

Credit in the Nonfinancial Private Sector and its Relation to GDP

Dublin Economics Workshop, October 17th 2014

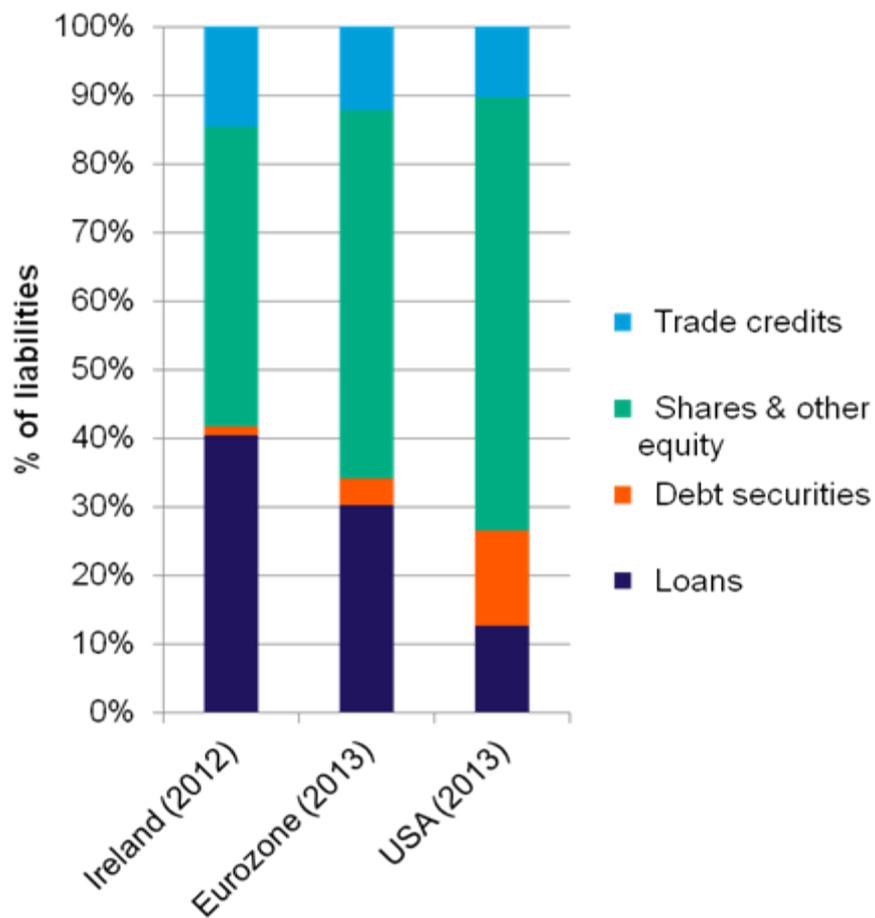
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Key questions

- **Is Ireland's economic recovery credit-less?**
- **What are credit levels that policy makers should target?**

