György Szapáry, Chief Adviser to the Governor of the Hungarian National Bank

Cusco, July 18-19, 2019

HUNGARY’S RESPONSES TO THE GREAT FINANCIAL CRISIS

THE STARTING POSITION IN 2010 WAS EXTREMELY DIFFICULT

Global phenomena

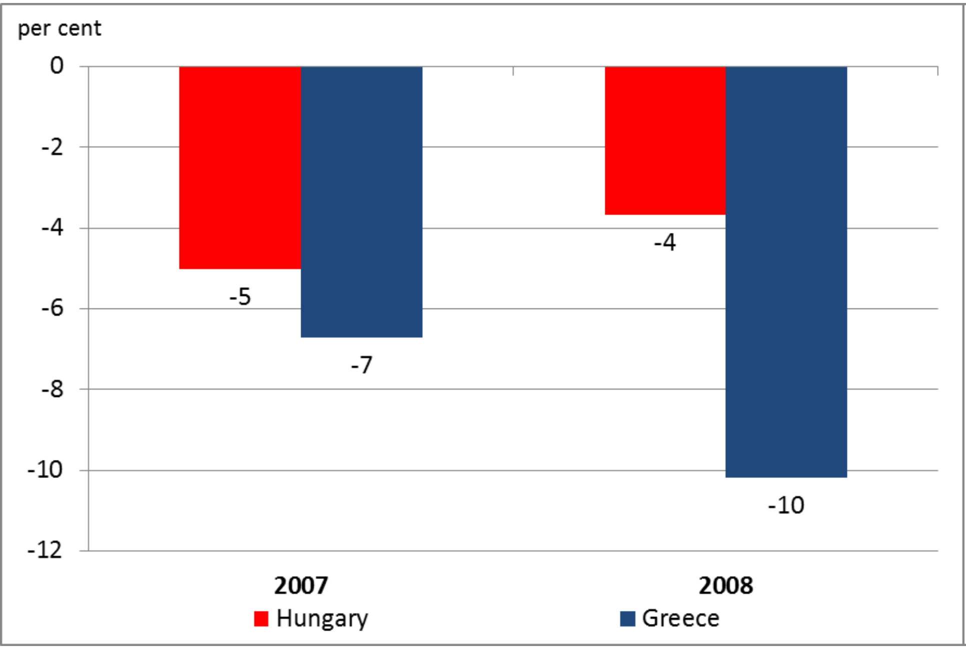
- Decrease of global demand and trade
- Deleveraging
- Liquidity shortage
- Risk aversion
- Lack of confidence

Country-specific factors

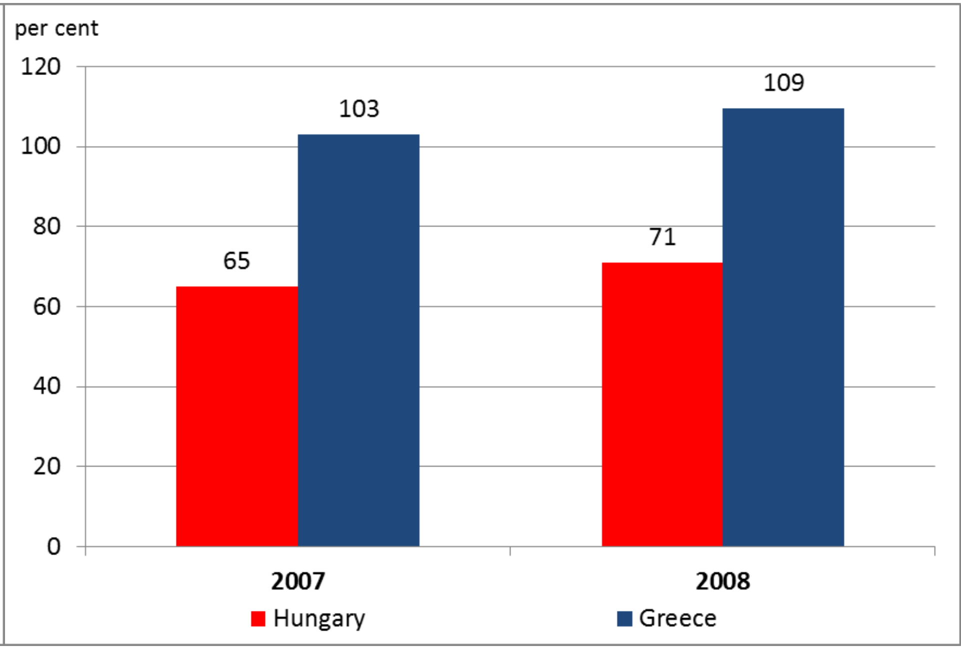
- Hungary had practically no toxic assets like the US and EU banks had, but suffered from other serious economic weaknesses:
- Extremely weak fiscal position
- Vulnerable external position
- High tax wedge
- Low activity rate
- High tax avoidance
- FX mortgage loans
- Low growth

BUDGET BALANCE AND GOVERNMENT DEBT IN HUNGARY AND GREECE, 2007-2008 (AS A PERCENTAGE OF GDP)

Budget balance



Government debt

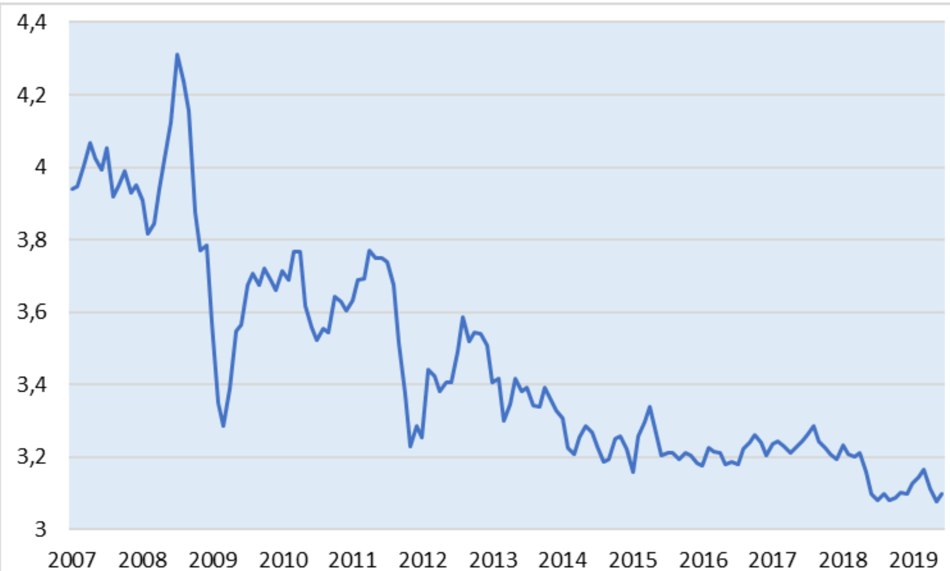


Source: AMECO

STATE OF THE HUNGARIAN ECONOMY BEFORE THE CRISIS

- Hungary had the second largest fiscal deficit in the EU (behind Greece) before the Great Financial Crisis and the fifth highest public debt.
- Nevertheless, Hungary was the first to be attacked by the markets, not Greece, because the latter was thought to be protected by its membership in the eurozone.
- In November 2008, Hungary entered into 17-month stand-by arrangement with the IMF in the amount of SDR 10.5 billion (€12.5 billion), 1015% of quota. In addition, it received €6.5 billion from the EU and €1 billion from the World Bank, altogether a credit line of **€20 billion.**

HUF/EUR nominal exchange rate, January 2007 – June 2019 (1000 HUF/EUR)



CPI based real effective exchange rate*, January 2007 – May 2019 (2005=100%)

*Note: Countries in the calculation, according to their weight, are the followings in descending order: Germany, China, France, Italy, Netherlands, Austria, Poland, Czech Republic, United Kingdom, Belgium, Japan, Slovakia, United States, Romania, Spain, South Korea, Turkey, Russian Federation, Hong Kong, Taiwan, Sweden

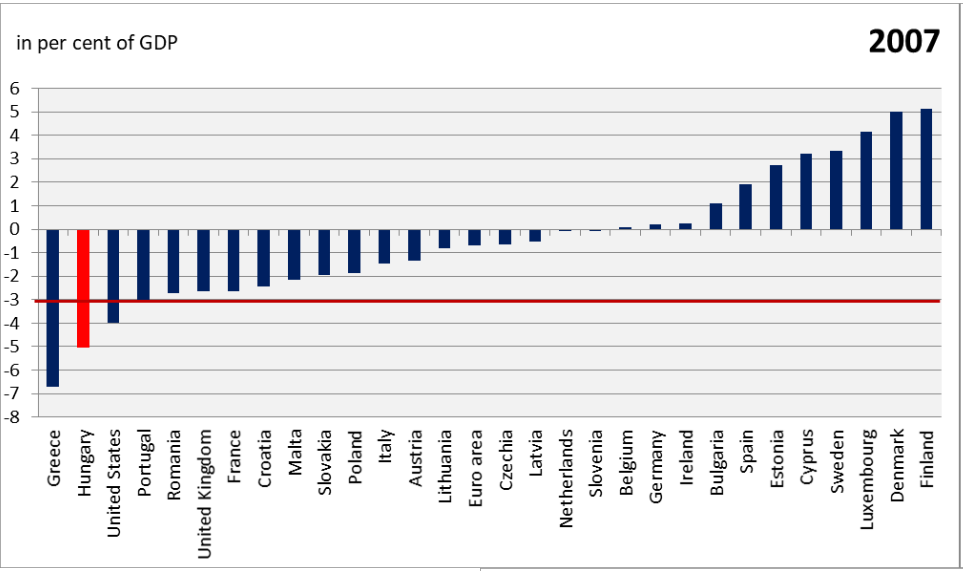
Source: National Bank of Hungary

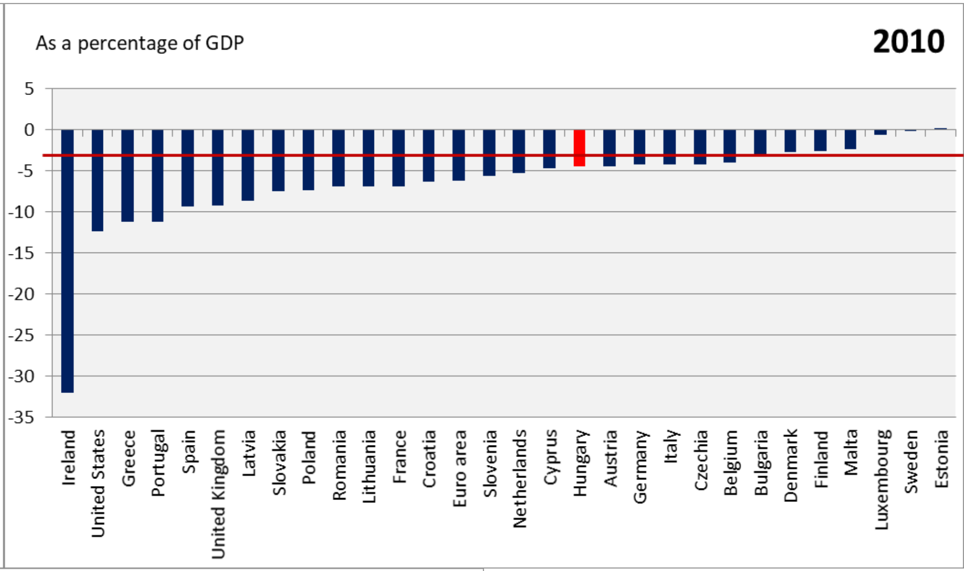
POLICY TURNAROUNDS

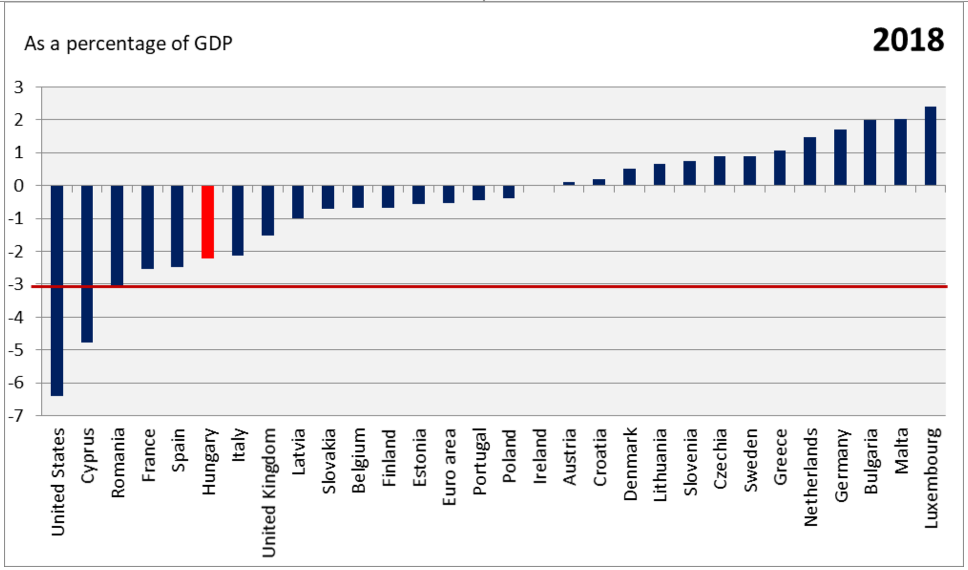
- Fiscal policy turnaround
- Monetary policy turnaround
- Vulnerability turnaround
- Regulatory turnaround
- Growth and employment turnaround

