

Stress testing market-based finance

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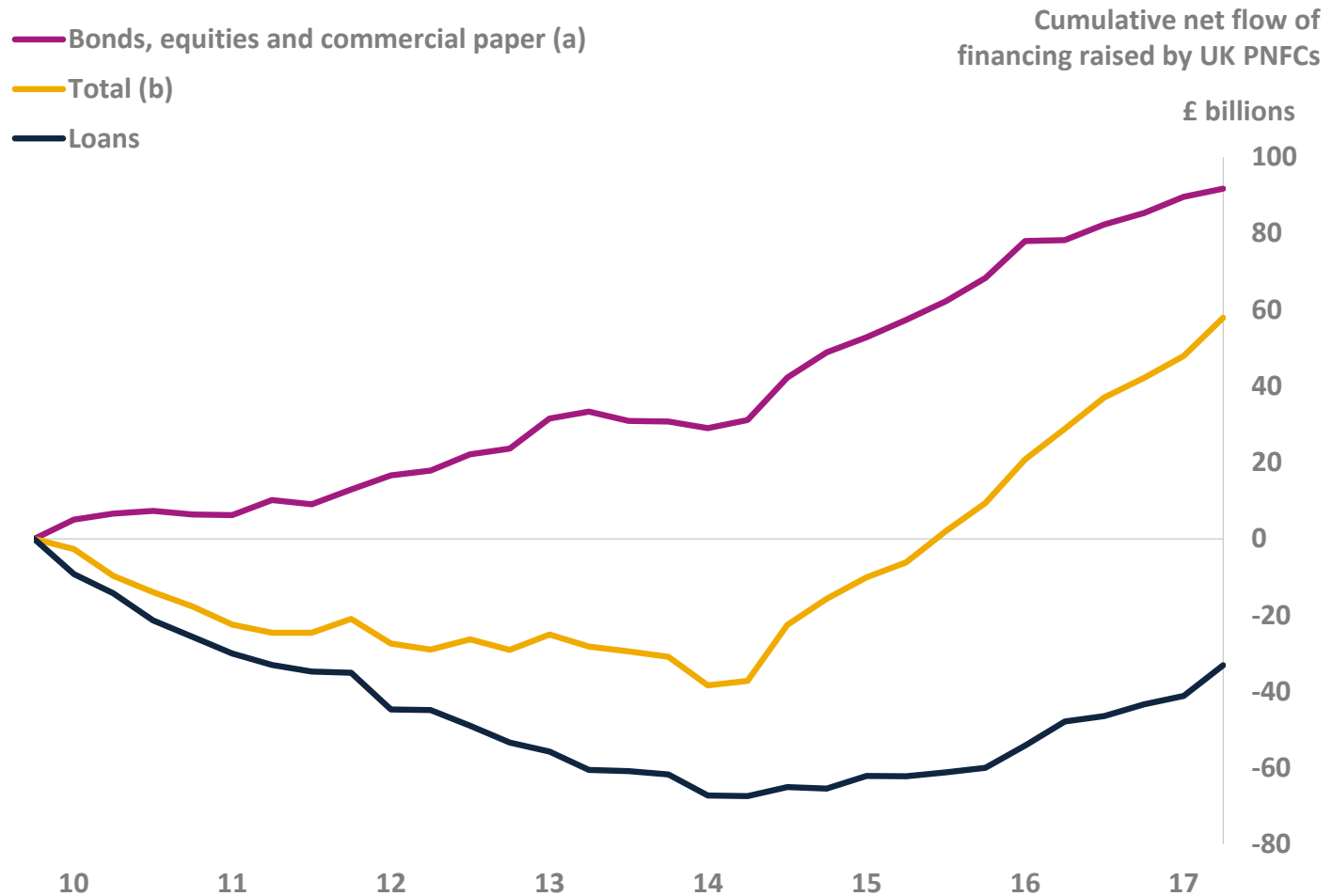
30 January 2019

* The views expressed are my own and should not be taken to represent those of the Bank of England or its policy committees.

Motivation

- Market-based finance (MBF) is the provision of finance to the real economy by non-bank financial institutions (corporate bond funds, insurers, pension funds), including via financial markets.
- MBF is becoming an increasingly important source of finance to the real economy:
 - MBF has grown by over 50% since 2008 and accounts for just under half of global financial system assets.
 - “Second phase of global liquidity” (Shin, 2013).
 - Nearly all net finance raised by UK private companies since crisis has been through equity and bond issuance.

