Monetary Policy Operations and Financial Market Development

Mangal Goswami
IMF – STI
Workshop on Implementation of Monetary Policy Operation
Bangkok, Thailand, Dec 3– 5, 2014

This training material is the property of the IMF-Singapore Regional Training Institute and is intended for use in STI courses. Any reuse requires the permission of the STI.

- Evolution of monetary frameworks
- Monetary policy and financial markets
- Case studies

Evolution of monetary frameworks

Evolution of Monetary Frameworks

- Inflation stabilization - anchoring by pegging exchange rate to say the USD;
- Deteriorating competitiveness and external balances;
- Move to more flexibility – peg to currency basket to horizontal band to crawling peg;
- Enhance credibility of central bank in managing inflation;
- Develop FX and money markets - build infrastructure including bank regulation and supervision;
- Move towards IT – from implicit IT to explicit IT;
- Include financial stability as a mandate beyond price stability;

Moving to Exchange Rate Flexibility

- Establish an alternative nominal anchor in the context of a new monetary policy framework and developing supportive markets;
- Operating a flexible exchange rate regime works well only when there is a sufficiently liquid and efficient FX market for price discovery
- Develop deep and liquid FX and money markets as well as debt capital markets;
- Formulate intervention policies consistent with the new exchange rate regime;
- Review exchange rate exposures and build the capacity of market participants to manage exchange rate risks;
- Build supervisory capacity to regulate and monitor risks;

Moving to Exchange Rate Flexibility

- Gradual transitions to exchange rate flexibility
- Increasingly more flexible forms of intermediate regimes in the interim period offer time to prepare for an orderly exit;
- High premium assigned by markets to a consistent mix of macroeconomic and financial policies under increased capital mobility;
- Transition to flexibility usually involves testing the markets of the authorities’ commitment;
- A transparent and effective communication strategy on monetary and exchange rate policies;

Monetary Framework and FX Regime

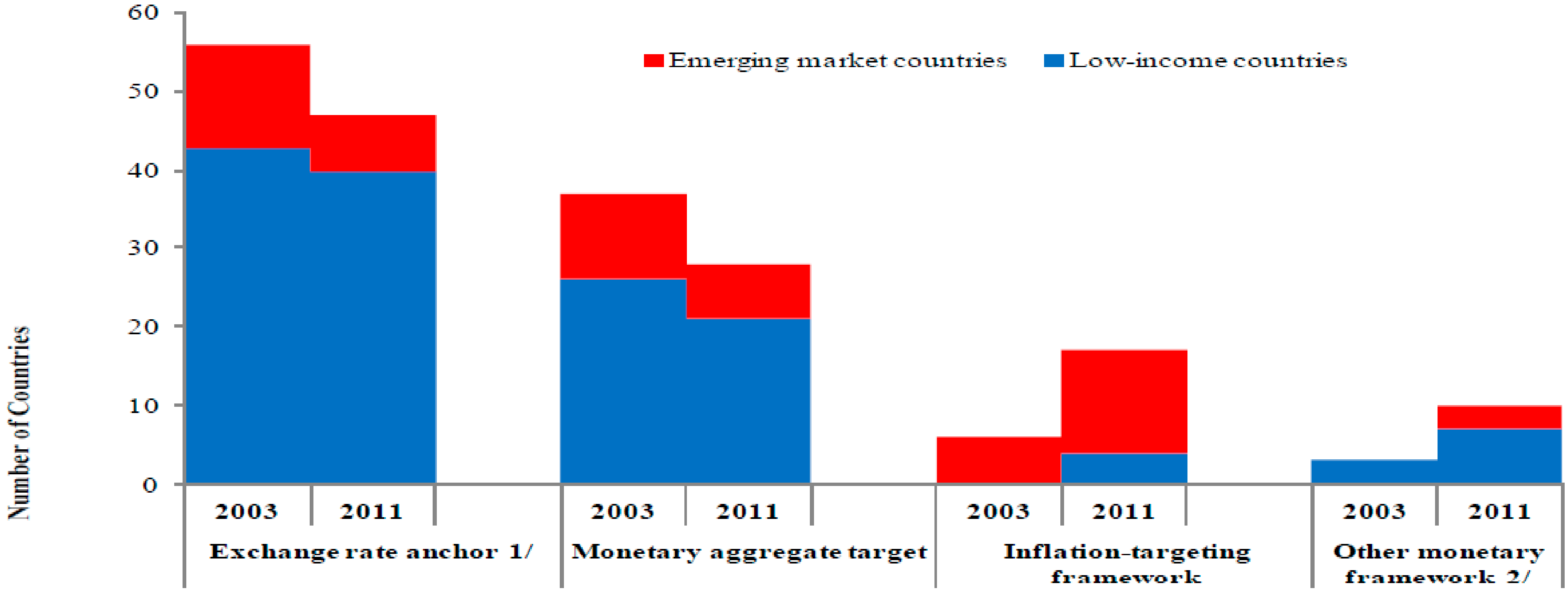
COUNTRY	FX REGIME	POLICY REGIME	POLICY RATE	OPERATIONAL INDEPENDENCE
China	Managed Float	Multiple Objectives	Lending Rate	Limited but improving
Hong Kong	Currency Board	(CBA)	Base rate	High, limited by CBA
India	Managed Float	Multiple Objectives	Reverse repo rate	High
Indonesia	Managed Float	FX/Inflation	Reference rate	High
Korea	Free Float	IT	Repo rate	Very High
Malaysia	Managed Float	Informal Taylor Rule	Overnight rate	Moderate
Philippines	Free Float	IT	Repo rate	High
Singapore	Managed Float	Informal Taylor Rule	n/a	Very High
Taiwan	Managed Float	Informal Taylor Rule	Rediscount rate	Very High
Thailand	Managed Float	IT	Repo rate	High