FISCAL POLICY TURNAROUND

BUDGET BALANCE IN EU MEMBER STATES *(2007, 2010, 2018)*

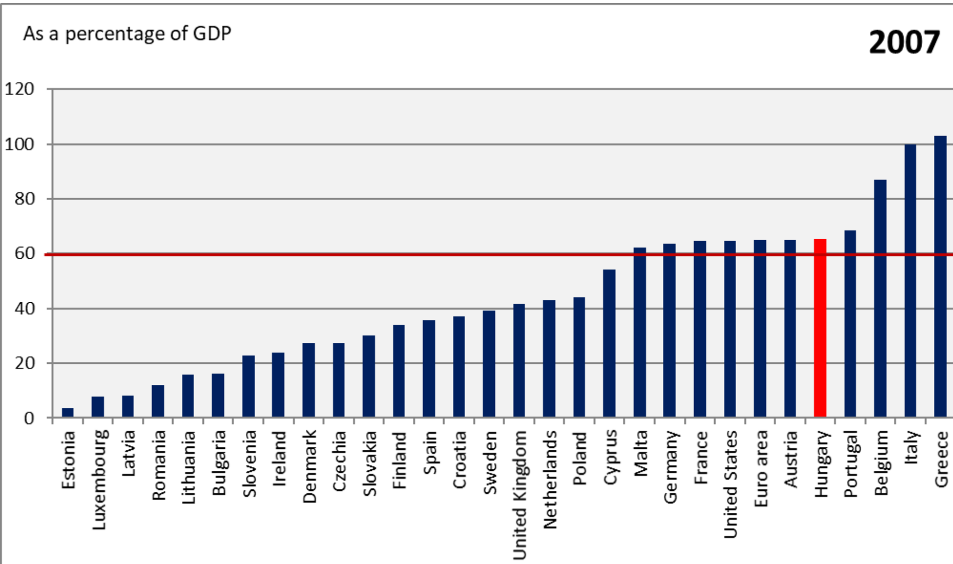


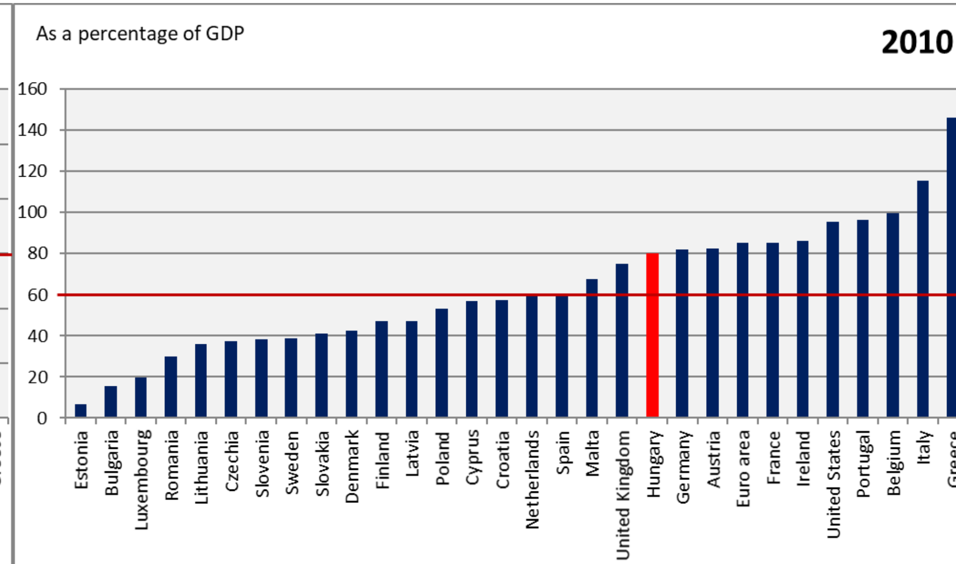


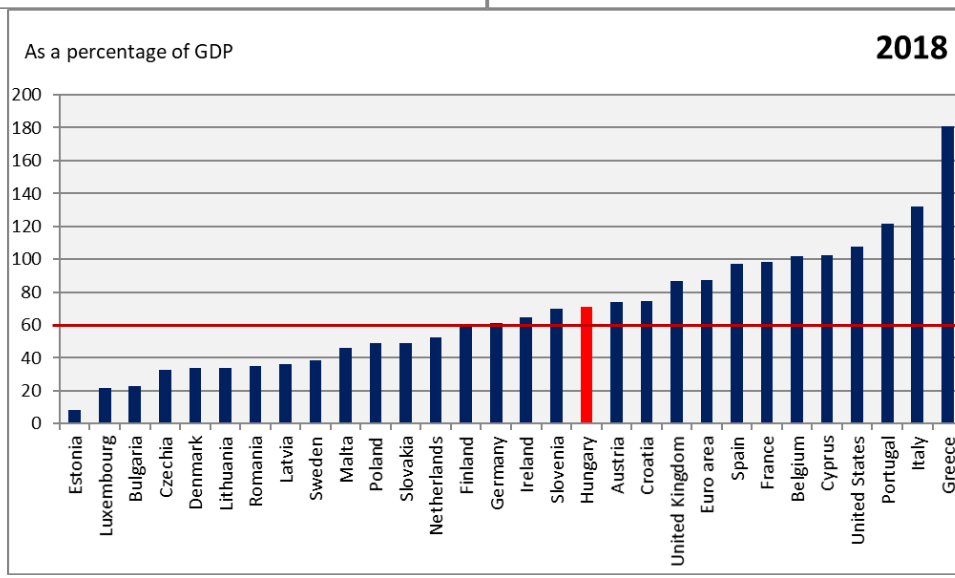


Source: AMECO

GOVERNMENT DEBT IN EU MEMBER STATES *(2007, 2010, 2018)*

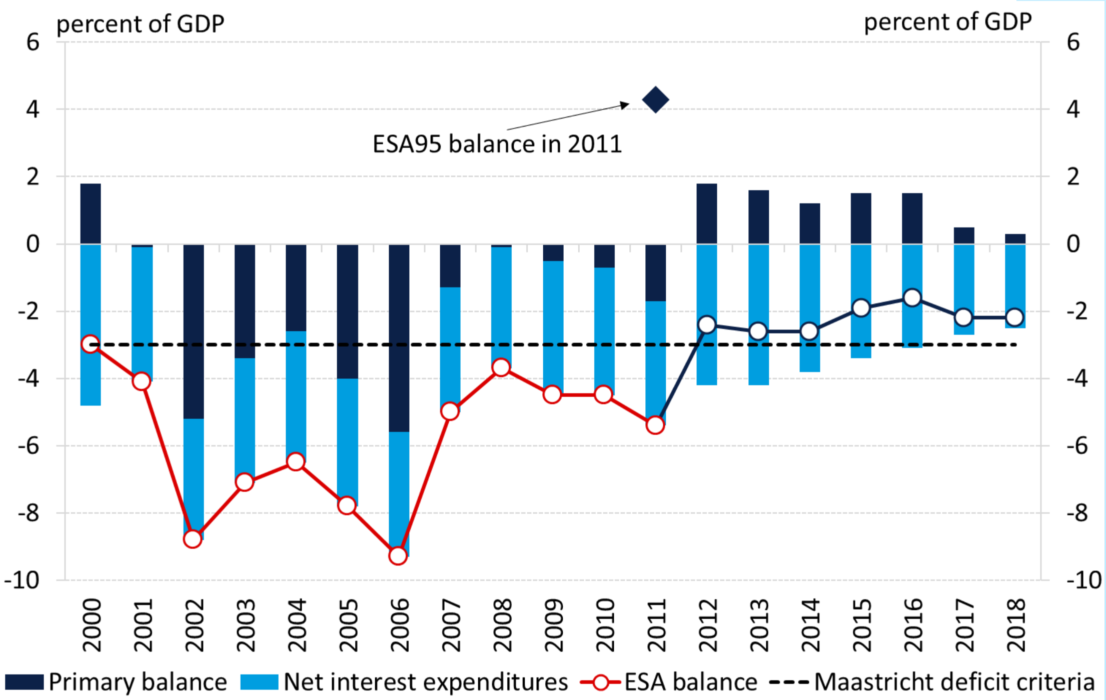






Source: AMECO

PUBLIC FINANCE TURNAROUND



THE BUDGET DEFICIT IN HUNGARY

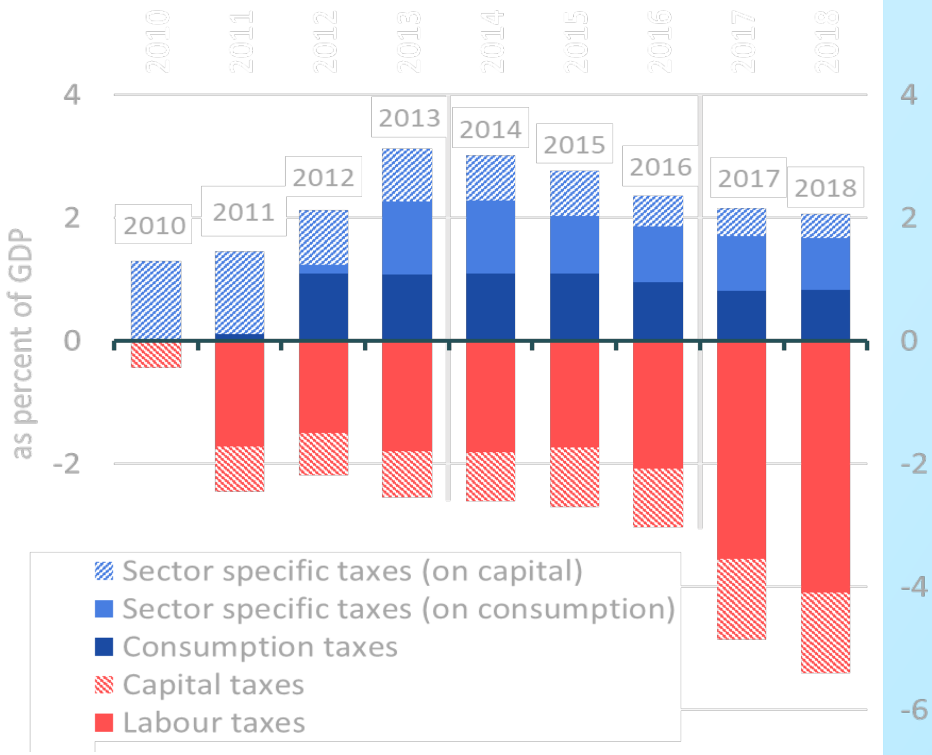
Since 2012 the primary budget balance has been positive

Source | Eurostat, MNB forecast

THE MAIN STEPS OF THE TAX SYSTEM'S REFORM

- Goal: to shift the tax burden from labor and corporations to consumption.
- **PIT:** *until 2010* progressive tax ranging between 17% and 32%. *2011*: introduction of flat tax at 16%; *2016*: **flat tax** reduced to **15%.**
- **VAT**: 5%, 18%, **27%** (25%, until 2012). *Measures to reduce tax avoidance.*
- **CIT**: *2009*: 16% in general, 10% under 50 million HUF tax base. *2017*: uniform rate of **9%.**
- **Special sectoral taxes** on financial institutions and certain large profitmaking corporations (energy, distribution chains).
- **Employer's social contribution tax**: progressive reduction from 27% in *2010* to 17,5% in *2019*.

