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**Working Paper**

## Pockets of risk in the Belgian mortgage market: Evidence from the Household Finance and Consumption Survey (HFCS)

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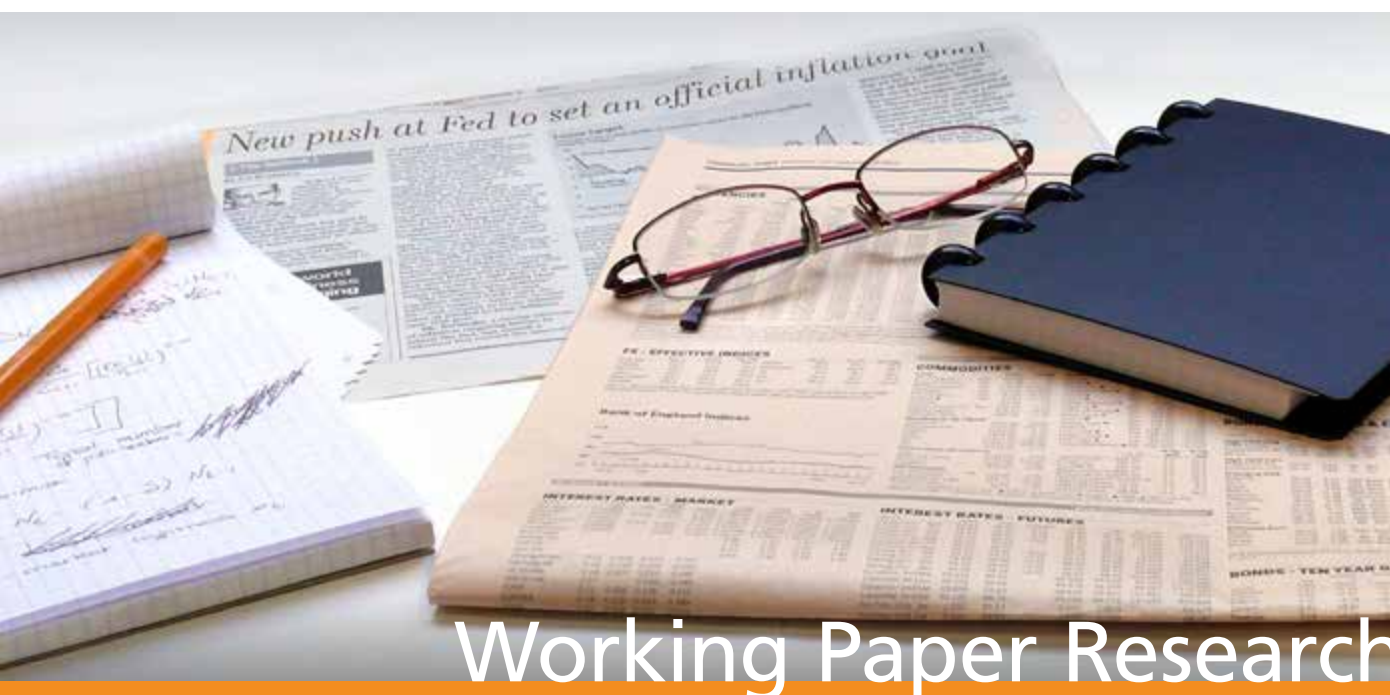
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# Pockets of risk in the Belgian mortgage market: Evidence from the Household Finance and Consumption Survey (HFCS)



## Working Paper Research

by Philip Du Caju

December 2017 No 332

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## **Abstract**

This paper complements macroeconomic indicators for macroprudential policy with information from microeconomic survey data from the Household Finance and Consumption Survey (HFCS), to identify pockets of risk in the Belgian mortgage market. It takes into account distributional aspects of debt and assets, with a special focus on the coverage of households' mortgage debt by (liquid) financial assets. It identifies the share of outstanding mortgage debt that is possibly at risk, and the parts of the population most affected, on the basis of income and assets-related debt indicators. The first finding is that some groups of households have problems servicing their debt out of their income and some lack the financial resources to cope with income loss. The second finding is that Belgian households' considerable financial wealth is (very) unequally distributed, and that therefore this wealth covers their outstanding mortgage debt only to a limited extent. As a consequence, a severe unemployment shock could hurt many mortgage-indebted households, involving a significant part of total outstanding mortgage debt in Belgium. All in all, this paper shows that survey data can complement macro data for macroprudential policy purposes.

JEL classification: D14, D91, G21, G28, K35.

Keywords: Household finance, Financial Fragility, Mortgage markets, Survey, HFCS.

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The views expressed in this paper are those of the author and do not necessarily reflect the views of the National Bank of Belgium or any other institution to which the author is affiliated.



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## 1. INTRODUCTION

Risks in the mortgage market are related to households' capacity to pay back mortgage loans. Households can default on their mortgage loan if their flow of income is not sufficient to pay the (monthly) debt-service payments and if their (liquid) financial assets are not sufficient to finance the service payments or to pay back (part of) the outstanding debt. If, on top of that, the asset that covers the mortgage loan is not worth considerably more than the outstanding debt, the lender faces a risk of loss. In this respect, micro data can shed a light on these risks in a way that is not possible with macro data alone, if debt and assets are unequally distributed between households.

To capture the different aspects of mortgage-debt burden for households, we look at ratios relating mortgage debt (service) to income, liquid financial assets and real-estate value. We define a mortgage-debt-to-income ratio MDtI, a mortgage-debt-service-to-income ratio MDStI, a liquid-assets-to-mortgage-debt-service ratio LAtMDS, a liquid-assets-to-mortgage-debt ratio LAtMD and a mortgage-loan-to-value ratio MLtV.

High financial wealth, as registered by macroeconomic financial accounts, is generally seen as contributing to the sustainability of the mortgage indebtedness of Belgian households. However, our analysis of survey data shows that mortgage-indebted households in Belgium on average hold less (liquid) financial assets than households without mortgage debt. One of the findings of this analysis is that, of the total amount of outstanding mortgage debt of Belgian households, almost a third is held by households that could service their mortgage debt out of liquid financial assets for less than six months. Almost half is held by households owning liquid financial assets that are worth less than 10 % of their outstanding mortgage debt. Therefore, for a significant part of the population, the high stock of financial wealth in Belgium does not enhance the sustainability of mortgage debt.

