



Monetary and Macroprudential Policies in Saudi Arabia

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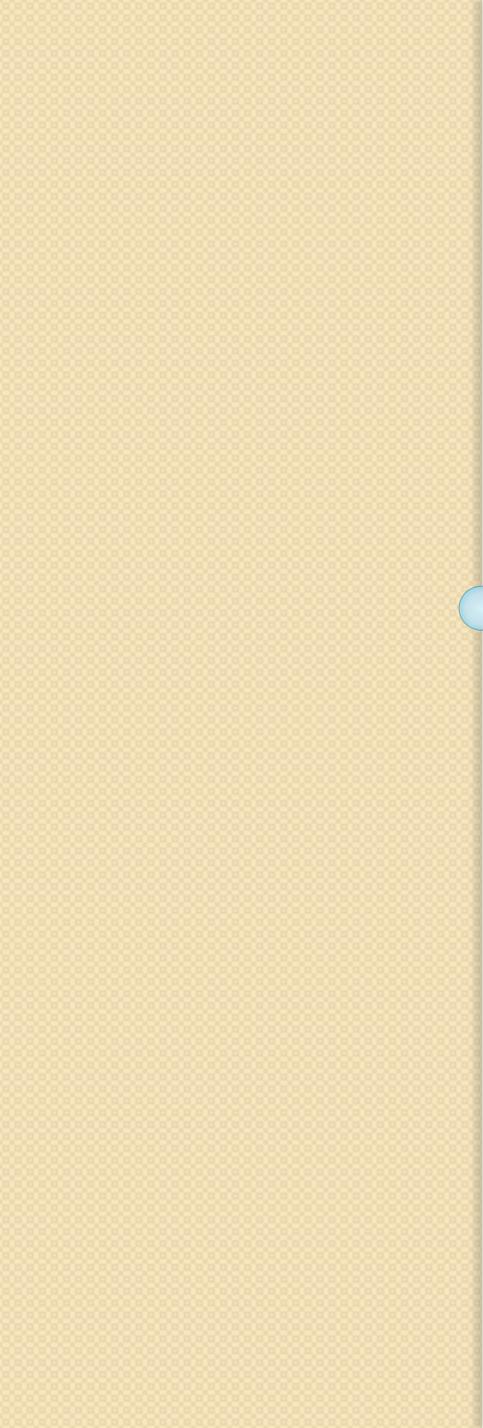
Saudi Arabian Monetary Agency & International Monetary Fund

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Outline

- The macroeconomic framework and monetary policy toolkit in Saudi Arabia
- International comparison of monetary policy frameworks
- Empirical analysis of the monetary policy transmission
- Macroprudential policy in Saudi Arabia
- International comparison of macroprudential policy frameworks
- Conclusion



- **Macroframework and monetary policy toolkit in Saudi Arabia**

Macroeconomic policy framework in Saudi Arabia

- Monetary policy anchored by the Saudi riyal's peg to the U.S. dollar.
- A mix of policies used to influence economic activity and financial sector risks
 - Fiscal policy
 - Monetary policy toolkit
 - Macroprudential regulations

SAMA's monetary policy toolkit

Instruments

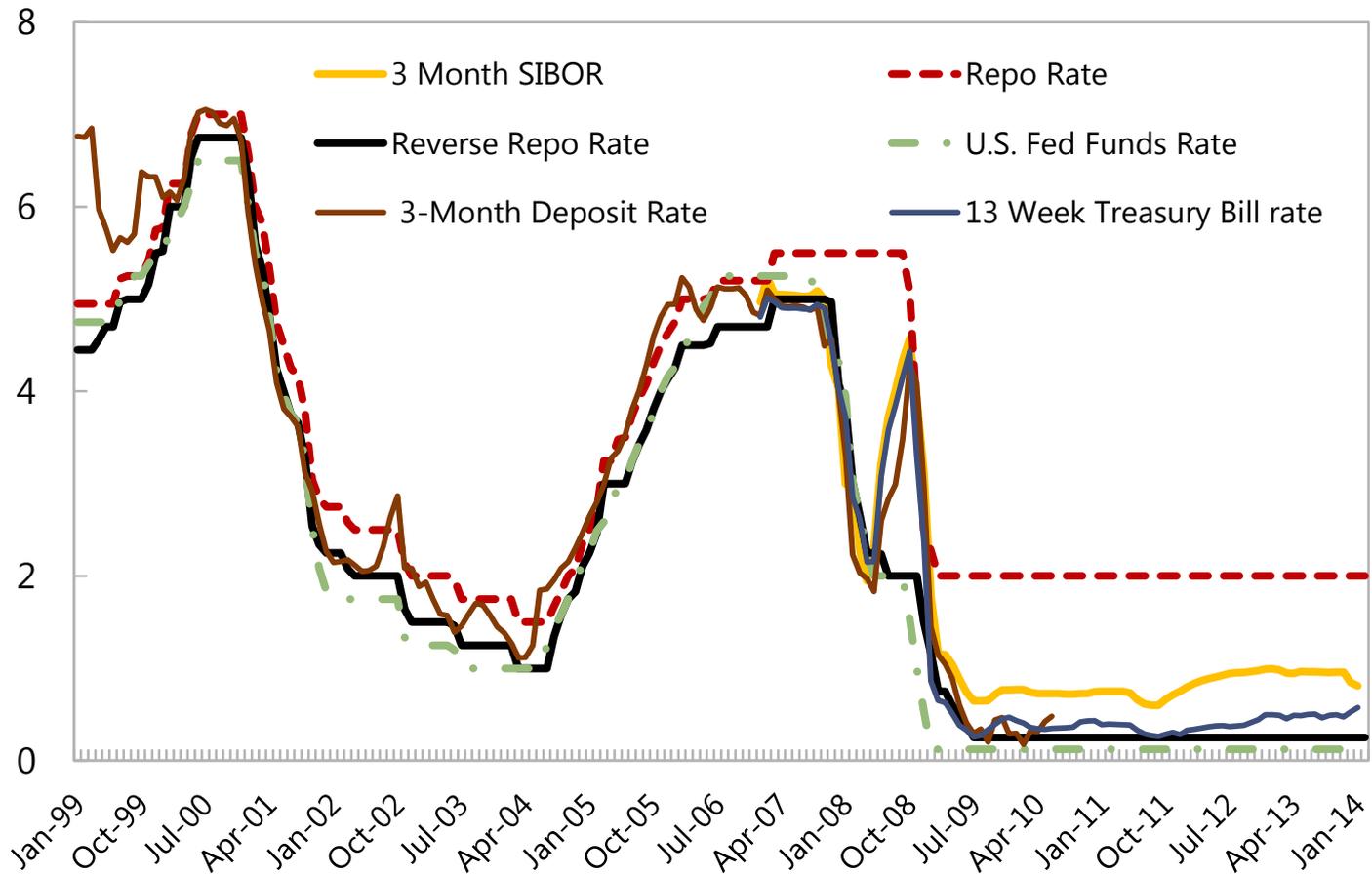
- Statutory Reserve Requirements
- Repo and reverse repo operations for short-term liquidity management
- Sale of SAMA paper (SAMA-bills) – increasing over time as stock of government bonds has decreased
- FX Swaps – used infrequently (e.g. during crises)
- Deposits Placement – used infrequently, deposits of government agencies placed strategically with banks over longer horizons than regular repo transactions