TAX SYSTEM TURNAROUND



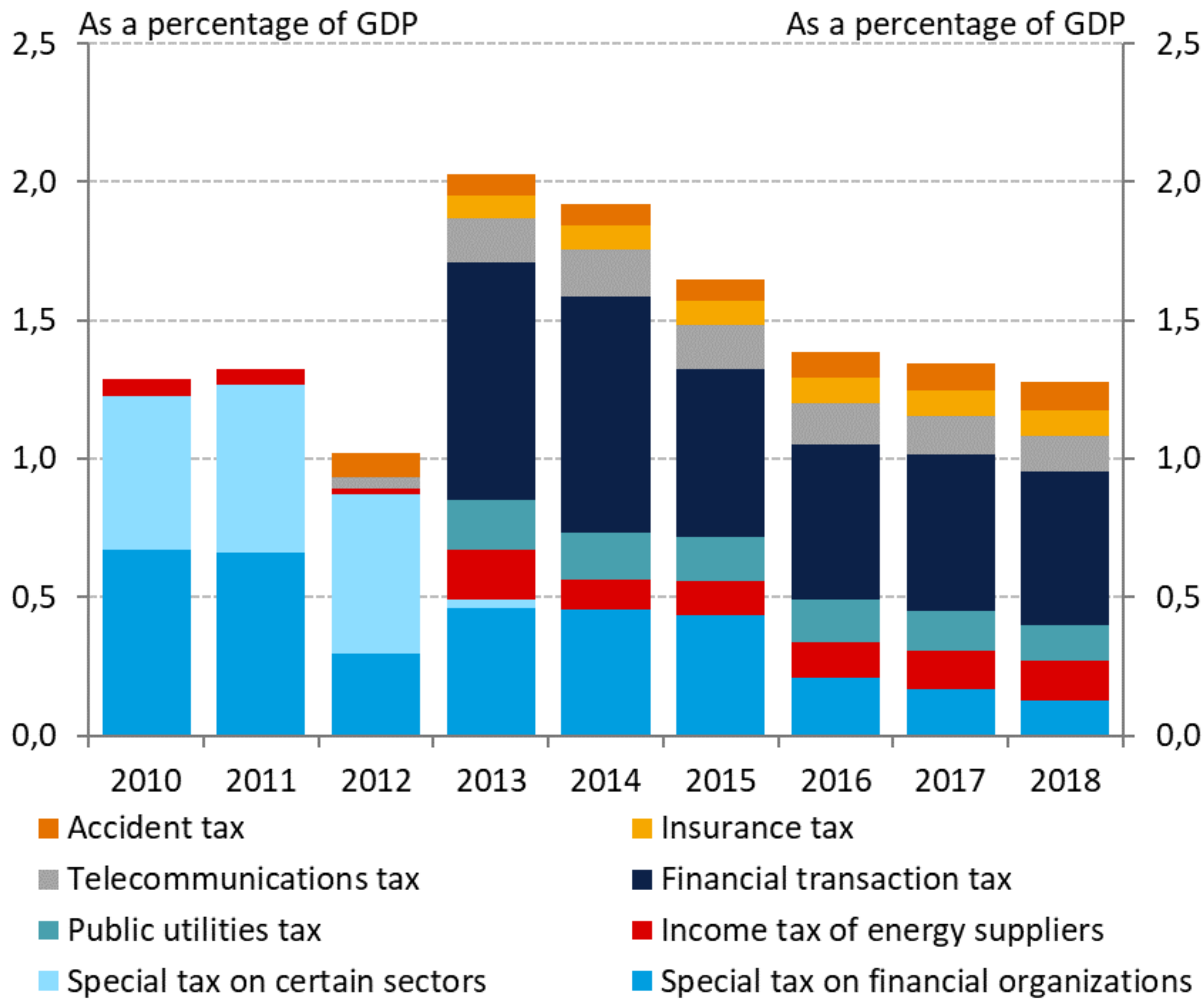
REFORM OF THE TAX SYSTEM

Aggregated effects of tax measures compared to 2009

The tax system shifted from taxes on labour to taxes on consumption

Source | MNB

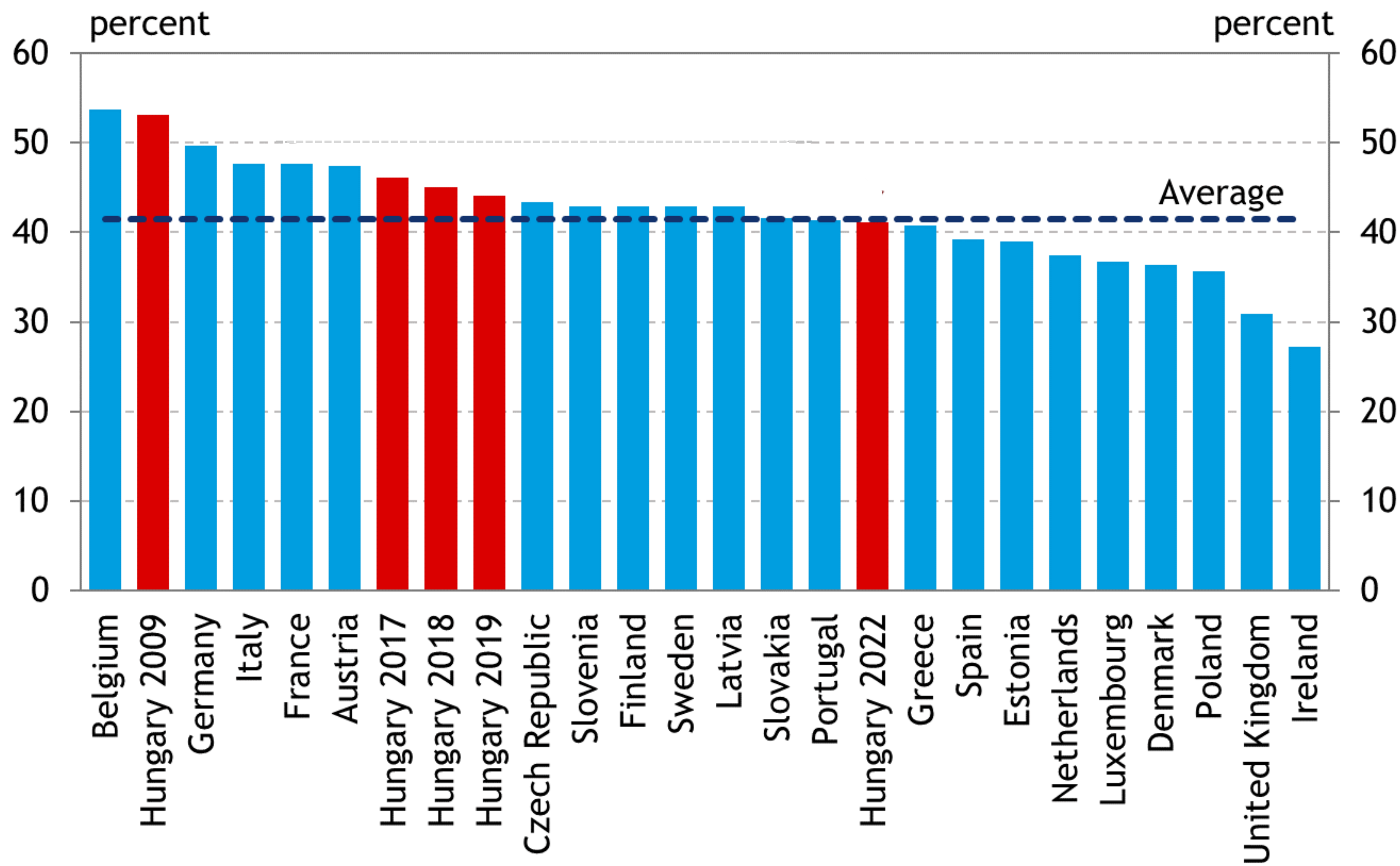
FISCAL REVENUES FROM SPECIAL TAXES, 2010-2018 (IN PER CENT OF GDP)



Source: National Bank of Hungary

HUNGARIAN TAX WEDGE DECLINED BUT IS STILL HIGHER THAN EU AVERAGE

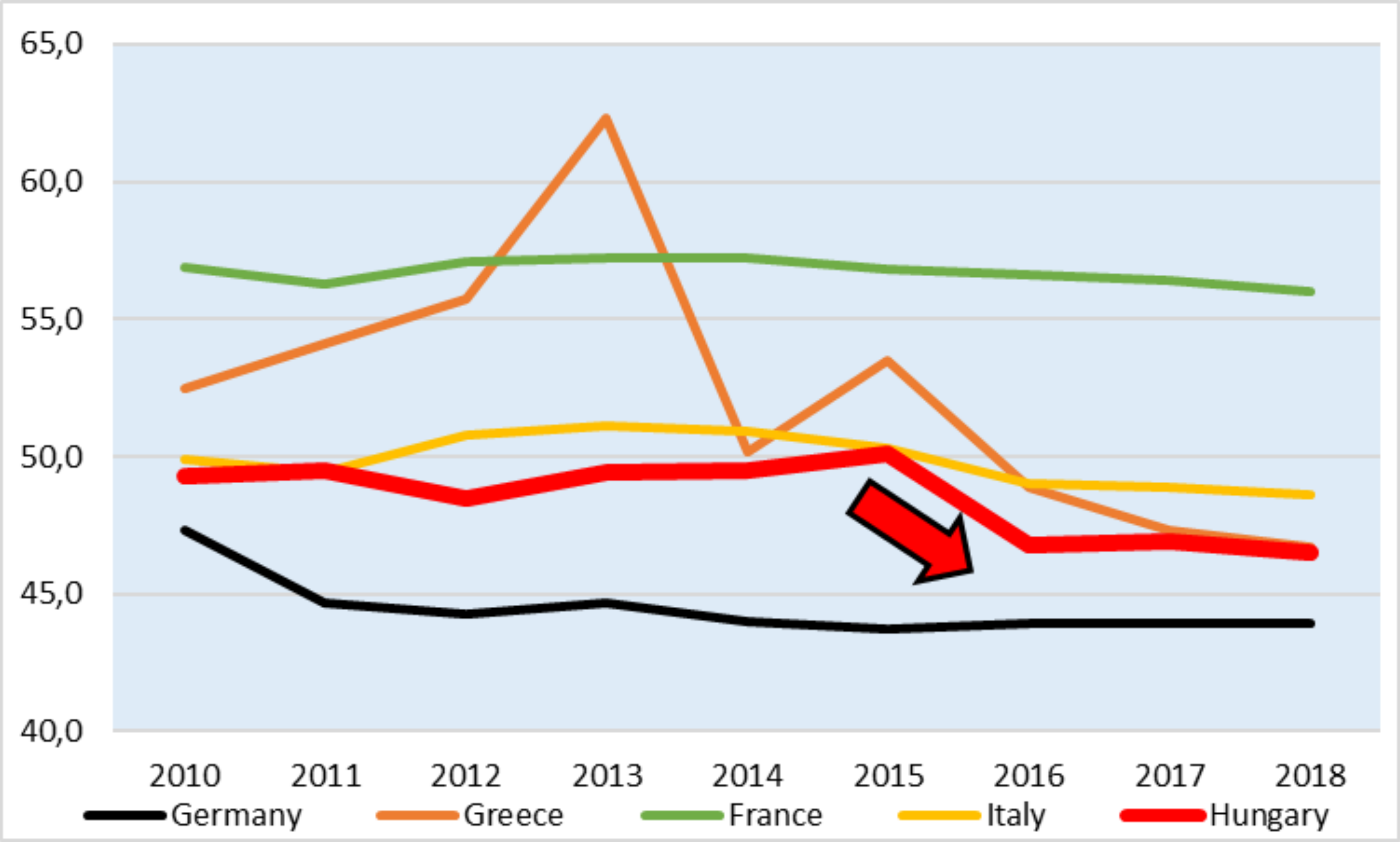
(at least without family tax allowance)



