

Measuring The Cumulative Economic Impact of Basel III

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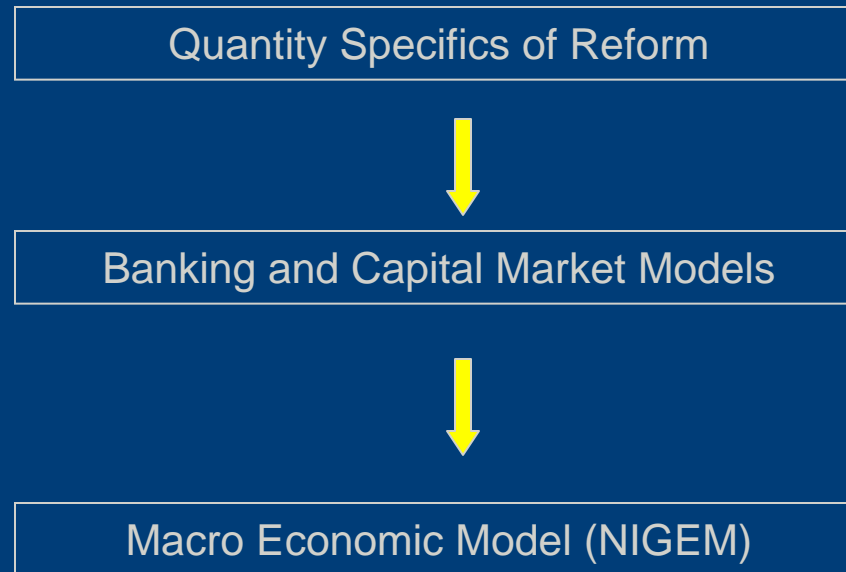
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The 9th Annual Ri\$k Capital Conference
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Results of IIF Study in Summary

- Implementing the current reform agenda fully will have a meaningful impact on the global economy:
 - Reduce (GDP-weighted) average level of GDP by 3.2% by 2015
 - Level of employment about 7.5 million lower by 2015
- It will require significant changes in bank balance sheets
 - Additional core Tier 1 capital needs of about \$1.3 trillion by 2015
- This leads to a significant tightening in lending conditions
 - Combination of higher lending rates and/or lower lending quantities
 - Lending rates could be about 360bp higher over next 5 years
- Reform may not produce the stability benefits hoped for
 - May not reduce probability of future crises

How Do We Get to These Results?

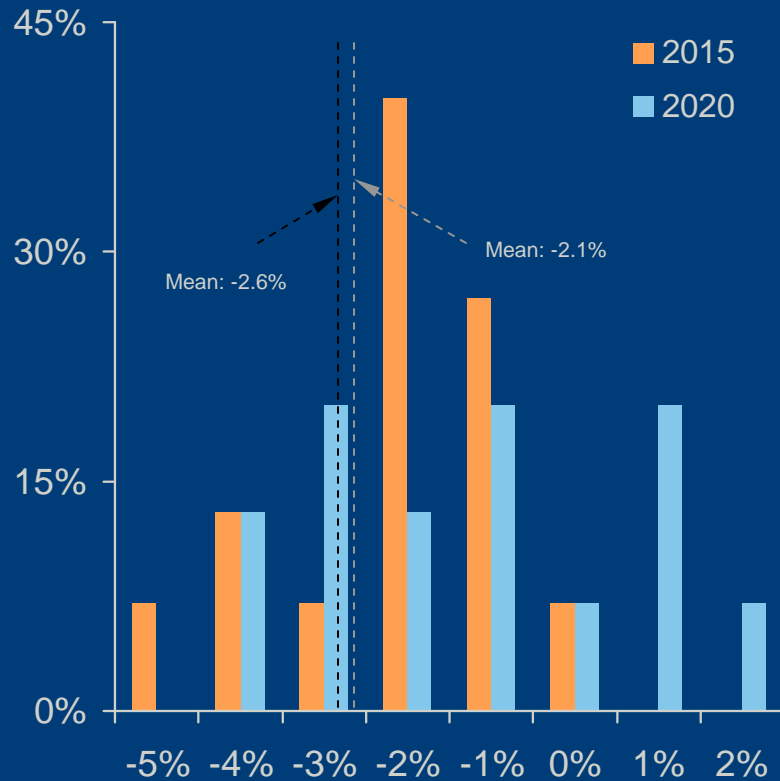


There is NO right and wrong answer to the issue: there is a range of outcomes

Range of Outcomes (1)

