FINANCIAL MARKETS AND INSTITUTIONS
A.Y. 2023/24
PROF. ALBERTO DREASSI – ADREASSI@UNITS.IT

# A7. MORTGAGE MARKETS

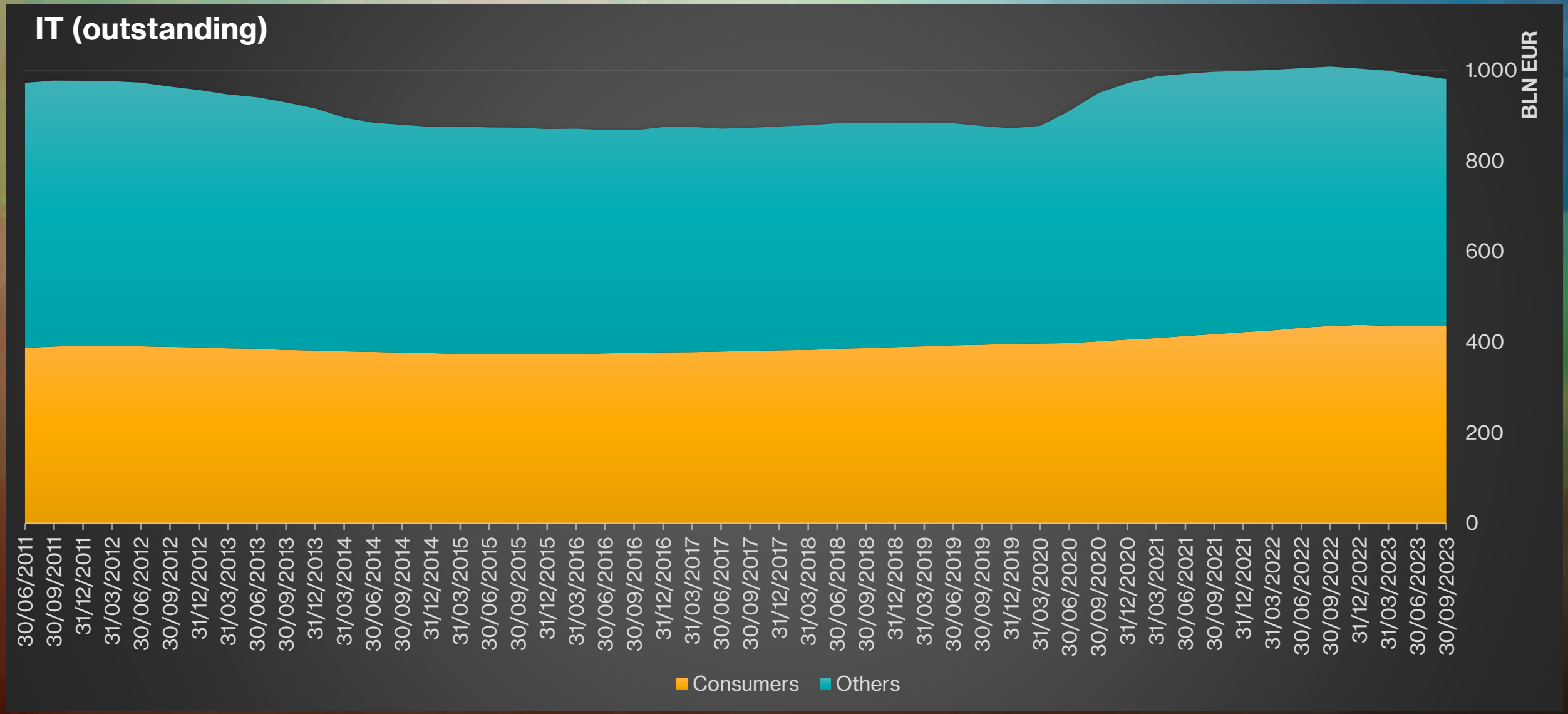
- WHY DO MORTGAGE LOANS EXIST?
- HOW DO THEY WORK?
- SECONDARY MARKETS AND THE FINANCIAL CRISES

# PURPOSE AND MAIN FEATURES

- **Long-term** loan **secured** by **real estate**
- Both **residential** and **commercial/industrial**
- Repayment with periodic payments of C and I (**amortisation**)
- IR fixed, variable, or a combination
- Global size (Allied Market Research): 11.5 TRN USD (2021), estimated 28 TRN USD (2031)

Many variations:

- can be **guaranteed by public agencies** (f.i. veterans, young couples, …)
- IR: adjustable rate mortgage (ARM), caps/floors, fixed installment + variable rate
- **Additional risks if increasing installments** (f.i. growing equity – GEM) or **decreasing optional installments** (preamortisation below nominal rate, interest-only, …)
- **multiple mortgages** on same collateral are possible
- **reverse annuity (RAM)**


IT (outstanding)
BLN EUR
1.000
800
600
400
200
0
30/06/2011
30/09/2011
31/12/2011
31/03/2012
30/06/2012
30/09/2012
31/12/2012
31/03/2013
30/06/2013
30/09/2013
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31/12/2021
31/03/2022
30/06/2022
30/09/2022
31/12/2022
31/03/2023
30/06/2023
30/09/2023
Consumers
Others

# EXAMPLES

# PRICING

$$i\% = \text{Market} + \text{Spread}$$

Variable: EURIBOR, EONIA …
Fixed: EURIRS

Lender:

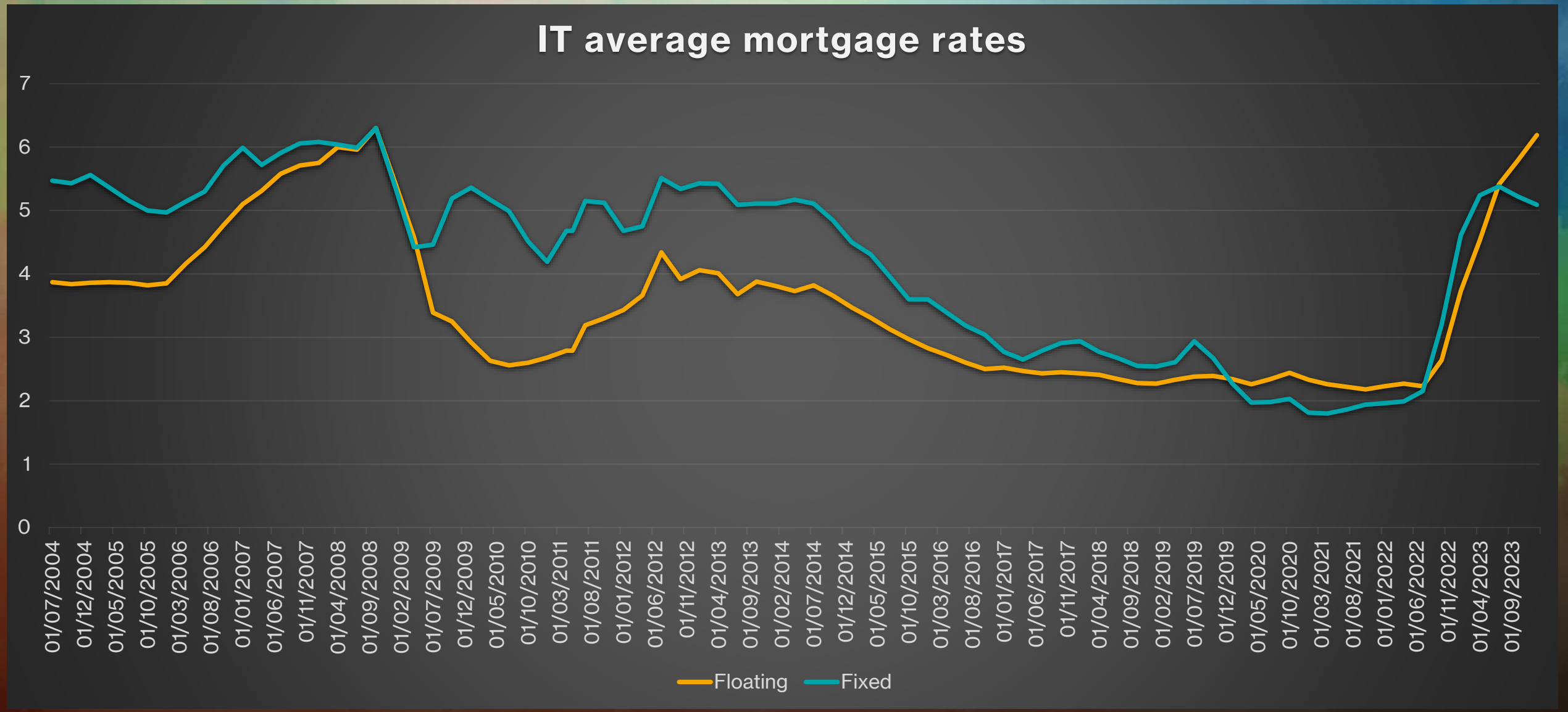
- Strategy and competition
- Funding
- Existing portfolio
- Expectations

