BANCO CENTRAL DO BRASIL

Intraday Liquidity Management

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Payments Week – 2007

Bahia, Brasil

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Agenda

- Overview
- Intraday liquidity management
- Payment flows maximization
- Forms of economizing liquidity
- Monetary policy effects
- Concluding remarks

Overview – Main variables

- Payments Volume
- Demand and supply of total reserves
- Network of interbank exposure
- Distribution of liquidity amongst banks
- Opportunity cost of holding reserves or collateral and cost of intraday liquidity
- Bank reputational cost
- Payments delay
- Possible impacts on monetary policy

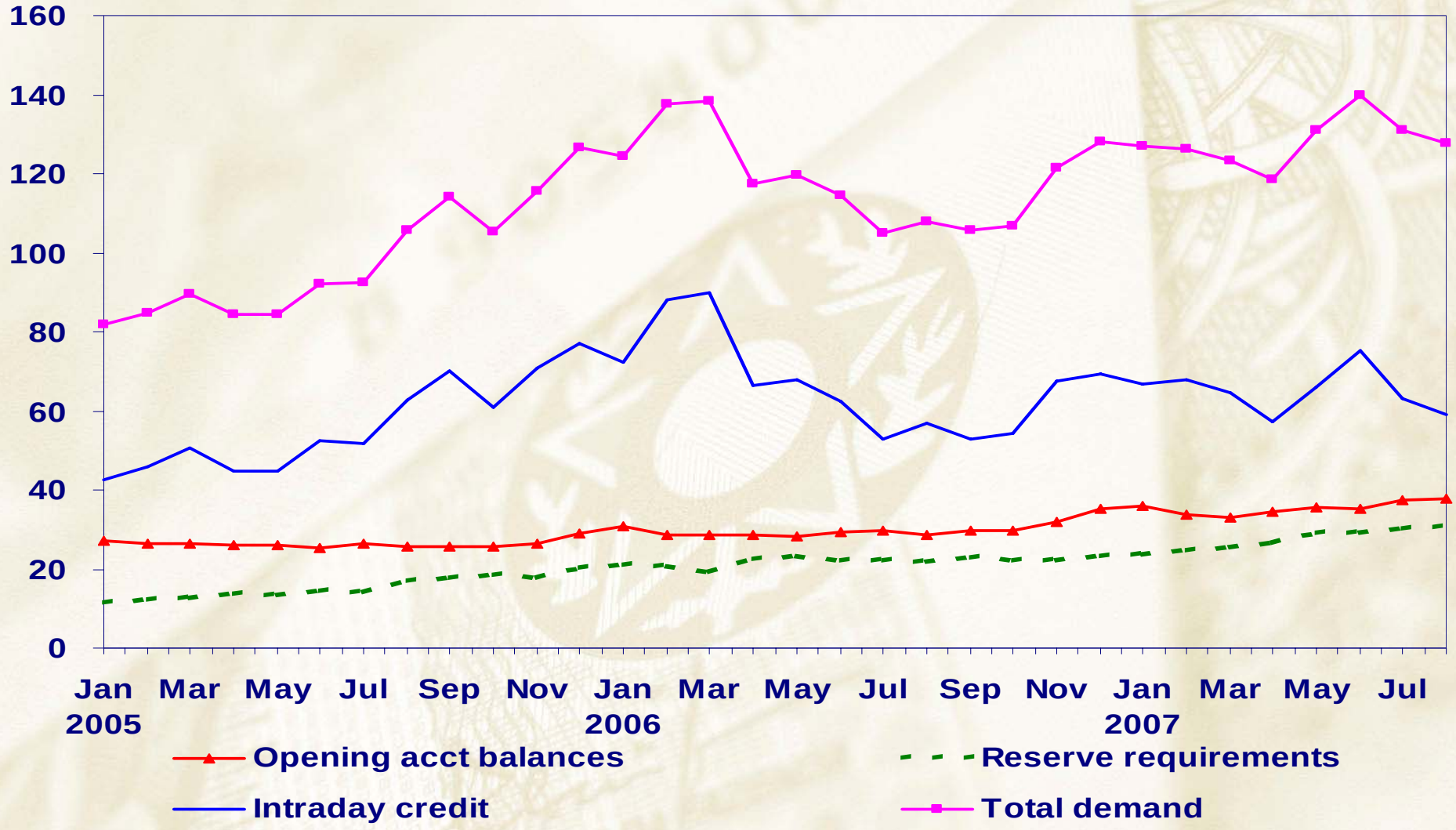
Overview – Liquidity Sources

Liquidity Sources	Banking credit cost	Banking tendency to delay payment	Central Bank Credit Risk
uncollateralized overdraft	no cost	no delay	credit risk
collateralized credit	opportunity cost of collateral maintenance	relationship between opportunity cost and reputational cost	issuer risk
costly credit	intraday credit interest rate	delay	credit risk
excess of reserves	opportunity cost	relationship between opportunity cost and reputational cost	no risk
endogeneous liquidity of payments	no cost	delay	no risk

