



Central Bank of Iceland

# Households and housing markets in financial crises

The Icelandic version

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# Overview of presentation



## Two main subjects

1. The financial crisis in Iceland in an international perspective, especially with regard to households and housing markets
2. The effects of the financial crisis in Iceland on the housing sector and households' economic situation



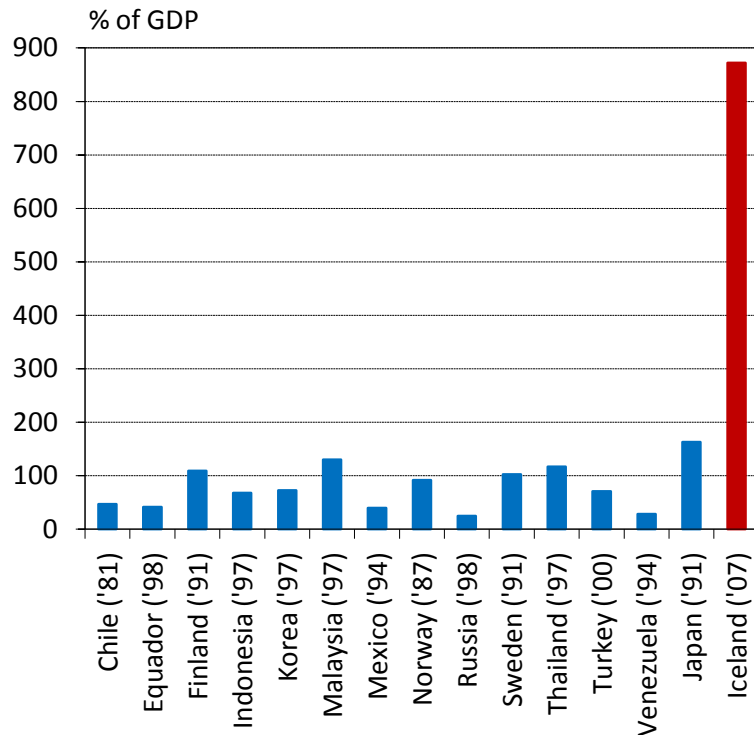
# The financial crisis in Iceland in an international perspective

# International perspective

It is well-known that Iceland had the largest banking system ever to have gone through a crisis ...

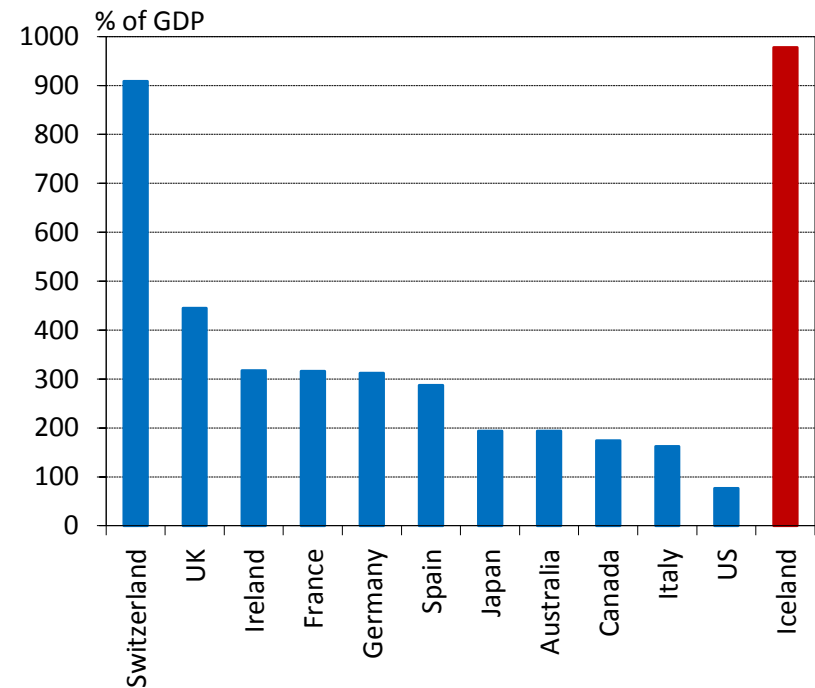


Commercial banks' assets as % of GDP a year before the onset of various crises



Sources: Bank of England, Central Bank of Iceland.

Banking group assets as % of GDP in the current global crisis



1. Total consolidated banking group assets from domestically owned banking sector only. This includes assets of domestic banks held abroad. End-2007 except UK (end 2008) and Iceland (June 2008).

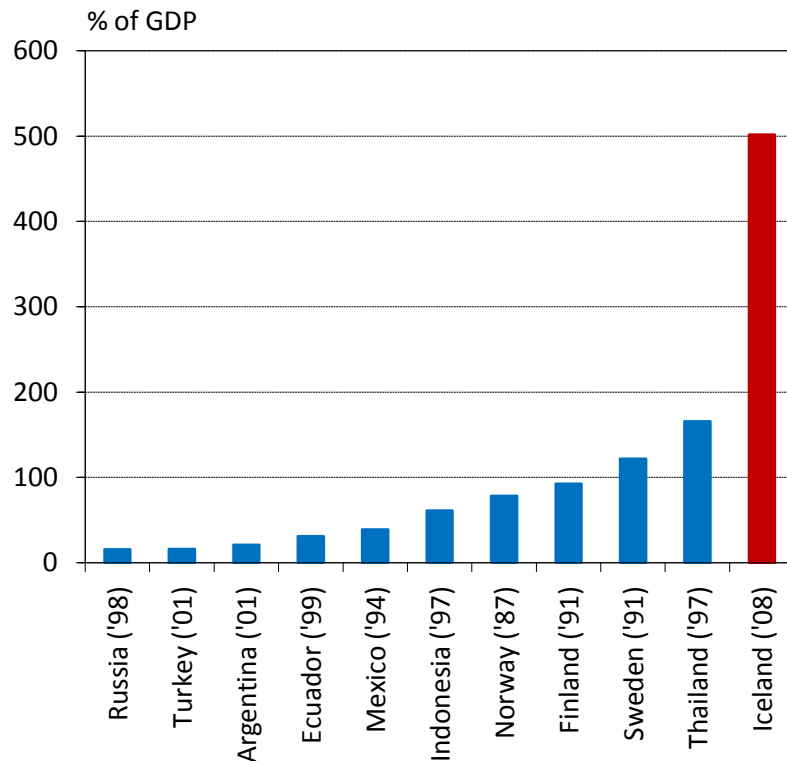
Sources: Bank of England, Central Bank of Iceland.

# International perspective

... the most indebted private sector ...



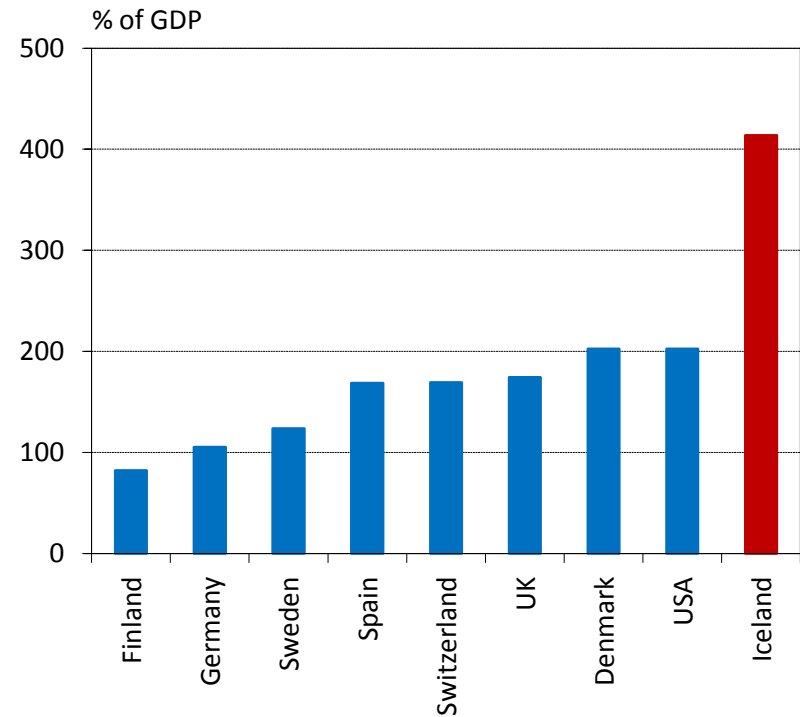
Private sector lending as % of GDP in a few crisis countries



1. The year in parentheses represents the onset of the crisis in the country concerned.

Sources: Reuters EcoWin, Central Bank of Iceland.

Private sector lending as % of GDP in a few countries in the current global crisis



1. The value is for 2007.

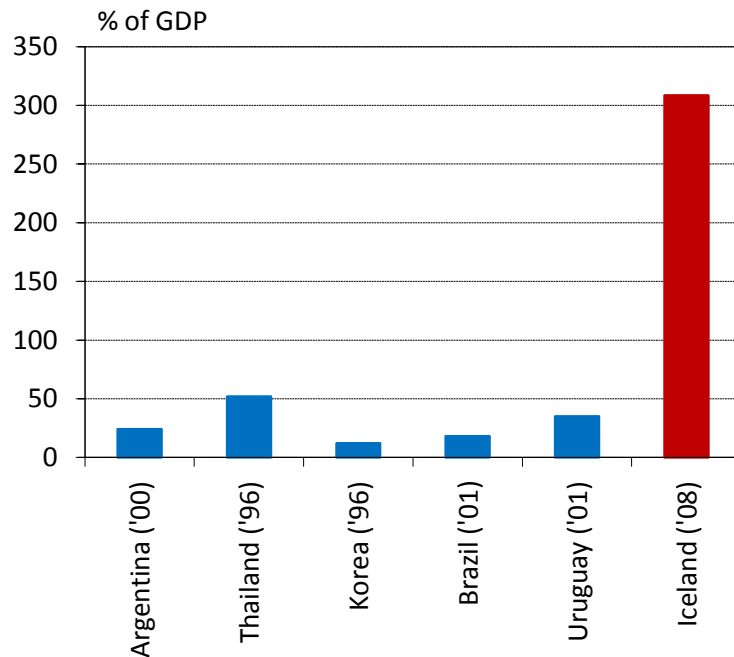
Sources: Bank of England, Reuters EcoWin, Central Bank of Iceland.