The share of outstanding mortgage debt in Belgium that is at risk because of high debt ratios is broadly comparable to that share in the euro area. This result confirms the vulnerability of Belgian households to income loss. It implies that a severe unemployment shock with income loss could hurt many mortgage-indebted households involving a significant part of total outstanding mortgage debt in Belgium.

The analyses in this article are based on the data from the Household Finance and Consumption Survey (HFCS). In 2008, the Governing Council of the European Central Bank (ECB) decided to conduct a survey on the financial behaviour of households in the euro area. A specific research network, called the Household Finance and Consumption Network (HFCN), was set up for this purpose, comprising researchers, statisticians and survey specialists from the ECB,



national central banks, some national statistical institutes and external consultants. The National Bank of Belgium is responsible for Belgium's HFCS.

The network aims to supplement existing macroeconomic financial accounts data with microeconomic information at individual household level, to conduct specific scientific research and policy-relevant analyses, and to learn about aspects related to the distribution of assets and liabilities. The HFCS was designed to support the Bank's and the Eurosystem's analyses of monetary and macroprudential policies. Data which reflect the heterogeneity of the household sector, such as those collected by the HFCS, can usefully supplement macroeconomic and financial statistics by adding information on distribution (notably on the asymmetric distribution of wealth). HFCS data permit analysis of specific groups of households key to policymaking, e.g. the lowest and highest income and wealth deciles, excessively indebted households and households facing credit constraints. In Belgium, the survey is conducted by the Bank. The fieldwork, i.e. the actual collection of information through face-to-face-interviews of households, is outsourced to an external agency by public tender and then followed up by the Bank.

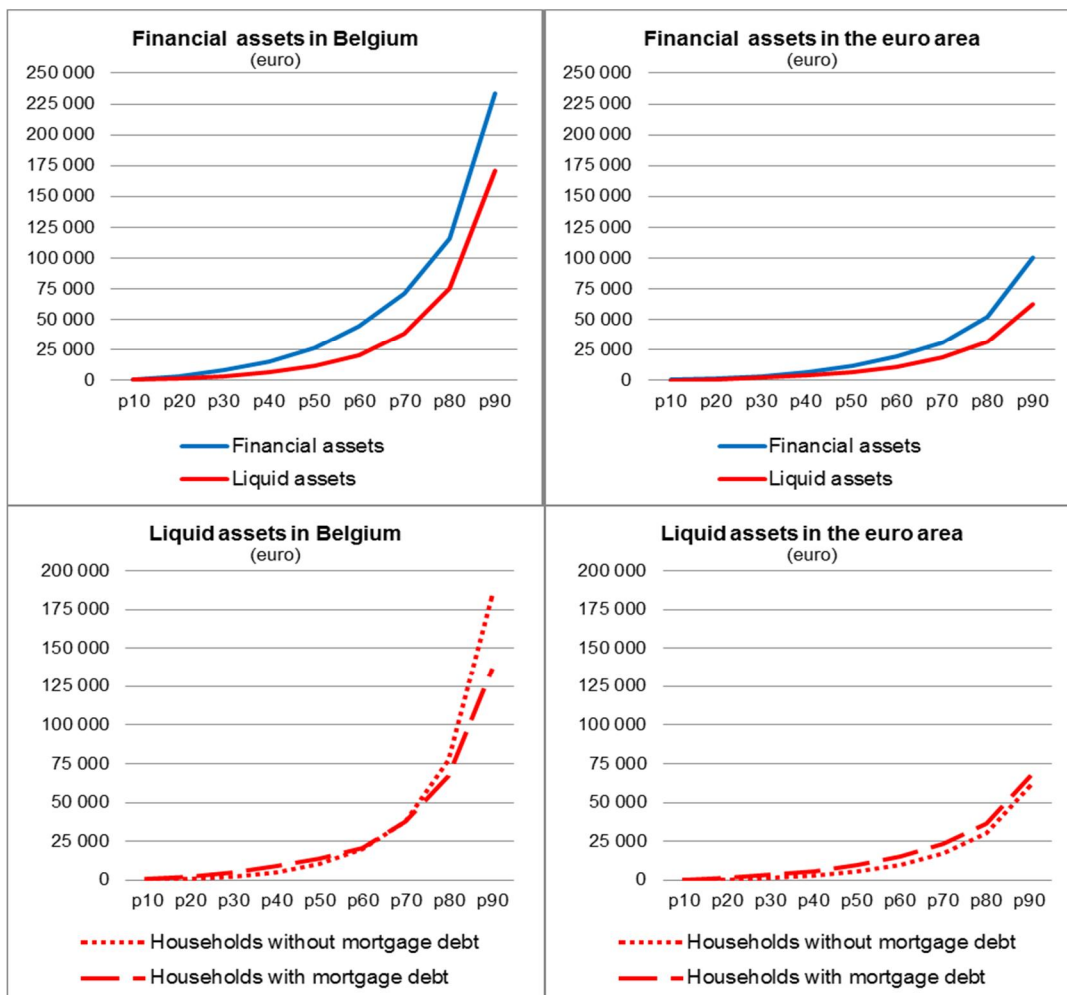
The HFCS provides detailed data at household level about a range of aspects, covering households' wealth (real and financial assets and liabilities) as well as related variables, including their income and demographic characteristics. The actual HFCS questionnaire is fairly comprehensive and the questions are answered by the person best informed about the household's financial situation. It should be noted that the HFCS records the value of the assets and liabilities as estimated by the households themselves. Where useful and possible, the interviewers encourage respondents to consult relevant documents such as bank statements, tax returns etc. This is not possible for all types of assets, of course, residential property being a case in point, and estimated values will not necessarily always match real market values.

HFCS data for two waves (2010 and 2014) are now available. Next waves of the survey are ongoing or planned (2017, 2020, ...). From the second wave, the survey covers all euro area (and some other) countries, sampling more than 80 000 households, of which around 2 300 in Belgium). The data collection fieldwork and post-fieldwork statistical processing are time consuming. Therefore, these survey data are published with a considerable time lag. More information on the survey can be found in HFCN (2013a, 2013b; 2016a, 2016b).

