HUNGARY
ÁKK – INVESTOR PRESENTATION

December 2023

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KEY FACTS AND FIGURES ON HUNGARY

Area: ~93,000 sq. kilometres

Capital: Budapest

Population: 9.6m (1 January 2023)

Life expectancy at birth: 75.8 years (2022)

Currency: Forint (HUF)

Exchange rate (2022): 391.33 HUF = 1.00 EUR[1]

Nominal GDP (2022*): HUF 66,075 billion

Real GDP growth (2022*): 4.6%

Public debt (2022*): HUF 45,562 billion

Public debt denominated in foreign currency (2022):
HUF 11,397 billion (approximately EUR 28 billion)

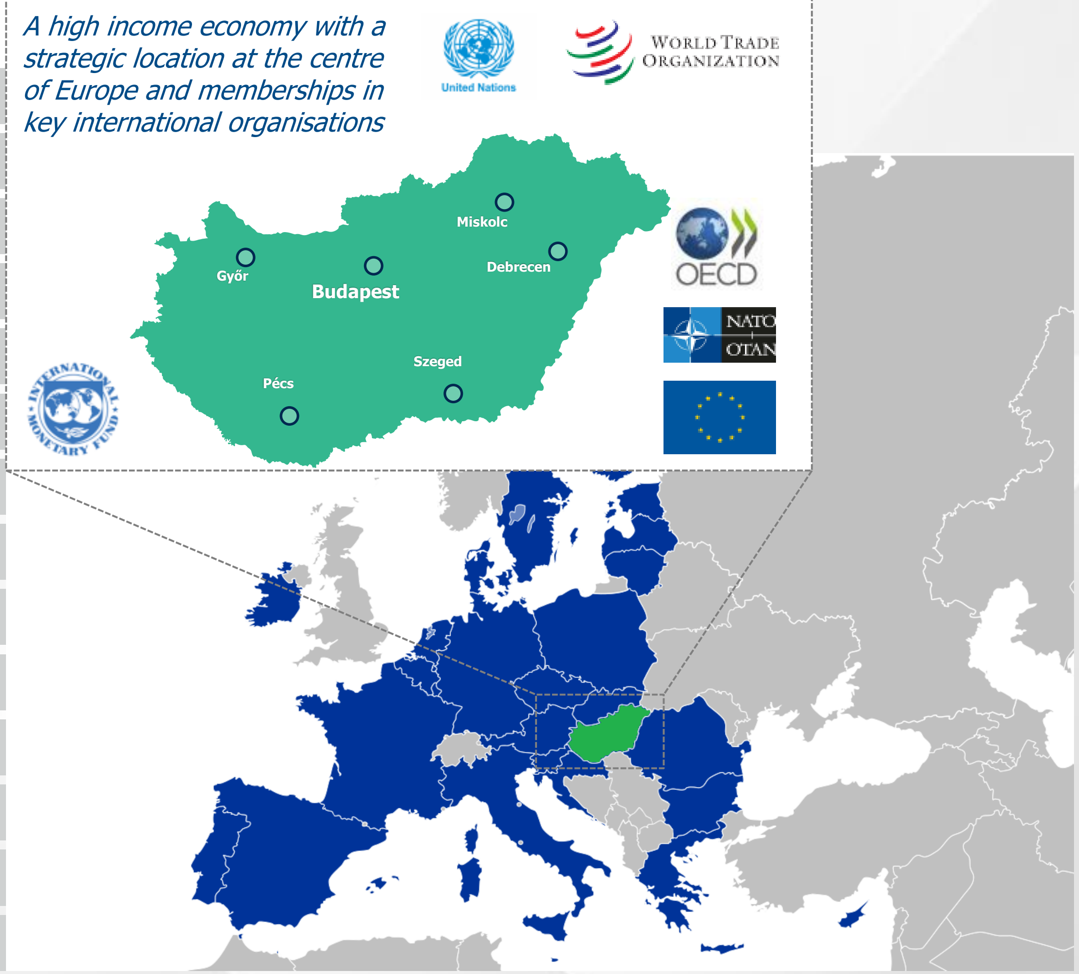
Sovereign ratings:
Baa2 (Stable) by Moody's; BBB- (Stable) by S&P; BBB (Negative) by Fitch

Government: parliamentary republic

EU member country since: 2004

Schengen area member since: 2007

A high income economy with a strategic location at the centre of Europe and memberships in key international organisations



*Note: 1. Average exchange rate in 2022. /*Preliminary data*
Sources: Government Debt Management Agency of Hungary (AKK), Hungarian Central Statistics Office (HCSO), HIPA, Magyar Nemzeti Bank (the central bank of Hungary) (NBH), World Bank, Bloomberg, European Commission

HUNGARY REMAINS IN STRONG POSITION TO FACE CURRENT CHALLENGES

Resilient economy	▪ **GDP growth** of 4.6% in 2022 (vs. EU average of 3.4%); GDP decreased by 1.2% in Q1-Q3 2023[1], with the latest Q3 print showing a 0.9% quarter-over-quarter increase resuming to growth ▪ Investments increased by 0.3% in 2022 and dropped by 10.6% in Q1-Q3 2023 ▪ Unemployment remained low and amounted to 3.6% in 2022 and 4.1% in Q3 2023 ▪ **Households net savings accelerated**, reaching 6.3% of GDP in the four-quarter period ended 30 September 2023
Fiscal policies supporting growth and stability	▪ In response to COVID-19 the ESA deficit was 7.6% of GDP in 2020 and 7.2% in 2021 compared to below 3% levels prior to the pandemic; the Government is committed to fiscal prudence ▪ The ESA deficit target for 2023 was revised from 3.9% of GDP to 5.2% of GDP ▪ After Covid-19 induced increase in the debt stock of 2020, debt-to-GDP gradually decreased to 76.7% in 2021 and 73.9% in 2022
Monetary policy focused to curb inflation	▪ Interest rate on the one-day quick deposit tenders was cut from 18.00% at the beginning of the current year to 13.00% at the end of September 2023 equalling the central bank base rate ▪ In September 2023, the central bank base rate became the main monetary policy instrument ▪ In October and November 2023, the central bank base rate was cut by 75-75 basis points each month ▪ HUF strengthened versus the euro during the course of the year
Improving external position	▪ **Current account** posted a historic high deficit of EUR 13.9 billion in 2022 ▪ The current account **turned into a surplus of EUR 0.7 billion in Q2 2023** driven by the improving terms of trade resulting from lower energy prices, increase in the value of exports, energy consumption adjustment of domestic sectors and decrease in import intensity ▪ **Net FDI remained strong** at EUR 4.7 billion in 2022 ▪ **International reserves** reached EUR 40.3 billion on 31 October 2023, comfortably covering short-term liabilities
Sustainability at the core of Hungary's economy	▪ **1st EU member to ratify the Paris Agreement in 2016** ▪ Climate neutrality target of 2050, intermediate target: 90% of carbon-free electricity production by 2030 ▪ Hungary has issued green bonds on several markets ▪ **Allocation and Impact Reports published in 2021, Integrated Report published in 2022** ▪ **Hungary's Green Bond Framework updated in 2023,** high share of EU Taxonomy alignment of assessed activities
Effective debt management	▪ **Debt management is well diversified** with local wholesale bonds, retail domestic bonds and international bonds. ▪ The share of FX debt was 26.3%[2] at the end of October 2023 ▪ The average time to maturity (ATM) of the total debt portfolio amounted to 6.1 years[2] at the end of October 2023 ▪ The share of retail debt reached 20.1%[2] at the end of October 2023 ▪ The maturity profile of FX debt is balanced, maturing debt is below EUR 2 billion each year until 2027

Note: 1. According HCSO (and Eurostat) preliminary data and flash estimate
2. 90-day moving average data.

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II. RESILIENT ECONOMY

SOLID ECONOMIC GROWTH AFTER 2020

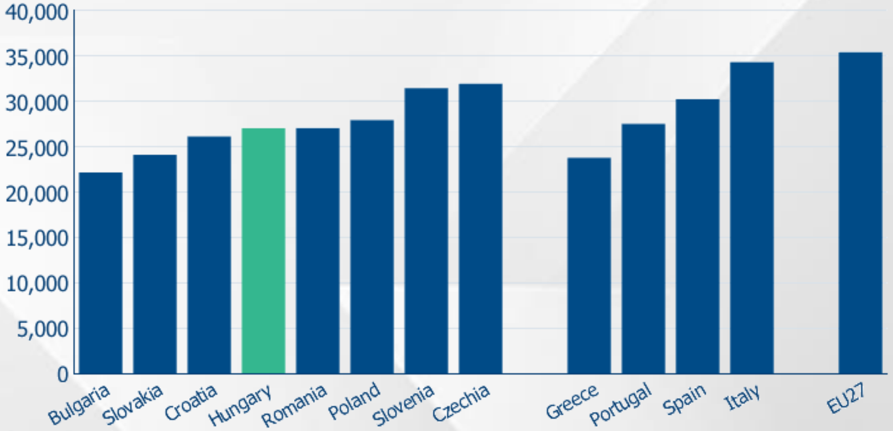
Key highlights

- **Real GDP grew by 4.6% in 2022** compared to the previous year according to preliminary data of HCSO
  - GDP grew by 1.4% and 1.1% in the first and second quarter of 2022 according to preliminary data adjusted for seasonal effects
  - In the third and fourth quarter of 2022, GDP decreased by 1.1% and 0.8% relative to the previous quarter
- During 2023, Q1 GDP showed a 0.2% decrease with stagnation in Q2 GDP and **0.9% GDP growth in Q3 (q-o-q), resuming to growth**
- **In the first three quarters of 2023, GDP decreased by 1.2%** relative to the corresponding period of the previous year
- **Sectoral breakdown:**
  - The value added in case of agriculture increased by 64.3% partly as a result of the low base of the corresponding period of the previous year
  - The value added in case of industry (including mining and manufacturing), construction and services decreased by 4.7%, 4.6% and 1.8%, respectively
- **Expenditure approach:**
  - Consumption declined by 1.8%, gross capital formation fell by 14.7%, of which gross fixed capital formation dropped by 12.5%
  - As a result, domestic use contracted by 6.0%
  - The volume of exports increased by 1.0%, and the volume of imports decreased by 4.2%
  - The effect of net exports partly offset the effect of the 6.0% decrease of domestic use resulting in a GDP decline of 1.2%

Real GDP growth - European Commission forecast
(YoY, %)

Sources: Eurostat, European Commission 2023 Autumn Economic Forecast
*Note: Unadjusted data /*Preliminary data*

GDP per capita compared to several EU member states
(purchasing power standards, 2022)



Source: Eurostat

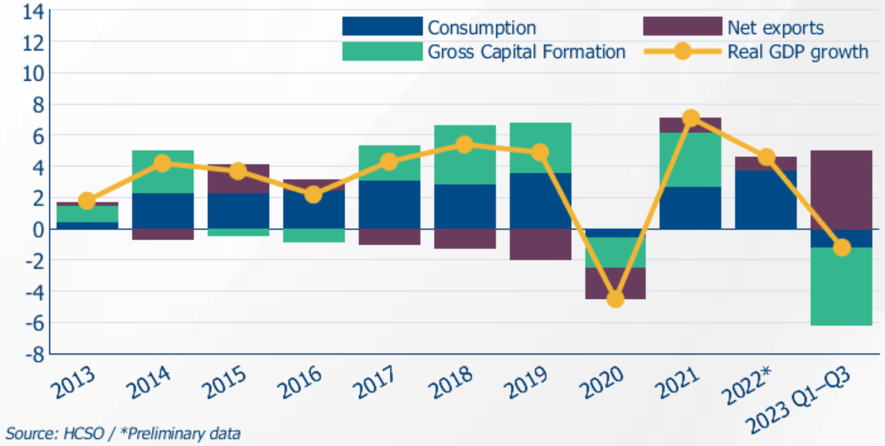
DIVERSIFIED GROWTH IN RECENT YEARS

Key highlights

- **All major sectors (except agriculture) increased in 2022**
  - In 2022, heavy drought contributed to the contraction in the agricultural sector
- **In 2022, the growth contribution was positive in the case of consumption and net exports**
  - Broad-based growth in 2022
- **In the first three quarters of 2023, the growth contribution was negative in the case of consumption and investments but positive in case of net exports**
  - Contraction of GDP driven mainly by declining domestic use
  - GDP growth supported by recovery in agricultural production among other factors

Contribution to GDP growth by expenditure

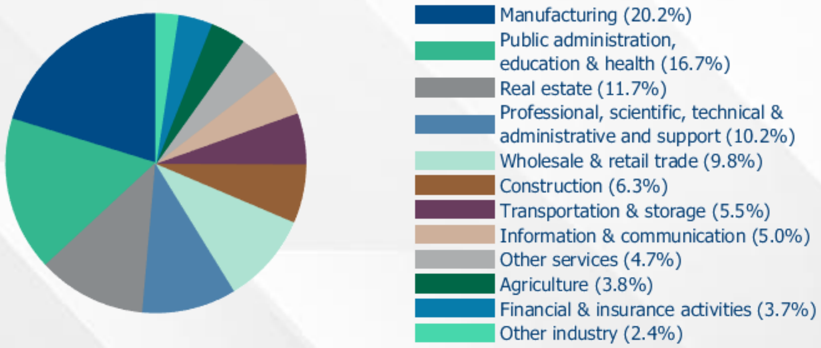
(percentage points)



*Source: HCSO / *Preliminary data*

Nominal GDP breakdown by sector

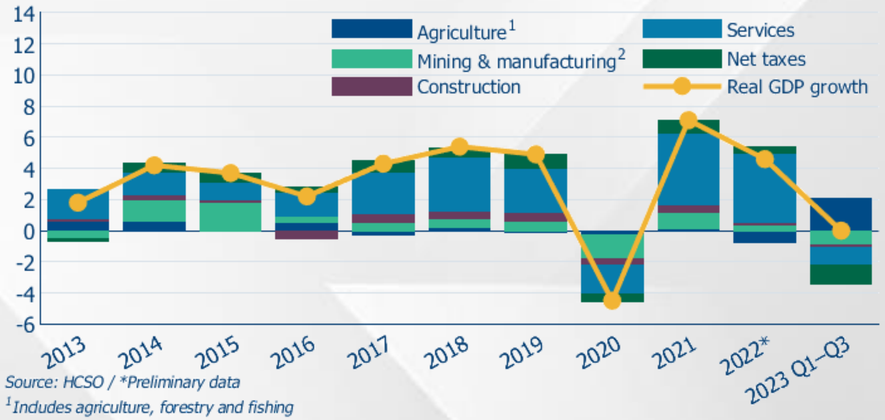
(2022*, % of total GDP excluding taxes less subsidies on products)



*Source: HCSO / *Preliminary data*

Contribution to GDP growth by sector

(percentage points)



