(rho_c)	95% CI (asymptotic)	Average	Correlation btw difference & mean
rater1	**rater0**	0.622	0.156	[0.316, 0.929]	-0.059	-0.139
rater1	**rater2**	0.496	0.240	[0.276, 0.667]	-0.176	-0.093
rater1	**rater3**	0.872	0.065	[0.744, 1.000]	0.133	0.019
rater1	**rater4**	0.657	0.167	[0.229, 0.885]	-0.118	-0.318