



# Perspectives on European Housing



Energy  
Efficient  
Mortgages  
Initiative

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Trento/IT

Energy Efficient Mortgage Initiative

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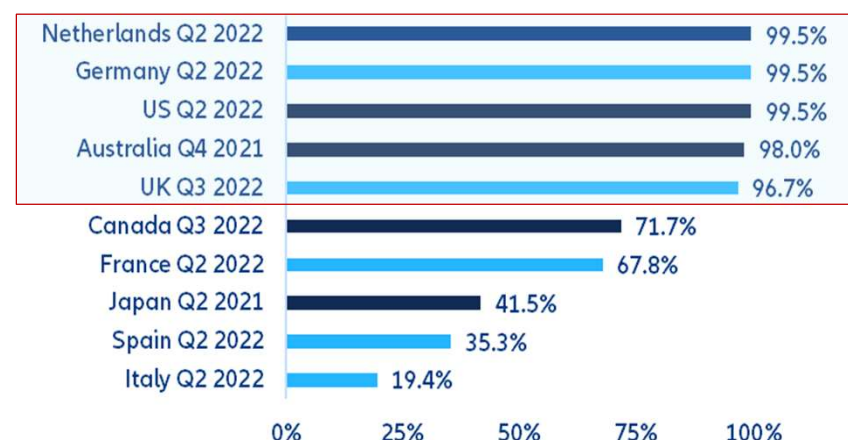
# Tighter financing conditions, slowing growth and soaring inflation

Europe: Residential Real Estate Heatmap  
(end-2022, z-score)

|                             |                       | Germany | France | Italy | Spain | UK |
|-----------------------------|-----------------------|---------|--------|-------|-------|----|
| Demand                      | Consumer sentiment    |         |        |       |       |    |
|                             | Wages                 |         |        |       |       |    |
|                             | Delinquent loans      |         |        |       |       |    |
|                             | Savings rate          |         |        |       |       |    |
| Supply                      | Building permits      |         |        |       |       |    |
|                             | Business confidence   |         |        |       |       |    |
|                             | Construction spending |         |        |       |       |    |
|                             | Housing starts        |         |        |       |       |    |
| Price                       | Nominal HPI           |         |        |       |       |    |
|                             | Price-to-rent Ratio   |         |        |       |       |    |
|                             | Price-to-income Ratio |         |        |       |       |    |
|                             | Materials prices      |         |        |       |       |    |
| Financial sector RE related | RE Equities           |         |        |       |       |    |
|                             | Residential loans     |         |        |       |       |    |
|                             | Mortgage rate         |         |        |       |       |    |
|                             | MBS Yield             |         |        |       |       |    |

Sources: Refinitiv, Allianz Research

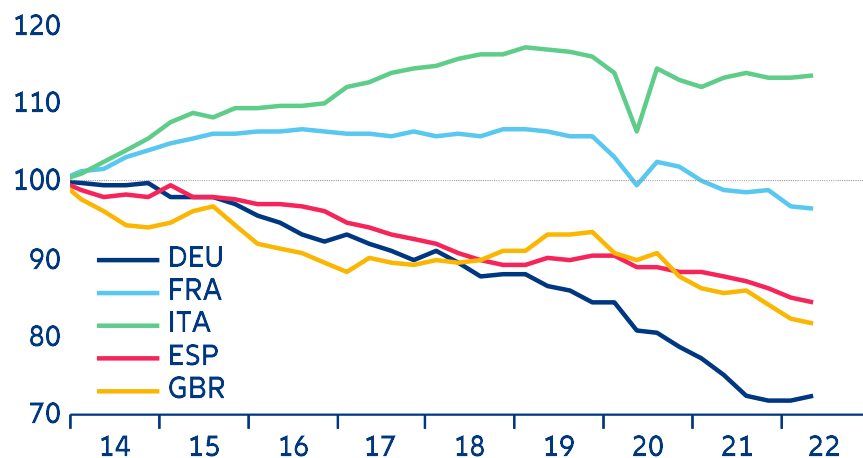
Global Real Estate: Perceived Appreciation  
(end-2022, as percentile of historical distribution)\*



Sources: Refinitiv, Allianz Research. Notes: The distribution of perceived returns was calculated since 1970. While there is not a certain threshold for overvaluation, a perceived rate of appreciation that exceeds the 95th percentile generally indicates a housing bubble.