Overview – Liquidity Supply in Brasil

- Reserve requirements
- Intraday collateralized credit
- Association of money market operations
- Payment delay
- Queuing
- Optimization algorithm
- Implicit interbank market

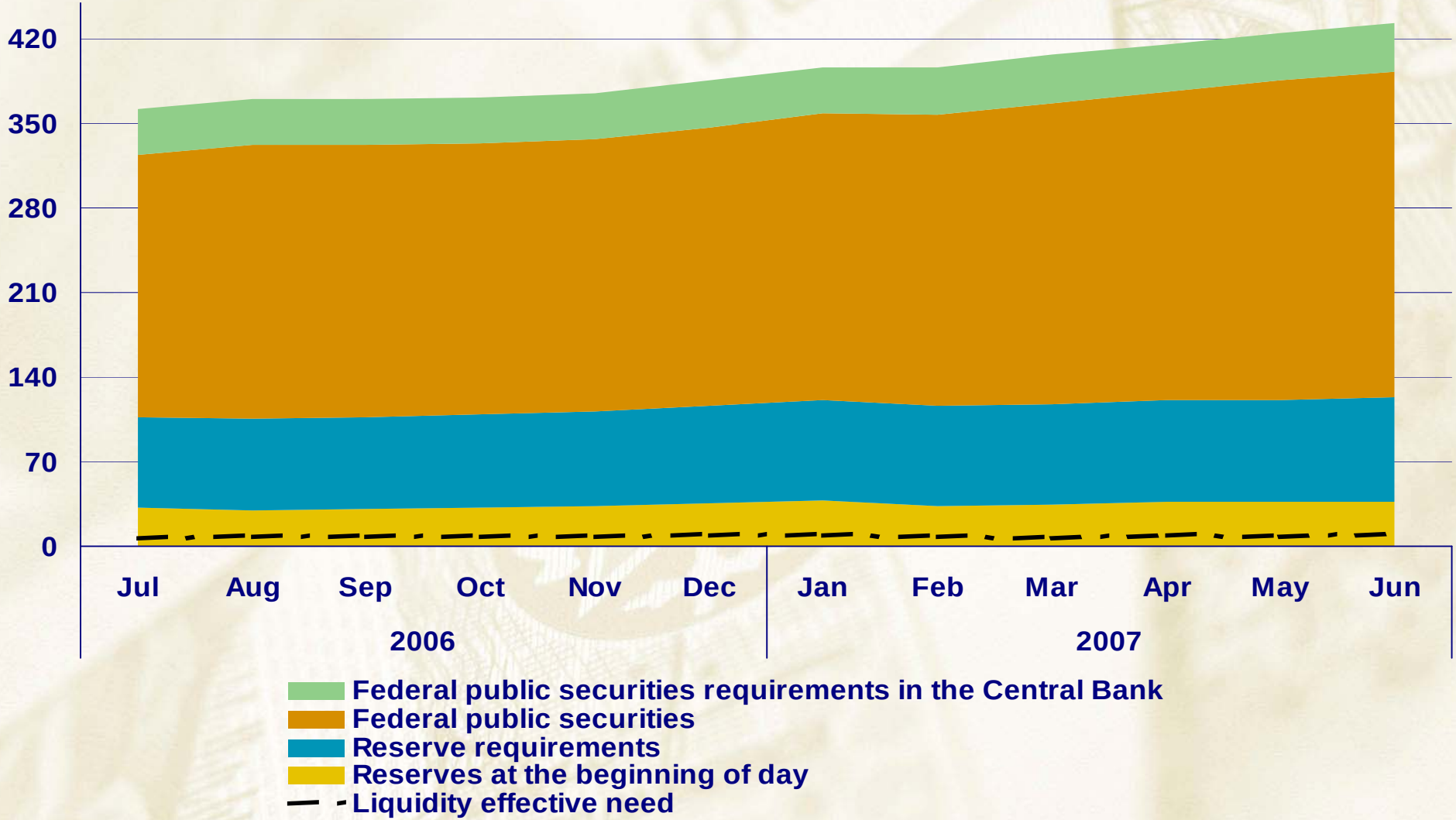
Intraday Liquidity Management – Demand – daily average
R$ billion