AVERAGE TAX WEDGE, SINGLE PERSON AT 100% OF AVERAGE WAGE IN 2017

Source | OECD

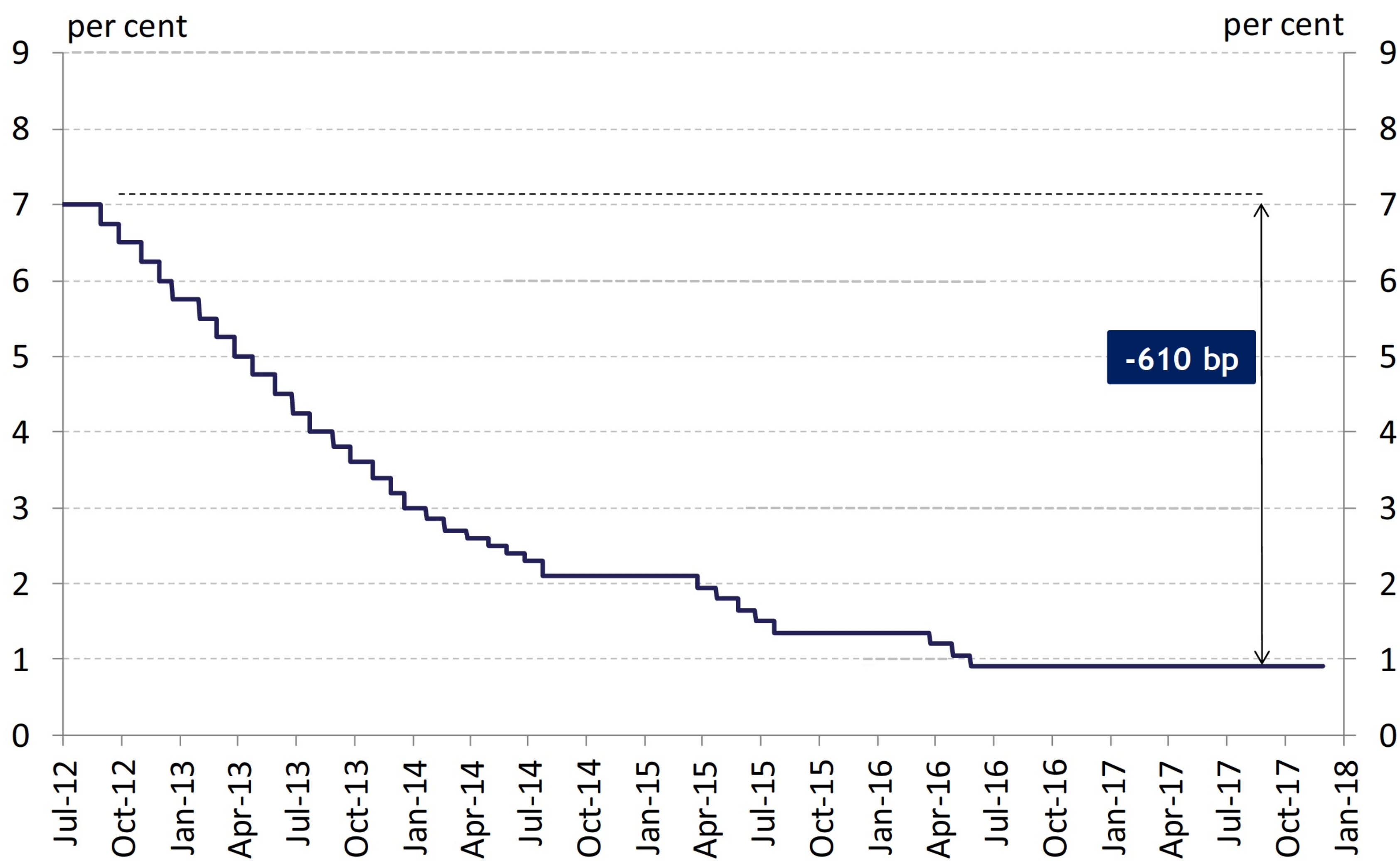
FISCAL EXPENDITURES (AS PERCENTAGE OF GDP)
2010-2018



Source: Eurostat

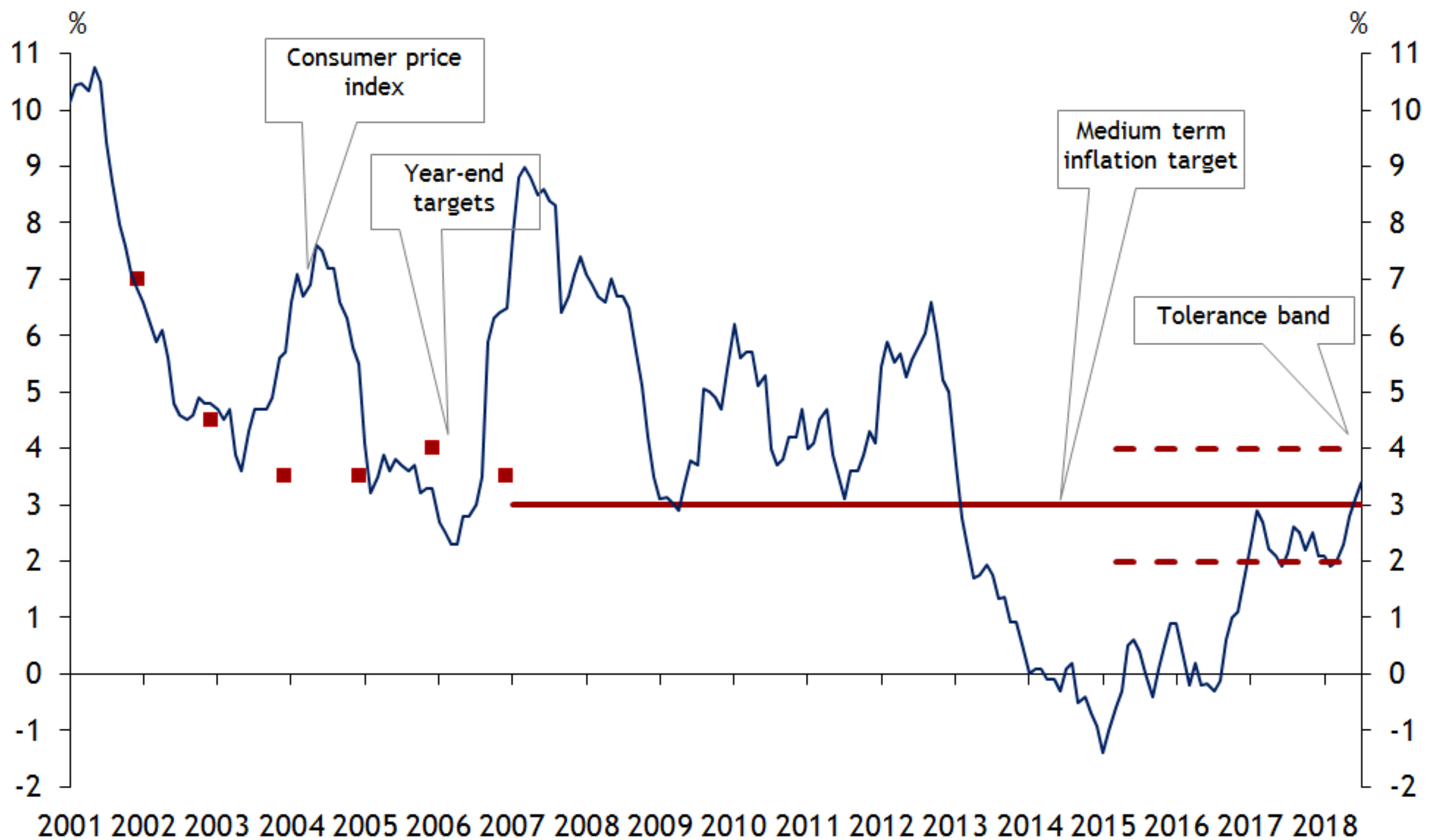
MONETARY POLICY TURNAROUND

THE PATH OF THE CENTRAL BANK BASE RATE, 2012-2018 (PER CENT)



Source: National Bank of Hungary

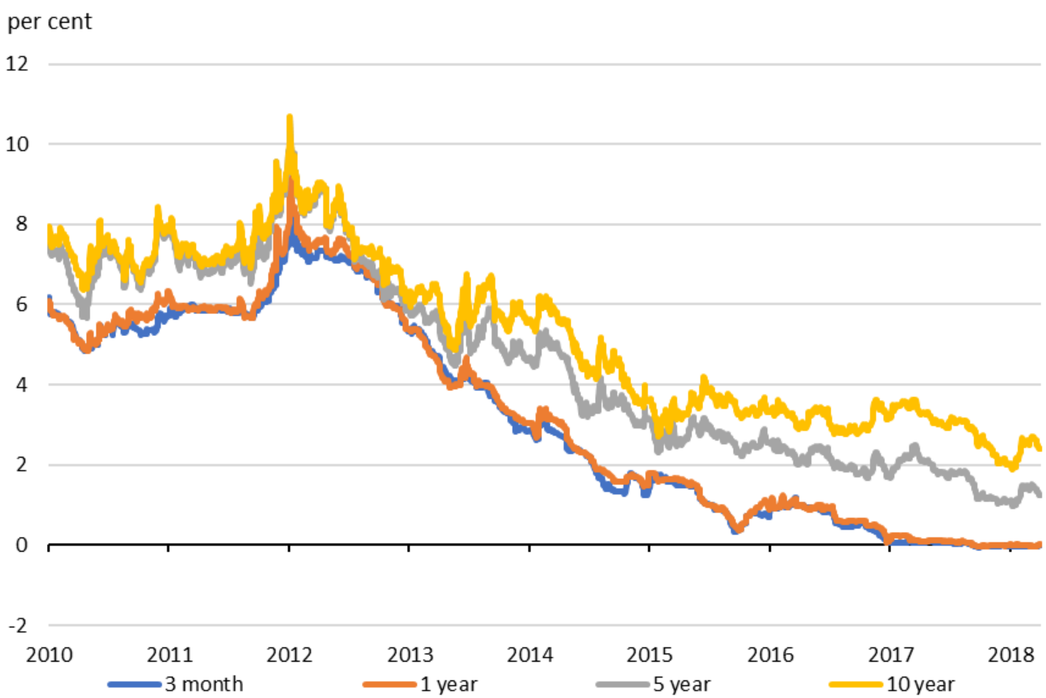
INFLATION TARGETING REGIME IN HUNGARY



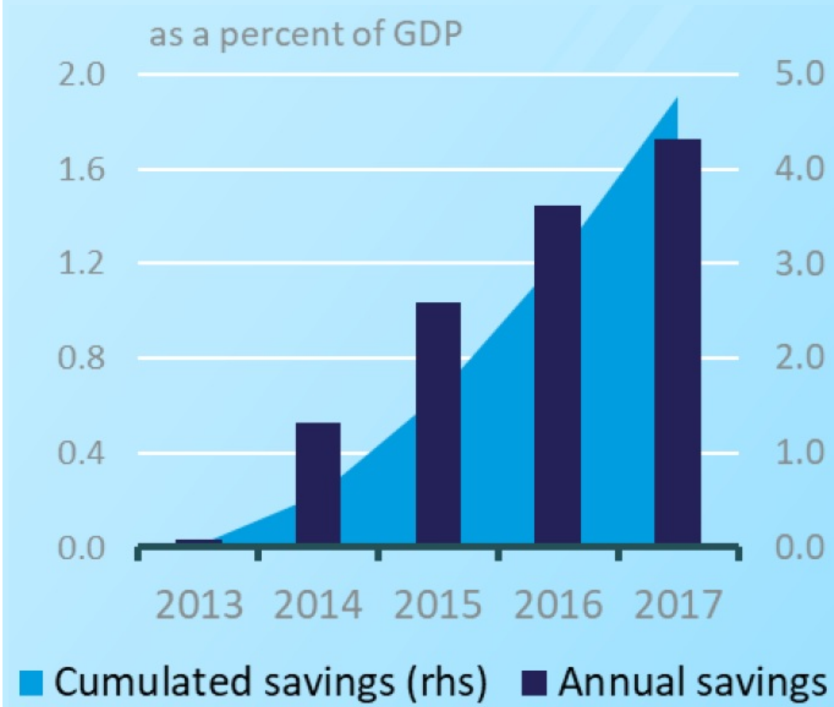
Source | MNB

GOVERNMENT BOND YIELDS AND GOVERNMENT'S INTEREST RATE EXPENDITURE

GOVERNMENT BOND YIELDS, 2010-2018 (PER CENT)



Government's interest rate expenditure, 2013-2017 (as a percent of GDP)



Source: National Bank of Hungary, Eurostat, Government Debt Management Agency

TARGETED LENDING INCENTIVE INSTRUMENTS

- MNB launched a **Funding for Growth Scheme** (FGS) in June 2013. Under the FGS, the central bank provided Forint loans at a **0% interest rate** to credit institutions, which could lend on these loans to SMEs with an interest margin **capped at 2.5 %.**
- In its **first phase**, FGS was used to a large extent **to refinance** previously contracted more expensive old loans, which undeniably produced a more muted growth effect, but helped a large number of SMEs to either achieve more favorable and more predictable interest rate burdens, or get rid of their foreign currency loans and the exchange rate risk involved.
- **The second phase** of FGS was launched in March 2015. **MNB assumed 50% of SMEs' credit risk** to improve access to credit by firms that had previously been excluded from the FGS on the basis of risk considerations. Only once was the MNB asked to realize the assumed risk.

TARGETED LENDING INCENTIVE INSTRUMENTS

- In early 2016, the **Growth Supporting Program (GSP)** was launched, as a **third phase of the FGS.** MNB funding was provided **only for investment purposes**, while SMEs with natural hedges gained access to foreign currency loans, which had not been available in the previous phases.
- Another part of GSP was the **Market-Based Lending Scheme** (MLS). The MNB helped banks with the transition to **market-based lending** primarily through an instrument supporting risk management, and an instrument supporting liquidity management.

TARGETED LENDING INCENTIVE INSTRUMENTS

- To hedge their interest rate risk resulting from lending at fixed rates, banks were offered by the MNB a ***lending interest rate swaps (LIRS), conditional on lending.*** The MNB pays interest at a variable rate in exchange for a fixed interest rate received. LIRS were auctioned off at a favorable price.
- Linked to LIRS, a ***preferential deposit facility at the MNB,*** on which the base rate was paid, was introduced to support banks with liquidity management. It was capped at 50% of each bank's LIRS transaction.
- The tenders for LIRS were discontinued, but there is outstanding stock from previous contracts.
- Starting in January 2018, MNB introduced a **favorably priced monetary interest rate swap (MIRS**) to encourage financial institutions to lend long term at fixed interest rates.
- The MIRS is for 5 and 10 years, auctioned off weekly at fixed price and at a maximized limit.
- MNB also introduced in January 2018 a **mortgage paper purchasing program**, which helped reduce the mortgage interest rates.

SELF-FINANCING PROGRAM

- A **Self-Financing Program** was launched by the MNB in April 2014. The goal was to **squeeze out from the MNB the excess liquidity** of banks in order to encourage banks to use their liquidity to lend to the economy or buy domestic securities in order to reduce the FX exposure and vulnerability of the country.
- **The traditional main policy instrument of the MNB had been the 2-week central bank bonds auctioned off weekly without a quantitative limit in order to absorb excess liquidity**. These bonds could be used as collateral and could also be sold on the secondary market. Many non-residents purchased them.
- In August 2014, the CB bonds were **replaced by 2-week deposits** at the MNB which were of course not marketable and could not be used as collateral. Hence, they were less attractive for banks to hold.