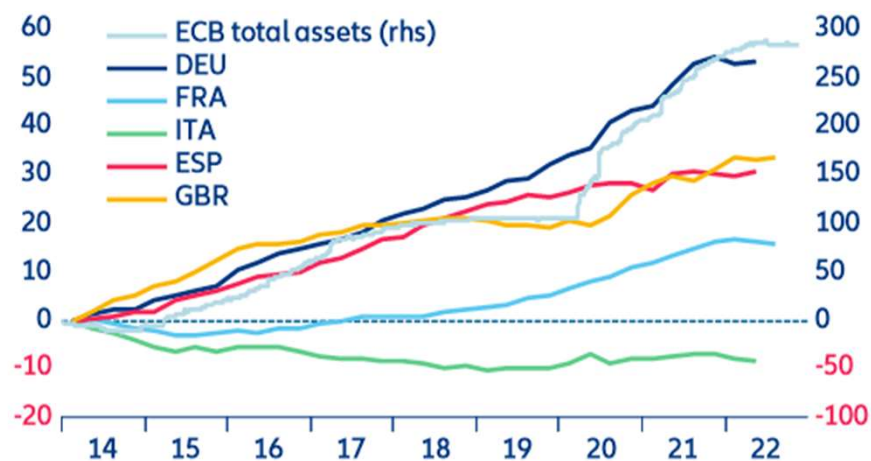
# Collapsing home affordability as home prices have become unsustainable

Ratio between Disposable Income and House Prices  
(rebased to end-2013)



Sources: Refinitiv, Allianz Research

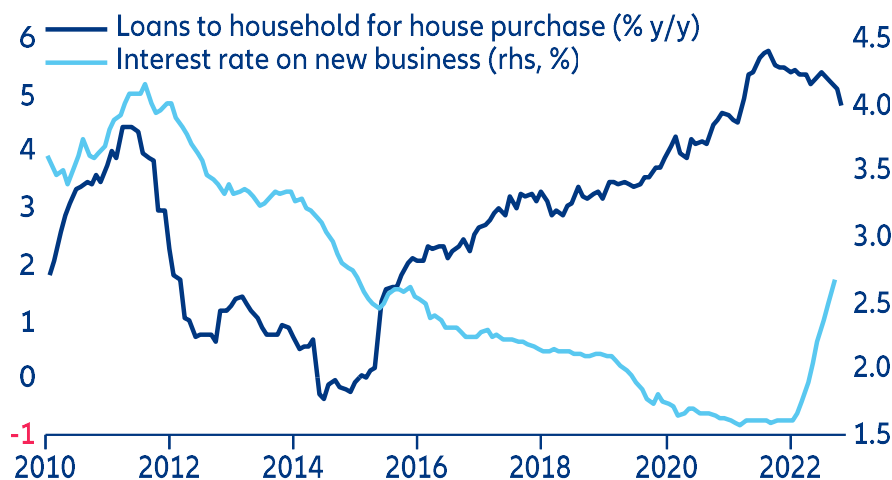
Change in Real House Prices (%) vs.  
ECB's Balance Sheet (rhs, %)  
(rebased to end-2013)