*Source: HCSO / *Preliminary data*

[1] Includes agriculture, forestry and fishing

[2] Includes mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply

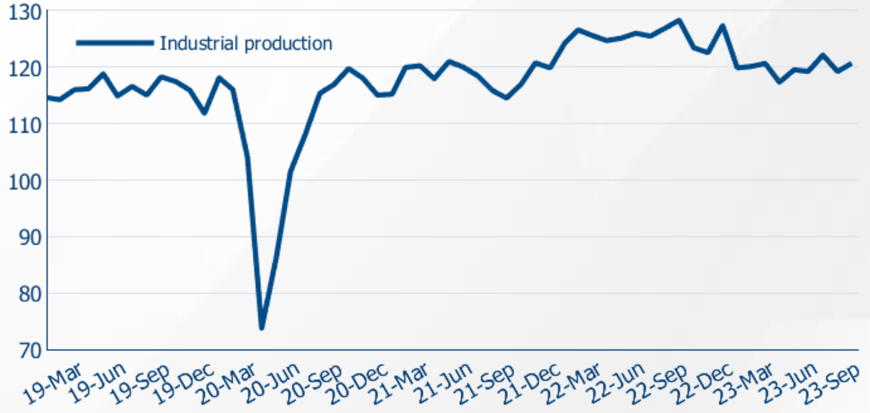
SHORT-TERM ECONOMIC INDICATORS IMPLY THE ECONOMY HAS AVOIDED A LARGE-SCALE SETBACK

Key highlights

- **Industrial production**
  - According to seasonally adjusted data, production increased by 2.4% in July, decreased by 2.4% in August and grew by 1.2% in September (the latest data) relative to the previous month
- **Retail sales**
  - Retail sales peaked in March 2022 mainly due to PIT (personal income tax) refunds
  - The volume decreased by 0.2% in July, and by 0.5% in August but rebounded by 0.1% in September 2023 (the latest data) compared to the previous month
- **Unemployment rate contained**
  - The unemployment rate amounted to 4.1% in October and the number of registered jobseekers dropped by 4.0% y-o-y (the latest data)
- **Activity rate reached a new historic high at 67.9% in October**

Industrial production

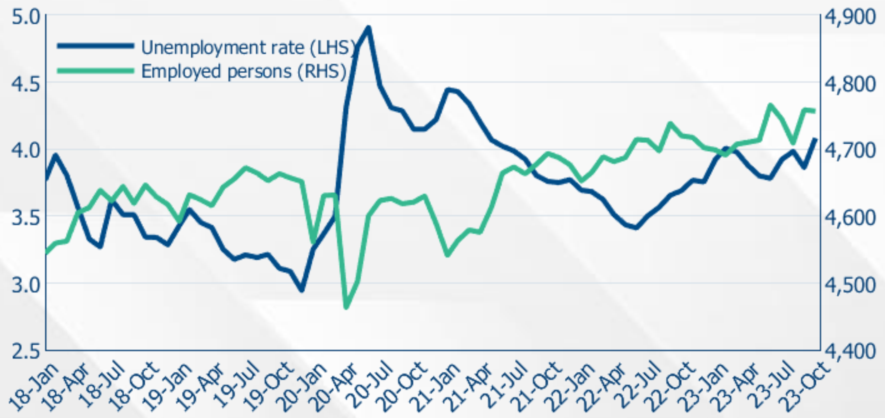
(seasonally and working-day adjusted volume indices, average month of 2015 = 100)



Source: HCSO

Unemployment rate and employed persons

(%, population aged 15-74, thousand persons)



Source: HCSO

Retail sales

(volume indices adjusted for calendar and seasonal effects, average month of 2015 = 100)

Source: HCSO

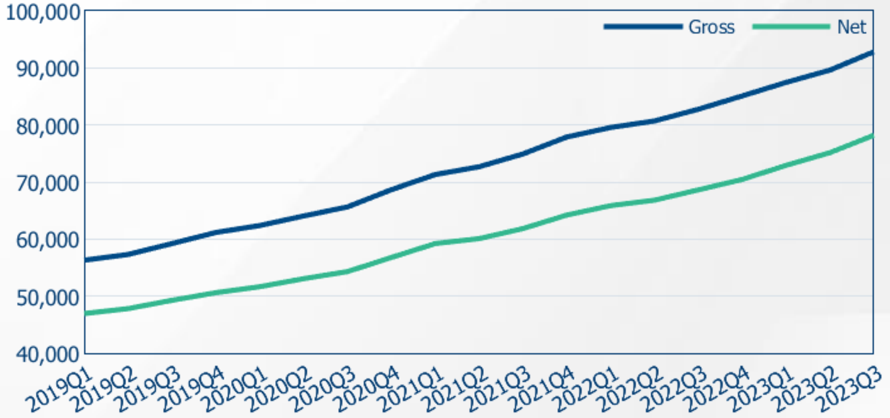
HOUSEHOLDS' SAVINGS ACCELERATED

Key highlights

- **Financial assets of households are growing consistently**
  - Gross and net assets of households are growing steadily indicating households' precautionary savings activity, moderate borrowing and a healthy balance sheet of households
- **Net savings of households exceeded HUF 4,500 billion in the four quarter period ended 30 September, 2023** (the latest data)
  - Of the HUF 4,529 billion net savings, net buying of financial assets amounted to HUF 5,090 billion
- **Households' net savings amounted to 6.3% of GDP in the four quarter period ended 30 September, 2023** (the latest data)
  - Net households' savings relative to GDP ratio accelerated from 4.0% in 2022
- Savings dynamics have also been supported by growth in earnings, with **real earnings showing positive dynamics for the first time since August 2022**, rising by 1.7% in September 2023 y-o-y (the latest data)

Financial assets of households

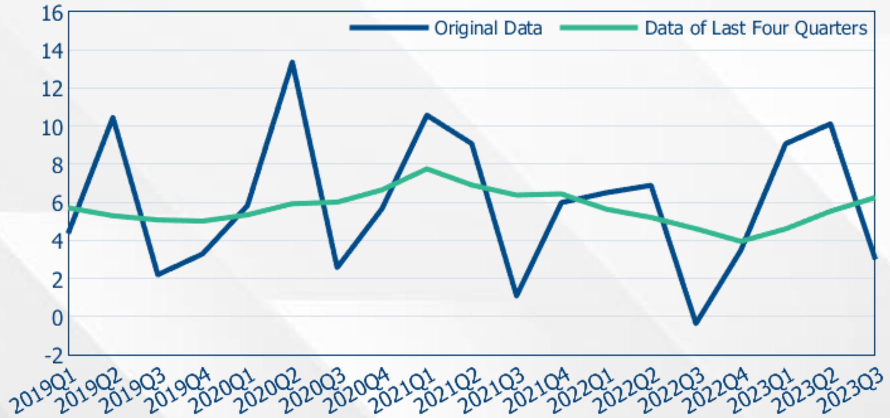
(HUF Billions)



Source: NBH

Net savings of households

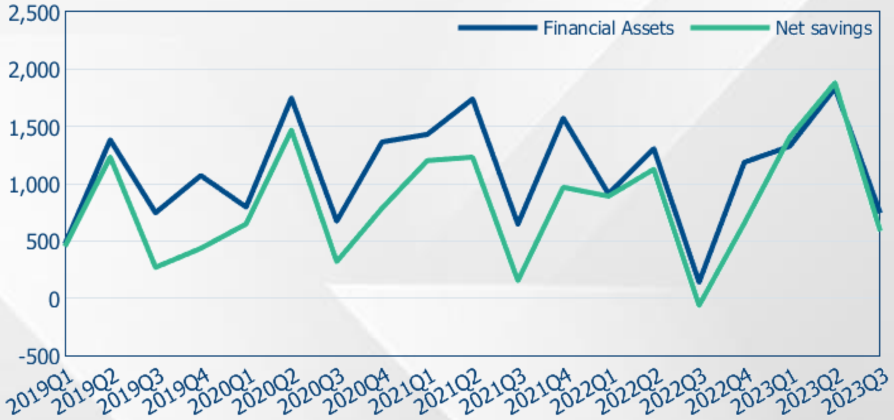
(Percent of GDP)



Source: NBH, HCSO

Net savings of households

(HUF Billion)



Source: NBH

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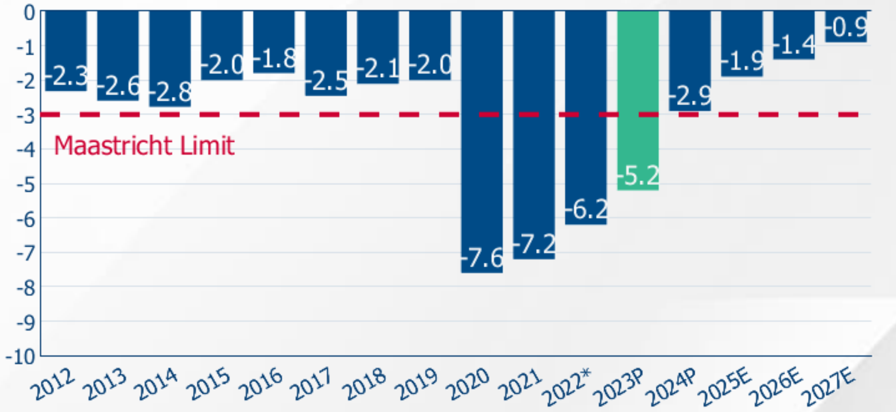
III. ECONOMIC POLICIES SUPPORTING GROWTH AND STABILITY

COMMITMENT TO FISCAL PRUDENCE SUPPORTS DEBT SUSTAINABILITY WITH DEBT-TO-GDP STEADILY DECLINING

Key highlights

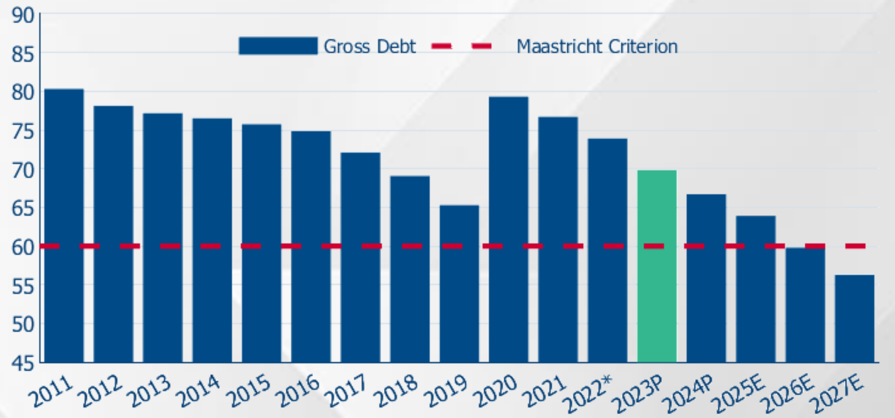
- **Budget deficit remained below the 3% Maastricht threshold between 2012-2019,** demonstrating the authorities' commitment to fiscal consolidation
- **Due to the COVID-19 pandemic, the ESA deficit amounted to 7.6% of GDP in 2020 and 7.2% in 2021**, with public spending allowing for prompt recovery of the economy as soon as 2021
- **Consolidation resumed in 2022**: the underlying fiscal deficit was reduced to 5.0% (6.2% with the extraordinary spending on gas purchase), with several measures to enhance fiscal resilience from 2022 onwards (*see next page*)
- **The Government currently targets a deficit of 5.2% for 2023, 2.9% for 2024, 1.9% for 2025 and 1.4% for 2026**, which would be one of the highest fiscal consolidation efforts within the EU
- **Fiscal consolidation efforts are supported by an effective institutional set-up, strong political will and historical credibility**
    - Under Hungary's Fundamental Law, only budgets which provide for a reduction of the government debt-to-GDP ratio can be adopted as long as government debt exceeds 50% of GDP
    - Following the Covid-19 induced increase in the debt stock of 2020, **debt-to-GDP decreased to 76.7% in 2021 and 73.9% in 2022**, while the Government targets ratios of 69.8% in 2023 and 66.7% in 2024
    - **Parliament has already approved the 2024 budget** which includes deficit and debt targets mentioned above

Evolution of Hungary's fiscal deficit
(% of GDP)



Source: HCSO, MoF; Note: Latest (Nov 2023) forecast / *Preliminary data

Evolution of Hungary's general government debt
(% of GDP)



Source: NBH, MoF / *Preliminary data

OVERVIEW OF RECENT MEASURES SUPPORTING HUNGARY'S FISCAL RESILIENCE

Key deficit targets: 5.2% in 2023 and 2.9% in 2024

Cutting expenditures*

-0.3% GDP — **Reduced spending for ministries, with a 10% cut in funding in 2023 and 2024**

-1.1% GDP — **Suspension of 270 investment projects for 2023**
- Nominal value of investments will stagnate in 2024

-0.5% GDP — **Reform of the utility prices support scheme with the reduction of institutions eligible to the scheme for gas and electricity prices**
- Only households are supported from August 2022 & until the level of average consumption, beyond which market prices are paid

-0.1% GDP — **Reform of the family support system, more efficient and targeted new schemes**
- Car purchase subsidy program for large families is suspended
- Terms of the pre-natal loans and the Family Housing Support Program (CSOK) will focus more on encouraging natality

Increasing Revenue*

+0.3% GDP — **Extraordinary tax on the banking sector, based on net income (interest and fee) with a 8% rate in 2023,** with no significant impact on bank profitability, as evidenced by Q1 2023 and H1 2023 results. Potential reduction in extraordinary tax to be balanced by increased purchases of government HUF bonds

+0.8% GDP — Realignment of **the tax on the energy sector** in 2023, which includes the increase of the windfall profit tax on Brent/Urals spread in December 2022

+0.3% GDP — **Conversion of the 'KATA' flat tax scheme**

+0.4% GDP — **HUF 309.1 billion dividend paid by MVM Group** (public utility) to the budget on the basis of the higher than expected profit in 2023

Focus on a faster deficit reduction from 2024

- Besides measures to improve the fiscal position, it should be taken into account that fiscal rules of the Stability and Growth Pact are suspended till 2023.
- However, according to the European Commission, Hungary can be among those 16 countries, where the debt to GDP ratio might decrease in 2023 (the 6th highest debt reduction from 27 member states).
- In line with the potentially renewed EU legislation (still under discussion), the government is committed to fulfil the Maastricht limitation and targets a deficit below 3%. The 2024 national budget has been approved by the Parliament.

* Expected budgetary impact of the fiscal consolidation measures presented in % of the projected 2023 GDP

ACCESS TO EU FUNDS – LATEST DEVELOPMENTS AND NEXT STEPS

Timeline of discussions with the EU

12 December 2022

The **Council of the European Union adopted Hungary's RRP** and **lowered the rate of funding suspension** of three operative programmes **from 65% to 55%** (**EUR 6.3bn** instead of the EUR 7.5bn previously proposed) as part of the conditionality procedure

22 December 2022

The European Commission adopted the Partnership Agreement for EU cohesion funds with Hungary, worth almost EUR 22bn for the period 2021-2027. For the implementation and release of the funds, Hungary has to comply with enabling conditions

1 June 2023

Entry into force of the justice reform package, agreed upon with the Commission and implementing enabling conditions and super milestones on judicial independence. The EU Commission was notified, the evaluation is in progress.