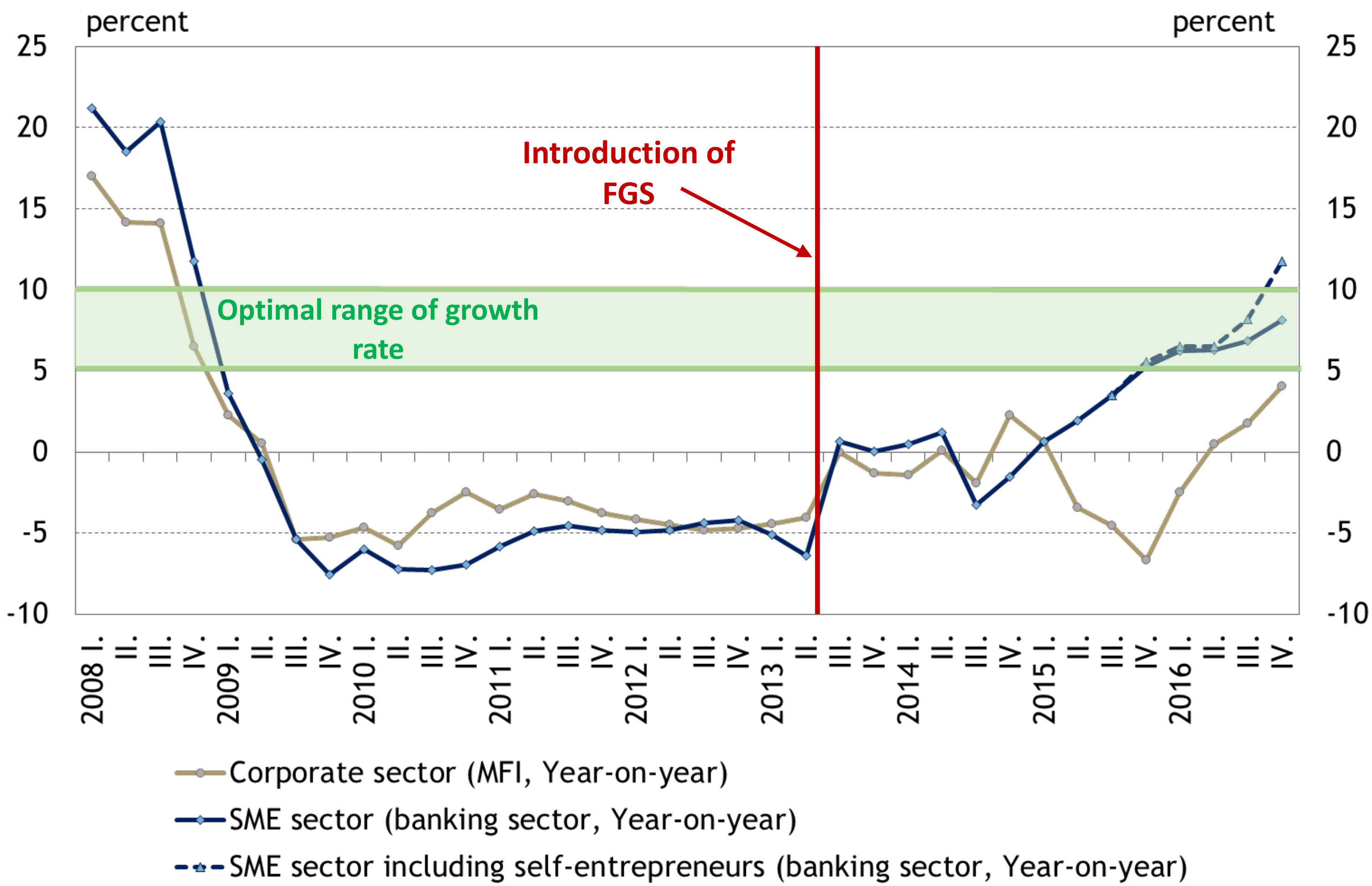
SELF-FINANCING PROGRAM

- In June 2015, the 2-week deposits were **replaced by 3-month deposits** and, in decreasing magnitudes, the **quantity was limited**. When the limit is exhausted, no more 3-month deposits are available for banks at the MNB.
- In December 2015, the **reserve ratio requirement was reduced to uniform 2%** from variable 2-5%. The base rate is paid on required reserves, but no interest is paid on excess reserves. With the decline in required reserves, banks were interested to withdraw additional deposits from MNB.

INTEREST RATE SWAP SYSTEM

- In the summer of 2014, an **interest rate swap system (IRS) was introduced to encourage banks to buy long-term domestic securities**. IRS was distributed in variable-price tenders.
- Difference with LIRS: IRS was for longer term.
- The tenders of IRS were discontinued, but there is outstanding stock from previous contracts.
- **All the above measures to squeeze out the excess liquidly from the MNB increased the domestic currency share of the government debt and also led to a significant reduction in long term interest rates.**
- **Bond purchase for growth.**

DUE TO THE FUNDING FOR GROWTH SCHEME HUNGARY WAS ABLE TO AVOID A CREDIT CRUNCH



GROWTH RATE OF LOANS OUTSANDING TO THE WHOLE CORPORATE AND SME SECTORS

Source | MNB

EXTERNAL VULNERABILITY TURNAROUND

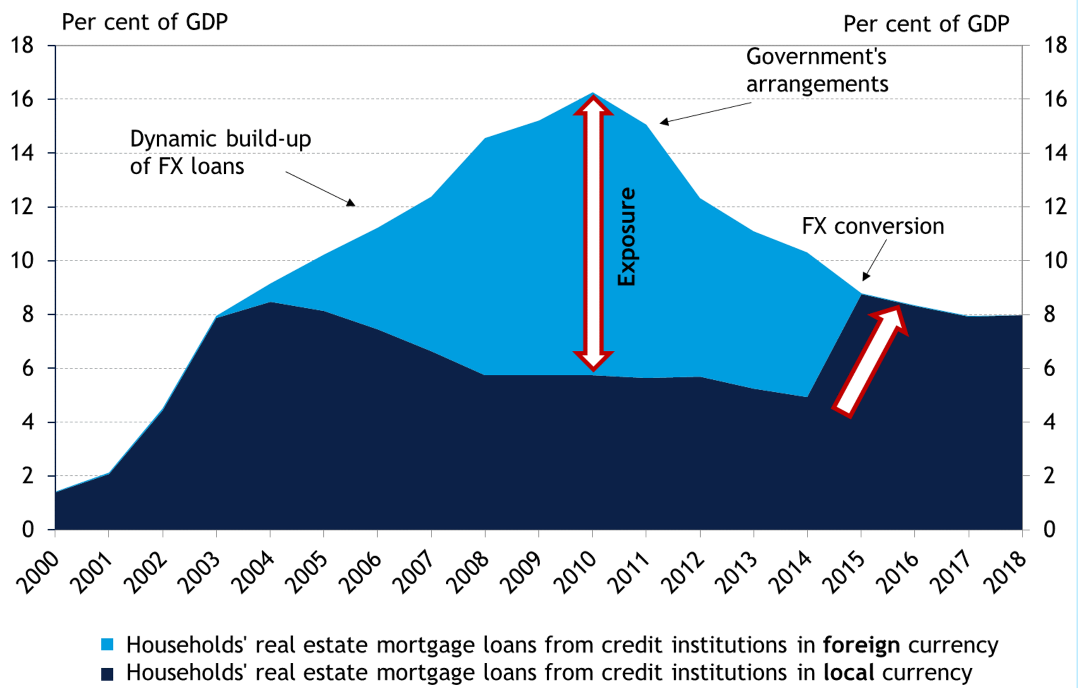
FOREIGN CURRENCY LOANS IN HUNGARY

- After 2003, due to rising demand for credit and the unfavorable terms of Forint lending (high average market rate of 12-13 per cent), **households were driven towards foreign currency-based loans, which offered much more favorable interest rate terms.** The bulk of the FX loans were in Swiss Francs and the rest in Yen and Euro.
- Most households did not take into account the foreign exchange rate risk.
- Expectation of entry into the eurozone mitigated the fear of currency risk.
- The mortgage loan amount was expressed in HUF tied to the HUF/CHF exchange rate. As the HUF exchange rate depreciated against CHF, the outstanding loan amount and the associated monthly mortgage payments rose.
- Non-performing loans increased as the debt burden of borrowers rose.
- Simultaneously, household consumption and savings fell as households deleveraged.

FX LOAN CONVERSION

- Several attempts were made to reduce the burden of household borrowers in FX before a final solution was implemented in 2014, luckily just before the Swiss Franc was floated and started to appreciate.
- The conversion was made at the HUF/CHF market rate and the MNB provided the FX or FX swaps for the banks to close their FX open positions as they de-linked the loans from the FX.
- As a result of the conversion, the MNB’s international reserves fell, but from a high level.
- Following the conversion, borrowers pay a HUF interest rate, which in the meanwhile was sharply reduced as a result of the MNB’s interest rate cutting cycle. The borrowers do not carry any exchange rate risk anymore.
- As a result, NPLs were also reduced.
- **The elimination of the exchange rate risk made the mortgage payment more predictable, which has strengthened confidence and contributed to the increase in consumption.**

TURNAROUND IN FX LOANS OF HOUSEHOLDS



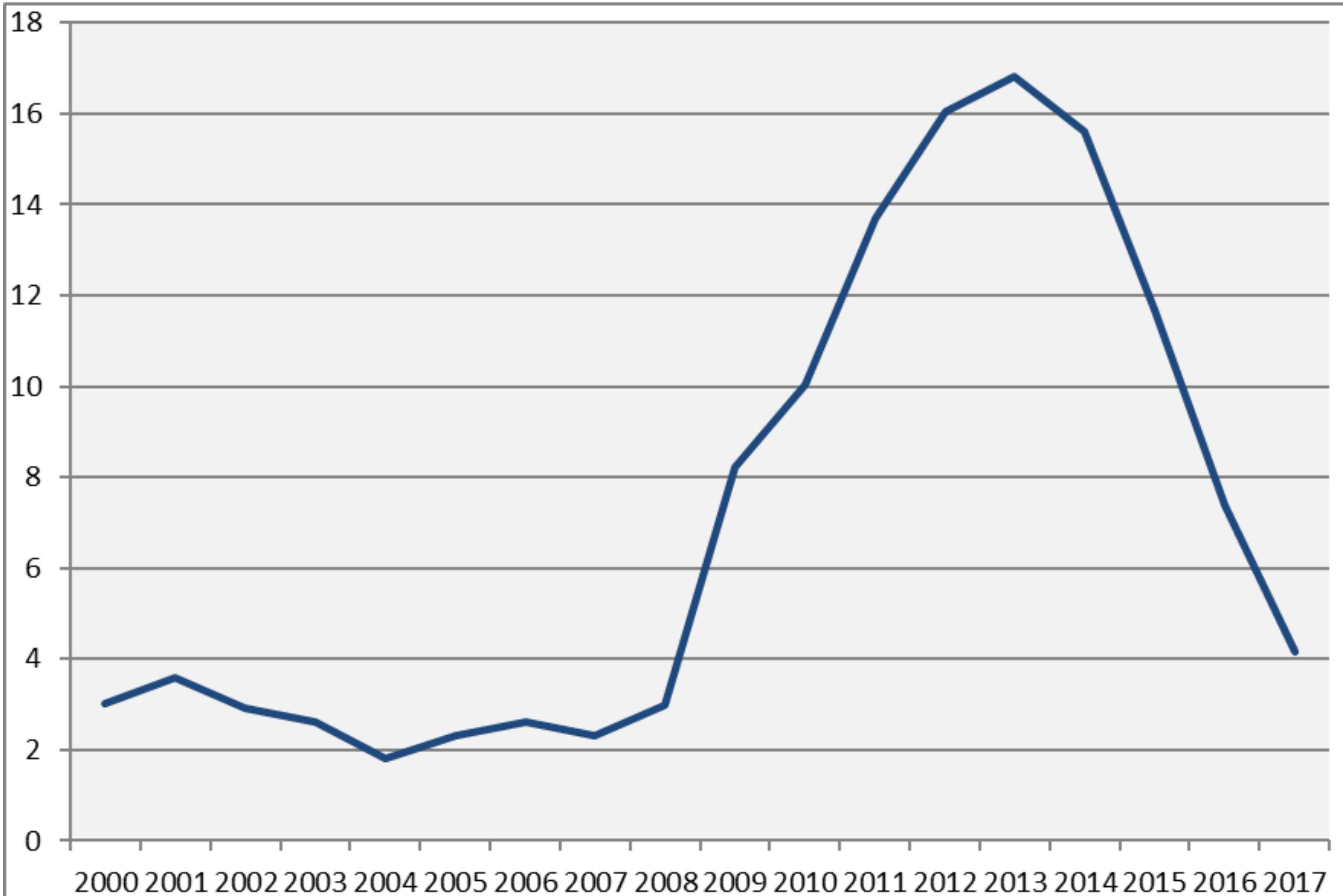
LOANS OF THE HOUSEHOLD SECTOR

2000-2018, as percent of GDP

Conversion of households' foreign currency denominated loans eliminated the largest source of vulnerability

