THE FUTURE OF CENTRAL BANKING
THE ROLE OF BALANCE SHEETS
IN THE NEW NORMAL
THE FUTURE OF CENTRAL BANKING

THE ROLE OF BALANCE SHEETS IN THE NEW NORMAL

BRIEF HISTORY OF CENTRAL BANKING

WHAT HAS CHANGED AFTER THE CRISIS?

THE HUNGARIAN WAY: A UNIQUE SOLUTION

MAIN MEGATRENDS SHAPING THE FUTURE

THE FUTURE OF MONEY
BRIEF HISTORY OF CENTRAL BANKING

**Aim**

- 1970s: Economic growth, low unemployment
- 1980s-2008: Price stability

**Target variable**

- 1970s: Monetary aggregates
- 1980s-2008: Inflation

**Tools**

- 1970s: Complex toolkit
- 1980s-2008: Interest rate

Inflation targeting has spread across the world from the ’90s
COUNTRIES PURSUING INFLATION-TARGETING POLICIES ACCOUNT FOR 70 PER CENT OF THE GLOBAL ECONOMY

38 Inflation targeters + 19 resemble IT countries

Source | IMF

Monetary policy frameworks across the world (2016)
IN THE PAST DECADES CENTRAL BANKS WERE SUCCESSFUL AT BRINGING INFLATION DOWN, BUT...

Source | OECD

Inflation in advanced economies (G7 countries)
...IN THE MEANINGLE TIME SIGNIFICANT AMOUNT OF DEBT ACCUMULATED AND FINANCIAL IMBALANCES EMERGED

Indebtedness by sectors in advanced and developing economies

Source: BIS
Who creates money?

Central banks and/or commercial banks?
Nowadays around 90 percent of money is already in digital form globally.

85 percent of M3 is created by commercial banks.

USD 90,400 billion
USD 29,568 billion
USD 7,232 billion

M3
M1
M0

REPO
WHAT ROLE DO FINANCIAL INSTITUTIONS PLAY IN MONEY CREATION?

THERE ARE TWO DIFFERENT VIEWS:

Financial intermediation theory of banking:
- Collecting deposits
- Lending out deposits
- No new money is created

Endogenous credit creation by commercial banks:
- Banks create credit and money newly when granting a bank loan
AT THE OUTBREAK OF THE CRISIS TOO BIG TO FAIL ISSUES HAVE AROSE: BAILOUT OR BANKRUPTCY?
CENTRAL BANK ACTIONS AFTER THE CRISIS

MEASURES

Short term

Liquidity providing measures

MRO  TAF  CBPP
TSLF  LTRO

Long term

Redesigning the monetary policy framework

It depended on the emerging problems and on the specific institutional framework of the economies
AFTER REACHING THE EFFECTIVE LOWER BOUND CENTRAL BANKS TURNED TO UNCONVENTIONAL POLICY TOOLS

Designing a more flexible framework

- Balance sheet policies (quantitative easing, qualitative easing, targeted asset purchases)
- Forward guidance (in order to shape longer-term expectations)
The way of financing differs considerably among advanced economies:

**United States**
- Capital market-based financing
- Turmoil on the mortgage market
- Large-scale asset purchase programmes focusing on the MBS market

**Europe**
- Bank loan-based financing
- Problems in the banking system
- Credit easing measures (LTRO, TLTRO tenders) for the banking sector
AS A RESULT OF UNCONVENTIONAL POLICIES THE SIZE OF CENTRAL BANK BALANCE SHEETS HAS MULTIPLIED

Balance sheets of the major central banks

Source | ECB, Fed, BoJ
ALTHOUGH BALANCE SHEETS HAVE INCREASED SIGNIFICANTLY, RECOVERY WAS SLOW AFTER THE CRISIS

Actual and trend GDP in the USA and in the euro area

Source | OECD, MNB
HOWEVER, THE PRICE INCREASE OF SOME FINANCIAL ASSETS WAS REMARKABLE.

Developments in major stock market indexes (percent change from January 2007)

Source: Bloomberg
ADDRESSING “TOO BIG TO FAIL” ISSUES

Implicit government guarantee may lead to increasing risk taking with no adequate market discipline (*moral hazard*).