Rates and paper used

- Policy Rate: Repo rate 2% Reverse repo rate 0.25%
Maturity: Overnight, reverse repos a passive liquidity absorption facility
- SAMA-Bills: papers issued by SAMA with 80% return of SIBID
Maturity: 1, 4, 13, 26, 52 weeks
Passive amount issued
- Government Development Bonds (GDB) with return from 2% to 8.5%
Maturity: 2, 3, 5, 7, 10 years, stopped issuance in 2007
Used as collateral for repo operations
- SIBOR/SIBID: the Saudi Interbank Offer and Bid rates
- US Fed Funds rate

Peg limits SAMA'S ability to set interest rates independently

Interest rates track U.S. rates



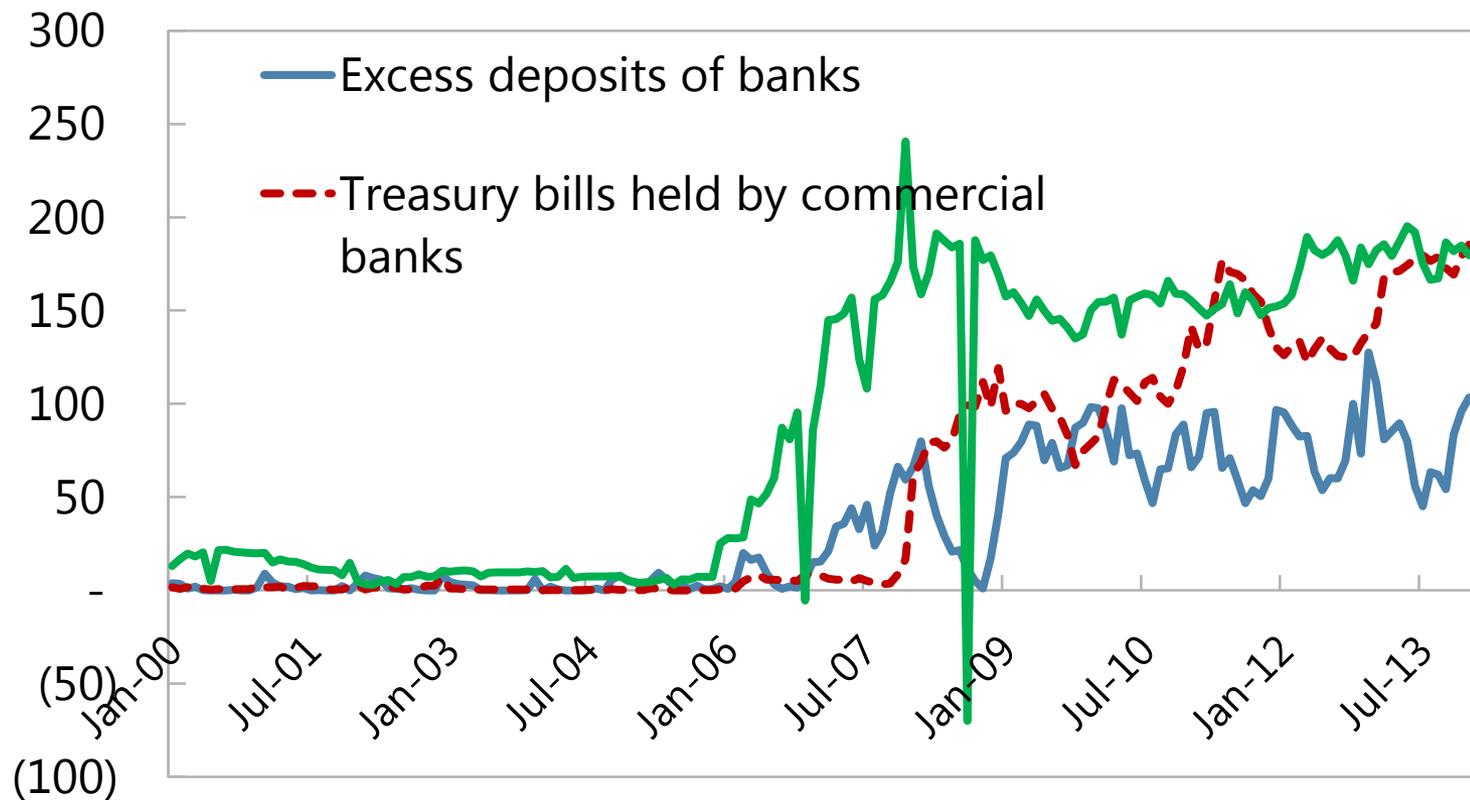
Reserve requirements

- **Statutory Cash Reserve Ratio (CRR)**
 - 7% of demand deposits
 - 4 % of the time and savings deposits.
- **Statutory Liquidity Ratio (SLR)**
 - 20 % of the total commitments of bank deposits to be held in the form of short-term assets convertible to cash within a month