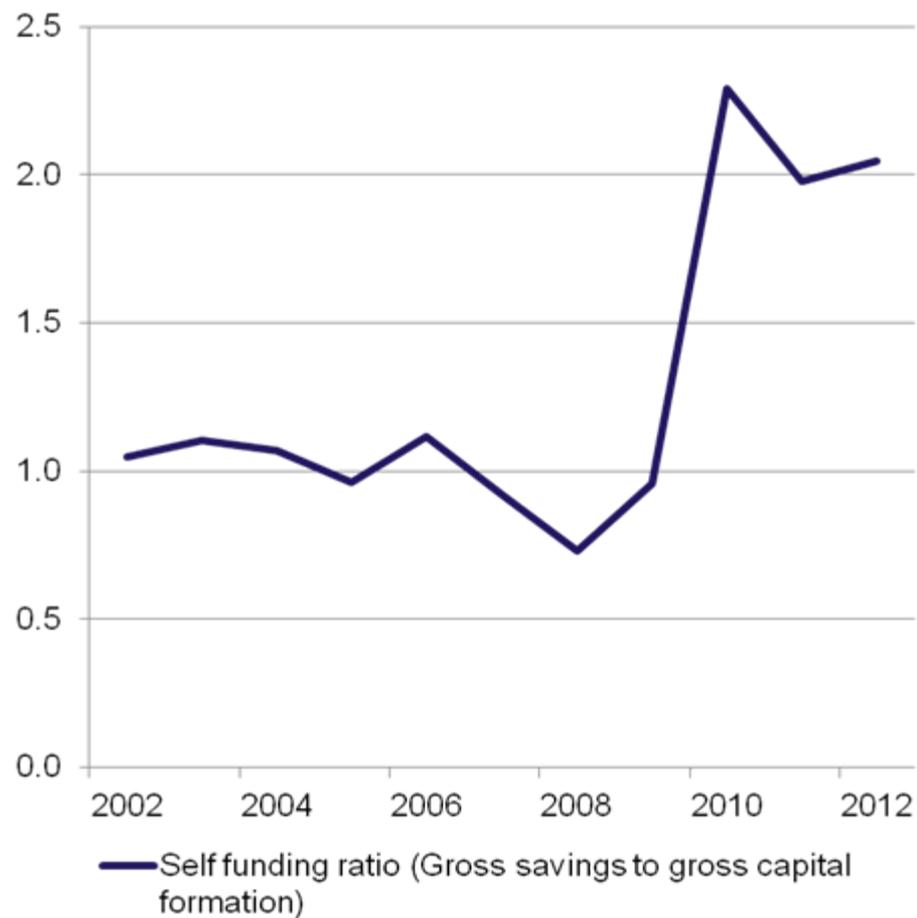
Bank lending is an important source of finance

