

# COVID-19 and the Mortgage Market in Luxembourg

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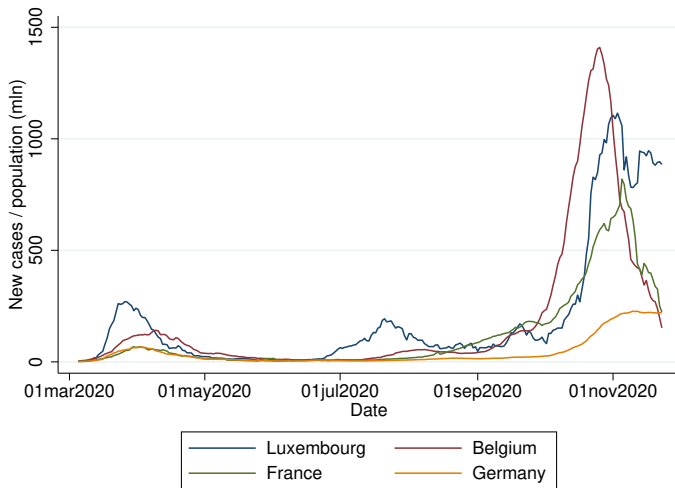
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With the assistance of Elena Cunetchi and Georges El Hajal

Disclaimer: The views expressed are not necessarily those of STATEC

# COVID-19 cases

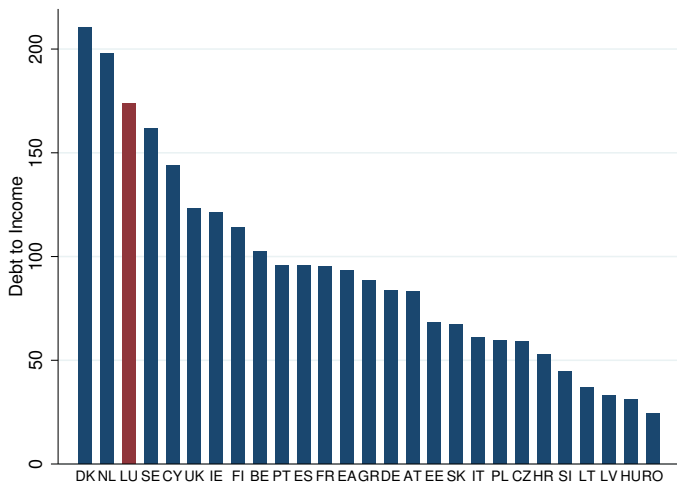


Source: ECDC, updated 26 Nov. 2020

## Lockdown and easing

- 16 March: Closure of schools, restaurants and bars, non-essential retail trade and personal services
- 23 March: Closure of construction sites and of passenger traffic at Findel
- 20 April: Restarting of construction sites, DIY shops
- 4 May: partial school reopening
- 11 May: reopening of shops
- 25-29 May: further reopening of schools, restaurants, passenger flights
- 30 October, 23 November: Curfew, new sanitary restrictions

# Household debt to disposable income in the EU



Source: Eurostat, 2018

# Research question and methodology

- What is the impact of the COVID-19 shock on the mortgage market in Luxembourg?
- High household leverage can increase procyclicality (Mian and Sufi 2009)
- Stylized facts
  - Household financial health
  - Labour market structure and implications for mortgages
  - Financial sector
- Stress Test
  - Micro-data on household income statements and balance sheets
  - Back of the envelope on sector-specific income shock

## Preliminary results

- On aggregate, features of the Luxembourg mortgage market may attenuate the COVID shock:
  - High holdings of liquid assets by households
  - Labour market structure
  - Banks have high equity levels
- At the micro-level, some households may be more vulnerable
  - Large differences in strength of household balance sheets across sectors and income groups
  - Back of the envelope suggests that COVID shock could increase household distress

# Outline

## 1 Stylized facts

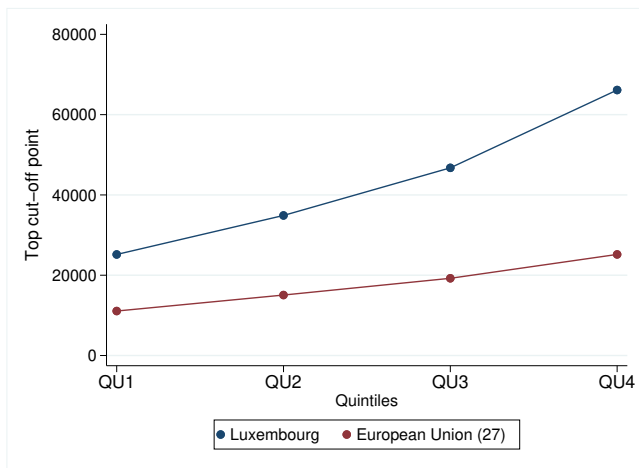
- Households
- Labour Market
- Financial Sector