Intraday Liquidity Management – Approach

- Intraday liquidity =
  - + Balance of reserve account
  - + Balance of reserve requirements
  - + Central Bank's intraday credit eligible portfolio
- Construction of the intraday liquidity curve throughout the day
- Liquidity Effective Need (NEL)
  - Sum of the higher difference between the intraday liquidity balance and its final balance of all institutions.

Intraday Liquidity Management – Liquidity Effective Need
R$ billion

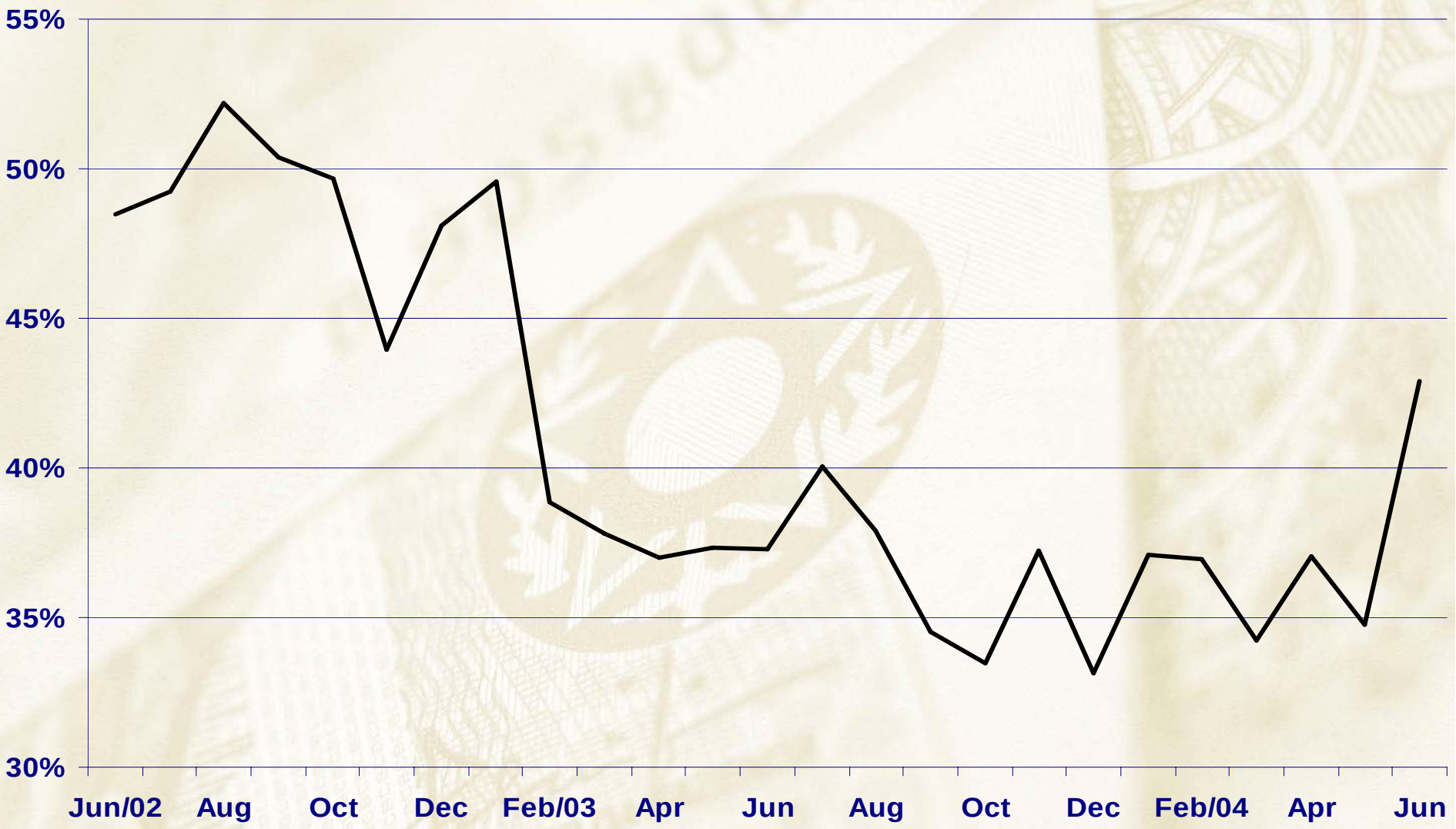