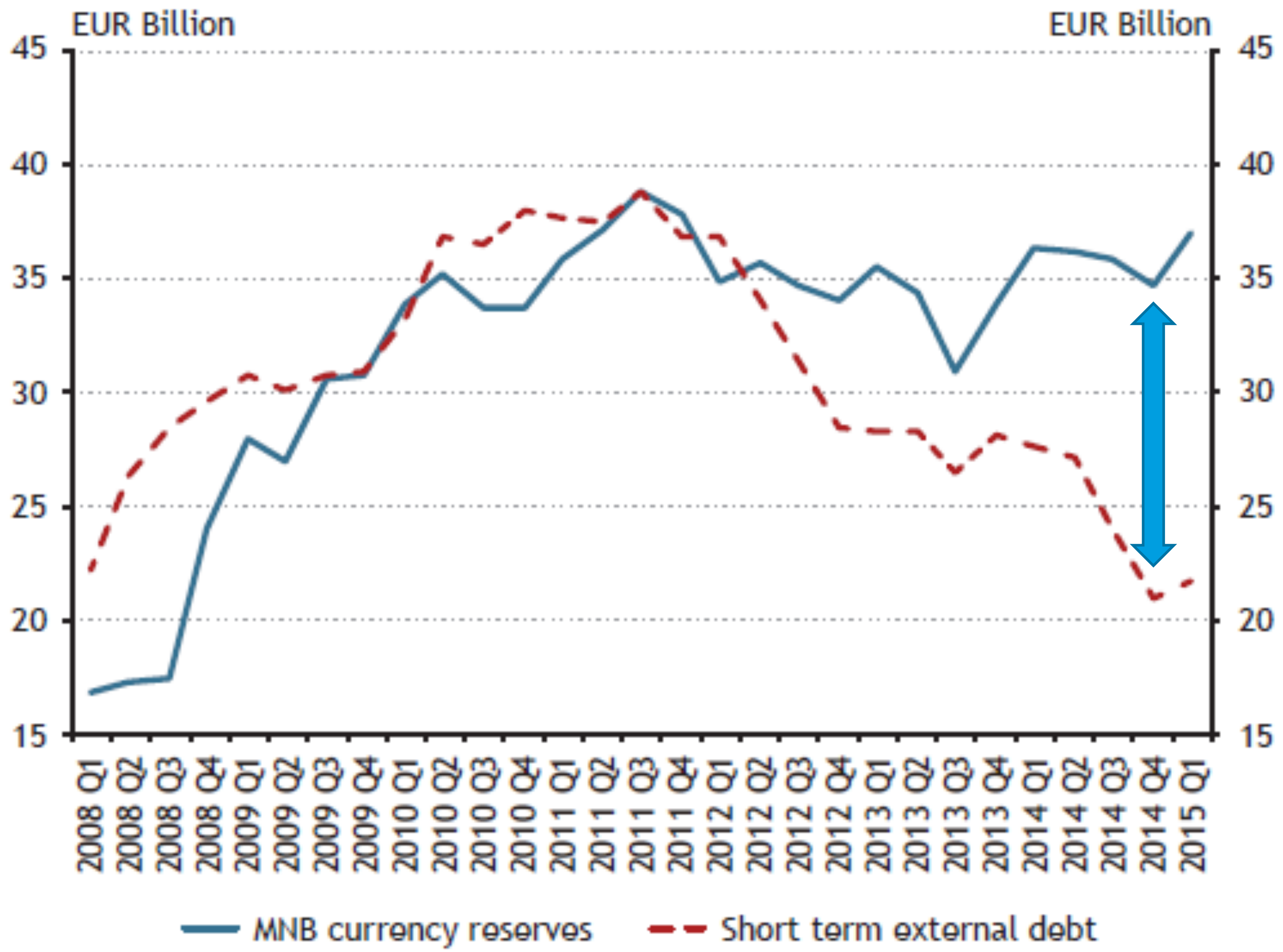
Source | MNB

THE RATIO OF NON-PERFORMING LOANS (NPL) WITHIN THE LOAN PORTFOLIO IN HUNGARY, 2000-2017 (IN PERCENT)



Source: World Bank

THE RESERVE ADEQUACY OF THE MNB REACHED THE LEVEL THAT ALLOWED FOR SAFE CONVERSION

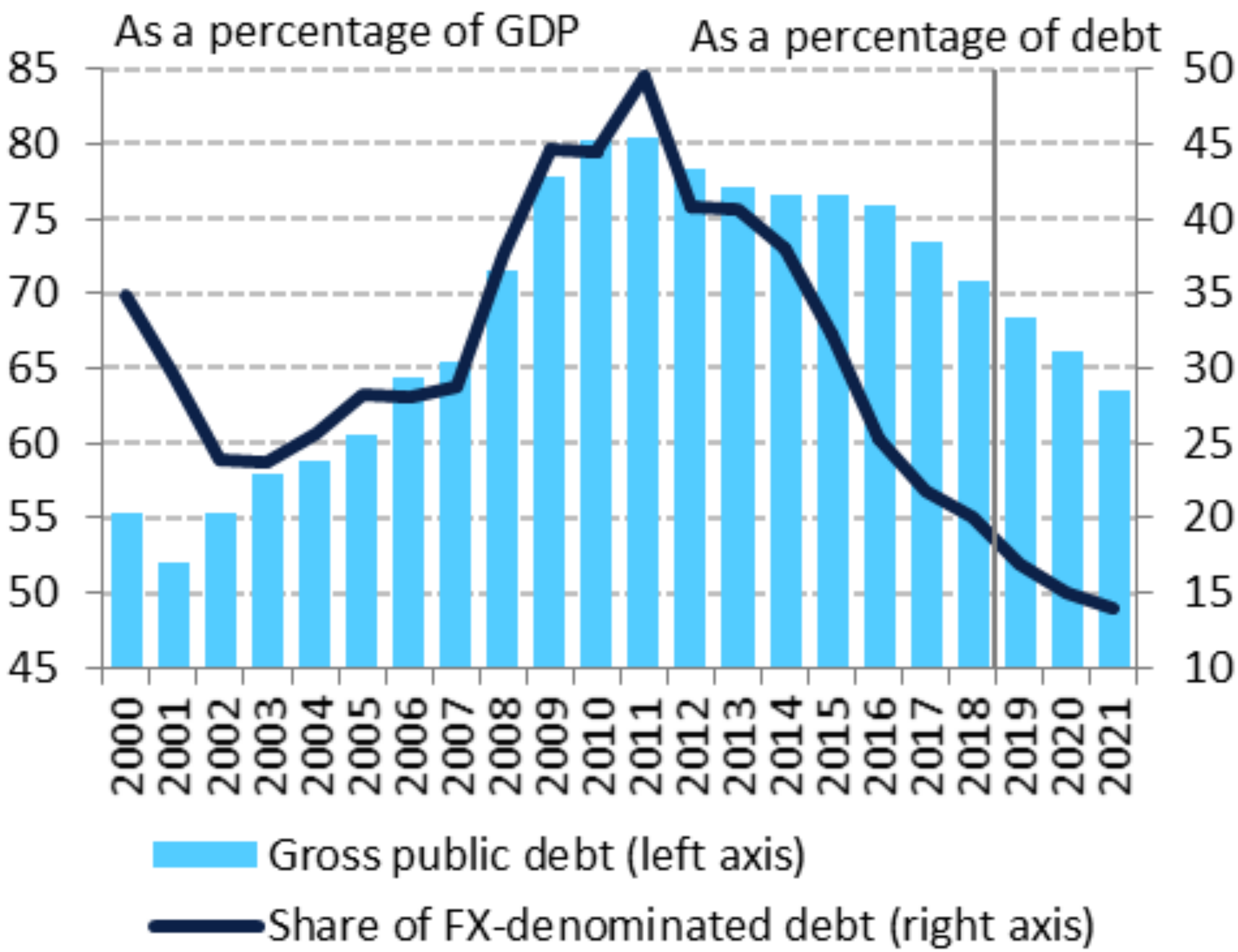


THE MNB'S FOREIGN EXCHANGE RESERVES AND SHORT-TERM EXTERNAL DEBT

Source | MNB

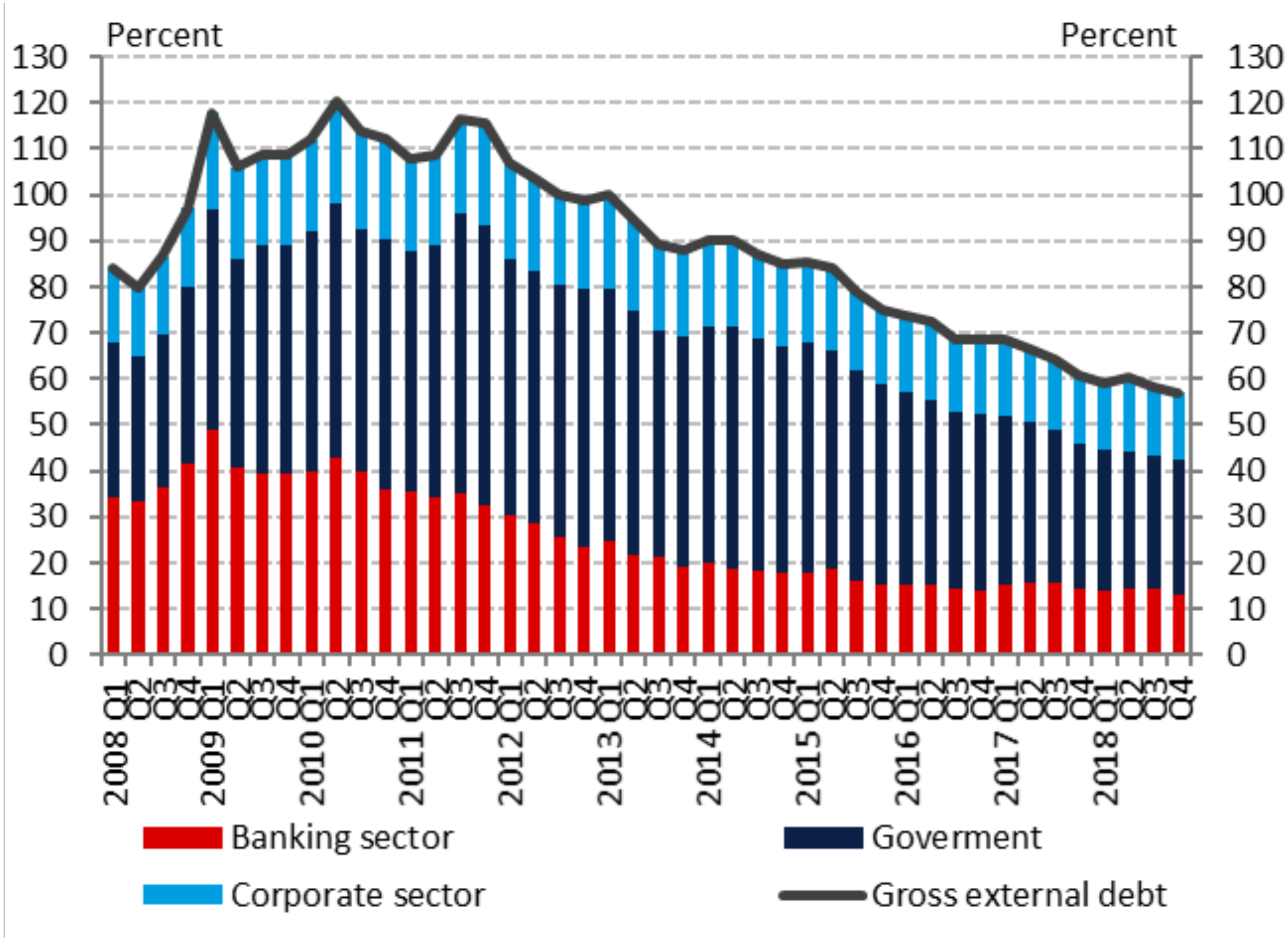
DEBT-TO-GDP RATIO DECREASES WITH FALLING SHARE OF FX DEBT

Gross public debt, 2000-2021* (in per cent of GDP)



Note: *2019-2021 forecasts of MNB are calculated with unchanged (end-of-2018) exchange rate.
Source: National Bank of Hungary, Government Debt Management Agency

GROSS EXTERNAL DEBT DECLINED TO A HISTORICAL LOW

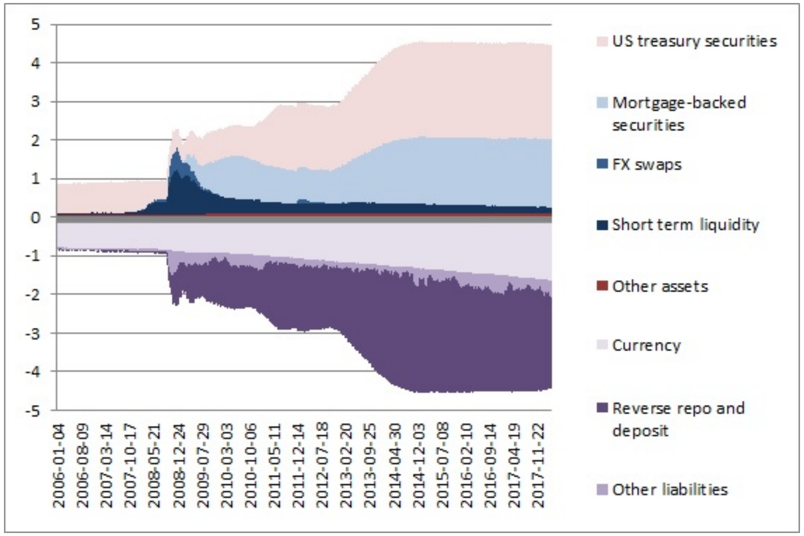


GROSS EXTERNAL DEBT IN A SECTORAL BREAKDOWN
(AS A PERCENTAGE OF GDP, EXCLUDING INTERCOMPANY LOANS)