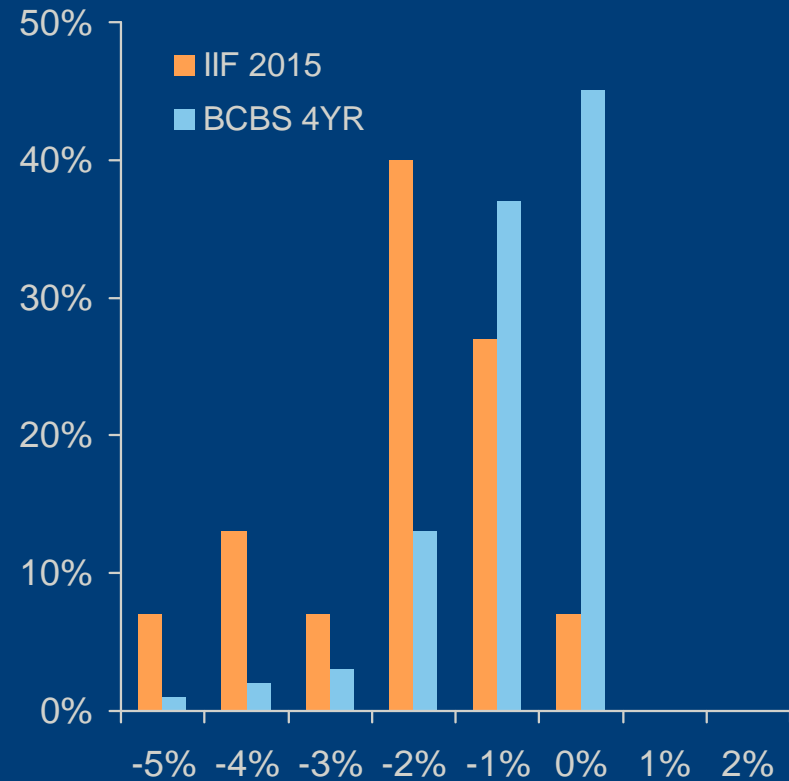
Percentage Difference from Base
in Real GDP

Frequency, 15 IIF scenarios



Percentage Difference from Base
in Real GDP

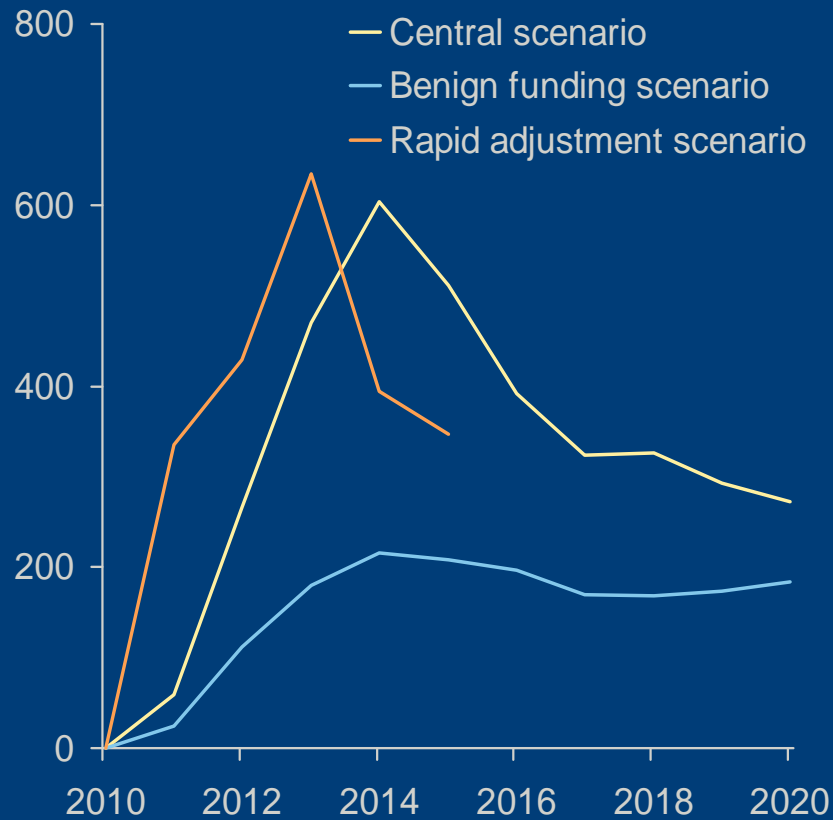
Frequency, comparison 15 IIF and BCBS scenarios



Range of Outcomes (2)