Intraday Liquidity Management – Liquidity Effective Need Distribution

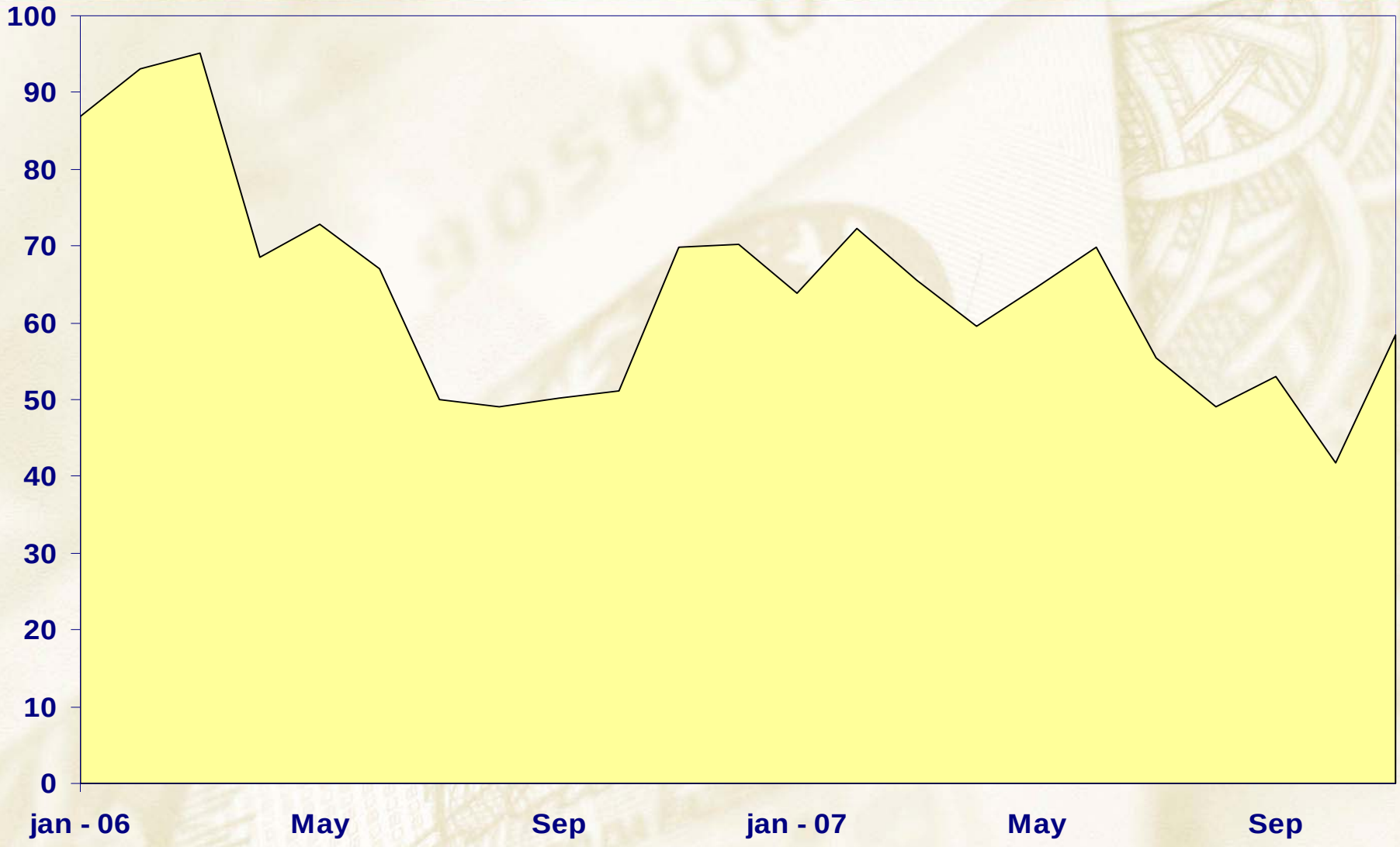
Class	2006		2007	
	2nd semester		1st semester	
	# of FIs	%1/	# of FIs	%1/
0% to 10%	45	78,1	12	42,1
10% to 20%	41	14,6	14	33,4
20% to 30%	14	3,9	14	10,6
30% to 40%	2	0,2	24	4,8
40% to 50%	1	0,4	22	2,0
50% to 60%	2	0,4	9	3,0
60% to 70%	2	0,6	7	1,3
70% to 80%	0	0,0	5	0,7
80% to 90%	1	1,7	1	0,1
90% to 100%	0	0,0	1	2,1
Total	108	100,0	109	100,0

1/ Percentage of payments.