## 2. HOUSEHOLDS' FINANCIAL AND LIQUID ASSETS

Data from the Household Finance and Consumption Survey (HFCS) show that the high financial wealth of Belgian households is unequally distributed (Du Caju, 2013 and 2016). The median household in the middle of the distribution holds financial assets worth 26 000 euro, which is at least 36 times more than a household in the lowest decile and at least 9 times less than a household in the highest decile (see the top left panel of Graph 1). Together, Belgian households have much more financial wealth than euro area households. The median household in the euro area owns 11 000 euro in financial assets, which is at least 28 times more than a household in the lowest decile and at least 9 times less than a household in the highest decile (see the top right panel of Graph 1).

**Graph 1 - The distribution of households' financial and liquid assets<sup>1</sup>**



Source: HFCS.

<sup>1</sup> A household's liquid assets are composed of its money holdings in deposits, mutual funds, bonds and listed shares.

To investigate the extent to which household debt is covered by financial assets, we can limit the scope to liquid financial assets. Liquid assets allow a household to immediately pay back debt if income falls. Liquid assets are defined as the sum of money holdings in deposits, mutual funds, bonds and listed shares, thus excluding not-quoted private business wealth, pension wealth and other financial wealth. As such, the median household in Belgium owns 12 000 euro of liquid assets, at least 47 times more than a lowest-decile household and at least 15 times less than a highest-decile household (see the top left panel of Graph 1). In the euro area as a whole, the median household has 7 000 euro in liquid assets, at least 79 times more than a lowest-decile household and at least 9 times less than a top-decile household (see the bottom left panel of Graph 1).

Liquid financial assets are not equally distributed between mortgage-indebted households and households without mortgage debt. Moreover, liquid assets are distributed more equally among mortgage-indebted households than among the other households in Belgium (see the bottom left panel of Graph 1). This reflects the high values of not-quoted private business wealth that some wealthy households hold. In the euro area, mortgage-indebted households hold more liquid financial assets throughout the whole distribution (see the bottom right panel of Graph 1).

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**Table 1 - Distribution of financial assets between mortgaged-indebted and other households**

	Share in the population (%)	Share in financial assets (%)	Share in liquid assets (%)	Median financial assets (euro)	Median liquid assets (euro)
<b>Belgium (69.7% homeowners)</b>					
Households with mortgage debt	30,5%	25,5%	21,9%	36 000	14 000
Households without mortgage debt	69,5%	74,7%	78,3%	22 000	11 000
<b>Euro area (60.1% homeowners)</b>					
Households with mortgage debt	23,1%	31,7%	27,5%	18 000	10 000
Households without mortgage debt	76,9%	69,2%	72,6%	10 000	6 000

Source: HFCS.

<sup>1</sup> A household's liquid assets are composed of its money holdings in deposits, mutual funds, bonds and listed shares.

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Three out of ten Belgian households have mortgage debt, four out of ten households are outright homeowners without mortgage debt and another three out of ten households do not own any real estate. While the group of mortgage-indebted households represent 30.5 % of the population, they only hold 25.5 % of all the households' financial assets in Belgium and 21.9 % of all the liquid financial assets. The median mortgage-indebted household owns (14 000 euro) 36 000 euro of (liquid) financial assets, whereas the median household without mortgage debt owns (11 000 euro) 22 000 euro (see Table 1). In comparison, in the euro area as a whole, relatively fewer households (60.1 % of all households compared to 69.7 % in Belgium) are homeowners. In relation to this, fewer euro area households carry mortgage debt: 23.1 % (or 38.5 % of all homeowners) compared to 30.5 % (or 43.8 % of all homeowners) in Belgium. Belgian households possess more financial wealth than their euro area counterparts. This holds for liquid

as well as for total financial assets and for mortgage-indebted households as well as for households without mortgage debt. However, in the euro area these (liquid) financial assets are relatively more concentrated with mortgage-indebted households: their share in total financial assets (31.7 %) and in total liquid assets (27.5 %) is greater than their share in the population (23.1 %). This is the opposite in Belgium, where mortgage-indebted households hold a smaller share of (liquid) financial assets compared to their share in the population (see Table 1).

Summing up: although in Belgium they own less financial assets on average, a typical (median) mortgage-indebted household owns more than a typical (median) household without mortgage debt. This is because financial assets are more equally distributed within the group of mortgage-indebted households than within the other group<sup>1</sup>. However, that does not imply that all mortgage-indebted Belgian households have sufficient financial assets to cover their debt. Compared to the euro area, they hold a smaller share of total financial wealth in the economy. The next section digs deeper into the distribution of debt and financial assets between mortgage-indebted households.

### **3. MORTGAGE DEBT AND LIQUID FINANCIAL ASSETS**

Households can default on their mortgage loan if their flow of income is not sufficient to pay the (monthly) debt-service payments and if their (liquid) financial assets are not sufficient to finance the service payments or to pay back (part of) the outstanding debt, in case income sources would suddenly run dry. If, in case of default, the asset that covers the mortgage loan is not worth significantly more than the outstanding debt, the lending bank faces a risk of loss. We therefore look at debt ratios that relate mortgage debt (payments) to income, liquid financial assets and real-estate value:

- The mortgage-debt-to-income ratio (MDtI) divides the outstanding amount of a household's mortgage debt by the flow of its yearly gross income. This ratio indicates the number of years of total income a household would need to repay its outstanding mortgage debt.
- The mortgage-debt-service-to-income ratio (MDStI) divides the flow of monthly mortgage-debt service payments by the flow of monthly gross household income. This ratio indicates which part of its income a household needs to periodically service its mortgage debt.
- The liquid-assets-to-mortgage-debt-service ratio (LAtMDS) divides the stock of a household's liquid assets by the flow of monthly mortgage-debt service payments. This

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<sup>1</sup> The other group contains (relatively more wealthy) outright homeowners as well as (relatively less wealthy) households that do not own any real estate.

ratio indicates how many months a household could service its mortgage debt out of liquid assets, e.g. when income suddenly falls away.

- The liquid-assets-to-mortgage-debt ratio (LAtMD) divides the stock of a household's liquid assets by the outstanding amount of mortgage debt. This ratio indicates the part (percentage) of a household's outstanding mortgage debt that could immediately be repaid with liquid assets.
- The mortgage-loan-to-value ratio (MLtV) divides a household's outstanding mortgage debt by the (self-assessed) value of its real estate.