## 2 Stress Test

- Household Expenditure and Balance Sheet Structure
- Simple Stress Test Assumption
- Results

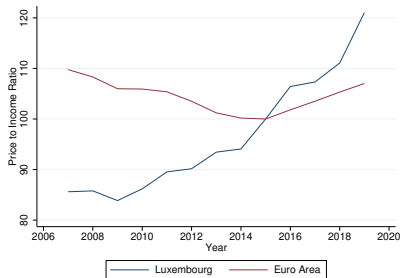
## 3 Conclusion

## National equivalised income across quintiles for Luxembourg and European Union (27)

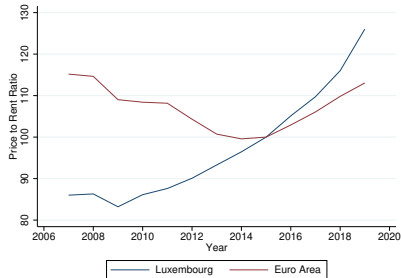


Source: Eurostat Survey on Income and Living Conditions, 2019.

# House prices and disposable income



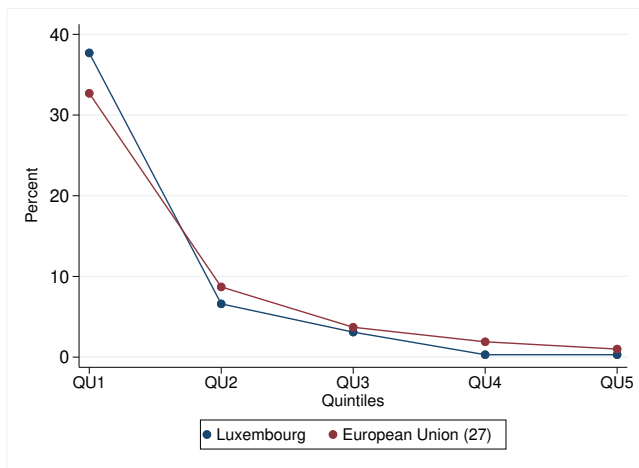
Price to income



Price to rent

Source: OECD, 2019q3.

## Housing cost overburden rate by income quintile for Luxembourg and European Union (27)



Source: Eurostat Survey on Income and Living Conditions, 2019.

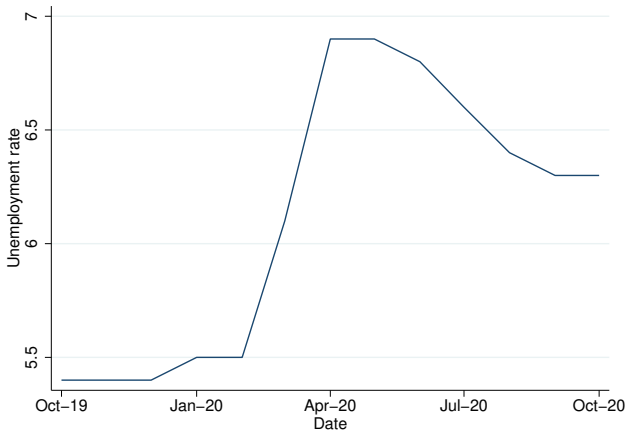
## Household financial indicators by income groups

Sample: Homeowners with mortgage outstanding

Income Group	Pop. share (%)	DSTI Mortgage	LTI	Gross income
Quintile 1	2.0	0.79	14.18	25,301
Quintile 2	3.4	0.24	3.64	48,305
Quintile 3	5.8	0.24	3.14	72,067
Quintile 4	7.7	0.19	2.76	108,514
Quintile 5	8.0	0.15	1.73	210,132

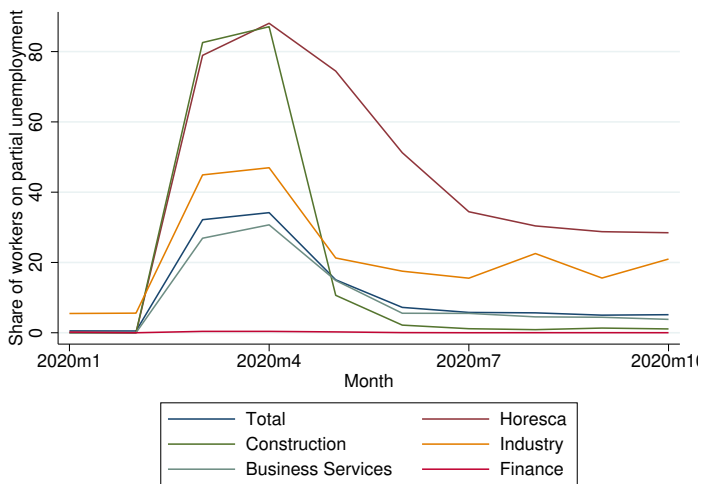
Source: ECB, Household Finance and Consumption Survey, 2019.

