



# KINGDOM OF THE NETHERLANDS— NETHERLANDS

## SELECTED ISSUES PAPER

December 2014

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# KINGDOM OF THE NETHERLANDS—NETHERLANDS

## SELECTED ISSUES

November 18, 2014

Approved By  
**European Department**

Prepared By Mico Mrkaic, Michelle Hassine, and  
Sergejs Saksonovs (all EUR)

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## OVERVIEW

### **House Prices, Consumption, and the Household Debt Overhang In the Netherlands**

*Deflated housing prices that were fueled by robust borrowing often leave in their wake households with heavy debt burden. This “debt overhang” forces households into deleveraging—reducing their level of debt to sustainable levels. When deleveraging is brought about through reduced household consumption, it can contribute to a protracted “balance sheet recession” as appears to be the case in the Netherlands. We analyze the link between house prices and consumption, the expected depth of deleveraging after the house price bust, and possible measures to alleviate deleveraging pressures.*

### **Building a More Resilient and Efficient Market for Housing and Finance in the Netherlands**

*The housing market plays a key role in the Dutch economy as source of household wealth, collateral for SME borrowing, and for investment and employment. The sector is also heavily distorted by supply restrictions and large fiscal incentives. They have contributed to a shortage of supply, buildup of large household debt, sizeable fiscal transfers, and financial risks. Reforms should focus on easing supply constraints, expanding the private rental market, developing more efficient instruments for housing finance, and enhancing macroprudential policies.*

### **SME Financing in the Netherlands**

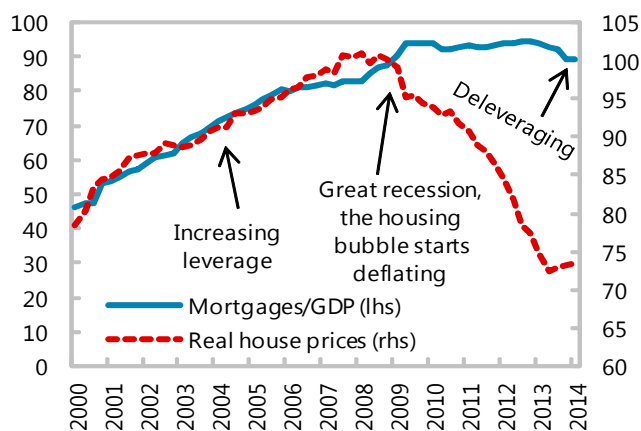
*Dutch SMEs, on average, are comparable in their profitability and leverage to other European countries. However, the sector exhibits a lot of heterogeneity and a substantial share of Dutch SMEs have been struggling due to weak domestic demand and declining collateral values. Policies to strengthen the SME sector should focus on strengthening bank lending in the near term, and developing alternative sources of finance to reduce the SMEs’ reliance on banks in the medium term. Finally, structural policies to enhance product and labor market flexibility can also support SMEs.*

## HOUSE PRICES, CONSUMPTION, AND THE HOUSEHOLD DEBT OVERHANG IN THE NETHERLANDS<sup>1</sup>

*Deflated housing prices that were fueled by robust borrowing often leave in their wake households with heavy debt burden. This “debt overhang” forces households into deleveraging—reducing their level of debt to sustainable levels. When deleveraging is brought about through reduced household consumption, it can contribute to a protracted “balance sheet recession” as appears to be the case in the Netherlands. We analyze the link between house prices and consumption, the expected depth of deleveraging after the house price bust, and possible measures to alleviate deleveraging pressures.*

1. **Deflated housing prices that were fed by robust borrowing leave in their wake households with low or even negative net worth.** A large negative wealth shock leads to “debt overhang” and drives households into a process of deleveraging—reducing their level of debt back to sustainable levels. Deleveraging that is achieved through reduced household consumption, especially in slow growing economies with low inflation, can hamper economic growth or even generate a “balance sheet recession”. In contrast to “standard” post WWII recessions, which are brought on by temporary lack of demand or monetary tightening and usually lasts a few quarters, the duration of balance sheet recessions is measured in years. Long lasting balance sheet recessions are hazardous, since they can become self-perpetuating, leading to low inflation, and permanent damage to potential GDP.

**Mortgage Debt to GDP ratio and House Prices**  
(Percent, HPI: 2008=100)



Source: Haver Analytics and Staff Calculations

2. **The Dutch housing situation is characterized by high outstanding mortgage debt, large share of underwater mortgages, and low delinquency rates.** Table 1 presents some key characteristics of six recent international housing cycles. The Dutch housing cycle can be contrasted

<sup>1</sup> Prepared by Mico Mrkaic, EUR. The paper is also part of EUR’s housing cluster project.

with the one in the United States; which has similar levels of mortgage debt and price declines as the former. However, the fraction of underwater mortgages in the US is significantly lower.<sup>2</sup>

**Table 1. International Comparison of Recent House Price Cycles**

	Netherlands	Denmark	Ireland	Spain	UK	US
Total outstanding mortgage debt (% GDP). maximum 2001-2012	108.4	103.4	91.7	64.9	87.2	101.0
Nominal house prices, relative peak-to-trough (%)	21.5	20.1	48.9	30.1	13.5	18.1
Unemployment rate, absolute trough-to-peak (%)	4.5	4.5	11.4	18.5	3.7	6.0
Payment Arrears H2 2013 /1	1.3	0.3	12.3	5.2	1.3	9.3
Underwater share of mortgages (%) /2	30	n/a	52	20	1.6-6.4	13

Source: EMF, FRB, BEA, Dallas Fed.

/1 Sources: Council of Mortgage Lending (UK), FRB (US), DNB (NL), Central Bank of Ireland (IE), Association of Danish Mortgage Banks (DK), Banco de España (ES).

/2 Sources: Corelogic (US), Financial Conduct Authority (UK), Banco de España (ES), DNB (NL), Central Bank of Ireland (IE).

## Literature Review

3. **Empirical researchers have found a strong link between housing wealth, leverage, and consumption.** In a seminal paper, Case, Quigley, and Shiller (2005) examine the link between increases in housing and financial wealth and consumer spending. They use a panel of country level and U.S. state-level data and find a large effect of increasing house prices on private consumption. Case, Quigley, and Shiller (2013) reexamine their previous research by extending their data set to post great-recession years and also find a large effect of housing wealth on private consumption when house prices decline. Furthermore, the effect of housing wealth is consistently larger than the effect of stock market wealth. According to their estimates, the elasticity of private consumption with respect to declining house wealth is around 0.10, implying that a 30 percent drop in real housing wealth would reduce private consumption by approximately 3 percent.

4. **Several studies that used micro data reaffirmed the link between house prices and consumption.** Attanasio, Blow, Hamilton, and Leicester (2009) investigate the link between

<sup>2</sup> The difference is most likely caused by different legal treatments of mortgage obligations in the U.S. and the Netherlands. This difference could potentially have important macroeconomic consequences, since the legal framework for personal bankruptcy in the U.S. prevents prolonged encumbrance with unremitting debt overhang.

household wealth, house prices, consumption and credit constraints. They find that the relationship between house prices and consumption is stronger for younger than older households, indicating that relaxing borrowing and/or liquidity constraints is a key mechanism linking house prices and consumption. Dynan (2012) uses household-level data to examine the effect of leverage and debt on household consumption. She finds that highly leveraged homeowners had larger declines in spending during 2007-09 than less leveraged ones even when controlling for changes in wealth. This suggests that high leverage discourages consumption above and beyond wealth declines and has contributed to the weakness in aggregate consumption.

5. **U.S. county level data analysis also supports the hypothesis of a strong link between private consumption, house prices, and leverage.** Mian, Rao, and Sufi (2013) analyze the relationship between household consumption and shocks to house prices using U.S. county-level data. They estimate that the marginal propensity to consume (MPC) out of housing wealth is between 5 and 7 cents out of a dollar. Furthermore, they also find that poorer and more levered households have a significantly higher MPC out of housing wealth.

6. **Recent empirical results for the Netherlands also demonstrate the link between house prices and consumption.** A recent study that uses a large administrative data set for the Netherlands is Van Beers, Bijlsma, and Mocking (200x). They find a negative relationship between changes in house price and savings, with the largest effects for young households with negative housing equity. Moreover, they find larger effects for house price increases compared to house price decreases. Household of age 30 with loan-to-value ratios above one save roughly 2 euro less for a 100 euro increase in house prices, while they save around 1 euro more for a 100 euro house price decline.

7. **Structural models of the link between consumption and housing wealth have been developed by Deaton (1991), Carroll (1997), and Gourinchas and Parker (2002).** Campbell and Cocco (2005) simulate a life-cycle model which allows for borrowing constraints and labor income uncertainty and includes housing choices. A general equilibrium treatment of house prices and consumption is developed in Iacoviello (2004), who estimates a monetary business cycle model with nominal loans and collateral constraints tied to housing values. His estimation results support two key results: collateral effects dramatically strengthen the response of aggregate demand to housing price shocks; and debt quoted in nominal terms increases the response of output to inflation surprises.

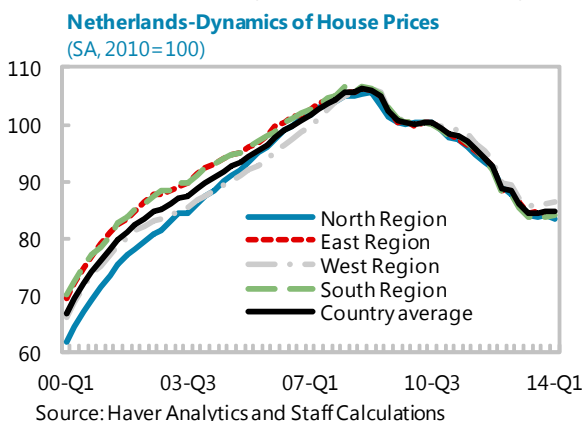
8. **Not all investigations detected a positive link between house prices and consumption.** Browning, Gørtz, and Leth-Petersen (2013) use a household-level panel data set with information about house ownership, income, wealth and demographics for a large sample of the Danish population in the period 1987–96. They find little evidence of a housing wealth effect. In a similarly vein, Buiters (2010) argues that that housing wealth isn't real social wealth, since in every economy there are agents who are short housing and those who are long housing. Finally, Calomiris, Longhofer, and Miles (2009) do not find any significant direct links between housing wealth and consumption and claim that the estimated links are the result of statistical biases.

9. **High levels of household debt before the housing bust could continue to weigh on consumption.** Several recent studies analyzed the interaction of the drop the negative wealth shock due to the drop in house prices and the pressure to reduce the level of mortgage debt to what could be called the “new normal”. Cuerpo et al. (2013) analyze debt overhang by proposing several criteria for debt sustainability. They indicate that the Netherlands could face significant household deleveraging pressures with knock on effects on private consumption. In a recent study, van Es, Bonenkamp, Lanser, and Ciocyte (2014) estimate the impact of deleveraging on consumption in the Netherlands under several different scenarios. They show that the deleveraging negatively affects consumption, but the size of the effect depends strongly on the assumptions for the “new normal” level of household debt and the speed of deleveraging.

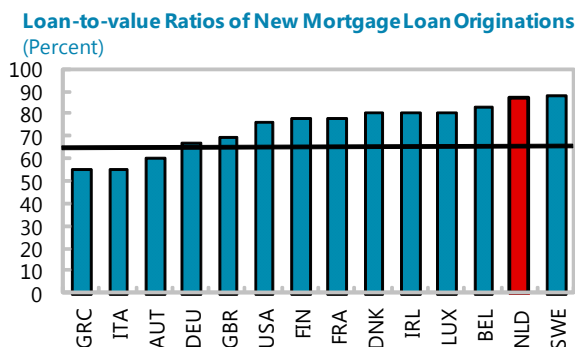


**Figure 1. The Path to Housing Bust in the Netherlands**

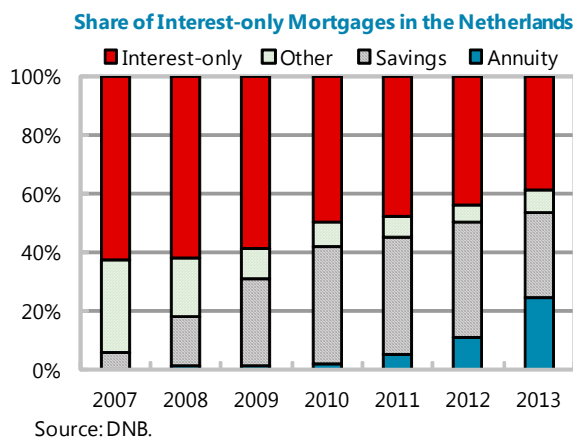
*The house price cycle has been fueled by...*



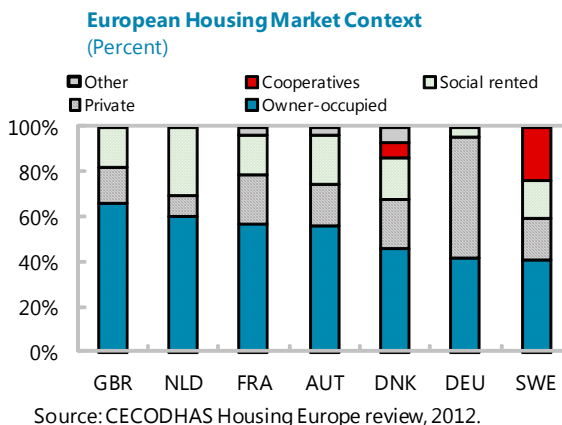
*...mortgages with high LTV ratios...*



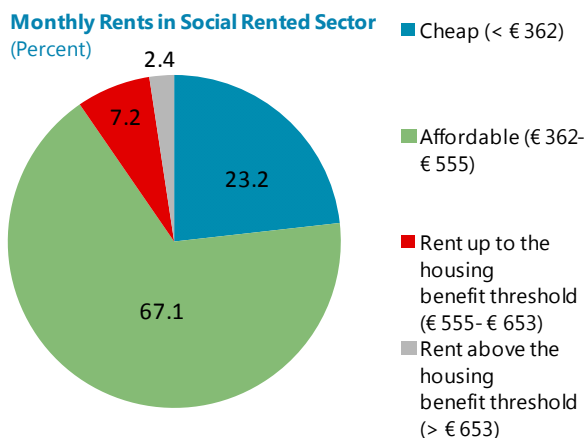
*...which were frequently interest-only to maximize tax benefits.*



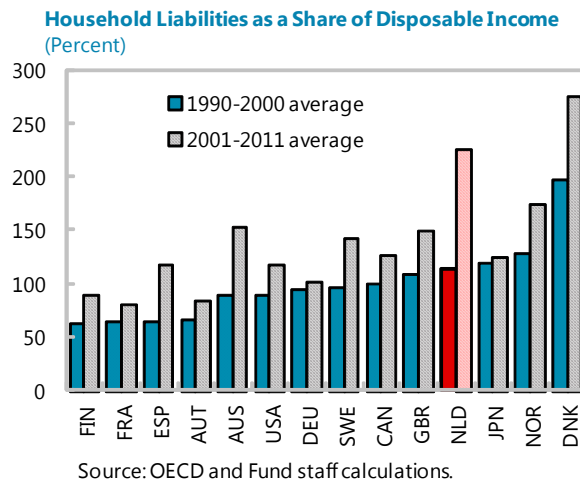
*Private renting has been crowded out by a large social housing sector...*



*...that provides subsidized dwellings to a large fraction of the population.*



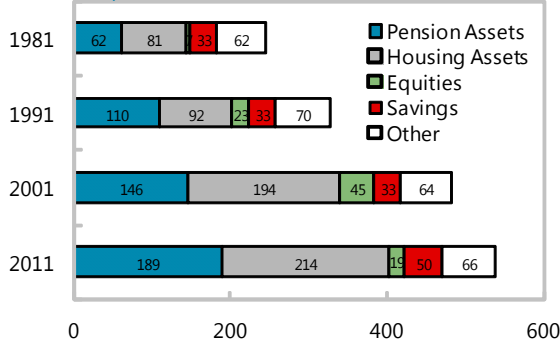
*These policies motivated households to increase indebtedness.*



**Figure 2. Assets and Liabilities across Generations**

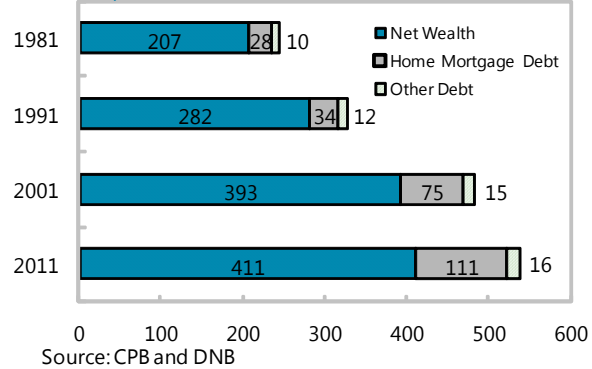
*The growth of the Dutch household assets has outpaced that of their liabilities...*

**Assets of Dutch Households**  
(in percent of GDP)



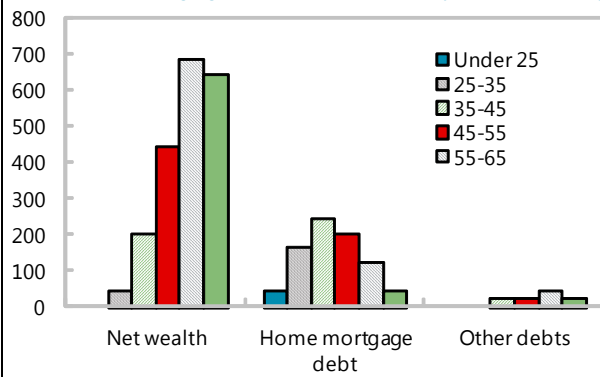
*...resulting in net household wealth of more 400 percent of GDP.*

**Liabilities of Dutch Households**  
(in percent of GDP)



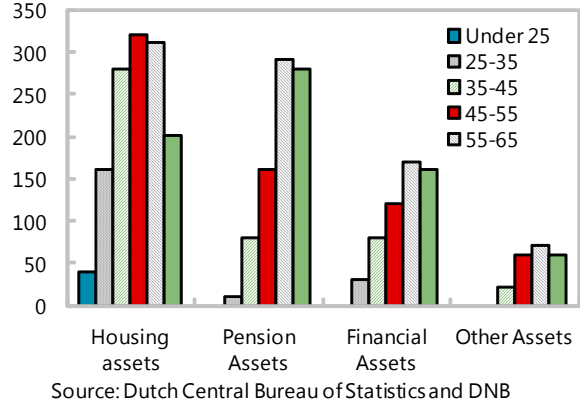
*However, the distribution of wealth is uneven...*

**Net wealth and liabilities of Dutch Households by Age, 2011**  
(Percent of average gross household income by main earner's age)



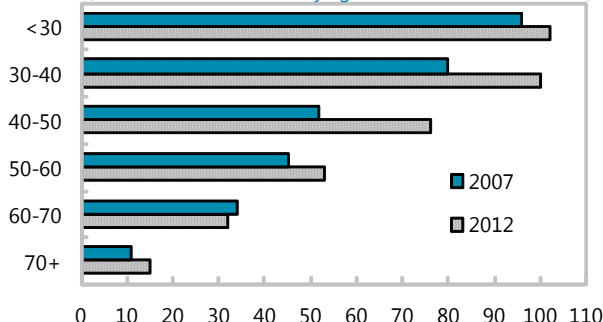
*...with households over 50 holding the majority of housing, pension, and financial assets.*

**Assets of Dutch Households by Age, 2011**  
(Percent of average gross household income by main earner's age)



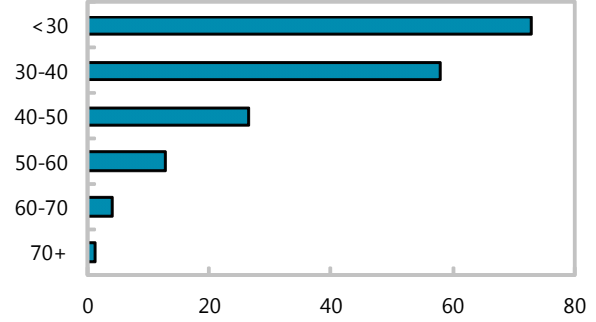
*Net housing wealth of young house owners is nearly zero...*

**Ratio of Mortgage to Debt Housing Assets**  
(Percent of households by age of the main breadwinner)



*...and most of them are under water.*

**Households with Negative Home Equity, 2011**  
(Percent)



## A. The Recent Housing Cycle in the Netherlands

10. **The interaction of generous social housing policies, pervasive rent controls, home ownership stimulated by uncapped mortgage interest tax deductibility, and controlled housing construction contributed to unsustainably rapid growth of house prices and household debt.** Social housing comprises around 85 percent of all rented housing stock (more than 30 percent of all housing) in the Netherlands. Together with private rent-controlled housing, the two segments dominate the rental market and provide few housing opportunities to persons looking for their first homes, who are thus incentivized to purchase houses instead of rent. Full mortgage interest deductibility (MID) and mortgages with large loan to value (LTV) ratios have further fueled the demand for owned housing.<sup>3</sup> The financial sector responded to this combination of incentives by offering non-amortizing (interest only) mortgages with high LTV ratios (often exceeding 100 percent), thus enabling house buyers to increase their financial leverage to one of the highest levels in Europe. Finally, building regulations restricted supply and amplified the growing housing prices, which peaked in the second half of 2008.<sup>4</sup>

11. **The global recession and regulatory tightening have helped deflate housing prices.** House prices have declined by 27 percent in real terms since their peak in late 2008 and have shown broad signs of stabilization only in the last few quarters. The decline of house prices after 2008 was driven by weakened aggregate demand and heightened uncertainty. Furthermore, regulatory changes such as reductions in the MID, gradual imposition of limits on the LTV, and a requirement that all new mortgages be fully amortized in order to qualify for MID, added to the downward pressure on house prices.<sup>5</sup> Despite the fact that the introduction and implementation of these regulatory changes were gradual, their effects have been priced into the markets quickly and their role in the decline of house prices is significant. For example, simple calculations show that the requirement that all new mortgages fully amortize in 30 years or less has reduced house prices by approximately 10 percent and the gradual reduction in MID rates has contributed further 4 percent to the decline.<sup>6</sup>

12. **The deflation of Dutch housing prices has caused massive losses of wealth which are unevenly distributed across generations.** The net worth of Dutch households has increased in the last three decades with housing assets representing its largest component. In 2011, even after three years of house price declines, the total value of housing assets exceeded 200 percent of GDP. A rough calculation gives an estimated loss of housing wealth of 60 percent of GDP since 2008. While loss of wealth has been sizeable, the aggregate net value of Dutch households, including pension

<sup>3</sup> After the beginning of the Great Recession, the authorities have introduced prudential measures to limit LTV and reduce the scope of MID to fully amortizing mortgages in order to limit risks in the housing sector.