Breakdown of remedial measures

27 „super milestones" have been included in Hungary's recovery and resilience plan (RRP), which must be implemented to be eligible to submit the first Recovery and Resilience Fund („RRF") payment request

- 17 remedial measures were already part of the conditionality procedure
- Additional measures introduced on strengthening judicial independence, standard RRF audit and control measures

Four of the „super milestones" on judicial independence had to be implemented to comply with enabling conditions on the "Effective application and implementation of the EU Charter of Fundamental Rights"

- Negotiations and the assessment process have been repeatedly prolonged due to the requests for clarifications made by the Commission
- Confirmation from the Commission would provide access to approximately 13 Bn of the Hungarian Cohesion Policy envelope

Next steps

- Agreement with the Commission on the outstanding issues on the remedial measures would pave the way for terminating the conditionality procedure and lifting the suspension of funding
- **The Hungarian reform process is on track, with the implementation of all super milestones close to completion**
- The submission of the first RRF payment request will shortly follow

Source: https://abouthungary.hu/news-in-brief/investor-information-sheet-regarding-the-availability-of-eu-funding-to-hungary

TIGHT MONETARY POLICY CONDITIONS
THE BANKING SECTOR IS RESILIENT

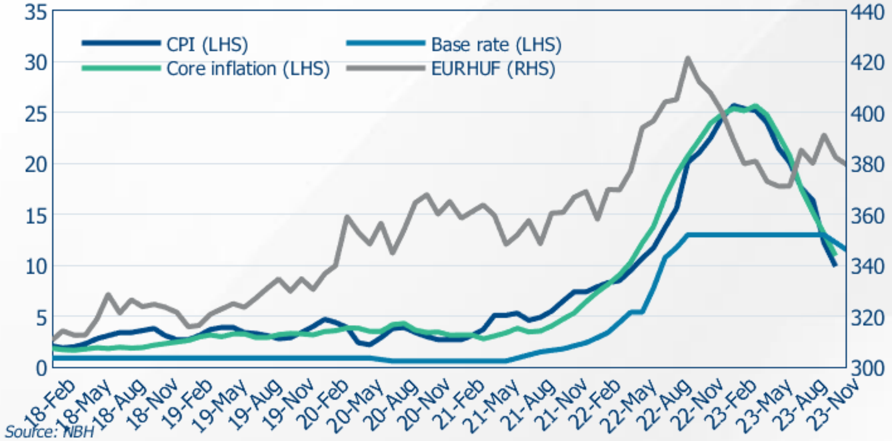
Key highlights

- **The NBH's primary statutory objective is to maintain price stability**
  - The central bank base rate was increased to 13.00% in September 2022 and forint liquidity reducing measures were introduced
  - After 14 October 2022, the central bank announced overnight deposit quick tenders yielding 18%
- **Inflation decelerated from 25.7% in January to 9.9% in October**
- Overnight deposit quick tenders yield was gradually reduced to 13.00% until September 2023
- Since September 2023, the central bank base rate became the main monetary policy instrument
- In October and November the central bank base rate was reduced by two consecutive 75bps rate cuts to 11.50% as of the end of November 2023
- HUF strengthened versus the euro during the course of the year

Source: NBH

Central bank base rate, inflation rates, foreign exchange rate

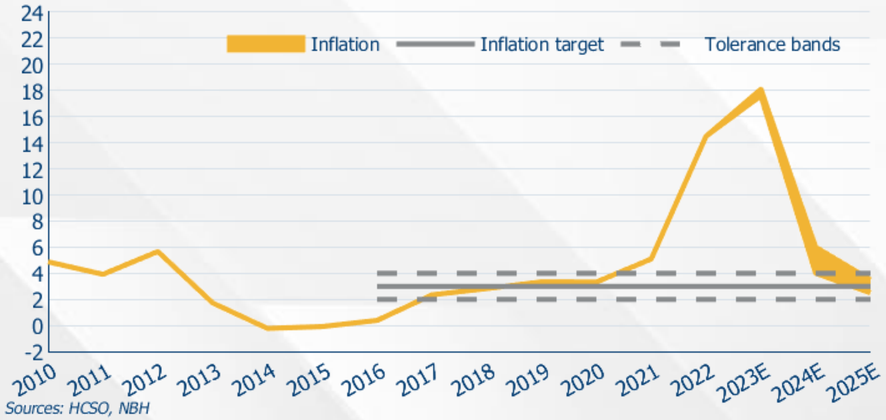
(end-of-month data, foreign exchange rate: HUF / 1 EUR; core and headline inflation: %)



Source: NBH

Inflation vs inflation targets

(yearly average data, %)

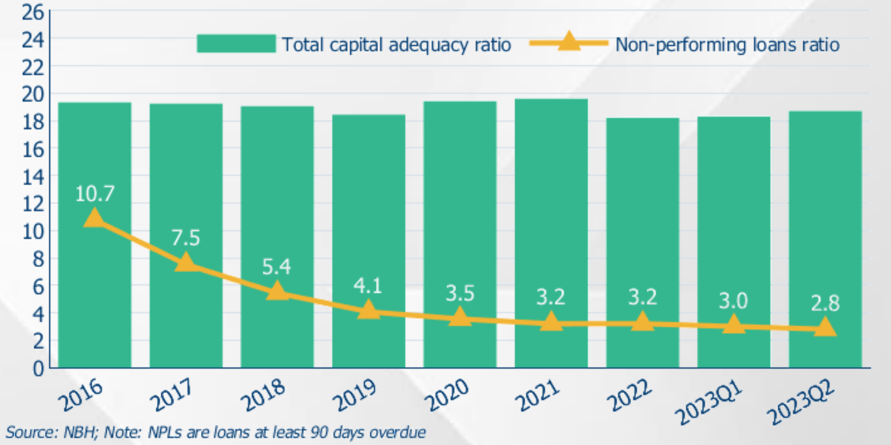


Sources: HCSO, NBH

Note: Based on seasonally unadjusted data, compared to the corresponding period of the previous year; forecasts after 2022

Total capital adequacy and non-performing loans ratios

(end of period, %)

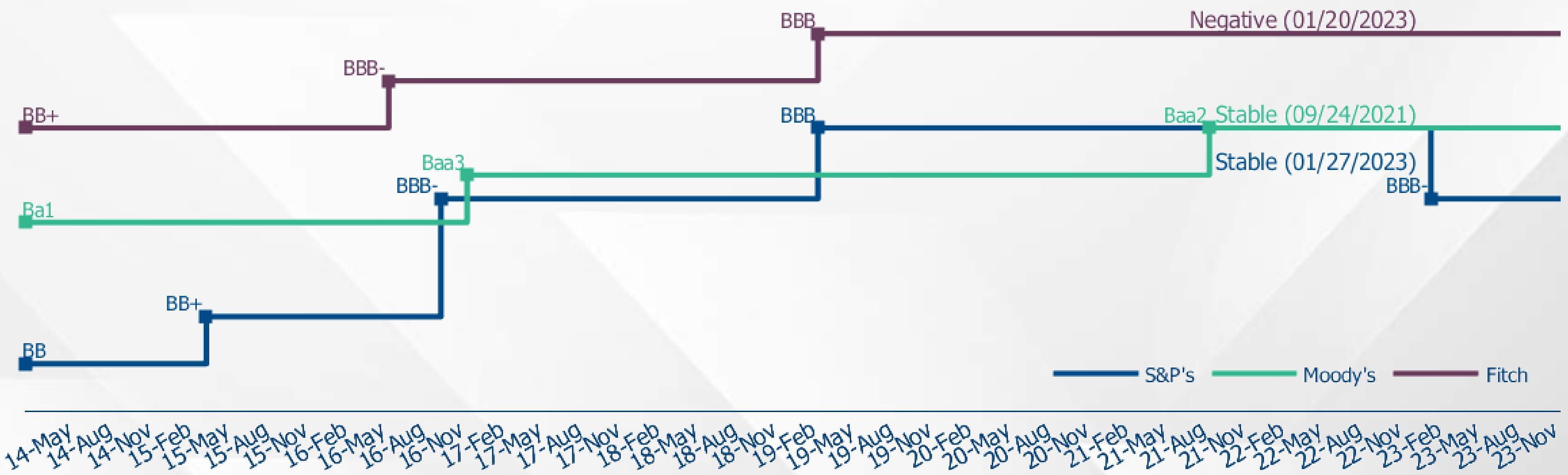


Source: NBH; Note: NPLs are loans at least 90 days overdue

STRONG FUNDAMENTALS HAVE ALLOWED HUNGARY TO NAVIGATE CHALLENGING GLOBAL BACKDROP

Evolution of Hungary's ratings [1]

- **Hungary's credit ratings have improved overall relative to 2014 thanks to improving fundamentals,** evidenced by several rating upgrades across 3 agencies in the last 8 years
- **Those strong fundamentals have allowed Hungary to remain an investment grade country** throughout the Covid-19 crisis and current difficult macroeconomic conditions linked to the war between Russia and Ukraine
- Hungary is currently rated Baa2 (stable) by Moody's, BBB (negative) by Fitch and BBB- (stable) by S&P



Source: NBH

Note: 1. A rating is not a recommendation to buy, sell or hold securities and may be subject to revision, suspension or withdrawal at any time by the assigning rating organisation. Similar ratings for different types of issuers and on different types of securities do not necessarily mean the same thing. The significance of each rating should be analysed independently from any other rating.

IV. EXTERNAL POSITION

HUNGARY'S EXTERNAL ACCOUNTS – RAPID IMPROVEMENT IN EXTERNAL BALANCE AMID RESILITENT FDI FLOWS

GOVERNMENT DEBT MANAGEMENT AGENCY PTE LTD.
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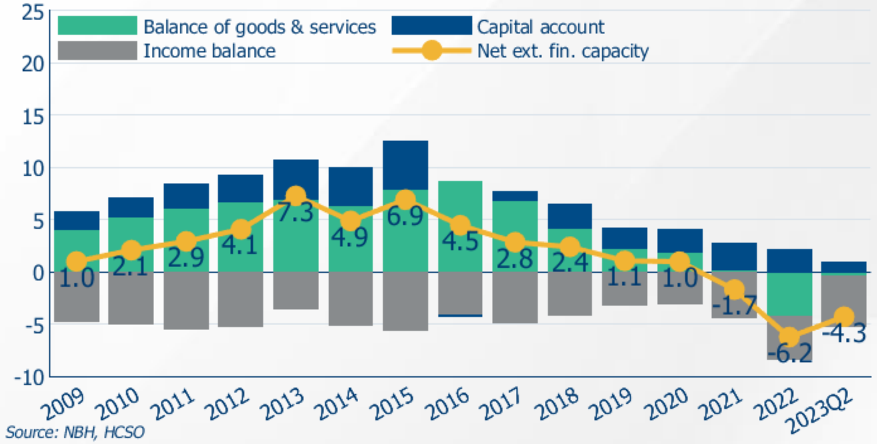
Key highlights

- **In 2022, the current account deficit amounted to EUR 13.9 billion**
  - Energy trade balance accounted for EUR 16.8 billion deficit
- **The current account deficit decreased to EUR 0.6 billion in Q1 2023 and turned into a surplus of EUR 0.6 billion in Q2 2023**
  - Energy trade deficit decreased from EUR 3.4 billion and EUR 3.3 billion in Q1 and Q2 2022, respectively to EUR 2.9 billion and EUR 1.7 billion in Q1 and Q2 2023, respectively
  - The trend-like improvement in the external balance position has been driven by significantly lower energy prices compared 2022, the adjustment of energy consumption, declining import intensity and growing value of exports

Net external lending components and position

(% of GDP, four quarter rolling data)

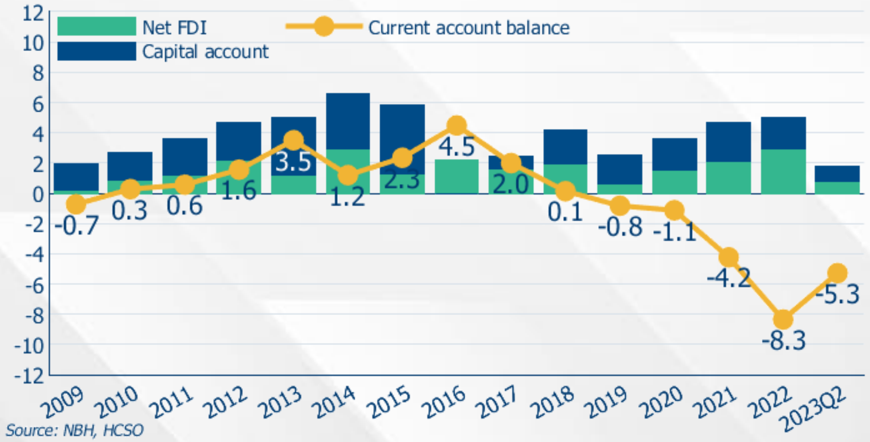


Source: NBH, HCSO

Source: NBH, HCSO

Net external lending position

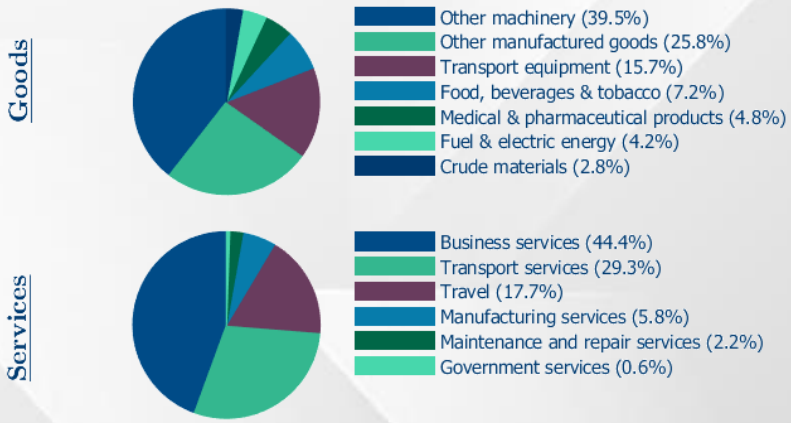
(% of GDP, four quarter rolling data)



Source: NBH, HCSO

2022 export - structural breakdown

(EUR millions)