Market-based finance has grown rapidly



Sources: Bank of England and Bank calculations.

(a) Data cover funds raised in both sterling and foreign currency, converted to sterling. Seasonally adjusted. Bonds and commercial paper are not seasonally adjusted.

(b) Owing to the seasonal adjustment methodology, the total series may not equal the sum of its components.

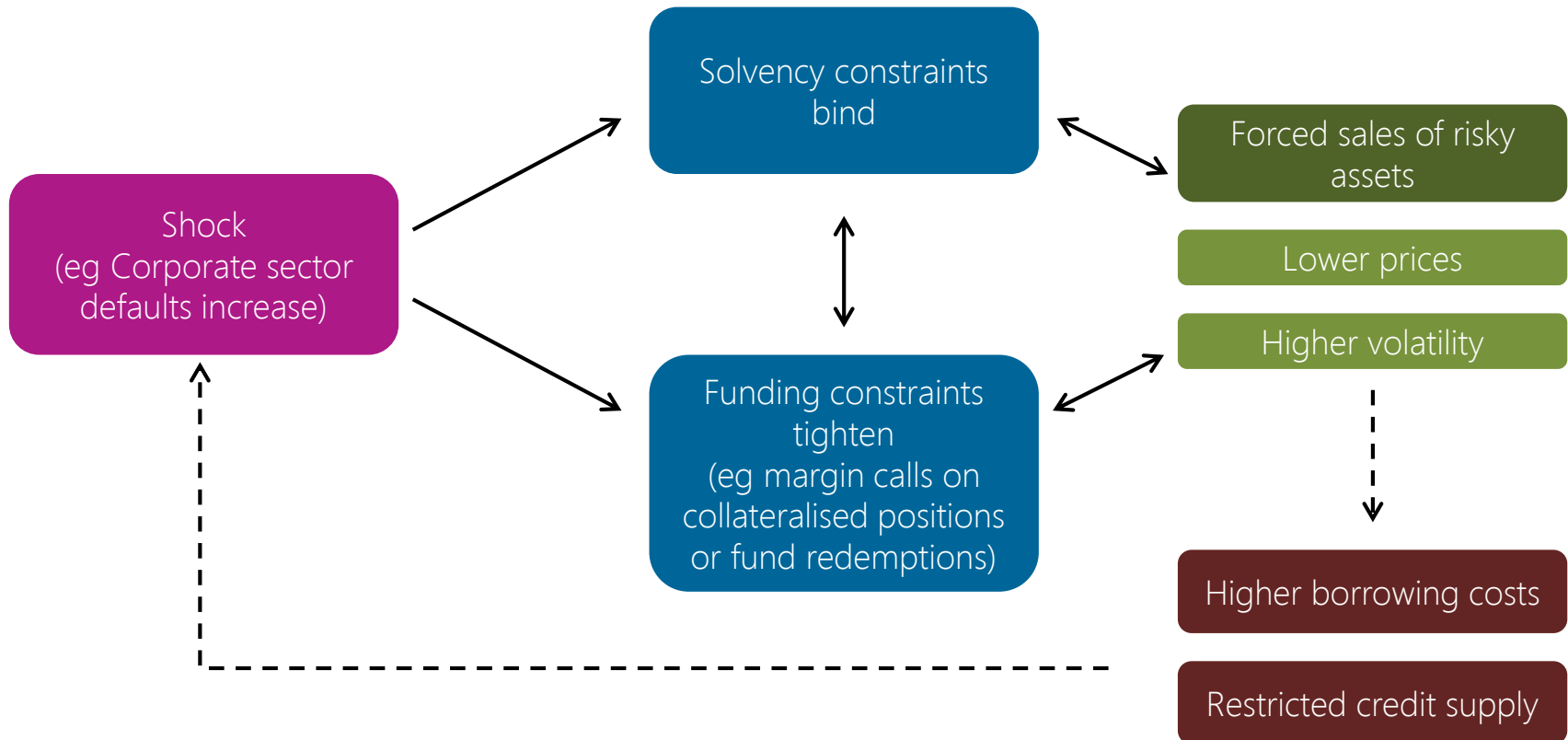
Motivation

- Resilience benefits: lower leverage, reduced reliance on short-term debt finance.
- But we do not know how MBF will respond under a severe stress. Behaviour during past episodes of stress may not be a good guide to future behaviour!
- Policy questions:
 - Through what **mechanisms** could systemic risks be a concern in MBF?
 - Where are the potential **'tipping points'**?