If debt ratios related to income or to liquid financial assets exceed critical values, households could run a greater risk to default on their mortgage debt (see also Du Caju et al., 2016 and De Backer et al., 2015). We look at the share of mortgage-indebted households that face mortgage-debt ratios exceeding certain values, at the share of total outstanding mortgage debt in Belgium that these households represent and the part of that share that is high compared to the value of the underlying real estate covering the debt (see Table 2). In general, 20.2 % of Belgian households' outstanding mortgage debt consists of loans with a mortgage-loan-to-value ratio above 80 %. By not only looking at the number of households at risk but also at the amount of outstanding debt they represent, we get a clearer picture of the risks for the financial sector.

Looking at the capacity to repay mortgage debt out of current income, according to the data of the 2010 wave of the HFCS, 30.5 % of Belgian households have a mortgage debt. In the group of mortgage-indebted households, 12.8% spend more than 30 % of their income to pay their periodical debt service. Together they hold 24.9 % of all outstanding household mortgage debt in Belgium, of which 6.7 ppt is debt with an MLtV ratio above 80 %. Moreover, 6.3 % of mortgage-indebted households pay more than 50 % of their income for debt service. They represent 12.7 % of total outstanding mortgage debt, of which 3.0 ppt with an MLtV ratio above 80 %. Similar pictures can be made looking at other threshold values of the MDStI ratio or alternatively looking at different values of the mortgage-debt-to-income ratio MDtI.

With respect to the coverage of mortgage debt by liquid financial assets, it appears that 26.3 % of mortgage-indebted households do not own enough liquid assets to pay more than six months debt service on their mortgage. This group of households together holds 30.8 % of total outstanding household mortgage debt in Belgium, of which 7.7 ppt with an MLtV ratio above 80 %. A 54.2 % of this total debt is held by households that could pay less than two years of mortgage-debt service out of their liquid financial assets. Looked at differently, 35.4 % of mortgage-indebted households could repay less than 10 % of their mortgage debt out of liquid financial assets. Together they hold 46.0 % of the total amount of outstanding mortgage debt.

**Table 2 - Households' mortgage debt at risk in Belgium**

	Share in the population of mortgage-indebted households (%)	Share in total outstanding mortgage debt (%)	of which is mortgage debt with MLtV>80% (ppt)	Cumulative share in the population of mortgage-indebted households (%)	Cumulative share in total outstanding mortgage debt (%)	of which is mortgage debt with MLtV>80% (ppt)
<b>Mortgage-debt-to-income ratio (MDtI)<sup>1</sup>:</b>						
more than 5 years	5,9%	18,3%	6,8%	5,9%	18,3%	6,8%
between 4 and 5 years	5,7%	8,8%	4,5%	11,7%	27,2%	11,3%
between 3 and 4 years	7,3%	8,9%	3,4%	18,9%	36,1%	14,7%
between 2 and 3 years	13,3%	18,8%	2,2%	32,2%	54,9%	16,8%
2 years or less	67,8%	45,1%	3,4%	100,0%	100,0%	20,2%
<b>Mortgage-debt-service-to-income ratio (MDSIt)<sup>2</sup>:</b>						
more than 50 %	6,3%	12,7%	3,0%	6,3%	12,7%	3,0%
between 40 and 50 %	2,0%	5,5%	0,9%	8,3%	18,2%	3,9%
between 30 and 40 %	4,5%	6,7%	2,9%	12,8%	24,9%	6,7%
between 20 and 30 %	19,3%	23,9%	8,5%	32,1%	48,9%	15,2%
20 % or less	67,9%	51,1%	5,0%	100,0%	100,0%	20,2%
<b>Liquid-assets-to-mortgage-debt-service ratio (LAtMDS)<sup>3</sup>:</b>						
less than 2 months	14,5%	16,0%	5,9%	14,5%	16,0%	5,9%
between 2 and 6 months	11,8%	14,7%	1,7%	26,3%	30,8%	7,7%
between 6 and 12 months	12,5%	12,4%	3,3%	38,8%	43,2%	10,9%
between 12 and 24 months	15,4%	16,2%	3,3%	54,2%	59,4%	14,2%
24 months or more	45,8%	40,6%	6,1%	100,0%	100,0%	20,2%
<b>Liquid-assets-to-mortgage-debt ratio (LAtMD)<sup>4</sup>:</b>						
less than 5 %	25,7%	35,1%	9,9%	25,7%	35,1%	9,9%
between 5 and 10 %	9,7%	11,0%	2,1%	35,4%	46,0%	12,0%
between 10 and 25 %	18,6%	19,8%	5,9%	54,0%	65,8%	17,8%
between 25 and 50 %	10,5%	12,8%	1,3%	64,5%	78,6%	19,1%
50 % or more	35,5%	21,4%	1,0%	100,0%	100,0%	20,2%
<b>Mortgage-loan-to-value ratio (MLtV)<sup>5</sup>:</b>						
more than 90 %	3,6%	10,0%	10,0%	3,6%	10,0%	10,0%
between 80 and 90 %	6,6%	10,2%	10,2%	10,2%	20,2%	20,2%
between 70 and 80 %	3,8%	8,2%	0,0%	14,0%	28,4%	20,2%
between 60 and 70 %	5,1%	8,5%	0,0%	19,1%	36,8%	20,2%
60 % or less	80,9%	63,2%	0,0%	100,0%	100,0%	20,2%

Source: HFCS.

<sup>1</sup> The outstanding amount of a household's mortgage debt divided by the flow of its yearly gross income. Indicates the number of years of total income a household would need to repay its outstanding mortgage debt.

<sup>2</sup> The flow of monthly mortgage-debt service payments divided by the flow of monthly gross household income. Indicates which part of its income a household needs to periodically service its mortgage debt.

<sup>3</sup> The stock of a household's liquid assets (the sum of a household's money holdings in deposits, mutual funds, bonds and listed shares) divided by the flow of monthly mortgage debt service payments. Indicates how many months a household could service its mortgage debt out of liquid assets.

<sup>4</sup> The stock of a household's liquid assets divided by the outstanding amount of mortgage debt. Indicates the part (percentage) of a household's outstanding mortgage debt that could immediately be repaid with liquid assets.