<sup>4</sup> See Chapter 2.

<sup>5</sup> 2013 Article IV Report on the Netherlands provides details of the regulatory changes.

<sup>6</sup> If the tax shield is evaluated at the marginal tax rate of 52 percent.

and housing assets, still exceeds 400 percent of GDP. However, the aggregate numbers are silent about the distribution of wealth across generations and, equally importantly, about the distribution of losses caused by the decline housing prices.

13. **Proportional to their wealth, younger house buyers are burdened by larger losses in housing wealth than older ones.** More than 70 percent of households under 30 and nearly 60 percent of those between 30 and 40 years of age are under water—their mortgages exceed the value of their houses. They purchased houses near or at the peak of the market, missing out on the house price appreciation that increased the wealth of their older compatriots. On average, for cohorts below 40 years of age, mortgage obligations and housing assets nearly cancel out, while older households have positive net housing assets. In addition to greater housing losses, younger households have not had sufficient time to accumulate pension claims and other (financial) assets. In particular, households under the age of 35 have negligible levels of net worth.

## B. House Prices and Consumption in the Netherlands

14. **In the Netherlands, house prices strongly influence consumption.** Compared to other developed countries, the correlation between consumption and house prices in the Netherlands is large. This relationship is at least in part explained by a large share of owned housing and the ability of households to extract equity out of their houses. Because of the strong connection between consumption and house prices, falling house prices depress private consumption, which could remain under its long-run trend until house prices start recovering robustly.

15. **Since 2000, private consumption has been influenced by house prices more than by changes in disposable income.** A visual analysis of household consumption, disposable income and real house prices (Panel 3) shows that household consumption follows real house prices more closely than the disposable income. A simple econometric analysis confirms this. The estimated elasticity of private consumption growth with respect to the growth in real house prices is 0.21. The estimate for the elasticity with respect to disposable income is similar, however only the house price elasticity is statistically significant. This finding indicates that explaining the consumption and deleveraging in the wake of the Dutch housing bust should take into account housing wealth effects.<sup>7</sup>

---

<sup>7</sup> The regression includes annual data from 2000-13. Because of the small size of the sample, we test for the normality of the residuals. We cannot reject the null hypothesis of normality of residuals, which strengthens the case for the validity of the regression.

**Table 2. Private Consumption, Disposable Income, and House Prices, 2000-13**

	Coefficients	Standard Error	t Stat	P-value
Intercept	0.201	0.217	0.929	0.371
Income	0.212	0.134	1.577	0.141
House prices	0.212	0.051	4.124	0.001

Sources: CPB and Fund staff calculations

16. **While the simple econometric analysis is suggestive of the strong link between consumption and house prices, additional econometric analysis addresses the issues of simultaneity and endogeneity.** In addition to estimating the effect of house prices on consumption, we are interested if and how changes in the net disposable income, uncertainty (as measured with consumer confidence), and other forms of wealth (e.g. stock market wealth) affect household consumption.

17. **We estimate a simultaneous equations model of the Dutch economy using a three-stage least squares approach.**<sup>8</sup> The model assumes that the Netherlands is a small open economy whose GDP growth and exports strongly dependent on the growth in the rest of the world. In addition, it assumes that imports and exports and interdependent due to the large share of re-exports in the Netherlands. We assume that private consumption depends on the net household disposable income, housing wealth and the real value of the stock prices index.

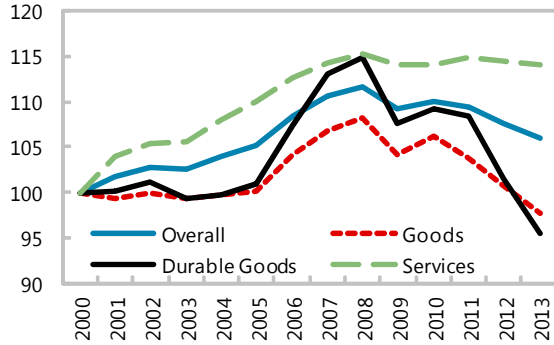
18. **Empirical results are supportive of the hypothesis that house prices strongly affect private consumption.** Estimates of the system are presented in Tables 5-7. Table 5 shows estimates under the assumption that house prices are exogenous and that consumption depends on the net disposable income and consumer confidence as well. Estimates show that house prices strongly and significantly affect consumption, while consumer confidence and disposable income are not statistically significant. In Table 6, we relax the assumption that house prices are exogenous. As a result, the estimated elasticity of house prices declines, but remains significant at the 10 percent level, while the other two explanatory variables are not significant. Table 7 adds stock prices as a source of housing wealth, but this inclusion does not change the robustness of the link between consumption and house prices.

<sup>8</sup> The model is estimated using annual growth rate data for the period 1999-2013.

**Figure 3. House Prices, Consumption, and Deleveraging**

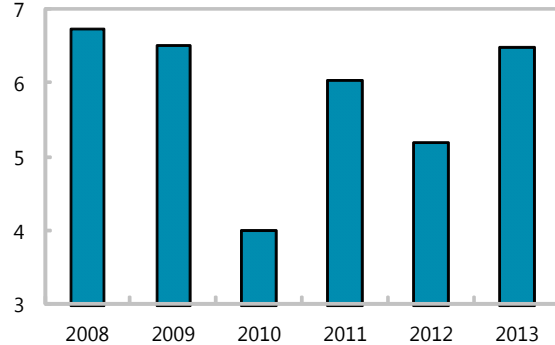
*Consumption growth has languished since 2008...*

**Components of Household Consumption**  
(Index, 2000 = 100)



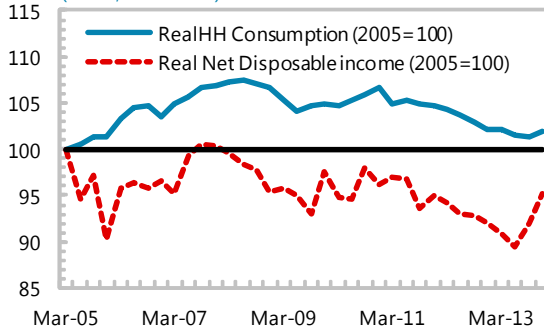
*...while households increased savings marginally relative to 2010.*

**Household Net Saving**  
(Percent of net disposable income)



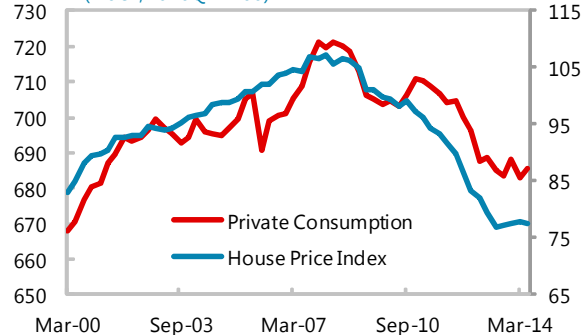
*Private consumption is only weakly affected by movements in disposable income...*

**Consumption and Disposable income**  
(Index, 2005=100)



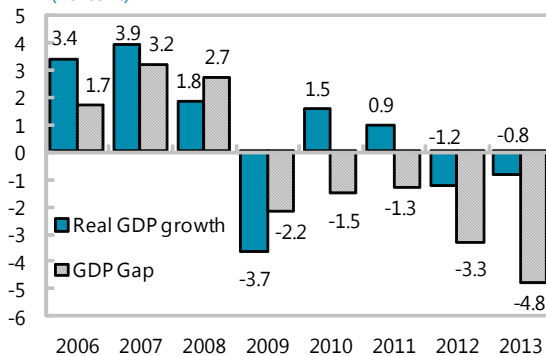
*...but is more closely related to movements in house prices.*

**House Price Index and Consumption**  
(Index, 2010Q1=100)



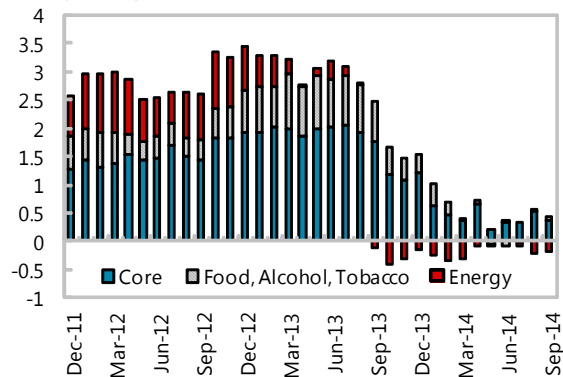
*Balance sheet recession and a large GDP gap...*

**Real GDP Growth and GDP Gap**  
(Percent)



*...have led to low inflation, which makes deleveraging even harder.*

**Contributions to Headline Year-Over-Year Inflation**  
(Percent)



Source: Haver Analytics and Staff calculations.

## C. Debt Overhang and Deleveraging

### Aggregate Demand for Loans and Debt Overhang

19. **Determining the aggregate demand for loans is essential to the analysis of deleveraging.** While the majority of studies of deleveraging use ad hoc assumptions about the steady state of mortgage debt, we use a structural approach, based on a detailed model of housing supply and demand in the Netherlands. The model is derived and explained in detail in Swank, Kakes, and Tieman (2002). According to their model, the equilibrium quantity of mortgage loans,  $B$ , is proportional to the product of the LTV ratio, prices of houses ( $P_h$ ), and the market quantity of houses,  $Q_h$ . Imposing a reasonable assumption that since the great recession, the supply of dwellings has not changed significantly, especially during the years of the largest price declines, gives a linear proportionality relationship between equilibrium level of debt, LTV ratios, and house prices

$$B \propto LTV \cdot P_h. \quad (0.1)$$

20. **Based on the above equation, the aggregate overhang of debt the existing mortgage debt has declined by approximately 15 percent since 2008.** Real house prices have fallen 27 percent since 2008. However, not all borrowers experienced full price decline. In addition, the average LTV has been reduced by 10 percentage points, but this reduction applies to newly issued mortgages only. Hence it follows that that the equilibrium level of mortgage debt has been reduced by approximately 15 percent.<sup>9</sup>

21. **The equation can be used to estimate the impact of macro-prudential policies on household indebtedness.** Two macro prudential instruments that are much discussed in the Netherlands are the LTV and the mortgage interest deductibility (MID). According to the above equation, changes in the LTV directly affect the equilibrium level of debt. The effects of changes in MID on the level of debt are conceptually straightforward as they affect the level of house prices and the equilibrium level debt.

22. **Reaching a new level of mortgage debt to GDP ratio depends on macroeconomic environment and saving.** In continuous time, the evolution of debt to income ratio,  $b$ , is given by the following first order linear differential equation.<sup>10</sup> Intuitively, the equation states left alone, the debt to GDP ratio would be proportional to the difference between the real interest rate and the rate of real GDP growth, a standard result in debt sustainability analysis. In addition, the growth of debt to GDP ratio is reduced if households save, which is captured by the second term on the right.

<sup>9</sup> While this estimation cannot be highly accurate, it provides useful guidance as to the needed residual deleveraging in the Netherlands.

<sup>10</sup> This dynamics holds for debt to income or debt to GDP ratios.

$$\dot{b} = (i - \pi - g)b - s. \quad (0.2)$$

In this equation,  $i$  is the nominal interest rate,  $\pi$  is the rate of inflation,  $g$  is the growth rate of real income, and  $s$  is the saving rate. For simplicity, the saving rate is assumed to be constant. Using the initial condition that starting debt is equal to  $b_0$ , we obtain the solution for the level of debt at time  $t$ .

$$b = b_0 + \frac{s}{i - \pi - g} \left[ 1 - e^{(i - \pi - g)t} \right]. \quad (0.3)$$

And for the required saving rate to lower the debt from  $b_0$  to  $b$  in  $T$  years it follows

$$s = (i - \pi - g)b_0 \left( 1 - \frac{(b - b_0)/b_0}{e^{(i - \pi - g)T} - 1} \right). \quad (0.4)$$

Combining equations (0.1) and (0.4) provides a convenient approach for estimating the aggregate burden of deleveraging.

23. **After the housing bust, the equilibrium level of debt starts growing with the growth of prices.** To determine the change in the savings rate needed to reduce the debt to the required level, we have to take into account that after the bust, house prices start recovering. If we assume that they recover at a constant rate  $\pi_h$ , we get the following equation for the target debt

$$b_t = b_0 \left( \frac{\Delta P_h}{P_h} \right) e^{\pi_h \cdot t}. \quad (0.5)$$

Combining equations (0.3) and (0.5), it follows that the time needed to deleverage is given by the solution to the following equation <sup>11</sup>

$$b = b_t \Rightarrow b_0 + \frac{s}{i - \pi - g} \left[ 1 - e^{(i - \pi - g)t} \right] = b_0 \left( 1 - \frac{\Delta P_h}{P_h} \right) e^{\pi_h \cdot t}. \quad (0.6)$$

24. **The changes in savings rates due to deleveraging depend on the length of the deleveraging horizon, on the growth of house prices, and on the main macroeconomic variables.** For illustration, we analyze the cases where deleveraging lasts between 5 and 10 years.

<sup>11</sup> Since in general, in this equation the exponential terms do not grow at the same rate, we cannot find a closed form solution, but the equation can readily be solved using simple numerical methods.



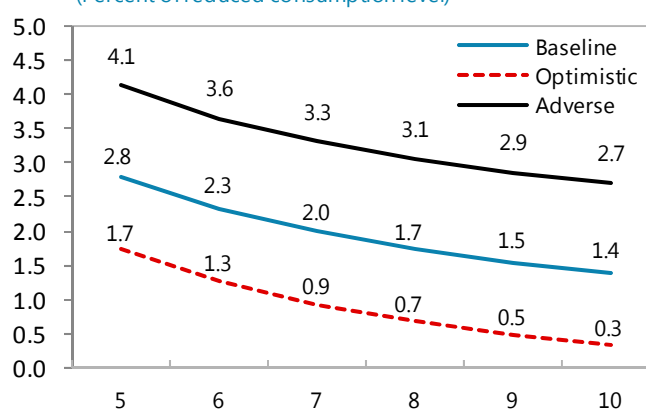
We assume that during that period the interest rate, GDP growth, inflation, and house prices are constant follow one of the following four alternative scenarios.

**Table 3. Scenarios for Deleveraging Analysis**

	Interest rate	Inflation	GDP Growth	House price growth
Baseline	3.5	1.5	1.3	1.0
Optimistic	3.5	2.0	2.0	2.0
Adverse	3.5	0.5	0.8	0.5
Pre-crisis performance	4.5	3.0	2.5	5.0

25. **The case of no house price growth gives an upper bound estimate for the duration of deleveraging.** The Figure on the right shows the changes in the level of desired saving if the macroeconomic variables fit into one of the four proposed scenarios, given that house prices do not grow. For example, under the adverse scenario, households would need to decrease their consumption by 3 percentage points above the level of savings which keeps mortgage debt unchanged, in order to reach the new equilibrium level of debt in eight years. Two results are readily apparent and conform to intuition. First, a gradual pace of deleveraging affects the level of consumption much less than a fast one. Second, the more favorable the economic environment, the less downward adjustment of consumption is needed by households to reach the lower debt target. This suggests that deleveraging should not be abrupt and that policies that support growth and prevent disinflation should be implemented to ease the reduction of debt.<sup>12</sup>

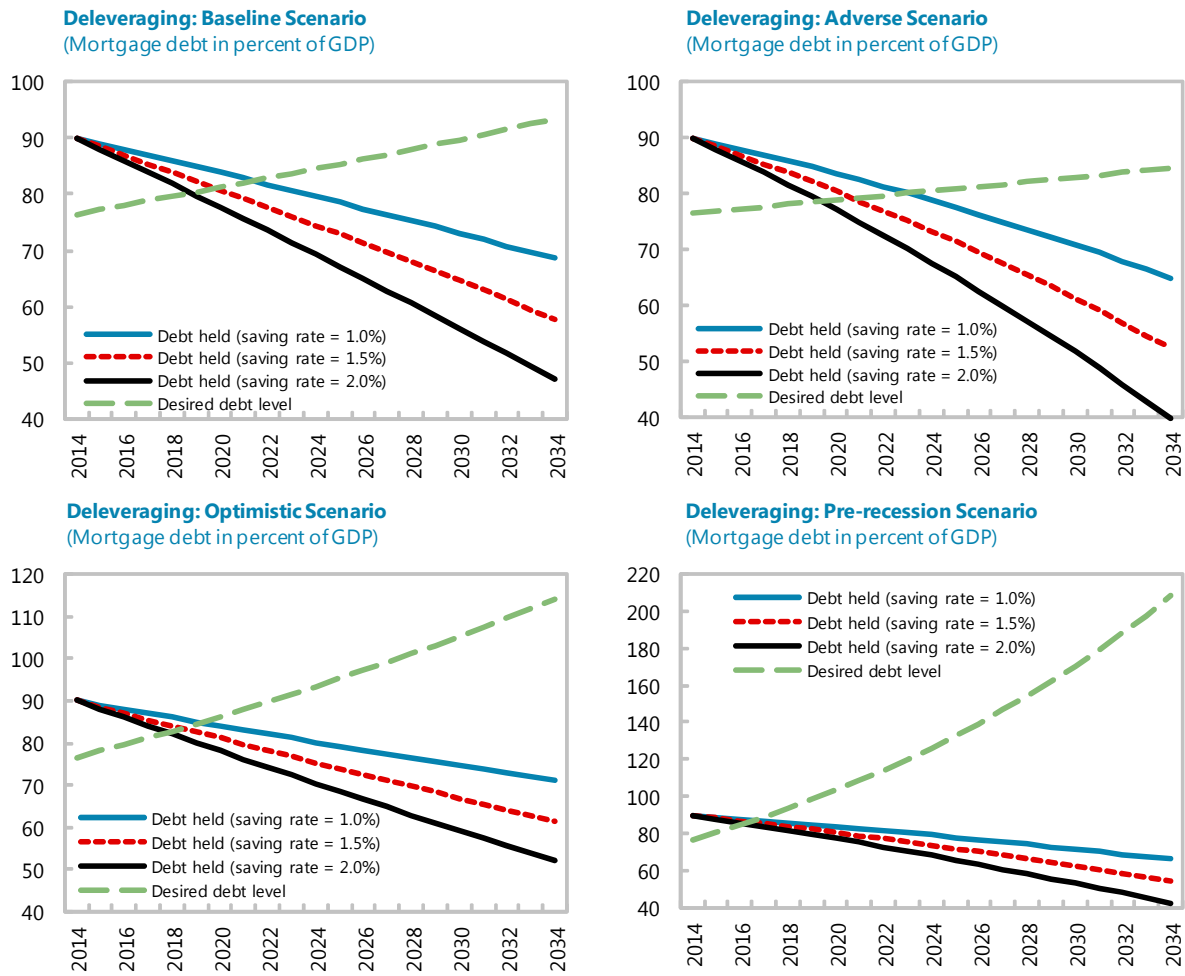
**Consumption and Deleveraging**  
(Percent of reduced consumption level)



Source: Staff Calculations.