Borrower:

- Creditworthiness, net worth and income
- Outstanding debt
- Past behavior and credit scores

Operation:

- Duration, rate and amortization plan, purpose
- Down payments (f.i. 80/20) and loan-to value
- Collateral, insurance


IT average mortgage rates
7
6
5
4
3
2
1
0
01/07/2004
01/12/2004
01/05/2005
01/10/2005
01/03/2006
01/08/2006
01/01/2007
01/06/2007
01/11/2007
01/04/2008
01/09/2008
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01/11/2017
01/04/2018
01/09/2018
01/02/2019
01/07/2019
01/12/2019
01/05/2020
01/10/2020
01/03/2021
01/08/2021
01/01/2022
01/06/2022
01/11/2022
01/04/2023
01/09/2023
Floating
Fixed

# EXAMPLES

# SECONDARY MARKET

- Mortgages are **illiquid** for lenders
- Partially also for borrowers (but: laws and regulation)
- Illiquidity threatens lenders:
  - IR risk (A/L mismatch, reinvestment of future flows)
  - default risk / market risk of collateral
  - loan servicing is expensive (administrative costs)

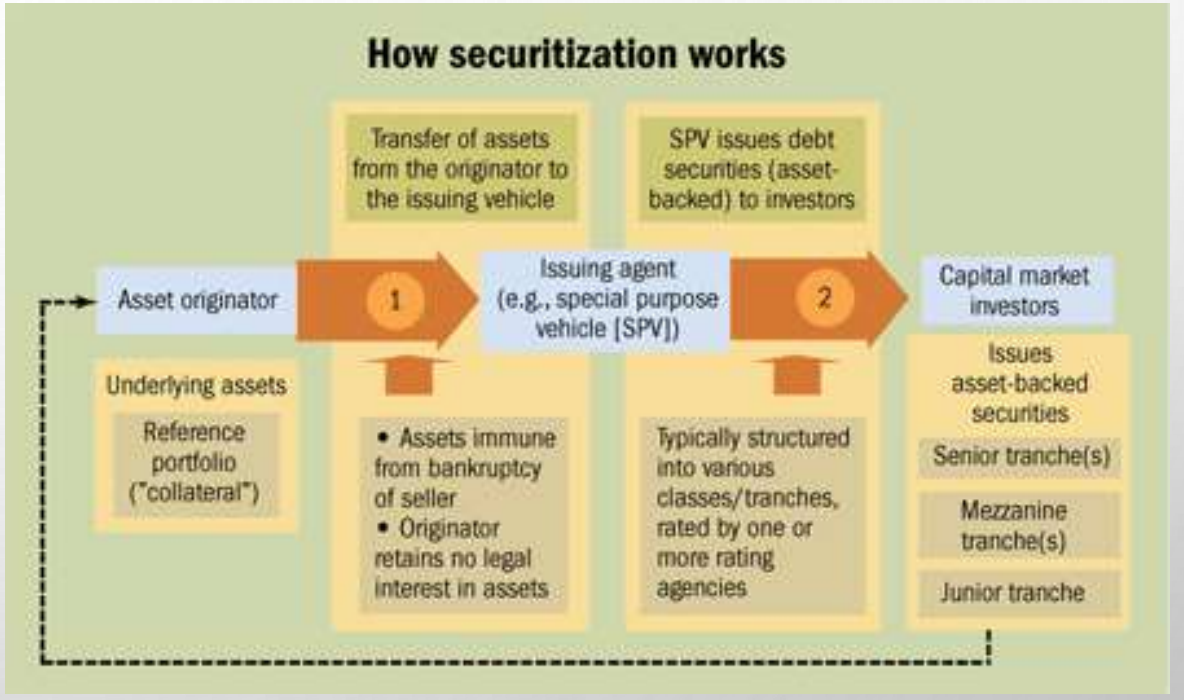
Secondary markets can be useful, but are difficult:

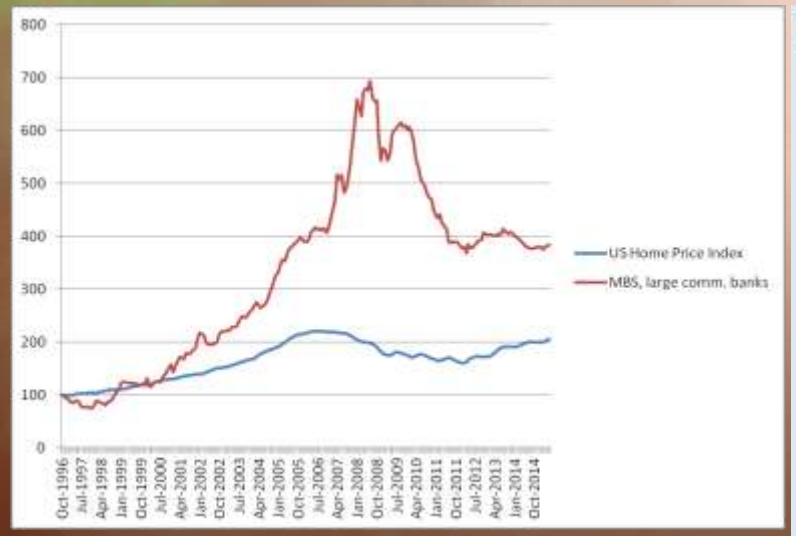
- Initially, **ceding loans** to other investors (but costly and time consuming)
- Then, funded by (and transferred to) **public repurchase programs** (in bulk, with asymmetric information issues)
- More recently, trough **securitization**

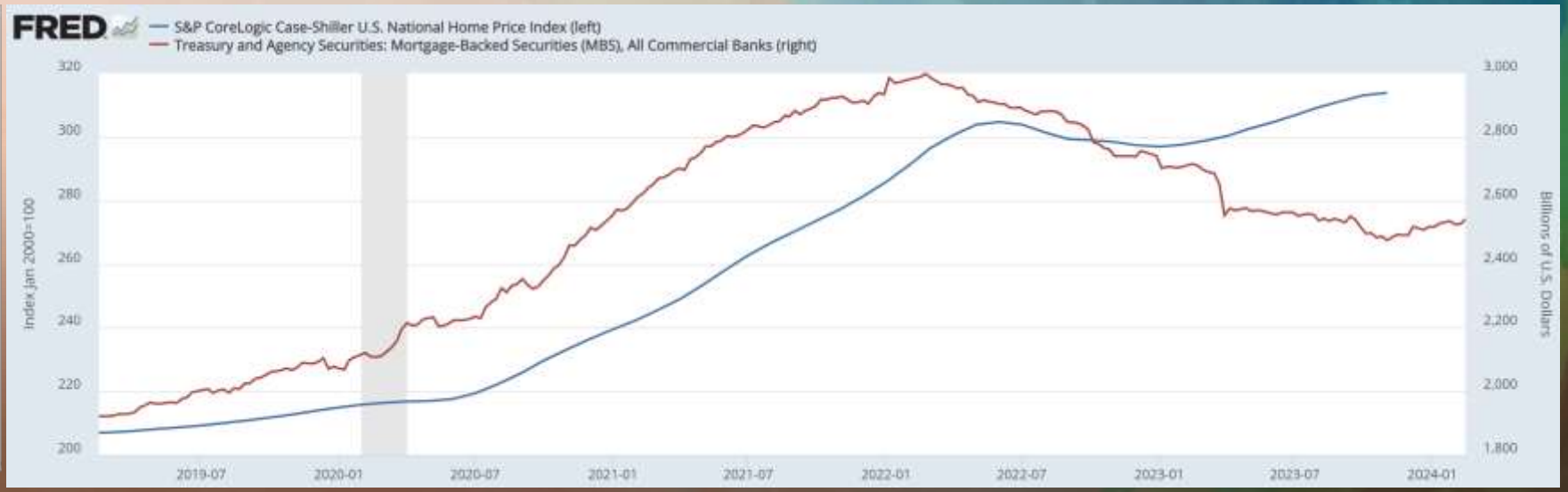
# SECONDARY MARKET & SECURITIZATION

**Securitisation:**

- Securities backed by assets (mortgages, **MBS**) to fund new acquisitions
- Useful for a number of small-size loans, unstandardised, with different maturities and other economic features, towards borrowers with different credit scores, costly to service, uncertain in default rates
- Allows **liquidity** to originator, **diversification** to investors
- Dangers: distance between risk-bearer and risk-assessment and complexity/pricing