# Economic impact



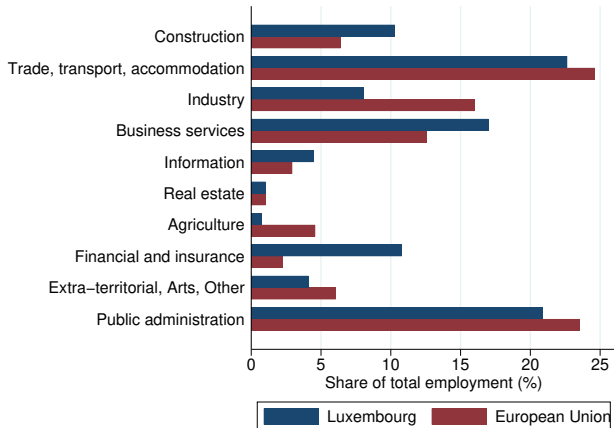
Source: STATEC, October 2020.

# Partial unemployment requests across sectors



Source: STATEC and ADEM, October 2020.

# Domestic employment by sector, EU and Luxembourg



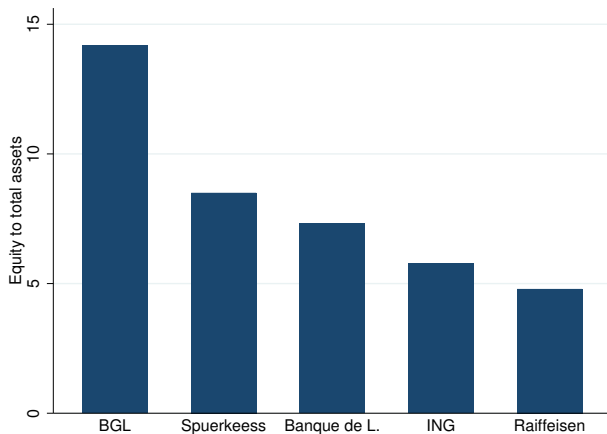
Source: Eurostat, Labour Force Survey, 2019.

# Employment in Luxembourg: National versus Domestic

Sector	Domestic	Share	National	Share	Share of non-residents
Construction	48	10%	14	5%	71%
Industry (except construction)	38	8%	11	4%	71%
Wholesale and retail trade, transport, accommodation	107	23%	44	16%	59%
Technical activities; administrative and support	80	17%	37	14%	54%
Agriculture, forestry and fishing	4	1%	2	1%	45%
Information and communication	21	5%	12	5%	43%
Financial and insurance activities	51	11%	31	12%	39%
Real estate activities	5	1%	3	1%	38%
Public administration, defence, education, human health	98	21%	84	31%	15%
Extra-territorial, Arts, Other service	19	4%	30	11%	-56%
Total	471	100%	268	100%	43%

Source: STATEC, 2019.

# Banks



Source: Bankfocus, 2019.

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## Average household expenditure structure

	Full Sample	Home-owners (w. mortgages)
Number of Households	226,279	60,487
Population Share	100%	27%
Avg. HH size	2.40	3.06
OECD Equiv. Gross Income	58,377	65,544
<b>Gross Income</b>	<b>92,988</b>	<b>116,366</b>
Expenses	51,278	52,613
EBIT (Income - Expenses)	41,710	63,753
Taxes & Social Contribution	24,766	33,416
Debt Service		
– mortgage	6,558	20,677
– non-mortgage	1,775	2,111
<b>Free Cash Flow</b>	<b>8,610</b>	<b>7,548</b>
<b>Free Saving Rate</b>	<b>12.6%</b>	<b>9.1%</b>