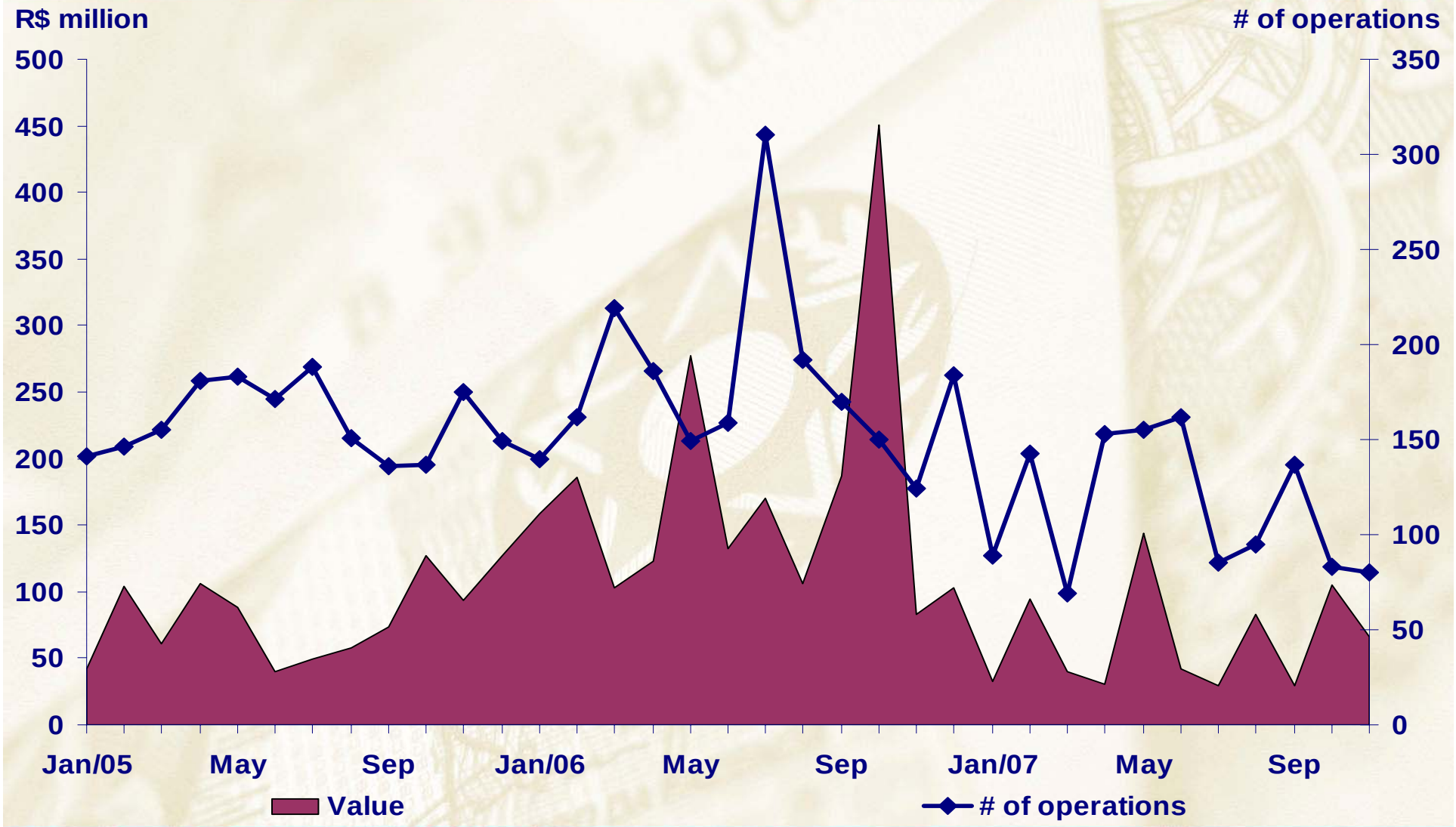
Minimum cost of systemic liquidity – Percentage of Reserves