Sources: Refinitiv, Allianz Research

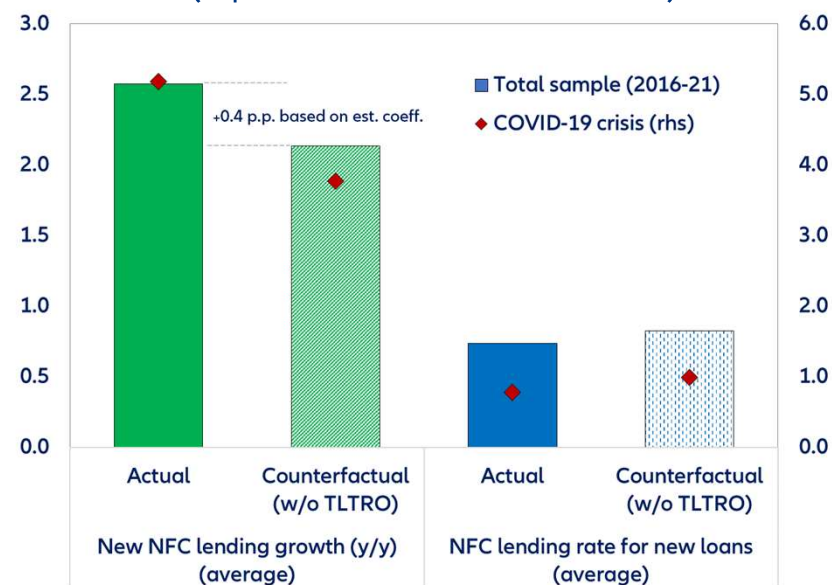
# Credit demand subsiding as energy prices & rates bite – green mortgage TLTRO ?

Eurozone: Mortgage Credit Growth and Loan Rates  
(2010-23)



Sources: Refinitiv, Allianz Research

Eurozone: Average Impact of TLTRO Take-Up on  
NFC Lending (2016-21)  
(dependent variables as first difference)



Sources: Refinitiv, Allianz Research



## REFERENCES

# Analysis is based on analytical work at Allianz Group and IMF ...



Allianz Research

## House of cards? Perspectives on European housing

Slowing growth, higher interest rates and energy inflation force hard policy choices impacting social cohesion and climate change mitigation

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### EXECUTIVE SUMMARY

- **Tightening financing conditions, slowing growth and soaring inflation are putting pressure on the European housing market.** Swiftly rising mortgage rates have dramatically reduced home affordability at a time when home prices have already reached unsustainable levels in many European countries. With higher energy prices and inflation further eroding disposable income, credit demand for home purchases is bound to subside over the next quarters.
- **Germany's housing market is most at risk among the major European economies.** Property prices increased by more than 50% in real terms since 2015 while home affordability has dropped by -30%. We project a price correction of -8% in real terms until end-2024, followed by around -5% in France and the UK. Price corrections in Spain and Italy, whose housing markets did not really take off after the 2000s' bubble burst, will be less severe at around -3%.
- **However, the slump in house prices will not materially mitigate the growing social challenge of rapidly declining home affordability, especially for the younger generation.** The massive expansion of money supply since the mid-2010s due to quantitative easing inflated prices of non-productive investment in areas that are highly collateralized, such as real estate. Thus, home affordability for younger generations and vulnerable households will become an increasingly pressing public policy issue.
- **At the same time, soaring energy prices, higher construction costs and rising interest rates could also challenge the European "renovation wave".** Unlike after the 2008 financial crisis, to address this, policy interventions need to be geared towards social and green aspects. We find that a combination of increasing the supply of housing and scaling up public support for vulnerable households could strengthen households' incentives to invest in energy-efficiency measures, advancing one of the key goals of the EU Green Deal.

[https://www.allianz.com/content/dam/onemarketing/azcom/Allianz\\_com/economic-research/publications/specials/en/2022/december/2022\\_12\\_01\\_European\\_Residential\\_Real\\_Estate2.pdf](https://www.allianz.com/content/dam/onemarketing/azcom/Allianz_com/economic-research/publications/specials/en/2022/december/2022_12_01_European_Residential_Real_Estate2.pdf)