SAMA has stepped up liquidity management operations

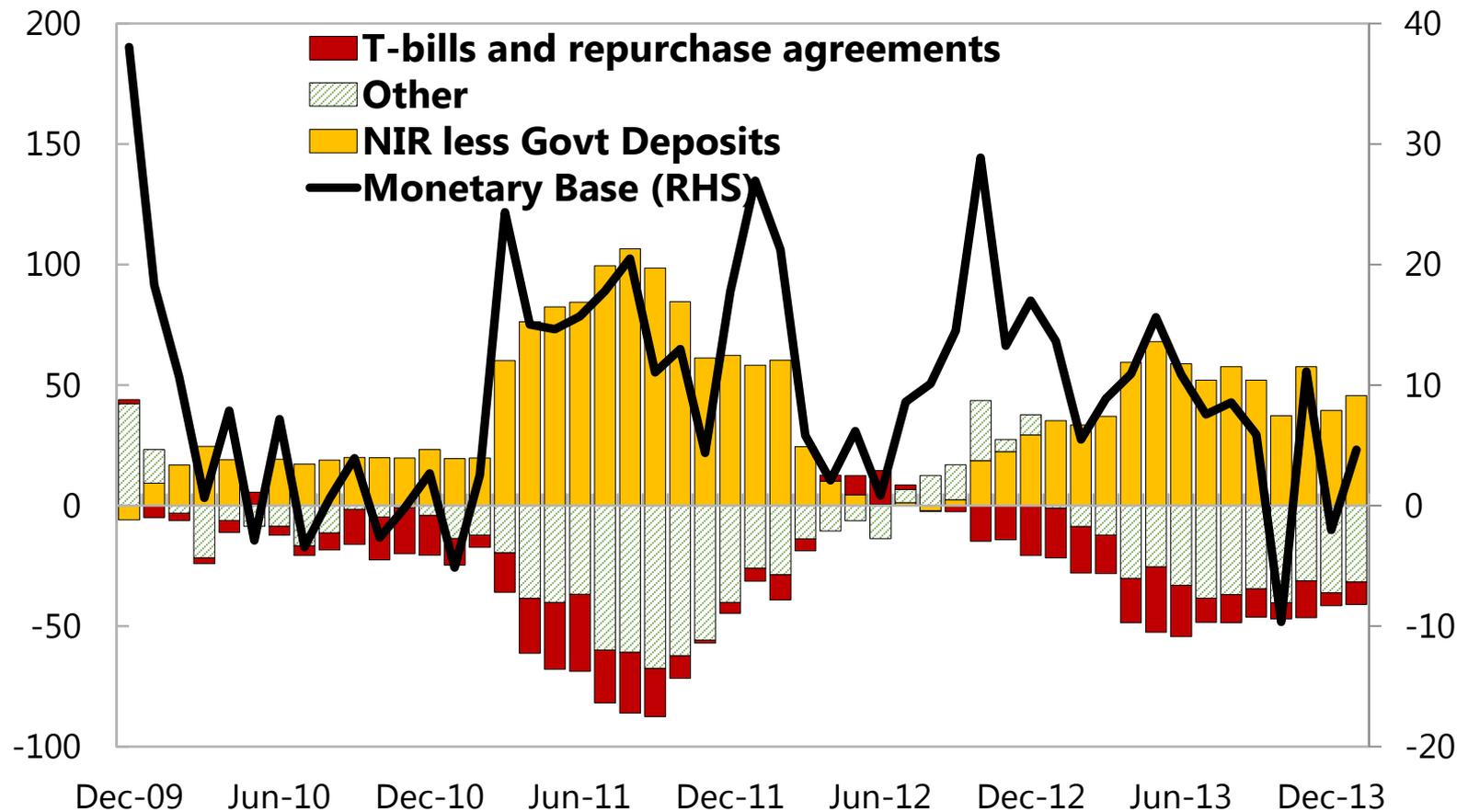
Liquidity Management by SAMA

(Billions SAR)



However, the monetary base is volatile

Contributions to Monetary Base Growth (in percent)