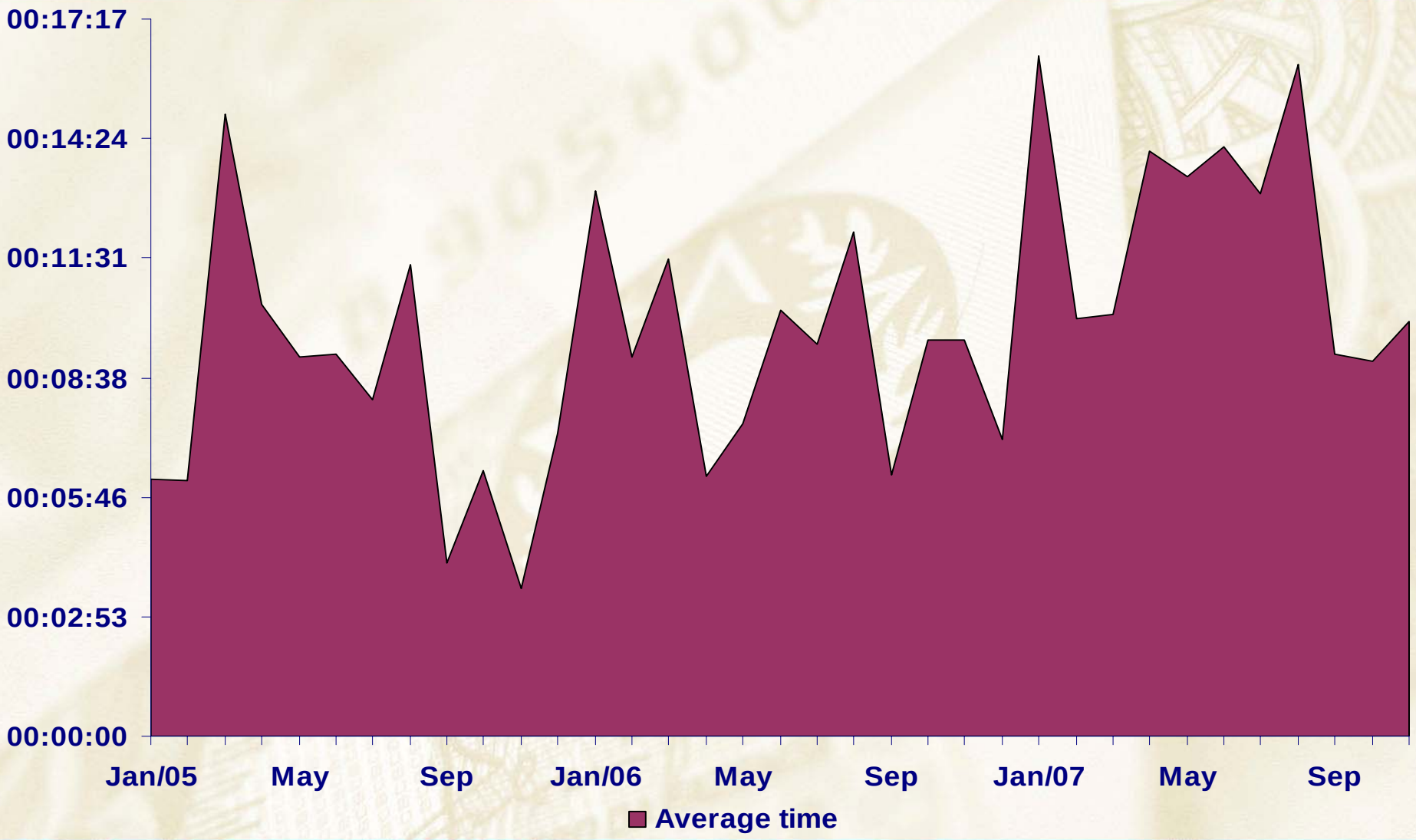
Association of Money Market Operations – Daily average
R$ billion