Finance structure of non-financial companies



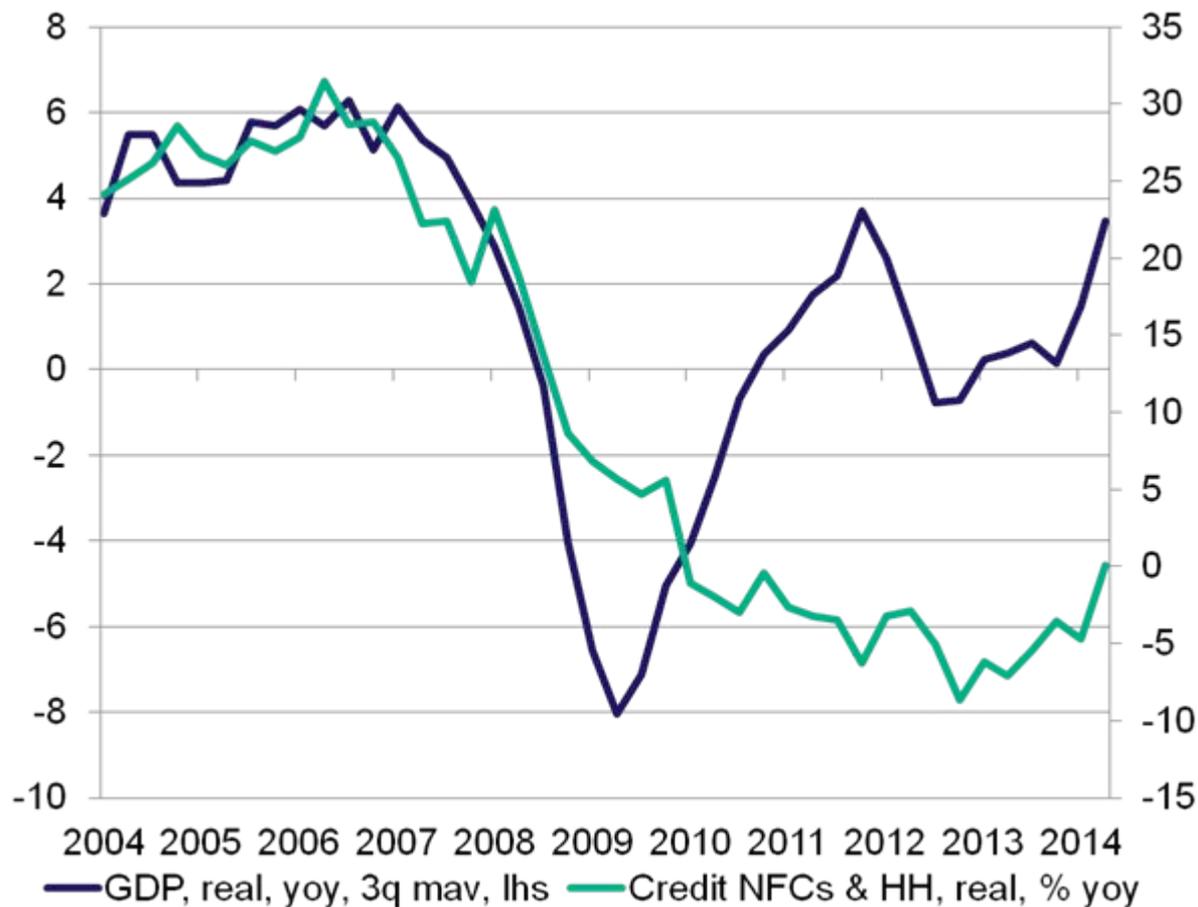
Source: OECD

Self funding ratio of NFCs



Source: CSO, own calculations

Economy recovers while credit is still declining



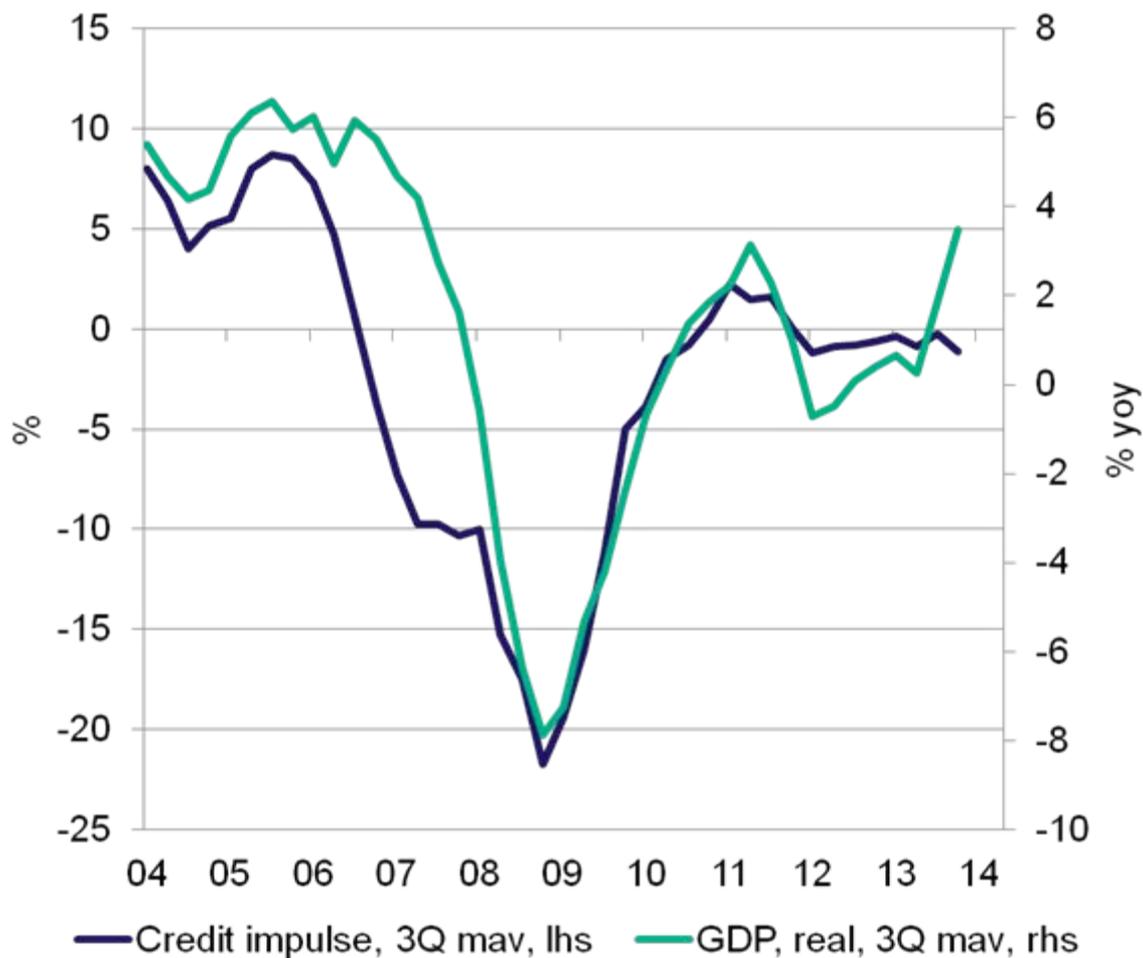
- Ireland's economy is recovering
- In H1 2014 GDP grew by 5.8% annually
- Credit did not recover as GDP recovered
- Volume of outstanding credit continues to fall
- Comparing GDP growth with credit growth gives the impression that the recovery is credit-less