26. **Duration of deleveraging depends strongly on the average growth of house prices over the medium to long term.** The panel below shows the dynamics of existing debt and the desired debt level. The latter is assumed to have declined by the drop in real house prices and then continues growing at a constant rate equal to the rate of appreciation of house prices.

<sup>12</sup> The current pace of deleveraging suggests that Dutch households have chosen a gradual approach.



Source: Staff calculations.

The duration of deleveraging for the four scenarios is presented in the table below.

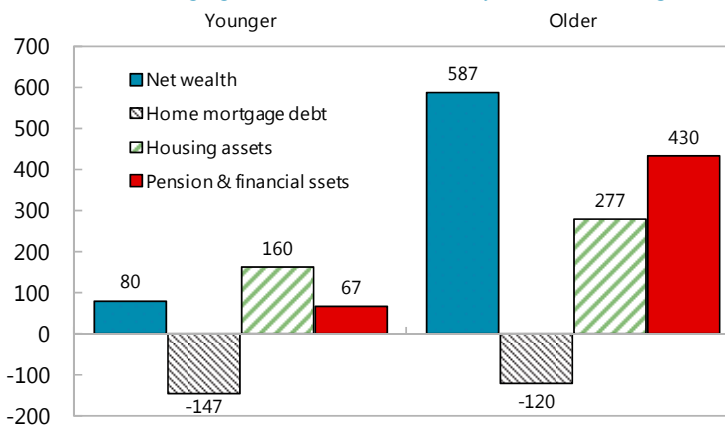
**Table 4. Duration of Deleveraging**

Scenario	Saving rate		
	1 percent	1.5 percent	2 percent
Baseline	7.4	5.8	4.8
Adverse	9.0	6.8	5.4
Optimistic	5.2	4.4	3.8
Pre-crisis	2.7	2.7	2.3

### Differences in Debt Overhang between Generations

27. **The losses of housing equity, caused by the deflated housing prices in the Netherlands, were larger for the young generations.** The reasons are twofold. First, the young bought their houses near the peak of the market and did not enjoy the appreciation of house prices prior to that period. Second, their starting net wealth was low and their purchases heavily leveraged, leading to large losses of housing equity because of large leverage multipliers. As the chart on the right shows, the younger generations are much more heavily leveraged than the old ones with larger average

**Balance Sheet of Dutch Households by Age, 2011**  
(Percent of average gross household income by main earner's age)



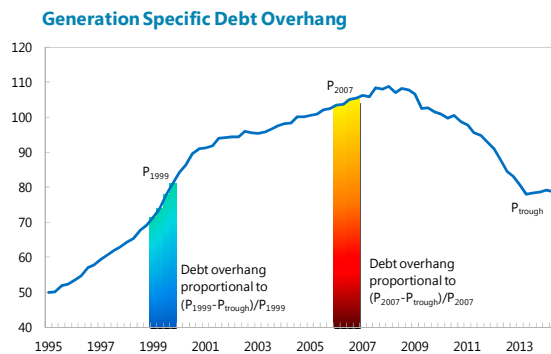
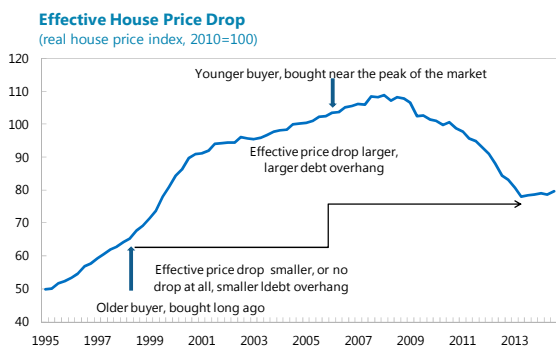
Source: Dutch Central Bureau of Statistics and DNB

LTV ratios. This implies that they lose a larger share of housing equity than the older generations for the same decline in house prices. The reason for this is that losses of housing equity are levered, connected to house prices through the following equation

$$\frac{\Delta e}{e} = \frac{\Delta p}{p} \frac{1}{1 - LTV} \tag{0.7}$$

From equation (0.7) it follows that in 2011, the average leverage multiplier for the younger generations was approximately 12, while for the older generations it was only 1.8. Consequently, an 8 percent drop in house prices would practically eliminate all housing equity of the younger generations while the older generations would lose around 15 percent of their housing equity.

28. **The effective drop in house prices and the debt overhang are generation specific and larger for younger households.** The households that bought houses before 2000 have not lost any housing wealth due to the decline in house prices, at least measured since the time of the purchase.

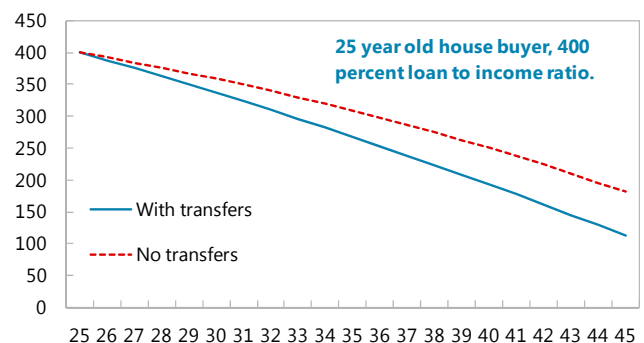


However, the younger households, who entered the housing market around its peak, did not enjoy a prolonged period of house appreciation, but had to bear the bulk of the price declines. This also implies that debt overhang is specific to a particular age cohort. On one hand, the current debt overhang for those households who bought houses before 2000 is small or equal to zero. On the other hand, the current debt overhang for the younger households is well approximated by expression (0.1). From these considerations it follows that a more detailed treatment of debt overhang must be based on generational considerations.

29. **One possible measure to assist with deleveraging is to make pension contributions into the second pillar age dependent.** Currently, most Dutch employees pay into the system of occupational pensions, known as the second pillar of the pension system. The second pillar is fully funded and represents a major component of household wealth. The pension accrual rates are equal for all participants. The reason for this is that pension benefits are back loaded—the marginal pension income increases with age and tenure. While this system makes active participation in the labor force until the full pensionable age attractive to older workers, it possesses an implicit and sometimes undesirable feature of a pay as you go systems—it transfers resources from the young (and relatively poor) to the old (and relatively wealthy). Since young employees contribute in excess of what is actuarially fair, their disposable income are lower at the time when many of them also have underwater mortgages. Making pension contributions actuarially fair, that is equating the future value of their contributions with the accrual rate, could lessen the drag of debt overhang on consumption by easing liquidity constraints on the most indebted (the young).

30. **Intergenerational rebalancing could accelerate deleveraging of the young households and reduce the negative effect on their consumption.** Reducing pension contributions could help accelerate deleveraging by giving younger generations additional resources to reduce their debt. Simulations show that over a ten year horizon, younger house owners could accelerate the amortization of debt by approximately fifty percentage points, should such transfers be implemented. This implies that, on average, implementing the described intergenerational transfers could help younger households to eliminate the debt overhang three years faster.

**Outstanding Mortgage Debt**  
(in percent of annual income)



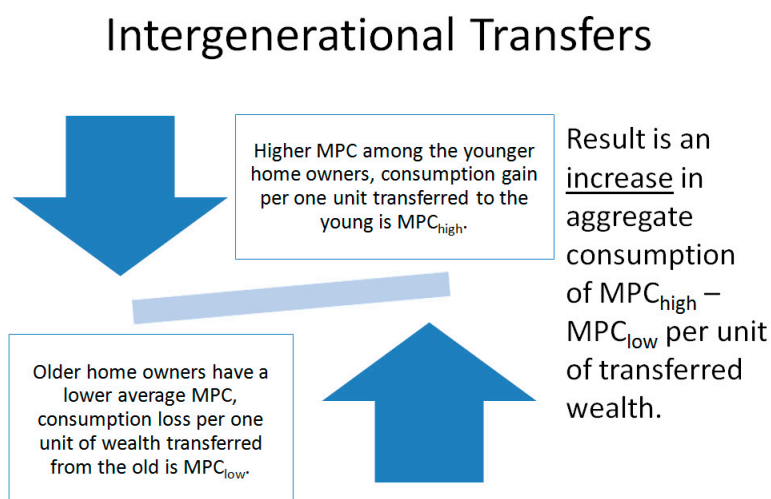
Source: Fund staff calculations

31. **Young and the old house owners have different marginal propensities to consume out of wealth.** Higher exposures to leveraged losses and stronger liquidity constraints incentivize young house owners to spend less out of wealth in order to maintain buffers against adverse shocks. Mian

and Sufi (2014) confirm this finding empirically for the U.S. Van Beers, Bijlsma, and Mocking (200x) discovered a related result for the Netherlands in their forthcoming paper.<sup>13</sup> They find that young households with an underwater mortgage respond more strongly to house price changes than older households with LTV ratios below one.

32. **Transfers from the old to the young (or a reduction of transfers from the young to the old) could boost aggregate consumption.**

A direct consequence of the above discussion is that transfers of wealth from the older generations (with lower MPC) to the younger generations (with higher MPC) could boost aggregate consumption and lower. As a way of illustration, one unit of wealth, transferred from the old reduces aggregate consumption by  $MPC_{low}$ . The transferred unit also increases the consumption among the young by  $MPC_{high}$ . As long as the difference between two MPC's is large enough, such transfers could boost aggregate consumption. It is a matter of empirical analysis to determine the magnitude of the change.



33. **Some practical applications of transfers to the younger house owners have already been implemented in the Netherlands.** The temporary tax exemption for gifts up to €100,000 that are used to reduce mortgage debt has proven very popular. The measure implicitly follows the logic described above. A related measure was the forthcoming across-the-board reduction of the accrual rate for occupational pensions. The accrual rate has been reduced from 2.25 to 1.875 percent. The reduction will become effective on January 1, 2015. The authorities have put in place several mechanisms to ensure that the lowering of the accrual rate will result in lower pension premiums. The reduction will increase disposable income and help increase consumption.

## D. Conclusion

34. **The global recession and regulatory tightening have helped deflate the housing prices with the losses falling disproportionately on the younger generations.** House prices have declined by 27 percent in real terms since their peak in late 2008. The deflation of Dutch housing

<sup>13</sup> The theoretical results were developed by Carroll and Kimball (1996), who prove the concavity of the consumption function with respect to wealth in a general multiperiod stochastic decision problem.

prices has caused massive losses of wealth which are unevenly distributed across generations. Younger house buyers are burdened by the lion's share of losses in housing wealth. In addition to greater housing losses, younger households have not have sufficient time to accumulate pension claims and other (financial) assets households under the age of 35 have negligible levels of net worth.

- **In the Netherlands, house prices strongly influence on consumption.** Since 2000, private consumption has been influenced by house prices more than by changes in disposable income. An econometric estimate of the elasticity of private consumption with respect to real house prices is statistically significant in a simple econometric model as well as in a simultaneous equation model. The estimated elasticity with respect to disposable income is equal in size; however it is not statistically significant. This result helps explain the downward trend of consumption after 2008.
- **The overhang of the aggregate mortgaged debt is approximately 15 percent of GDP above its current level and reaching it would reduce the level of consumption by one to four percentage points during the deleveraging period.** The changes in savings rates due to deleveraging depend on the length of the deleveraging horizon and on the main macroeconomic variables. The range of percentage points of reduction in consumption required to reach the new equilibrium level is between two and four percent.
- **Young and the old house owners have different marginal propensities to consume out of wealth.** Higher exposures to leveraged losses and stronger liquidity constraints incentivize young house owners to spend less out of wealth in order to maintain buffers against adverse shocks. Transfers from the old to the young could boost aggregate consumption.

Table 5. Estimates With Exogenous House Prices

VARIABLES	(1) Investments	(2) Exports	(3) Imports	(4) Consumption	(5) Disp. Income
L.Exports		-0.00462 (0.0490)			
Imports		0.950*** (0.172)			
y_row	0.401 (0.590)	0.306 (0.391)			
D.RER		0.825 (3.910)	3.357 (2.464)		
L.y_row	1.988*** (0.477)				
D.HPI	0.660** (0.298)				
L.Imports			-0.0615 (0.0492)		
Exports			0.766*** (0.0583)		
y			0.399*** (0.139)		0.537*** (0.194)
Disp. Income				0.170 (0.202)	
HPI				0.217*** (0.0507)	
Consumer confidence				0.00925 (0.0266)	
Gov. consumption					0.0447 (0.159)
Constant	-3.505** (1.604)	-0.153 (0.405)	0.474 (0.313)	0.545 (0.509)	-0.455 (0.586)
Observations	15	15	15	15	15
R-squared	0.679	0.960	0.975	0.828	0.346

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 6. Estimates With Endogenous House Prices

VARIABLES	(1) HPI	(2) Investments	(3) Exports	(4) Imports	(5) Consumption	(6) Disp. Income
y_row		0.226 (0.521)	0.659** (0.284)			
L.y_row		2.166*** (0.424)				
D.HPI		0.733*** (0.248)				
y	1.070 (0.663)			0.369*** (0.132)		0.542*** (0.194)
Consumer confidence	0.225*** (0.0719)				0.0442 (0.0332)	
L.Exports			-0.00163 (0.0427)			
Imports			0.789*** (0.131)			
D.RER			1.816 (3.388)	3.972* (2.365)		
L.Imports				-0.0607 (0.0492)		
Exports				0.783*** (0.0588)		
Disp. Income					0.118 (0.211)	
HPI					0.121* (0.0705)	
Gov. consumption						0.0697 (0.153)
Constant	2.765 (2.071)	-3.442** (1.508)	-0.201 (0.387)	0.449 (0.323)	1.161* (0.624)	-0.523 (0.580)
Observations	15	15	15	15	15	15
R-squared	0.682	0.678	0.960	0.973	0.797	0.348

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1



**Table 7. Estimates With Endogenous House Prices and Stock Prices**

VARIABLES	(1) HPI	(2) Stock prices	(3) Investments	(4) Exports	(5) Imports	(6) Consumption	(7) Disp. Income
y_row			0.430 (0.451)	0.685** (0.282)			
L.y_row			1.716*** (0.363)				
D.HPI			0.829*** (0.207)				
y	1.142* (0.668)	6.895** (2.823)			0.384*** (0.131)		0.543*** (0.194)
Consumer confidence	0.218*** (0.0724)	-0.104 (0.337)				0.0403 (0.0354)	
L.Exports				0.0175 (0.0419)			
Imports				0.762*** (0.130)			
D.RER				2.481 (3.367)	3.719 (2.357)		
L.Imports					-0.0745 (0.0488)		
Exports					0.789*** (0.0597)		
Disp. Income						0.110 (0.213)	
HPI						0.116* (0.0700)	
Stock prices						0.0132 (0.0144)	
Gov. consumption							0.0597 (0.152)
Constant	2.558 (2.086)	-13.45 (9.085)	-2.809** (1.383)	-0.221 (0.386)	0.463 (0.323)	1.145* (0.644)	-0.499 (0.579)
Observations	15	15	15	15	15	15	15
R-squared	0.681	0.310	0.660	0.958	0.973	0.764	0.347

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

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## Appendix I. A Model of Household Consumption and Deleveraging

1. **To conceptualize the impact of debt overhang and deleveraging and demonstrate one possible mechanism that gives rise to wealth dependent marginal propensities to consume, we develop a life-cycle model of household consumption which contains a stylized specification of labor income pension income, pension contributions, mortgage amortization, borrowing constraints and bequest motives.** We model life-cycle dynamics of income and savings for households of any age between 25 and 80 as a non-stationary decision problem. For simplicity, we assume that pension contributions and house prices are determined exogenously. The decision to consume depends on the current wealth, current and future income, and the preference for liquidity, whose strength depends on the level of housing equity. This preference reflects the demand for buffer stock liquid savings.<sup>1</sup>
2. **A household derives utility from consumption, liquid wealth, from bequeathing terminal wealth.** Preferences are time additive and separable between consumption and liquid wealth. Furthermore, we assume that households must consume a positive minimal level of consumption,  $\underline{c}$ .<sup>2</sup> Per period utility at time  $t$  is

$$u(c_t, l_t) = \frac{(c_t - \underline{c})^{1-\sigma}}{1-\sigma} + \phi(e_h) \left( l_t (\bar{l} - l_t) \right). \quad (0.8)$$

In the above expression,  $\sigma$  is the coefficient of relative risk aversion;  $\phi$  is the strength of preference for liquid wealth and  $\bar{l}$  stands for the maximum desirable level of liquid buffer stock. Consumption and liquid wealth are denoted by  $c_t$  and  $l_t$  respectively and  $h_e$  is the level of housing equity. The utility derived from bequeathing terminal wealth  $w_T$  is

$$v(w_T) = \frac{w_T^{1-\theta}}{1-\theta}. \quad (0.9)$$

$\theta$  is the intensity of bequest preference and  $w_T$  is the total wealth that the household bequeaths. If  $\beta$  denotes the time discount factor, then a household lives from age  $t_1$  to age  $T$ , solves the following life-cycle problem

$$\max_{\{c_t\}_{t=t_1}^T} \sum_{t=t_1}^T \beta^t u(c_t, l_t) + v(w_T). \quad (0.10)$$

Problem (0.10) must be solved subject to the following budget constraints. The evolution of household wealth is exogenous and determined through, changes in house prices,  $p_t$

<sup>1</sup> The model shows that preference for liquidity can generate strong MPC dependence even in a deterministic model.

<sup>2</sup> This assumption encapsulates social transfers in money and in kind.

$$p_{t+1} = p_t (1 + \zeta_t). \quad (0.11)$$

Similarly, the growth of labor income is given by

$$y_{t+1} = y_t (1 + \zeta_t). \quad (0.12)$$

After retirement, households receive pensions. The pension income is given by the product of the sum of accrual rate over the employment history (from  $t_1$  to retirement time,  $t_2$ ) and the pensionable income  $b_{t_2}$ . Pension accrual rates can be time dependent but the pension income is assumed to be constant (in real terms) throughout retirement.

$$yp_t = b_{t_2} \sum_{t=t_1}^{t_2} a_t. \quad (0.13)$$

Disposable income is the sum of after tax labor income (accounting for the tax shield due to MID) and pension receipts, reduced by the mortgage interest payments,  $i_t$  and pension contributions,  $pp_t$ . The evolution of liquid wealth is therefore given by

$$l_{t+1} = l_t (1 + r_t) + y_t + yp_t - c_t - i_t - pp_t. \quad (0.14)$$

Finally, we assume that households are liquidity constrained and that their level of liquid wealth has to exceed a certain floor level  $\underline{l}_t$ , which can be time dependent.

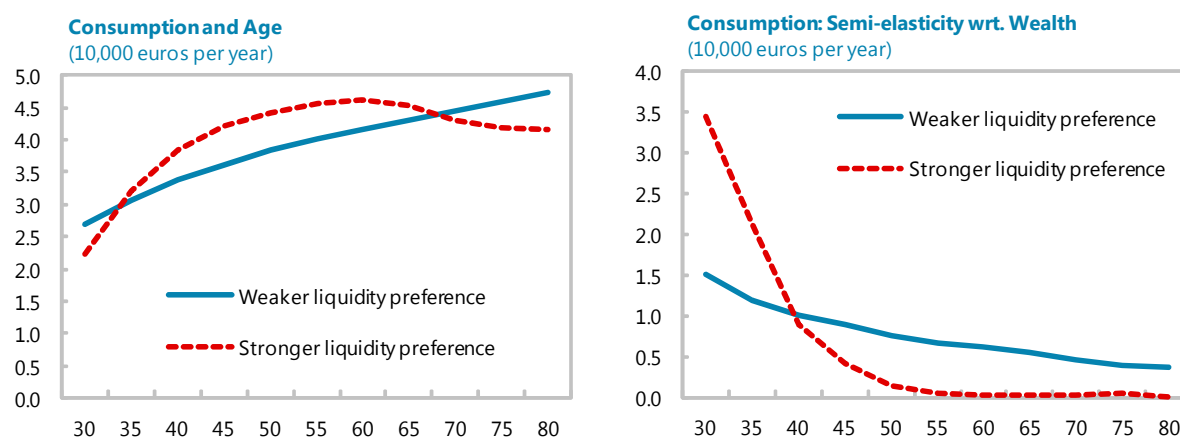
3. **The model is calibrated to reflect the current policy macroeconomic environment.** The pension accrual rate has been recently reduced from 2.25 to 1.875 percent. The current MID rate is assumed to be 52 percent, reduced by 0.5 percent each year until it reaches 38 percent. We assume that mortgages must be fully amortized in 30 years or less and that agents retire at age 65. The personal discount factor  $\beta$  is set to 0.99, and the coefficient of relative risk aversion 2, and the lower bound on annual consumption expenditures is 10,000 euro. Other parameters are presented in Table A-1.