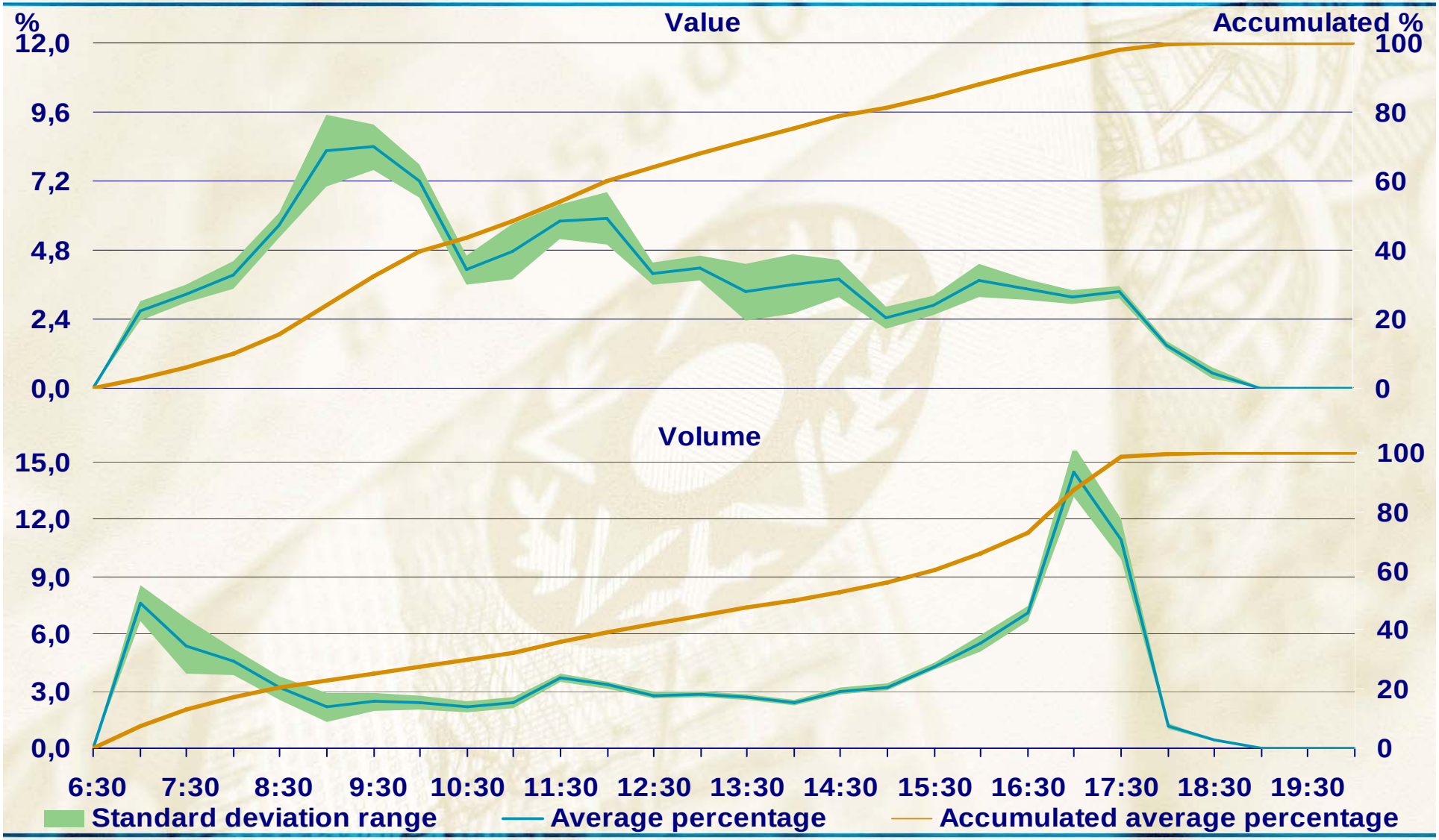
Queue of Payments – Daily Average



Queue of Payments – Average Time



Delaying of Payments – Intraday Profile



Delaying of Payments – Money Market Effect

- Although significant in terms of volume, the delaying of payments is not binding in terms of value;
- Correlation between funds transfer and money market operations at the end of the day is relatively low;
- Low relative volume of funds transfer at the end of the day comparing to the volume of transactions on money market throughout the day;
- Low difference between interest rates on transactions at the end of the day and the average interest rate;
- Even with extremely low interest rates at the end of the day caused by payments delay, there is no significant pressure on the average daily interest rate
- Low pressure of payments delay in money market;

Implicit Interbank Market – Preliminary Results

- Micro data analysis
- Selic overnight interbank market
- Interest rate decomposition per operation
- Statistically significant parameter for “Time duration of the operation” (proxy for implicit intraday market)
- Average cost of intraday credit implicit on the overnight market operations estimated as 0.0076% per work day, 10.9% of the overnight money cost.