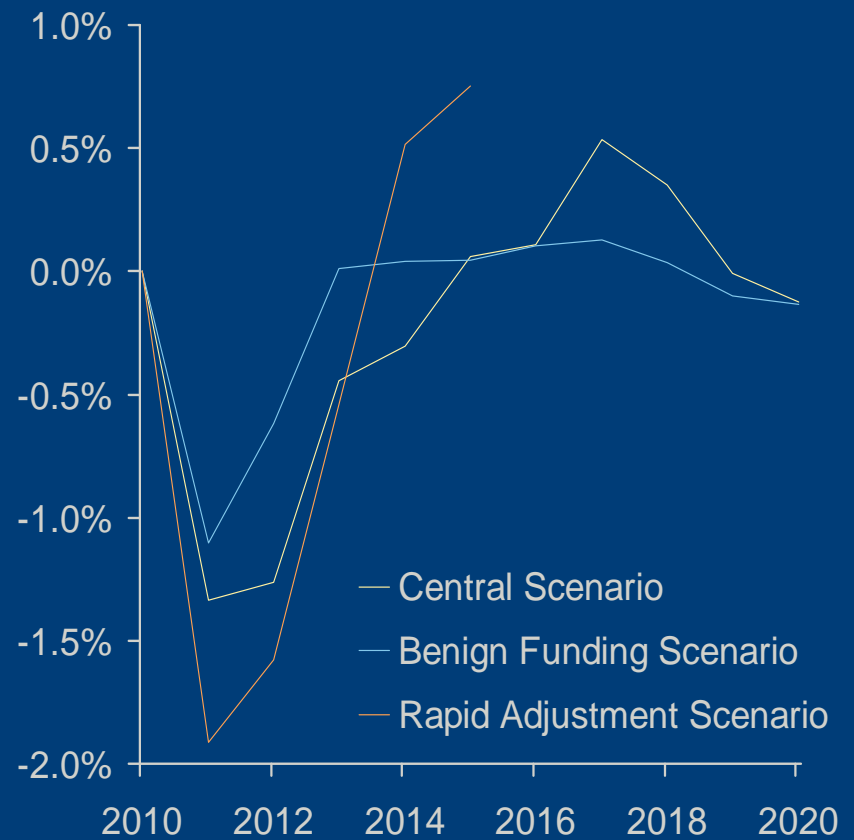
All Countries: Real Lending Rate

Basis points, difference from base



All Countries: Real GDP Growth

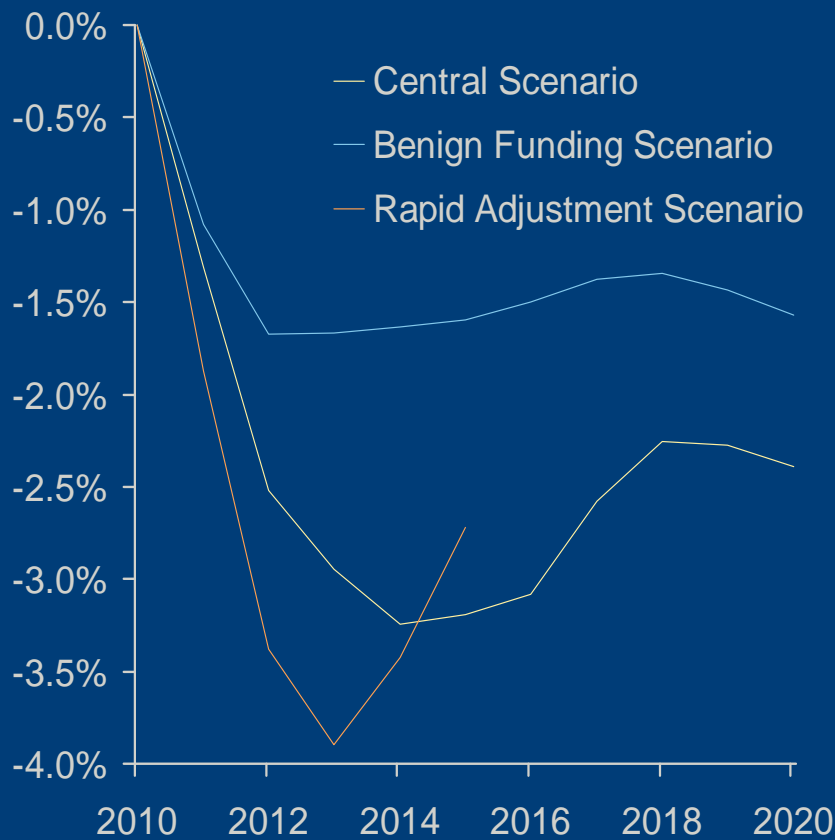
Basis points, difference from base



Range of Outcomes (3)