*Increased expected loss of a failure*

**Measures on the CBs’ agenda:**

- More intensive risk assessment covering institutional complexity and market structures
- Identifying SIFIs and applying extra capital buffers
- Effective resolution regime

But bailouts in order to stop cascading effects arising in a crisis are expensive.
BOOM AND BUST – SHOULD MONETARY POLICY REACT? IF YES, WHEN AND WHERE?

Credit creation increases
Risk-taking increases
Loan / valuation ratios improve, bank profitability increases
Collateral values rise, outlook improves
Asset prices rise
Balance sheets improve

Risk aversion increases
Banks’ profitability declines
Bankruptcies increase / deflation
Balance sheets deteriorate
Asset prices fall

Credit creation declines

#manias #peer_pressure #groupthink #risk-based competition #moral hazard, #regulatory arbitrage #this time is different #irrational exuberance

#panic #chrashes #fire sale #liquidity shortage #deflation #lender of last resort #NPL #cherrypicking #creditcrunch
AFTER THE CRISIS, A MACRO-FOCUSED APPROACH TO FINANCIAL STABILITY RISKS HAS GAINED ATTENTION

**Pre-crisis**

- Macroeconomic policy
  - Price stability, economic growth

**After crisis**

- Macroeconomic policy
  - Price stability, economic growth

- Financial supervision
  - Idiosyncratic institutional risks

**MACRO-**

- Macroprudential supervision

**PRUDENTIAL**

- Financial supervision

- Idiosyncratic institutional risks

Source | JVI
HUNGARIAN CASE STUDY: WIDE RANGE OF MACROPRUDENTIAL INSTRUMENTS

Banking system balance sheet

- **Liquid assets**
  - Corporate loans covered by real estate
  - Other corporate loans
  - Household loans covered by real estate
  - Other household loans
  - Other loans
  - Other assets

- **Capital**
  - Deposits
  - Foreign currency interbank deposits and loans
  - HUF interbank deposits and loans
  - Securities
  - Other liabilities

- **Capital buffers**: CCyB, SyRB, O-SII

- **Currency mismatch regulation**: FFAR, FECR

- **Interbank funding regulation**: BFM

- **Maturity mismatch regulation**: MFAR

- **Liquidity requirements**: LCR

- **Real estate exposures**: Risk weights

- **Debt cap rules**: PTI, LTV

- **Maturity mismatch regulation**: MFAR
LESSONS LEARNED FROM THE CRISIS

Financial sector has grown too big

Not sustainable

Uncontrolled money creation of the banking sector created asset bubbles instead of financing productive investments
A SMALL OPEN ECONOMY IN THE HEART OF EUROPE

Source | WDI, HCSO, MNB
A SMALL OPEN ECONOMY IN THE HEART OF EUROPE

Real GDP (PPP, 2018): 270 billion international $

Real GDP per Capita (PPP, 2017): 28,768.6 international $

Investment rate (% of GDP, 2018): 25.5%

Exchange rate (2019 April, average):
HUF/EUR: 321.3
HUF/USD: 286.1

Unemployment rate (2019Q1): 3.4%

Total active population: 6.6 million

Total population (2018): 9.8 million

Inflation (2018): 2.8%

Openness (Export/GDP, 2018): 89.5%

Current account (% of GDP, 2018): +0.5%

Net FDI flow (2018): 3.7 billion $
Net FDI stock (2018): 52.2 billion $

Source | WDI, HCSO, MNB
HIGHER AVERAGE GROWTH THAN IN WESTERN EUROPE OR IN MOST NEIGHBOURING COUNTRIES

GROWTH MAP
OF THE MEMBER STATES OF THE EUROPEAN UNION
(2013-2019)

Source | Eurostat
FAVOURABLE ECONOMIC DEVELOPMENTS WERE REFLECTED BY IMPROVING DEBT RATINGS BACK INTO INVESTMENT GRADE
MNB HAS MET ITS INFLATION TARGET, FOCUS SHIFTED TO ITS MAINTAINANCE