# International perspective

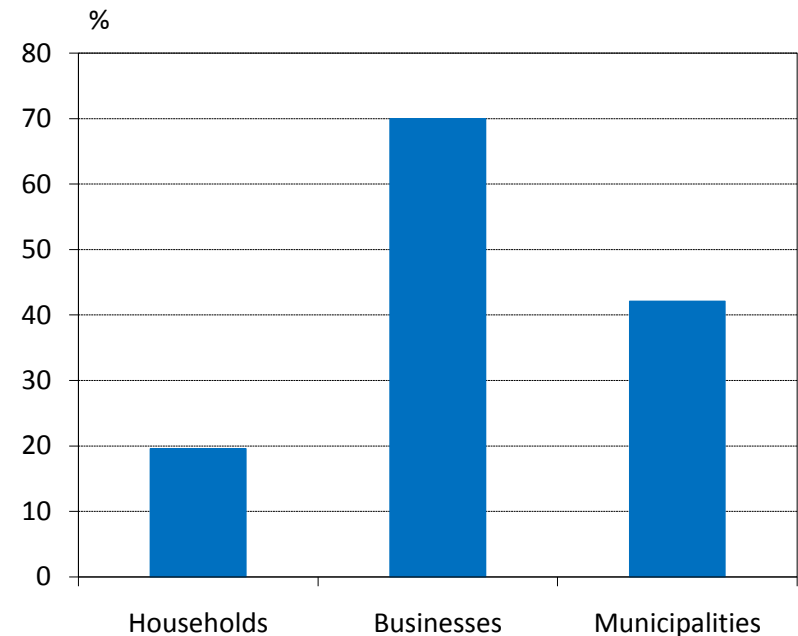
## ... and widespread foreign-currency borrowing



Corporate foreign currency debt to GDP in a few crisis countries



Proportion of total foreign-denominated debt in some of Iceland's key sectors



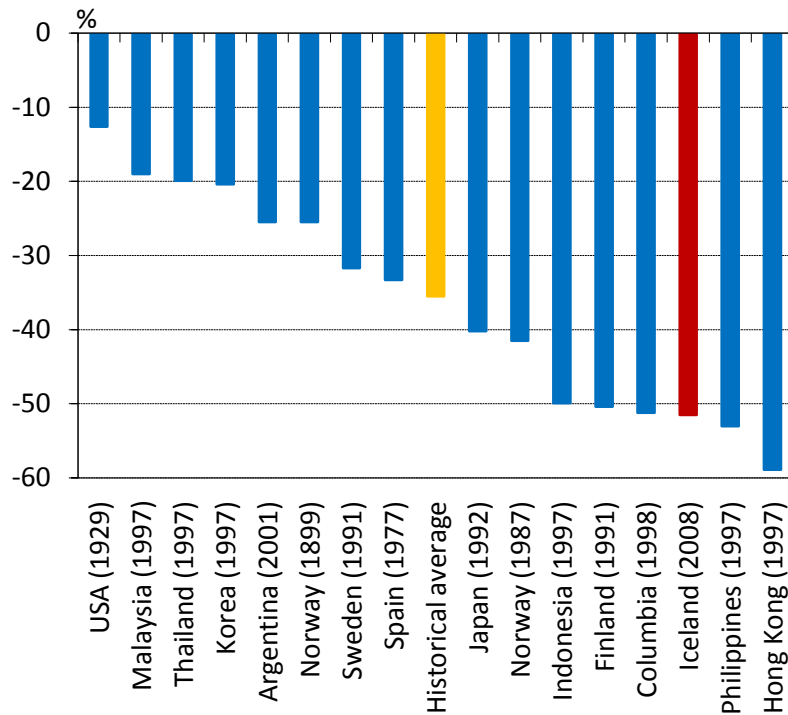
1. Figures for households and municipalities are as of year-end 2008, and figures for businesses are as of June 2009.

Source: Central Bank of Iceland.

# International perspective

Loss of household wealth will be in the high-end relative to other crises as house prices decline ...

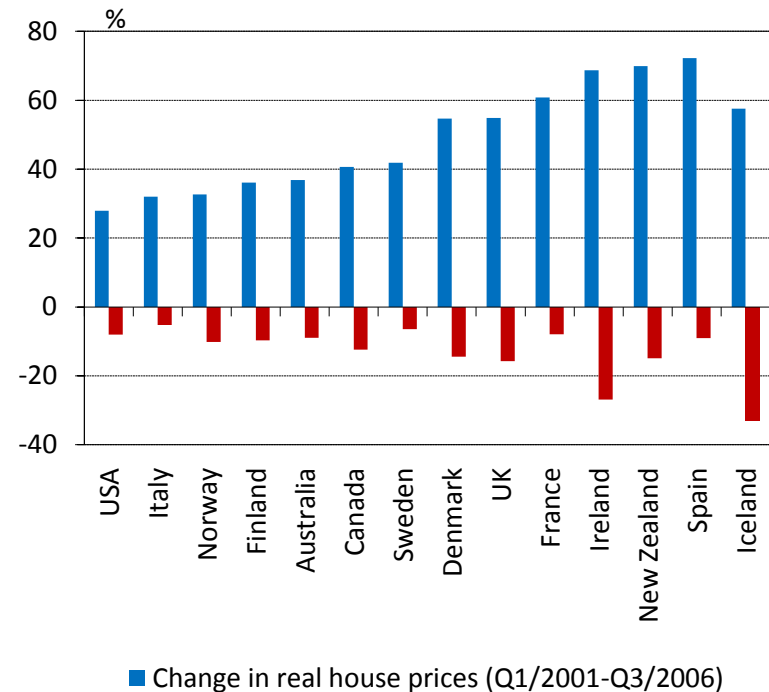
Real house price declines in a few crisis countries



1. Central Bank of Iceland baseline forecast.

Sources: Reinhart, C.M. and K.S. Rogoff (2009), *This Time is Different: Eight Centuries of Financial Folly*, Princeton University Press; Central Bank of Iceland.

Real house price rises and subsequent falls in the current global crisis



■ Change in real house prices (Q1/2001-Q3/2006)

■ Real house prices falls from recent peak

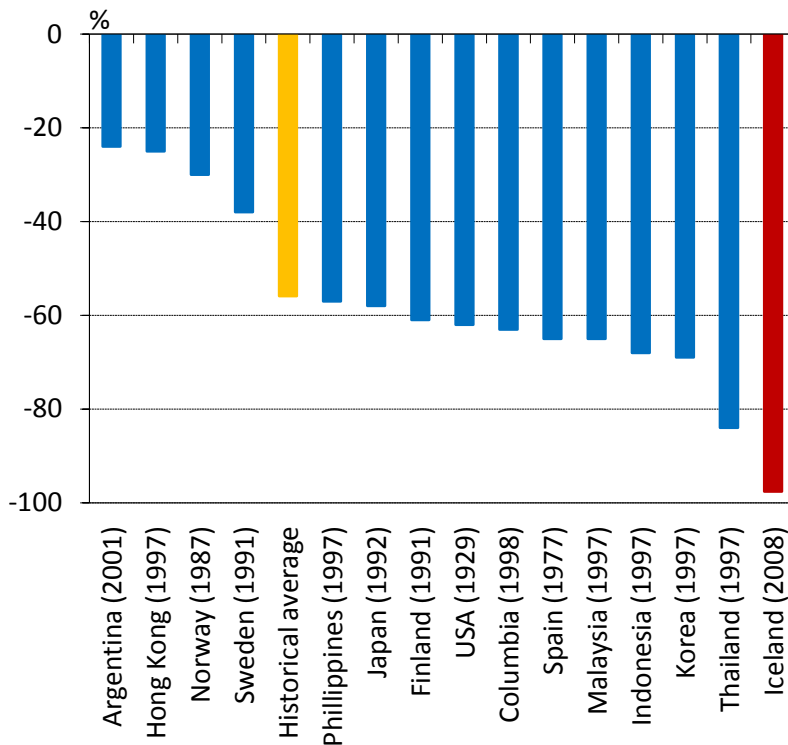
Sources: IMF, Central Bank of Iceland

# International perspective

## ... and financial assets collapse



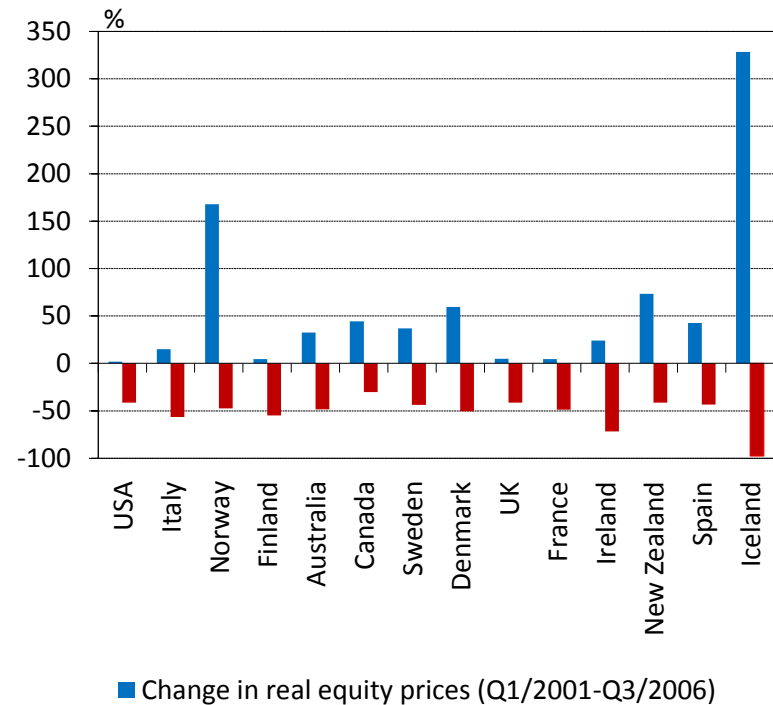
Real equity price declines in a few crises countries



1. Central Bank of Iceland baseline forecast.

Sources: Reinhart, C.M. and K.S. Rogoff (2009), *This Time is Different: Eight Centuries of Financial Folly*, Princeton University Press; Central Bank of Iceland.