Source: HCSO

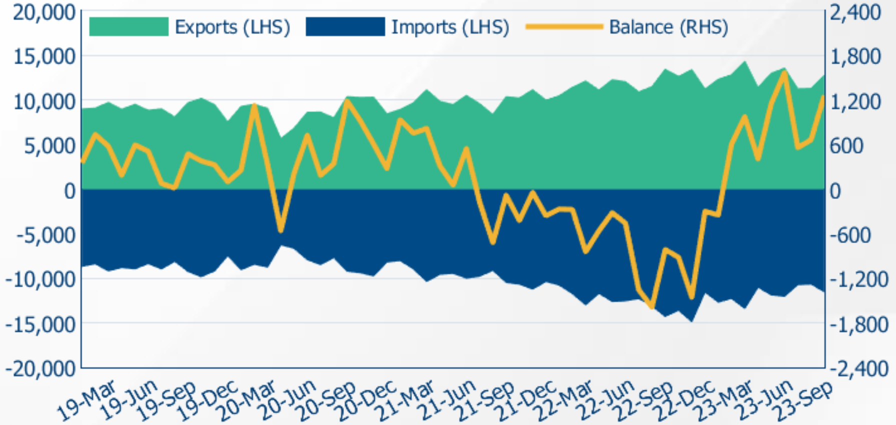
EXTERNAL TRADE IMPACTED BY EXCEPTIONAL SITUATION REGARDING ENERGY PRICES

Key highlights

- **According to preliminary data of HCSO, external trade deficit amounted to EUR 9.1 billion in 2022**
  - External trade deficit in case of fuels and electric energy amounted to EUR 16.8 billion in 2022
- **Since February 2023, external trade posted a surplus each month**
  - External trade posted a surplus of EUR 4.4 billion in H1 2023; the deficit in case of fuels and electric energy amounted to EUR 4.6 billion
  - External trade posted a surplus of EUR 0.6 billion in July 2023, EUR 0.6 billion is August 2023 and EUR 1.3 billion in September 2023 (the latest available data)

External trade balance

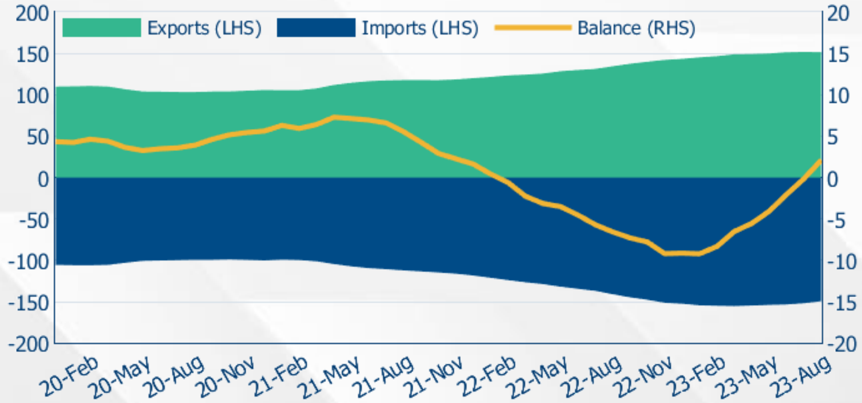
(Monthly data, EUR millions)



Source: HCSO

External trade

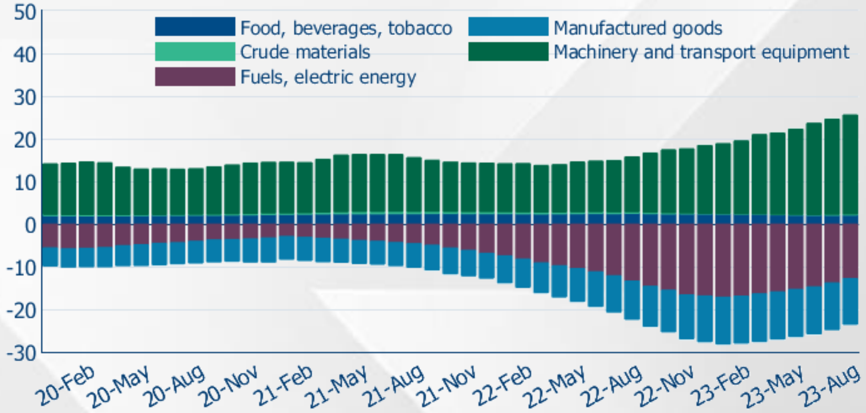
(Twelve-month rolling data, EUR billions)



Source: HCSO

External trade balance breakdown

(Twelve-month rolling data, EUR billions)



Source: HCSO

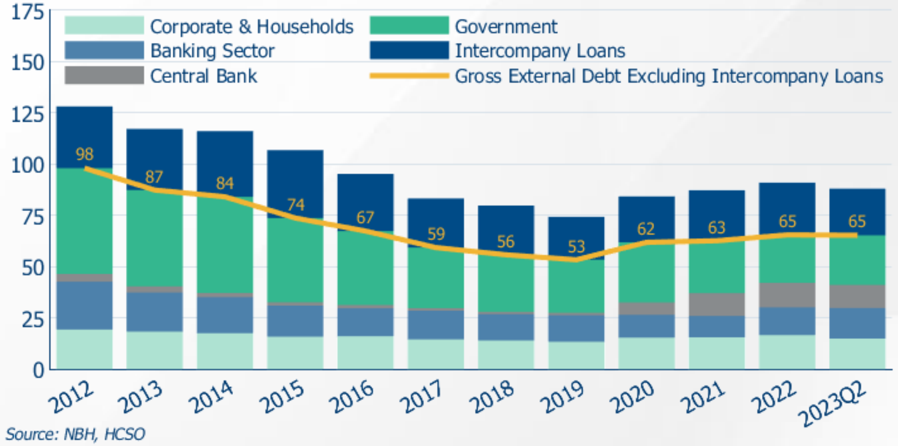
EXTERNAL DEBT AND FX RESERVES

Key highlights

- **External debt indicators improved significantly compared to 2012**
  - Hungary’s gross external debt decreased substantially between 2012 and 2019, notably on the back of active public debt management
  - The external debt has increased since 2019 mainly as a result of the pandemic and high energy prices
  - The net external debt of Hungary also improved between 2012 and 2019 and has deteriorated since then
- **International reserves remain high and continue to considerably exceed the level considered safe under the Guidotti-Greenspan rule***
  - Hungary’s FX reserves to short-term debt ratio has been above 1.0x since 2012
  - FX reserves amounted to EUR 40.3 billion on 31 October 2023

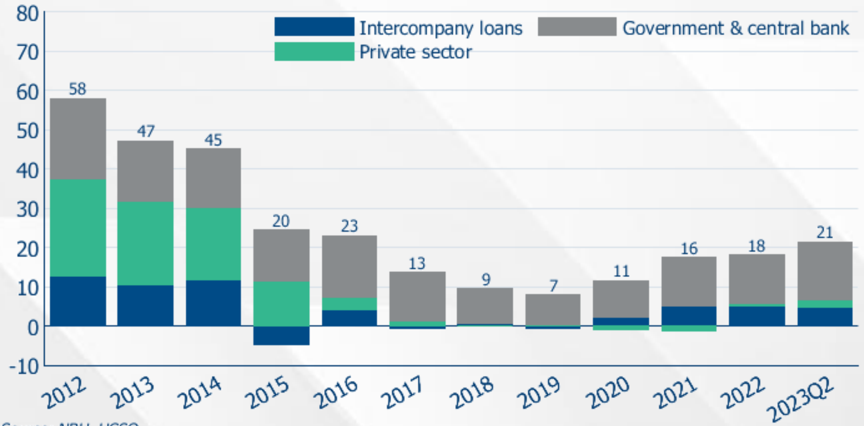
Source: NBH

Gross external debt
(% of GDP, excluding special purpose entities four quarter rolling data)



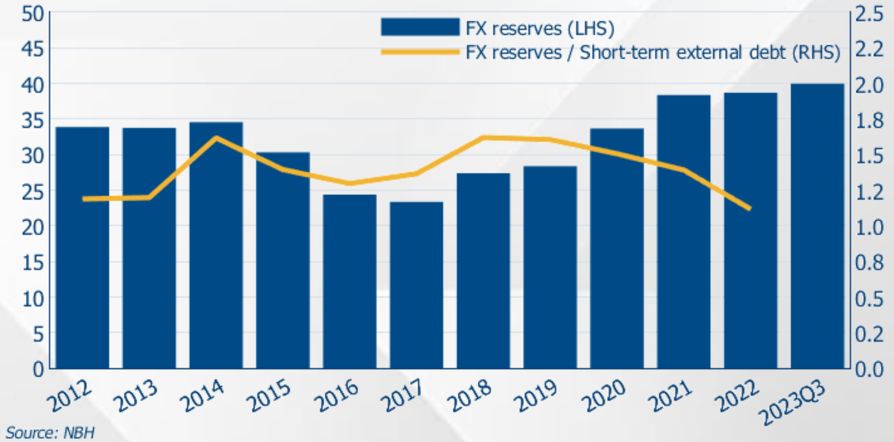
Source: NBH, HCSO

Net external debt
(% of GDP, excluding special purpose entities, four quarter rolling data)



Source: NBH, HCSO

International reserves level
(EUR billions)

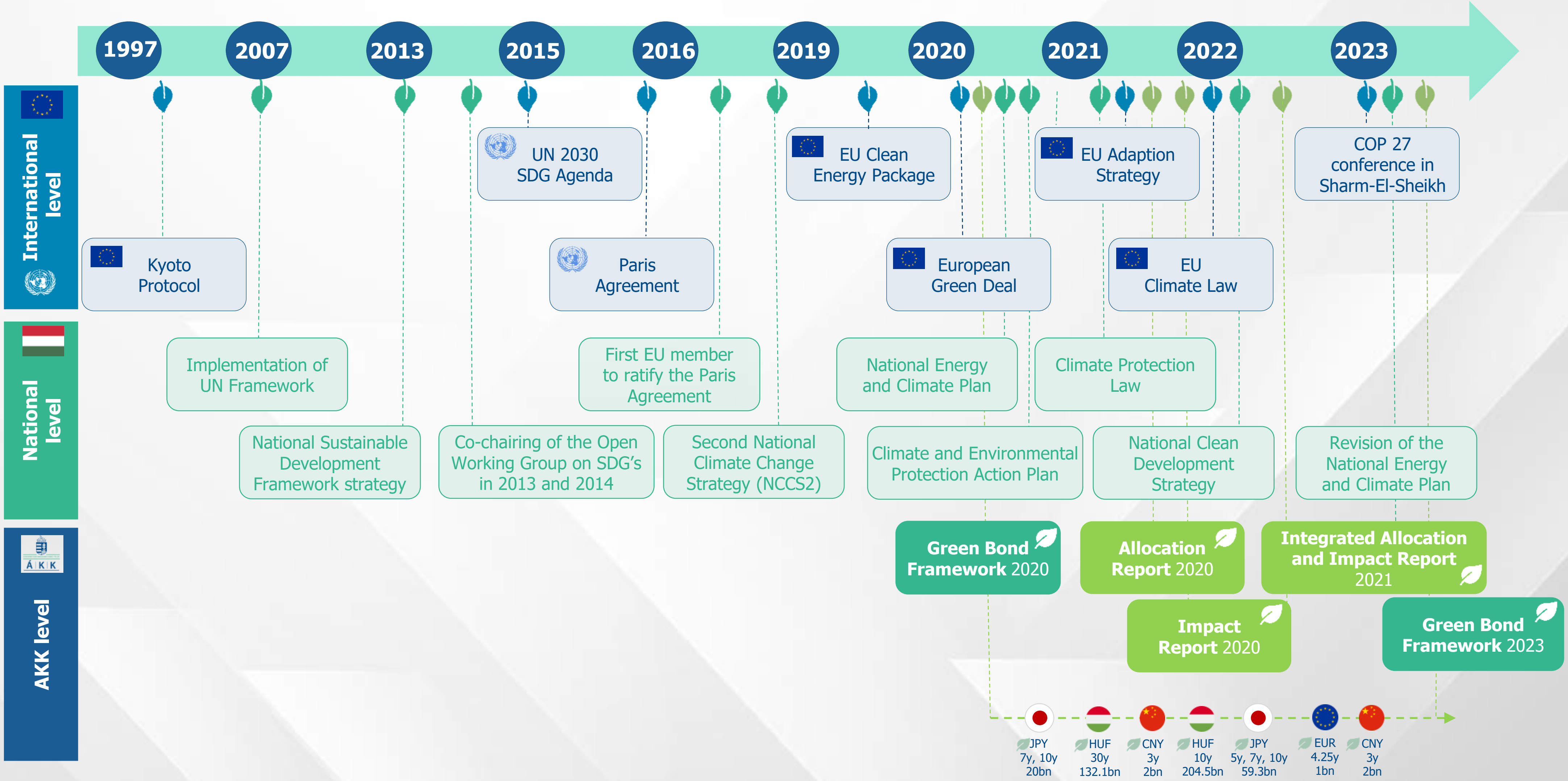


Source: NBH

**Note: The Guidotti–Greenspan rule states that a country's reserves should equal short-term external debt (one-year or less maturity), implying a ratio of reserves-to-short term debt of 1*

V. ESG

PROTECTING THE ENVIRONMENT IN ACCORDANCE WITH INTERNATIONAL AND NATIONAL REGULATIONS



COMMITMENT TO REACH THE EU AND INTERNATIONAL TARGETS

National Clean Development Strategy

Long term goal	▪ This strategy aims to achieve **climate neutrality by 2050** ▪ To achieve this target, the additional annual investment need accounts for 4.8% of the GDP (early action scenario)

National Climate Change Strategy (NCCS2)

Near term goal

- This strategy consists in a **comprehensive framework** of **targets and policies** on climate and green economy development
- Focuses on 4 pillars for the 2018 – 2030 period

Four key pillars	
Decarbonisation	▪ Replacement of fossil fuel energy carriers ▪ Increase in energy efficiency ▪ Reducing natural resources consumption
Analysis of climate vulnerability	▪ Development of vulnerability methodologies ▪ Promoting climate-related research projects
Adaptation	▪ Preservation of natural resources ▪ Adaptation of vulnerable regions and sectors
Partnership for climate	▪ Horizontal integration in public administration ▪ Awareness-raising in the Education

Other relevant strategies

- **National Energy and Climate Plan**
- **National Energy Strategy 2030**
- **Climate and Environmental Protection Action Plan**
- **Long Term Renovation Strategy**
- **National Hydrogen Strategy**
- **National Forest Strategy**
- **National Biodiversity Strategy**
- **National Water Strategy**

HUNGARY'S PATHWAY TO CLIMATE NEUTRALITY

GOVERNMENT DEBT MANAGEMENT AGENCY PTE LTD.
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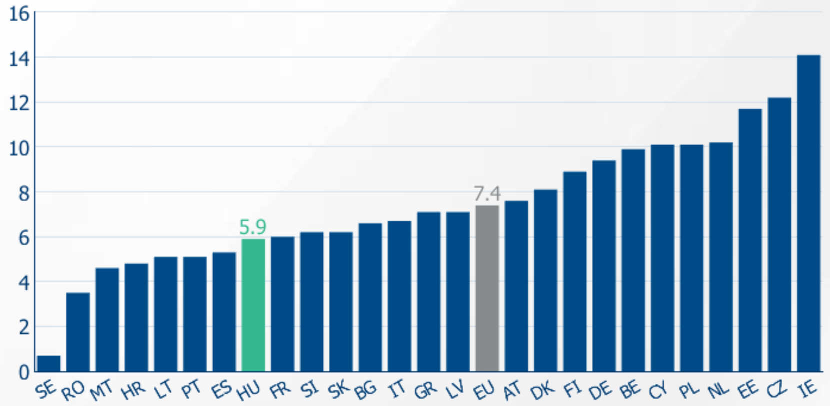
Key highlights