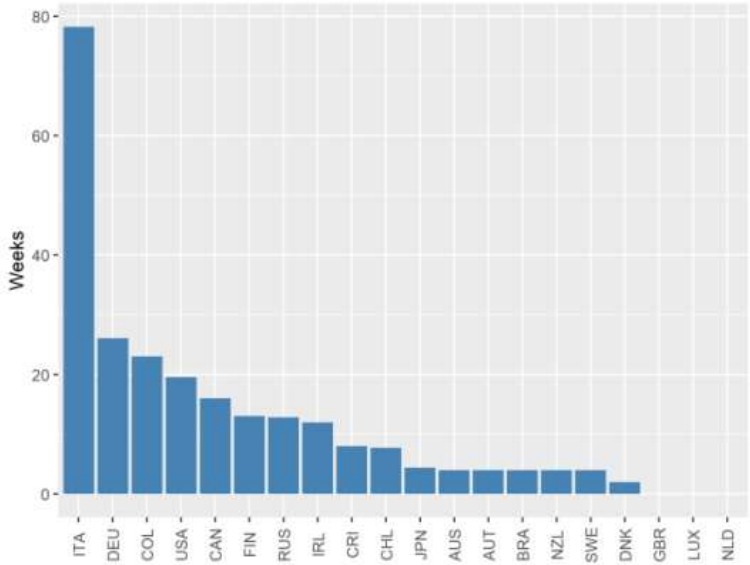

800
700
600
500
400
300
200
100
0
Oct-1996
Jul-1997
Apr-1998
Jan-1999
Oct-1999
Jul-2000
Apr-2001
Jan-2002
Oct-2002
Jul-2003
Apr-2004
Jan-2005
Oct-2005
Jul-2006
Apr-2007
Jan-2008
Oct-2008
Jul-2009
Apr-2010
Jan-2011
Oct-2011
Jul-2012
Apr-2013
Jan-2014
Oct-2014
US Home Price Index
MBS, large comm. banks


FRED
S&P CoreLogic Case-Shiller U.S. National Home Price Index (left)
Treasury and Agency Securities: Mortgage-Backed Securities (MBS), All Commercial Banks (right)
Index Jan 2000=100
320
300
280
260
240
220
200
Billions of U.S. Dollars
3,000
2,800
2,600
2,400
2,200
2,000
1,800
2019-07
2020-01
2020-07
2021-01
2021-07
2022-01
2022-07
2023-01
2023-07
2024-01