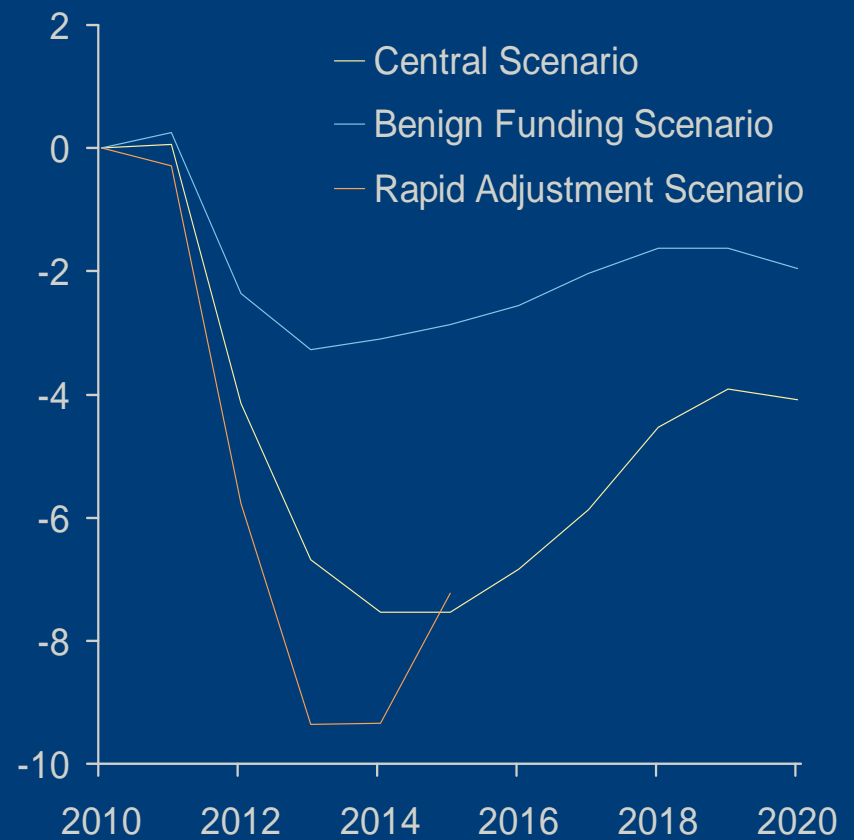
All Countries: Real GDP Level

Basis points, difference from base



All Countries: Employment Loss

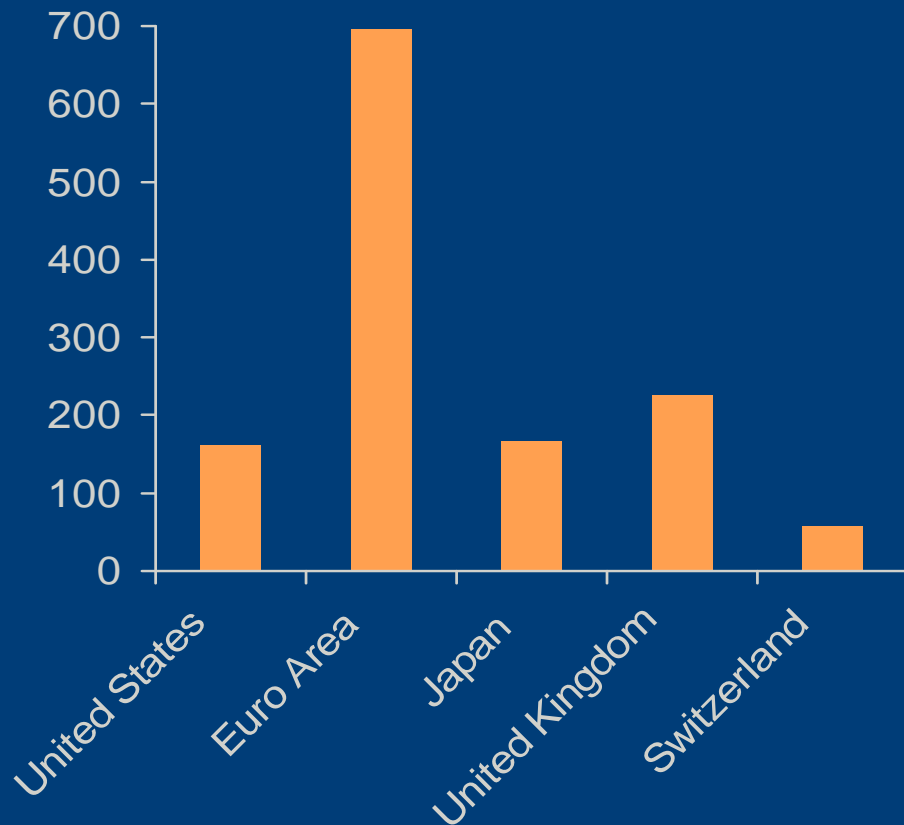
Basis points, difference from base



National Results (1)

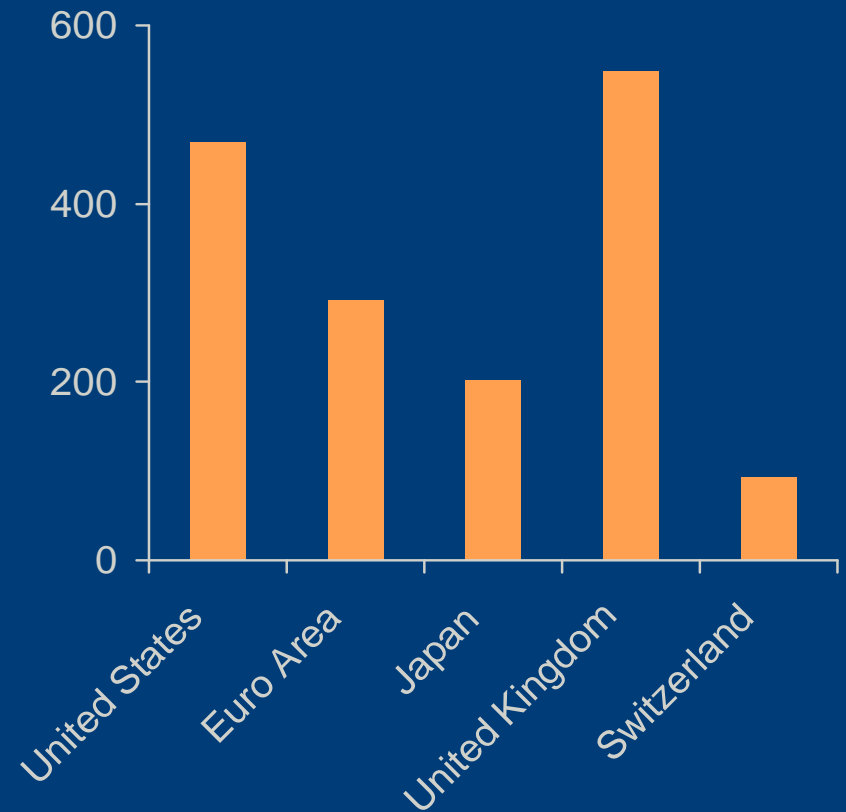
Additional Core Tier 1 Capital Requirement