INTERNATIONAL MONETARY FUND

European Department

## Sectoral Policies for Climate Change Mitigation in the EU

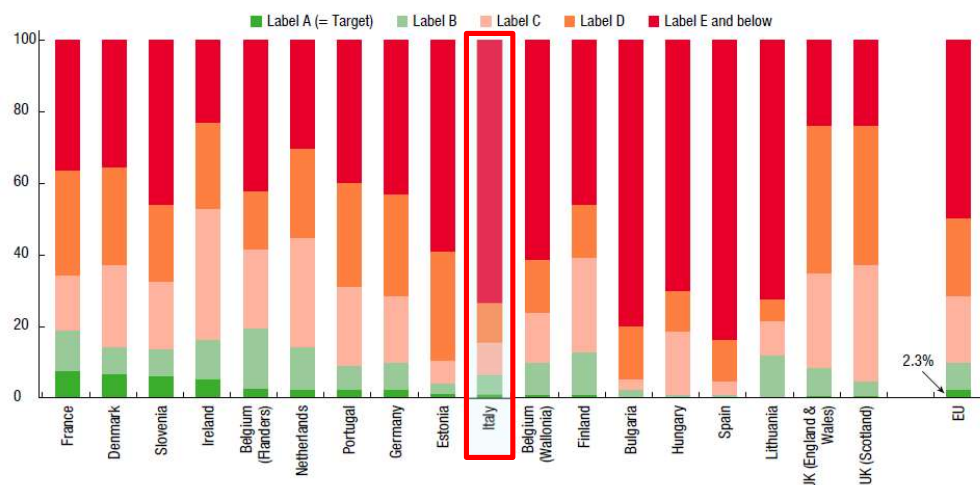
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No. 20/14

<https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2020/09/16/Sectoral-Policies-for-Climate-Change-Mitigation-in-the-EU-49640>

# Renovation/retrofitting for energy-efficiency as main abatement channel ...

Europe: Distribution of Building Stock  
(by EPC rating, percent of dwelling) 1/



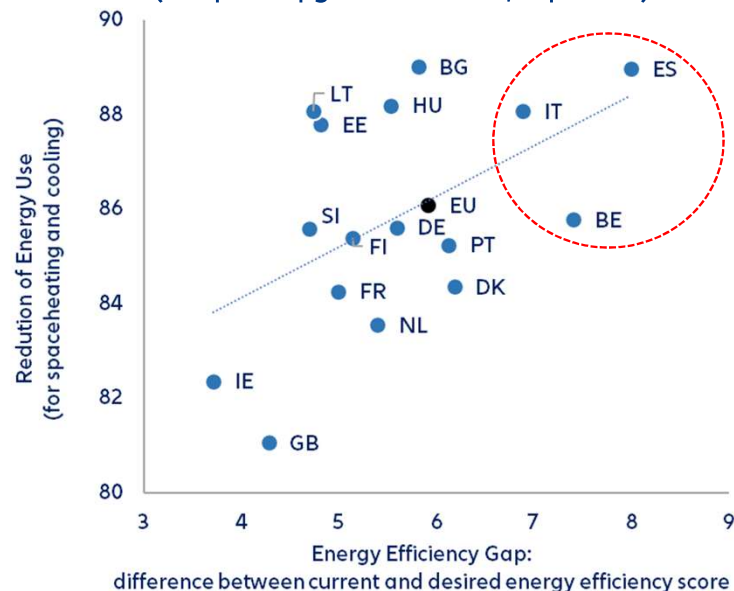
Sources: Building Performance Institute Europe; Central Statistics Office Ireland; European Environment Agency; Eurostat, *EU Building Stock Observatory*; and IMF staff calculations.

Note: EPC = Energy Performance Certificate.

<sup>1</sup>Countries with no central database (for example, Poland) or with limited information (Czech Republic, Romania, Slovak Republic) are not included.

Europe: Potential Reduction of Energy Use from  
Retrofitting

(complete upgrade to EPC=A, in percent)



# Greening housing requires both price- and non-price policies

**Market mechanisms** (“price-based”): intrinsic price premium and/or effective carbon-pricing (across sectors and cross-border)

- Efficient pricing of externalities (carbon tax) rewards long-term benefits from sustainability
- Enhanced disclosure and data availability on climate-related transition and physical risks

**Growth-friendly policy interventions** (“non-price levers”): market failure (uncertain outcome, ineffective signals (due to subsidies), timing), liquidity constraints or socially unattainable adjustment of relative prices