Source: BofAML GEMs Paper #6, Sept 2011

Frontier Economies: Evolving Monetary Frameworks

- Lower inflation/inflation volatility and ongoing financial deepening is creating an environment for adopting a more flexible monetary policy framework;
- More prominent role for policy interest rates and inflation objectives;
- Using policy rates to signal monetary policy stance with implicit inflation targets;
- Reserve money targets and even monetary targets are becoming less effective with financial innovation and shocks to money demand which weakens the link between money and prices;
- Monetary policy is no longer limited to monetary aggregate targeting which often leads to excessive interest rate volatility;

Monetary Policy Regimes



Source: IMF AREAER Database.

1/ The exchange rate anchor includes regimes where the exchange rate serves as the nominal anchor or intermediate target of monetary policy and includes pegs (with or without bands), crawling pegs, currency board arrangements, no separate legal tender regimes, and other managed arrangements.

2/ Other monetary framework includes regimes with multiple objectives, typically inflation or money target together with an exchange rate anchor.

Exchange Rate Arrangements

	De Facto	De Jure	Monetary Policy Framework
Cambodia	Stabilized Arrangement	Managed Float	Exchange Rate Anchor (USD)
Lao PDR	Stabilized Arrangement	Managed Float	Mixed Regime of Monetary Targeting and an Exchange Rate Anchor
Myanmar	Other Managed Arrangement	Managed Float	Multiple Indicators
Vietnam	Stabilized Arrangement	Managed Float	Exchange Rate Anchor (Basket)

Source: IMF Annual Report on Exchange Arrangements and Exchange Restrictions (2013)

Frontier Economies: Monetary Transmission

- Shallow financial systems in frontier economies limit:
  - fiscal, monetary, and exchange rate policy choices;
  - hamper macroeconomic policy transmission
  - impede opportunities for hedging or diversifying risk;
- Short-term relationship between money and inflation is stronger for economies with high inflation and low financial development;

Monetary Policy and Financial Markets

Monetary Policy and Financial Markets

- Financial markets are central to monetary policy operations;
- There are also synergies between monetary policy objectives and financial stability;
- Monetary transmission depends on financial market structure;
- Money market instruments can vary from short-term cash debt markets (CD, CP), interbank market, repo markets and FX swap markets;
- Interest rate deregulation – help in developing money markets and the transmission thereof;
- Financial liberalization – can alter the transmission;