International comparison of monetary policy frameworks



Heterogeneity in monetary policy frameworks across oil exporters

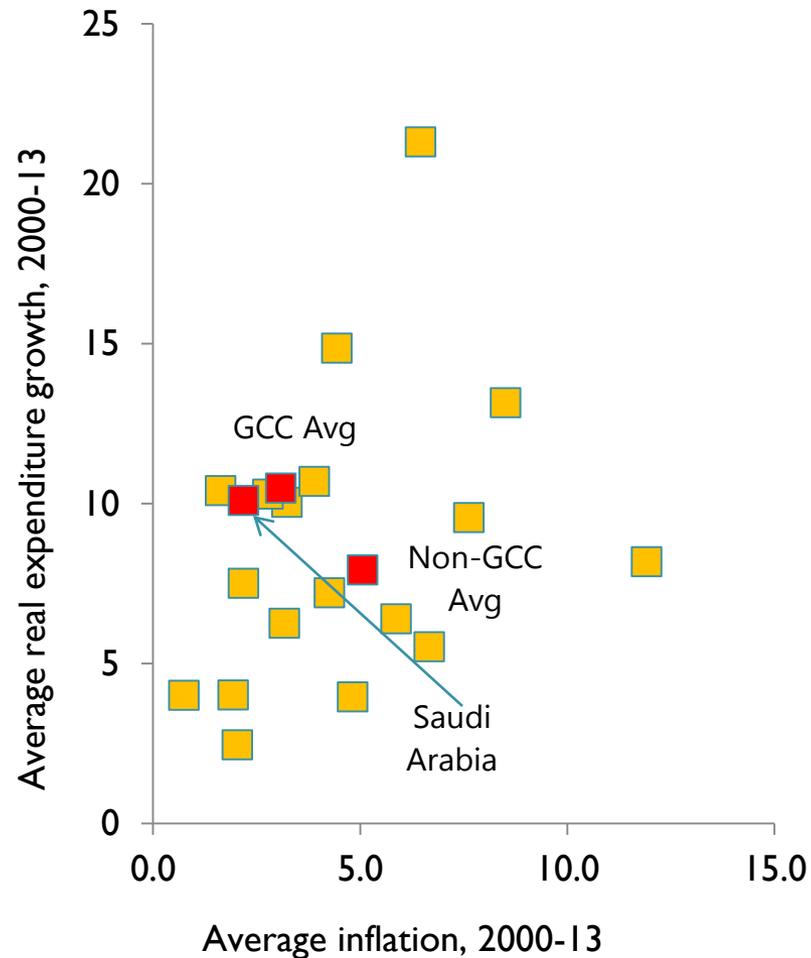
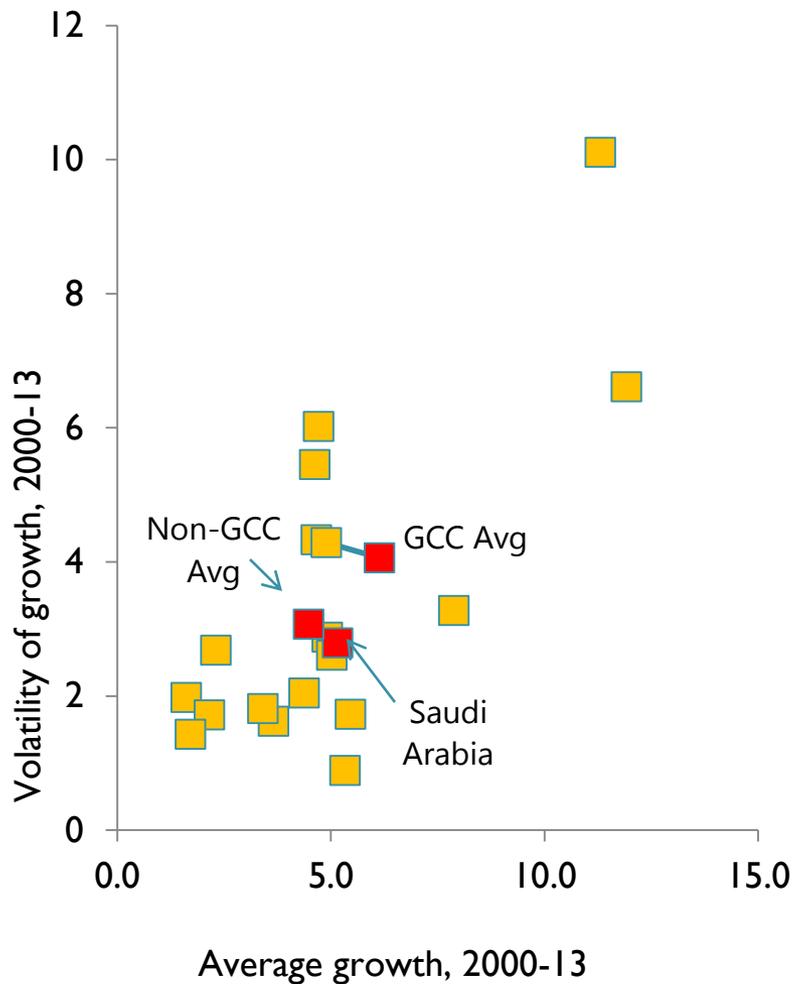
Country	Monetary policy framework
Saudi Arabia	Exchange rate anchor
Other GCC	Exchange rate anchor
Algeria	Exchange rate anchor
Azerbaijan	Other*
Brunei	Exchange rate anchor
Canada	Inflation target
Chile	Inflation target

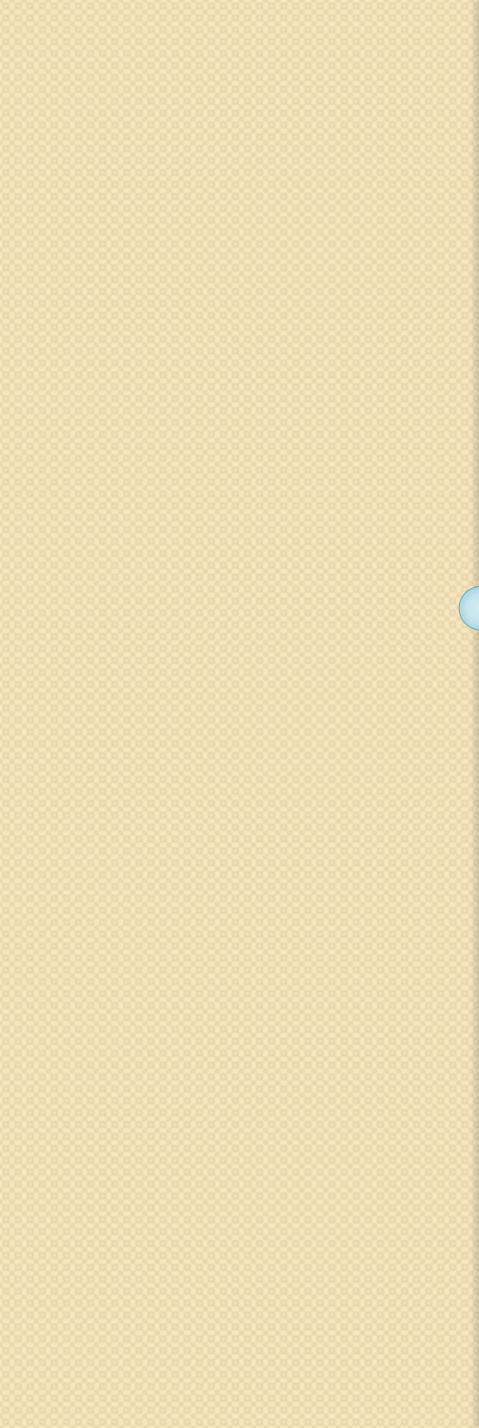
Country	Monetary policy framework
Indonesia	Inflation target*
Kazakhstan	Exchange rate anchor
Malaysia	Other
Mexico	Inflation target
Norway	Inflation target
Russia	Other
South Africa	Inflation target
Trinidad and Tobago	Exchange rate anchor

Source: IMF, *Annual Report of Exchange Arrangements and Exchange Restrictions*, end-April 2013.