- Fiscal policies (e.g., transfers and grants, de-risking of private investment)
- Structural policies (e.g., land use, building codes, product standards, and regulations)
- Financial sector policies (e.g., prudential requirements)

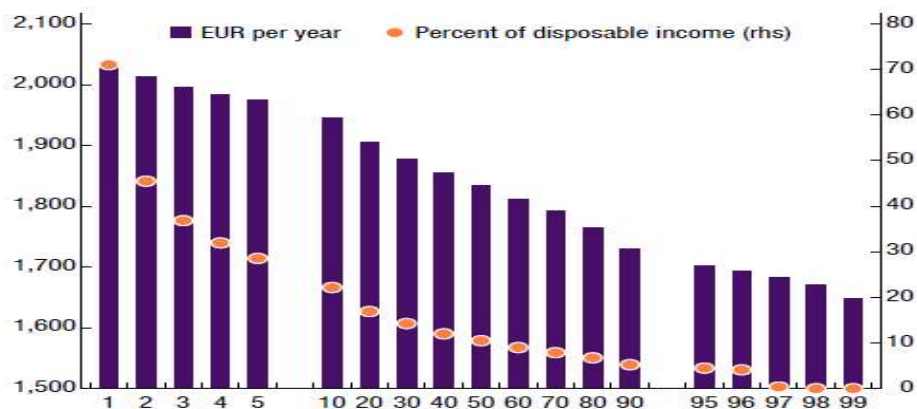
→ Focus on (mostly) private investment with focus on housing market

# Externalities & market failures **limit** investments ...

- **Liquidity constraints**
- Energy savings awareness/uncertainty
- Limited taxation of emissions
- **Owner/renter barrier (cost-benefit mismatch)**
- Implementation complexity

## Households' Energy Cost Savings from Retrofitting

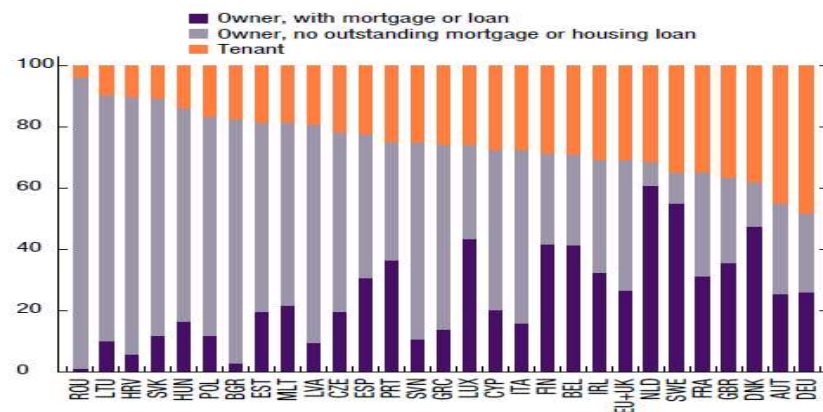
(Updated to EPC=A, per household income percentile, 2018) 1/



Sources: European Environment Agency; Eurostat; United Nations Framework Convention on Climate Change; and IMF staff calculations.  
Note: EPC = Energy Performance Certificate.

## Share of Owner-Occurred Housing

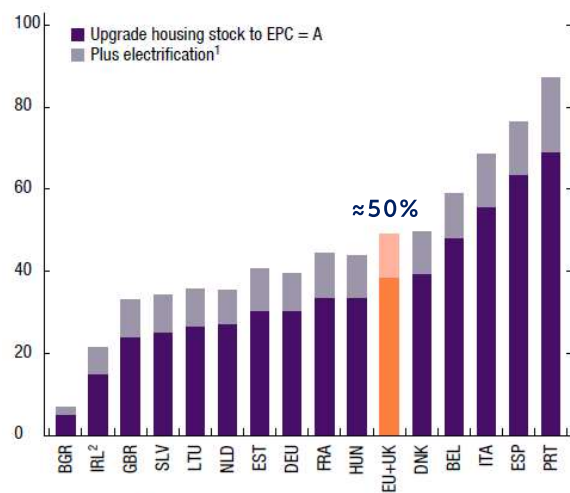
(Percent, 2018)