Monetary Policy and Financial Markets - Asia

- Depth and breadth of Asian money markets have improved over the past decade and has become more integrated to the global financial system;
- Debt stock of the government is small in many countries while foreign assets of monetary authority are large constraining monetary operations;
- Many countries in the region use swap-implied interest rates as reference rate rather than interbank rates – CB and MOF coordination is crucial;
- Banking system in Asia is quite liquid in local currency and therefore does not foster interbank market development;
- Banks often prefer to park excess cash with central banks or buy government securities rather than to lend to other banks;

Monetary Policy and Financial Markets - Asia

- Structurally, Asian banks typically depend on deposits for funding rather than money markets or capital markets ;
- In a bank dominated system, monetary transmission takes place through bank lending channel but in a diversified financial system central bank faces new challenges;
- Collateralized lending (repo) is still developing although FX swaps are quite common;
- Legal framework for collateralized lending is still weak;
- Restrictions of short selling also does not help liquidity in the market;
- More recently, local currency bond markets have grown rapidly in many Asian countries, aiding financial development;

Monetary Policy and Financial Markets - Asia

- Interest rate deregulation – more flexible and market determined rate -> interest rate channel;
- Capital account liberalization – greater market integration -> foreign interest rates more important and domestic policy rate less effective in transmission;
- Financial disintermediation – development of capital markets -> less reliant on bank lending channel but the transmission from policy rates to market rates could be faster;
- Financial innovation – securitization and derivatives -> banks are less constrained by policy rate changes making the asset price channel more important;

Measuring Financial Development

- Size of financial institutions and markets (financial depth)
- Degree to which individuals can and do use financial services (access)
- Efficiency of financial intermediaries and markets in intermediating resources and facilitating financial transactions (efficiency)
- Stability of financial institutions and markets (stability).

Measuring Financial Development

	Financial Institutions	Financial Markets
DEPTH	**Private sector credit to GDP** Financial institutions' assets to GDP Money (M2 aggregate) to GDP Deposits to GDP Value-added of the financial sector to GDP	**Stock market capitalization plus outstanding domestic private debt securities to GDP** Private debt securities to GDP Public debt securities to GDP International debt securities to GDP Stock market capitalization to GDP Stocks traded to GDP
ACCESS	**Accounts per thousand adults** (commercial banks) Branches per 100,000 adults (commercial banks) Percent of people with a bank account (from user survey) Percent of firms with line of credit (all firms) Percent of firms with line of credit (small firms)	**Percent of market capitalization outside of top 10 largest companies** Percent of value traded outside of top 10 traded companies Government bond yields (3 month and 10 year) Ratio of domestic to total debt securities Ratio of private to total debt securities (domestic) Ratio of new corporate bond issues to GDP
EFFICIENCY	**Net interest margin** Lending-deposits spread Noninterest income to total income Overhead costs (percent of total assets) Profitability (return on assets, return on equity) Boone indicator (Herfindahl, or H-statistic)	**Turnover ratio** (turnover/capitalization) for stock market Price synchronicity (co-movement) Price impact Liquidity/transaction costs Quoted bid-ask spread for government bonds Turnover of bonds (private, public) on securities exchange Settlement efficiency
STABILITY	**z-score** (or distance to default) Capital adequacy ratios Asset quality ratios Liquidity ratios Other (net foreign exchange position to capital, etc.)	**Volatility** (standard deviation/average) of stock price index, sovereign bond index Skewness of the index (stock price, sovereign bond) Price/earnings (P/E) ratio Duration Ratio of short-term to total bonds (domestic, international) Correlation with major bond returns (German, United States)

Source: Based on the review of literature in Čihák, Demirgüç-Kunt, Feyen, and Levine 2012.

Benchmarking Financial Development

Financial Institutions (Mean)	High income	Upper middle income	Lower middle income	Low income
Depth	84	44	28	13
Access	55	32	19	5
Efficiency	86	75	61	42
Stability	35	38	40	35

Financial Markets (Mean)	High income	Upper middle income	Lower middle income	Low income
Depth	51	27	16	10
Access	53	58	69	29
Efficiency	45	19	20	21
Stability	53	60	53	44

Source: Data from and calculations based on the Global Financial Development Database (http://www.worldbank.org/finanacialdevelopment)

Financial Deepening in Developing Economies (2009-2011)