* These countries maintain a de facto exchange rate anchor.

Saudi Arabia's macroeconomic outcomes compare well





Empirical analysis of monetary
policy in Saudi Arabia

Monetary transmission channels

- **Interest rate channel**
 - policy rates impact economic activity through cost of borrowing
- **Credit channel**
 - availability of bank reserves impacts supply of credit
- **Exchange rate channel**
 - exchange rate movements impact net external demand
- **Asset price channel**
 - monetary policy impacts asset prices which generates wealth effects

Overview of empirical model

- Purpose—examine the interest rate and credit channels of monetary policy transmission
- Vector Error Correction Model
- Model the impact of movements in interest rates and reserve money on macroeconomic outcomes
- Endogenous variables include government expenditure (G), real non-oil GDP (Y), private sector credit ($Credit$), prices (cpi), and reserve money (RM).
- Exogenous variables—oil prices, U.S. GDP, U.S. CPI, and U.S. fed funds rate.
- Saudi interest rate proxied by fed funds rate

Results – Long run relationship (1/3)

- Long run relationship between endogenous variables is estimated as:

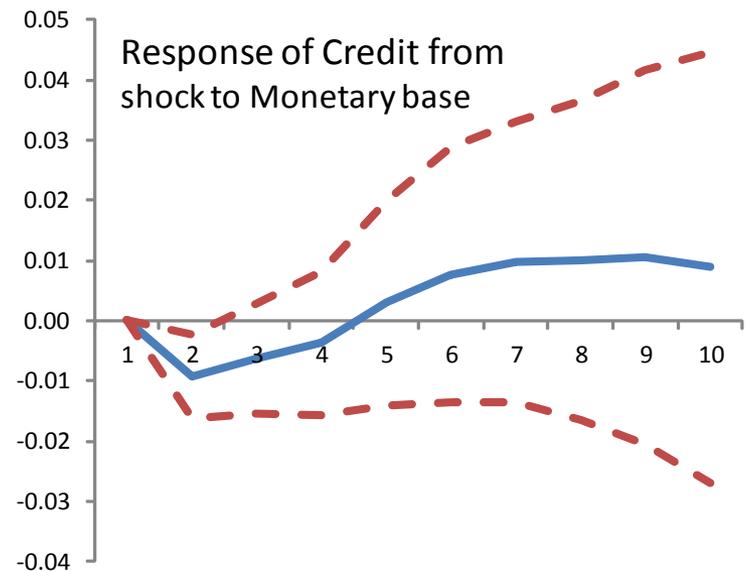
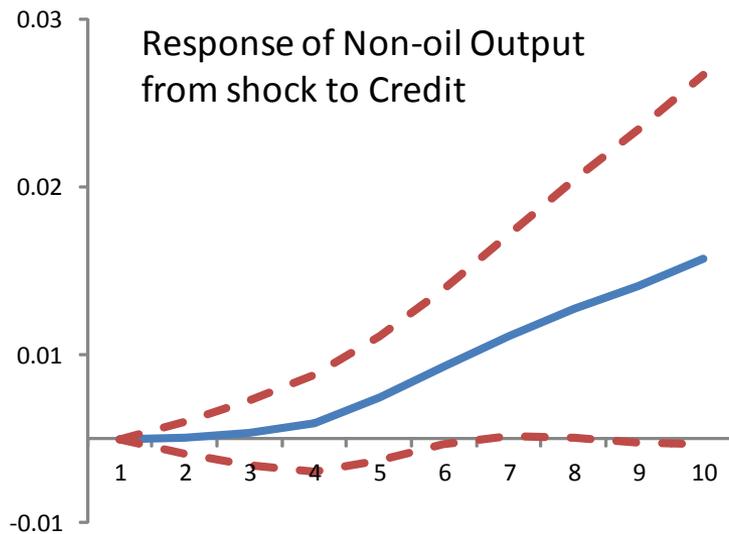
$$G + 8.42*Y - 3.24*Credit + 10.36*CPI - 6.54*RM - 82.49 = e_t$$

(3.0) (-3.2) (4.1) (-4.6)

- Interpretation: An increase in G or Y is associated with an increase in $Credit$ and RM . Similarly, an increase in $Credit$ or RM may be associated with an increase in G , Y , and the CPI .
- Deviations from long-run equilibrium are corrected primarily through adjustments in Y and CPI .

Results – Impulse responses (2/3)

Figure . Saudi Arabia: Impulse Responses from a Cholesky 1 s.d. shock



Results – Summary (3/3)

- An increase in the U.S. fed funds rate has a significant negative impact on prices but not output – suggesting that normalization of US monetary policy will have limited impact in SA
- Credit has a positive and statistically significant impact on non-oil output after 7 quarters – suggesting that credit channel is working
- Weak evidence of economic impact from shocks to *RM* – suggesting scope to develop this further
- Increase in oil price increases *G* with a six month lag
- Inflation in partner countries increases Saudi Inflation
- US GDP increases *Y* with a 3 month lag

Comparisons and caveats

- Results are qualitatively similar to Espinosa and Prasad (2012) and Cevik and Teksoz (2012)
- Caveat:
 - Useful to check results using a model of monetary transmission through bank lending (using lending and deposit rates data)

Macroprudential policy toolkit in Saudi Arabia



Macroprudential policy can be used countercyclically

- Fiscal policy main countercyclical tool
- But not always flexible enough to prevent credit booms
 - Expenditure rigidities
 - Lags in implementation
 - Volatilities in oil revenues
- Countercyclical macroprudential policy can be used to influence economic activity and financial sector risk