\$ billion, difference between central and base scenario, Through 2015



Increase in Real Lending Rate

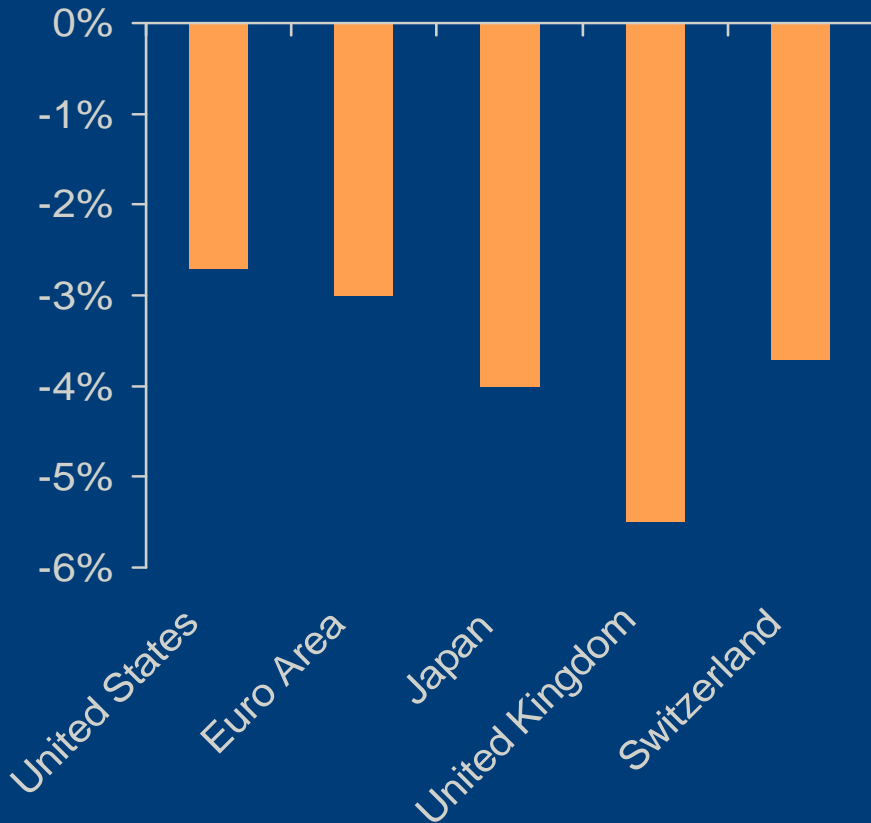
Bps, difference between central and base scenario, 2011-2015 average



National Results (2)