- Hungary was **among the first countries globally to turn its 2050 emissions target into a legal commitment** with the adoption of the Climate Protection Law in 2020
- As part of the EU's 2030 Climate and Energy Framework, by 2030, **Hungary's plans to reduce its overall GHG emissions by 50%**
- Hungary is currently **below the EU average GHG emission rate** (t/capita) and **8th lowest** GHG emitter in the EU
- Hungary **reduced** its **greenhouse gas emissions** (t/capita) by **34%** between 1990 and 2021 and based on preliminary data by **37%*** between 1990 and 2022
- The biggest GHG emitters were the **Energy and Passenger/goods transport sector** in 2020. These sectors require **more actions and green investments**

Net greenhouse gas emission

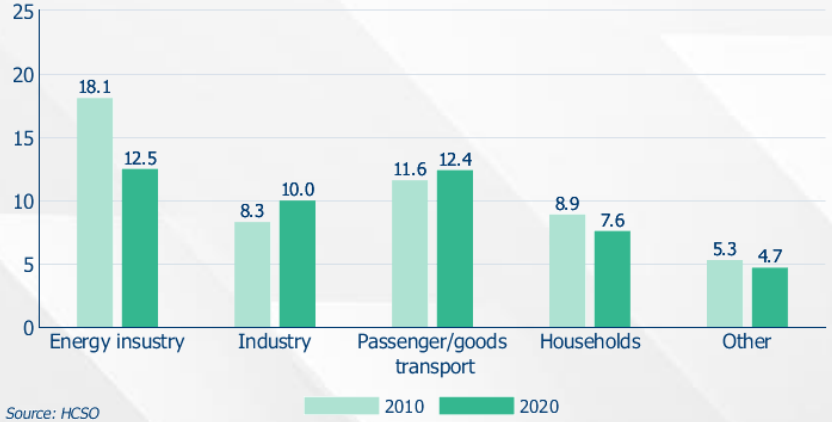
(t/capita), 2021



Source: Eurostat

GHG emission by sector

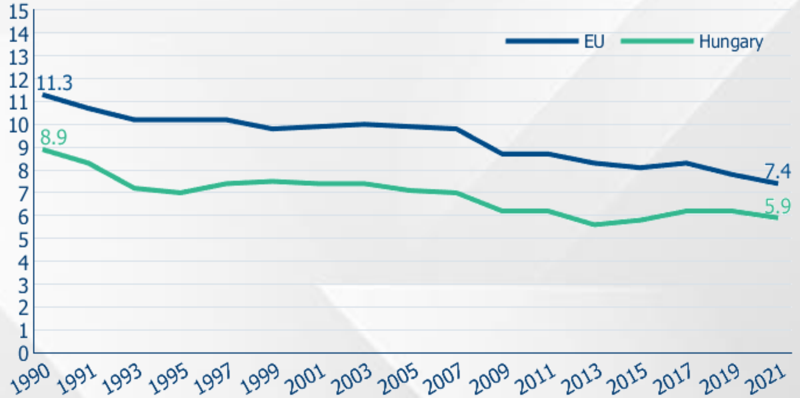
(Million tonnes, CO_2 equivalent)



Source: HCSO

Historical net greenhouse gas emission

(t/capita), 1990-2021



Source: Eurostat

*** Source:** *Ministry of Energy (2023)*

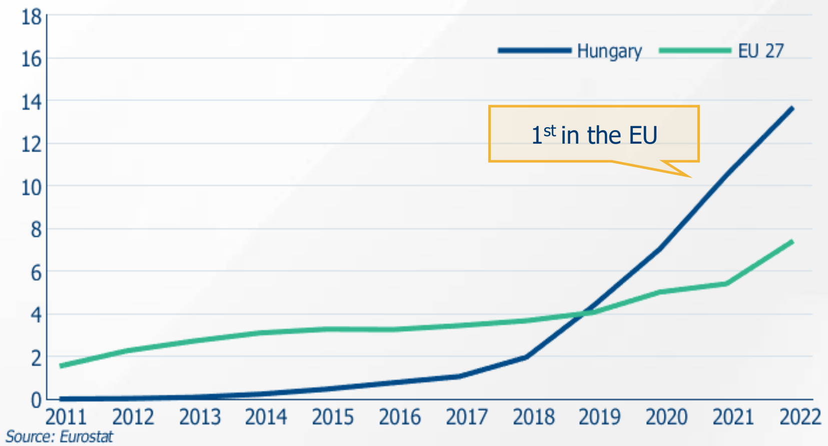
AMBITIOUS PLANS AND ACHIEVEMENTS IN THE ENERGY SECTOR TO REACH CLIMATE NEUTRALITY

Key highlights

- The National Energy Strategy 2030 with an outlook to 2040 to reduce the importation of fossil energy. **Primary objective is to strengthen Hungary's energy independency**
- Since 2015, **solar energy has increased significantly** in terms of relative share in gross renewable electricity production resulting in Hungary's leadership in the EU regarding **solar PV share in electricity output**
- **High growth of the share of renewables** in primary energy consumption since 2000
- The change in the energy mix represents the **first results of the Government's ambitions to** increase the share of renewables in power and heat generation and to decrease natural gas consumption

Solar PV share in electricity output

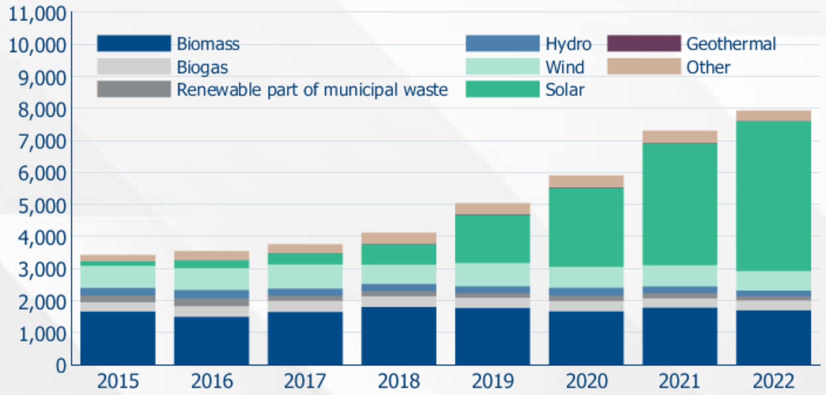
(%, net gross), 2022



Source: Eurostat

Gross renewable electricity production

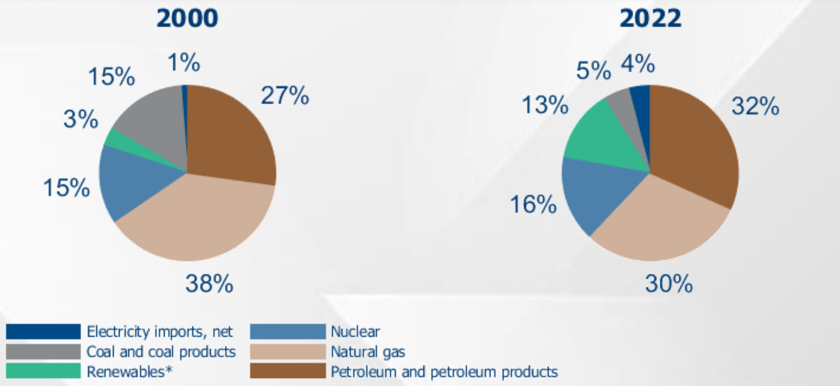
(gigawatt hours), 2015-2022



Source: HCSO / Note: Preliminary data for 2022

Primary energy consumption structure

(%)



*Source: HCSO / *Ind. combustible and non-combustible renewables, wastes, wind and hydro. Note: Preliminary data for 2022*

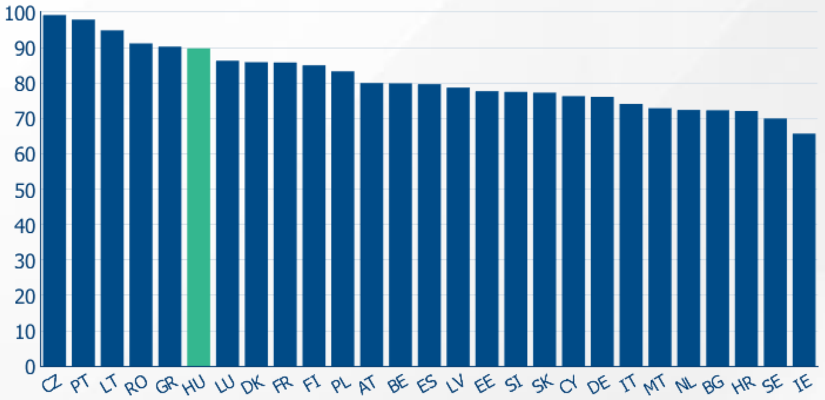
GREENING THE TRANSPORT SECTOR IN ORDER TO CONTRIBUTE TO A GREENER FUTURE

Key highlights

- The volume of passenger transport relative to Hungary's GDP is **one of the highest** in Europe
- **Public transport** is vital for passenger transport in Hungary
- According to the **National Energy and Climate Plan**: „To reduce increasing energy consumption in transport, it is essential to develop and increase the use of public transportation"
- The **Green Bus Program** aims to integrate electric buses into local transport with the implementation of Pilot Projects
- **Electrification of the railway** network is expected to continue to increase, which should further help CO_2 emission reduction
- Further **modal shift from passenger cars and freight transport to public transport is encouraged**, which underpins high share of spending from proceeds obtained by issuing Green Bonds

Volume of passenger transport relative to GDP

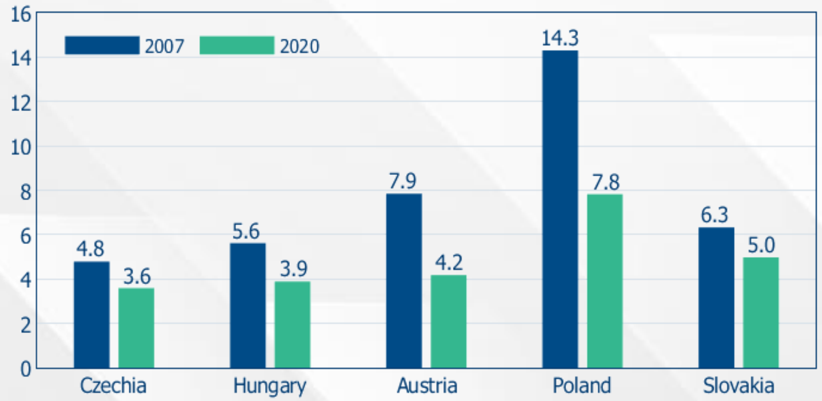
(percent, index 2015=100), 2021



Source: Eurostat

GHG emissions per diesel train-kilometres

(tons of CO2e per thousand kilometres)

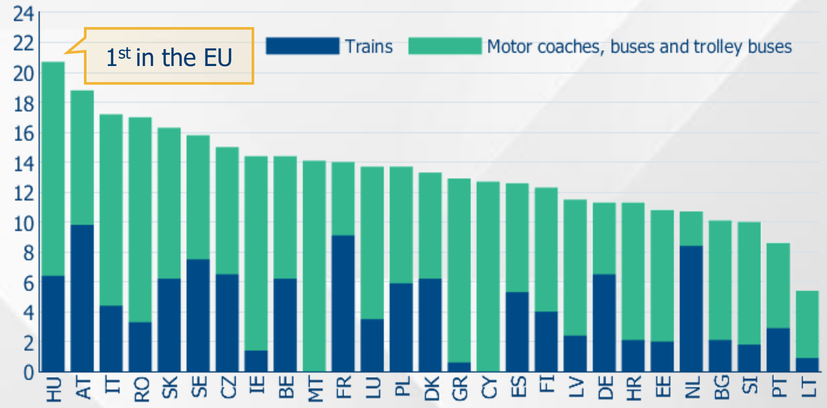


Source: Eurostat

Note: Total railway GHG emissions divided by the sum of movement of diesel-powered locomotives and railcars.

Modal split of passenger transport

(percent), 2021



Source: Eurostat

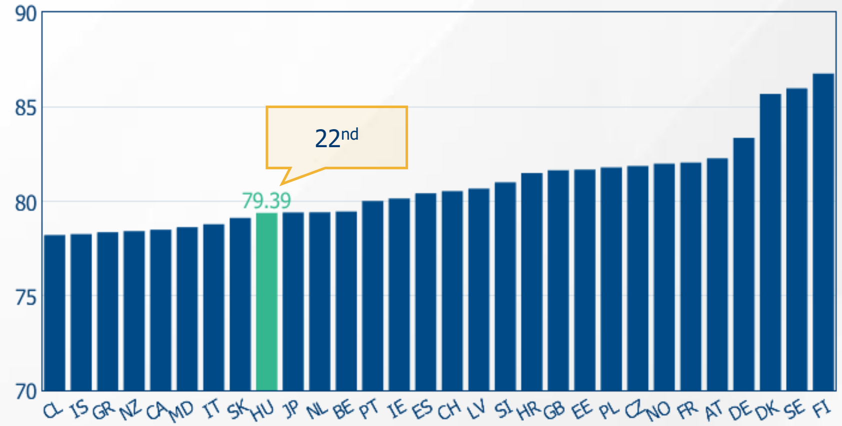
HUNGARY'S ESG POSITION

Key highlights

- **Overall:**
  - Hungary is ranking **22nd** among all 193 UN Member States regarding the percentage of its **SDG achievement**
  - Largest Central Eastern European green bond issuer
  - Hungary intends to issue more green bonds in the future and **continue it's path on sustainable finance**

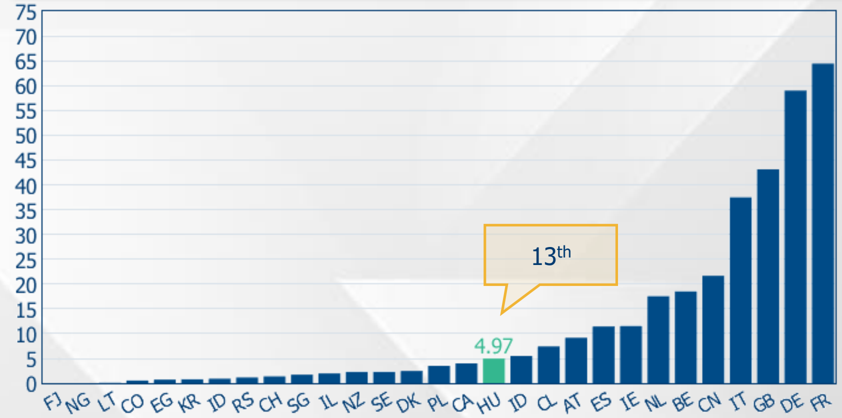
- **Green Bond finance:**
  - Hungary successfully issued Green Bonds on the domestic (HUF) and international (EUR, JPY, CNY) markets for a total amount of **HUF 1.6 trillion** (as of May 2023) between 2020 and 2023
  - In **2023 July**, Hungary published its **renewed Green Bond Framework**
  - **EU Taxonomy assessment** was part of the new Framework
  - **37 activities** were assessed for **Substantial contribution** and **Minimum Safeguards** criteria
  - **20 activities** were assessed for **DNSH** criteria including the Clean Transportation, Energy efficiency (incl. Green buildings), Renewable energy