<sup>5</sup> A household's outstanding mortgage debt divided by the (self-assessed) value of its real estate.

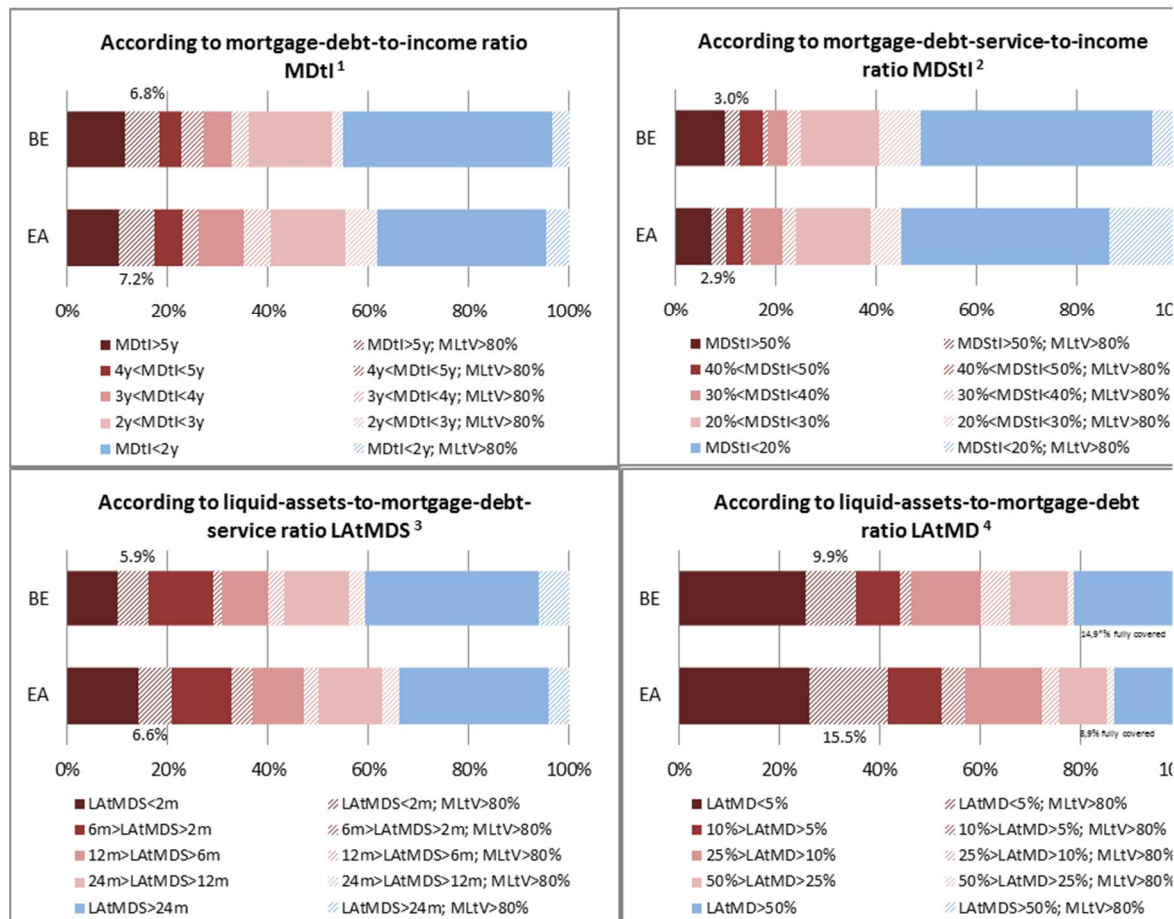
All in all, the share of total outstanding mortgage debt that is carried by households with a high mortgage-debt-service-to-income ratio or by households with only limited liquid financial assets to cover their mortgage debt in Belgium is comparable to that share in the euro area (see Graph 2). In the euro area as a whole, 27.2 % (12.9 %) of all households' mortgage debt is in the hands of households that need more than 30 % (50 %) for their periodical debt repayments.

As to the coverage of mortgage debt by liquid financial assets, 34.0 % of all households' mortgage debt in the euro area is held by households that could not serve more than six months

of debt payments; 53.5 % of mortgage debt lies with households owning liquid financial assets worth less than 10 % of their outstanding mortgage debt.

**Graph 2 - Distribution of mortgage debt according to risk**

(Percentages of outstanding mortgage debt)



Source: HFCS.

- <sup>1</sup> The outstanding amount of a household's mortgage debt divided by the flow of its yearly gross income. Indicates the number of years of total income a household would need to repay its outstanding mortgage debt.
- <sup>2</sup> The flow of monthly mortgage-debt service payments divided by the flow of monthly gross household income. Indicates which part of its income a household needs to periodically service its mortgage debt.
- <sup>3</sup> The stock of a household's liquid assets (the sum of a household's money holdings in deposits, mutual funds, bonds and listed shares) divided by the flow of monthly mortgage debt service payments. Indicates how many months a household could service its mortgage debt out of liquid assets.
- <sup>4</sup> The stock of a household's liquid assets divided by the outstanding amount of mortgage debt. Indicates the part (percentage) of a household's outstanding mortgage debt that could immediately be repaid with liquid assets.
- <sup>5</sup> A household's outstanding mortgage debt divided by the (self-assessed) value of its real estate.

Combining the 80 %-threshold of mortgage-loan-to-value with the most problematic thresholds for the other debt ratios, we get the following picture. In Belgium, 3.0 % of mortgage debt is held by households that pay more than 50 % of their income to debt service and have a MLtV above 80 %, similar to 2.9 % of households in the euro area. Comparing outstanding debt with income, for 6.8 % of Belgian households the outstanding mortgage debt ways more than five years of income and the MLtV is above 80 %, compared to 7.2 % of households in the euro area. Turning to the liquid-assets-related indicators, 5.9 % of Belgian households have a MLtV

above 80 % and not enough liquid assets to serve more than two months of debt payments, against 6.6 % of all households in the euro area. Moreover, for 9.9 % of Belgian households the mortgage debt represents more than 80 % of the value of their real estate and is covered for less than 5 % by liquid financial assets, compared to 15.5 % of households in the euro area. On the other side of the picture, 14.9 % of total outstanding mortgage debt in Belgium is fully covered by households' liquid assets, against 8.9 % in the euro area.