Real equity price rises and subsequent falls in the current global crisis



■ Change in real equity prices (Q1/2001-Q3/2006)

■ Real equity prices falls from recent peak

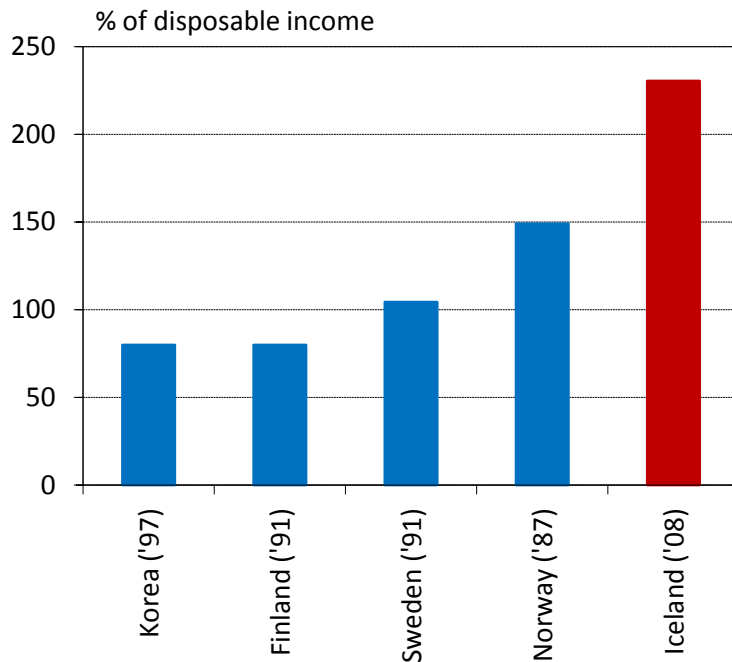
Sources: IMF, Central Bank of Iceland



# International perspective

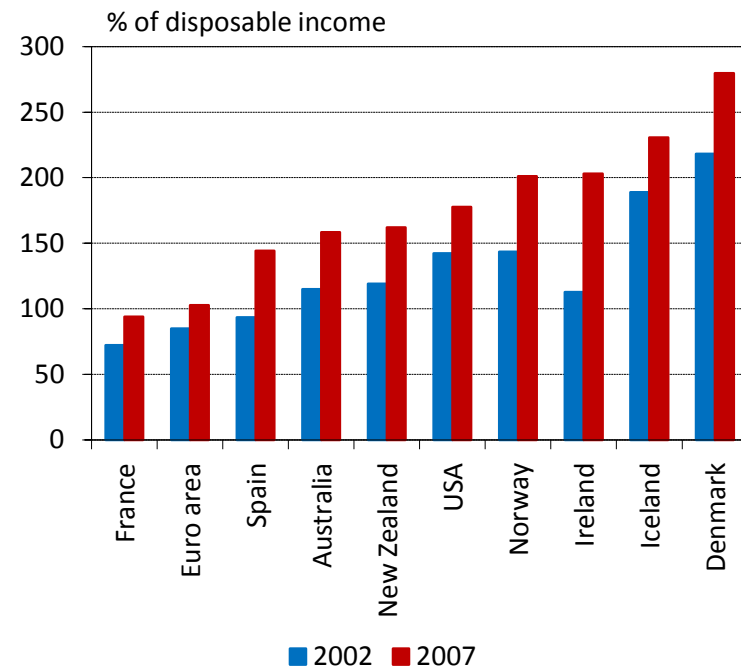
## Icelandic households were vulnerable to the effects of the crisis due to high indebtedness

Household debt as % of disposable income in a few crisis countries



Sources: Riksbanken, Norges Bank, BIS, Central Bank of Iceland

Household debt as % of disposable income in the current global crisis



1. Values for Iceland are for 2002 and 2008.

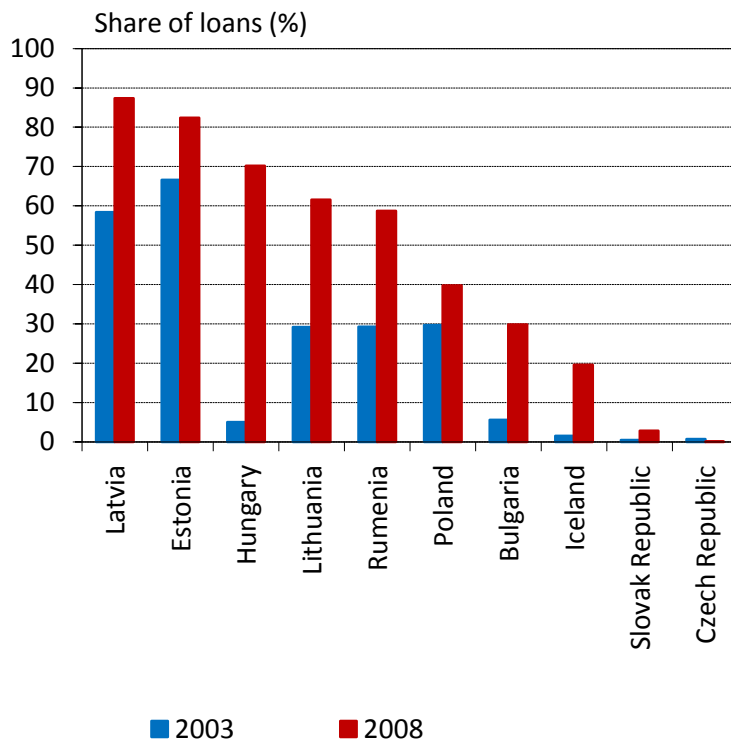
Sources: OECD, Central Bank of Iceland.

# International perspective

Icelandic households have been more affected by depreciation than FX borrowers in other countries

Share of banks' household loans in foreign currency in a few countries

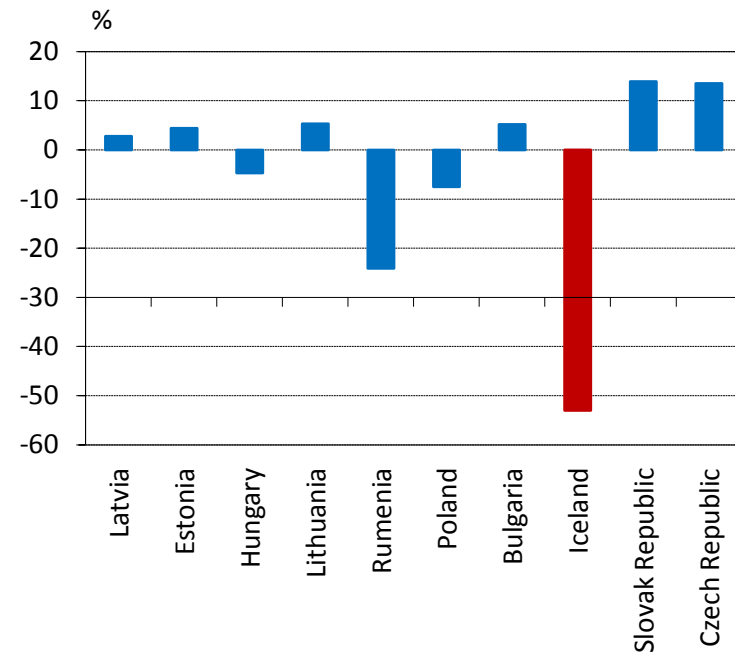
Comparison between 2003 and 2008



Sources: Magyar Nemzeti Bank, Central Bank of Iceland.

Exchange rate changes from July 2007 to October 2009

BIS broad nominal effective exchange rate indices

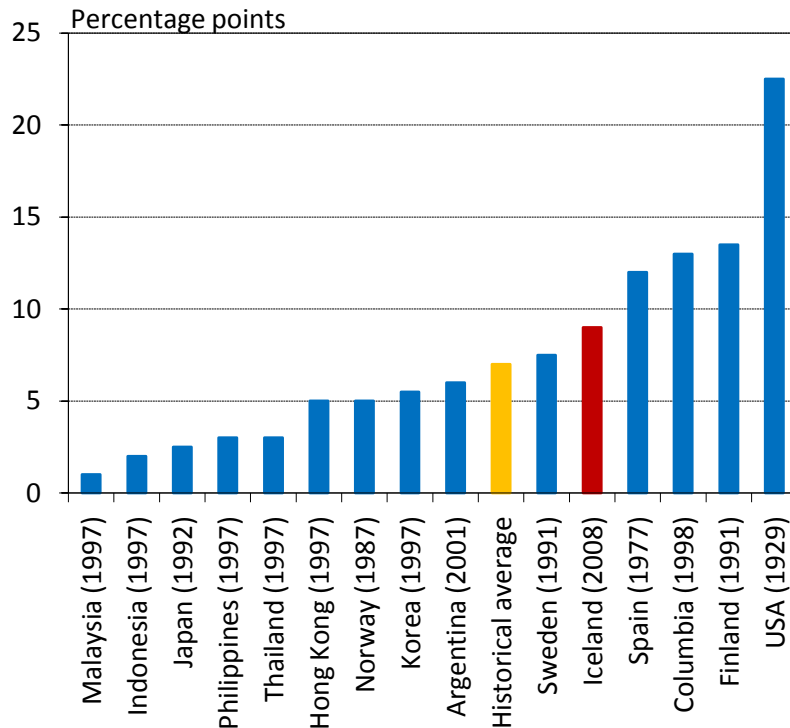


Sources: BIS, Central Bank of Iceland.