**Table A-1. Economic environment**

Labor income growth rate (percent per year)	1.5
Current house value (10k euro)	22
Initial mortgage value (10k euro) /1	25
Initial financial wealth (10k euro)	1.0
Starting annual labor income after tax and contributions (10k euro)	3.0
Mortgage rate (percent per year)	3.9%
Growth rate of real house prices (percent per year)	1.0%

/1 mortgages start underwater

4. **The model is analyzed for two cases: stronger and weaker liquidity preferences.** The solutions are presented in the charts below. Liquidity preference strongly affects the life-cycle trajectory of consumption. Specifically, during young age, when households are strongly liquidity constrained (cannot borrow against housing equity, because they have little or no of it), they reduce consumption when liquidity preferences strengthen. This implies that in an environment of increased uncertainty, when liquidity buffers become “more valuable”, households are going to save more. The chart on the right shows the marginal effect of a positive one time shock to wealth. Two findings emerge: young households have higher semi-elasticity of consumption out of wealth than old ones and the semi-elasticity increases together with the strength of liquidity preferences.



Source: Staff calculations.

5. **The above simulations suggest that there exist possibilities for improving the welfare of young underwater households.** The general idea is to transfer resources to the households with low liquid buffers, since their semi-elasticity of out of wealth is high. There are several possible mechanisms to achieve such transfers. One has already been implemented by the authorities, by allowing temporary tax-free gifts to (mostly young) households that are suffering from debt overhang. Another possible mechanism is to reprofile social and pension contributions to increase the disposable income of underwater households.

# BUILDING A MORE RESILIENT AND EFFICIENT MARKET FOR HOUSING AND FINANCE IN THE NETHERLANDS <sup>1</sup>

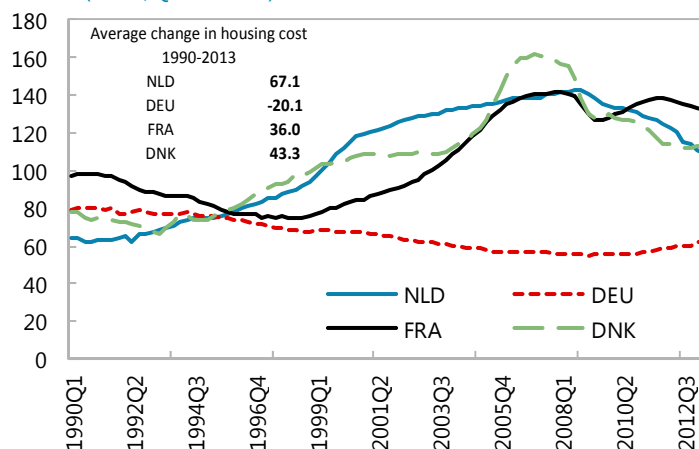
*The housing market plays a key role in the Dutch economy as source of household wealth, collateral for SME borrowing, and for investment and employment. The sector is also heavily distorted by supply restrictions and large fiscal incentives. They have contributed to a shortage of supply, buildup of large household debt, sizeable fiscal transfers, and financial risks. Reforms should focus on easing supply constraints, expanding the private rental market, developing more efficient instruments for housing finance, and enhancing macroprudential policies.*

## A. Background

**Housing supply is inelastic, constrained by administrative requirements and a large social sector**

1. **Zoning regulations have constrained supply and contribute to its low price elasticity.** Despite having twice the population density of Italy and Germany, only about 20 percent of the Netherlands' territory is built on. In addition, tight zoning and other regulations have held back new developments. Hence, supply is heavily influenced by various policies, such as urban planning, fiscal incentives, and social welfare policies, rather than house price developments.

**Affordability in Housing, 1980-2013 1/**  
(Index, Q1980=100)

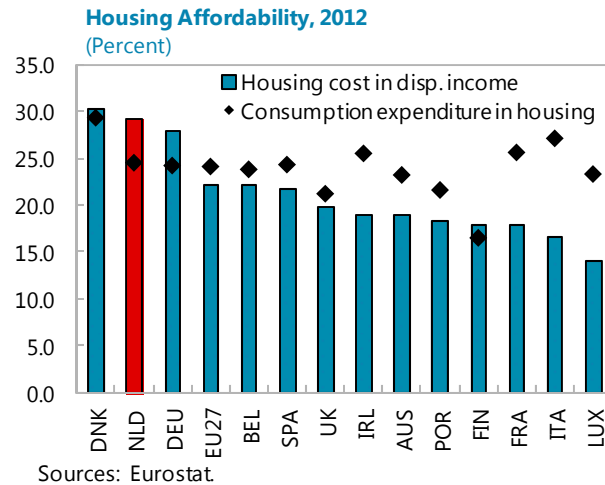


1/ Calculated as the average of the price-to income and price-to rent ratio  
Source: IMF Research Department database, and IMF staff calculations.

<sup>1</sup> Prepared by Michelle Hassine, EUR. The paper is also part of EUR's housing cluster project on regional lessons for strengthening the housing market.

2. **Eighty percent of all rental dwellings are in social housing, leaving little room for a private rental market.** Social housing operates on the basis of tight rent-cost regulation and public housing policies. 95 percent of the regulated sector is managed by housing corporations, who are supported by public guarantees on their funding (see Box). In contrast, the rental sector—about 13 percent—has declined in size and remains heavily regulated. Only 4-5 percent of the residential market has rents above the regulatory threshold (currently at €699 per month) and is unhindered by rent controls.

3. **Despite the prevalence of social housing, housing affordability is similar to European peers.** Housing costs have risen both for tenants and homeowners. In 2012, housing absorbed nearly one quarter of households' expenditure, with the share slightly above the EU28 average in the past 20 years.



**At the same time, certain features in housing finance have amplified financial vulnerabilities**

***Tax incentives to homebuyers have favored asset accumulation***

**Tax incentives have encouraged investment in housing as a major source of household wealth.** Homebuyers seek to optimize a tax-sheltered stream of income and were guided by tax incentives towards high leverage. Generous tax incentives have improved house affordability and ownership, but also resulted in higher household indebtedness and balance sheet sensitivity to house prices.

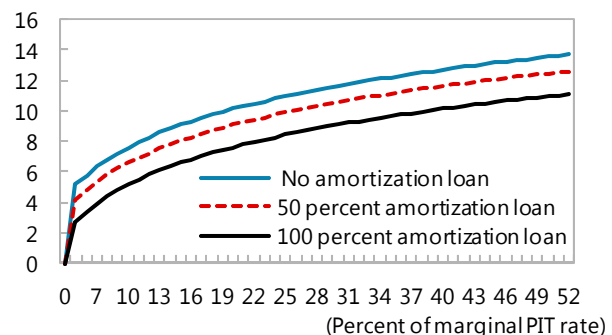
4. **In the Netherlands, mortgage interest deductibility (MID) is the main subsidy for homebuyers.** Considered as a regular element of the tax structure rather than a special deduction, the MID allows households to benefit from full interest deductibility at the top marginal rate (up to 51.5 percent in 2014). The total yield

Netherlands: Mortgage interest deduction, 2011

	In billion EUR	Average mortgage rate, in percent
Mortgage loans	371.7	4.8
Average interest rate, percent		
Mortgage interest	17.7	
Mortgage interest deduction	12.0	
Net post-MID mortgage interest cost	5.7	1.5

Sources: Dutch Ministry of Finance, and IMF staff calculations

**Total yield associated with the MID**  
(Percent of house value 1/)



Sources: NIBUD data; and IMF staff calculations.

1/ Parameters: Nominal values on the basis of a 30-year €100,000 mortgage loan; annual mortgage rate 3 percent; NHG guarantee at 1 percent, and transaction fee at 2 percent. The mortgage loan has no associated saving scheme.

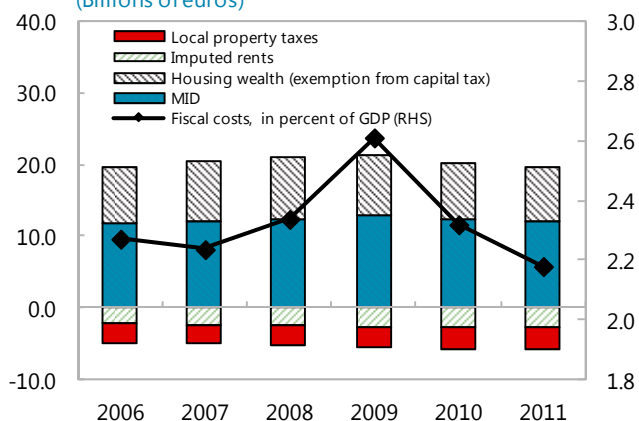


associated with the MID is significant, and grows over time along with the marginal income tax bracket. For example, a non-amortizing loan yields the highest return under MID with a cumulated yield close to 14.5 percent at the highest tax bracket, as the outstanding loan remains intact throughout the loan period. A fully amortizing loan in the same conditions produces a return of about 11.5 percent. As they are able to optimize their asset portfolio, borrowers tend to opt for the highest leverage to extract the largest fiscal advantage. As the yield associated with the MID progresses with income and size of the mortgage, the MID benefit is concentrated among higher-income homebuyers, suggesting implicit tax subsidies from lower-income to higher income taxpayers.

**5. Other tax measures encourage household leverage by providing a stream of income from home ownership.**

For example, in comparison with financial securities, capital gains on the main residence are not taxed. Also, owner-occupied houses are not taxed on the basis of capital income but on labor income, which is much more progressive. Additionally, a portion of the home value is included in the taxable income through the tax on imputed rent—directly contributing to an average 7 percent increase in disposable income for borrowers.<sup>2</sup>

**Budgetary Costs of Housing Policies in Property Market**  
(Billions of euros)



Source: CBS, 2012

***Mortgage finance has created risks for the banking sector***

**6. The size of the Dutch mortgage market is well above those of its European peers.**

(Figure 1) Mortgage debt reached 110 percent of GDP at end 2013, about twice the average euro area average. Mortgage loans are concentrated among the top three banks, who have 84 percent of the market. Competition has been severe until the financial crisis, as mortgage finance gave banks the resources to fund their expansion overseas.

<sup>2</sup> Figari, and al., "Taxing Home Ownership: Distributional Effects of Including Net Imputed Rent in Taxable Income", IZA Discussion Paper, April 2012.

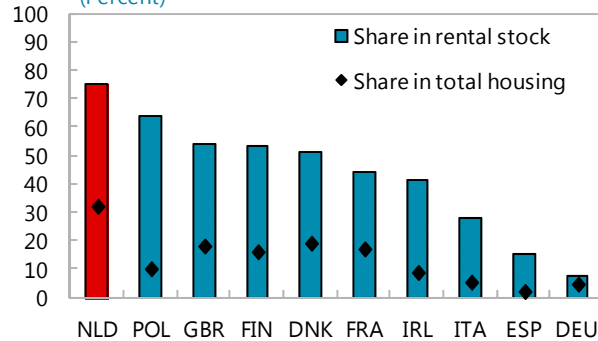
### Box 1. Social Housing Corporations in the Netherlands

*A long history of regulating housing has made social housing a dominant presence in the market. Housing corporations manage 2.4 million dwellings, 34 percent of the existing stock, and offer cheap housing to low and middle-income households. Social housing dominates the rental sector and in big cities, such as Amsterdam and Rotterdam, more than half of all dwellings are social.*

#### **About 420 social housing corporations manage close to 95 percent of rented dwellings.**

Most of the housing corporations were established before 1930, with the oldest ones founded in the second half of the 19<sup>th</sup> century by corporations, charitable institutions, churches, and municipalities. Housing corporations constructed 60 percent of all new dwellings in 2011, and operate their dwellings within government rent-price regulation and tenure protection in various forms. Housing corporations manage tenures through a complex scoring system for dwellings and waiting lists for tenants. On average, the waiting time for social housing in Amsterdam and The Hague is 8 and 6 years, respectively.

**The Netherlands has the Largest Share of Social Housing Among EU Countries**  
(Percent)



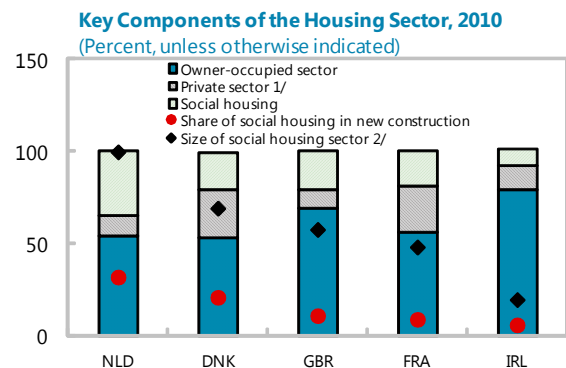
Source: CECODHAS Housing Europe, Housing Europe Review, 2012

**Housing corporations must be legally self sustaining.** A reform bill in 1995 reform ended subsidies and altered public support to housing corporations by giving full ownership of the social housing stock to the corporations. Since the reform, housing corporations have mainly relied on rents and other real-estate activities for funding. Selling dwellings allows housing corporations to realize the latent value added of their assets. Additionally, cross-subsidies among housing corporations through financial transfers ensure that wealthier corporations support weaker ones.

**Housing corporations still benefit from significant public support.** Housing corporations are incorporated as non-profit corporations, with a majority established as foundations. They are eligible for government guarantees when raising funding from the Guarantee Fund for Social Housing (WSW), and reduced prices for purchasing land from local governments. At end-2013, housing corporations had borrowed about 14 percent of GDP (€86.2 billion) from the WSW.

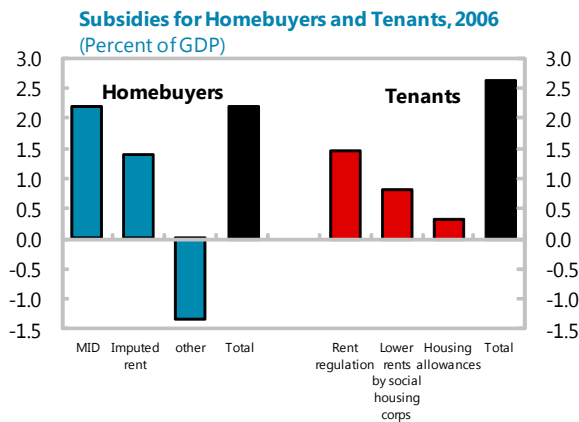
**Housing corporations were often found lacking proper governance and transparency.** Their Boards of Directors are self-appointed with limited supervision by public authorities. Housing corporations may engage in activities beyond their core business, including risky investments. The large losses on derivative deals by the top housing corporation in 2012 prompted the authorities to strengthen oversight and enforce more stringent reporting.

**Figure 1. Netherlands: Salient Features of the Housing Sector**

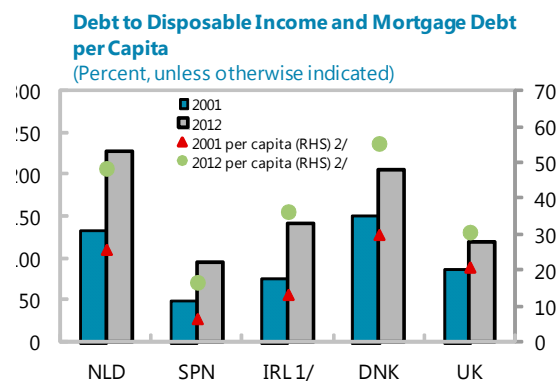


1/ Includes regulated private sector (about 5 percentage points).  
2/ Size in proportion of Netherlands' sector.

Sources: OECD and IMF staff calculations.



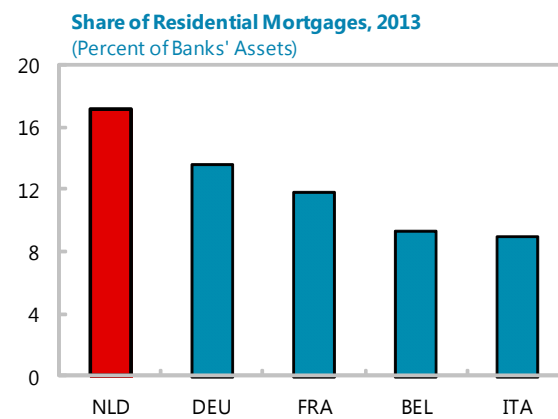
Sources: Beseling et al. (2008); based on Romijn and Besseling, 2008)



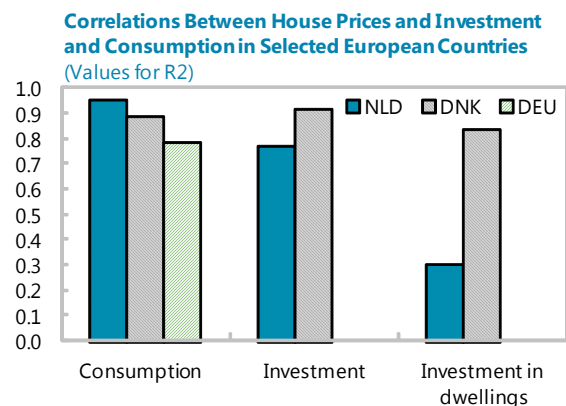
Sources: European Mortgage Federation and Hypostat 2013.

1/ Ireland data 2002.

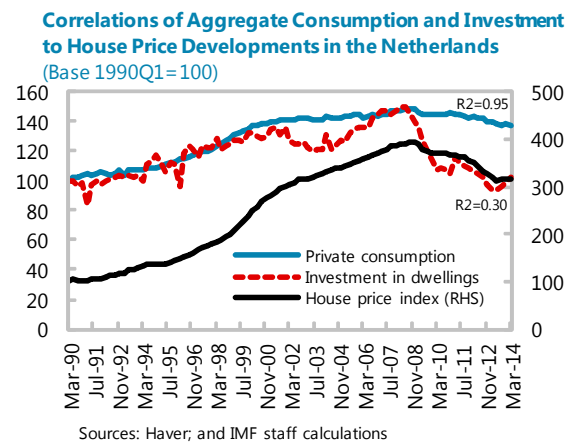
2/ In thousand euros.



Sources: Central banks' monetary data (SRF); and IMF staff calculations.



Sources: OECD, Bundesbank, Haver, Global Insight, and IMF staff calculations.



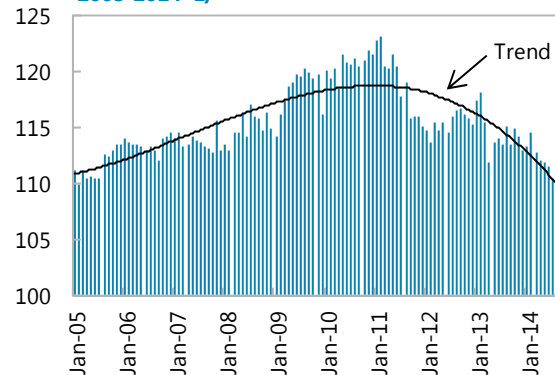
Sources: Haver; and IMF staff calculations

7. **Dutch banks are more protected than their peers from mortgage lending.** Deemed a secure business mainly due to low default, mortgage lending provides a steady stream of income at low credit risk. Households are encouraged to keep large outstanding balances for the longest time due to the interplay of the high LTVs at issuance and generous MID over the mortgage lifecycle. Personal bankruptcy laws protect creditors' claims, with little room for strategic default. The large share of mortgage insurance provides an additional solid backing for any residual loss. National rules on risk-weight for mortgages keep the cost of capital comparatively low.<sup>3</sup>

8. **Primarily designed to optimize tax benefits, mortgage products can be often complex.** Mortgage loans are usually rollover 5 to 10-year loans, with a total maturity up to 30 years at adjustable rates. They typically mix one or more borrowing commitments (part non-amortizing, the rest amortized), insurance contracts, and a sequestered savings account, serving to net out the outstanding mortgage in a single payment at the end of the contract. Two thirds of the market include principally or secondarily non-amortizing loans; about a fifth of mortgage outstanding includes a saving account.

9. **Macroprudential measures have not curbed the growth of mortgages.** In 2007 the Mortgage Lenders' Code of Conduct introduced a loan-to income (LTI) ratio to 30 percent. Given an assumed 5.5 percent interest rate, a typical mortgage loan would then be limited to 4½ times the gross annual income of an average-income household. Meanwhile, lenders started taking second incomes into account, in effect neutralizing the LTI cap. Limited only from 2012, LTVs would routinely reach well beyond 100 percent, as financing needs included additional ancillary costs—mortgage insurance, transfer taxes, and house renovation. Accordingly, borrowers would apply for the highest loan amount, based on their LTI or LTV ratios.

Average LTVs on New Loans Extended During 2005-2014 1/



1/ Based on actual transactions.

Sources: Kadaster, CBS, and IMF staff calculations.