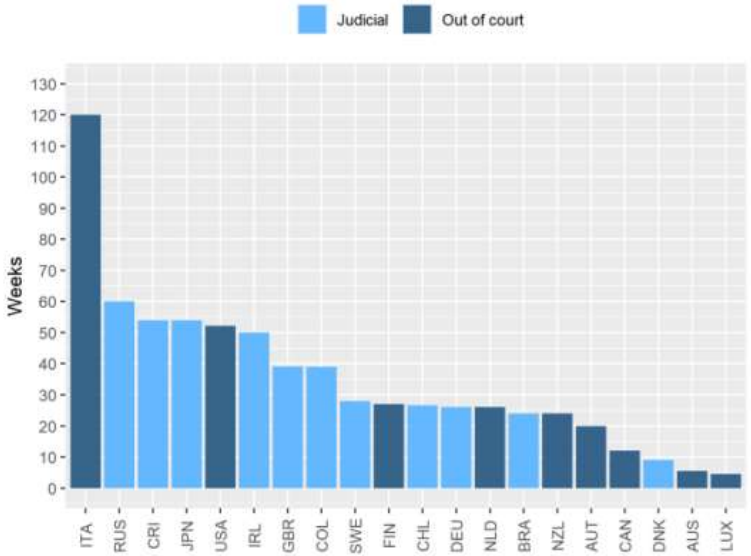
# EXAMPLES

## Figure 13. Foreclosure proceedings' characteristics across jurisdictions

Panel A:Weeks after first missed payment that foreclosure procedure starts

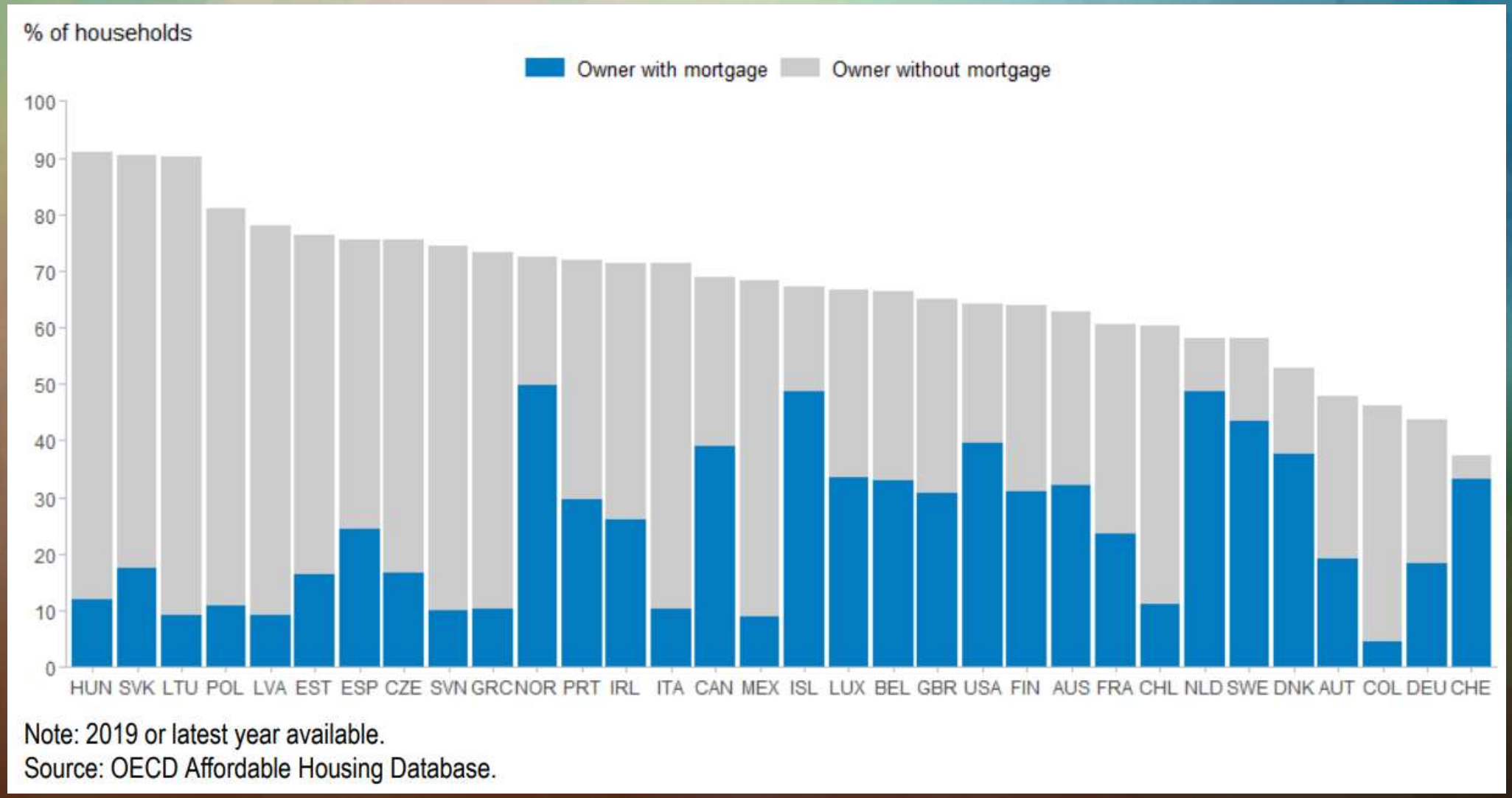



Panel B:Duration of foreclosure proceedings




Note to Panel B: Typical duration of the foreclosure process for the most common procedure in the respective country (out of court or in court).
Source: OECD QUASH survey and various public sources.