Financial Institutions

Characteristic	Indicator	Indonesia	Cambodia	Lao PDR	Myanmar	Vietnam	World	Lower Middle-Income
Depth	Private credit by deposit money banks to GDP (%)	24.4	25.4	17.9	-	104.4	53.8	31.2
Access	Account at a formal financial institution (%, age 15+)	19.6	3.7	26.8	-	21.4	45.7	24.0
Efficiency	Bank lending-deposit spread (%)	5.6	-	20.3	5.0	2.4	7.9	8.9
Stability	Bank Z-score	2.8	9.7	4.6	0.5	18.6	15.5	17.6

Financial Markets

Characteristic	Indicator	Indonesia	Vietnam	World	Lower Middle-Income
Depth	Stock market capitalization + outstanding domestic private debt securities to GDP (%)	37.9	16.5	66.5	29.8
Access	Market capitalization excluding top 10 companies to total market capitalization (%)	55.6	-	45.7	54.1
Efficiency	Stock market turnover ratio (%)	56.3	87.0	43.7	21.9
Stability	Stock price volatility	27.6	30.0	25.3	26.3

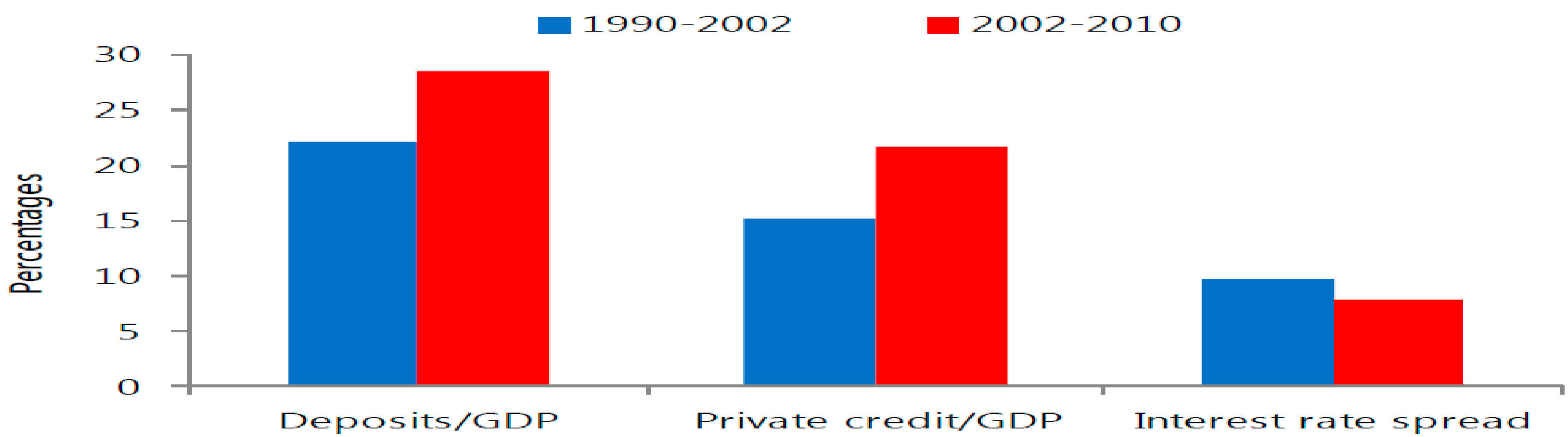
Source: World Bank, Global Financial Development Report 2014

Frontier Economies: Financial Deepening

- Financial deepening has contributed to changes in policy landscape;
- Bank deposits and credit to private sector has increased significantly over the past decade;

Financial Deepening (LICs and EMs)

(Medians, from 1990–2012)