10. **This also created vulnerabilities for the banks.** Banks concentrated their credit exposures in housing, with idiosyncratic risks turning into systemic risks. The high loan to deposit ratio (1.36 at end-2013) reflected their heavy reliance on wholesale funding for nearly 10 percent of their assets. When housing prices started falling in mid-2008, banks increased provisions, and cut back on new mortgages, worsening procyclicality and putting pressure on the housing market and indebted households.

<sup>3</sup> The risk weight of mortgage loans is 11.5 percent in Netherlands, compared to nearly 17.5 percent in Germany, 20 percent in Italy, and 8 percent in Belgium and Finland.

**The government ultimately absorbs private risks through the NHG, a publicly-funded mortgage insurance**

11. **Government-sponsored mortgage guarantees are generous and contribute to housing affordability.** Created in 1995, the National Mortgage Guarantee (*Nationale Hypotheek-garantie*, NHG) offers protection to lenders from any residual debt after a forced sale of the house. The NHG is fully funded by mortgage borrowers, and receives an explicit public guarantee. Absent private alternatives to NHG mortgage insurance, the NHG covered about 70 percent of outstanding mortgages in 2013.

Mortgage insurance markets--International comparison

Country (date of creation)	Monoline	Ownership of mortgage insurance scheme	Government guarantee	Maximum exposure of mortgage insurance (in percent)	Required downpayment on mortgage (in % of house value)	Threshold for requirement	Capital relief for banks	Cost for borrowers
Netherlands (1957)	No	Public	Yes, explicit	90 (2014)	No	No	0% of RWA	1.0% upfront
Australia (1965)	yes	Private	No	100	5% minimum	No, but in practice banks request insurance when LTV > 80.	30% reduction in RWA	0.5 to 4.4% upfront, varying on LTV and sum insured
Canada (1954)	yes	Mixed public/private	Public insurance: 100%; Private insurance: 90%	100	20% minimum	Yes, from 80% LTV	Based on own capital requirements (capital test for non-life insurers), plus specific provision.	1.75-2.90% upfront, varying on LTV and mortgage product
France (1993)	No	Private	No	100	5% minimum	No	Depends on borrower' rating	2.0% upfront + 0.15% annually

Sources: Basel Committee on Banking Supervision, BIS (BIS2013); Reserve Bank of Australia; Londerville J.

12. **NHG support has contributed to increasing household leverage and housing risks for banks.** Mortgages backed by an NHG guarantee have lower interest rates for borrowers (by about 50 bps), a zero capital requirement for lenders, and are easier to securitize. Households insured by the NHG have a LTV on average 12 percentage point higher than those without insurance. Moreover, given the prevalence of non-amortizing loans, the exposure of the NHG to housing risks remains high over the loan life cycle. Falling house prices have also exposed the NHG to risks particularly to underwater borrowers. The NHG mortgage guarantee scheme offers more generous borrowing terms than in peer countries (Table).

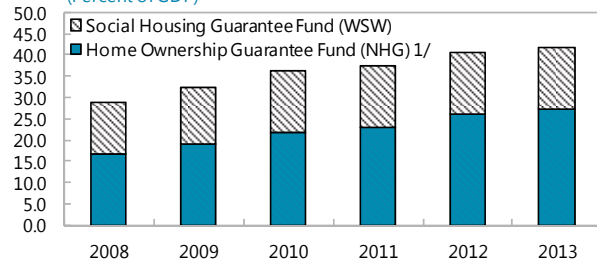
**Housing finance poses risks to macroeconomic policies**

13. **Tax incentives have eroded personal income tax and benefited primarily mortgage borrowers.** Direct annual support for homebuyers reaches about 2.2 percent of GDP, including the MID and tax exemption on capital gains.

14. **In addition, contingent liabilities related to housing reach about 40 percent of GDP.** Homebuyers are covered through the NHG for about 27 percent of GDP, while social housing receives public guarantees for about 14 percent of GDP. The low fee for public guarantees represents a large transfer of state resources (See Table 1).

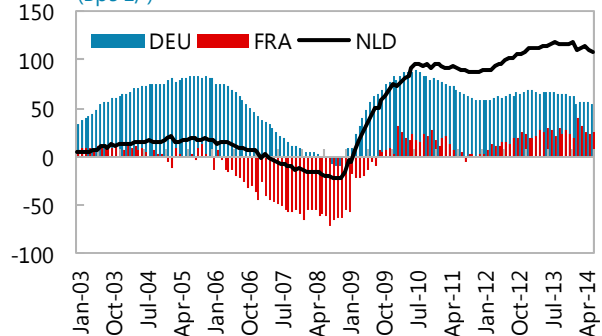
15. **Since the financial crisis, mortgage rates have remained higher than in peer countries.** Up to the financial crisis, mortgage rates in the Netherlands were in line with EA averages. The sudden decline in market liquidity forced Dutch banks to compete for short term resources with higher deposit rates and funding costs. Banks hence relied on higher mortgage rates to maintain profitability.

**Housing Related Contingent Liabilities Reach About 42 percent of GDP at end-2013**  
(Percent of GDP)



Sources: Annual Financial Report of the Kingdom, 2013 (Financieel Jaarverslag van het Rijk 2013), Government of the Netherlands, Table 5.3. 1/ The central government and municipalities share equally the responsibility for losses by the NHG.

**Interest Rates on Mortgage Lending**  
(Bps 1/)



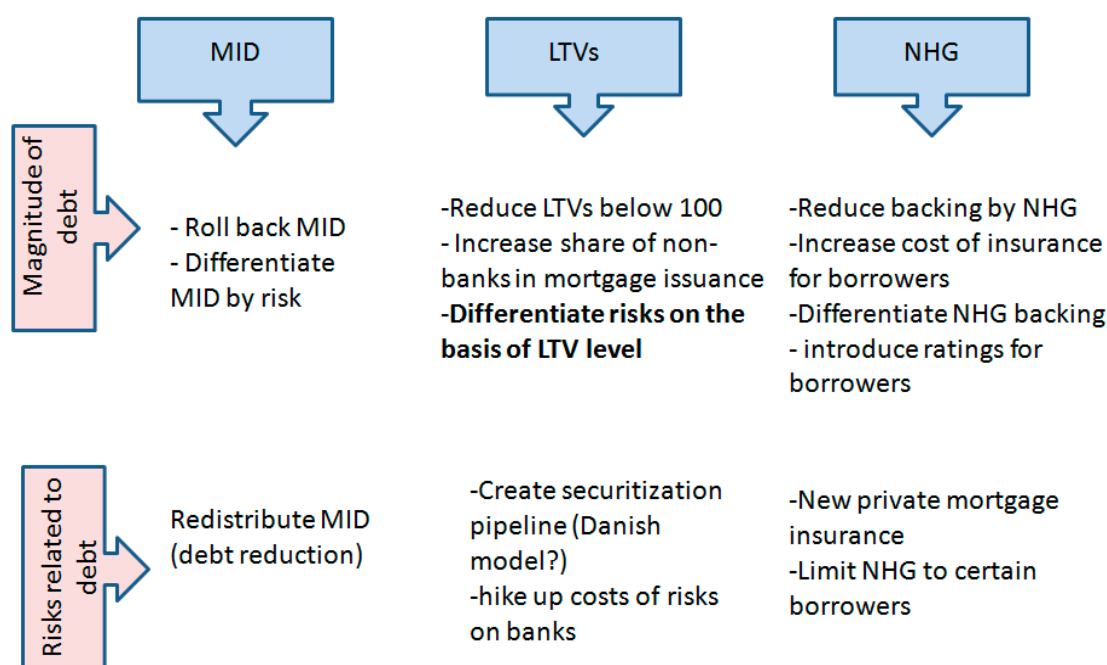
Source: ECB, SW database, and IMF staff calculations. 1/ Discrepancy of interest rates on 5 years or more mortgage loans with similar EA average rates.

## B. Reforming Housing Finance

16. The *Housing Market Reform Agenda* published in September 2013 provided a plan to reform owner-occupied and residential sectors (see Tables 2 and 3). These included the introduction of a cap on LTV, and its gradual reduction by one percentage point per year until 2018, a slow reduction in MID, and lower exposure by the NHG.

**More however is needed to reform the housing finance market, including by increasing market orientation to expand supply, especially for rentals.**

### Reform the real estate market—possible policy measures



- **Developing the private rental housing sector could ease demand for excessive leverage.** A larger and deeper private rental sector would cater to tenants of all income segments and allow price signals to operate. In particular, freezing the threshold rent between regulated and unregulated sectors would help steer more dwellings towards market mechanisms. Concentrating social housing on its core missions would direct public resources to improve social welfare.
- **The social mandate of housing corporations should be reinforced.** Income testing with a periodic review (for instance every 5-7 years) would focus social housing to lower income populations. Also, housing corporations should review their governance framework, identify costs through benchmarks, and separate their public-service core activities from commercial ones.

- **Updating property values for dwellings managed by housing corporations would reduce implicit subsidies and improve efficiency.** In contrast with privately owned real estate where taxable value is revised annually, property values in social housing were frozen at historic prices, before 1995. Hence, updating dwelling values would create tax resources, streamline costs, and reduce implicit tax transfers from owner-occupied to rental sectors.
- **Actual costs need to play a larger role in the management of social housing.** Actual costs have not appropriately guided demand for housing, as they were chiefly guided by administrative proxies. Point-based rents have created distortions in demand, while large subsidies have contributed to burden public accounts. Moreover, public guarantees to the housing sector have further blurred market signals and created rigidities in the management of housing.
- **Easing the regulatory burden on investors would increase the size of the private housing sector.** Taxes on privately-owned rental dwellings could be reduced. The share of privately-owned rental sector could grow, for instance through the sale of social dwellings to tenants and investors.

### Macprudential reforms need to be strengthened

- **To reduce excessive debt, the LTVs and MID need to be further scaled back.** Further reductions in their levels would help steer household expectations towards lower levels of leverage and reduce uncertainties on the housing market. The stabilization of the housing market took place in a context of pre-announced reductions in LTVs and MID, suggesting that the market could be ready for further reductions. In particular, aiming for a faster pace of LTV reduction—possibly targeting 80 percent by 2028—would give a clear timeline for buyers to build up savings and support regulatory transition.
- **The price of NHG support to borrowers should be more risk-based.** The absence of alternatives to the NHG guarantee and its tax-deductibility add pressure on the state accounts. The introduction of privately funded mortgage insurance, with an adequate pricing in line with the cost of transferred risks, could ease this pressure. The NHG cost could also reflect relative exposure to housing risk, for instance by making it proportional to LTV.
- **The LTV level should be used to monitor and segregate risk exposures.** The disconnect between LTV level and risk pricing has been a key feature of mortgage issuance. The disparity in mortgage rates between high and low LTV loans is 50-70 bps, a low level based on credit risk. Borrowers obtain a loan bound by their LTI and optimize their MID. Moreover, mortgage rates have little connection to risk, absent any positive credit registry, and uniform discount mainly attributed to NHG-backed mortgages. Zero risk weights on mortgages with public mortgage insurance further limit banks' attention to risks. Hence policies should look to rectify this risk failure. In particular, there is an advantage in using LTV levels at mortgage issuance for calculating buffers—through liquidity, capital, and counter-cyclical surcharges on banks—to improve banks' abilities to manage their risks during housing downturns.



- **The NHI could foster securitization by setting standard LTVs at issuance.** The creation of the National Mortgage Institute (NHI) is a step in the right direction. In particular, targeting the issuance of fully amortizing mortgages with an 80 percent LTV and idiosyncratic risk guarantee could help facilitate the packaging of standard loans.
- **A redistributive MID could help focus tax benefits on lower-income households.** In particular, the benefit of the MID could be mainly reserved to lower incomes, while the tax revenue from reduced MID rates on higher incomes could support targeted transfers to low income groups.
- **A private mortgage insurance scheme is needed.** All mortgage borrowers do not qualify for NHG-conforming loans. Besides, as it entails transfers between different categories of homeowners, NHG support should be reserved to a limited number of homebuyers, possibly to encourage first time homebuyers and low/middle income homebuyers.
- **Reducing risks on the NHG through several simultaneous measures.** The NHG backing needs to be calibrated to individual risks (possibly through ratings). With claims to the NHG on the rise, there is a need to strengthen the capitalization of the NHG to shelter public accounts. Limiting the NHG risk to 90 percent of the loan from January 2014 is commendable, but there is scope for further limiting the NHG involvement. On new mortgage loans, the NHG could reduce its risks by focusing on first-time borrowers, or on a fraction of the loan. Also, some risk sharing with the NHG and lenders—who ultimately benefit from the NHG guarantee—could further shelter public accounts.
- **Alternative risk-sharing mechanisms could ground new financing instruments.** The prevalence of debt financing mainly exposes households' balance sheet to a housing price downturn. Financial vulnerabilities could be mitigated through alternative instruments that distribute risks. They include debt equity swaps, warrants and future contracts insuring against idiosyncratic drop in house prices. For instance, underwater borrowers could receive a restructuring plan from lenders, where part of the debt is forgiven in exchange for some equity—thereby allowing lenders to receive a payout when the house is sold for a profit.

**Table 1. Netherlands: Public Guarantees in the Housing Sector**

<b>Institution</b>	<b>Role</b>	<b>Type of public guarantee</b>	<b>Estimated transfers</b>
WSW (Social Housing Guarantee Fund)	The WSW—a private law institute—pools the resources of all housing corporations and guarantees their borrowings. It enjoys a AAA rating.	<ul style="list-style-type: none"> <li>- The central government and municipalities extend two instruments: (i) an interest-free loan, and (ii) a supplementary credit facility.</li> <li>- The State guarantee is triggered as soon as the amount of claims reaches 0.25 percent of amounts guaranteed.</li> <li>- Housing corporations pay no charge as a <i>quid pro quo</i> for the public guarantee.</li> </ul>	The public guarantee on borrowing results in lower financing costs for housing corporations, about €0.5-0.8 billion per year.
WEW / NHG Foundation for Home Ownership Guarantee Fund	The WEW offers mortgage insurance to homeowners for the coverage of idiosyncratic risks through the National Mortgage Fund (NHG).	The WEW has state guarantee, beyond its financial reserves; homeowners pay 1 percent for the guarantee; homeowner receive coverage after the first year of insurance. Guarantees issued before 2011 were backed half by the state and half by municipalities.	Premia on guarantees were gradually increased to protect WEW resources. 0.7 percent of the borrowed amount (2012), 0.85 percent (2013), and 1 percent in 2014. From January 2015 0.15 percentage point of the premium will serve to form a precautionary reserve with the general government budget.
CFV Central Housing Fund	The CFV financially supervises and restructure housing corporations. It is a redistribution mechanism assisting weaker housing corporations. It is financed through charges levied on all social housing organizations.	Soft loans or direct grant at below-market conditions	
BNG Dutch Municipality Bank	The BNG is a public bank owned by municipalities. It benefits from a AAA-credit rating.	Lending to public bodies, mainly municipalities and housing corporations; loans at lower costs due to AAA rating, with backing from state guarantee	
SVN <i>Stichting Stimuleringsfonds Volkshuisvesting Nederlandse Gemeenten</i>	SVN manages a housing fund, created by the contributions of municipalities. Homeowners apply for a loan to municipalities for housing renovation; SVN assesses the credit risk of borrowers.	Homeowners receive below-market interest rates. The loan term can reach 20 years, with interest rates 4 percentage points below market rates.	
Dutch Municipal Housing Incentive Fund		To first-time homebuyers; loans below market rates.	[clarifications required]

Sources: EU Commission, State Aid Decision, 12/15/2009; AEDES, Cenfuegos-Spikin (2011); and IMF staff.

Table 2. Netherlands: Policy Measures Targeting the Owner-Occupied Housing Sector: Legacy and New Mortgages

Area	Targeted Balance Sheet	Legacy Mortgages	New Mortgages (from January 1, 2013)
Mortgage issuance and amortization conditions		<p><b>Issuance:</b> Mortgages are issued with a 15-, 20-, or 30-year term; the interest rate is renegotiated every 5 to 7 years and is reset at market rate at rollover.</p> <p><b>LTV:</b> Interest-only loans have a maximum 75 percent LTV. Amortizing mortgages can have a higher-than 100 percent LTV.</p> <p><b>Complex products:</b> Interest-only loans with companion savings vehicles (investment and pension-linked) have a market share of 35-45 percent of existing mortgages. The savings account usually serves to pay the final bullet payment in capital.</p> <p><b>Prepayment options:</b> a new provision allows existing mortgages with a 10 year or less remaining maturity to be reimbursed without penalty (also applies to new mortgages).</p> <p><b>Guarantee:</b> About 55 percent of mortgages are guaranteed by the Mortgage Guarantee Fund (NHG).</p>	<p>Unchanged. However, amortizing mortgages are capped to 106 percent LTV from 2013, with a 1 percentage point reduction in LTV per year for new loans. Non-amortizing loans continue to receive a maximum 75 percent LTV.</p>
Fiscal	Households	<ul style="list-style-type: none"> <li>- Existing mortgages continue to benefit from full mortgage-interest deductibility (MID) regardless of amortization conditions.</li> <li>- As a temporary measure (only during 2013-17), interest paid on outstanding debt from a mortgage loan remaining after the sale of a home can be deducted for up to 10 years.</li> <li>- Since January 2014 homeowners receiving NHG guarantee can refinance their residual debt under a new NHG-backed mortgage after the sale of their earlier home.</li> <li>- Legacy mortgages can be reduced through a one-time donation for a maximum €100,000 until end-December 2014; the donated amount is exempted from taxes. At end-March 2014, about 4,000 taxpayers had availed of this measure.</li> </ul>	<ul style="list-style-type: none"> <li>- From January 1, 2014, the MID is limited to 30-year amortizing mortgages for new contracts only. Additionally, the deduction benefiting higher-income household is gradually limited, as it is reduced by 0.5 percent per year from 52 percent to 38 percent. For the average tax bracket at 42 percent, the cumulated loss of income associated with lower deductibility reaches about 0.4 percent of the asset value over 30 years.</li> <li>-The property transfer tax of 6 percent was permanently lowered to 2 percent in 2012 for new loans. This transfer tax can be financed with the mortgage loan.</li> </ul>
Macroprudential	Banks	<p>The new regulations gradually lowering LTVs do not affect the treatment of existing mortgages. More than half of existing mortgages are interest-only mortgages with bullet payments in capital.</p> <p>Equity loss recorded when swapping homes can be subsumed in a new mortgage loan, with a corresponding loan with a higher-than standard LTV.</p>	<ul style="list-style-type: none"> <li>- Loan to income (LTI) limits were enforced from January 2007.</li> <li>- New loans have a capped LTV, gradually reduced by 1 percentage point per year to reach 100 percent in 2018 for amortizing mortgages. The LTV limit is 50 percent for interest-only mortgages.</li> <li>- Households have the option to accelerate the amortization of outstanding debt when the remaining maturity is 10 years or less.</li> </ul>

**Table 3. Netherlands: Policy Measures Targeting the Rental Housing Sector: Social Housing and Private Housing**<sup>1</sup>

Area	Measures	Impact on the private sector
Ground principles	<p>-The <i>Housing Market Reform Agenda</i> (September 17, 2013) was agreed between the Rutte II Cabinet plus three opposition parties (D66, the Christian Democratic party, and SGP, the Calvinist party). Most of the measures were enforced during 2013-14</p> <p>-The Reform Agenda recognizes that housing corporations (HCs) should continue focusing on providing affordable rental housing to lowest income households.</p>	Create a larger non-regulated housing sector, including by attracting investors.
Housing corporations	<p><b>Mission statement:</b> HCs need to concentrate on core tasks, chiefly social housing. Accordingly other activities need to be rolled back or outsourced.</p> <p><b>Management:</b> HCs may sell dwellings in portfolio to tenants and other HCs.</p> <p><b>Governance:</b> (i) Improve transparency and accountability; (ii) Separate core tasks and non-core, with a concentration on core tasks; and (iii) clarify HCs mandate on managed dwellings.</p> <p><b>Supervision:</b> Reinforce supervision by moving from the diffracted 3-supervisors' oversight (WSW<sup>2</sup>, the Central Fund for Housing (CFV) and Ministry of Internal Affairs) to two supervisors for administrative (Ministry of Internal Affairs), and use of funds by WSW with new on-site inspections.</p> <p><b>Investments:</b> HC are allowed to raise rents, lower their administrative costs, and borrow from the WSW</p>	Increase incentives to strengthen investment for the renovation and upgrade of existing dwellings, and build new dwellings.
Tenure	New rentals: HCs may use term contracts, instead of open-ended rental contracts; HCs will focus on lower-income populations.	The measure creates flow from social to private housing sectors.
Rent level	<b>Point system:</b> it should reflect market value, as based on the actual valuation of the property. Upper category dwellings will exit point-based ratings, and refer to the taxable value, as reported by municipalities.	Expands range of non-regulated dwellings.
Fiscal	<p><b>Indexation:</b> Inflation adjustment is introduced to stabilize real term rental income.</p> <p><b>Rent levels:</b> Rents increase to adjust for inflation since July 2013. The maximum rent increase over inflation is 1.5 percent for low-income households (up to €34,085), 2 percent for middle-income households (€34,085 to €43,602) and a maximum of 4 percent for higher (upper) middle income households (€43,602 and up).</p> <p>- Rent freeze: All dwellings in the housing sector benefit from a rent freeze, with rent ceilings at €699 per month.</p> <p><b>Subsidies:</b> Absent subsidies to HCs, the current subsidies concentrate on (i) income-tested populations (for incomes below €28,000 per year), (ii) reducing effective rents, and (iii) family size and age.</p> <p><b>Tax incentives:</b> HCs pay a rental tax from 2014 onwards (to reach €1.7 billion in 2017).</p>	<p>Incentivizes higher income earners to leave the social housing sector.</p> <p>Subsidies to lower-income segments will increase demand to private sector. n/a.</p>

<sup>1</sup> This Table is based on (1) National Reform Program 2014 The Netherlands, Ministry of Economic Affairs, December 2013, and (2) EC State Aid No 2/2005 and 642/2009 on housing corporations

<sup>2</sup> The WSW is the Social Housing Guarantee Fund, the mutual insurer for housing corporations.