Hungary's SDG ranking globally (top 30 countries), 2023



Source: SDG Index

Hungary's green bond issuance compared to sovereign issuers* (Amount issued USD bn.), 2023



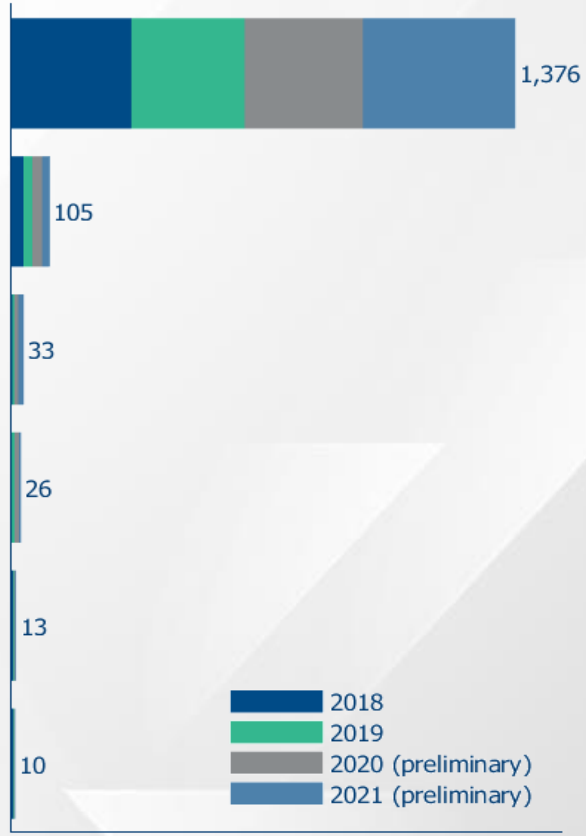
Source: ICMA Group, based on their own calculation

***Source:** ICMA Group's methodology and database of bonds that are published in the LGX DataHub and declared by the issuer and/or an external reviewer to be aligned with the Green Bond Principles*

GREEN BOND ACHIEVEMENTS (BASED ON PUBLISHED GREEN BOND REPORTS)

UN SDGs		Positive impacts of each green category	
13 Climate Action; 11 Sustainable Cities and Communities	**Clean Transportation**	**1,447**	**Kilotons of CO_2** saved
15 Life on Land	**Land Use and Living Natural Resources**	**142k**	**Projects** supporting sustainable agricultural areas **covering 833,716 hectares**
7 Affordable and Clean Energy	**Energy Efficiency**	**96**	**Kilotons of CO_2** saved
6 Clean Water and Sanitation; 13 Climate Action	**Adaptation**	**11**	**Developments** supported the **implementation of the Water Framework Directive**
6 Clean Water and Sanitation; 11 Sustainable Cities and Communities	**Waste and Water Management**	**780**	**Meters per kilometres increase in length of sewage system** of drinking water system
7 Affordable and Clean Energy	**Renewable Energy**	**13.2**	**Kilotons of CO_2** saved

Eligible green expenditures (HUF billions)



Source: AKK

Note: *Based on 2020, and 2021 issuances according to the allocation criteria defined under the Hungary's Green Bond Framework 2020*

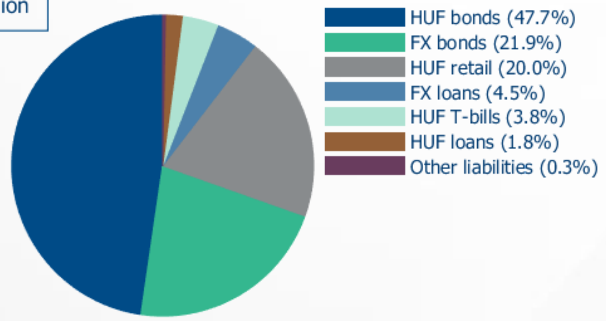
Source: *Integrated Report on the Allocation and Environmental Impact of Hungary's Green Bond Proceeds, 2021: https://www.akk.hu/download?path=631eea18-a51a-4084-866a-fbcee27e3625.pdf; Allocation report 2020: akk.hu/download?path=f5dfa7d7-eb5f-4ff1-bf27-86e20a8e9f6e.pdf; Impact report 2020: akk.hu/download?path=21dcb526-74eb-40c9-914a-9119b8e1d8e1.pdf*

VI. EFFECTIVE DEBT MANAGEMENT

HUNGARY BENEFITS FROM A FAVOURABLE DEBT PROFILE

Hungary's central government debt breakdown
(30 November 2023, % of total)

Total debt:
HUF 49,918 billion



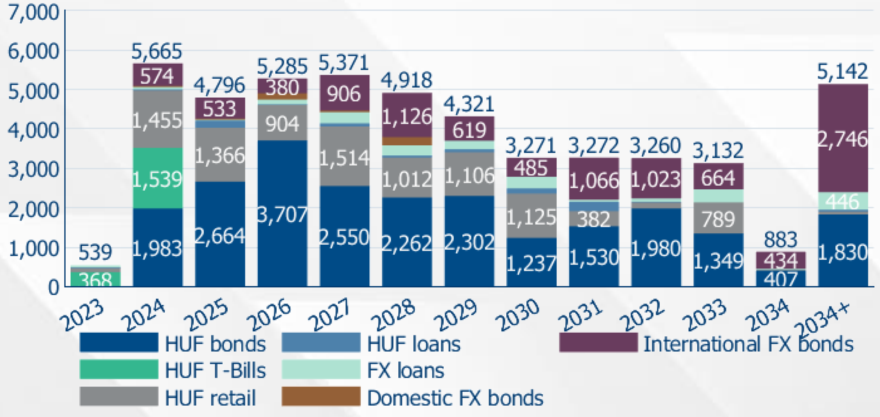
Source: AKK; Note: Central government debt, including MTM and Repo deals

Key targets and characteristics of Hungary's government debt

	2023 benchmark targets		30 November, 2023 figures
Share of FX debt	Maximum 30%	✓	26.6%
Currency mix of the FX debt (after swaps)	100% in EUR (with a 5% deviation allowed)	✓	99.9%
Average time to maturity	Minimum 5.5 years	✓	6.1 years
Average time to re-fixing	Minimum 4 years	✓	4.9 years
Share of debt with a fixed coupon	Between 60% and 80%	✓	68.8%
Share of retail debt	Between 20% and 25%	✓	20.1%
Share of green bonds			3.4%

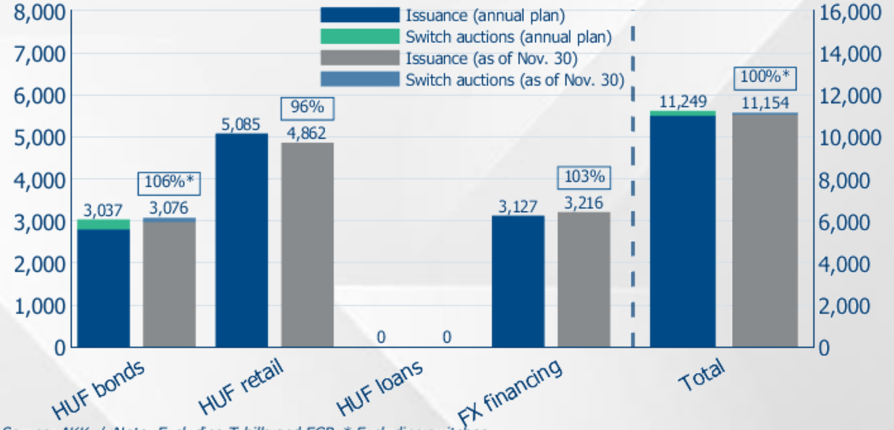
Source: AKK; Note: Central government debt; Benchmark values are 90-day moving averages

Hungary's government debt redemption profile
(30 November 2023, HUF billion)



Source: AKK; Note: Central government debt, excluding MtM, swap and Repo deals

2023 issuance vs current 2023 financing plan
(30 November 2023, HUF billion)



*Source: AKK / Note: Excluding T-bills and ECP. * Excluding switches*

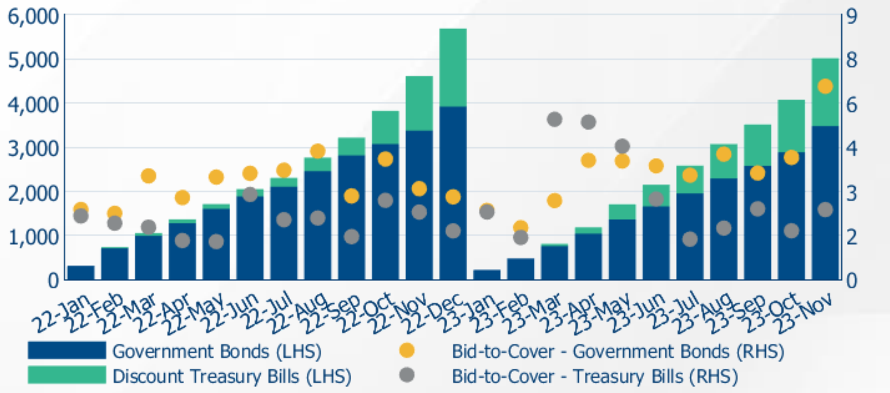
STRONG MARKET DEMAND ON THE LOCAL WHOLESALE MARKET

Key highlights

- **To ensure simplicity and transparency, AKK issues standard debt instruments according to a fixed annual calendar published in advance**
- **Primary auctions, as well as switch and buyback operations, help support a balanced bond issuance pattern,** manage the redemption profile and reduce refinancing risk
  - Buyback auctions were relaunched in July 2023 and switch auctions restarted in September 2023, along with a new framework allowing for more flexibility
- **Demand for Discount T-bills was strong in H1 2023** due to their popularity among retail investors and changes in taxation rules for mutual funds
  - As a result, ÁKK was able to reduce the volume of 3-year and 5-year bonds in its issuance plan
  - Another key objective is the gradual reduction of HUF institutional bonds maturity peaks in 2025 and 2026

Source: AKK, NBH

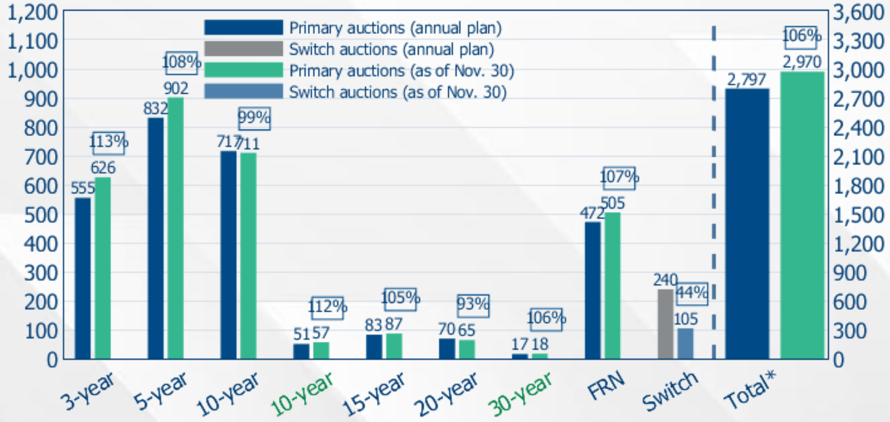
Cumulative monthly debt securities issuance and the ratio relative to the planned amount (left-hand scale: HUF billion)



Source: AKK; Note: Government Bonds excluding repo transactions, Discount Treasury Bills according to OECD methodology

Government bond issuance on auctions by tenor

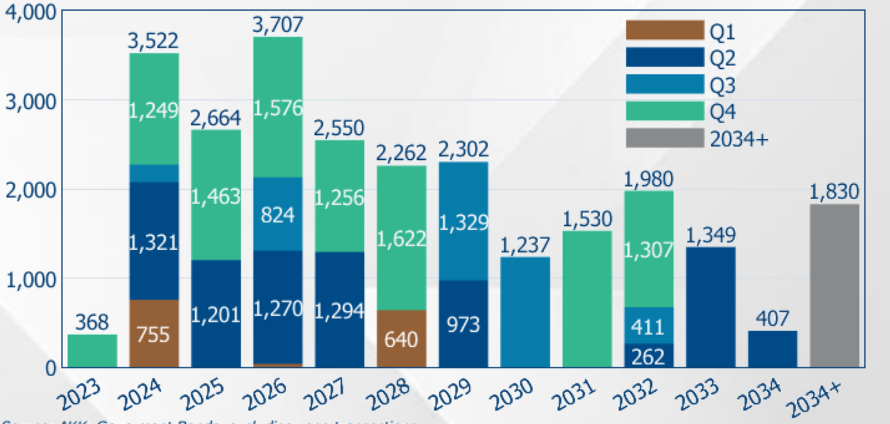
(2023 issuance vs current 2023 financing plan excluding municipal bond sales, HUF billion)



*Source: AKK; *Total primary auction issuance*

Redemption profile of wholesale government securities

(as of 30 November 2023, HUF billion)



Source: AKK; Goverment Bonds, excluding repo transactions

LOCAL RETAIL MARKET IS AN IMPORTANT DIVERSIFICATION TOOL

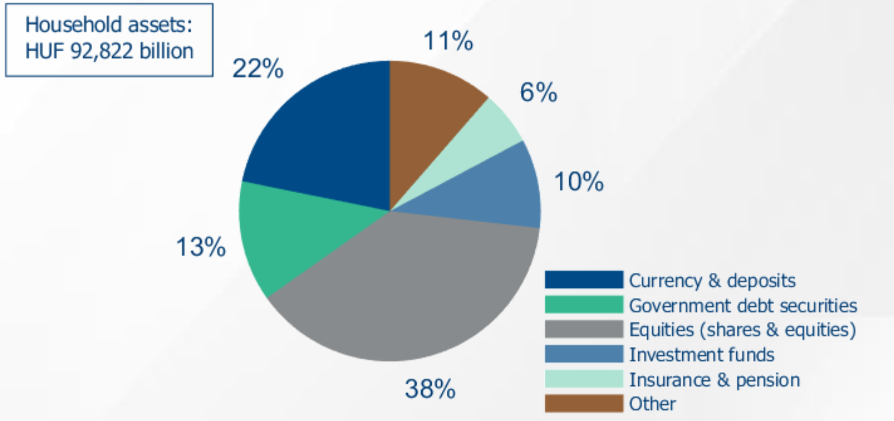
Key highlights

- **The retail debt program constitutes an important financing channel for the Government,** with the outstanding amount of HUF retail securities at HUF 9,990 billion as of 30 November 2023, or 20.1% of total debt
- **The issuance of new PMÁP (inflation-linked retail security) bonds played a significant role in the stock increase over 2023**
- **AKK continuously monitors market conditions and takes them into account when pricing retail securities**
  - AKK also regularly buys back securities from market makers to provide liquidity
- **Continued increase in retail investors and reduced concentration are key objectives going forward**
  - Sales caps have been applied to two popular retail securities as of January 2023
  - To further reduce wealth concentration sales cap on the inflation-linker has been reduced twice in 2023