Intraday Liquidity Supply – Possibility of Pricing According to Shadow Prices

- Optimization of payment flow on a RTGS system;
- Model parameters:
  - Intraday liquidity variable policy
  - Haircut of the value of different security eligible for intraday credit
- Each security eligible for intraday brings different payment flow to the market

Intraday Liquidity Supply – Possibility of Pricing According to Shadow Prices

- Possible applications
  - Pricing of the collateral corresponding to the payment flow it might bring to the market
  - Possibility of acceptance of other banks assets as collateral for intraday liquidity
- Implication
  - Minimization of the exposition of the central bank to the issuer risk
  - Maximization of the payment flow
  - Reduced liquidity supply offered by the Central Bank
- Current excess of liquidity makes the differentiation binding

Intraday Liquidity Management in Brazil
Concluding Remarks – I

- Currently high cost liquidity sources
- Liquidity excess caused by restrictive Monetary policy

  - High interest rates → High portfolio of federal securities on banking system
  - High reserve requirements

- In the first half of 2007, STR, the Brazilian LVTS, had an average daily turnover of only 107% of its total liquidity supply
- Inefficient in payment system point of view
- Low impact of payment system on monetary policy implementation

Intraday Liquidity Management in Brazil
Concluding Remarks – II

- Scenario: maintenance of the current trend of Monetary policy relaxation
- Trend to reduce current costly liquidity sources
- Possibility of implementation of less costly liquidity sources
  - Intraday credit accounting for shadow prices
  - Optimization algorithm
- Trend of better coordination and liquidity management from the banking system, guided by Central Bank incentives
- Higher efficiency of the system

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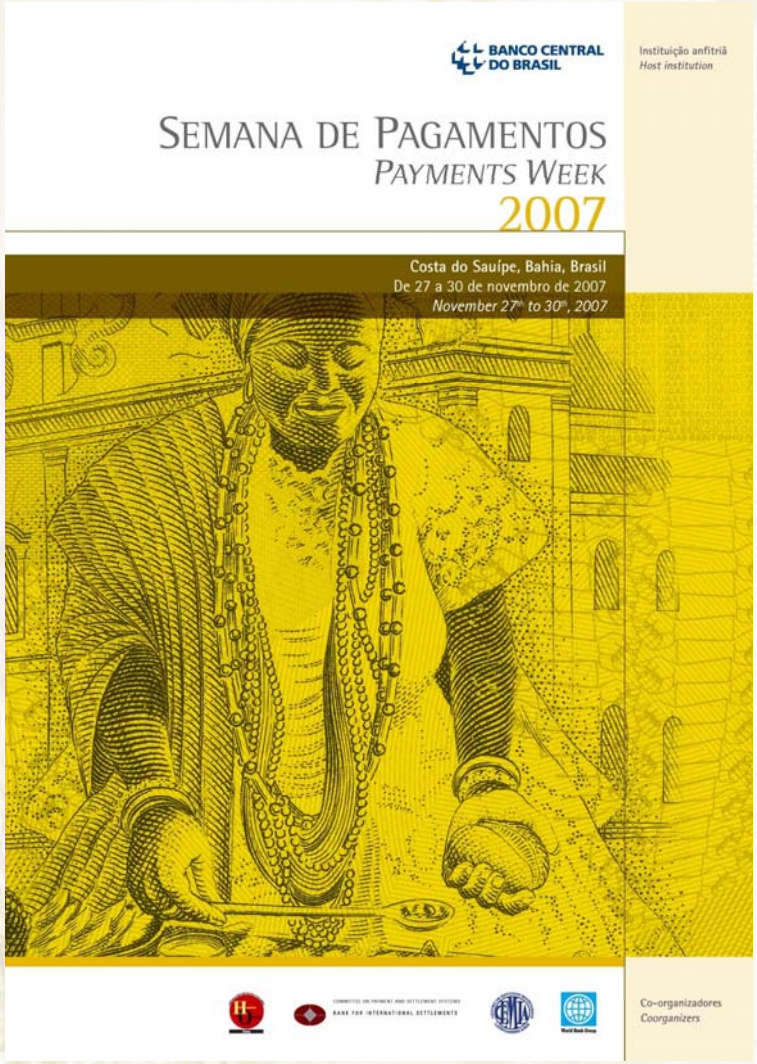

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