Source: CSO, CBI, own calculations

Concept of credit impulse

- GDP is a flow variable and should be compared with the flow of credit
- Illustration:
 - $GDP_t = C_t + I_t$
 - C and I are consumption and investment
 - $\Delta GDP_t = \Delta C_t + \Delta I_t$
 - Δ is the first difference of the variable, i.e. the growth
 - Assumption: Investment is financed by borrowing. Debt will increase by the amount of investment.
 - D is the stock of credit
 - $I_t = \Delta D_t$
 - ΔD_t represents the flow of credit / new borrowing
 - $\Delta GDP_t = \Delta C_t + \Delta \Delta D_t$
 - $\Delta \Delta D_t$ is the change in the credit flow or the 'credit impulse'

Ireland's recovery does not appear credit-less, ...



- **Strong positive correlation between credit impulse and economic growth**
- **Slower deleveraging has positive effects on economic growth**
- **In the coming quarters a strong economic recovery has to be supported by a rising credit impulse**

Source: CSO, CBI, own calculations

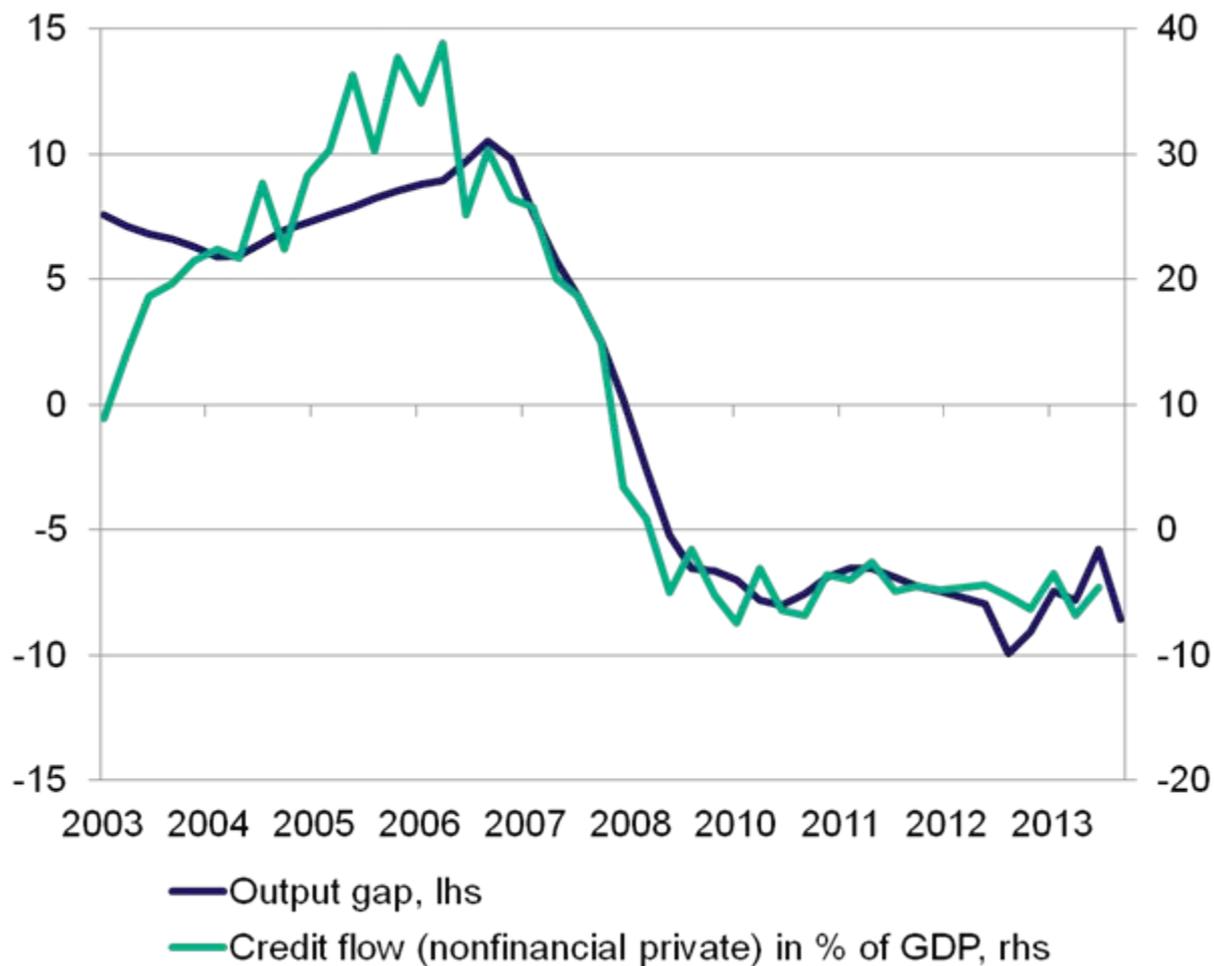
...however, the credit impulse has to improve

- **In the last few quarters, GDP growth was not supported by a rising credit impulse**
- **If this situation holds on, it is a threat for the future economic development as the relationship between the credit impulse and economic growth is strong**
- **What level of credit flow should policymakers target in order to support the economic recovery**

Credit flow and output gap

- A possible solution might be to compare the credit flow with the output gap (Borio et al (2013) and Biggs et al (2013))
- The output gap measures the deviation of actual output from potential output
- An output gap of zero indicates that actual and potential output are equal
- A positive output gap signals a situation where the economy is above potential and vice versa
- A positive correlation between the credit flow and the output gap might indicate what a sustainable credit flow level is