# Renovation/retrofitting costs are high but are “self-financing” ...

**Total Investment Needs for Renovation/Retrofitting**  
(Percent of GDP)



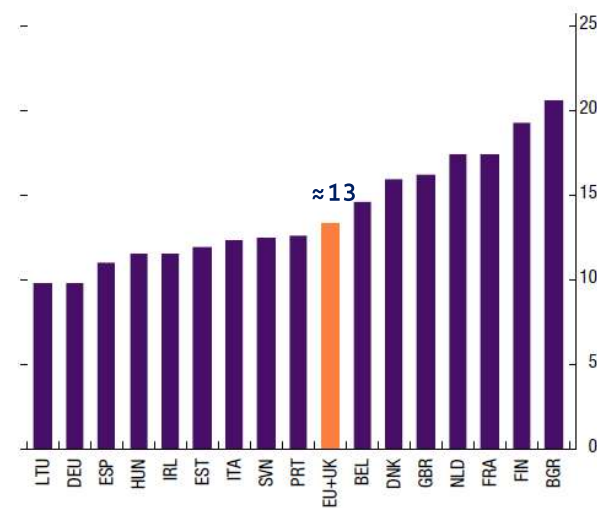
Sources: Central Statistics Office Ireland; European Environment Agency; Eurostat; and IMF staff calculations.

Note: Country list uses International Organization for Standardization (ISO) country codes. EPC - Energy Performance Certificate.

<sup>1</sup>Includes cost for electric heatpump only.

<sup>2</sup>Percent of GNI.

**Amortization Time of Investment in Renovation/Retrofitting**  
(Years)



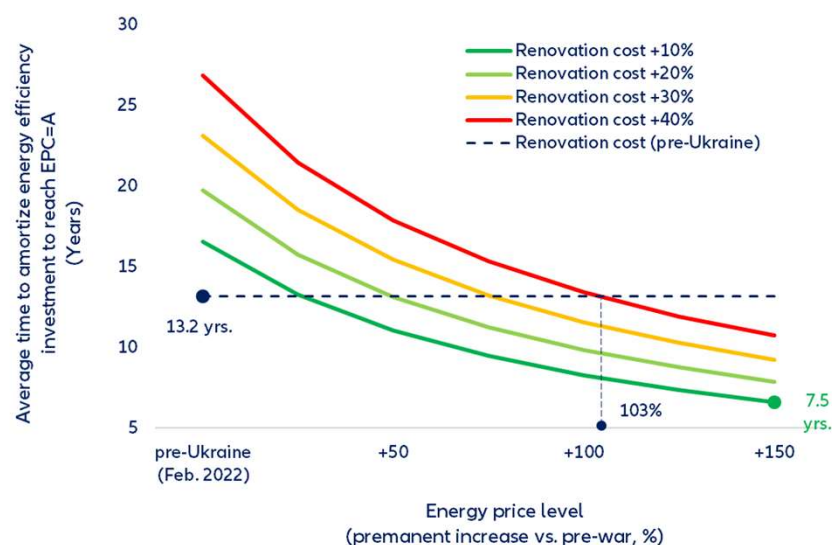
Sources: Building Performance Institute Europe; Central Statistics Office Ireland; European Environment Agency; Eurostat, *EU Building Stock Observatory*; and IMF staff calculations.

Note: Country list uses International Organization for Standardization (ISO) country codes. EPC = Energy Performance Certificate.

<sup>1</sup>Median income level for each country is assumed.