DEVELOPMENTS IN INFLATION

Source | HCSO, MNB
THE FX RATIO OF PUBLIC DEBT DECREASED SIGNIFICANTLY AS A RESULT OF THE SELF-FINANCING PROGRAMME

GROSS PUBLIC DEBT
2000-2020, from 2018: MNB forecast

SHARE OF FX-DENOMINATED PUBLIC DEBT AND FOREIGN INVESTORS
2000-2018
MNB USED CONVENTIONAL AND UNCONVENTIONAL TOOLS AT THE SAME TIME

HUNGARIAN BASE RATE AND TIMING OF UNCONVENTIONAL INSTRUMENTS

Note: *Monetary policy interest rate swap (IRS) facility and the Mortgage Bond Purchase Programme
MNB’s measures pushed down short-term interest rates within the interest rate corridor

1. Reform of the BUBOR market
2. Announcement of the cap on 3M deposit
3. Introduction of the forint liquidity providing FX-swaps
4. Reduction of the required reserve ratio

DEVELOPMENTS IN SHORT-TERM MONEY MARKET YIELDS
WITHIN THE INTEREST RATE CORRIDOR

Source | MNB
UNLIKE ADVANCED COUNTRIES’ CENTRAL BANKS, THE MNB REACTED TO THE CHALLENGES IN A TARGETED WAY

Similar measures

- Forward guidance
- Liquidity expansion
- Targeted credit incentives

Differences

- No government bond purchase
- Off-balance sheet measures
- Narrowing balance sheet
Monetary easing with balance sheet policy

**On-balance sheet policy**
- Increasing the size of the balance sheet (e.g. asset purchases)
  - Affects liquidity by increasing the balance sheet

**Off-balance sheet policy**
- Changing the structure of the balance sheet (e.g. IRS, FX swaps)
  - Affects liquidity without increasing the balance sheet
FUNDING FOR GROWTH SCHEME WAS A TARGETED PROGRAMME WITH A MAIN FOCUS ON THE SME SECTOR

More targeted programme, focus on the SMEs
Purchase programme targets residential mortgage backed fixed-rate bond

- MNB purchased only fixed-rated mortgage bonds
- Secondary market presence lowered yields and spreads
- Focus on the primary market to support fixed-rated mortgage lending
- Total purchases reached **316 bn HUF (~1 bn EUR)**
  - Primary: 191 bn HUF (60 pct)
  - Secondary 125 bn EUR (40 pct)
- Net issuances of fixed-rate mortgage bonds rose to **400 bn HUF (~1.2 bn EUR)**
MNB WILL LAUNCH ITS BOND FUNDING FOR GROWTH SCHEME IN JULY 2019

- In order to improve the efficiency of the monetary transmission mechanism
- To promote the diversification of financing
- To strengthen financial stability and increase the liquidity of the corporate bond market
- In case of crisis, the possibility of fast and efficient central bank intervention

<table>
<thead>
<tr>
<th>Total amount</th>
<th>HUF 300 bn (0.7 percent of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start of the purchase</td>
<td>1 July 2019</td>
</tr>
<tr>
<td>Issuers of the bonds to be purchased</td>
<td>domestic non-financial corporations</td>
</tr>
<tr>
<td>Credit rating of the bonds to be purchased</td>
<td>at least B+</td>
</tr>
<tr>
<td>Denomination of the bonds to be purchased</td>
<td>HUF</td>
</tr>
<tr>
<td>Original maturity of the bonds to be purchased</td>
<td>Min. 3 years, Max.10 years</td>
</tr>
<tr>
<td>Proportion of MNB's purchase per bond series</td>
<td>max. 70 percent</td>
</tr>
<tr>
<td>Maximum exposure of the MNB per corporate group</td>
<td>HUF 20 bn</td>
</tr>
<tr>
<td>Minimum volume per issuance</td>
<td>HUF 1 bn</td>
</tr>
<tr>
<td>Sterilisation of the excess liquidity arising from the purchases</td>
<td>by the preferential deposit facility</td>
</tr>
</tbody>
</table>
REAL INTEREST RATES ARE LIKELY TO REMAIN BELOW THEIR HISTORICAL AVERAGE
NOT JUST CYCLICAL BUT ALSO STRUCTURAL FACTORS ARE INFLUENCING GROWTH, INFLATION AND INTEREST RATES