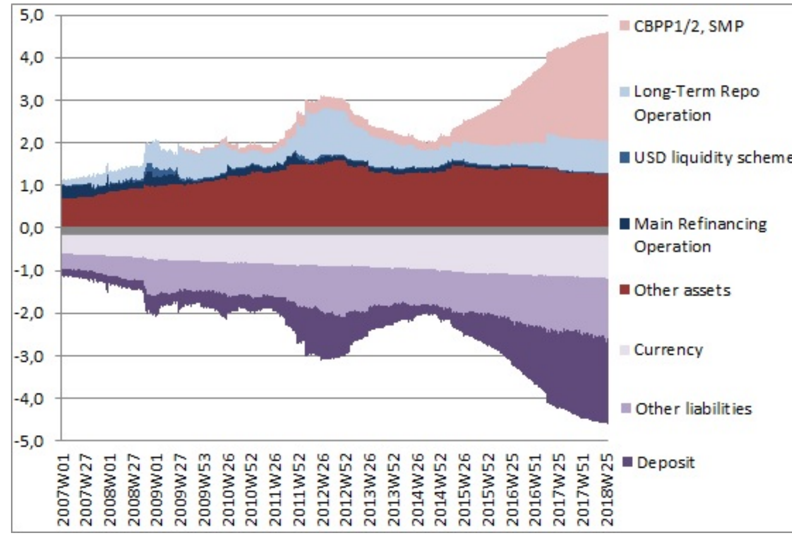
Source | MNB Report on balance of payments, April 2019

BALANCE SHEET OF FED, ECB AND MNB

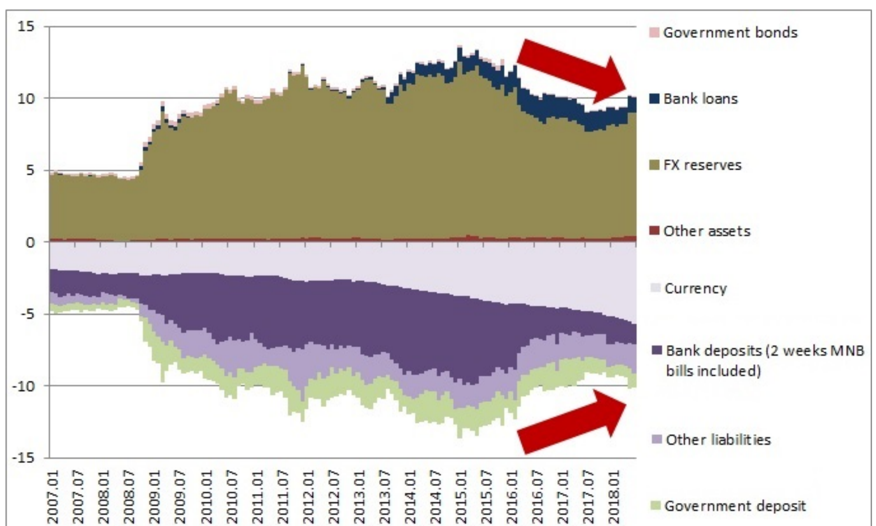
Balance sheet of FED, January 2007 – November 2018 (thousand billion USD)



Balance sheet of ECB, January 2007 – November 2018 (thousand billion EUR)

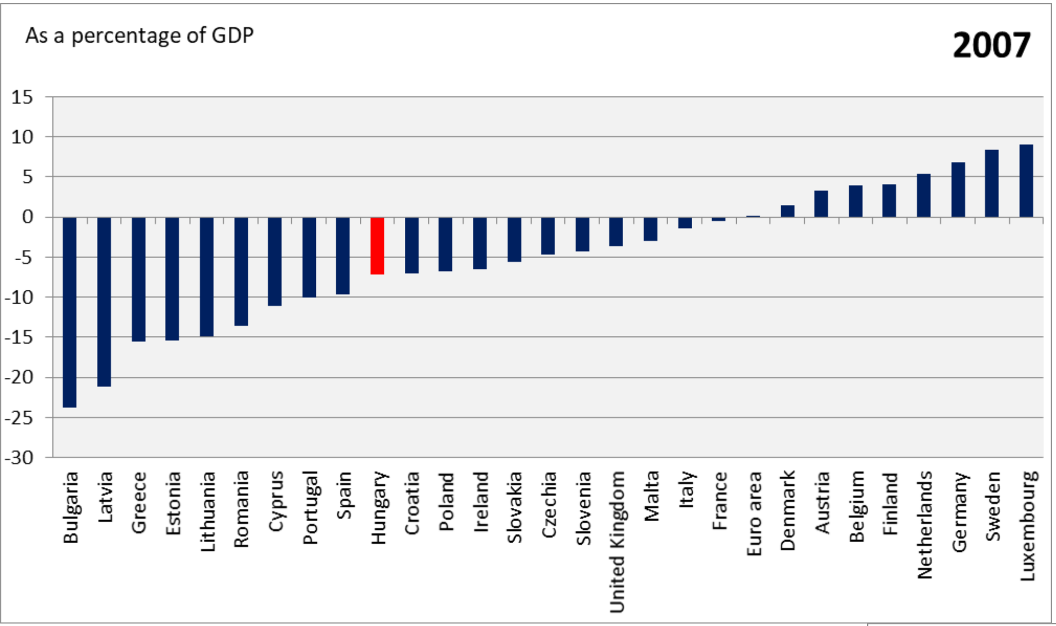


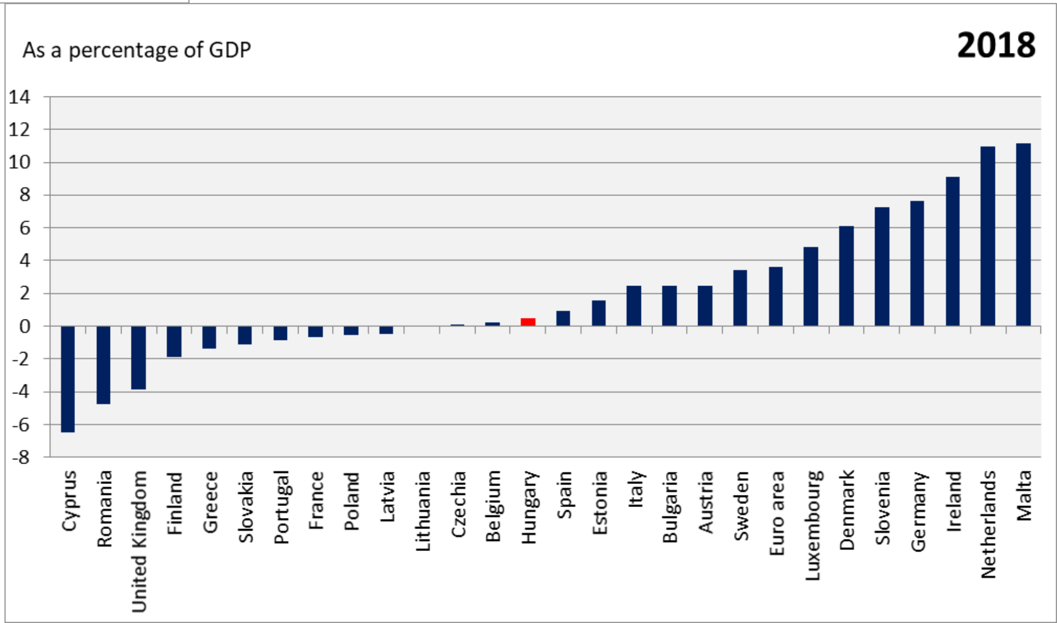
Balance sheet of MNB, January 2007 – October 2018 (thousand billion HUF)



Source: Fed, ECB, MNB

CURRENT ACCOUNT BALANCE IN EU MEMBER STATES (2007 AND 2018)

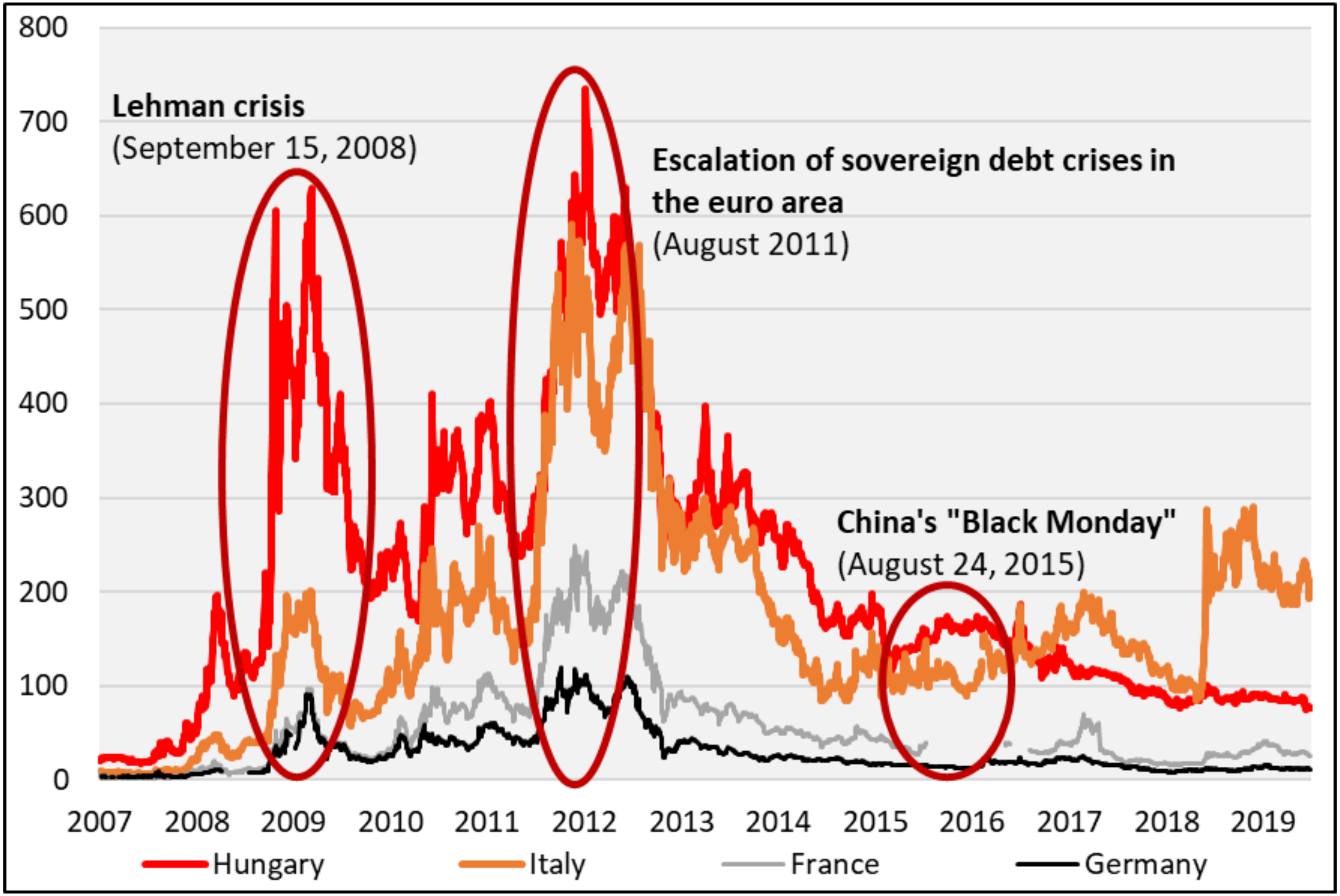




Szapáry©2019

Source: AMECO
Note: *Data for Croatia originates from 2016.