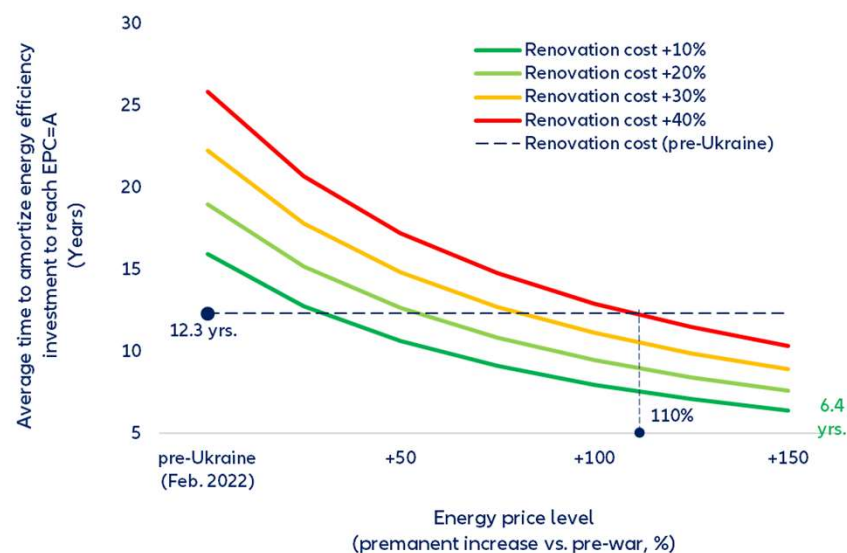
# Positive impact of energy prices, constr. costs & rates on “renovation wave”

EU: Amortization Time of Investment in Renovation/Retrofitting (Years)



Sources: Refinitiv, Allianz Research

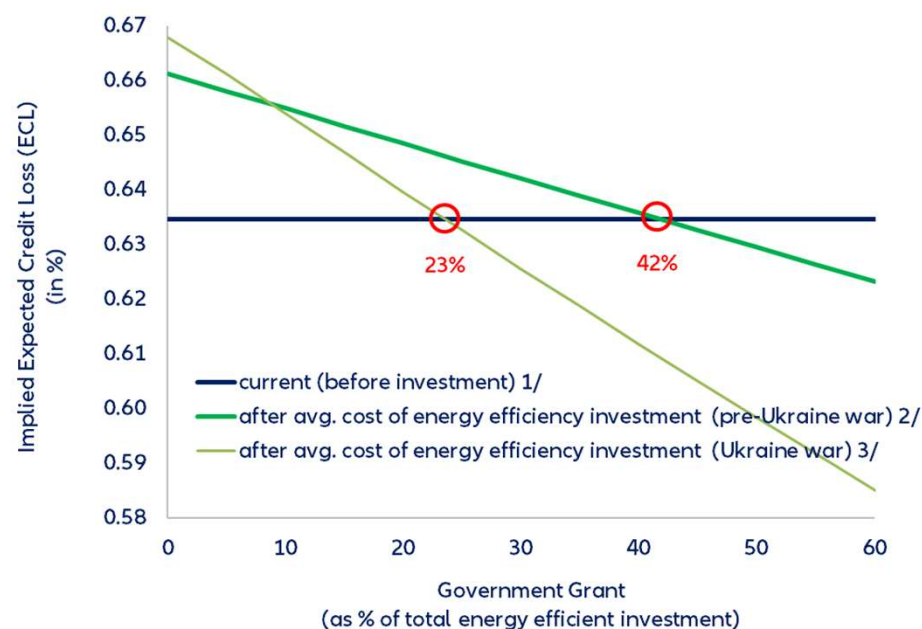
Italy: Amortization Time of Investment in Renovation/Retrofitting (Years)



Sources: Refinitiv, Allianz Research

# Effective demand support via grants

## Required Grant Element for Renovation/Retrofitting (EPC=A) without Increasing Default Risk (ECL) (renovation cost ↑10%, energy cost ↑100%)



Sources: Refinitiv, Allianz Research. Sources: Eurostat, IMF, Allianz Research. Note: 1/ for an average European household with annual gross income of EUR100k and a mortgage with LTV=80% and interest rate of 2% over 10 years for a property valued at EUR226k; 2/ Upfront investment cost of EUR25k generating energy savings of EUR2.5k per year; 3/ for an interest rate of 3% over 10 years for a property valued at EUR245k + upfront investment cost of EUR35k (assuming permanent 10% increase in renovation cost) generating energy savings of EUR3.6k per year.