All in all, the results confirm the debt vulnerability of Belgian households to severe income loss, as could be the case when an unemployment shock hits the economy, which is documented by De Backer et al. (2015), Du Caju et al. (2014) and by Du Caju et al. (2016).

Therefore, for a significant part of the population, financial wealth does not guarantee the sustainability of mortgage debt in the case of income loss. As such, the share of outstanding mortgage debt in Belgium that could be regarded as being at risk because of low coverage by households' liquid financial assets (or equivalently by household income or by real-estate value) is broadly comparable to that share in the euro area.

#### **4. HOUSEHOLDS WITH MORTGAGE-DEBT AT RISK IN BELGIUM**

To see how many and which households are homeowners carrying mortgage debt at risk, we divide households according to the labour status of the reference person into working (employee or independent), unemployed and inactive (retired and other inactive)<sup>2</sup>, and into income and age categories.

We can then identify “vulnerable” households based on debt ratios exceeding a certain threshold. As an example, we look at mortgage-indebted homeowners with a mortgage-debt-to-income ratio (MDtI) of more than 3 years, mortgage-debt-service-to-income ratio (MDStI) above 30 %, a liquid-assets-to-mortgage-debt-service ratio (LAtMDS) less than 6 months and a liquid-assets-to-mortgage-debt ratio (LAtMD) below 10 %.

##### **4.1. Households at risk according to labour status**

According to the HFCS, 69.7 % of all households in Belgium are homeowners. Among the households with a working reference person, 71.3 % are homeowners. Also, 33.5 % of the unemployed and 74.7 % of the inactive households own a home. The vast majority of inactive (mostly retired) households are outright homeowners with no mortgage, while most working households have mortgage debt (see Graph 3).

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<sup>2</sup> For a more in-depth analysis of the distribution of debt in general across households in euro area countries, see Bover et al. (2016).

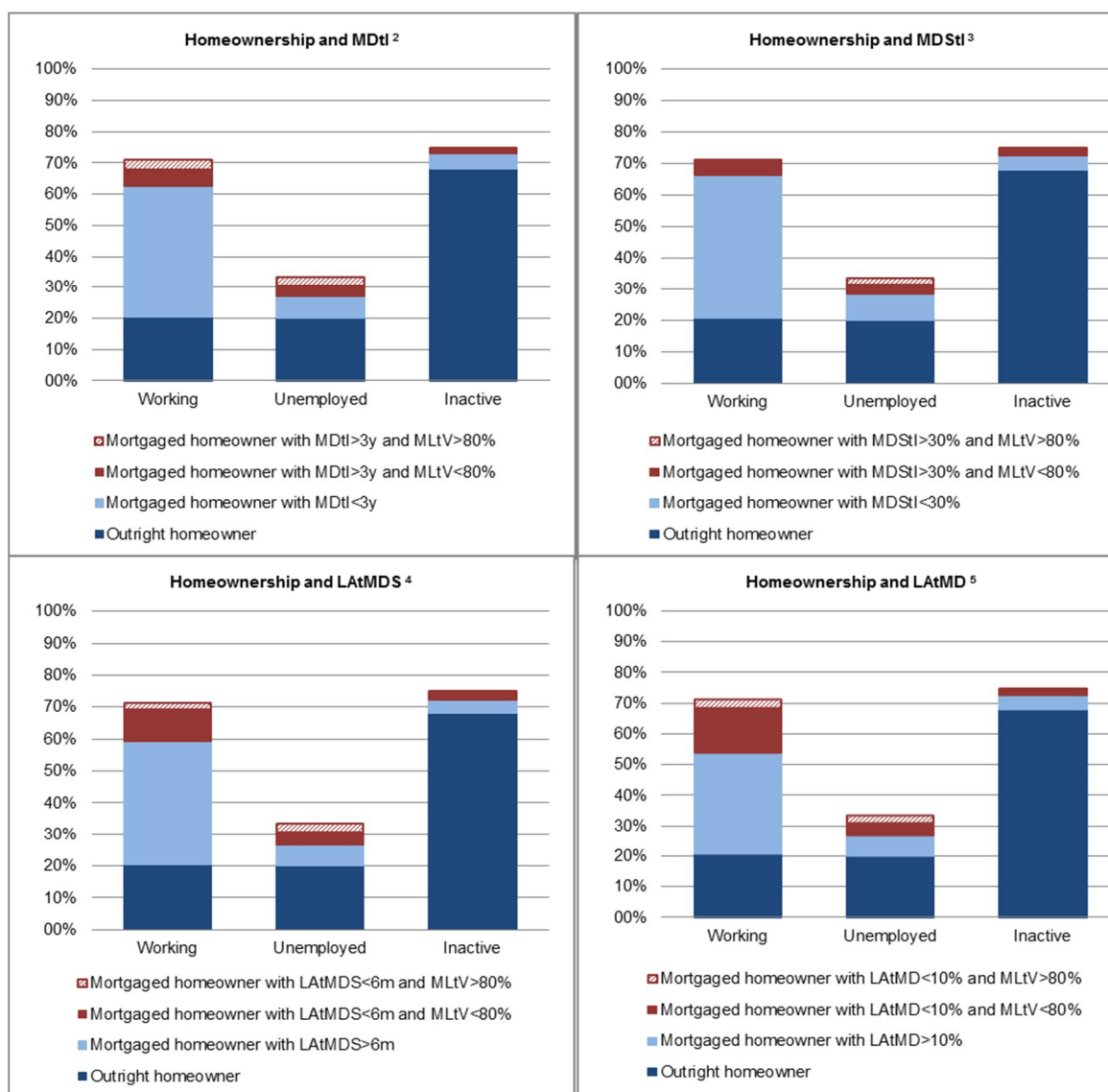


Parts of the mortgage-indebted households have “problematic” debt ratios in the way defined above. This part is bigger among the unemployed.

Looking at the income-related debt ratios, it appears that 9.3 % of mortgage-indebted working households spend more than 30 % of their income on mortgage-debt service (one out of six of them has a MLtV ratio above 80 %), while 37.0 % of the unemployed and 29.9 % of the inactive do so. Further, it appears that 17.2 % of mortgage-indebted working households have an outstanding mortgage debt of more than three years of gross household income; almost two thirds of them have an MLtV above 80 %.