Source: AKK

Households asset structure

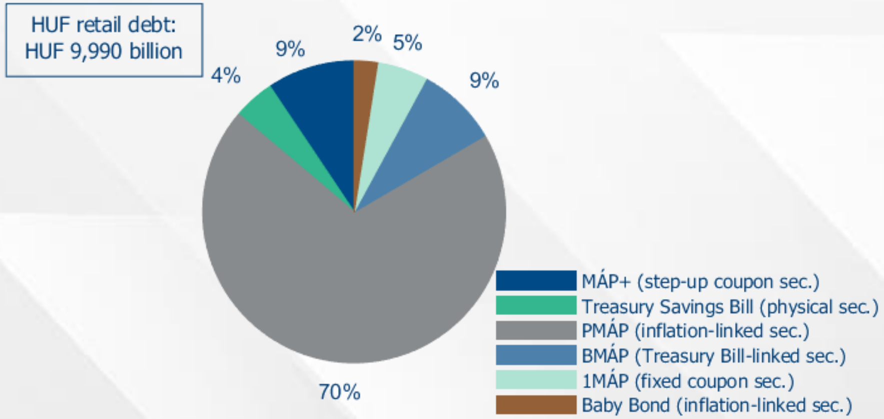
(Q3, 2023, % of total)



Source: NBH

HUF retail portfolio by instrument

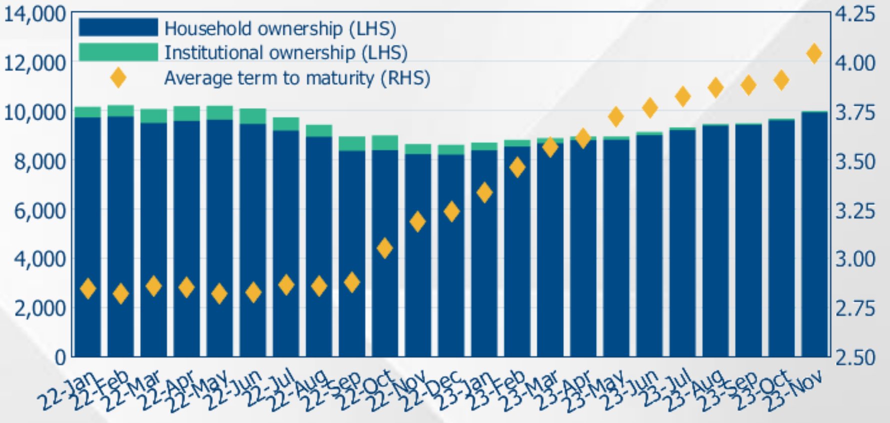
(30 November 2023, % of total)



Source: AKK

HUF retail securities

(HUF billion and years)



Source: AKK

HUNGARY'S EXPOSURE TO INTERNATIONAL MARKETS IS CAREFULLY MANAGED

ÁKK
GOVERNMENT DEBT MANAGEMENT AGENCY PTE LTD.

Key highlights

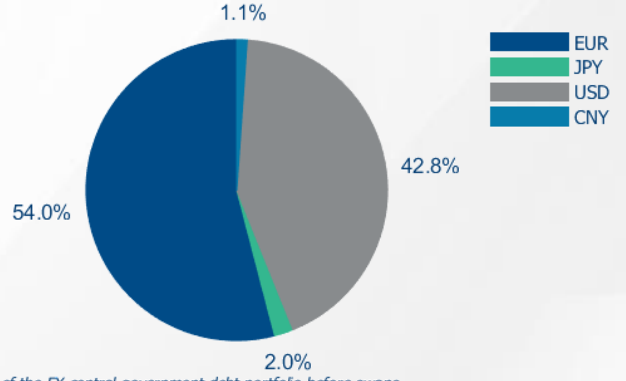
- **The share of Hungary's government debt in foreign currency remains contained.** At the same time, Hungary intends to maintain its presence on international capital markets to ensure diversification of funding sources
- **FX debt is mainly denominated in EUR and USD,** and all non-EUR proceeds are swapped into EUR, resulting in a 100% EUR FX debt portfolio
- **Effective debt management has led to record low amounts of FX bonds maturing over 2024-2026** partially thanks to buybacks of short-term USD bonds through tenders and OTC transactions
- **Hungary issued FX green bonds in key foreign currencies, including EUR** (in June 2020 and November 2022), **JPY** (in September 2020 and February 2022) and **CNY** (in December 2021 and November 2022)
- **Besides revolving facilities Hungary established a Euro Commercial Paper Programme** in July 2023 to manage short term FX liquidity

Source: AKK

FX debt composition by currency before swaps

(30 November 2023, % of total)

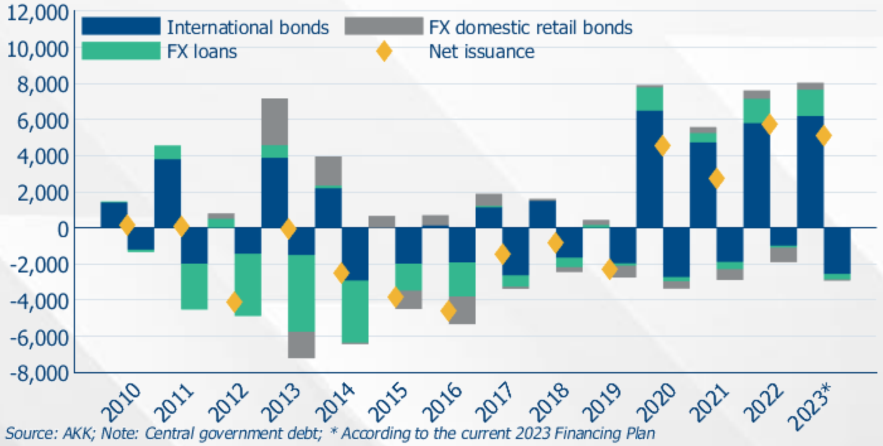
Total FX debt[1]: EUR 34.9 billion



Source: AKK; Note: composition of the FX central government debt portfolio before swaps
[1] Excluding CCIR swaps; total FX debt including CCIR swaps amounted to EUR 34.7 billion

FX redemption, issuance & net issuance

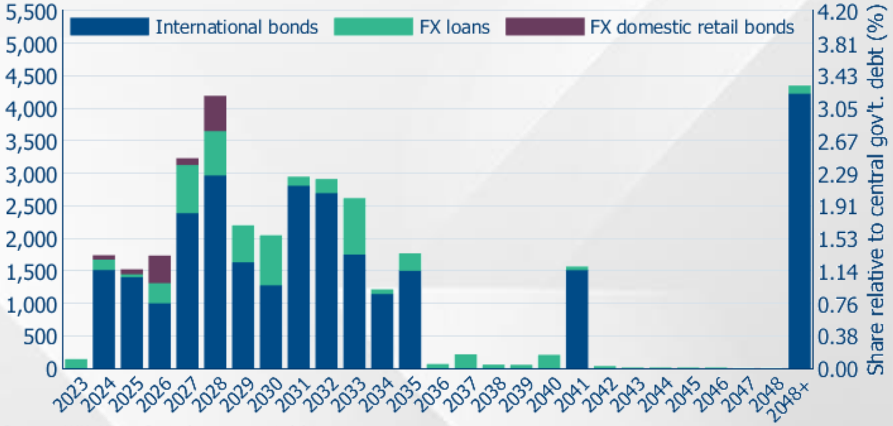
(EUR million)



*Source: AKK; Note: Central government debt; * According to the current 2023 Financing Plan*

Maturity profile of FX debt

(30 November 2023, EUR million)



Source: AKK; Note: Central government debt

VII. FINANCING PLAN

ACHIEVEMENTS OF GOVERNMENT DEBT MANAGEMENT IN 2023

GOVERNMENT DEBT MANAGEMENT AGENCY PTE LTD.

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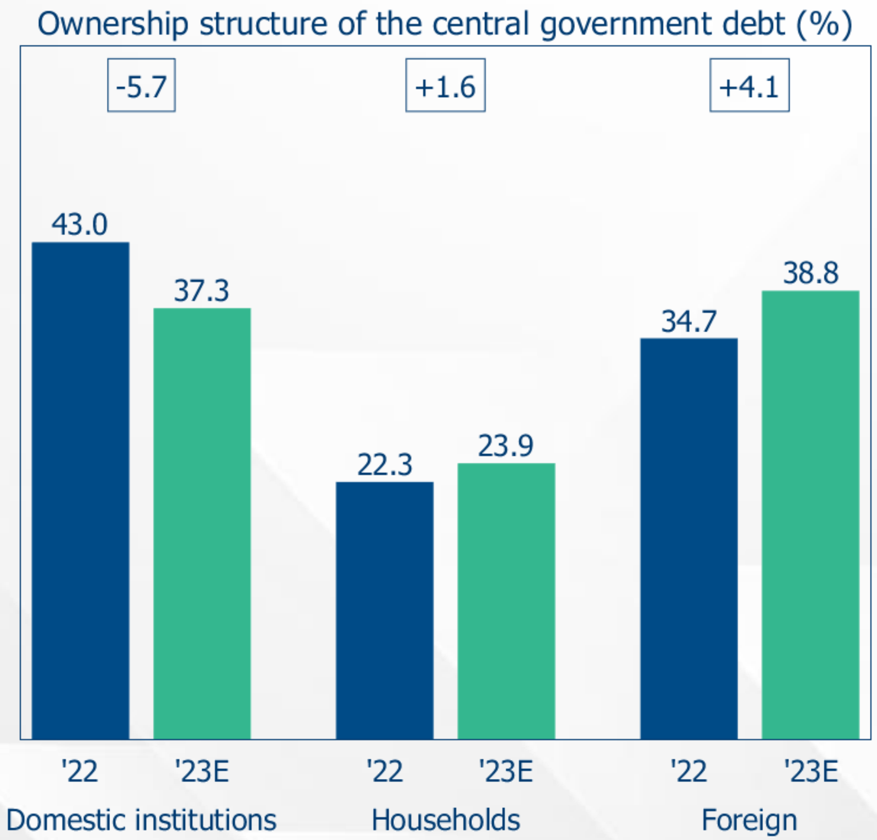
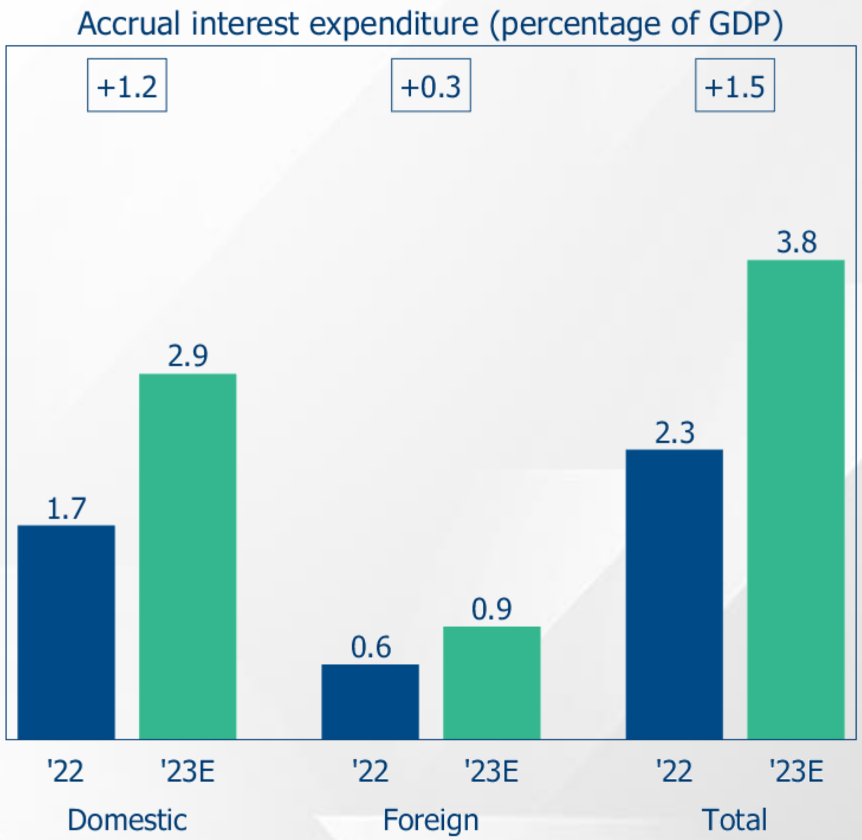
HUF Institutional Market	▪ 3-year fixed interest rate bond auctions with a volume of HUF 660 billion. Average term-to-maturity of HUF bond auctions was 6.8 years. ▪ Switch auctions re-launched in September with flexible conditions and with a volume of HUF 165 billion compared to the planned volume of HUF 390 billion. ▪ HUF 520 billion floating rate bond issuance compared to the HUF 881 billion volume of 2022. ▪ The outstanding amount of T-Bills increased due to higher-than-expected retail demand and mid-year regulation changes. ▪ Green HUF bond issuances with a volume of HUF 75 billion. ▪ First agreement for Non-PD Market maker status with Morgan Stanley Europe SE.
Retail Market	▪ Due to the introduction of the sales cap, the share of retail securities owned by customers with over HUF 500 million in retail securities holdings did not increase from the end of December 2022 value of 6.5% until the end of October 2023. ▪ Only one available PMAP series instead of two, introduction of an additional interest premium to incentivise holding until maturity. ▪ 42,220 new customers at retail dealers until the end of October 2023. ▪ Research still needed before the introduction of the retail benchmark index.
FX	▪ Successful USD bond issuance in January with a gross volume of USD 4.25 billion along with a USD 1 billion short maturity USD bonds' buyback. ▪ Launch of a dual-currency (EUR and USD) Euro Commercial Paper (ECP) Programme in July 2023. The programme allows the issuance of short maturity papers with a maximum volume of EUR 1 billion, further expanding AKK's liquidity management toolkit. ▪ Successful 10-year EUR bond issuance in the beginning of September with a volume of EUR 1.75 billion and with a bid-to-cover ratio over 3. ▪ Private placements of the 2028 USD bond with a total volume of USD 650 million and the 2032 USD bond with a volume of USD 300 million in March and November after reverse investor inquiries.
ESG	▪ The updated Green Bond Framework of Hungary was published in July 2023, with the majority of the supported green categories now aligning to EU Taxonomy. ▪ With the Integrated Report to be published in December 2023, the allocation of proceeds raised by green bonds issued according to the 2020 Green Bond Framework will be finished. ▪ AKK continues to investigate the possibility of issuing thematic bonds in accordance with changing best market practices, investor demands and other goals.