## Pricing (carbon taxes)

- Higher coverage/price of emissions from *direct* energy use, incl. lower subsidies for domestic fuels

## Supply side (regulation)

- Binding targets for energy efficiency improvements
- Harmonize and regulate energy efficiency ratings
- Increase availability/commercial relevance of building efficiency information

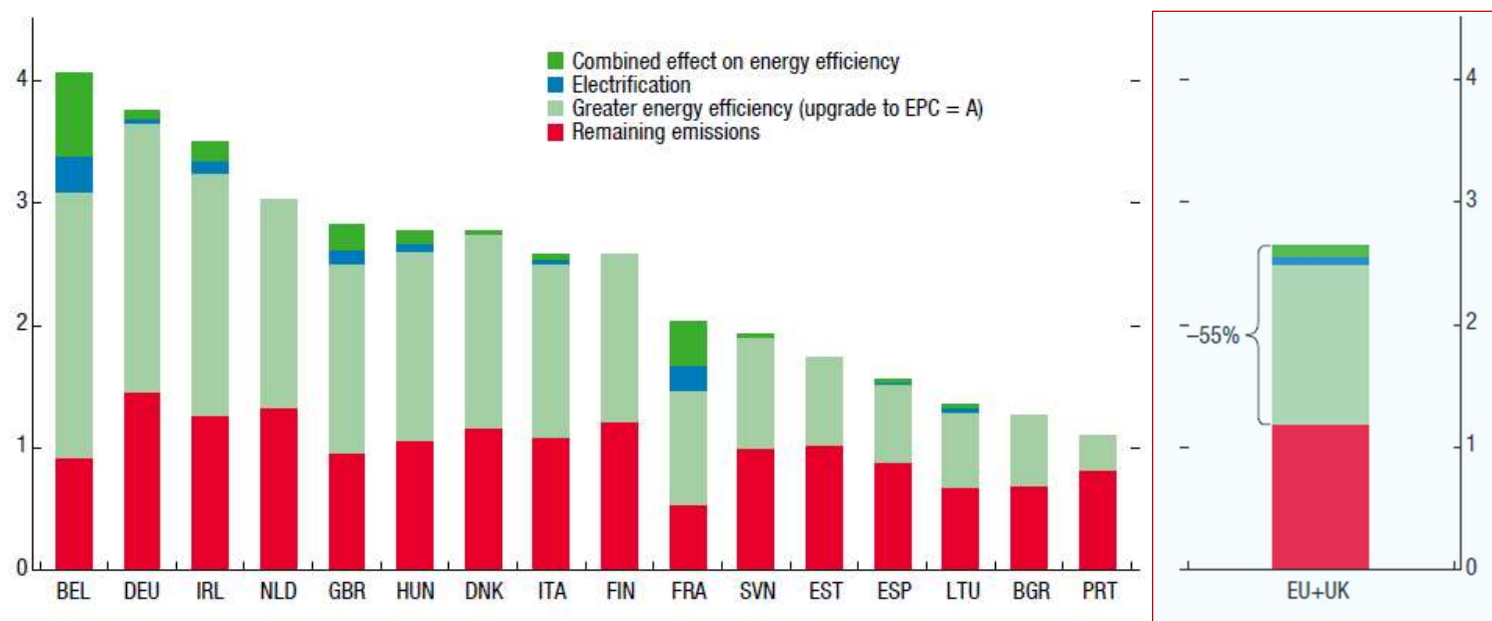
## Demand side (financing)



- "Green mortgages" and means-tested grants
- Energy-dependent property taxes (i.e., emission-differentiated)
- Options for "on-bill financing" of energy efficiency investment

# Positive impact of energy prices, constr. costs & rates on “renovation wave”

Potential Emission Reduction from Renovation/Retrofitting (EPC=A) and Electrification  
(tCO<sub>2</sub> per capita, UN mean lifecycle emission projection per GWh)



Sources: European Environment Agency; Eurostat; United Nations Framework Convention on Climate Change; and IMF staff calculations.  
Note: Country list uses International Organization for Standardization (ISO) country codes. EPC - Energy Performance Certificate.

Thank you!