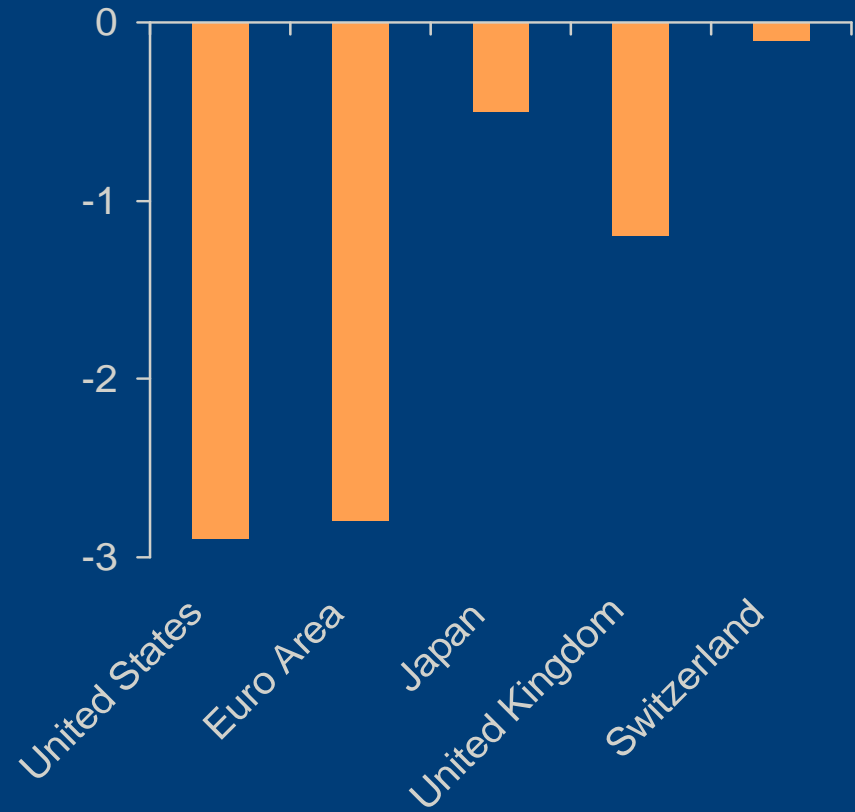
Real GDP Level

2015, difference between central and base scenario, %



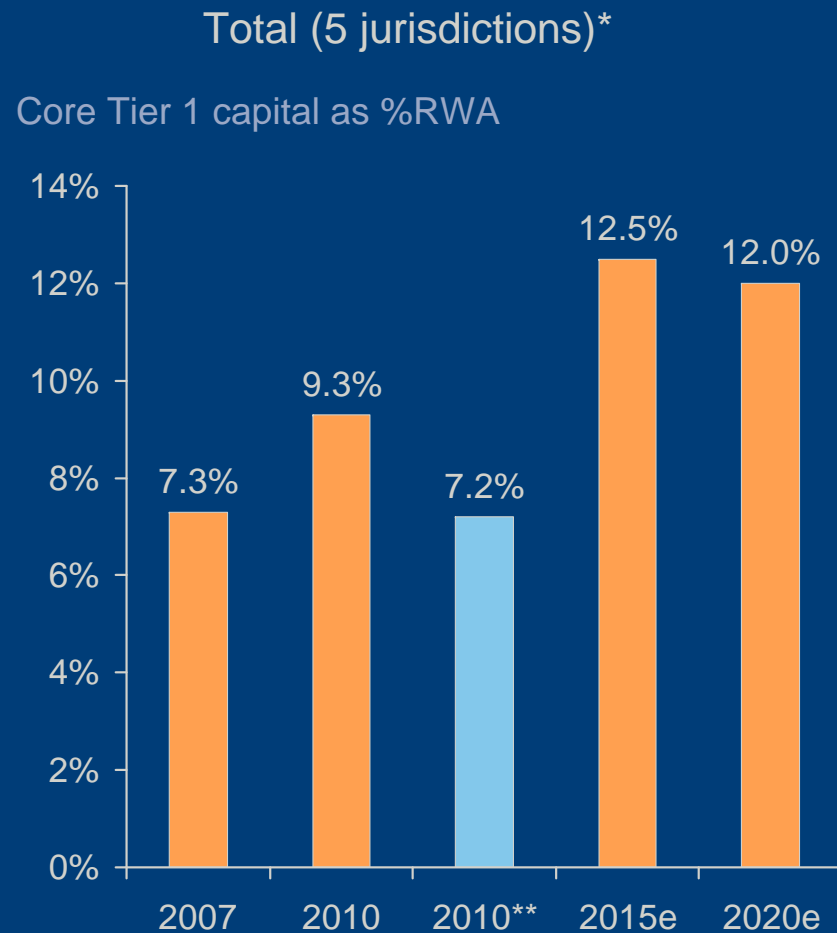
Employment

2015, difference between central and base scenario, million



Quantifying the Specifics of Reform

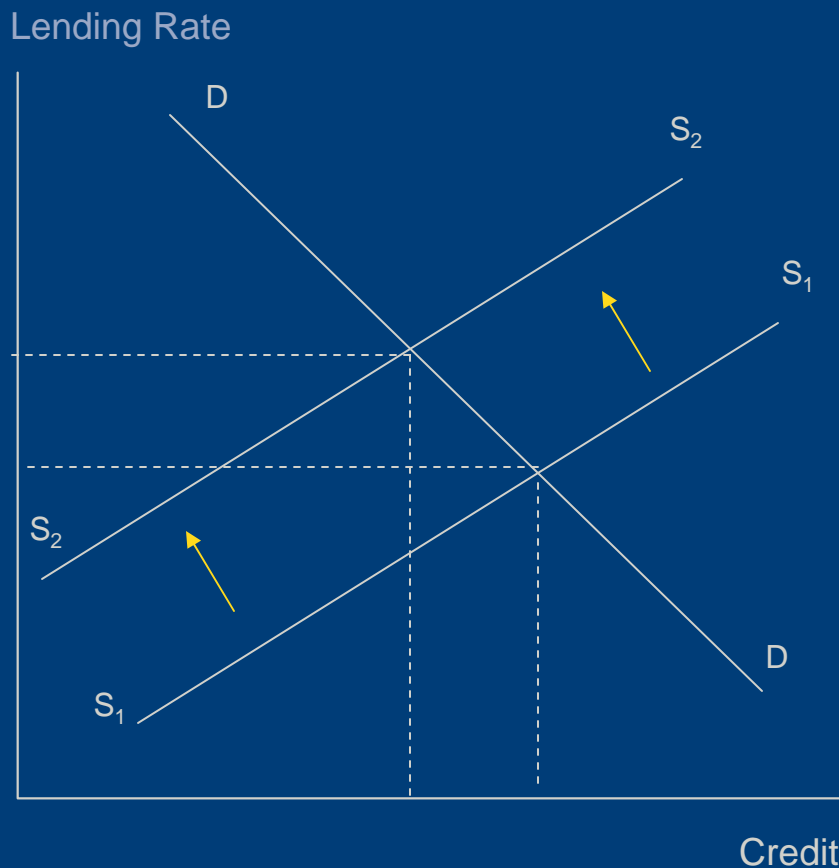
- Global and national measures
 - Basel III
 - Dodd Frank
- Capital, liquidity, taxes and fees, restrictions on activities
 - Capital: higher core ratios, surcharges, change in risk-weighting and redefinitions
 - What buffers will regulators choose to impose?
- The cumulation and synchronization of these measures is critical