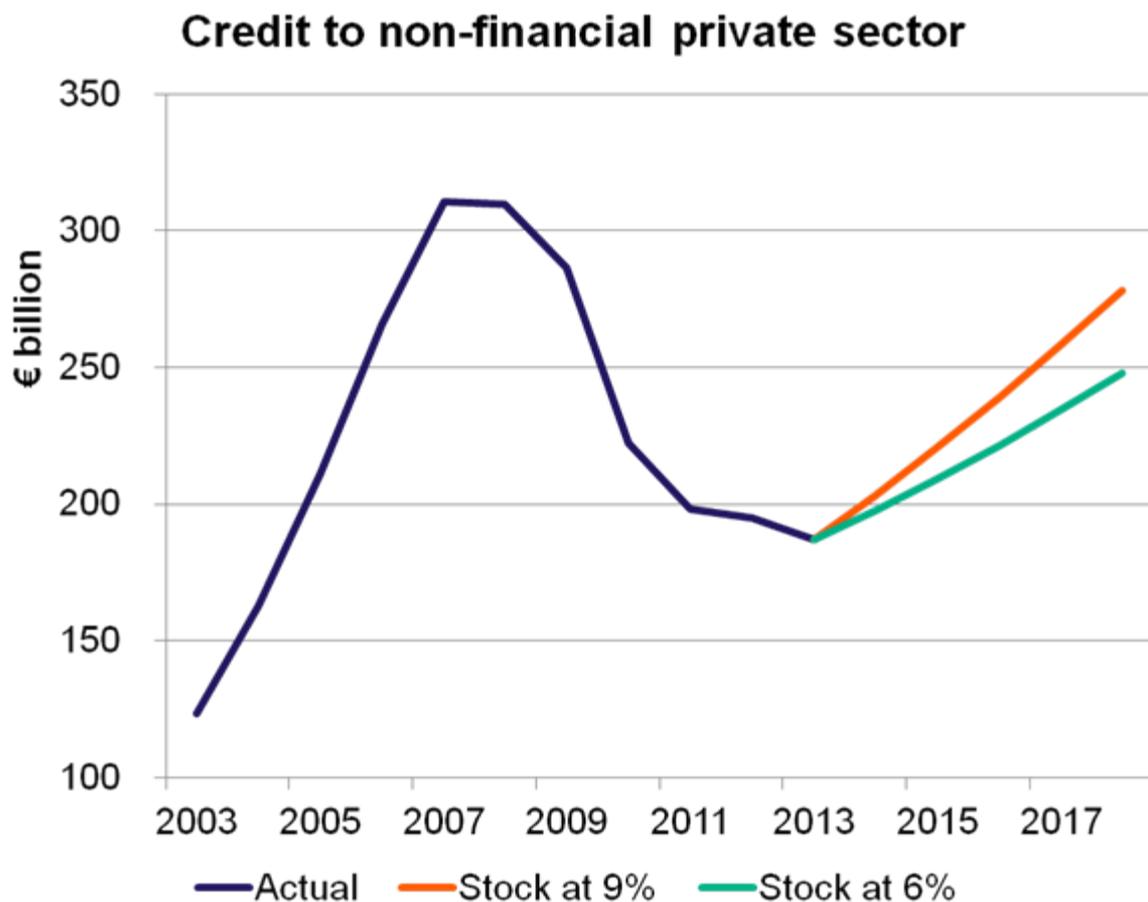
Credit flow and output gap (2)



- The relationship between the credit flow and the output gap is positive
- An output gap of zero is equivalent to a credit flow of ca. 9% of GDP
- Problems:
 - 1) period of observation is short
 - 2) extreme periods in economic history