5-YEAR CDS SPREADS, 2007-2019 (BASIS POINTS)



Note: Data of French government securities are missing for certain periods.
Source: Bloomberg, National Bank of Hungary

CREDIT RATING OF HUNGARY BY RATING AGENCIES, 2012-2018

Year	Moodies	S&P	Fitch
2012	Ba1	BB	BB+
2013	Ba1	BB	BB+
2014	Ba1	BB	BB+
2015	Ba1	BB+	BB+
2016	Ba1	BBB-	BBB-
2017	Ba1	BBB-	BBB-
2018	Baa3	BBB-	BBB-
2019	Baa3	BBB	BBB

Source: National Bank of Hungary

REGULATORY TURNAROUND

The summary of regulatory responses to the financial crisis at global and EU level applicable in Hungary

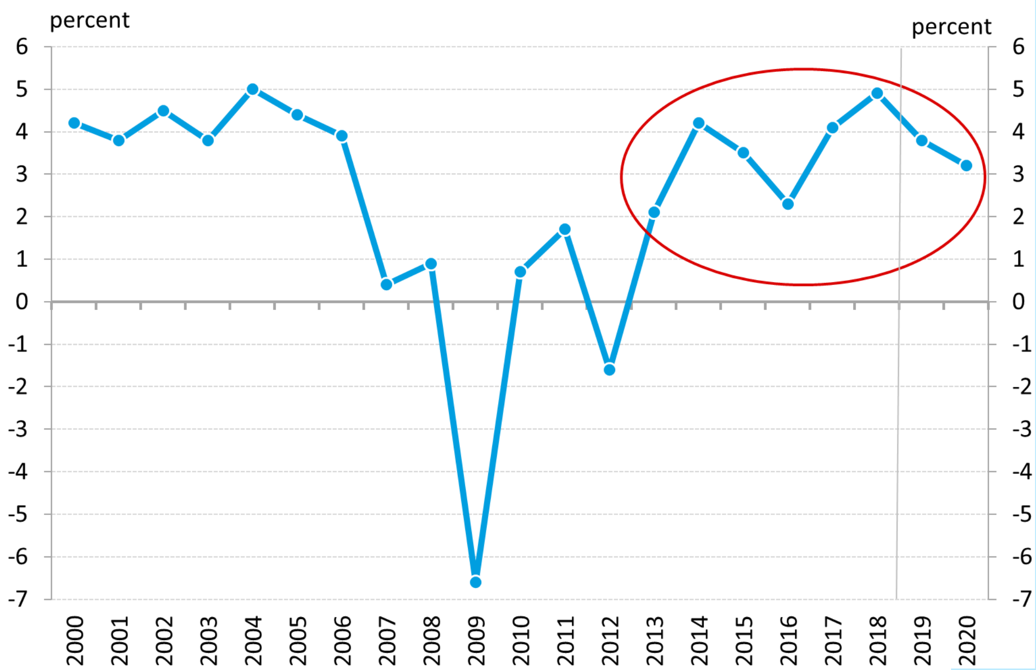
	Topic	Global	EU
GLOBAL	**Establishment of macroprudential supervisory framework**	FSB, Basel Committee	ESRB, EBA Regulations, CRD
	Strengthening capital requirements, leverage ratio	Basel III	CRD, CRR
	G-SII and O-SII banks	FSB, Basel Committee	CRD, Banking Union
	Liquidity	Basel III	CRD, CRR
	Resolution framework	FSB, Basel Committee	BRRD
	Extension of disclosure requirements	Basel III	CRR
	Corporate Governance	FSB	CRD
EU	**Qualitative and quantitative developments in EU legislation**		CRD, CRR, Regulations
	Strengthening the role of EBA		CRR, EBA Regulation
	Single EU supervisor		Banking Union

ADDITIONAL REGULATORY RESPONSES AT HUNGARIAN LEVEL

- Transfer of FSA to the National Bank of Hungary.
- Prohibition of unilateral contract amendments disadvantageous to the banks’ customers.
- „Debt brake limits”: loan-to-income and loan-to-value limits.
- Tightening the conditions for retail foreign currency loans to prevent excessive risk build-ups: households can borrow in FX only if they have sufficient income in the FX currency in which they want to borrow.
- Rules with respect of non-performing loans: banks with NPL over 5% have to submit a plan detailing how they will reduce the amount of NPLs.
- Several measures to reduce the currency and maturity mismatches.
- Much stricter enforcement of regulations.

GROWTH TURNAROUND AND EMPLOMENT TURNAROUND

GROWTH TURNAROUND

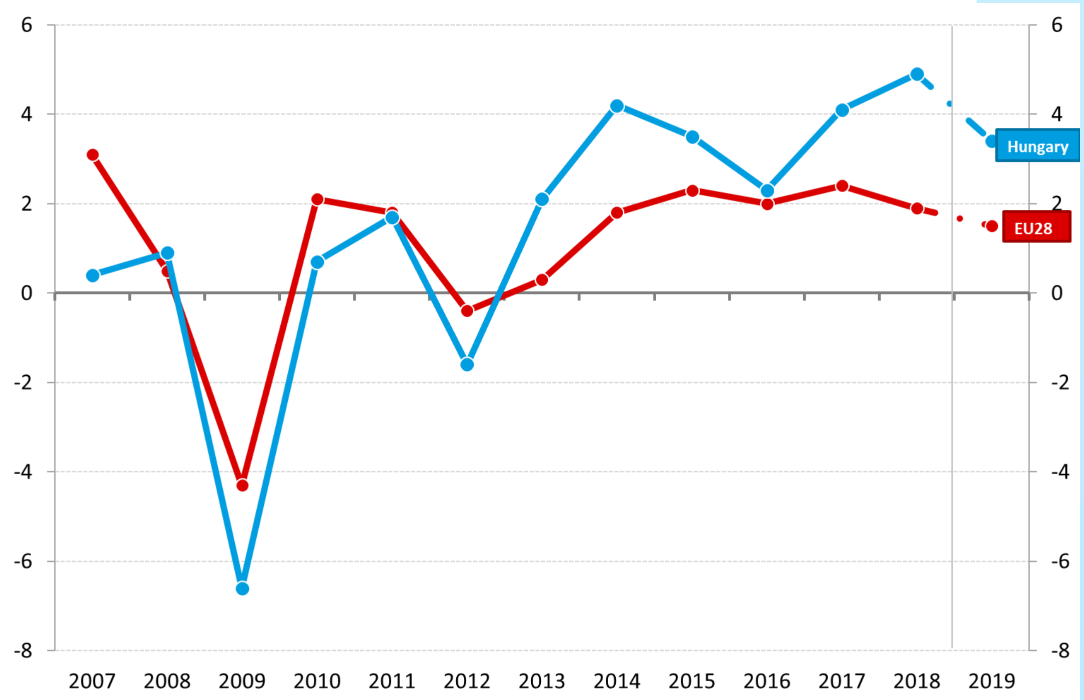


REAL GDP GROWTH

Between 2000 and 2020

Source | KSH, MNB forecast

CONVERGENCE TURNAROUND



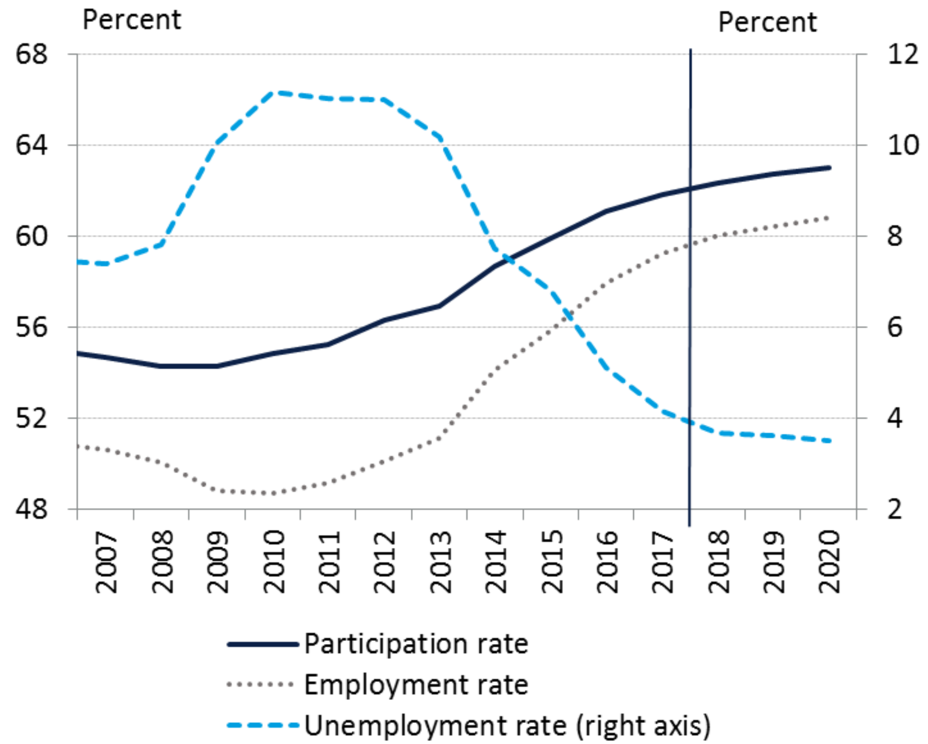
ANNUAL REAL GDP CHANGE (%)

For 2019 based on the winter 2019 interim forecast of the European Commission

Hungarian economy grows faster than the EU average.

Source | European Commission

LABOUR MARKET TURNAROUND



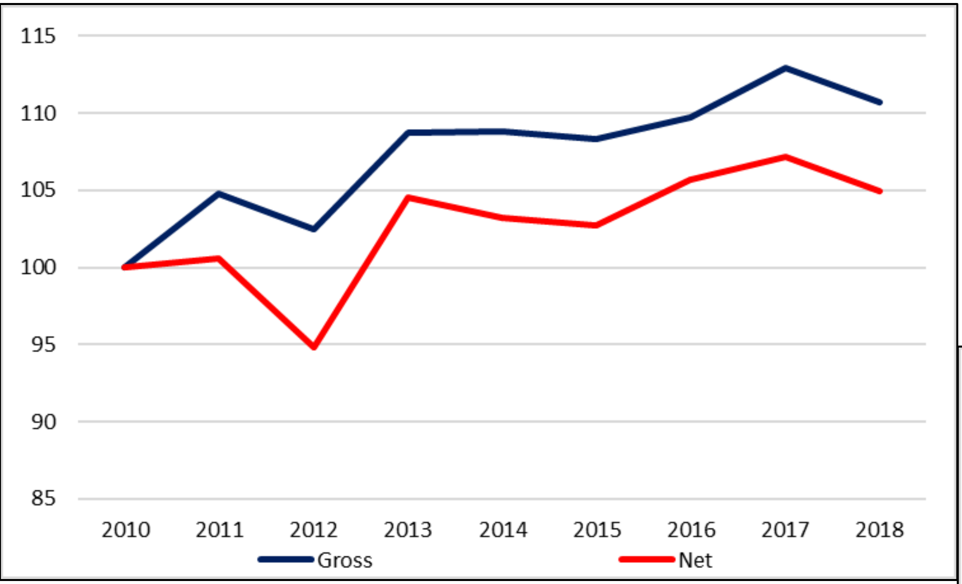
ACTIVITY, EMPLOYMENT AND UNEMPLOYMENT IN HUNGARY

Hungarian unemployment rate is one of the lowest in the EU

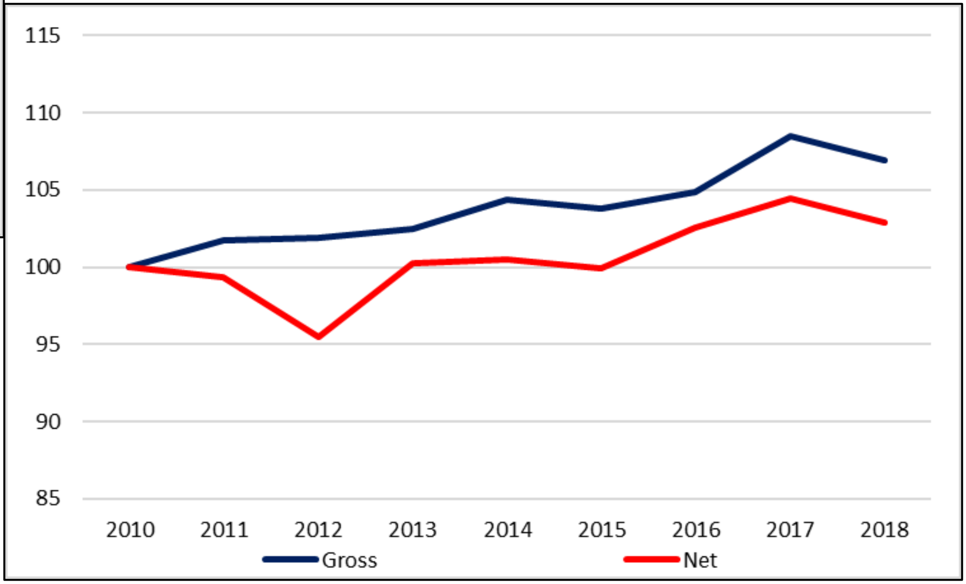
Source | MNB

REAL EARNINGS INDEX, 2010-2018 (PER CENT, 2010=100%)

Full-time employees in the national economy



Full-time employees in the manifacturing sector



Note: Data from 2013 without employees under the public works program.
Source: Hungarian Central Statistical Office

THE ECONOMIC TURNAROUNDS REALISED IN HUNGARY ENABLE A NEW COMPETITIVENESS TURNAROUND

	TURNAROUND		2010	2018
1	**Labour market**	Employment	3.7 m	4.5 m
2	**Tax system**	Shift from taxes on labour to taxes on consumption	✗	✓
3	**Motivational**	Marginal tax wedge	64.1%	45.0%
4	**Public finance**	Budget deficit	-4.5%	-2.2%
5	**Public debt**	Gross public debt	80.2%	70.8%
6	**EDP**	End of EDP procedure	✗	✓
7	**Monetary policy**	Base rate	6.0%	0.9%
8	**Lending**	Annual change in lending to the enterprises	-2.5%	12.0%
9	**FX loans of households**	Foreign currency denominated loans of the household sector as percent of GDP	65%	0%
10	**Balance sheet of the MNB**	MNB balance sheet as percent of GDP	40.7%	27.8%
11	**Growth**	Real GDP growth	0.7%	4.9%
12	**Convergence**	Annual real GDP growth exceeding the EU average	✗	✓

Source | MNB

THANK YOU FOR YOUR ATTENTION!