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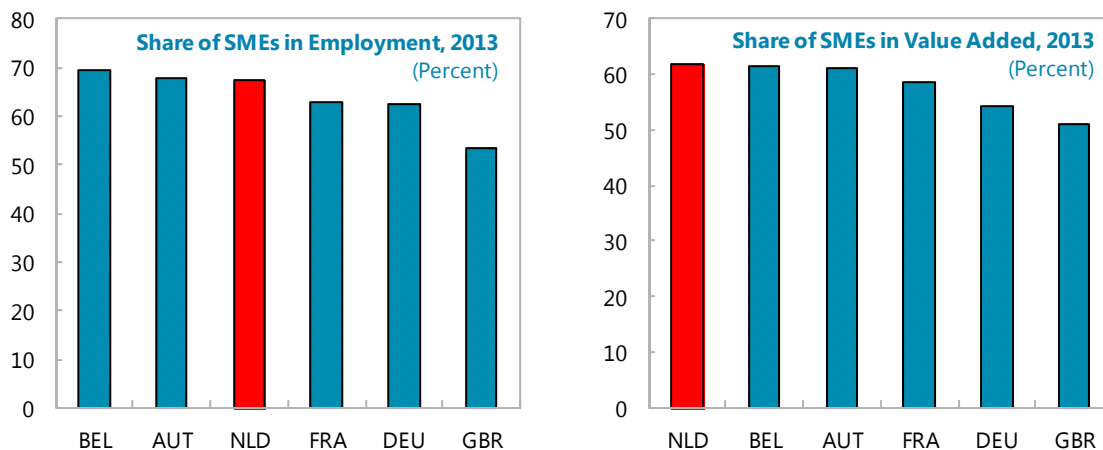
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## SME FINANCING IN THE NETHERLANDS

*Dutch SMEs, on average, are comparable in their profitability and leverage to other European countries. However, the sector exhibits a lot of heterogeneity and a substantial share of Dutch SMEs have been struggling due to weak domestic demand and declining collateral values. Policies to strengthen the SME sector should focus on strengthening bank lending in the near term, and developing alternative sources of finance to reduce the SMEs' reliance on banks in the medium term. Finally, structural policies to enhance product and labor market flexibility can also support SMEs.*

### A. Introduction

1. **Small and medium enterprises (SMEs) are a key part of Dutch economy.** As in other European countries, Dutch SMEs employ the majority of the labor force and generate the most value added. In 2013, for example, they employed two thirds of the labor force and generated close to the same in value added in the economy.<sup>1</sup> More than 99 percent of Dutch firms are SMEs (European Commission, 2014).



Source: European Commission SME Performance Review, 2014

Notes: Shares are a proportion of the total for non-financial business economy.

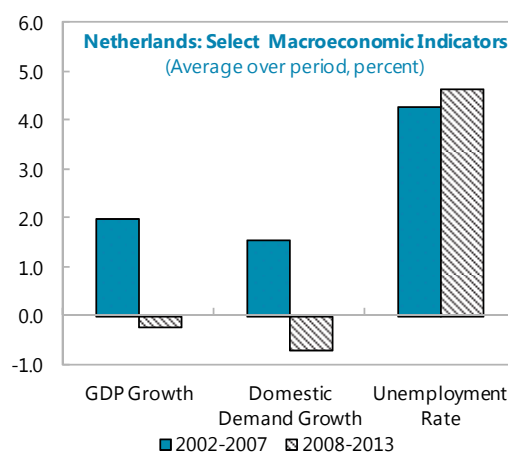
2. **SMEs have been stagnating since the crisis.** Estimates by the European Commission suggest that aggregate employment in SMEs in 2013 was virtually the same as in 2010 (and 2.3 percent lower than in 2008). Value added increased by around one percent since 2010 but remained below 2008 levels (European Commission, 2014). The total number of SMEs has increased but was

<sup>1</sup> Throughout the paper, economy will refer to non-financial business economy, which includes industry, construction and distributive trades and services. This refers to economic activities covered by sections B to J and L to N of NACE (classification of economic activities) Revision 2. This paper relies on the EU law definition of SMEs, which includes firms with less than 250 employees and a turnover of 50 million euro or less or total assets of 43 million euro or less.

driven mostly by the rise in the number of self-employed (*zelfstandigen zonder personeel*). On the other hand, the total number of non-financial business firms with 2-100 employees<sup>2</sup> in the economy remained roughly unchanged.

3. **SMEs were hit hard by the cyclical collapse in domestic demand.** From 2008 to 2013, GDP growth was on average negative in the Netherlands driven primarily by declines in domestic demand and a collapse in exports in the aftermath of the global financial crisis.

Unemployment rates remained low initially but have risen since 2011. The decline in consumption has been driven by deleveraging by households and the financial sector as well as the loss in household wealth from a substantial decline in house prices.



Source: World Economic Outlook

4. **However, SMEs' problems are also structural.** As elsewhere in Europe, SMEs remain reliant primarily on banks for external financing. The market for SME loans suffers from information asymmetries, which increase the cost of lending, and will likely persist even as the economy recovers. Similarly, Dutch SMEs rely on real estate for collateral, exposing them to housing risk. Finally, external financing for the SME sector is primarily in the form of debt, which is less resilient to shocks.

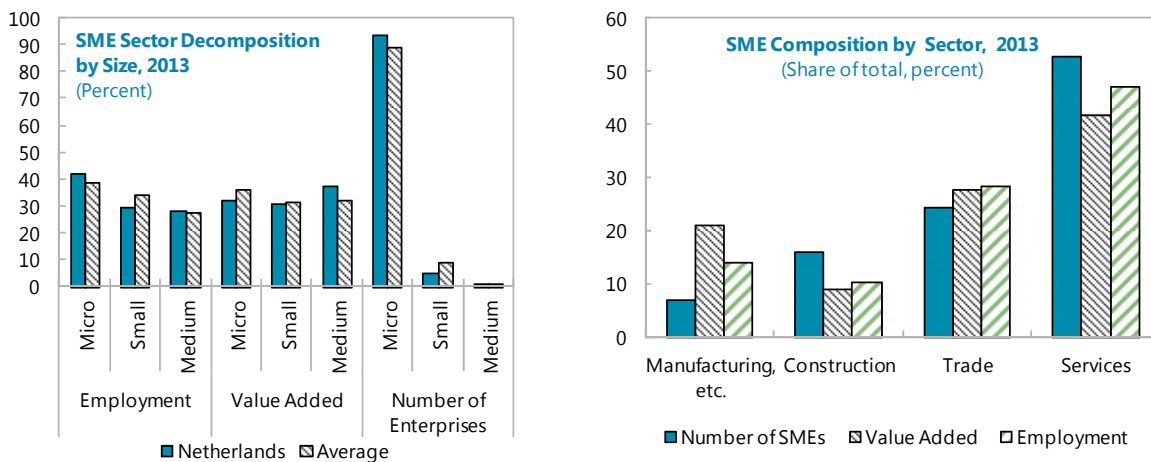
5. **Scope.** This paper provides a broad overview of Dutch SMEs relative to peer countries using both aggregate data and firm level data from the ORBIS database (Section B), and SME financing developments (Section C). Section D focuses on credit information sharing schemes, their relevance for the Netherlands and the possible role of the government in creating a credit bureau system. Policies to support and strengthen the SME sector are summarized in Section E.

<sup>2</sup> The Dutch definition of SME differs from the European one requiring less than 100 employees and less than 23 million euro in turnover; hence data is available from Statistics Netherlands in this analytical category. European Commission also compiles estimates of the number of SMEs, which show a decline relative to historical peaks.

## B. An Overview of Dutch SMEs

### Aggregate Indicators and Survey Evidence

6. **Dutch SMEs are typically small, employing less than 10 people.** This is in line with comparator European countries<sup>3</sup> — 94 percent of SMEs employ less than 10 people, compared to the average of 89 percent. The smallest Dutch firms employ a slightly larger share of the total SME employment and generate a smaller than average share of value added, however, the differences are not large. As in other European countries, even though the majority of the firms are small, the larger firms (10-49 and 50-249 employees) have similar employment size and value added.



Source: European Commission SME Performance Review, 2014

Notes: Micro enterprises are defined as employing 0 to 9 people. Small enterprises employ 10 to 49 people, while medium enterprises employ 50 to 249 people. Manufacturing, etc. is defined as the sum of mining and quarrying (NACE code: B), manufacturing (C), electricity, gas, steam and air conditioning supply (D), and water supply (E). Services are defined as the sum of transportation and storage (H), accommodation and food service activities (I), information and communication (J), real estate (L), professional, scientific and technical, as well as administrative and support service activities (M and N).

7. **Dutch SMEs are concentrated in services and trade.** Almost half of SME employment and value added in 2013 was in the services sector, followed by another quarter from wholesale and retail trade. Manufacturing is the third most important sector in employment and value added, although it has the smallest number of enterprises. Compared to other countries, trade generates a slightly higher share of value added in the Netherlands, while services and trade sectors employ a larger share of total SME labor force. The greater importance of services is partly rooted in the 1973 oil crisis, which spurred the transition toward a service-oriented economy fuelled by rising labor costs, increased educational attainment, and a decrease in production-cost competitiveness (European Commission, 2013).

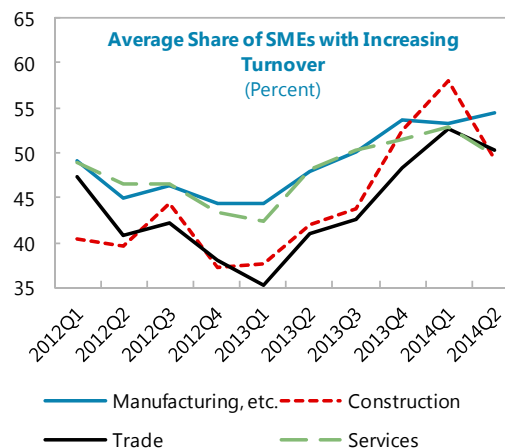
<sup>3</sup> Throughout the paper comparator countries are Austria, Belgium, France, Germany and the United Kingdom, except for data from Survey on Access to Finance of Enterprises (SAFE), where data for the UK is not available.



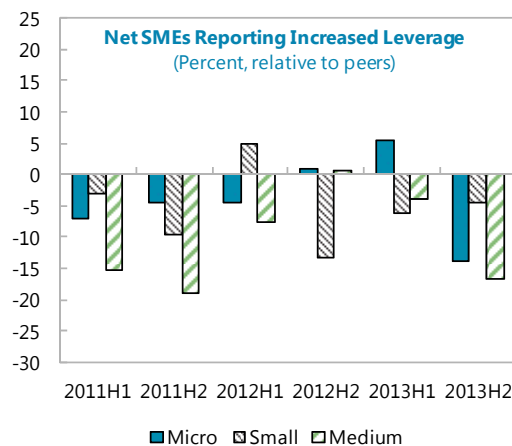
8. **Over the last year SMEs managed to gradually increase turnover.** The average share of SMEs with increasing turnover reached its lowest point in the first quarter of 2013 and has since returned to around 50 percent in the second quarter of 2014. The most important sector, services, has remained somewhat stagnant with the share of SMEs with growing turnover at 49.7 percent, only barely above the value in the beginning of 2012 of 48.9 percent.

9. **Successful cost reduction helped Dutch SMEs preserve relative profitability.** Evidence from Survey on access to finance of enterprises (SAFE)<sup>4</sup>, regularly conducted by the ECB, suggests that SMEs in the Netherlands since 2011 have consistently struggled to increase turnover relative to peer countries (notwithstanding the evidence above). On the other hand, they have been successful in controlling costs, especially labor costs, and also, to some extent, net interest expenses and other costs. This enabled firm profits to increase broadly in line with peer average, and exceed the average in 2013. As a result, profit margins have been increasing somewhat faster than average (Figure 1).

10. **Dutch SMEs have also been reducing leverage faster than peers.** Survey evidence suggests that *net percentage* of SMEs reporting increase in leverage (the difference between percent of firms reporting an increase and decrease in debt relative to assets) has been consistently lower than peer country average. With some variation over time, this has been true for all firm sizes, but medium firms generally have had the largest differences. Balance sheet evidence confirms this with medium firms substantially reducing leverage ratios in 2012, while the improvement for smaller firms has been more gradual. Large firms, on the other hand, have had their leverage ratios relatively steady at a lower level than SMEs.

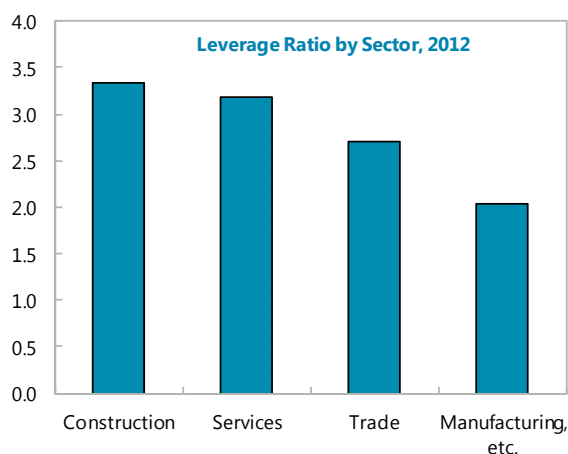


Source: Statistics Netherlands  
 Notes: Averages taken across different size classes. No data for turnover of L, M and N NACE sectors for the services aggregate available.



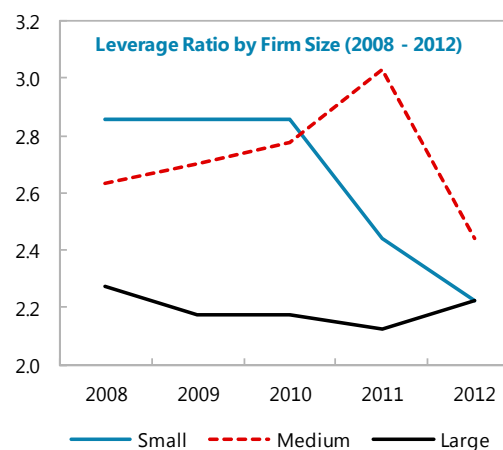
Source: SAFE Survey, Staff estimates

<sup>4</sup> Some caution is warranted in utilizing survey evidence due to a very small size of the sample relative to the population of SMEs in the Netherlands. In particular the smallest firms may be underrepresented.



Source: Panteia (2014).

Notes: Leverage ratios by sector are constructed by adding up balance sheet data of individual firms into a total balance sheet. Services ratio is the simple average of corresponding sectors. Large firms are included in the total. The original report computes solvency ratio – the share of equity in total balance sheet – an inverse of the leverage ratio presented.



Source: Panteia (2014)

Notes: Includes also micro-sized companies.

11. **Firm leverage differs across sectors.** Firms in construction and services sectors have the highest leverage. Leverage in the services sector is driven mainly by firms in accommodation and food services. Manufacturing has the lowest leverage ratio, which is partly attributable to the larger average firm size and better stock market access (Panteia, 2014).

### Firm-Level Data

12. **ORBIS data.** The number of SMEs in the Netherlands is large and the availability and timeliness of aggregate data on variables such as profitability, leverage and indebtedness is limited. We therefore rely on the ORBIS dataset by Bureau van Dijk to obtain firm level data on key characteristics of SMEs in the Netherlands and comparator European countries.

13. **Sample selection.** This paper focuses on firms that met the EU law definition of SMEs in 2013. This narrows the sample to firms with data on assets or turnover as well as employment available in 2013. In addition, we only include non-financial firms. To avoid double counting, we focus our search on firms with unconsolidated accounts and exclude firms that have *only* consolidated accounts available.<sup>5</sup> We also exclude firms with zero or negative equity and/or negative liabilities.

<sup>5</sup> This is similar to a strategy employed for non-financial corporations, for example, by Kalemli-Ozcan et. al. (2012).

14. **A representative sample?** The ORBIS database does not have any *a priori* selection criteria (e.g. the requirement that the firm be publicly listed). Nevertheless the data available covers only a small subset of Dutch SMEs.<sup>6</sup> It is therefore important to establish to what extent this data is representative of the overall population and adjust the empirical analysis accordingly. Suitable benchmarks to judge the representativeness of the sample could be its composition by firm size and industry because the European Commission estimates population sizes by these criteria.

**Table: ORBIS SME sample for the Netherlands, 2013, percent of total**

	Manufacturing, etc.	Construction	Trade	Services	Total
Micro	6.9	2.7	5.5	6.9	5.9
Small	49.6	38.1	42.7	47.7	45.2
Medium	37.0	38.4	42.8	57.5	46.9

Source: ORBIS, European Commission, Staff estimates

- *The ORBIS sample is biased towards larger firms.* While for the Netherlands almost half of small and medium firms are included in the sample, only around six percent of micro enterprises are covered. This is to be expected given that smaller enterprises likely face lighter reporting requirements.<sup>7</sup>
- *Construction and manufacturing firms are somewhat less represented.* The differences in representation, however, are relatively minor suggesting that the probability of inclusion in the sample is not affected by the sector of the economy that the SME is operating in.
- *Among comparator countries these trends are broadly the same.* The best coverage by a considerable margin is for a sample for Belgium.<sup>8</sup> The worst sample coverage is for the UK.

15. **Probability weights.** To correct for the particular characteristics of the sample, we use probability weights in estimating population parameters. Probability weights are the inverse of the sampling fraction (e.g. the ratio of medium-sized Dutch manufacturing firms in ORBIS relative to the total estimated by European Commission). Thus, for example, in calculating median leverage ratio of Dutch SMEs, observations on micro enterprises have around five times the weight of observations on medium enterprises.

16. **Median profitability of Dutch SMEs is comparable to peers, however, up to a third of firms are struggling.** Estimates based on the unweighted sample suggest relatively high returns on

<sup>6</sup> Specifically, after the application of preliminary sample selection criteria described in ¶13 we are left with 66,830 enterprises — less than 10 percent of the 802,087 estimated by the European Commission.

<sup>7</sup> ORBIS documentation explicitly states that for Netherlands: Sole Traders, Federations, Foundations and participations, which are consolidated in holding and companies for which a liability guarantee is filed are not required to file any form of accounts.

<sup>8</sup> For Belgium, the number of medium firms in all sectors *exceeds* the number estimated by the European commission. In this case, the sample size is assumed to be the population size. This highlights uncertainty surrounding the EC estimates. Therefore we report both weighted and unweighted population estimates.

assets and equity (ROA and ROE) and the share of loss making firms at around 20 percent.<sup>9</sup> Profitability lags only behind Germany and is close to France and the UK. However, weighted sample estimates, where the smallest companies have the largest impact, suggest significantly lower profitability. The share of loss-making firms in the weighted sample is significantly higher than for peer countries except Austria. Furthermore profitability has been on a declining trend since 2007 and is now lower than the pre-crisis average (CPB, 2014).