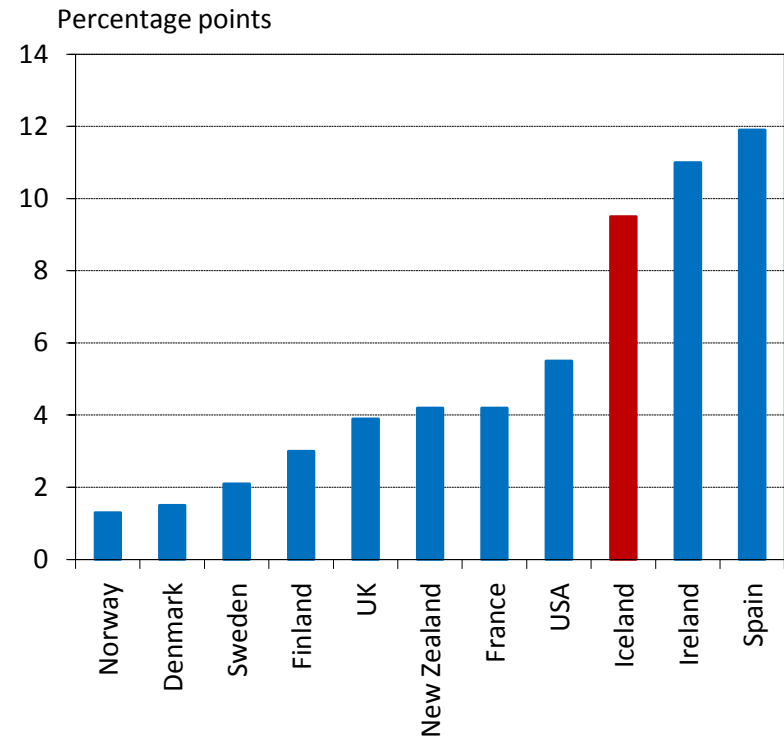
# International perspective

The increase in unemployment is expected to be relatively high ...

Unemployment increases in a few crises countries



Expected unemployment increases from 2007 to 2010 in the current global crisis



1. Central Bank of Iceland baseline forecast.

Sources: Reinhart, C.M. and K.S. Rogoff (2009), *This Time is Different: Eight Centuries of Financial Folly*, Princeton University Press; Central Bank of Iceland.

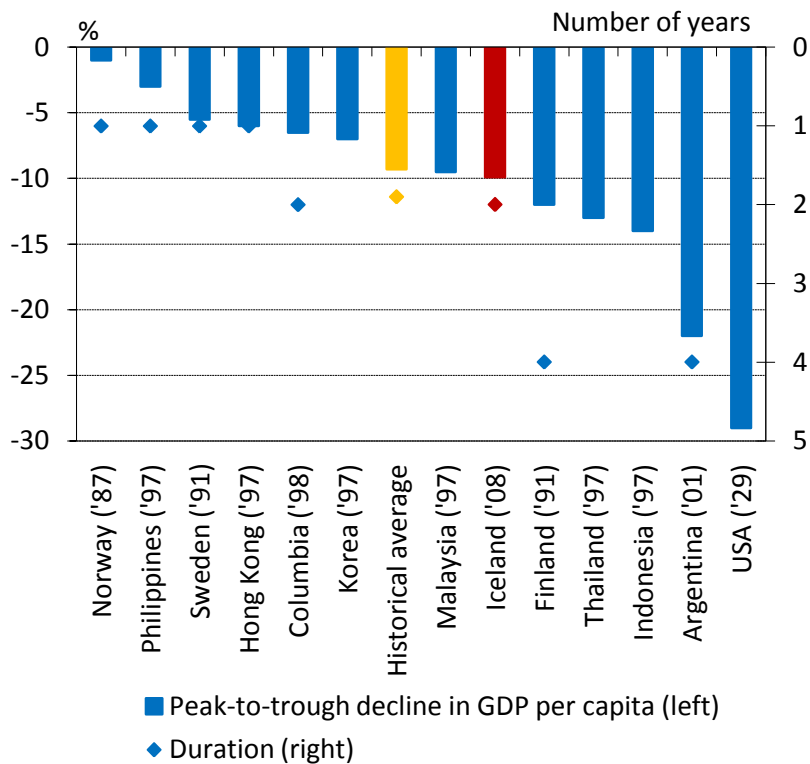
Sources: IMF.

# International perspective

## ... and the drop in GDP large



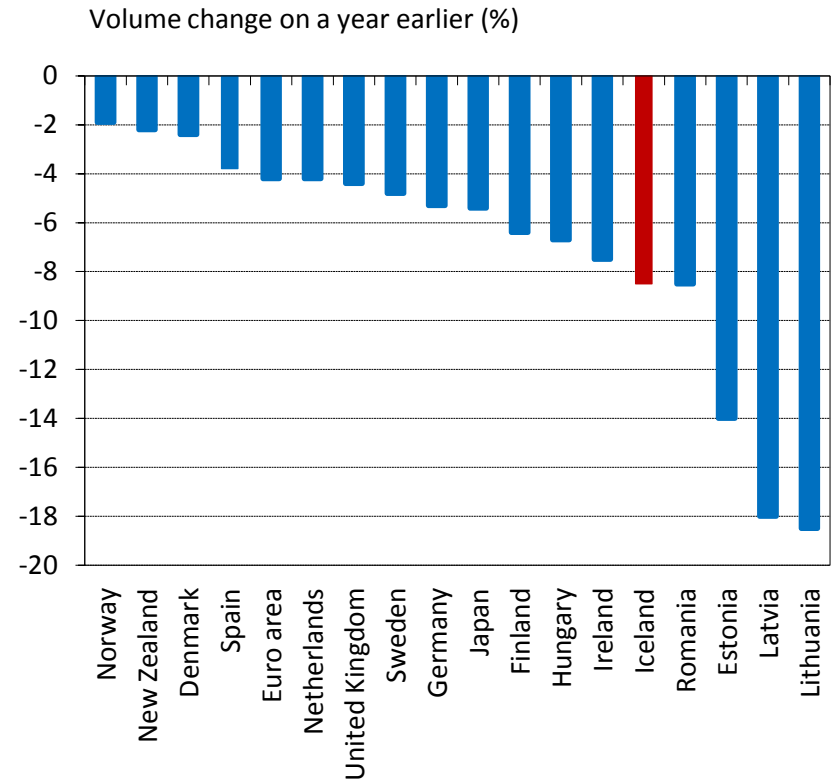
Real GDP per capita cycles in a few crises countries



1. Central Bank of Iceland baseline forecast.

Sources: Reinhart, C.M. and K.S. Rogoff (2009), *This Time is Different: Eight Centuries of Financial Folly*, Princeton University Press; Central Bank of Iceland.

Forecast for GDP growth in 2009



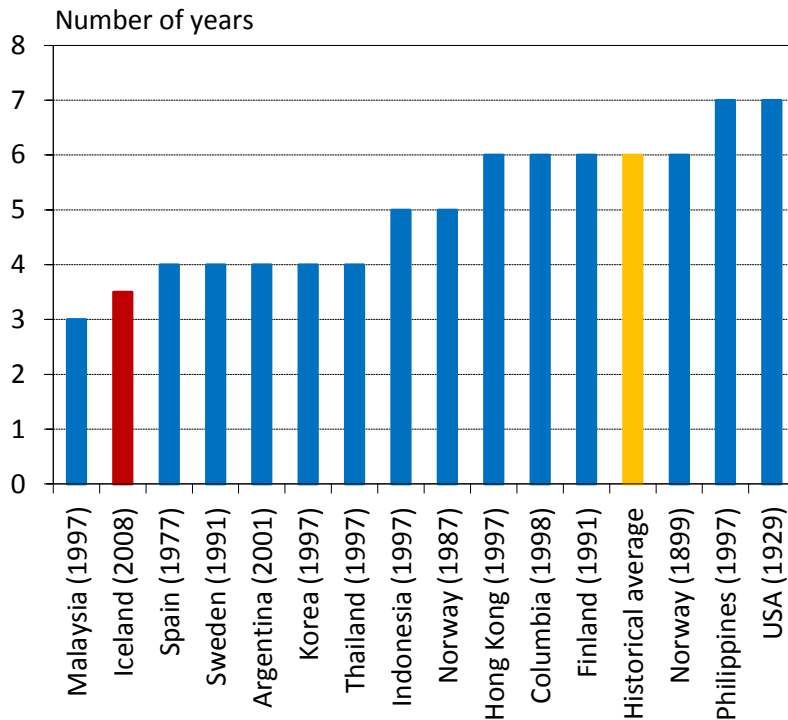
Source: IMF.