The other two indicators, relating mortgage debt (service) to liquid financial assets, show broadly similar shares of vulnerable households for the unemployed and the inactive. However, these two indicators show a bigger vulnerable share for the working households, compared to the income-related indicator: 23.7 % of mortgage-indebted working households could pay less than six months debt service out of liquid assets; 34.2 % of mortgage-indebted working households could not repay more than 10 % of their outstanding mortgage debt with liquid assets; one out of five households in these groups has a mortgage-loan-to-value ratio of more than 80 %. This reflects the fact that working households are still in the phase of accumulating financial assets, but it also shows their vulnerability in case of severe income loss.

**Graph 3 - Homeownership and mortgage-debt burden by labour status of Belgian households<sup>1</sup>**



Source: HFCS.

<sup>1</sup> Households are categorised according to the labour status of the reference person into working (employee or independent), unemployed and inactive (retired and other inactive).

<sup>2</sup> The outstanding amount of a household's mortgage debt divided by the flow of its yearly gross income. Indicates the number of years of total income a household would need to repay its outstanding mortgage debt.

<sup>3</sup> The flow of monthly mortgage-debt service payments divided by the flow of monthly gross household income. Indicates which part of its income a household needs to periodically service its mortgage debt.

<sup>4</sup> The stock of a household's liquid assets (the sum of a household's money holdings in deposits, mutual funds, bonds and listed shares) divided by the flow of monthly mortgage debt service payments. Indicates how many months a household could service its mortgage debt out of liquid assets.

<sup>5</sup> The stock of a household's liquid assets divided by the outstanding amount of mortgage debt. Indicates the part (percentage) of a household's outstanding mortgage debt that could immediately be repaid with liquid assets.

This analysis shows that, although only few working households have problems servicing their debt out of their income, a significant part of these households lack the liquid financial resources to cope with severe income loss. If they lose their job, they could get in difficulty to service the mortgage debt on their home.

## 4.2. Mortgage debt at risk according to household income and age

Turning to income and age groups, based on total household income and on the age of the reference person in the household, the HFCS data show that most of the outstanding mortgage debt in Belgium is held by middle-aged high-income households. This reflects the life cycle and paying capacity. Broadly the same households also hold most of the debt at risk that is only moderately covered by liquid financial assets. However, their share in this debt at risk is smaller than their share in total debt. It is the young and low-income households who hold relatively larger shares in mortgage debt at risk, compared to their shares in total mortgage debt (see Graph 4). This analysis shows that young low-income households are relatively more at risk when an unemployment shock hits the economy.

**Graph 7 - Distribution of mortgage debt (at risk) between income and age groups<sup>1</sup> in Belgium**

Concentration (%) of outstanding mortgage debt						Concentration (%) of outstanding mortgage debt with MLtV <sup>2</sup> > 80%					
	-34	35-44	45-54	55-64	65+		-34	35-44	45-54	55-64	65+
I	1.7%	1.1%	0.9%	0.6%	0.3%	4.6%	1.2%	0.5%	0.9%	0.0%	0.0%
II	1.3%	0.9%	1.5%	1.0%	0.5%	5.2%	3.3%	2.5%	0.0%	0.0%	0.9%
III	6.6%	4.5%	3.7%	1.4%	0.3%	16.5%	15.8%	2.2%	3.9%	2.2%	0.3%
IV	8.0%	10.8%	6.5%	1.4%	0.4%	27.1%	12.5%	8.0%	6.5%	0.0%	0.3%
V	6.9%	22.8%	13.3%	3.7%	0.0%	46.7%	12.1%	18.5%	7.0%	1.5%	0.0%
	24.4%	40.0%	25.9%	8.1%	1.6%	100.0%	44.9%	31.7%	18.3%	3.6%	1.5%
Concentration (%) of outstanding mortgage debt with MDtI <sup>3</sup> > 3 years						Concentration (%) of outstanding mortgage debt with MDStI <sup>4</sup> > 30%					
	-34	35-44	45-54	55-64	65+		-34	35-44	45-54	55-64	65+
I	4.6%	2.8%	2.1%	1.6%	0.6%	11.7%	6.8%	4.0%	3.5%	2.3%	0.6%
II	3.1%	2.3%	3.2%	1.5%	1.1%	11.3%	3.4%	2.9%	4.3%	2.9%	1.1%
III	15.7%	4.9%	5.1%	1.9%	0.2%	27.8%	13.1%	2.8%	5.2%	0.2%	0.1%
IV	9.8%	8.2%	6.2%	0.9%	1.0%	26.0%	7.0%	6.6%	7.1%	0.2%	0.1%
V	1.9%	17.8%	3.6%	0.0%	0.0%	23.2%	0.0%	21.1%	4.7%	0.0%	0.0%
	35.1%	36.0%	20.2%	5.9%	2.8%	100.0%	30.3%	37.4%	24.8%	5.5%	2.0%
Concentration (%) of outstanding mortgage debt with LA <sup>5</sup> < 6 months						Concentration (%) of outstanding mortgage debt with LAMtD <sup>6</sup> < 10%					
	-34	35-44	45-54	55-64	65+		-34	35-44	45-54	55-64	65+
I	3.1%	1.0%	1.4%	1.2%	0.6%	7.3%	4.2%	1.5%	2.0%	1.8%	0.9%
II	2.0%	1.8%	2.6%	1.3%	1.1%	8.8%	2.8%	2.6%	3.8%	1.9%	0.3%
III	8.2%	6.9%	4.0%	1.3%	0.3%	20.8%	6.4%	6.1%	4.9%	2.1%	0.4%
IV	9.2%	12.7%	6.8%	0.9%	0.0%	29.6%	6.4%	13.5%	9.0%	1.4%	0.0%
V	6.6%	17.0%	7.2%	2.8%	0.0%	33.5%	6.0%	15.3%	5.4%	1.3%	0.0%
	29.1%	39.5%	21.9%	7.5%	2.0%	100.0%	25.8%	39.0%	25.1%	8.5%	1.7%

Source: HFCS.