**Table: SME Profitability Indicators, 2013**

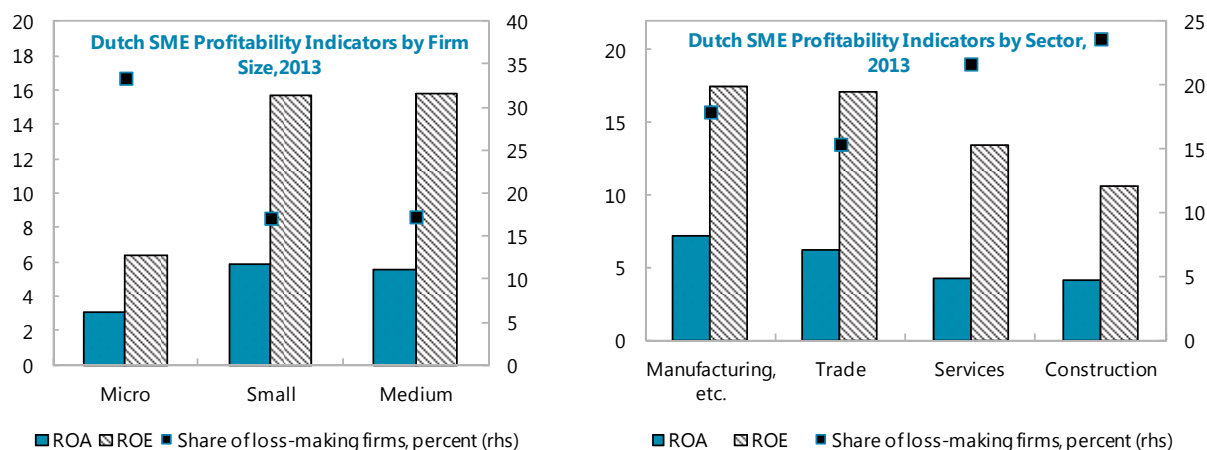
	Weighted			Unweighted		
	ROA	ROE	Share of Loss-making Firms	ROA	ROE	Share of Loss-making Firms
Netherlands	3.5 (0.7)	7.2 (1.5)	31.8 (2.1)	5.5 (0.2)	15.2 (0.3)	19.2 (0.6)
Austria	2.3 (1.0)	8.1 (2.8)	36.2 (4.2)	4.8 (0.3)	14.2 (0.8)	18.8 (1.1)
Belgium	4.1 (0.0)	12.7 (0.1)	24.8 (0.2)	3.7 (0.0)	11.5 (0.1)	24.2 (0.1)
France	5.6 (0.0)	16.0 (0.1)	22.9 (0.1)	5.4 (0.0)	15.7 (0.1)	22.1 (0.1)
Germany	6.6 (0.2)	21.0 (0.6)	14.1 (0.4)	6.6 (0.1)	22.6 (0.3)	11.8 (0.2)
United Kingdom	5.2 (0.2)	11.7 (0.5)	26.0 (0.5)	5.9 (0.1)	15.5 (0.2)	19.2 (0.2)

Source: ORBIS, Staff estimates

Notes: Median return on assets (ROA) and returns on equity (ROE) are reported. Standard errors are reported in brackets. Share of loss-making firms is in percent to the total.

17. **The smallest firms, as well as those in construction and services, are the least profitable.** In 2013, median return on assets and equity for micro-sized firms were around two times smaller than for small and medium enterprises, while the share of firms with losses was two times larger. The differences by sectors are less pronounced, however, with services and construction having significantly lower returns and higher proportion of firms experiencing losses. These results are broadly consistent with trends documented by the CPB (2014).

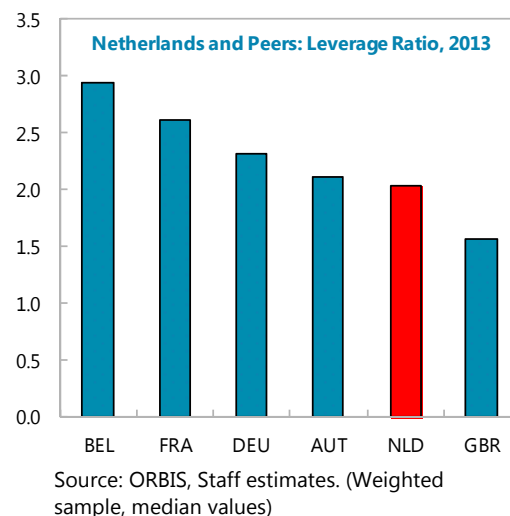
<sup>9</sup> Firms for which profitability for 2013 can be computed are only a subset of the sample. Sometimes they number much less, for example, for the Netherlands there are only 4,330 firms. A possible *systematic bias* in this smaller sample might be a concern. ORBIS documentation indicates that if a company decreases in size in the Netherlands it may not have to file a profit/loss statement, hence the smallest companies are likely the most underrepresented.



Source: ORBIS, Staff estimates.  
Notes: Median ROA and ROE are reported.

**18. Using ORBIS firm level data, Dutch SME leverage is comparable to peer countries.** Even

when observations are weighted, median leverage ratio for Dutch SMEs in 2013 was relatively low.<sup>10</sup> The relative positions of countries are robust to weighting, although it does reveal substantial possible biases for Austria, Germany and the UK. Book value data may also understate the true leverage of SMEs. Real estate often is a significant share of equity for SMEs and valuing it at book value may not reflect the recent decline in house prices. A back of the envelope calculation assuming that the true value of equity is 20 percent<sup>11</sup> less than book value would raise median leverage ratio to 2.5, close to the levels of France and lagging only Belgium. Overall, median leverage ratio estimates based on ORBIS data are lower than those reported by Panteia (2014) (see above). The latter estimates may reflect housing developments better. It may also reflect the presence of firms that we excluded from the sample (e.g. those with negative equity). Decomposition by sectors suggests that firms in the services sector have the lowest leverage, which differs from the findings in Panteia (2014). Decomposition by firm size, on the other hand, reveals that, consistent with Panteia (2014), smaller companies have lower leverage.



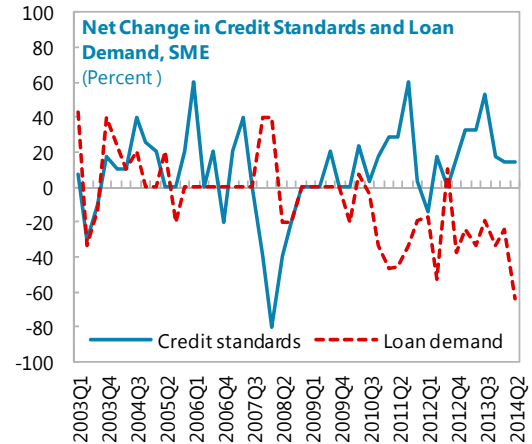
<sup>10</sup> According to the CPB (2014), over the past decade Dutch SMEs have gradually reduced leverage and current levels are therefore low compared to historical values.

<sup>11</sup> Roughly equivalent to the magnitude of the house price decline in previous years.

## C. State of SME Financing

### *Dutch SMEs are heavily reliant on bank finance*

19. **Credit standards are tighter for Dutch SMEs than for large firms, while loan demand is low.** The difference between the percentages of banks reporting tightening of credit for SMEs and those reporting tightening for large firms is declining slowly from historically high levels. Underlying this are two recent waves of tightening in credit standards. The first, which affected both large and small enterprises, occurred in the wake of the global financial crisis. Subsequently, in 2011-2013 credit standards tightened for SMEs but not for large firms. This tightening may in part reflect declining collateral values, deterioration in SME profitability, and higher risks in a recession. SME loan demand continued to contract, while for large firms it has started to recover.

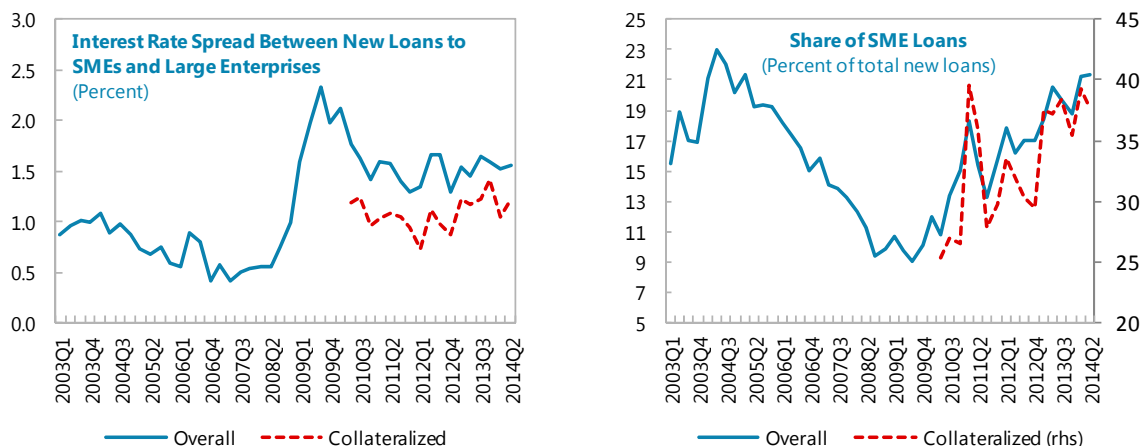


Source: Bank Lending Survey

20. **Interest rates on SME loans are higher than for large firms in the Netherlands.** The spread in interest rates between loans to SMEs<sup>12</sup> and loans to large firms, while somewhat lower since the crisis peak in late 2009, still remains significantly above the pre-crisis average (from 2003 to 2007). Underlying this trend is the decline in nominal rates for both large and small firms. While in the case of small firms, interest rates returned only approximately to their pre-crisis average, for large firms they are now significantly lower. In other words, the pass-through of the monetary accommodation by the ECB has been greater for large firms. The fact that interest rates on SME loans have not been declining could reflect their increased riskiness as well as higher costs associated with SME lending.

21. **SME loan volumes are falling, but the share of SME loans has been rising.** As a share of total loans, it has returned to historically high levels of around 20 percent, and for collateralized loans, where the share of SMEs is expected to be higher it is now reaching 40 percent. The declining share of larger firm may reflect their better access to non-bank finance.

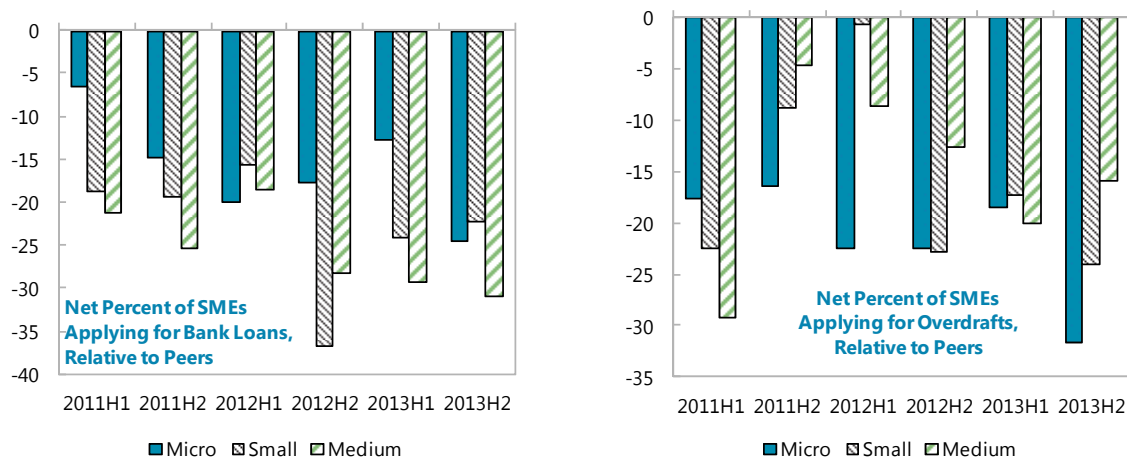
<sup>12</sup> As is standard SME loans are defined as loans for an amount of 1 million euro or less.



Source: DNB, Staff estimates

Notes: The series on the overall new volume of loans is subject to multiple structural breaks due to reclassifications. The amount of revisions is usually small (on the order of 1 percent) and should not affect the ratios significantly.

22. **Fewer Dutch SMEs have been applying for loans and overdrafts.** Across all firm sizes, the share of Dutch SMEs who do not apply for bank loans or even overdrafts for fear of possible rejection or other reasons is substantially higher than in peer countries, lowering the net percent of SMEs applying. Other reasons may include, for example, lack of available collateral or relatively higher interest rates.

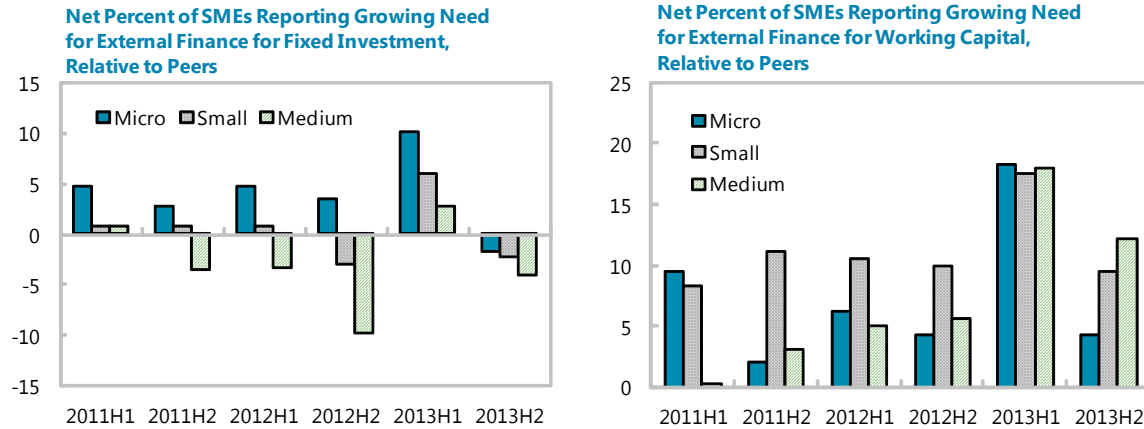


Source: Survey on Access to Finance of Enterprises, Staff estimates

Notes: Net percent refers to the difference between percentage of survey respondents who applied for the type of external finance and percentage of respondents who did not apply either because of possible rejection or for other reasons (but *not* because they had sufficient internal funding).

23. **Dutch SMEs that do apply for loans tend to be financially weak and are often rejected.** Analysis by De Winter (2014) shows that the index of financial position (based on enterprise responses to SAFE questions on their financial condition) is significantly weaker for Dutch firms that apply for loans than for loan applicants in other core countries. Dutch loan applicants are also in weaker position than Dutch firms that do not apply for loans. Survey evidence indicates that Dutch firms apply for loans mostly for working capital needs rather than to finance investment. Net success percentage, that is the difference between firms who applied and got all or most of the funding and

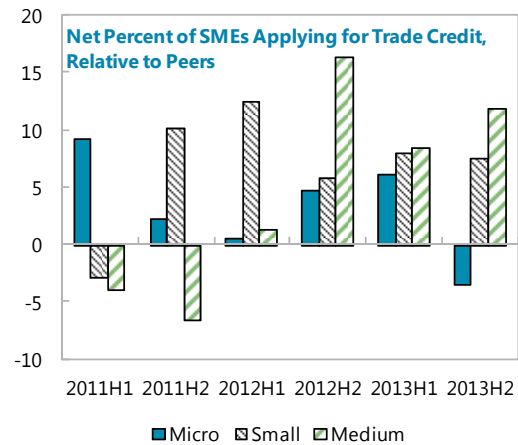
those who were unsuccessful or rejected the offer due to costs, is much lower in the Netherlands than peer average. The difference is driven primarily by the low net success rates in the Netherlands, which may be explained by the adverse selection effect documented in De Winter (2014).



Source: SAFE survey, Staff estimates

#### 24. Dutch SMEs are relatively more reliant on banks or trade partners for trade finance.

Trade credit is the only type of external financing where the share of Dutch micro and small enterprises indicating a growing need in the past six months, has been consistently higher than the average for peer countries (Figure 2). This is consistent with the Netherlands being a relatively more export-oriented economy. Importantly, net application rates for trade credit have also been higher than for peers suggesting that Dutch SMEs are not discouraged from applying for this type of external finance. On the other hand, the net percentage of Dutch SMEs reporting *increasing* need for bank loans has been close to zero for the smallest companies and substantially negative for medium ones. Still, success rates in applying for trade credit are lower than in peer countries.



Source: SAFE survey, Staff estimates

25. **Dutch SMEs faced higher interest rates and shorter loan maturities than those in other countries.** Interest rates for loans in some cases rose faster than average or declined less during 2012-2013, however, in the most recent survey the difference between percent of SMEs reporting increases and decreases in interest rates returned to peer average. Collateral requirements have also become tighter relative to peers, especially for micro-enterprises (Figure 3). This may reflect the correction in house prices since real estate is the primary form of collateral for small companies.



26. **Factors affecting the availability of external financing are generally improving except for bank willingness to lend.** Importantly, SMEs are also becoming more optimistic about firm specific factors (Figure 4). The last wave of the SAFE survey has been the first in three years when the difference between the balance of firms who see general economic outlook, firm capital and credit history as having improved versus those who see it as having deteriorated, has been higher than peer average for all three firm sizes. However, smaller Dutch firms continue to report deterioration in bank willingness to lend relative to peer countries. These firms may be limited by declines in the value of their equity.

### ***Non-bank finance for SMEs is scarce***

27. **Non-bank finance has failed to offset the decline in bank finance.** While access to financing, especially debt via banks, has deteriorated in 2013, some alternative financing methods did better, for example, the share of venture capital investments is well within the EU average and has increased (European Commission, 2013). However, this was not enough to compensate for the decline in credit. SAFE survey evidence suggests that more than 90 percent of SMEs do not see issuance of debt securities or equity as a relevant source of financing.

### ***Policies to Support SME Financing***

28. **Government policies to support SME financing mostly target debt finance.** Measures targeting debt finance include:

- *SME Loan Guarantee Scheme (Borgstellingsregeling MKB).* Under this scheme, the Dutch government guarantees SME loans up to €1.5 million. When an SME is applying for a bank loan, the bank can then apply for a guarantee. Recently, however, demand has been low.
- *Subordinated loans.* Dutch government has facilitated the setup of a private subordinated loan fund, providing guarantee for €500 million. The aim is to strengthen the capital base of SMEs. It is expected that subordinated financing could attract additional (bank) financing.
- *Dealing with loan rejections.* The *Qredits* scheme contributes to SME financing by taking on bank loan applications that have been previously rejected by commercial banks. *Qredits* lends out both micro-loans (maximum € 50,000) and slightly larger SME loans (€50,000 - €250,000).

Measures involving other forms of financing include:

- *Innovation fund.* The government has allocated €500 million to an innovation fund (MKB+) over 2012-2015. This includes loans, seed capital and venture capital to SMEs with new ideas for products and services. Equity financing to early phase startups and business angels has recently been expanded. Repaid financing is to be re-invested into innovative SMEs. The government has recently expanded this fund with another €100 million.

- *New providers of SME finance.* The government has committed €400 million to stimulate new providers of SME financing through pilots with Credit Unions, promoting crowd funding and other alternative forms of financing.

## D. Credit Information Sharing

29. **Dutch SMEs are a diverse group, raising challenges for risk assessment.** While SMEs feature some common trends, for example, a decline in profitability, and leverage ratios, the sector features also a lot of heterogeneity by firm size and profitability. Evaluating borrower's prospects can be a costly activity, which is constrained by the small scale of SME lending. As a result, most banks lend primarily based on the availability of good collateral and rely on cross-selling additional services to their borrowers. This limits competition and new entrants to the market, and makes the SME sector more vulnerable to shocks such as the recent correction in house prices.

30. **In general, credit information sharing can overcome asymmetric information problems.** There are two types of credit information sharing schemes: a privately held credit bureau or publicly regulated credit registry. Such schemes can help lenders and borrowers overcome asymmetric information problems by allowing lenders to share information about their clients. Disseminated information can include payment history, total debt exposure, and overall creditworthiness (Peria and Singh, 2014).

31. **Credit information sharing can improve the efficiency of SME financing in several ways.** First, it can reduce adverse selection — a situation when only riskier firms apply for loans. As shown by De Winter (2014), this may be the case in the Netherlands. Severe adverse selection can result in a negative equilibrium, where higher interest rates cause safe borrowers to drop out of the market (Pagaon and Jappelli, 1993). Second, it can lower rents stemming from access to information (see e.g. Sharpe (1990)). In the Dutch banking system, which is dominated by only a few banks, this gives the advantage to banks who already have credit histories of their borrowers and can limit competition from new entrants or other banks who lack such information. Third, it can discipline borrowers by increasing the cost of default (Padilla and Pagano, 2000). Finally it can help reduce over-indebtedness of firms by making the problem more transparent (Bennardo et. al., 2014).

32. **There is empirical evidence of benefits of credit information sharing schemes.** Peria and Singh (2014) use multi-year, firm-level surveys for 63 countries covering more than 75,000 firms over the period 2002–13 and find that after the introduction of a credit bureau, the likelihood that a firm has access to finance rises, interest rates drop, maturity lengthens, and the share of working capital financed by banks increases. Credit registries alone did not have significant effects.<sup>13</sup> Other

<sup>13</sup> Peria and Singh (2014) suggest several possible reasons for this. Credit registries are often used for supervisory purposes and might have high minimum loan limits. They may not always include positive information, which is important for credit scoring, for example. Evidence of benefits of credit registries, however, was found by Love and Mylenko (2003).

studies with firm level data that find benefits of information sharing among banks include Brown et al. (2009), who focused on transition economies. The value of credit report information in reducing lender selection cost and allowing them to more accurately predict the probability of defaults has also been well documented (see e.g. Kallberg and Udell, 2003).