STRUCTURAL FACTORS

- Changing demographics
- Rising inequalities
- Slowdown of potential growth rate
- Globalisation
- Technological progress

Slowdown in economic growth, lower inflation and interest rates
EFFECT OF DIGITAL TECHNOLOGICAL PROGRESS ON INFLATION DEVELOPMENTS

Most important inflationary channels of the Internet and digitalisation

Source | Riksbank (2015)
POTENTIAL EXPLANATIONS FOR THE SLOWDOWN IN ECONOMIC GROWTH

Medium-term financial factors

Repair of the balance sheets

Spokesman of the theory: Richard Koo

Long-term real economic factors

Secular stagnation

Spokesman of the theory: Lawrence Summers
HIGH DEBT BURDENS POSE A CONSIDERABLE CHALLENGE FOR CENTRAL BANKS AS WELL

Risks associated with monetary tightening when debt burdens are high

- Public debt may become unsustainable
- Number of zombie firms may increase
- Consumption and investment may slow due to rising interest expenses

Is it possible for central banks to increase interest rates significantly or unwind their balance sheets if needed under these circumstances?
CAN THE EXAMPLE OF JAPAN BE THE FUTURE OF OTHER CENTRAL BANKS AS WELL?

Inflation below the target

Ultra loose monetary policy

Massive fiscal stimulus
BELIEF IN MONEY IS FAR MORE IMPORTANT THAN THE PHYSICAL FORM OF IT

Source | MNB
ADJUSTED TO NEEDS, MONEY HAS TAKEN NUMEROUS FORMS IN THE COURSE OF HISTORY

Barter, only medium of exchange function
- Egypt
- 9000 BC
- Cowrie as value indicator
- 1200-1100 BC

First coins (gold and silver) royal
- 600 BC

Coins from Florence - international trade (shipping, compass)
- 1250-90

Thirty Years' War, right to issue banknotes for the first time
- 1618-48

End of gold standard, due to war expenditures
- 1816

England gold standard
- 1914

Gold standard again partially
- 1918-1939

Bank of the Medici family
- 1668

Sweden: the first central bank
- 1871

Western Union telegram as a technical novelty
- 1946

Banknotes issued for the first time
- 1970

Start of free floating, end of gold standard
- 1995-2000

Mobile bank and online transfers
- 2008

The first credit card was issued, plus gold currency system, end of gold standard, gold-US dollar; US dollar-other currencies (Bretton Woods)

STORE OF VALUE FUNCTION
UNIT OF ACCOUNT FUNCTION
MEDIUM OF EXCHANGE FUNCTION
THE EVOLUTION OF MONEY CREATION

Who creates money?

1970s
- Central banks

1980s-2008
- Central banks + Commercial banks
  - With less control

Present
- Central banks + Commercial banks
  - With more control

Future
- Central banks + Commercial banks + Private entities
  - Challenges are arising
CENTRAL BANKS ARE ALREADY FOCUSING ON THE FUTURE OF MONEY AND ITS POTENTIAL IMPLICATIONS

Central bank digital currency (CBDC)

E-money
IS CENTRAL BANK DIGITAL CURRENCY A DEAD END?

THE FUTURE OF MONEY

Central Bank Digital Currency

Digital Money

Two-tier banking system

Single-tier banking system
DIGITAL MONEY MAY BE THE RIGHT WAY OF DEVELOPMENT

Searching for new solutions that are...

- Faster
- Cheaper
- More effective
- Safer

Digital money?
THE DIGITAL REVOLUTION OF MONEY

1. A new and more effective payment method?

2. Transformation of the whole financial system?

THE FUTURE OF MONEY
COMPLEX, LONG-TERM EFFECTS MUST BE CONSIDERED

- Uncertain future of the banking system
- Financial consequences

- Problem of generational differences
- Social consequences

- Permanently lower inflation?
- Real economy consequences

- What do we consider as legal money?
- Legal consequences
THANK YOU FOR YOUR ATTENTION!