# The effects of the financial crisis on the housing market and households' economic situation

# The Icelandic housing market

Relatively short duration of real house price declines and inflation playing a large role in the adjustment

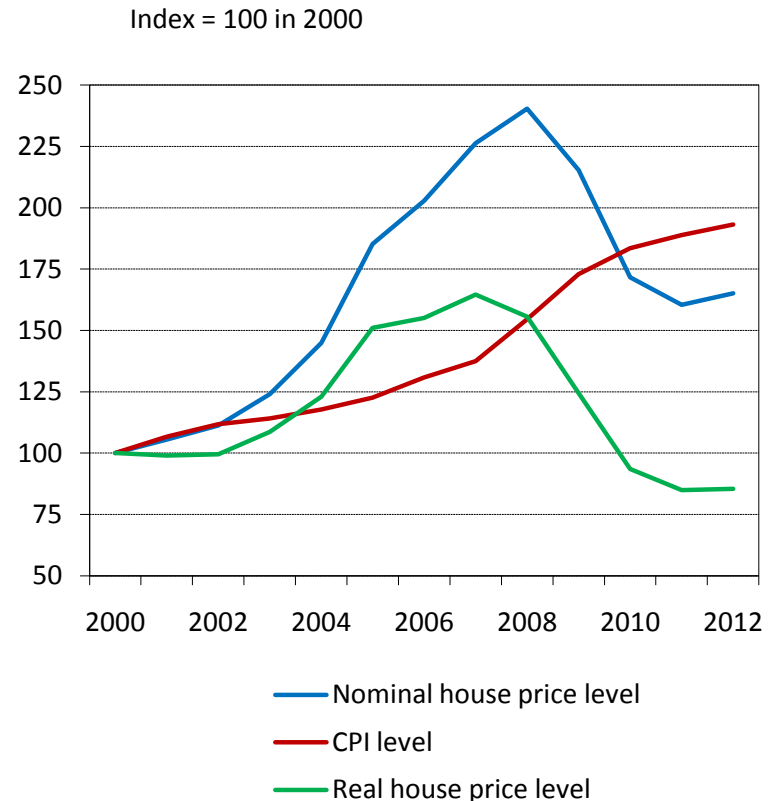
Duration of real house price declines in a few crisis countries



1. Central Bank Iceland baseline forecast.

Sources: Reinhart, C.M. and K.S. Rogoff (2009), *This Time is Different: Eight Centuries of Financial Folly*, Princeton University Press; Central

House price levels



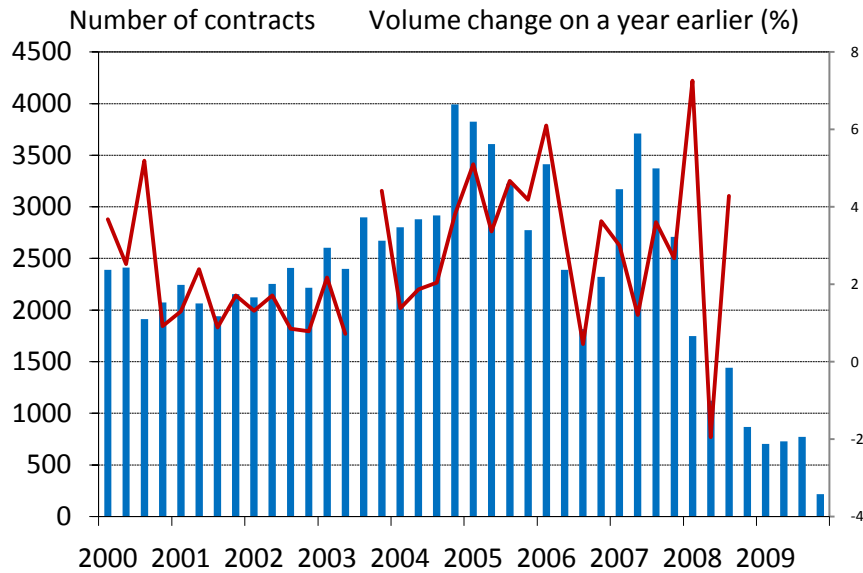
Sources: Statistics Iceland, Central Bank of Iceland.

# The Icelandic housing market

## Dysfunctional market



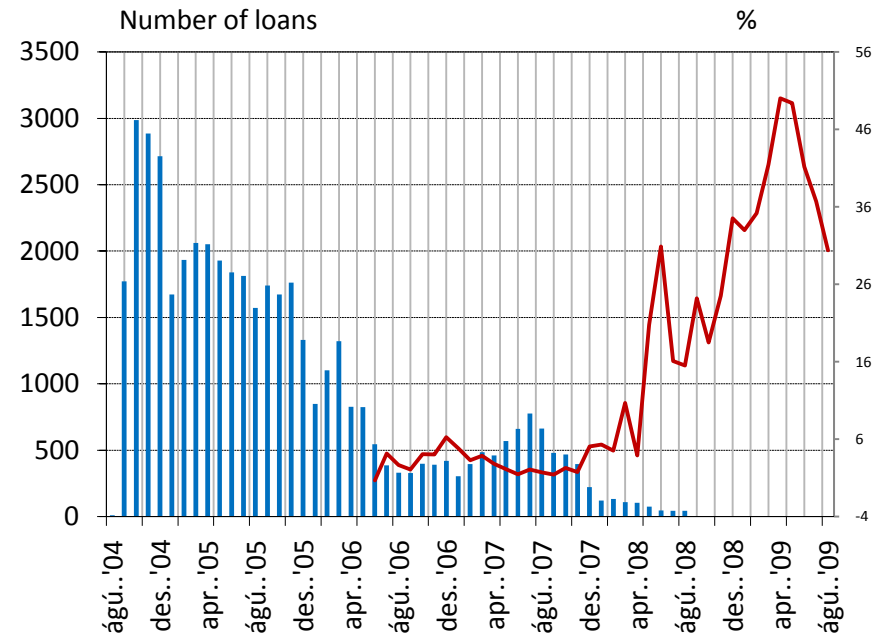
Turn-over on the residential housing market and quarterly growth in household debt in



- Turn-over on the residential housing market (left)
- Quarterly growth in household debt in real terms (right)

Sources: Icelandic Property Registry, Central Bank of Iceland

Number of new mortgage loans issued at DMI and share of swaps in total turnover



- Number of new mortgage loans at DMI
- Swaps as a portion of total turnover

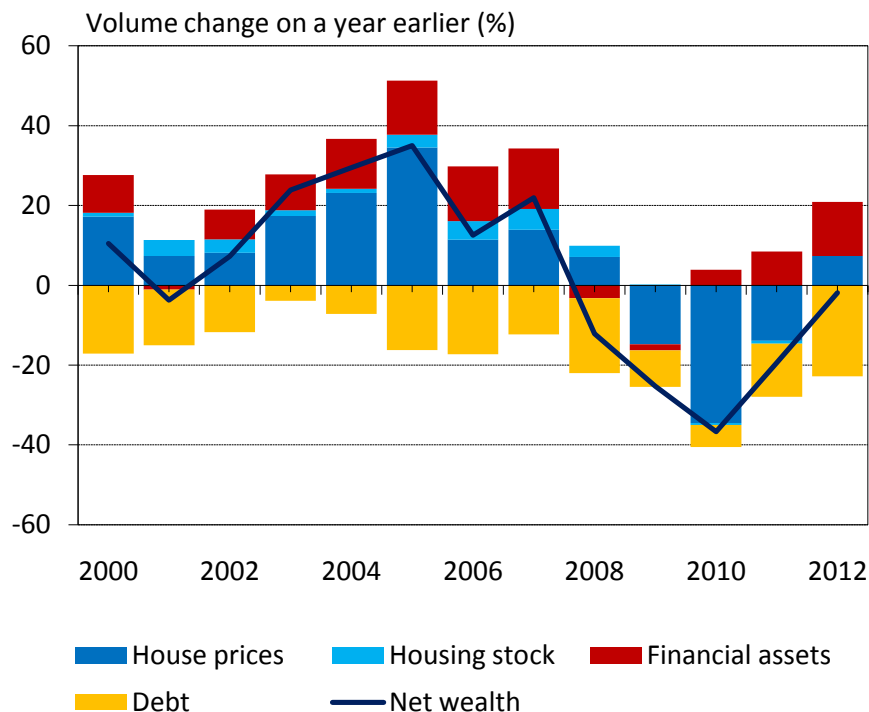
Sources: Icelandic Property Registry, Central Bank of Iceland

# Icelandic households: Aggregate data

## Changes in net wealth and real disposable income



Developments in household net wealth and contribution of underlying components 2000-2012<sup>1</sup>

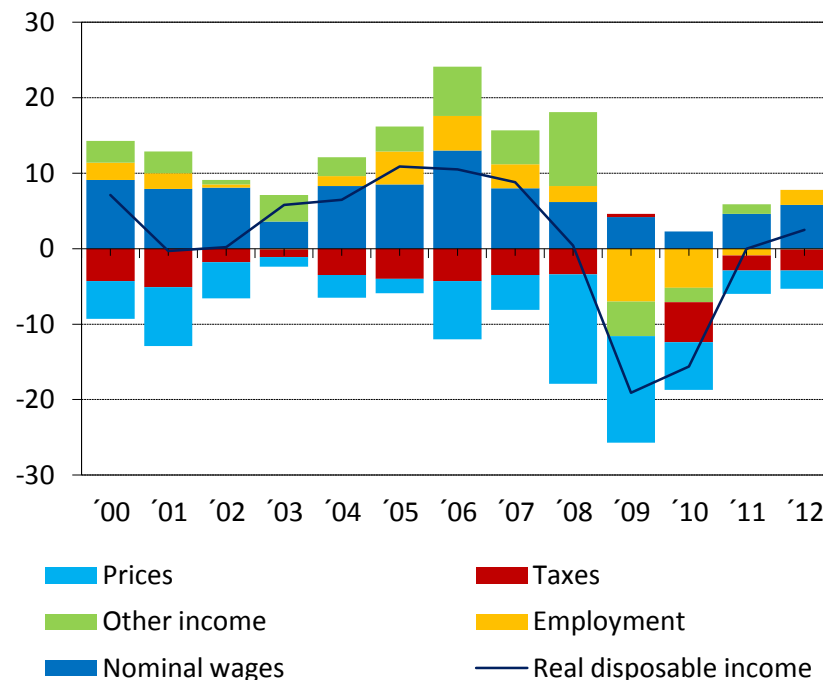


1. Central Bank of Iceland baseline forecast 2009-2012. The contribution of the main underlying factors in the yearly changes in net wealth is calculated based on each factor's weight in new wealth. The combined contribution of underlying factor does not add up to the total change due to rounding.