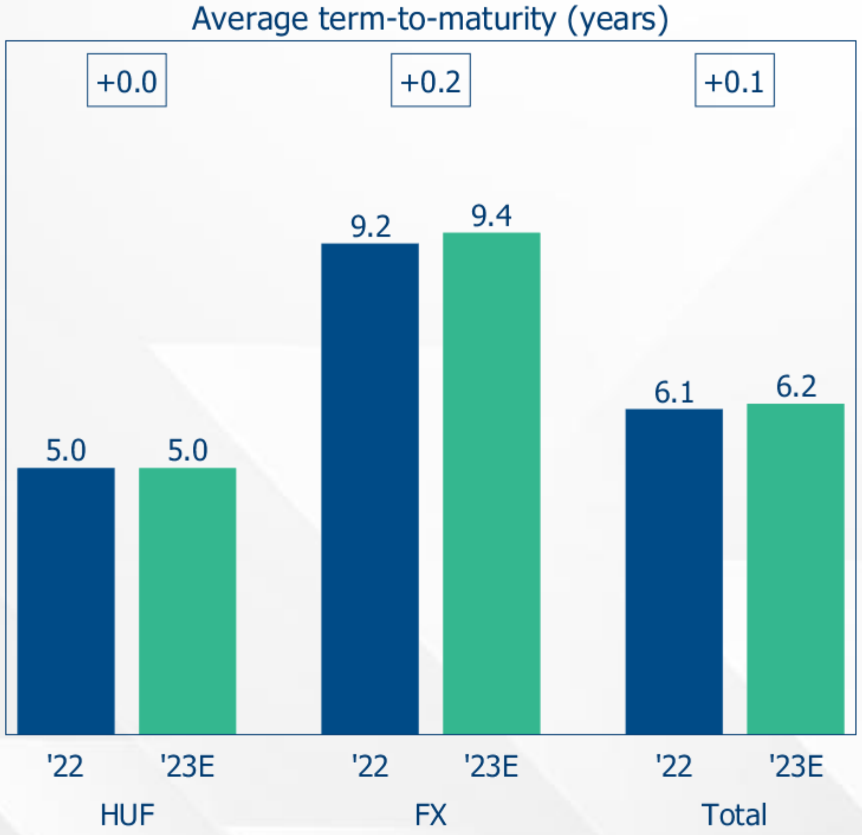
INCREASING INTEREST EXPENDITURES, MOSTLY PAID DOMESTICALLY

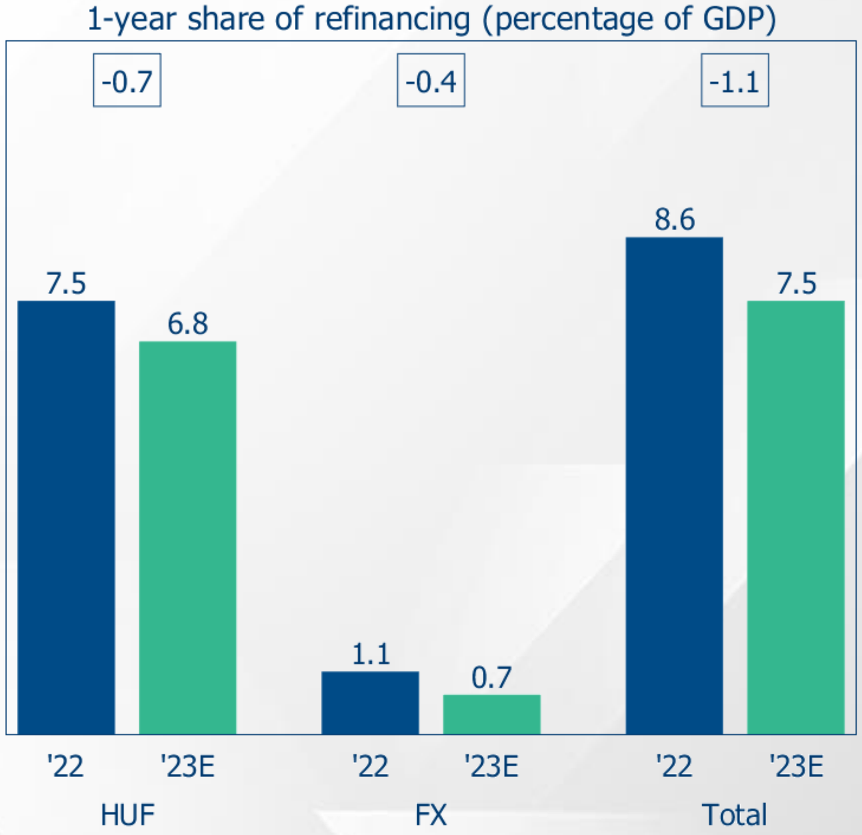




Source: AKK, NBH; Note: Interest expenditure - Factual end-2022 and expected end-2023 values; Ownership structure - estimated end-2022 and end-2023 values

GRADUALLY INCREASING DURATION WITH REDUCTION IN SHORT-TERM REFINANCING





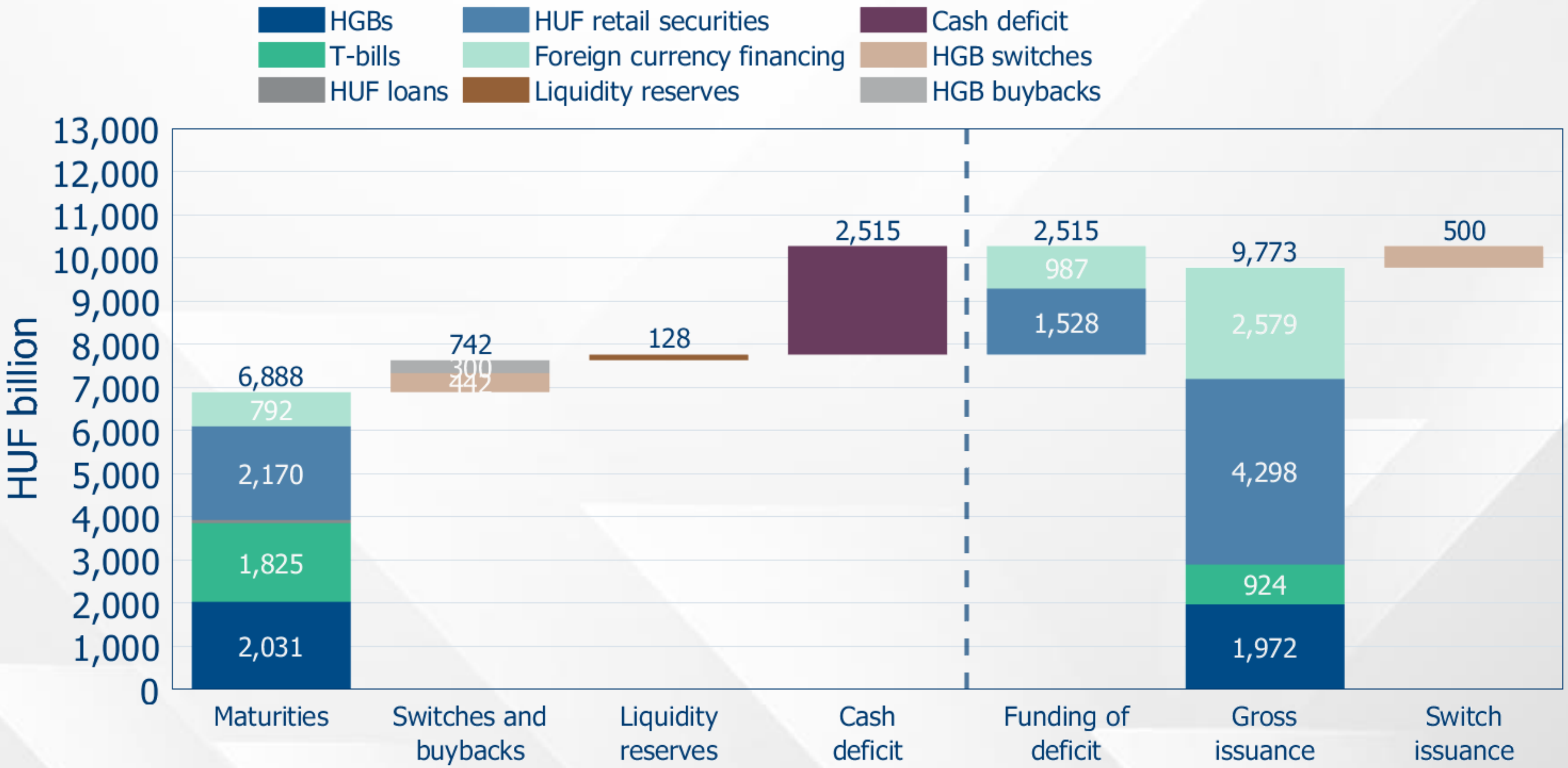
Source: AKK; Note: Factual end-2022 and expected end-2023 values

GOALS OF GOVERNMENT DEBT MANAGEMENT IN 2024

In 2024, the total net financing requirement of the central budget in 2024 is HUF 2,515 billion based on the approved 2024 Budget, financed by a net issuance of HUF 2,643 billion. The gross government security issuance and borrowing is expected to be HUF 10,273 billion (including switch auctions) in 2024 compared to the HUF 13,358 billion average gross government borrowing volume in the last 5 years.

Benchmark Targets	▪ The benchmark indicators regarding the composition of government debt remain unchanged for 2024.
HUF Institutional Market	▪ Net negative HUF institutional bond issuance with an average term-to-maturity of almost 7 years. ▪ A HUF 500 billion switch auction programme with the goal of reducing maturity peaks of 2025-26. ▪ Decreasing the number of outstanding government bond series if possible and the development of the T-Bill market adapting more flexibly to market demand to improve market liquidity. ▪ HUF 60 and 20 billion (10- and 30-year respectively) green Hungarian Government Bond issuance.
Retail Market	▪ Increasing the number of active customers with securities accounts and the share of digital sales channels through the simplified account opening procedure provided by the Hungarian State Treasury. ▪ The introduction of a 3-year fixed interest rate 'Fix Hungarian Government Security' as well as a 5-year Bonus Hungarian Government Security with a loyalty premium. Re-pricing of the Hungarian Government Security Plus from June and the discontinuation of the 1-year Hungarian Government Security. ▪ Active use of sales caps for every retail security in order to further mitigate wealth concentration risk.
FX	▪ Issuance of an international USD bond with a volume of up-to USD 2 billion and a benchmark-sized green EUR bond in case of favourable market conditions in the first half of 2024. ▪ Further strengthening market participation in Asian markets with Samurai and Panda bond issuances in the second half of 2024. ▪ FX project loans with favourable conditions and other types of FX financing based on circumstances (e.g.: private placements, ECP).
ESG	▪ Broadening the investor base, strengthening market presence with green bond issuances in 2024. ▪ Considering new ESG-themed issuances based on the market environment and best market practices.

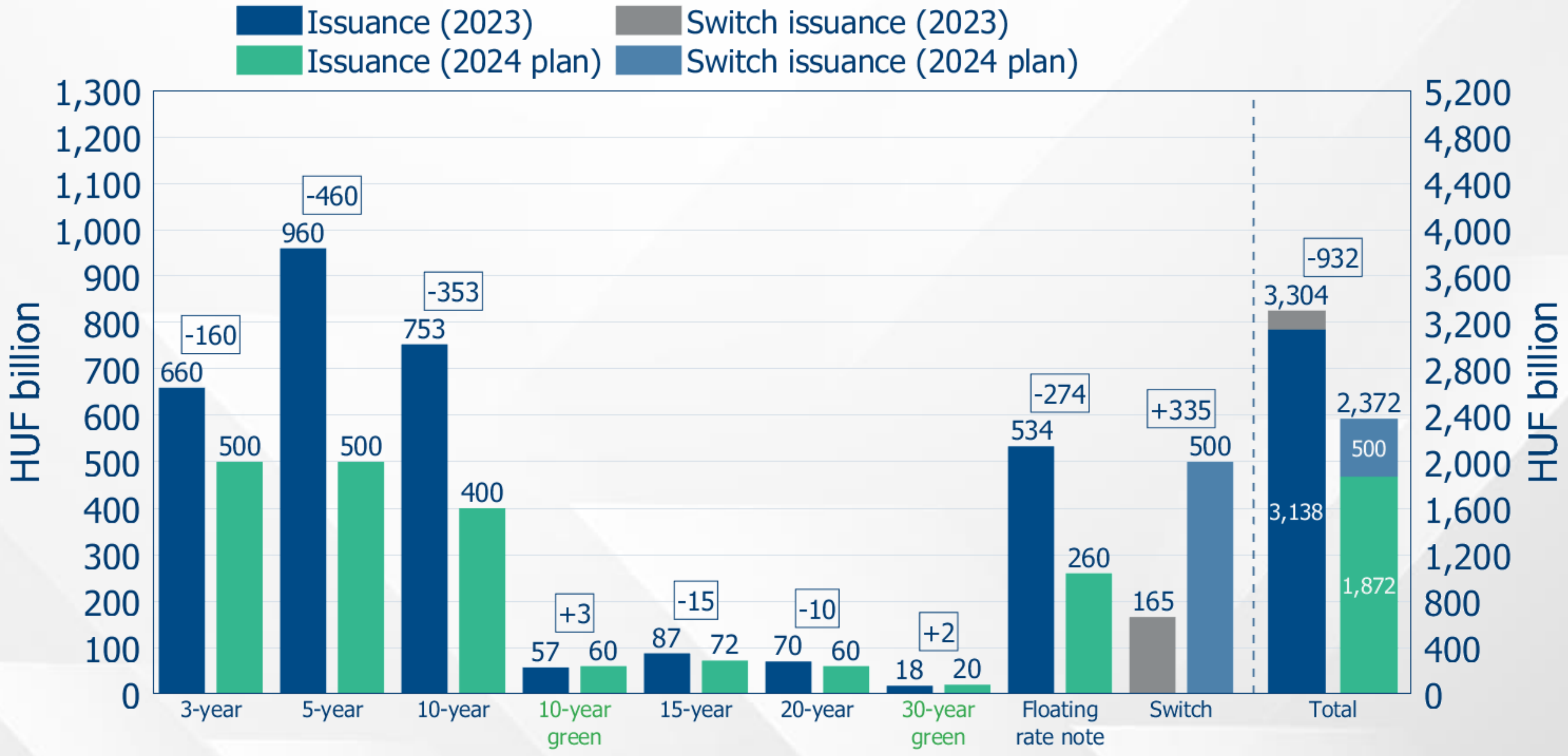
2024 FINANCING PLAN



Source: AKK; Note: transactions based on nominal values

The total net financing requirement for 2024 is HUF 2,515 billion, financed by a net issuance of HUF 2,643 billion. Net issuance exceeding the funding requirements increases liquidity reserves. The total net issuance of securities owned by households is HUF 1,632 billion, of which HUF 104 billion is foreign currency financing.

PLANNED VOLUME OF HUF WHOLESALE BOND ISSUANCES



Source: AKK; Note: Expected 2023 and planned 2024 values

THANK YOU FOR YOUR ATTENTION!

GOVERNMENT DEBT MANAGEMENT AGENCY PTE LTD.

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