- <sup>1</sup> Households are categorised according to the age of the reference person.
- <sup>2</sup> A household's outstanding mortgage debt divided by the (self-assessed) value of its real estate.
- <sup>3</sup> The outstanding amount of a household's mortgage debt divided by the flow of its yearly gross income. Indicates the number of years of total income a household would need to repay its outstanding mortgage debt.
- <sup>4</sup> The flow of monthly mortgage-debt service payments divided by the flow of monthly gross household income. Indicates which part of its income a household needs to periodically service its mortgage debt.
- <sup>5</sup> The stock of a household's liquid assets (the sum of a household's money holdings in deposits, mutual funds, bonds and listed shares) divided by the flow of monthly mortgage debt service payments. Indicates how many months a household could service its mortgage debt out of liquid assets.
- <sup>6</sup> The stock of a household's liquid assets divided by the outstanding amount of mortgage debt. Indicates the part (percentage) of a household's outstanding mortgage debt that could immediately be repaid with liquid assets.

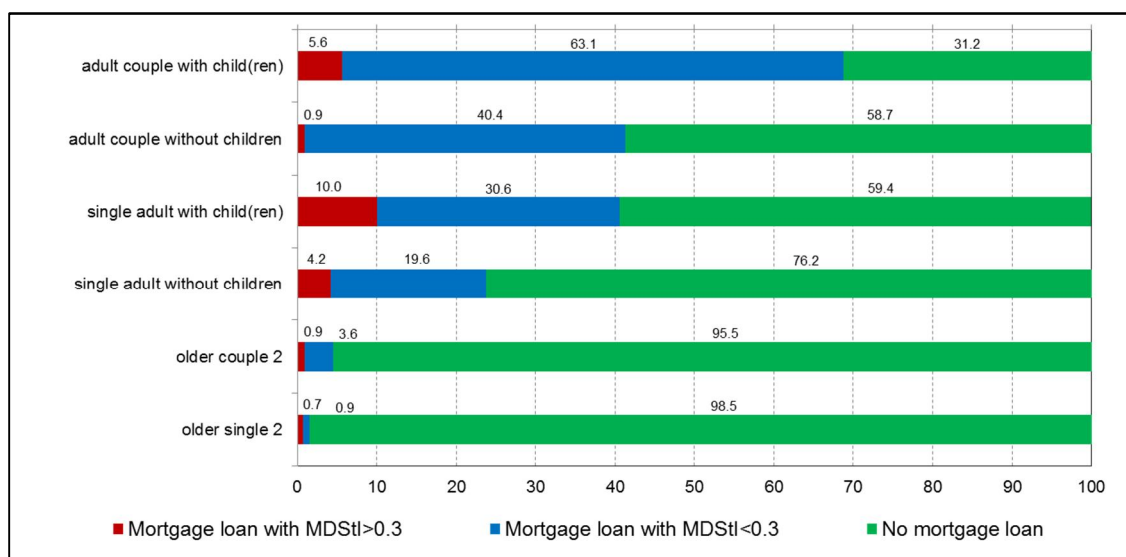
### 4.3. Households at risk according to family status

Mortgage debt is not equally easy to shoulder for all types of households. Here, too, HFCS findings prove enlightening, as households can be divided into families with and without children. This distinction to a large extent determines housing requirements and spending patterns. Division by age is another possibility – i.e. whether or not the adult(s) in the household have or have not reached the age of 65, as this influences income perspectives and savings behaviour, and whether or not they are a couple, which helps to determine their potential financial resources. Six groups of households emerge: adult couples with children, adult couples without children, lone parent families, single-person households, older couples (at least one of whom is 65 years or older) and older people living alone. Debt positions can be described for each of these types of family: no mortgage loan, a mortgage loan at an MDStI of < 0.3 or a mortgage loan at an MDStI of > 0.3.

Breaking down households by household type and by debt position is highly revealing, allowing identification of potential pockets of risk in the mortgage market in the shape of steep MDStI ratios, particularly for lone parent families and to a lesser extent also single-person households. The survey shows that one in ten lone parent families need over 30% of their household income to pay their mortgage, i.e. one in four households with this level of debt in this category.

**Graph 5 - Mortgage debt and MDStI ratio<sup>1</sup>, by household type**

(Percentages of the total number of households)



Source: HFCS.

<sup>1</sup> The flow of monthly mortgage-debt service payments divided by the flow of monthly gross household income. Indicates which part of its income a household needs to periodically service its mortgage debt.

<sup>2</sup> At least one person is over the age of 65.

The illustrations above are based on simple bivariate descriptions. More (multivariate) econometric evidence on socio-demographic (age, income, labour or family status) profiles of

household indebtedness (holding, amount, interest rate), related to institutions and credit market characteristics, can be found in Bover et al. (2016). Du Caju et al. (2016) provide (multivariate) econometric evidence on the role of labour status and demographics, as well as on the impact of unemployment shocks on (changes in) household over-indebtedness. In relation to this, Du Caju et al. (2014) show that loan defaults and payment arrears in Belgium are correlated with the unemployment rate, especially for the youngest borrowers.

## CONCLUSION

In Belgium, mortgage-indebted households on average hold less (liquid) financial assets than households without mortgage debt. Of the total amount of outstanding mortgage debt of Belgian households, almost a third (29.8 %) is held by households that could service their mortgage debt out of liquid financial assets for less than six months. Almost half (44.6 %) is held by households owning liquid financial assets that are worth less than 10 % of their outstanding mortgage debt. The share of outstanding mortgage debt in Belgium that is at risk because of low coverage by households' liquid financial assets is not much lower than that share in the euro area. This implies that pockets of risk exist in the Belgian mortgage market, due to households facing high (income or asset related) debt ratios, and that these risky pockets are similar to the ones in the euro area.

Although only few working households have problems servicing their debt out of their income, a significant part of them lacks the financial resources to cope with severe income loss. Most of the debt at risk (and of the debt in general) in Belgium is held by middle-aged high-income households, but young low-income households, and especially single parents, are relatively more at risk when an unemployment shock hits the economy.

This analysis puts into perspective the general idea that high financial wealth, as registered by macroeconomic financial accounts, contributes to the sustainability of the mortgage indebtedness of Belgian households. It implies that, because financial wealth is (very) unequally distributed, a severe unemployment shock with income loss could hurt many mortgage-indebted households involving a significant part of total outstanding mortgage debt in Belgium.

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