Sources: Statistics Iceland, Central Bank of Iceland.

Developments in real disposable income and contribution of underlying components

Volume change on a year earlier (%)



1. Central Bank baseline forecast 2009-2012. The contributions of the main underlying factors in the yearly changes in real disposable income is calculated based on each factor's weight in disposable income. The combined contribution of underlying factors does not add up to the total change due to rounding and incomplete income accounts for households.

Sources: Statistics Iceland, Central Bank of Iceland.

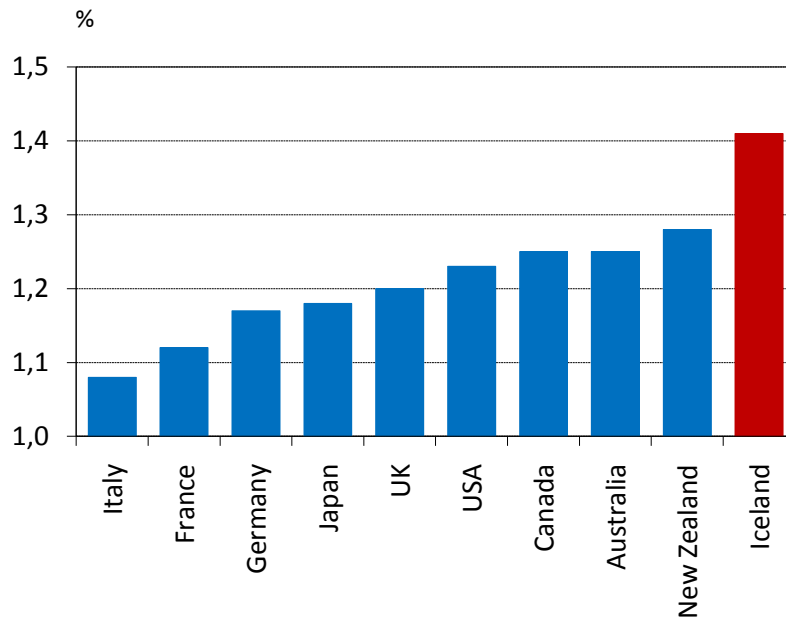


# Icelandic households: Aggregate data



Leverage is high in international comparison but it decreased in the boom as expected ...

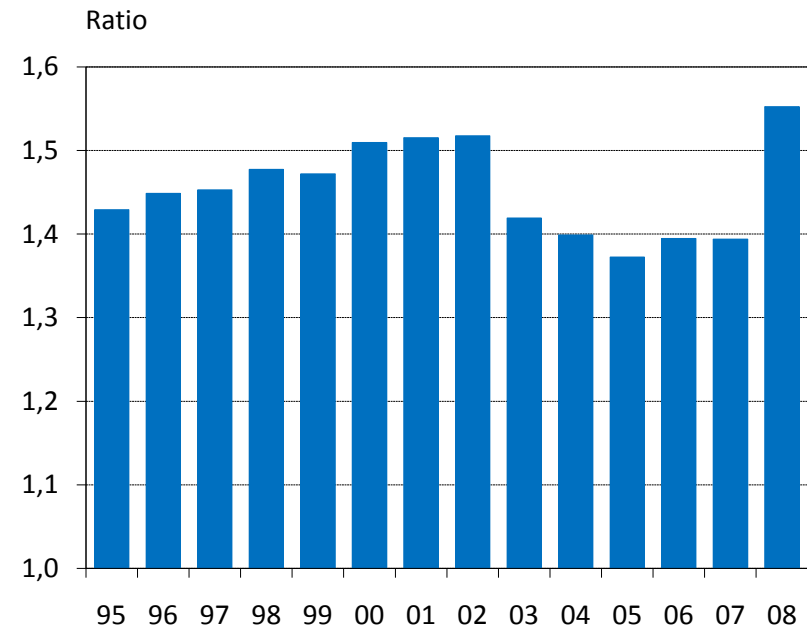
Household leverage in the current global crisis



1. Total household assets as proportion of net wealth at year-end 2007

Sources: OECD, Reserve Bank of Australia, Reserve Bank of New Zealand, Central Bank of Iceland.

Icelandic households' leverage 1995-2008



1. Total household assets as proportion of net wealth based on the Central Bank of Iceland estimate of asset and net wealth except for 2008 where leverage growth is based on tax authority data

Sources: Central Bank of Iceland, Icelandic tax authorities (RSK).

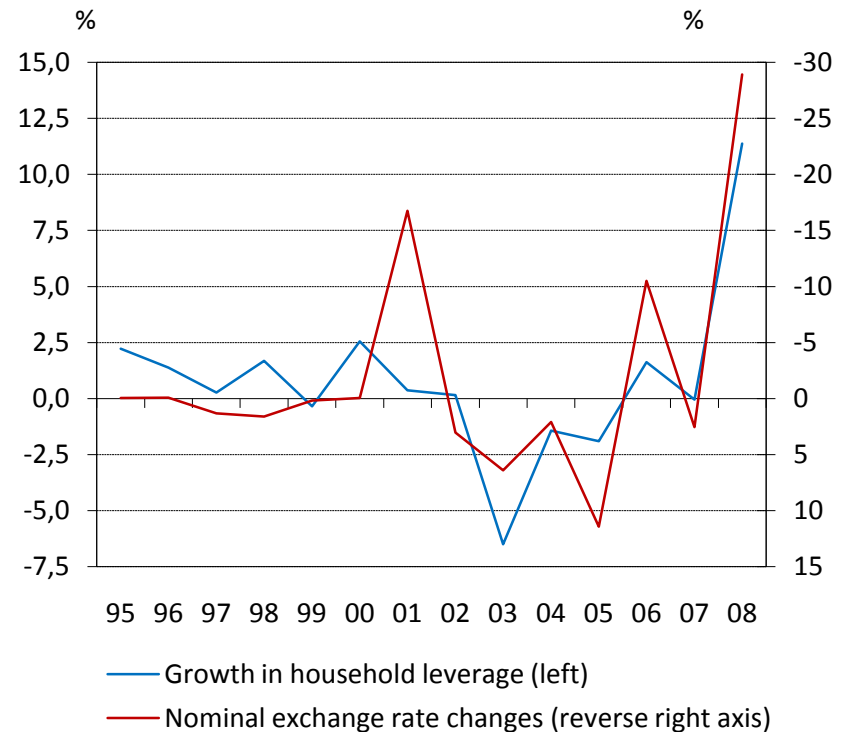
# Icelandic households: Aggregate data



... but leverage has become much more dependant on exchange rate movements

- In the run-up to the crisis, household assets increased even faster than debt and households' equity position improved and leverage decreased
- But the large depreciation and asset destruction has pushed leverage up and balance sheet restructuring has begun

Household leverage growth and exchange rate movements



1. Household leverage growth is based on the Central Bank of Iceland estimate of asset and net wealth except for 2008 where leverage growth is based on tax authority data

Sources: Central Bank of Iceland, Icelandic tax authorities (RSK).

# Icelandic households: Micro data



## The Central Bank of Iceland household sector project

- Assessing the extent of debt problems in the private sector, their effects on the crisis dynamics and developing the policies needed to limit the severity of the crisis is a daunting challenge
- One of many preconditions for success is access to valuable data on household and corporate sector balance sheets
- The Central Bank has assembled a unique database for households and an analysis on the household balance sheet and debt servicing capabilities is ongoing
  - See e.g. chapter 2.2. in Central Bank of Iceland *Financial Stability* 2009

# Icelandic households: Micro data



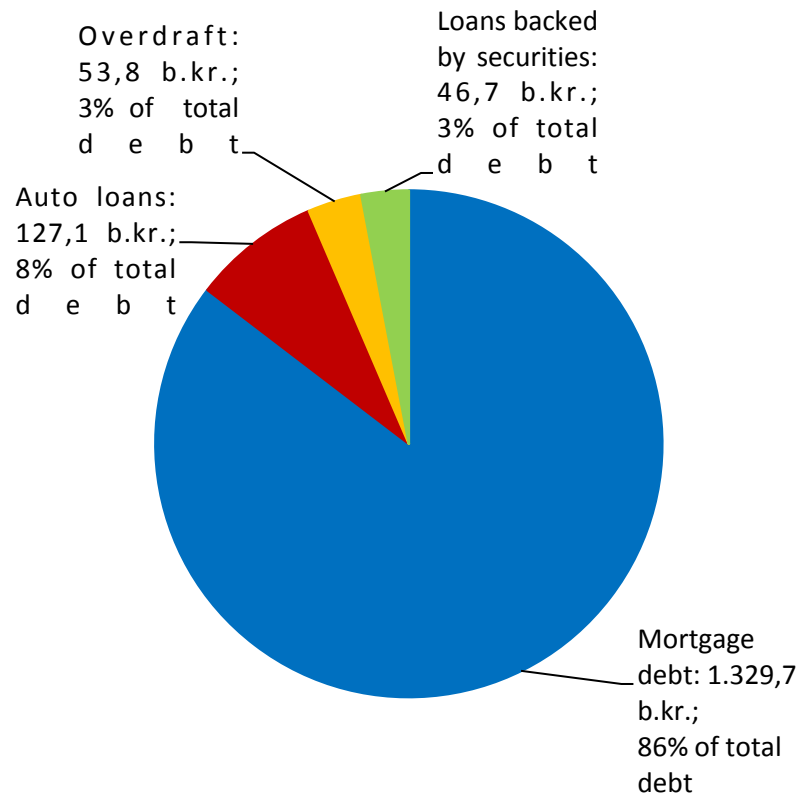
## The Central Bank of Iceland household sector project

- The database contains financial data on all individual customers of the commercial banks, savings banks, smaller financing undertakings, pension funds and the Housing Financing Fund (HFF)
- Income data from the tax authorities (RSK)
- Data on unemployment from the Directorate of Labour
- The data are encrypted and have been processed in a format which is not personally identifiable
- This data base is unique for a country experiencing a financial crisis and offers many possibilities for analyses and projections

# Icelandic households: Micro data

The largest share of household liabilities is mortgage debt which is mainly in ISK ...

