

Attachment to Norges Bank's consultation response of 4 May 2015 regarding residential mortgage lending requirements:

POSSIBLE EFFECTS OF FINANSTILSYNET'S PROPOSAL

Norges Bank has analysed data on household income, debt and housing wealth based on tax assessment figures for 2013.¹ The analysis provides an insight into the number of households that would have been affected by the proposed regulatory requirements if these requirements had applied in 2013.

Household borrowing in 2013

Households that increased their debt in 2013 are identified using the tax assessment data (see Table 1). According to the data, total borrowing for these households came to NOK 330 billion. Homeowner households at the end of 2013 accounted for 85 percent of total household borrowing. First-time home buyers accounted for 19 percent of total household borrowing, while borrowing by remortgagors accounted for 39 percent.

Table 1 Household borrowing and deleveraging. 2013¹

	NOK bn	Percentage
Borrowing²	330	100
Homeowner, first-time buyer	62	19
Homeowner, home mover	88	27
Homeowner, remortgagor	130	39
Non-homeowner	49	15
Deleveraging	-162	
Change in debt	168	

¹Borrowing is the total increase in debt for households with higher debt at the end than at the beginning of 2013. Deleveraging is the total reduction in debt for households with lower debt at the end than at the beginning of 2013.

² Includes increase in student debt of NOK 1 billion among homeowners. This is not included in the distribution across subgroups. If the tax value of a dwelling increases by more than 25 percent, it is assumed that the homeowner purchased a new home (home mover).

Sources: Statistics Norway and Norges Bank

Borrowing increases with income. Households in the three highest income deciles accounted for more than half of total borrowing (see Chart 1). Households in the three lowest income deciles accounted for a relatively small percentage of household borrowing. More than half of the total was borrowed by households in the age groups

¹ The analyses are based on tax return data from Statistic Norway's income and wealth statistics for households. Wealth data do not include accrued pension rights or actuarial reserves. The market values for dwellings are estimated (available from 2010). Standard living expenses are National Institute for Consumer Research (SIFO) estimates and include ordinary current expenditure on food, clothing, toiletries, etc. and expenses on less frequent purchases of consumer durables such as furniture and electrical appliances. Self-employed persons are excluded. The age of the household is determined by the age of the main income earner. A broader review of the data is provided in Lindquist, K.-G., M. Riiser, H. Solheim and B.H. Vatne (2014): "Ten Years of Household Data. What Have we Learned?" Norges Bank *Staff Memo* 8/2014.

25-34 and 35-44. The distribution of borrowing across age groups and income deciles has remained relatively stable over time.

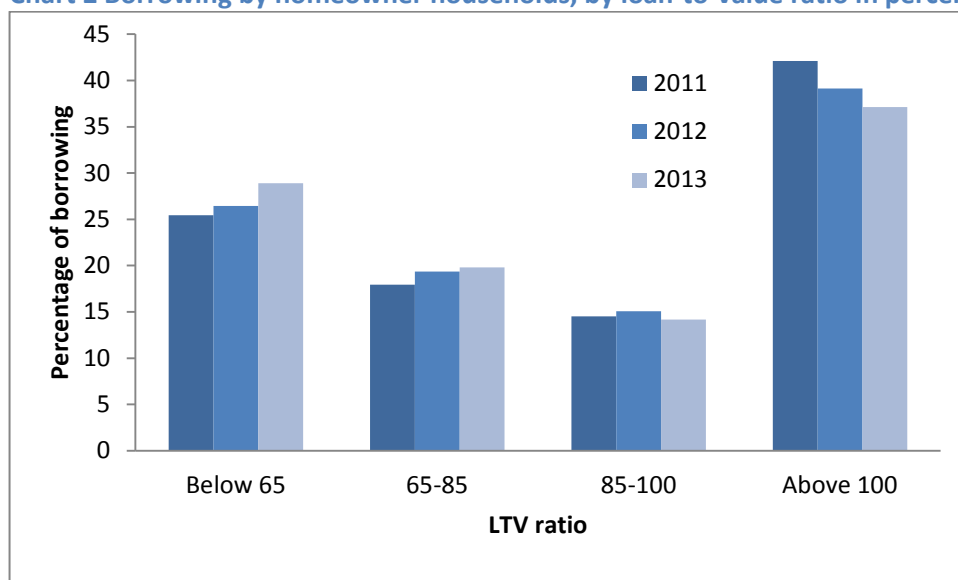
Around half of the total was borrowed by households with a loan-to-value (LTV) ratio of more than 85 percent of the dwelling's estimated market value (see Chart 2).

Chart 1 Distribution of borrowing by age group and income decile. 2013



Sources: Statistics Norway and Norges Bank

Chart 2 Borrowing by homeowner households, by loan-to-value ratio in percent



Sources: Statistics Norway and Norges Bank

Analysis of effects of the measures

According to the tax assessment figures, the total change in debt came to NOK 168 billion in 2013, equivalent to an annual growth rate in 2013 of 7.6 percent. Based on

these figures, the proportion of borrowing in 2013 that exceeds the proposed limits can be calculated.