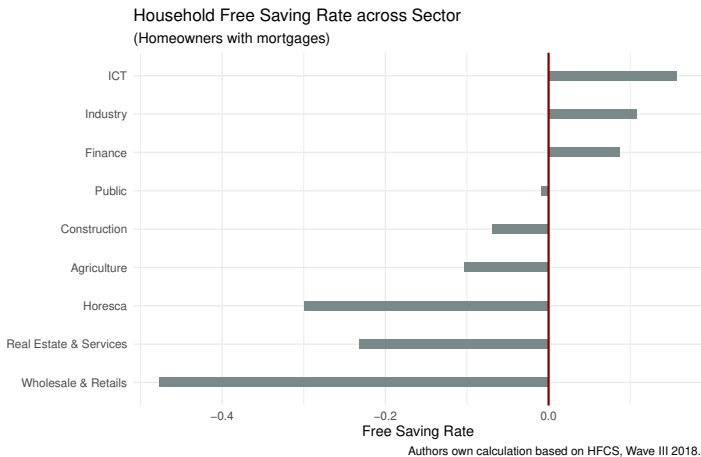
*Note:* Author own calculation from HFCS survey, Wave III (2018). Free Saving Rate is computed as percentage of gross disposable income. Housing tenure status is based on the current status of household's home main residence.

## Average household balance sheets

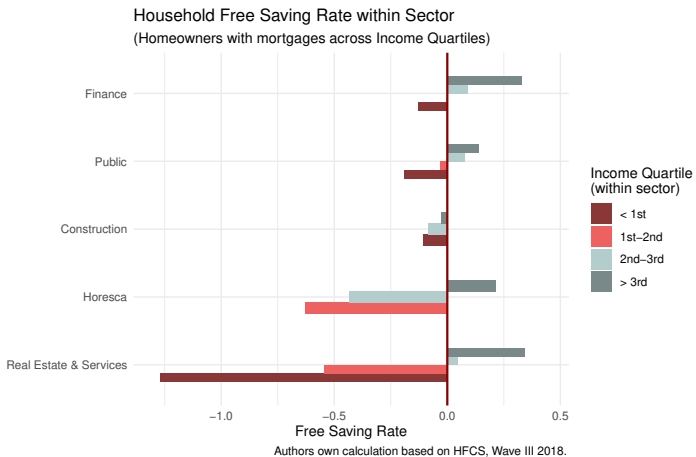
	Full Sample	Home-owners (w. mortgages)
<b>Assets</b>	<b>995,658</b>	<b>1,114,169</b>
<i>of which</i>		
Cash	59,207	54,349
Fin. Assets	59,865	62,740
Real Estate	713,588	860,313
<b>Liability</b>	<b>104,188</b>	<b>302,581</b>
<i>of which</i>		
Mortgage	95,127	294,320
<b>Net Worth</b>	<b>891,470</b>	<b>811,587</b>

*Note:* Author own calculation from HFCS survey, Wave III (2018). Housing tenure status is based on the current status of household's home main residence.

# Household saving rates across sectors



# Variation within sectors

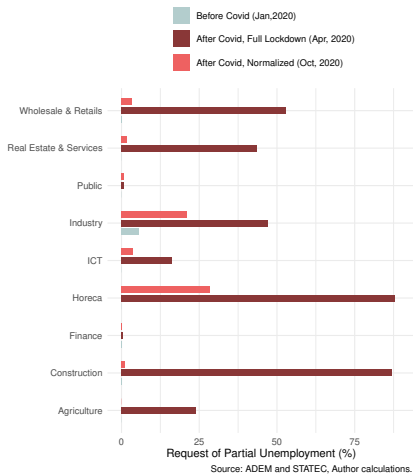


## A simple stress test

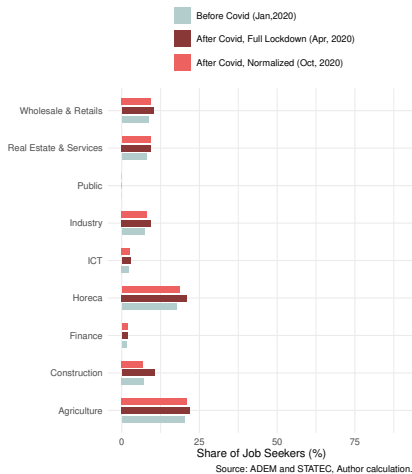
- Each household has a **sector-specific** probability of receiving an income shock
  - based on partial and full unemployment rate before and after Covid-19 Shock
  - matched under full lock-down and no lock-down periods
- If shocked,
  - assume 60% and 80% income replacement rate
  - recompute taxes
  - assume expenses are unchanged (i.e. food, utilities)
- Outcome variables:
  - vulnerable households: having negative cash reserves in less than 3 months
  - shares of vulnerable households across sectors