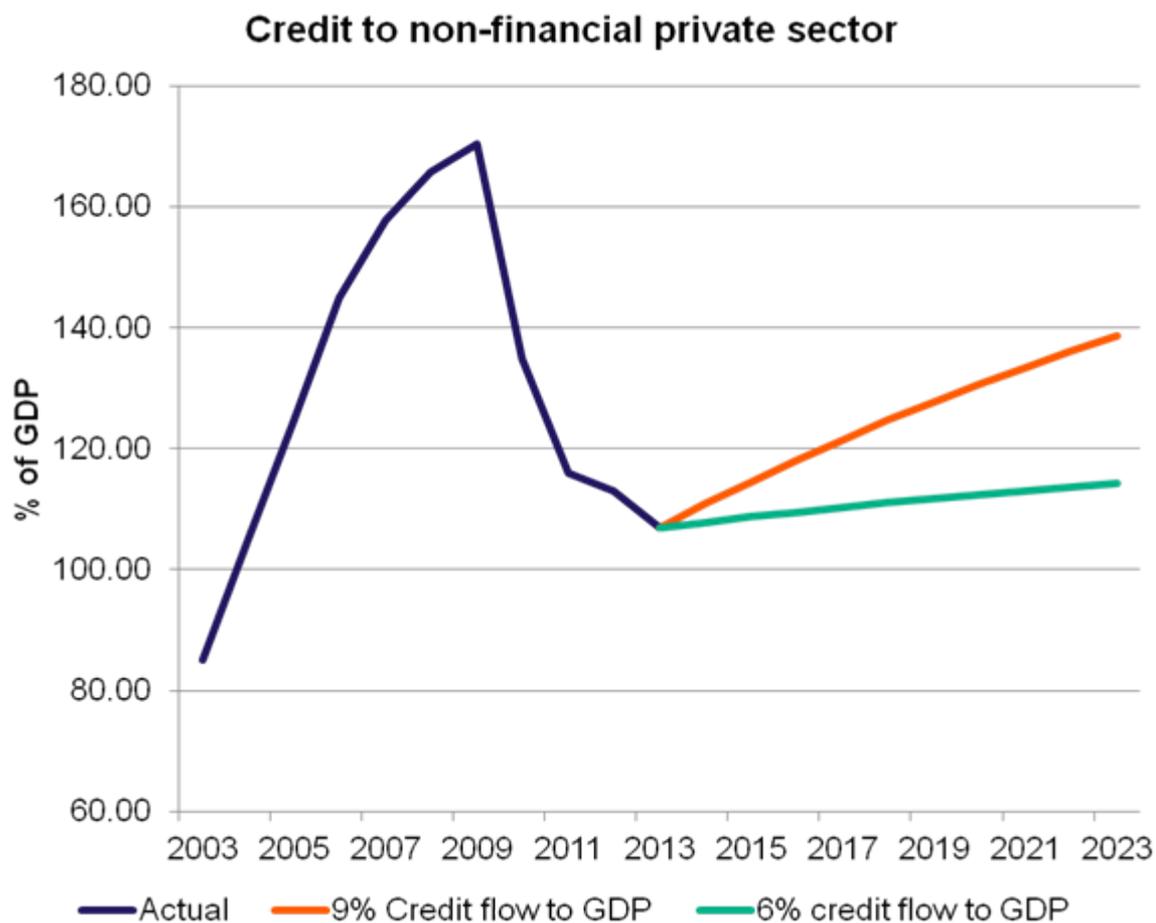
Source: CSO, CBI, own calculations

Projections for credit stock



- Assumption: nominal GDP grows by ca. 5% in next few years
- What credit flow is needed?
- At a credit flow of 9% of GDP credit advanced to non-financial private sector climbs to €278 bn in 2018
- At a credit flow of 6% of GDP the credit stock climbs to €248 bn in 2018

Credit-to-GDP ratio as indicator



- It is difficult to judge what level of credit is economically sustainable
- International thresholds for credit-to-GDP ratios are around 120% to 130%
- At a 9 % target the credit-to-GDP ratio climbs to 140% in the next 10 years
- At a 6% target it reaches 115% in 10 years

Source: CSO, CBI, own calculations

Key findings

- **Strong correlation between credit impulse and economic growth. A rebound in economic activity is closely related to a rebound in the flow of credit.**
- **Credit flow can be used as an indicator for the output gap. However, it does not give an indication of what might be a sustainable credit flow level.**
- **If medium to long-term GDP growth is around 5% a credit flow target of 6% of GDP appears to be sustainable. Credit-to-GDP stabilises at around 120%. The volume of outstanding loans to the non-financial private sector would increase by ca. €10 to €14 billion per year to €248 billion in 2018. In the boom time credit expanded by €50 to €60 billion.**
- **Ireland's dependence on bank loans is high by international standards.**

Key recommendations

- **Incorporating credit indicators such as credit impulse or credit flow into policy making is an important step to stabilise the economic growth.**
- **A flexible approach in setting out certain target levels for credit variables is needed.**
- **The credit indicators signal that the current actions taken by the ECB and other institutions to support credit supply should be continued.**
- **For non-financial companies it is important to diversify external financing.**