Finanstilsynet's guidelines for prudent mortgage lending apply to residential mortgages. Norges Bank's analysis is therefore restricted to homeowner households that increased their debt in 2013. It is assumed that households that reduced their debt in 2013 would not be affected. Borrowing by non-homeowner households is kept unchanged. Student loans and other factors that could influence household borrowing and debt-to-income ratios, such as house prices, interest rates and income, are also kept unchanged.

In the analysis, the LTV ratio of the dwelling is calculated based on its market value as estimated by Statistics Norway. Debt-servicing capacity is calculated based on household income after tax less interest expenses, standard living expenses and principal repayments. Table 2 presents a more detailed description of how borrowing that would have been affected by the measures is identified.

Table 2 Operationalisation to calculate effects of Finanstilsynet's proposal¹

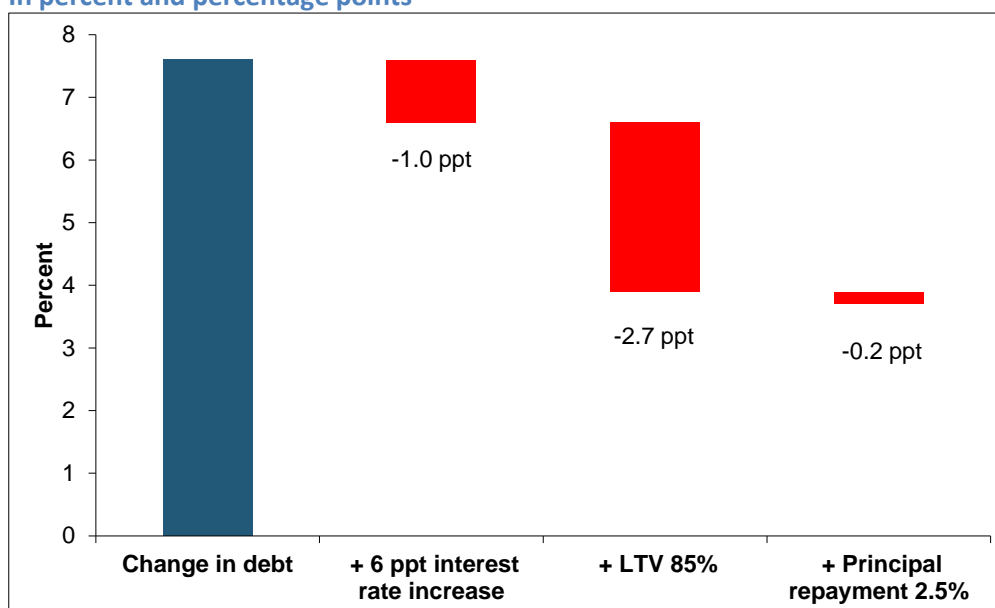
Requirement	Operationalisation
Debt-servicing capacity with <i>6 ppt interest rate increase</i>	A household breaches the requirement when the household's income after tax does not cover interest expenses and standard living expenses if the interest rate on debt and deposits rises by 6 percentage points.
Maximum <i>LTV ratio of 85%</i>	A household breaches the requirement when the household's LTV ratio, defined as the ratio of loans other than student loans to the estimated market value of the dwelling, exceeds 85 percent.
Debt-servicing capacity with addition of <i>Principal repayment of 2.5%</i>	A household breaches the requirement when the household's income after tax does not cover interest expenses, standard living expenses and repayment of 2.5 percent of outstanding debt when the LTV ratio exceeds 65 percent. The principal repayment requirement is analysed as an addition to the requirement for debt-servicing capacity in the event of a 6 percentage point interest rate increase.
<i>Combined requirements</i>	A household breaches the requirement when the household's LTV ratio exceeds 85 percent or the household's income after tax does not cover interest expenses, standard living expenses and repayment of 2.5 percent of outstanding debt when the LTV ratio exceeds 65 percent if the interest rate on debt and deposits rises by 6 percentage points.

¹ Method used to identify households and debt that would have been affected by the proposed measures, i.e. households in breach of the requirements and their borrowing.

Ten percent of homeowner households that had increased their debt at the end of 2013 do not comply with the requirement of debt-servicing capacity in the event of a 6 percentage point interest rate increase. This share increases to 15 percent if the principal repayment requirement is added. LTV ratios exceed 85 percent for about 25 percent of homeowner households that increased their debt. One in three homeowners that increased their debt in 2013 breach one or more of the three requirements.

In the analysis, the requirements are implemented in stages. The effect of each measure depends on the order in which they are introduced as some households breach several of the requirements. If debt held by households that do not comply with the requirement of being able to afford an interest rate increase of 6 percentage points is reduced to comply with the requirement, total debt growth falls by 1 percentage point (see Chart 3). If it is assumed that an LTV limit of 85 percent of the dwelling's market value is set, total debt growth falls by a further 2.7 percentage points. Adding the principal repayment requirement does not reduce total debt growth by an appreciable extent. If borrowing is reduced just enough to comply with the three requirements, debt growth in 2013 is reduced by almost half in this static analysis of tax assessment figures.