Sources: Finstat, WDI, and IMF staff calculations

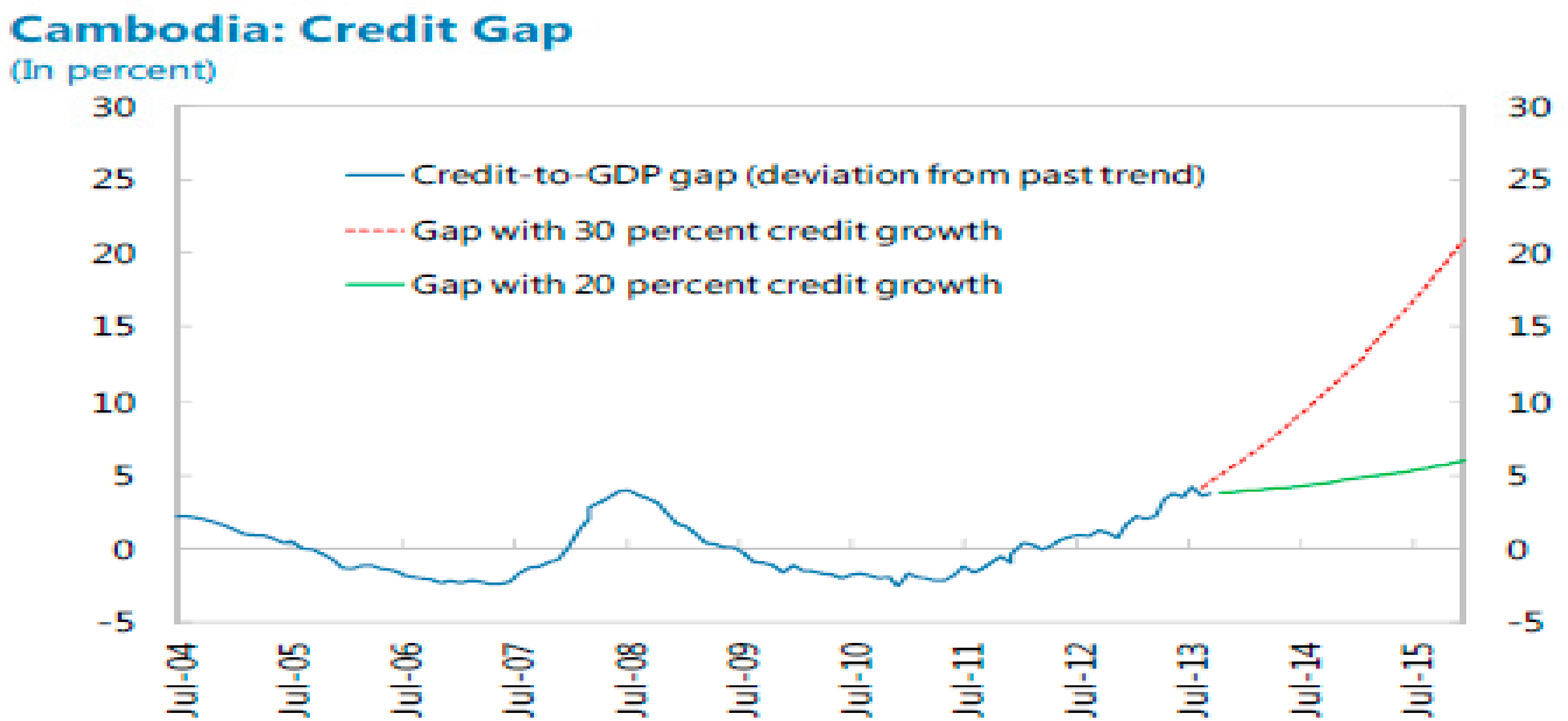
Case Studies

Cambodia – Financial Stability Risks (1)

- Cambodia has witnessed a fast paced financial deepening in recent years (Credit-to-GDP ratio has nearly doubled in the last three years);
- Foreign banks that started operations since 2011 contributed to more than one-third of total new lending in 2012;
- Rapid credit growth amid a shifting funding structure compounds potential liquidity risks;
- Domestic deposit growth has not kept pace with credit growth.
- Fast expansion of the real estate sector point to emerging financial stability risks;
- Proliferation of real estate financing from the shadow banking system adds to overall risks

Cambodia – Financial Stability Risks (1)