Household debt by category



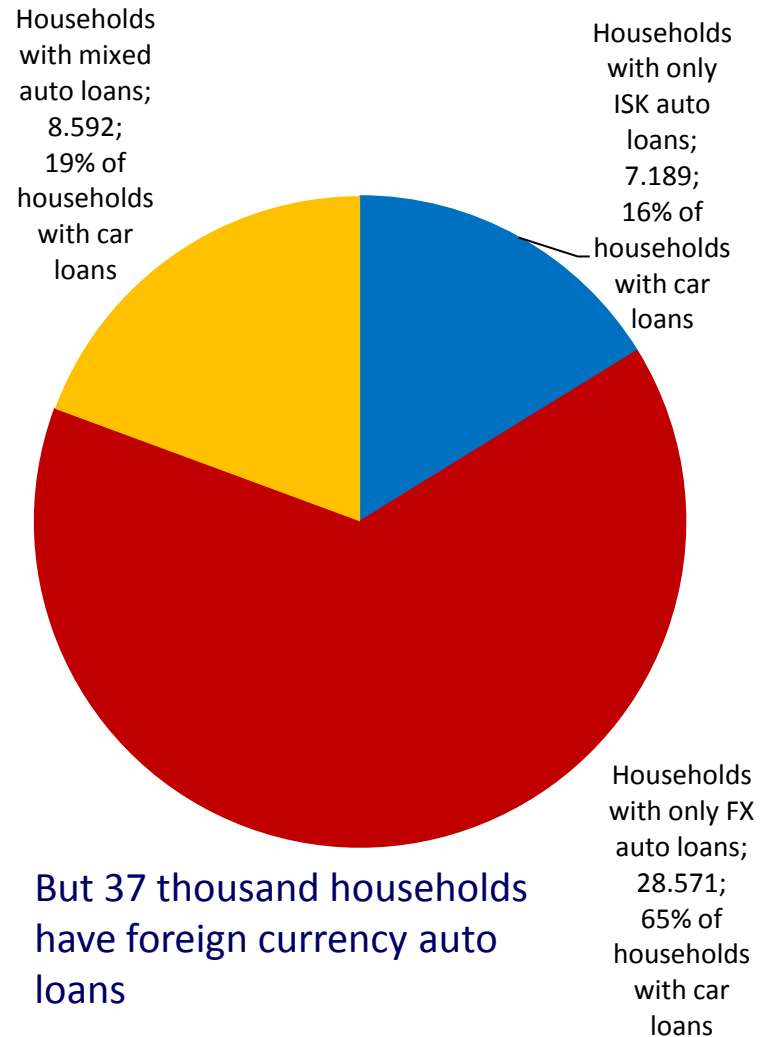
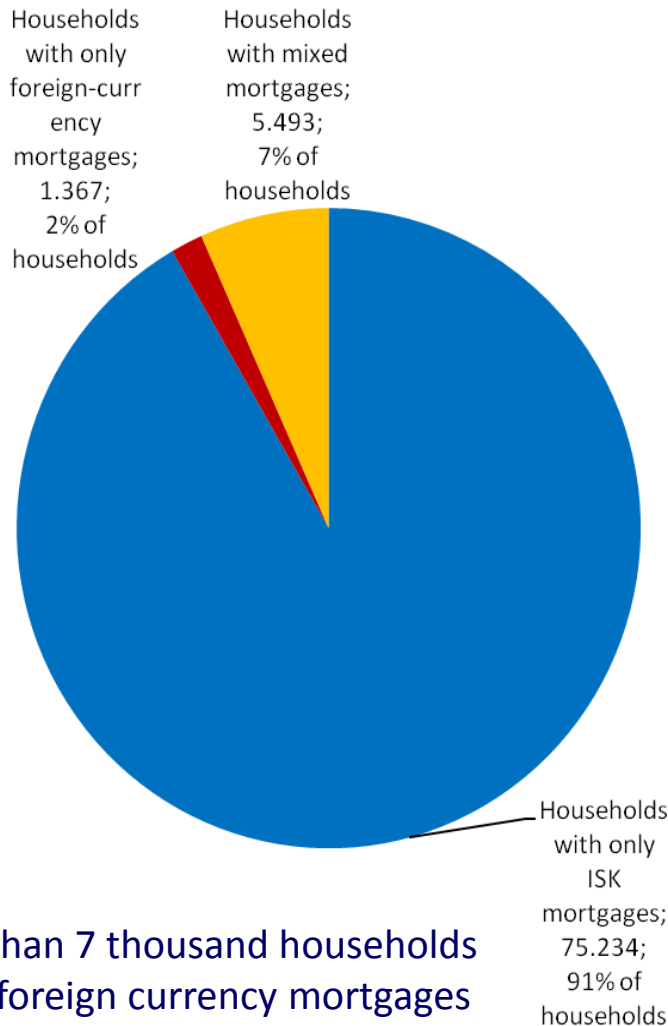
Source: Central Bank of Iceland.

Note: Combined household debt in the database is 1557 b.kr. Student loans , loans from some smaller pension funds and more complete data on loans backed by securities are missing from the database. According to tax returns for the year 2008, total household debt amounted to 1683 b.kr., which is ca. 200 b.kr. lower than according to credit system data for September 2008.

# Icelandic households: Micro data



... FX borrowing is more widespread in auto loans than in mortgages

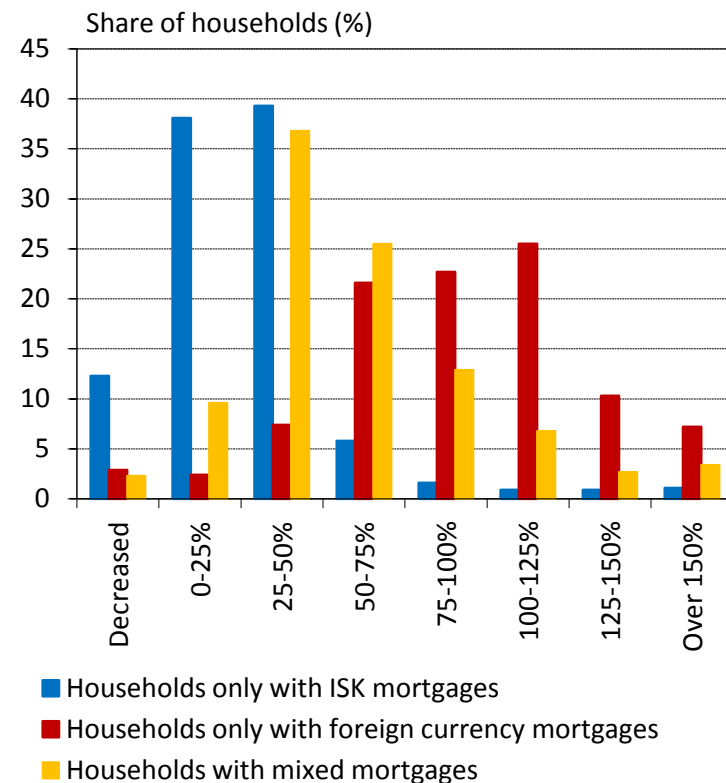


# Icelandic households: Micro data

Households with FX mortgages have experienced the greatest increase in debt levels

- Housing liabilities have more than doubled for 43% of households with pure FX mortgages and risen more than 50% for roughly half of households with mixed mortgages
  - Relatively few households
- Less impact for households with indexed ISK mortgages but a third has nevertheless experienced more than 30% increase

Change in outstanding amount of mortgages from date of origin to year-end 2008



1. All loans backed with residential housing collateral are defined as mortgage loans.

Source: Central Bank of Iceland.