Saudi macroprudential toolkit

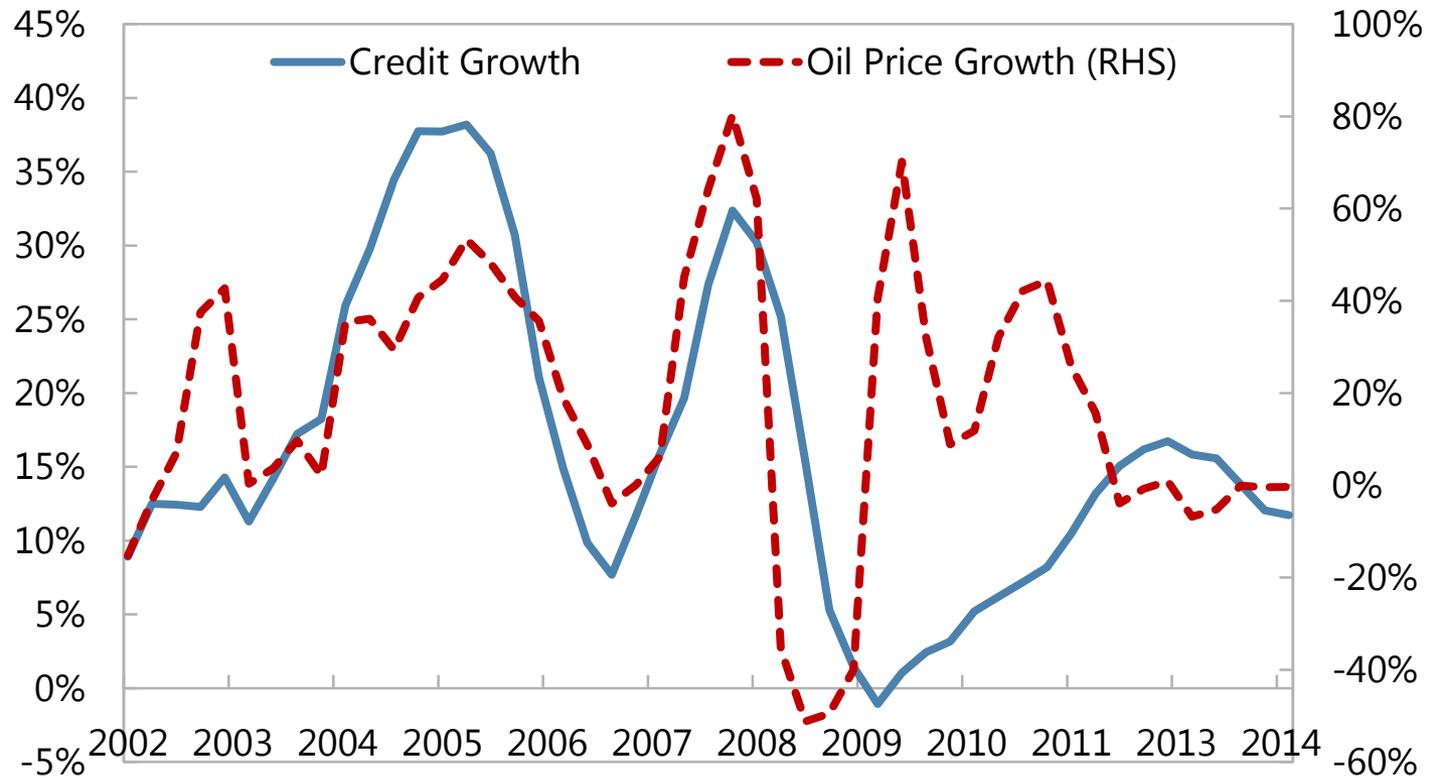
- SAMA has used several macroprudential instruments (MPI) in the past...

Capital Tools	Leverage Ratio Provisions
Liquidity Tools	Loan to Deposit Ratio Liquidity Requirements
Sectoral Tools	Concentration Limit Loan to Value Ratio Debt to Income Ratio
Exposure Tools	

Countercyclical MPIs in Saudi Arabia

- MPIs have generally not been used in a countercyclical way in Saudi Arabia
- SAMA encourages banks to provision in a countercyclical way, but
 - SAMAs countercyclical provisions are part of the supervisory process and done on a bilateral basis with individual banks
 - Based on microprudential concerns such as operating performance, composition of assets and riskiness of loan portfolio.
- The changes in provisions are not based on macroeconomic developments

Despite countercyclical provisioning, credit has been volatile



Sources: Country authorities; and IMF staff calculations.

International comparison of macroprudential policy frameworks



Comparison of toolkit

- SAMA toolkit is comparable to other commodity exporters.