*Dollar Denominated RWA-weighted

**New definition of Capital

The Impact of These Changes Depends Crucially on Banking and Capital Market Models (1)



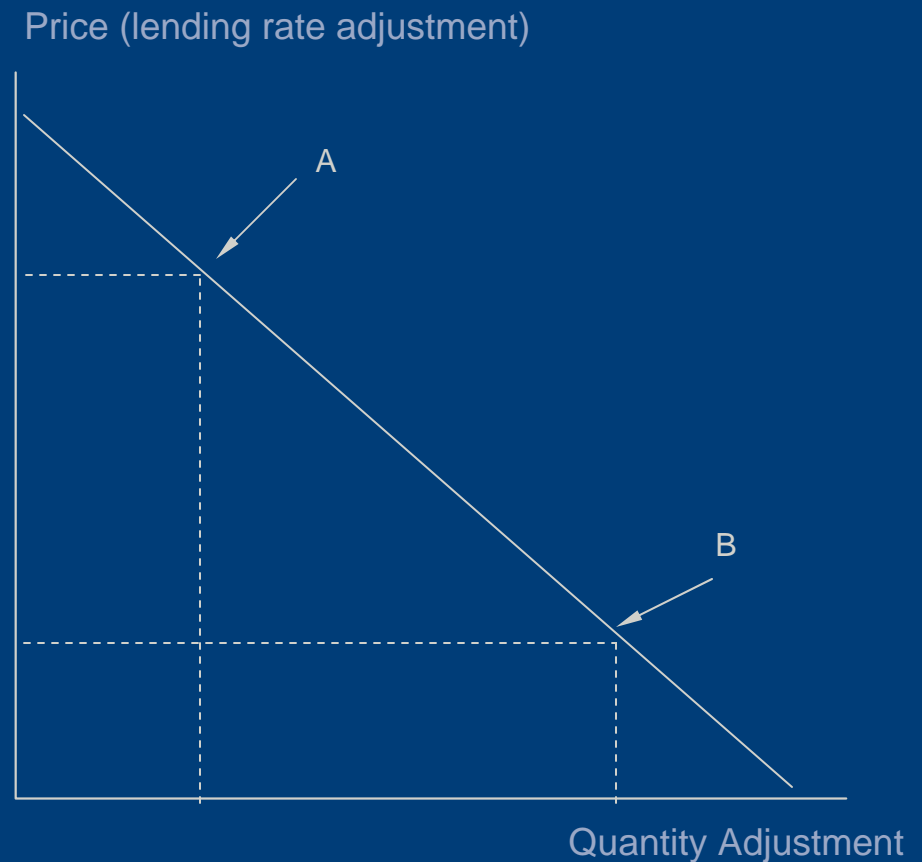
- In general terms, the measures add up a leftward shift in the bank credit supply curve
- This will raise bank lending rates (spreads) and cut credit flows
- The relative split of this shift is driven by the (interest) elasticity of demand for bank credit

The Impact of These Changes Depends Crucially on Banking and Capital Market Models (2)

- Start with equation for bank profits and solve out for lending rate charged by banks:

$$r_{RA} = [RoE/(1-T)]*(E/RA) + r_D (D/RA) - r_{LA} (LA/RA) - (K/RA)$$

- The bank lending rate is thus affected by various aspects of reform
- We (implicitly) assume relatively inelastic demand for credit



The Key Moving Part in the IIF Frameworks is our Model Shadow Price of (Bank) Equity

$$\begin{aligned} \text{RoE}_{\text{shadow}} = & \text{Target RoE} + \\ & \beta 1 * (\text{Growth Rate of Core Tier 1 Equity} - \text{Nominal} \\ & \text{GDP Growth})_{t-1} + \\ & \beta 2 * (\text{Target RoE} - \text{Realized RoE})_{t-1} + \\ & \beta 3 * (\text{Core Tier 1 Capital Ratio} - 7\%)_{t-1} \end{aligned}$$

In Plain English, How Does This Model Work? (1)

- The return on equity concept that is the important one is the rate that capital allocators within the bank charge users of capital
 - We call this: RoE_{shadow}
 - There are three different RoE concepts in our model
- The more capital is required (over a short-time frame), the more banks have to pay for it
 - The supply curve of capital is upward sloping
 - The benchmark used (nominal GDP) proxies aggregate wealth
- The choice of parameters (β) allows us to set conditions of model
 - Differentiate central from benign scenarios