# EXAMPLES

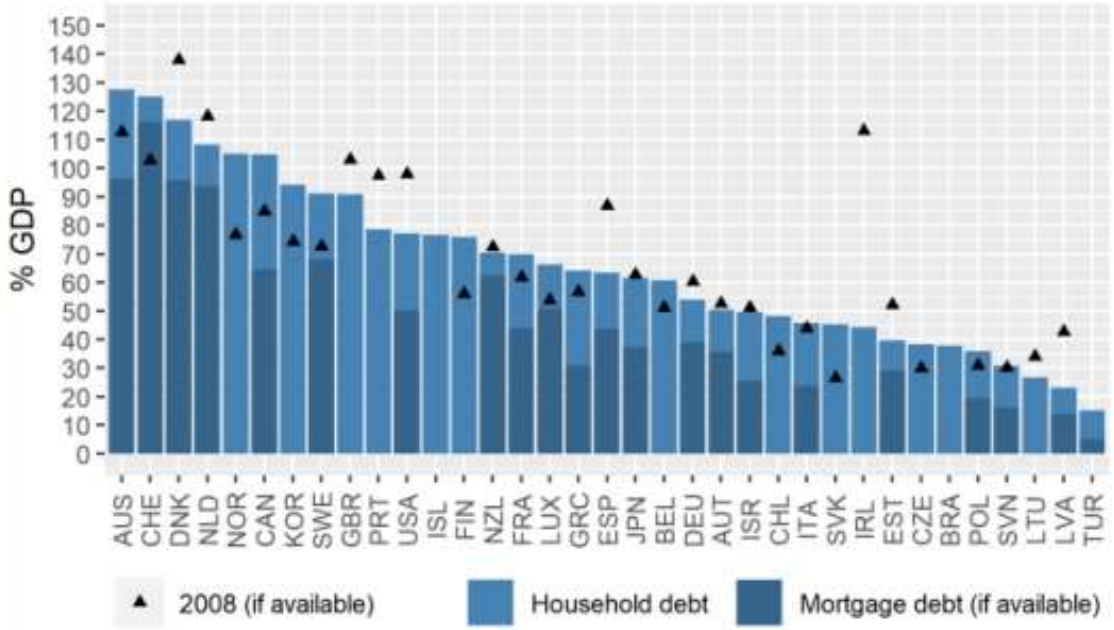



Note: 2019 or latest year available.
Source: OECD Affordable Housing Database.