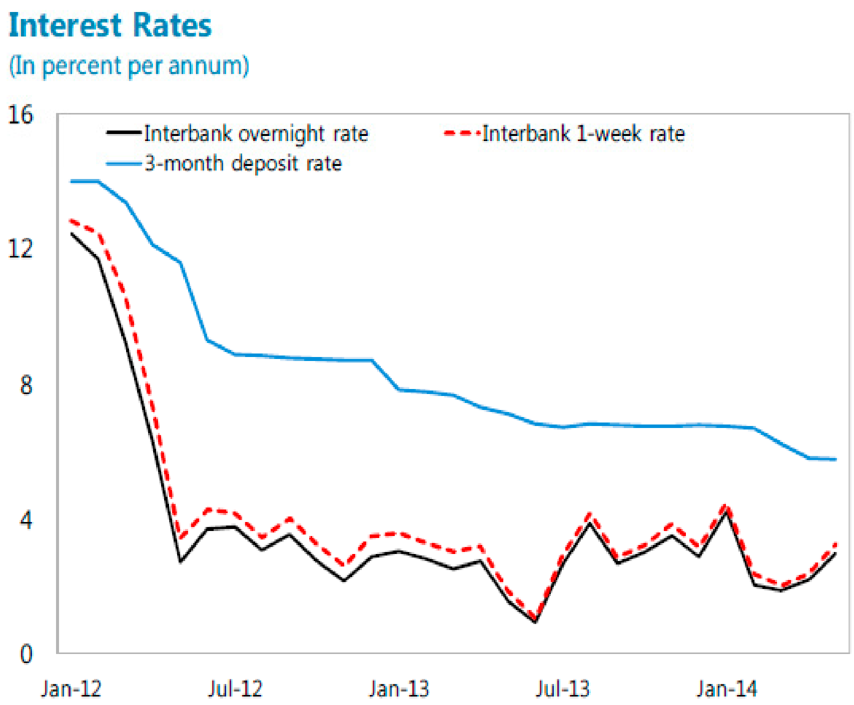
If the current pace of credit growth continues, credit-to-GDP gap would rapidly widen, surpassing the 2008 boom.

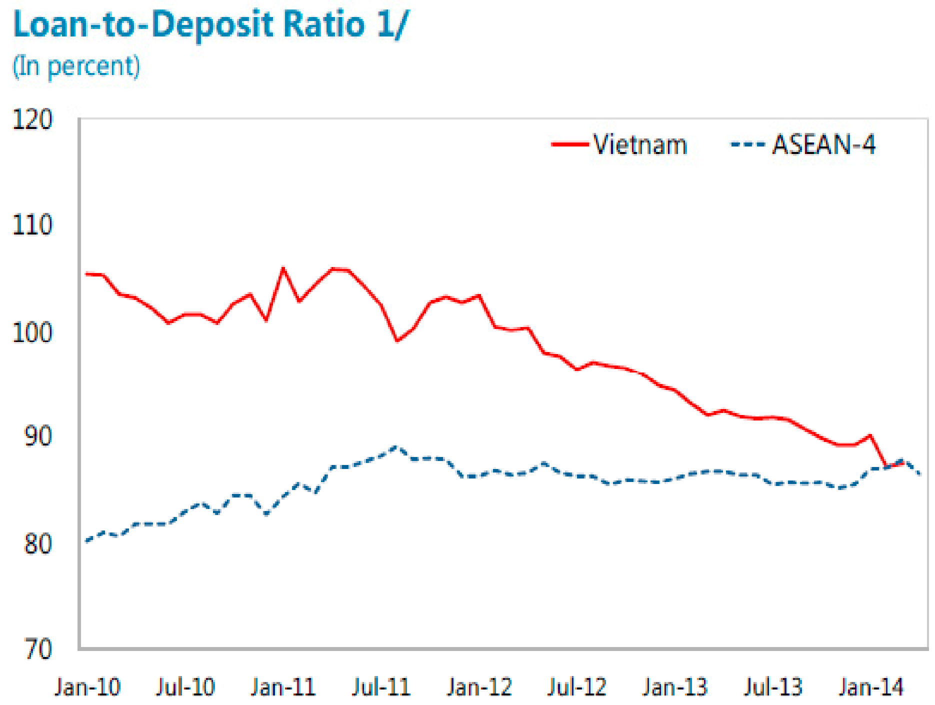


Monetary Policy in Vietnam (1)

- SBV independence is not in the law explicitly;
- SBV has financial stability mandate by decree only;
- Monetary framework: multiple targets and instruments, including broad money, bank credit, and various interest rates;
- A daily US$/VND exchange rate target is announced, with a band of ±1 percent;
- Future move to more independent monetary policy framework;
- Future move to IT and more flexible exchange rate;

Monetary Policy in Vietnam (2)





1/ ASEAN-4 includes Indonesia, Malaysia, Philippines, and Thailand.