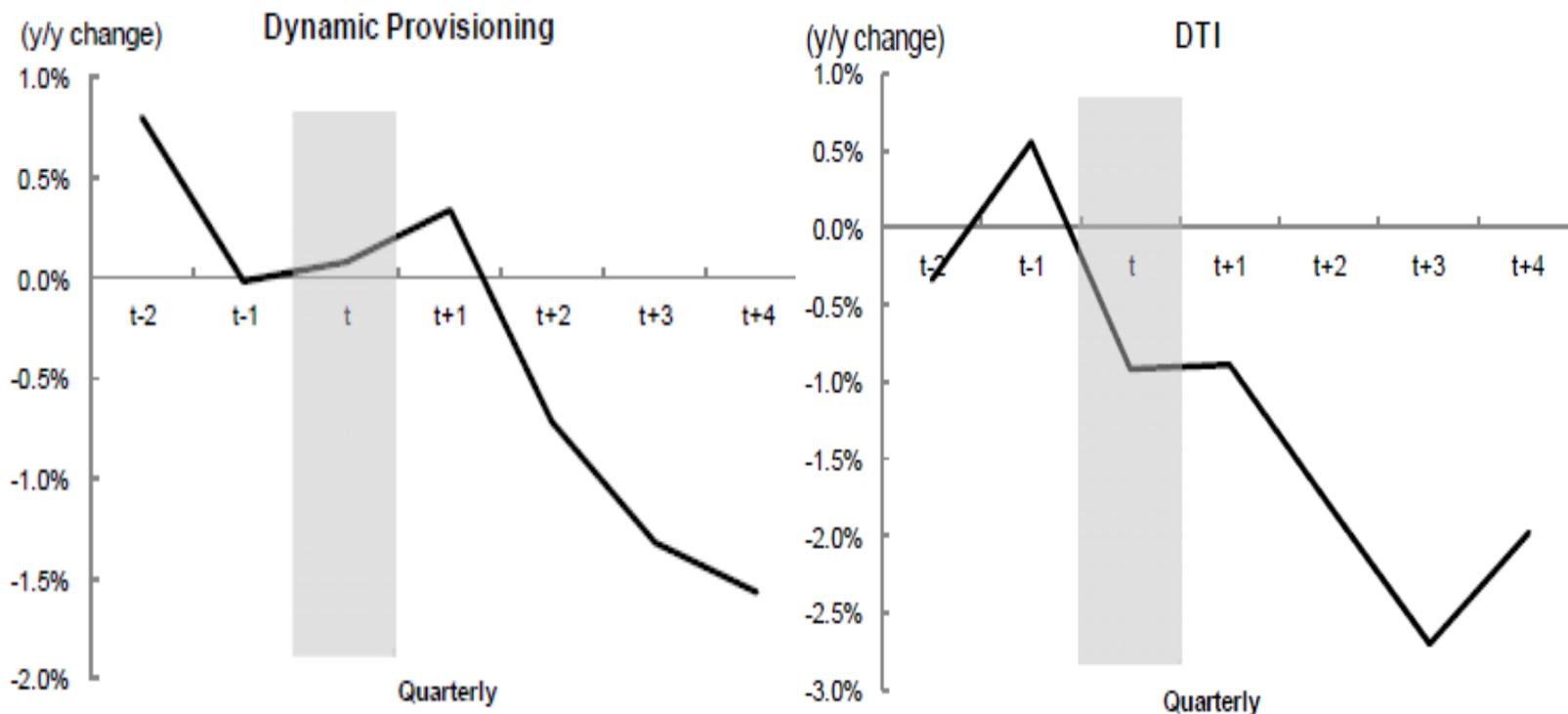
Capital Tools	Leverage Ratio Provisions
Liquidity Tools	Loan to Deposit Ratio Liquidity Requirements Asset Maintenance Ratio
Sectoral Tools	Concentration Limit Loan to Value Ratio Debt to Income Ratio Sectoral Capital Buffers Limits on Domestic Currency Loans
Exposure Tools	Real Estate Interbank FX and Currency Limits

Countercyclical macroprudential policy is increasingly the norm

Country	Capital	Liquidity	Sectoral	Exposure
Saudi Arabia	√			
Kuwait			√	
Algeria		√	√	
Azerbaijan	√	√	√	
Brunei				
Canada		√		
Chile		√	√	
Indonesia			√	
Kazakhstan	√			
Malaysia			√	√
Mexico			√	
Norway			√	

Effectiveness

Cross-country evidence



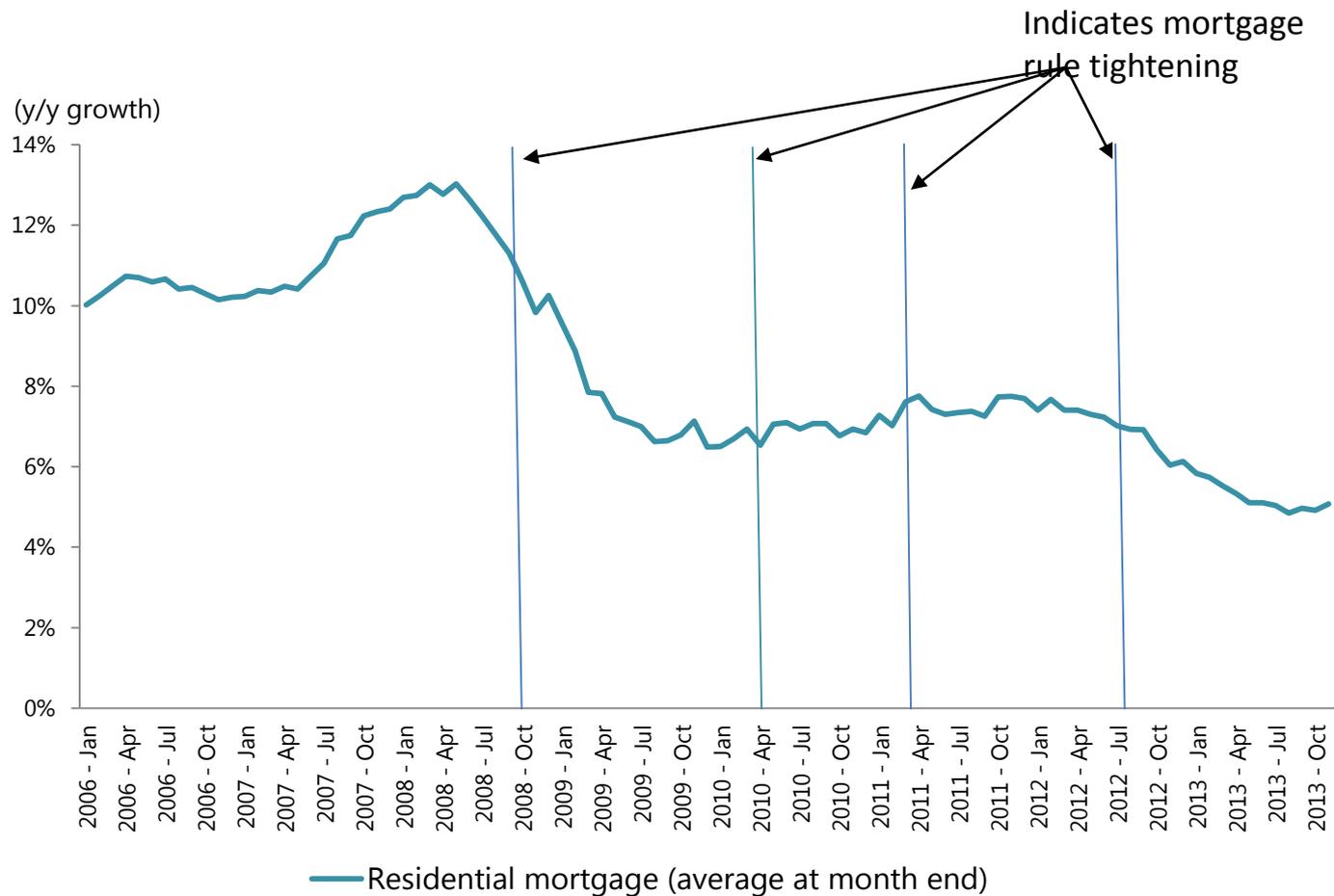
Notes:

1/ Average of sample countries' y/y growth in credit (detrended).