33. **The public sector can play an important role in facilitating credit information sharing.**

There is evidence that a credit bureau is significantly less likely to emerge in economies characterized by a high degree of bank concentration. The reason for this are information rents discussed previously (Bruhn, et. al. 2013). The government should also ensure a sound legal framework for sharing credit information data and ensure that it follows best practice. To obtain maximum benefit from credit information sharing, a proposed scheme should include non-financial institutions as data providers, and report both positive and negative information. It is also important to balance the timeframe for retaining credit information between disciplining borrowers and giving firms a chance for fresh start.

## E. Conclusions and Policies to Strengthen the SME Sector

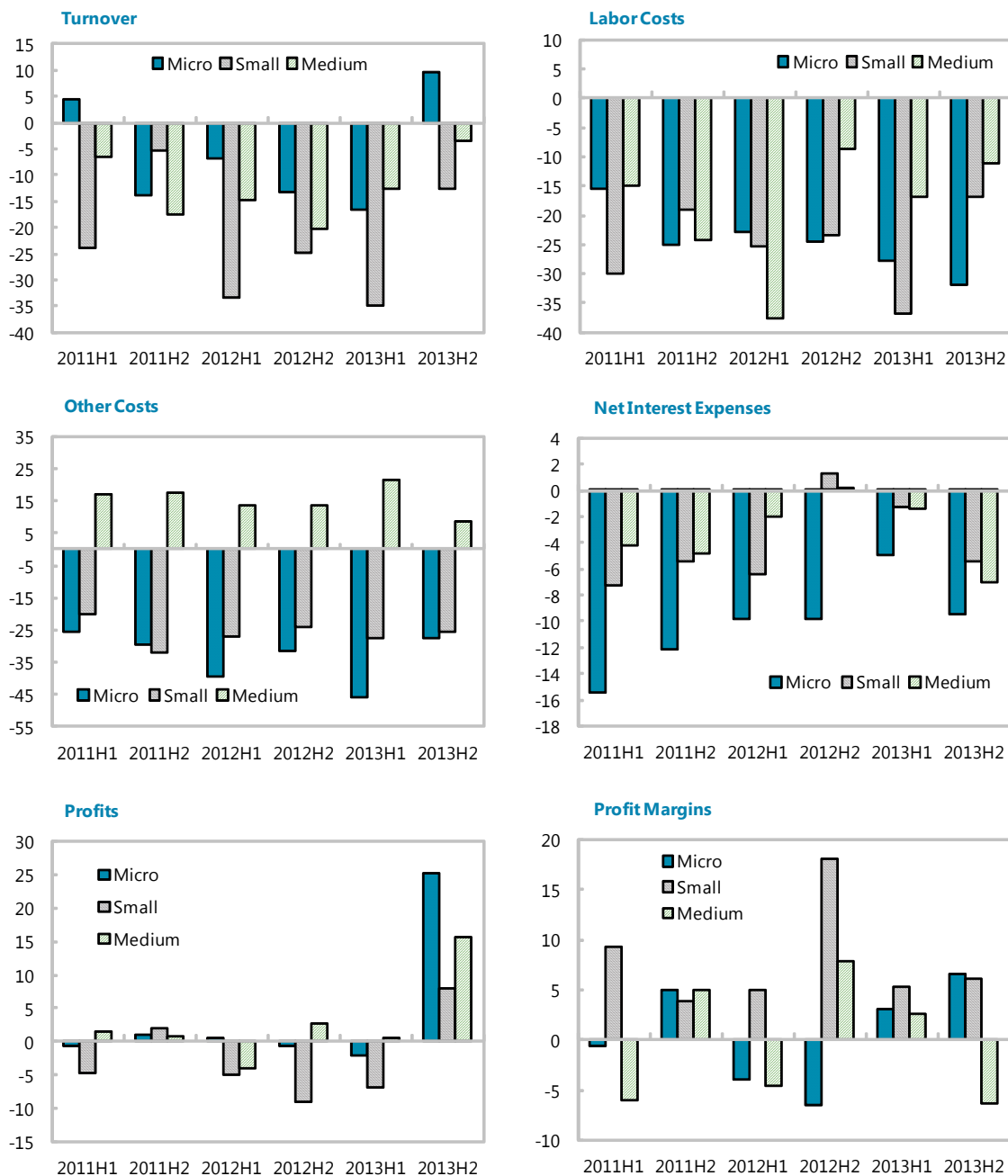
34. **Overall, Dutch SME sector has been struggling with the consequences of house price correction.** Even as firms, on average, are comparable in their profitability and leverage to other European countries, the sector exhibits a lot of heterogeneity and a substantial share of firms, especially smaller firms in construction and services' sectors are in difficulty. Not only did SMEs suffer due to weak domestic demand, their balance sheets suffered from the declining value of their primary collateral — real estate. Policies to strengthen the SME sector should focus on strengthening bank lending in the near term, and developing alternative sources and instruments of finance to reduce the SME sector reliance on banks in the medium term. Finally, structural policies to enhance product and labor market flexibility can also support the SME sector.

35. **Policies should address the bottlenecks in the provision of bank finance.** Improving the quality of credit information and facilitating the creation of a credit bureau would enhance the availability of credit for SMEs. Credit information sharing can also strengthen competition in the financial sector and help develop alternative sources of SME financing, especially securitization. Important insolvency reforms that support SME restructuring and facilitate new lending should be completed quickly. Ongoing steps to lower the costs of monitoring SMEs such as introducing standardized business reporting are also welcome.

36. **In the medium term, alternative sources and instruments of SME financing should be developed.** At the moment, non-bank finance cannot serve as an adequate alternative to bank finance. Further development of non-bank finance, for example securitized-loans and mini bonds, would provide alternatives to banks. Shifting public support from credit guarantees, which are currently not fully utilized, to equity or quasi-equity initiatives would support balance sheet repair. Dutch pension funds, which currently have considerable assets abroad, could be encouraged to invest more in domestic alternative assets, possibly with intermediation by the newly created National Investment Institute.

37. **Structural and tax reforms would help improve the resilience of the SME sector further.** There may be scope for easing a regulatory burden, for example, since regulation emerges as an SME concern in the SAFE survey. A survey by the OECD also suggests that restrictive labor regulations are an important barrier for doing business in the Netherlands (OECD, 2014). Steps by the government to reduce the cost of regulation and conducting impact assessments on SMEs for new regulations are therefore welcome. To facilitate equity financing an Allowance for Corporate Equity (ACE) could be introduced to extend tax allowances to corporate equity at a specified “normal return.” The ACE could link the “normal return” to corporate bond rates, apply the allowance only on new investments, and allow the netting of benefits for holding companies.

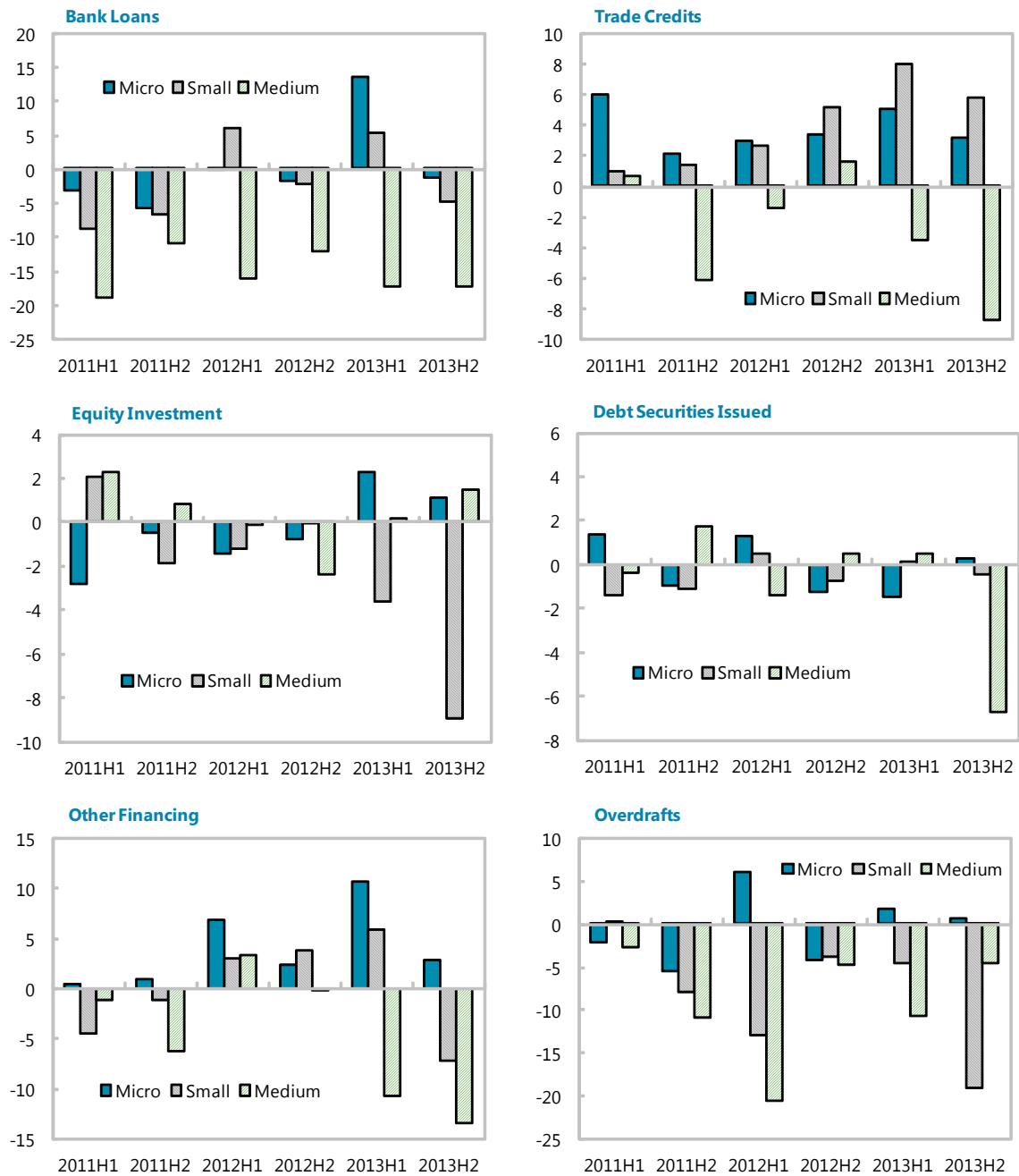
**Figure 1. Survey Evidence on Operating Conditions and Results of Dutch SMEs, Net Percentage of Firms Reporting Increases in the Past 6 Months Relative to Peers**



Source: Survey on Access to Finance of Enterprises and IMF staff calculations.

Note: Peer countries include Austria, Belgium, France, and Germany (SAFE does not have data for the United Kingdom). For each country, the net percentage - the difference between percent of firms reporting an increase (in turnover, labor costs, etc.) and percent of firms reporting a decrease is calculated by the enterprise class. The charts report the difference between the net percentage for Netherlands and the unweighted average of the net percentage for the peer countries. H1 and H2 refer to April - September of the given year respectively and October of the given year - March of the next year respectively.

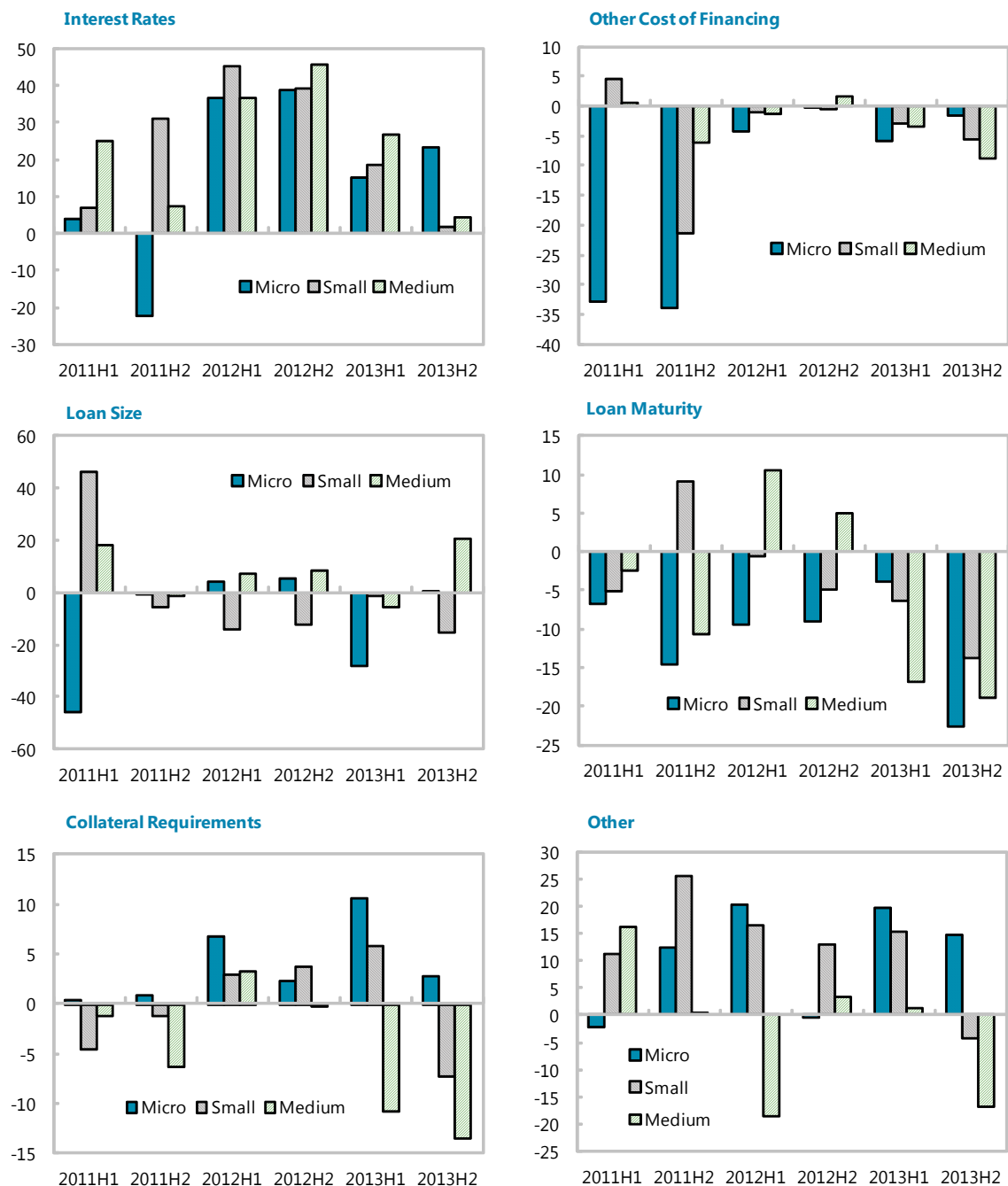
**Figure 2. Survey Evidence on the Need for External Financing by Type, Net Percentage of Firms Reporting Increases in the Past 6 Months Relative to Peers**



Source: Survey on Access to Finance of Enterprises and IMF staff calculations.

Note: Peer countries include Austria, Belgium, France, and Germany (SAFE does not have data for the United Kingdom). For each country, first the net percentage - the difference between percent of firms reporting an increase (in the need for different types of financing, etc.) and percent of firms reporting a decrease is calculated by enterprise class. The charts report the difference between the net percentage for Netherlands and the *unweighted average* of the net percentage for the peer countries. H1 and H2 refer to April - September of the given year respectively and October of the given year - March of the next year respectively.

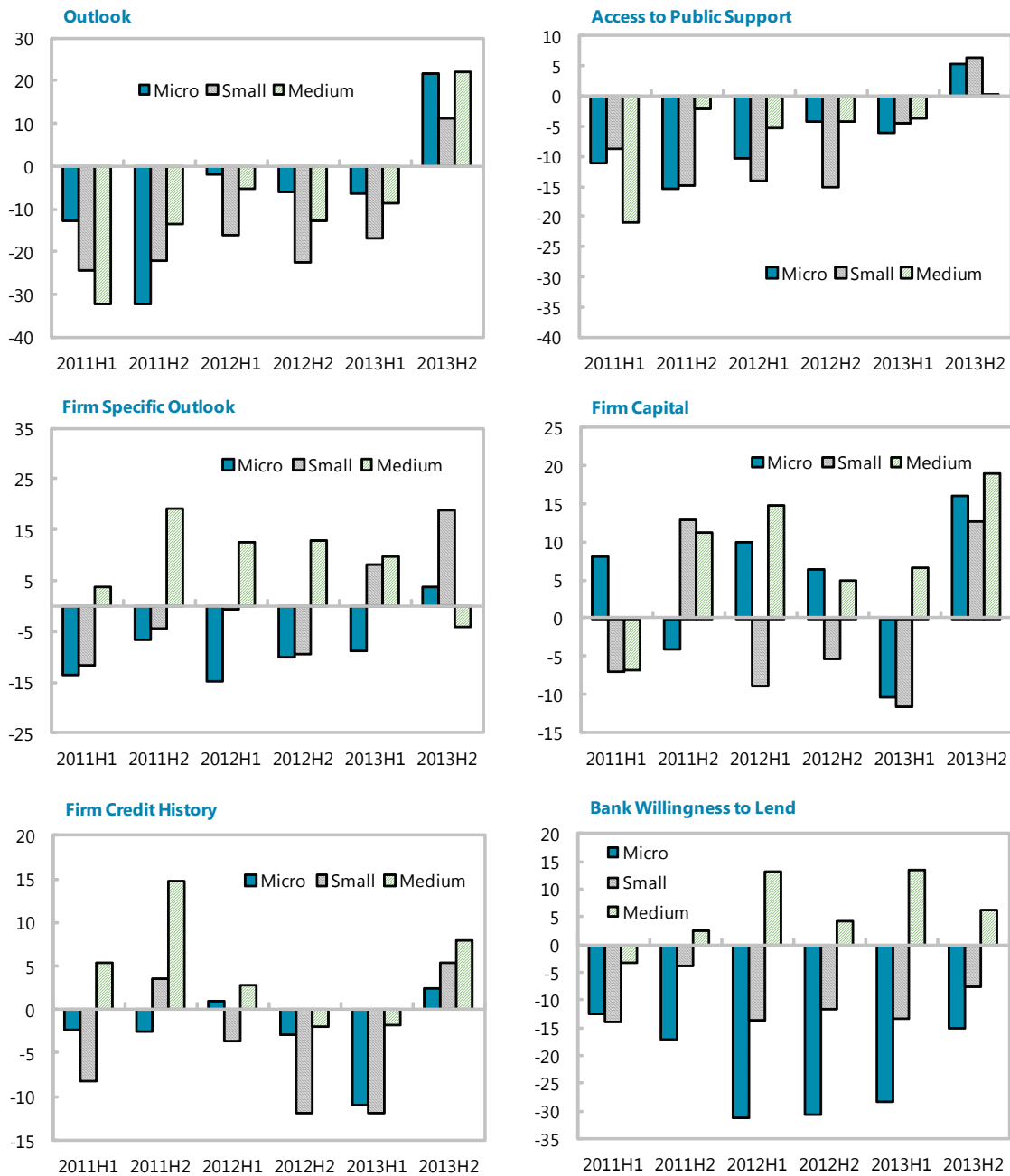
**Figure 3. Survey Evidence on the Change in Conditions for External Finance, Net Percentage of Firms Reporting Increases in the Past 6 Months Relative to Peers**



Source: Survey on Access to Finance of Enterprises and IMF staff calculations.

Note: Peer countries include Austria, Belgium, France, and Germany (SAFE does not have data for the United Kingdom). For each country, first the net percentage - the difference between percent of firms reporting an increase (e.g. in interest rates, etc.) and percent of firms reporting a decrease is calculated by enterprise class. The charts report the difference between the net percentage for Netherlands and the unweighted average of the net percentage for the peer countries. H1 and H2 refer to April - September of the given year respectively and October of the given year - March of the next year respectively.

**Figure 4. Survey Evidence on the Changes in Factors Affecting the Availability of External Finance, Net Percentage of Firms Reporting Increases in the Past 6 Months Relative to Peers**



Source: Survey on Access to Finance of Enterprises and IMF staff calculations.

Note: Peer countries include Austria, Belgium, France, and Germany (SAFE does not have data for the United Kingdom). For each country, first the net percentage - the difference between percent of firms reporting an increase (e.g. in outlook, etc.) and percent of firms reporting a decrease is calculated by enterprise class. The charts report the difference between the net percentage for Netherlands and the unweighted average of the net percentage for the peer countries. H1 and H2 refer to April - September of the given year respectively and October of the given year - March of the next year respectively.



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