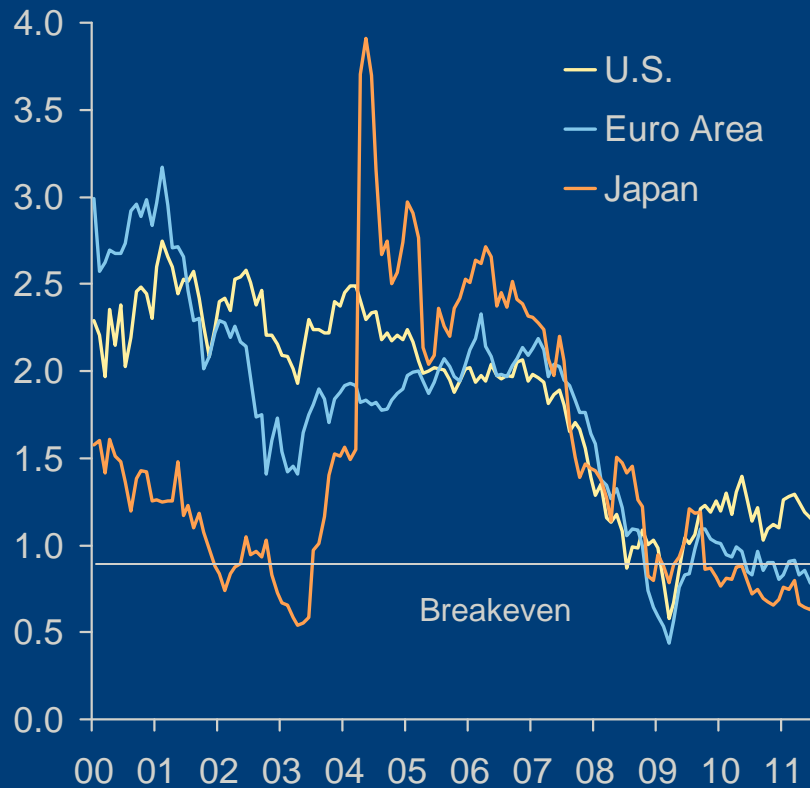
In Plain English, How Does This Model Work? (2)

- Investors expect banks to meet RoE expectations (RoE_{target})
 - If banks fall short in one period, they must aspire to meet it the next
- The safer banks are, the lower their cost of capital
 - Modigliani-Miller
- In a steady state, our model reduces to a M-M framework, but in the short-run, it embodies significant adjustment costs
 - Capital costs the same whether it is raised via new issuance or by retained earnings

Record Developments Only Serve to Highlight the Key Messages from Our Impact Study

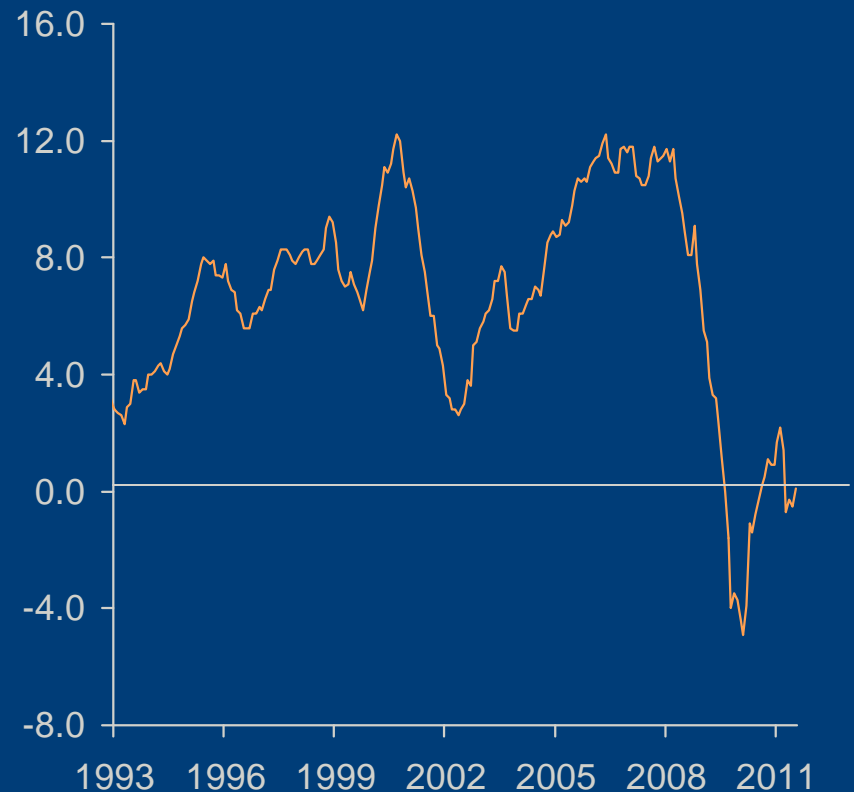
G3: Bank Valuations

MSCI indices, price to book ratios



G3: Bank Lending to Private Sector

%ch over a year ago (GDP weighted)



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