Monetary Policy in Vietnam (3)

- Monetary policy tools:
  - reserve requirement on USD and VND (mainly a tool for managing credit growth)
  - OMO (reverse repo rate) to inject and withdraw liquidity on a daily basis
  - SBV lends short-term at the reverse repo rate with government debt as collateral
  - SBV refinance rate and discount rate is meant for lending with collateral to banks with liquidity problems
  - SVB and government uses loan growth targets to manage credit expansion
  - SBV also has deposit/lending rate ceiling to control interest rates

Monetary Policy in Vietnam (4)

- SBV Banks are the largest players in the local government bond market
- Banks cannot use bonds to satisfy reserve requirements.
- Banks invest in and actively trade the 0-5Y segment
- Offshore participation in the local-currency bond market is limited, with most offshore funds preferring to invest in the USD global bonds

Case Study: Cambodia (1)

Monetary framework:

- NBC has maintained a relatively fixed exchange rate vis-à-vis the U.S. dollar, which has been the effective nominal anchor for three decades in the absence of a formal monetary framework;
- Dollarization relegates NBC's role in setting monetary policy which is subordinated to US monetary policy;
- NBC lacks instruments to influence monetary policy to anchor inflation;
- NBC uses USD reserve requirement ratio as a tool for monetary policy (but of limited effectiveness);

Case Study: Cambodia (2)

Monetary framework:

- High dollarization requires NBC to maintain adequate level of dollar liquidity (at macro level and at individual banks);
- Dollarization makes Cambodia susceptible to changes in U.S. monetary policy (imports US monetary policy);
- Weak institutions undermine policy credibility regarding the enforceability of contracts, inducing residents to hold foreign currency as security;

Case Study: Cambodia (3)

Monetary framework reform (de-dollarization):

- Reduce the share of foreign currency deposits to broad money (examples are Israel, Poland, Mexico, and Pakistan);
- Gradual and market-driven policies have been more successful – lower inflation and deepen financial markets;
  - creating markets for local currency denominated bonds;
  - introducing differential remuneration rates on reserve requirements on foreign currency deposits;
  - active bank supervision to ensure that banks fully covered their foreign currency loans positions;
- Forced de-dollarization through conversion of dollar deposits to domestic currency has had macroeconomic costs in Mexico and Pakistan;

Case Study: Cambodia (4)

Monetary framework reform (de-dollarization):

- Reversing dollarization is not easy and is mainly a gradual process;
- De-dollarization requires persistence in reducing inflation and stabilizing macroeconomic policy;
- Establishing the credibility of macroeconomic policy is essential;
- Exchange rate based stabilization is not well aligned with a de-dollarization strategy;
- Need to develop the domestic financial system;
- There is no silver bullet in encouraging the use of local currency over foreign currency.

Case Study: Cambodia (5)

Monetary framework reform (de-dollarization):

- Enhancing NBC's LOLR framework (standing facilities);
- Prudential policy: higher reserve requirement on FC deposits and lower RR for local currency deposits;
- Deposit insurance system fosters confidence in the banking system;
- Require all prices in the market to be set and payment to be made in domestic currency;

De-Dollarization Policies (1)

- Set the right incentives for residents to be willing to hold domestic currency;
- Clear policy towards to price stability and macro stability;
- Both government intervention and market forces are needed;
- Market forces: reducing price uncertainty of consumers and firms - to insure against inflation surprises;
- Government: strengthen institutions;

De-Dollarization Policies (2)

- Develop domestic financial market instruments;
- Israel – conscious effort to deepen local currency markets (may incur a high interest cost);
- Later extend maturity of instruments and foster the development of developments;
- Once some credibility is build, a move to IT can be introduced to anchor inflation expectation;
- A more flexible exchange rate also lowers future build-up of balance sheet vulnerabilities;
- Key pillar behind Israel's success was the move to IT that contributed to monetary credibility and eventually price stability;