# Unemployment level by Occupation (ADEM)

### Request of Partial Unemployment across Sectors



### Full Unemployment across Sectors



## Example of the income shock

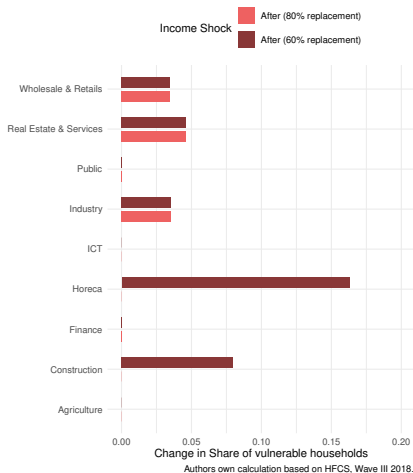
### Sector BCDE: Industry, 1st Income Quartile

	Before	After	
		80% rate	60% rate
Number of households	738	738	738
Household size	2.45	2.45	2.45
Gross Income	40,882	32,706	24,529
Expenses	23,083	23,083	23,083
EBIT (Income - Expense)	17,799	9,623	1,447
Debt Service			
– mortgage	9,961	9,961	9,961
– non-mortgage	1,866	1,866	1,866
Taxes & Social Contributions	5,035	3,235	1,851
<b>Free Cash Flow</b>	<b>937</b>	<b>-5,439</b>	<b>-12,231</b>
Liquidity Assets			
– cash	10,942	10,942	10,942
– fin. assets	2,181	2,181	2,181
<b>Years of Survival</b>	<b>Safe</b>	<b>2.41</b>	<b>1.07</b>

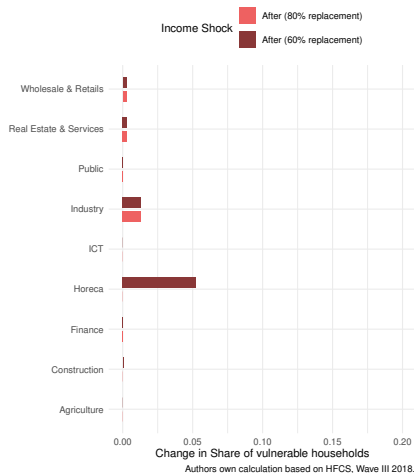
# Results

## Change in Share of vulnerable households due to Covid-19

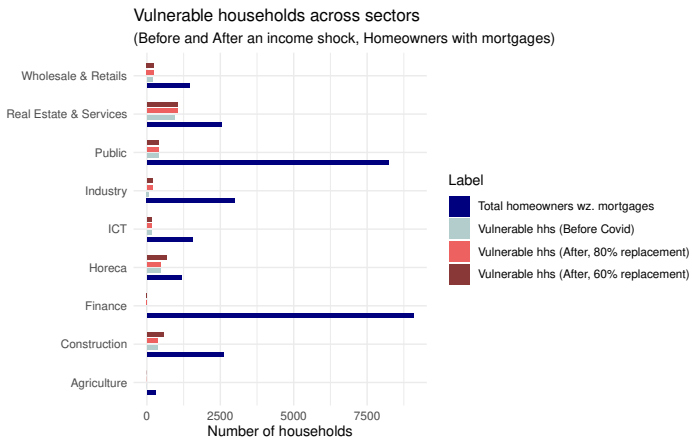
Full Lock-down



No Lock-down



# Number of vulnerable households



Authors own calculation based on HFCS, Wave III 2018.

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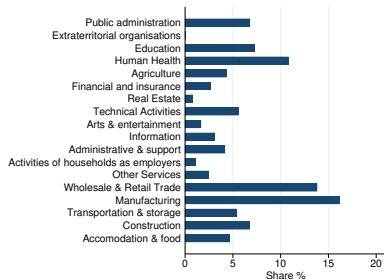
# Conclusion

- On aggregate, features of the Luxembourg mortgage market may attenuate the COVID shock:
  - High holdings of liquid assets by households
  - Labour market structure for residents (borrowers) and non-residents (non-local borrowers)
  - Banks have high equity levels
- At the micro-level, some households may be more vulnerable
  - Large differences in income and strength of HH balance sheets across sectors and income groups
  - Back of the envelope suggests that COVID shock could increase household distress

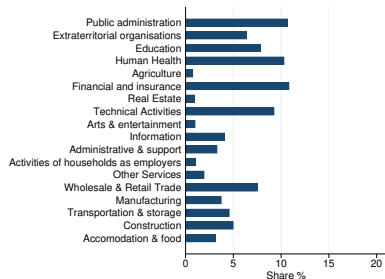
# Outline

## 4 Appendix

# Domestic employment by sector, EU and Luxembourg



European Union (27)



Luxembourg

Source: Eurostat, Labour Force Survey.