Chart 3 Actual change in household debt in 2013 and effects of Finanstilsynet's proposal.¹ Calculations based on tax assessment figures. In percent and percentage points



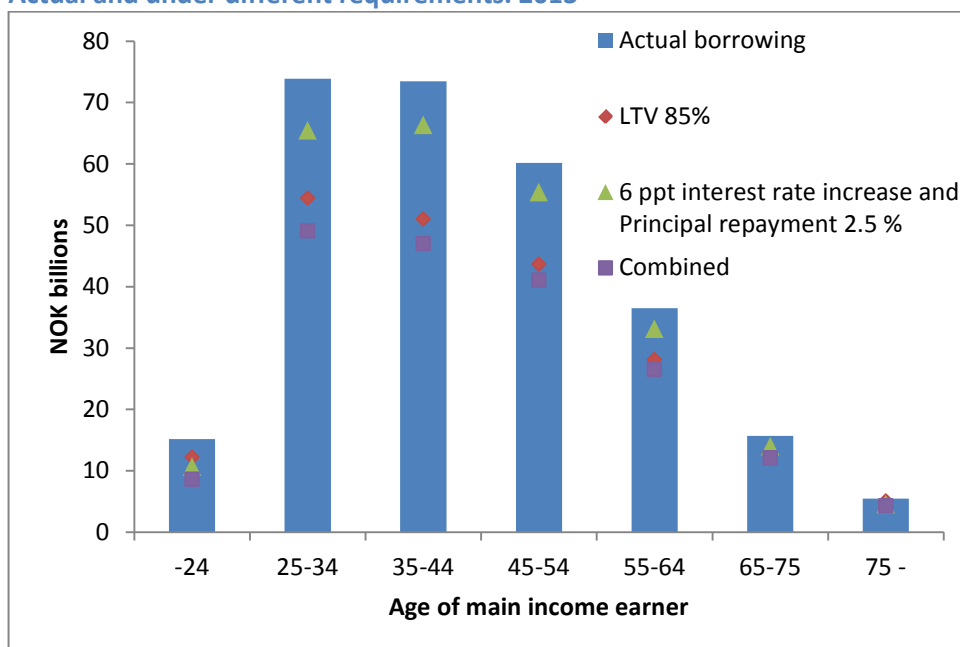
¹ Actual change in debt in 2013 was NOK 168 billion (see Table 1). Estimates are based on the introduction of requirements in stages and depend on the order in which the requirements are introduced.

Sources: Statistics Norway and Norges Bank

The proposed requirements have the strongest impact on younger households (see Chart 4). For households where the main income earner is below the age of 45, borrowing falls by more than 30 percent.

The effect of debt-servicing capacity requirements is strongest for the three lowest income deciles. These households already have relatively small margins. For the other income deciles, the LTV requirement has a stronger effect than the debt-servicing capacity requirement.

**Chart 4 Borrowing by homeowner households, by age group.¹
Actual and under different requirements. 2013**



¹ Total borrowing by homeowner households was NOK 280 billion in 2013 (see Table 1). Affected households are assumed to borrow up to the limits permitted under the requirements. Sources: Statistics Norway and Norges Bank

The estimates are subject to considerable uncertainty. Banks can base their assessments of LTV ratios and debt-servicing capacity on a broader set of data about borrowers than can be provided by tax assessment figures.²

Tax assessment figures contain no information about additional security in the form of other real property. Finanstilsynet's mortgage survey for 2014 indicates that additional security was provided for slightly less than half of approved repayment mortgages with high LTVs: The share of repayment mortgages with an LTV ratio of more than 85 percent was 19 percent. If additional security is taken into account, the share decreases to 10 percent. Additional security includes personal debt guarantees, which under the new proposal will no longer be permitted.

Furthermore, the tax assessment data do not distinguish between loans secured on dwellings and other loans (with the exception of student loans). This means that the level of household debt in the analyses may be too high.

² The data used in our analysis do not contain information about to what extent debt is collateralised, the nature of the collateral or the LTV of the collateral. As most household debt is secured by dwellings, we assume that the debt of households with housing wealth is secured by the dwelling. We cannot take account of debt secured by property owned by a third party. Our data contain interest payments, but do not provide information about borrowing conditions, such as the mortgage rate, tenor or repayment schedule, or other fixed expenses. The data do not contain information about a borrower's bank.

These factors suggest that the effects of Finanstilsynet's proposal will be smaller than indicated by the above calculations. On the other hand, the analysis is based on the assumption that affected households borrow up to the limits permitted under the requirements. If it is assumed instead that loans that do not comply with the requirements will not be extended at all, debt growth could be considerably lower.

The estimated market values of dwellings are also subject to uncertainty as they may be underestimated. When banks assess LTV ratios, they use more updated information on market values based on valuations or selling prices.

If the final regulatory framework contains a speed limit, the effect on debt growth will also depend on which borrowers each bank prioritises within the flexibility to diverge from the requirements provided by the speed limit.