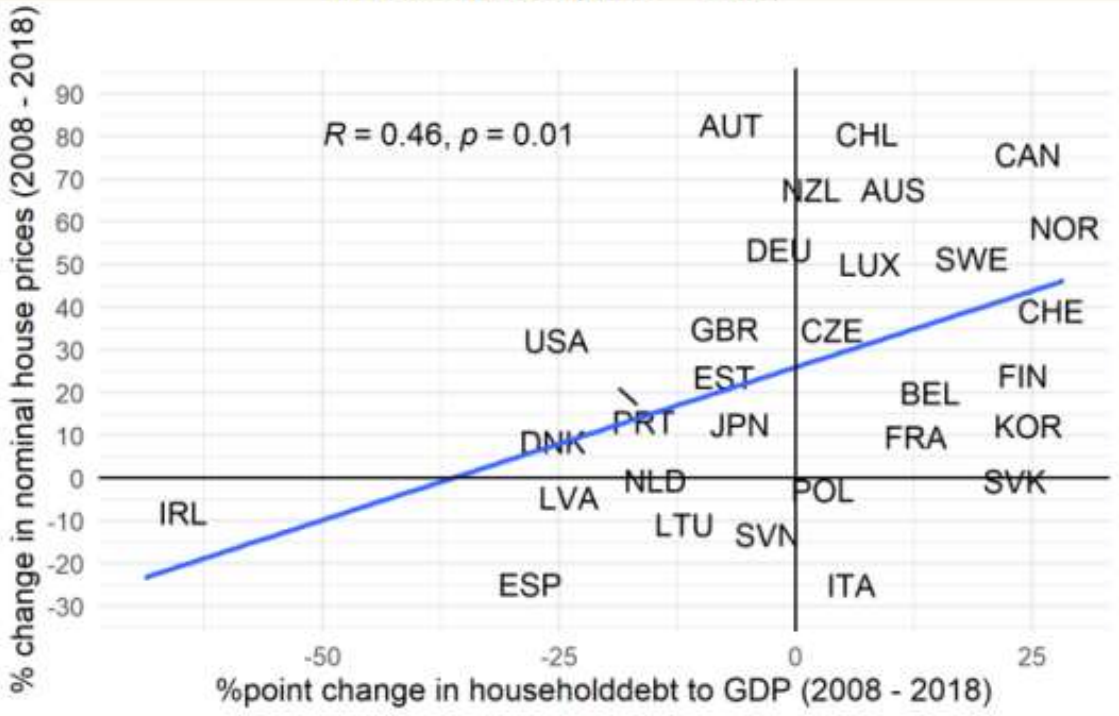
# EXAMPLES

## Figure 9. Total household (including mortgage) debt to GDP

Panel A: Household debt to GDP in 2018 and 2008



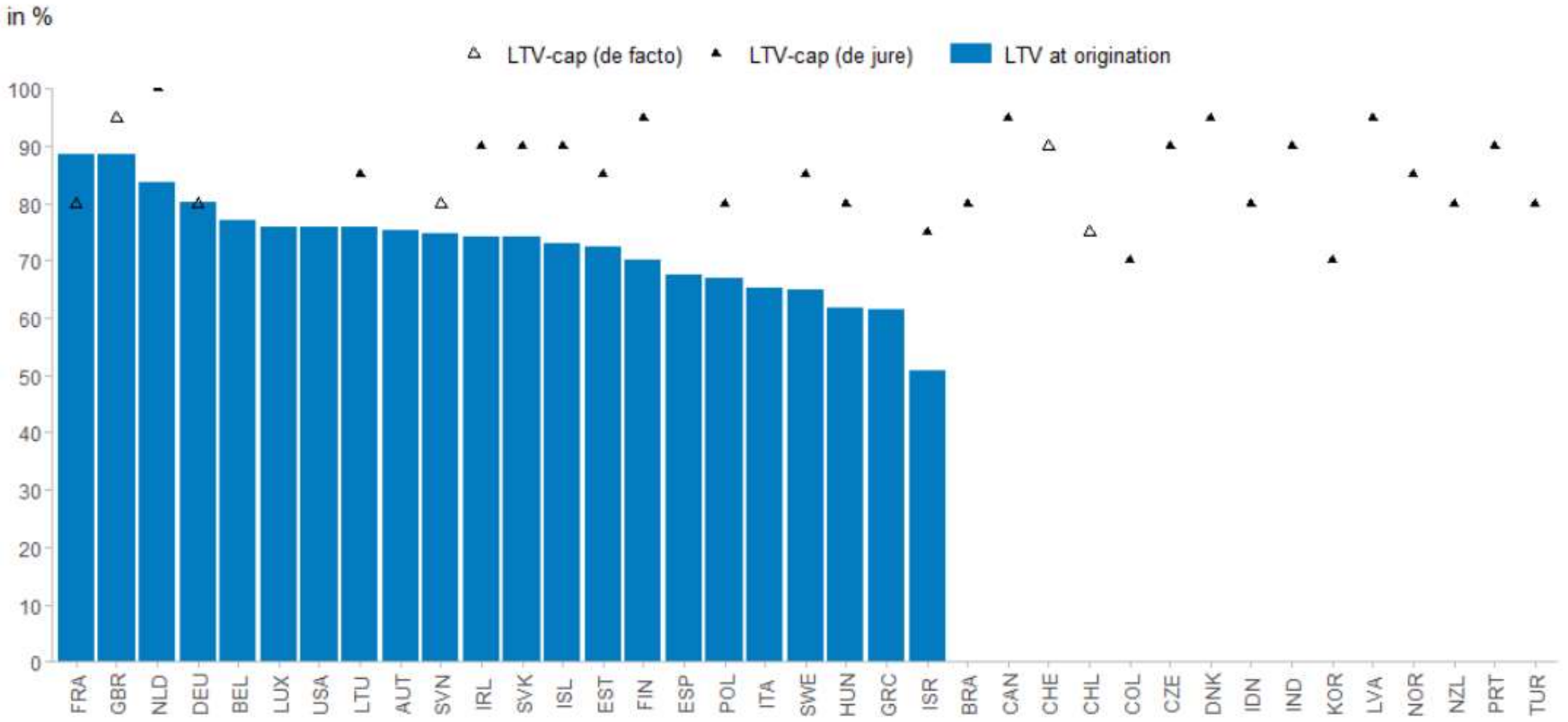

Panel B: Change in household debt to GDP versus change in house prices (2008 – 2018)




Source: OECD Household Accounts, doi:0.1787/na-data-en; OECD Housing Prices, doi:10.1787/63008438-en and EMF.

# EXAMPLES

## Figure 10. Loan-to-value at origination and loan-to-value caps




Note: De jure LTV-caps refer to official regulation of government institutions. The de facto caps are caps that follow from self-imposed constraints by financial institutions or recommendations from governments.

Source: ESRB (2021) Macroprudential database; OECD QUASH 2019 survey; IMF Macroprudential database; ECB (2020[30]); Bank of England.

# EXAMPLES

Vai su **wooclap.com** e usa il codice **FMAI23**

Which is the best FIXED interest rate that today, for a 20 years residential mortgage, one can obtain in Trieste?
(in %, number only)

**Votiamo!**

Clicca sullo schermo di proiezione per avviare la domanda

0 %

i partecipanti che hanno già risposto

wooclap

100 %

0 / 264

Vai su **wooclap.com** e usa il codice **FMAI23**

Which is the best VARIABLE interest rate that today, for a 20 years residential mortgage, one can obtain in Trieste? (in %, number only)

**Votiamo!**

Clicca sullo schermo di proiezione per avviare la domanda

i partecipanti che hanno già risposto