Stress testing – market-based finance

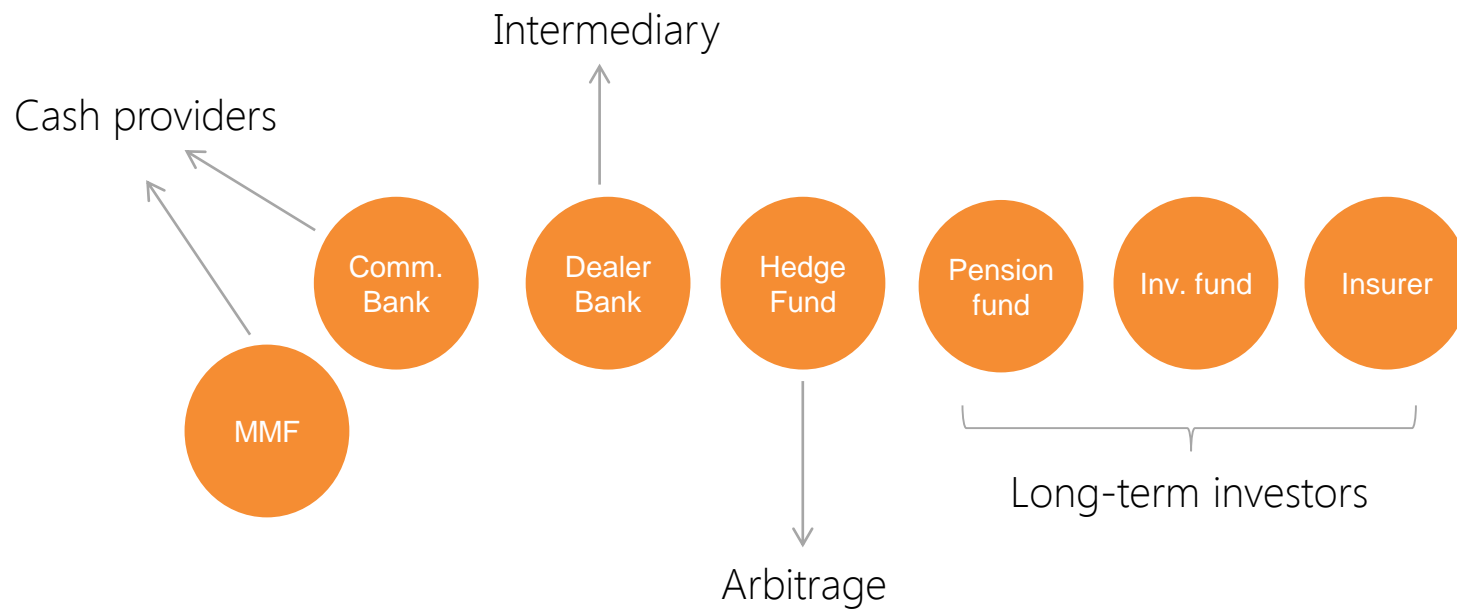
Traditional stress tests: do banks have sufficient capital to absorb losses?

Stress testing MBF: is there potential for a dislocation in asset prices – **fire sales?**

