Data series

C3 mainland Norway as a percentage of mainland GDP

C3 mainland Norway is defined as the sum of domestic debt (C2) in households and total debt (C3) in mainland non-financial enterprises (see Tables 1 and 2 for sources and methods). C3 mainland non-financial enterprises is defined as the sum of domestic debt (C2) in non-financial enterprises and foreign debt in mainland Norway.¹

Both series are break-adjusted for government lending institutions' loans to housing cooperatives between 1989 Q3 and Q4 and between 1994 Q1 and Q2, and break-adjusted for the new institutional sector classification between 2011 Q4 and 2012 Q1. C2 households is adjusted for the start-up of OBOS-Banken AS in 2013 Q4. C2 mainland non-financial enterprises is break-adjusted as a result of the main revision in Norwegian national accounts 2014. The level of foreign debt to mainland non-financial enterprises has been adjusted upwards with a factor reflecting the average percentage increase in the series in the period 2012 Q2 - 2014 Q2 due to the main revision of the national accounts in 2014 Q4.

Total quarterly credit is calculated as percentage of mainland GDP at current prices (total past four quarters). GDP is chained as shown in Table 3.

House prices relative to disposable income

House prices are based on several sources and chained as shown in Table 4. The chained house price index is seasonally adjusted.

House prices are break-adjusted for the changeover from quarterly to monthly data in the house price statistics from the real estate industry between 1996 Q4 and 1997 Q1. Quarterly figures are calculated as the average price index over the months in the quarter.

The quarterly house price index is calculated as percentage of household disposable income (total last four quarters). The series is chained as shown in Table 5 and scaled to 100 in 1998 Q4.

Real commercial property prices

Commercial property prices are calculated as market rents divided by a *yield* for the prime segment in Oslo. Commercial property prices are chained as described in Table 6.

Quarterly real prices for commercial property are calculated as the average price of commercial property (Table 6) the past four quarters in relation to the average mainland GDP deflator (Table 7) the past four quarters. The real price index is 100 in 1998.

Banks' wholesale funding ratio

Wholesale funding is defined as total assets less customer deposits and equity. The wholesale funding ratio is wholesale funding as a percentage of total assets, see Table 8 for more information.

Customer deposits include deposits from households, enterprises, municipalities and other public sector entities, and certain financial companies (insurance companies, mutual funds). Deposits from credit institutions (banks, mortgage companies and finance companies) and central banks are excluded.

¹ Foreign debt in mainland Norway includes debt of non-financial enterprises, households and regional governments. As the stocks of foreign debt relating to households and regional governments are small, the total foreign debt in mainland Norway is assigned to non-financial enterprises.

 $\label{thm:constraint} \textbf{Table 1: Total debt (C3), mainland non-financial enterprises} \\$

Period	Description	Source
1995 Q4 –	C3 mainland non-financial enterprises. Stocks at the end	Statistics Norway
	of the quarter.	
1987 Q4 – 1995 Q3	Chained back in time using growth in total C3 non-	Statistics Norway
	financial enterprises.	
1975 Q1 – 1987 Q3	Chained back in time using growth in enterprises' total	Norges Bank
	loan debt (bank loans, bonds and notes).	

Table 2: Domestic debt (C2), households

Period	Description	Source
1987 Q4 –	C2 households. Stocks at the end of the quarter.	Statistics Norway
1975 Q1 – 1987 Q3	Chained back in time using growth in households' total loan debt.	Norges Bank

Table 3: Mainland GDP

Period	Description	Source
1995 Q1 –	Mainland GDP, market value, current prices.	Statistics Norway
1978 Q1 – 1994 Q4	Chained back in time using growth in Mainland GDP before the main revision of the national accounts in 2014 Q4.	Statistics Norway
1975 Q1 – 1977 Q4	Chained back in time using total GDP growth.	International
		Monetary Fund

Table 4: House prices

Period	Description	Source
2003 Q1 –	House price statistics from the real estate industry. House price index.	Eiendom Norge, Finn.no og Eiendomsverdi AS
1990 Q4 – 2002 Q4	Chained back in time using price per square meter from the real estate industry. Price per square meter of an average dwelling of approx. 100 square meters. NOK 1000.	Norwegian Association of Real Estate Agents (NEF), Association of Real Estate Agency Firms (EFF), Finn.no and ECON
1978 Q1 – 1990 Q3	Chained back in time using Historical Monetary Statistics for house price inflation ("Total"). Converted to quarterly data using linear interpolation.	Norges Bank (Historical Monetary Statistics)

Table 5: Disposable income

Period	Description	Source
2002 Q1 -	Quarterly disposable income adjusted for reinvested	Statistics Norway
	dividend income in 2000-2005 and redemption/reduction	
	of equity capital from 2006 to 2012 Q3.	
1978 Q1 – 2001 Q4	Annual disposable income adjusted for reinvested	Statistics Norway
	dividend income in 2000 and 2001. Converted to	
	quarterly data using quarterly wage income as weights.	

Table 6: Commercial property prices

Period	Description	Source
1995 Q1 –	Commercial property prices estimated based on CBRE's	CBRE
	data for market rents and yield for prime offices in Oslo.	
	NOK per square meter. Quarterly data.	
1990 Q4 – 1994 Q4	Annual data from 1990 to 1994 converted to quarterly	CBRE
	data using linear interpolation.	
1980 Q4 – 1990 Q3	Chained back in time with the growth in estimated market	OPAK and Dagens
	price of high-standard office premises in central Oslo.	Næringsliv
	NOK per square meter. Semi-annual data converted to	
	quarterly data using linear interpolation.	

Table 7: Mainland GDP deflator

Period	Description	Source
1995 Q1 –	Mainland GDP deflator.	Statistics Norway
1980 Q3 – 1994 Q4	Chained back in time using growth in mainland GDP	Statistics Norway
	deflator before the main revision of the national accounts	
	in 2014 Q4.	

Table 8: Banks' wholesale funding ratio

Period	Description	Source
1975 Q4 –	The wholesale funding ratio is calculated on the basis of all Norwegian banks and covered bond mortgage companies except subsidiaries and branches in Norway of foreign banks and covered mortgage companies. Data are based on the sum of individual company (solo) balance sheets, and from 2007 Q4 adjusted for intragroup receivables and payables. This means that both numerator (wholesale funding) and denominator (total assets) are adjusted. Quarterly data from 1987 Q1.	Norges Bank
1975 Q4 – 1986 Q4	Quarterly data are calculated by linear interpolation of annual data.	Norges Bank