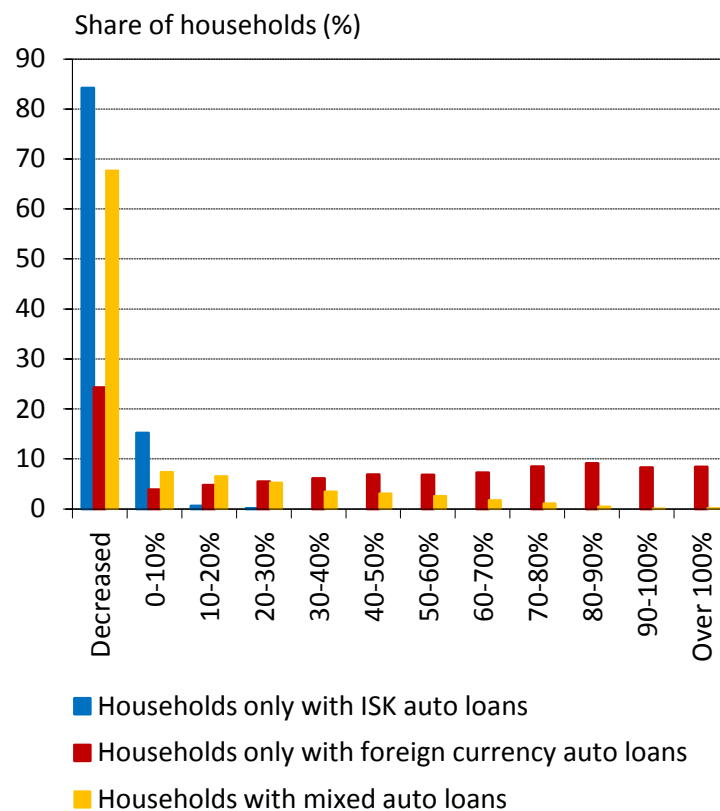
# Icelandic households: Micro data



... and so have the great number of households with FX auto loans

- Liabilities due to car loans have risen by more than 50% for roughly half of households with pure FX auto loans
  - Relatively many households

Change in outstanding amount of auto loans from date of origin to year-end 2008



Source: Central Bank of Iceland.



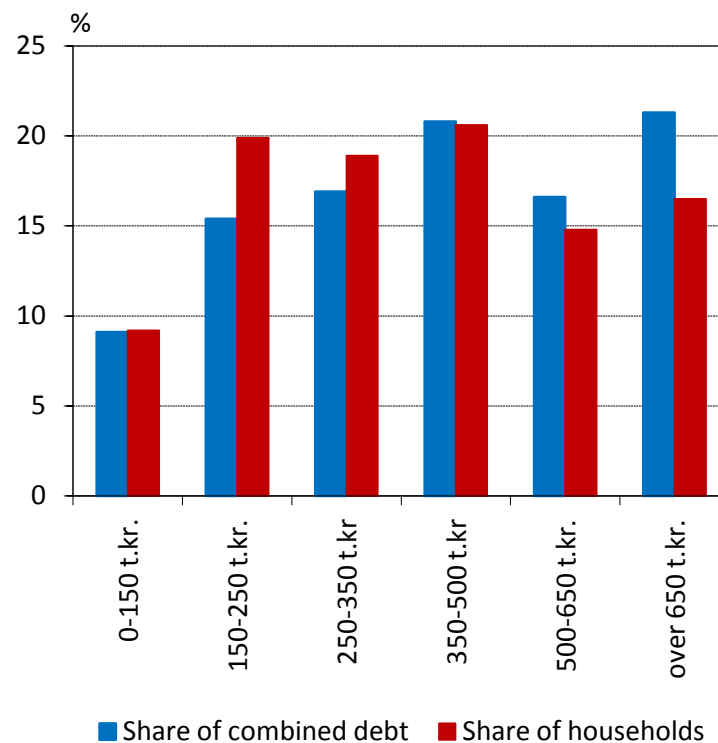
# Icelandic households: Micro data



The highest-income group carries a smaller share of debt than is common abroad

- The distribution of debt is well in line with income distribution and the share of debt borne by higher-income groups is smaller than is often the case in other countries

Mortgage, auto and overdraft debt as per cent of annualised disposable income



1. Based on outstanding amounts of loans at year-end 2008 and income data from PAYE records in February 2009.

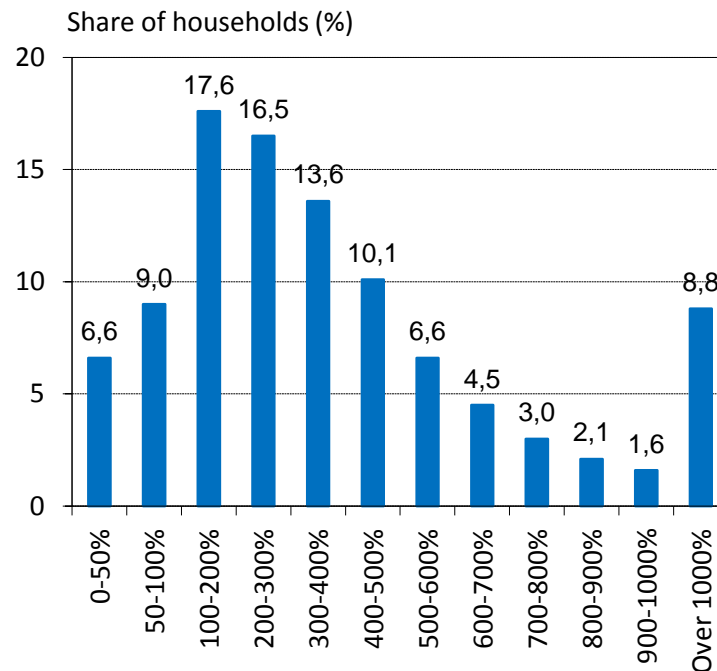
Source: Central Bank of Iceland.

# Icelandic households: Micro data

A large share of total debt is in the hands of very indebted households

- 63% of households have debt less than 400% of annual disposable income but for roughly 1/4 of households the ratio is above 500%
  - Smaller share with > 500% than in Norway prior to the banking crisis
- Households owing more than 600% of disposable income carry 39% of total debt

Mortgage, auto and overdraft debt as per cent of annualised disposable income



1. Based on outstanding amounts of loans at year-end 2008 and income data from PAYE records in February 2009.

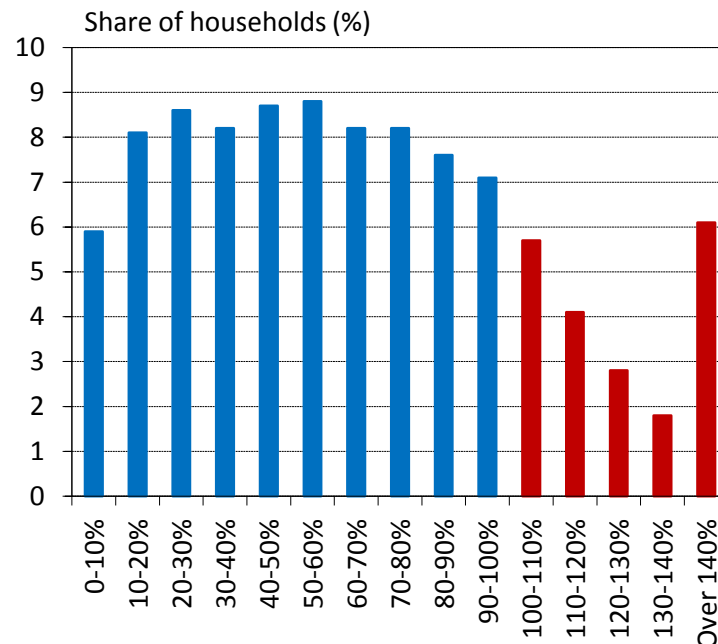
# Icelandic households: Micro data



Roughly 20% of households were in negative housing equity at year-end 2008

- Likely that around a third of homeowners will go into negative territory in the coming years as nominal house prices continue to fall

Mortgage debt as a share of housing wealth at year-end 2008



1. Based on outstanding amount of mortgage debt and Land Registry value of residential property in December 2008.

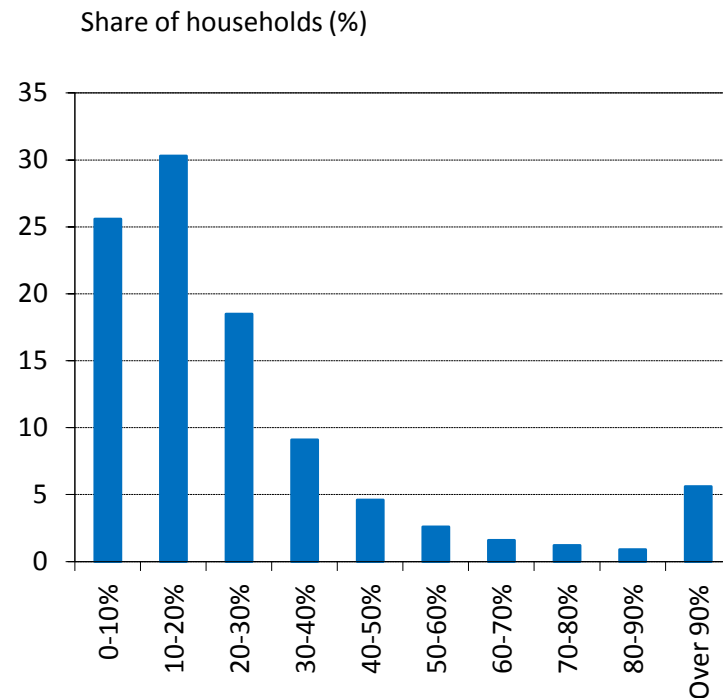
Source: Central Bank of Iceland.

# Icelandic households: Micro data

20-26% of households with debt service ratio above common danger points

- Households that have to use more than 30-35% of their disposable income to service their mortgage debt are often considered at risk
- 20% of households need to devote more than 35% of their income to service their mortgage debt
- 35-40% of households with FX mortgages or mixed mortgages

Mortgage debt service ratio



1. Mortgage debt at beginning of the year as a service ratio from PAYE records in February 2009. Excluding some households with mortgage loans where interest or principal payments have been frozen.



# Final remarks

# Final remarks

Unemployment and debt restructuring will be major determinants of the scope of financial distress

- Households have sustained severe blows as a result of the banks' and the currency's collapse
- The pre-crisis spree of FX borrowing has proven extremely costly for many, and banks were far too liberal in issuing FX loans
- Various evidence indicates that 20-25% of households are in financial difficulties and that this figure will rise if no action is taken
- Household debt restructuring has begun
- The scope of financial distress will be determined by unemployment and the success of debt restructuring