2/ t denotes the time of the introduction of instruments.

Sources: Lim et al (2011), International Financial Statistics.

Effectiveness Canadian Experience



Sources: Krznar and Morsink (2014), Bank of Canada.

Early Warning System (EWS)

- EWS prerequisite for using MPIs countercyclically.
- Indicators to identify systemic risks such as
 - macroeconomic imbalances and exuberant credit growth
 - inter-linkages between financial and real sectors
 - fragility in the structure of the financial system

can be used to determine timing for activation or deactivation of MPIs (CGFS, 2012) and bring clarity and credibility to macroprudential policy

- Indicators can be used in a
 - ‘Rule Based’ fashion to time use of MPIs (e.g. Swiss guided discretion approach for CCB)
 - ‘Discretionary’ fashion to guide macroprudential policy (e.g. UK core indicators monitored by the FPC)

FSR and Dashboard

- SAMA lags GCC & commodity exporters in terms of FSR, but is planning to publish one soon.
- SAMA has developed “internal” macroprudential dashboard.

Country	First FSR
Bahrain	2007
Kuwait	2013
Oman	2013
Qatar	2010
United Arab Emirates	2013

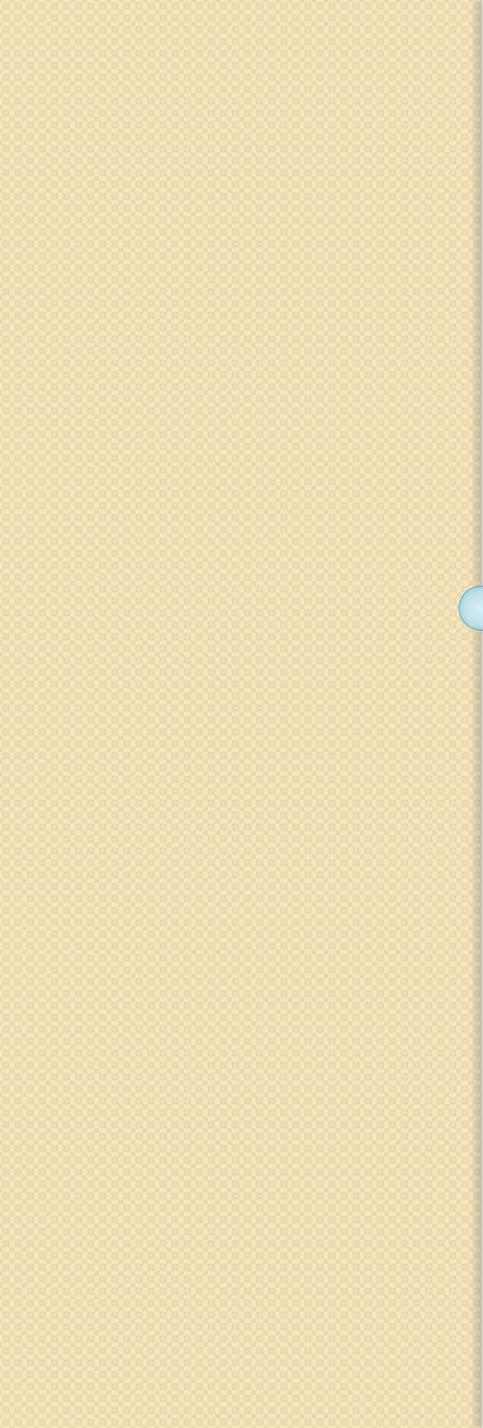
Country	First FSR
Azerbaijan	2010
Canada	2002
Chile	2004
Indonesia	2003
Kazakhstan	2006
Malaysia	2006
Mexico	2006
Norway	1997
Russia	2012
South Africa	2004

Formal framework essential to ensure effectiveness

- Strong accountability with clear objectives
 - Establish responsibility for macroprudential policy
 - Coordination and willingness to act
- Access to information for effective EWS
 - Indicators (possibly with thresholds) can counter biases for inaction
- Powers to act in the face of evolving risk
 - Can be ‘hard’ (direct), ‘semi-hard’ (comply or explain) or ‘soft’ (recommendation) depending on tools and country specific factors
- Communication to create public awareness of risk
 - Signaling channel of the transmission mechanism

International experience with macroprudential frameworks

- Several countries moving towards formal framework
- Three models have emerged
 - Central Bank with explicit mandate and powers (Czech Republic)
 - Committee within central bank (UK Financial Policy Committee)
 - Committee outside central bank (Australia, France, USA)
- Saudi Arabia considering formal framework – this should be in SAMA



Conclusion

Key takeaways

Short run issues

- There is limited evidence of an adverse impact on GDP from normalization of US monetary policy

Monetary policy framework

- Saudi Arabia's exchange rate peg has served it well
- Although liquidity management toolkit is being developed, monetary base is volatile
- There is scope to strengthen liquidity management operations as a channel for monetary policy transmission
- A liquidity forecasting framework and review of the instruments to improve effectiveness may help

Key takeaways

Macroprudential policies

- Countercyclical macroprudential policy can help curtail credit booms and financial sector risk
- SAMA has an adequate toolkit, but tools have not been used countercyclically
- Macroprudential framework needs strengthening to ensure effectiveness in countercyclical role

Questions?