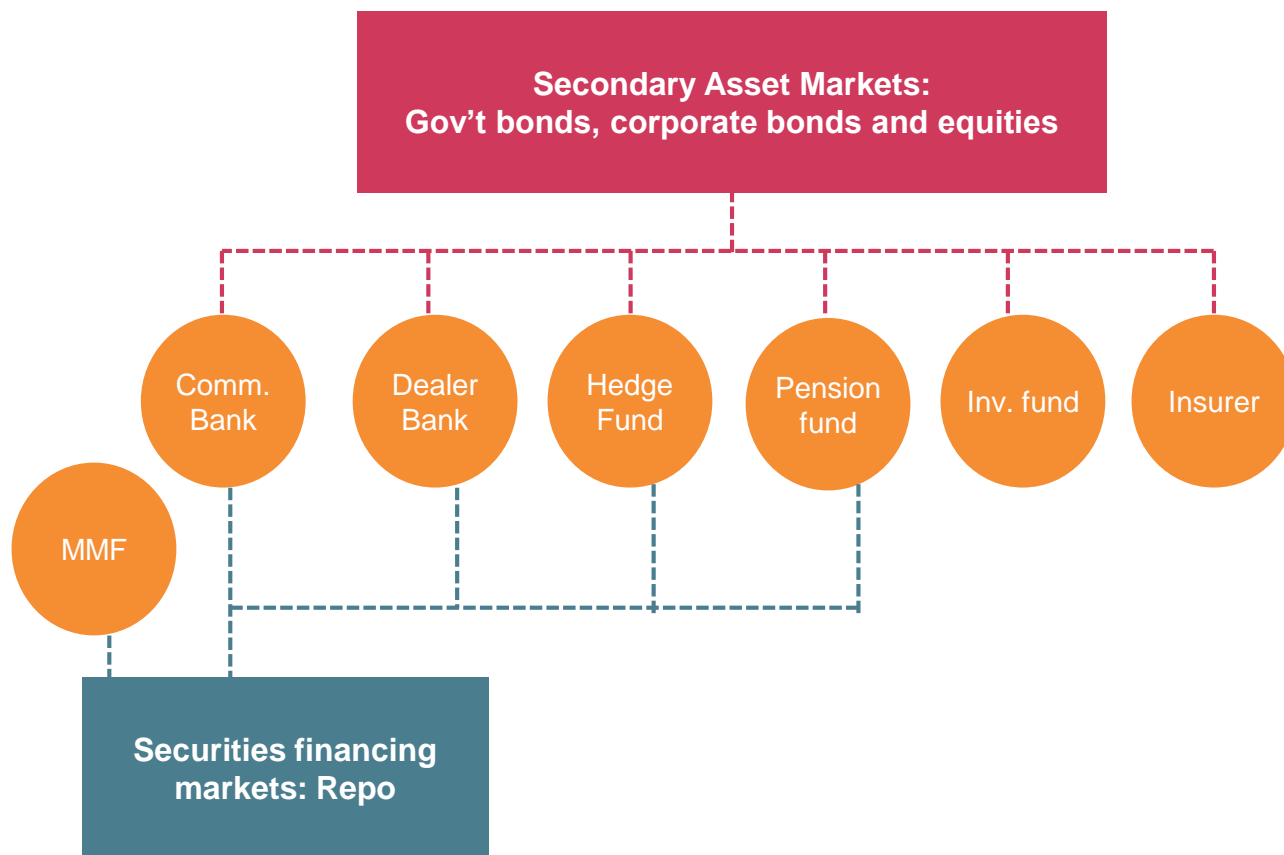


The model

Model structure



Model structure

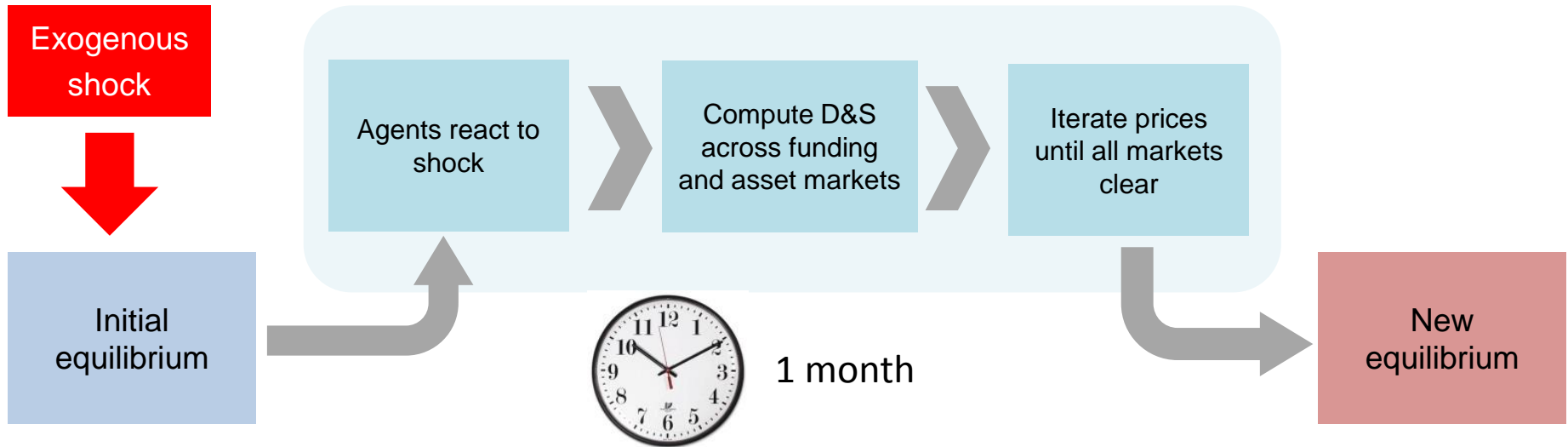


Model structure: agents' objectives and constraints

Constraints:

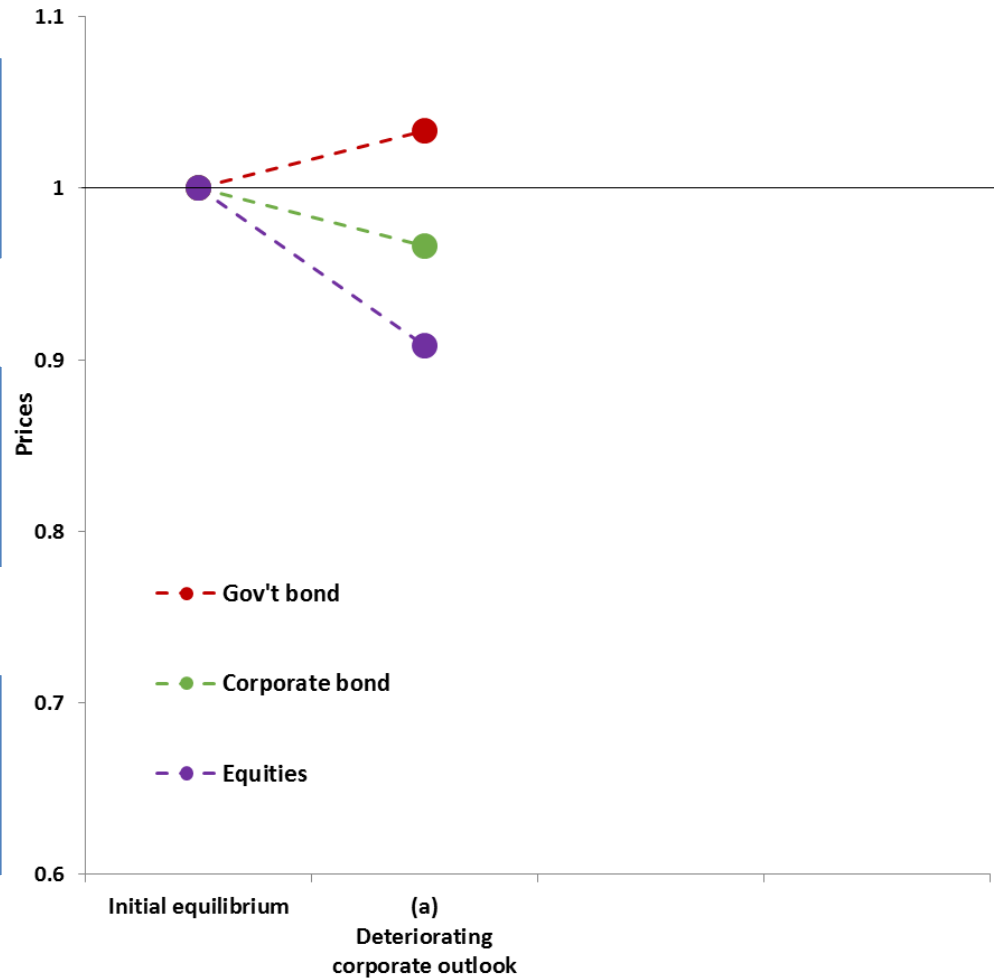
	Objectives / role in the model	Leverage / solvency	Short-term liquidity	Investors redeem
Pension fund	Maximising expected risk-adjusted returns		✓	
Life insurer		✓	✓	
Investment fund			✓	✓
Hedge fund	Arbitrage	✓	✓	✓
Dealer	Intermediating repo and derivative markets	✓	✓	
Commercial Bank	Funding to repo market	✓	✓	
MMF				✓

Model structure



Stress scenario

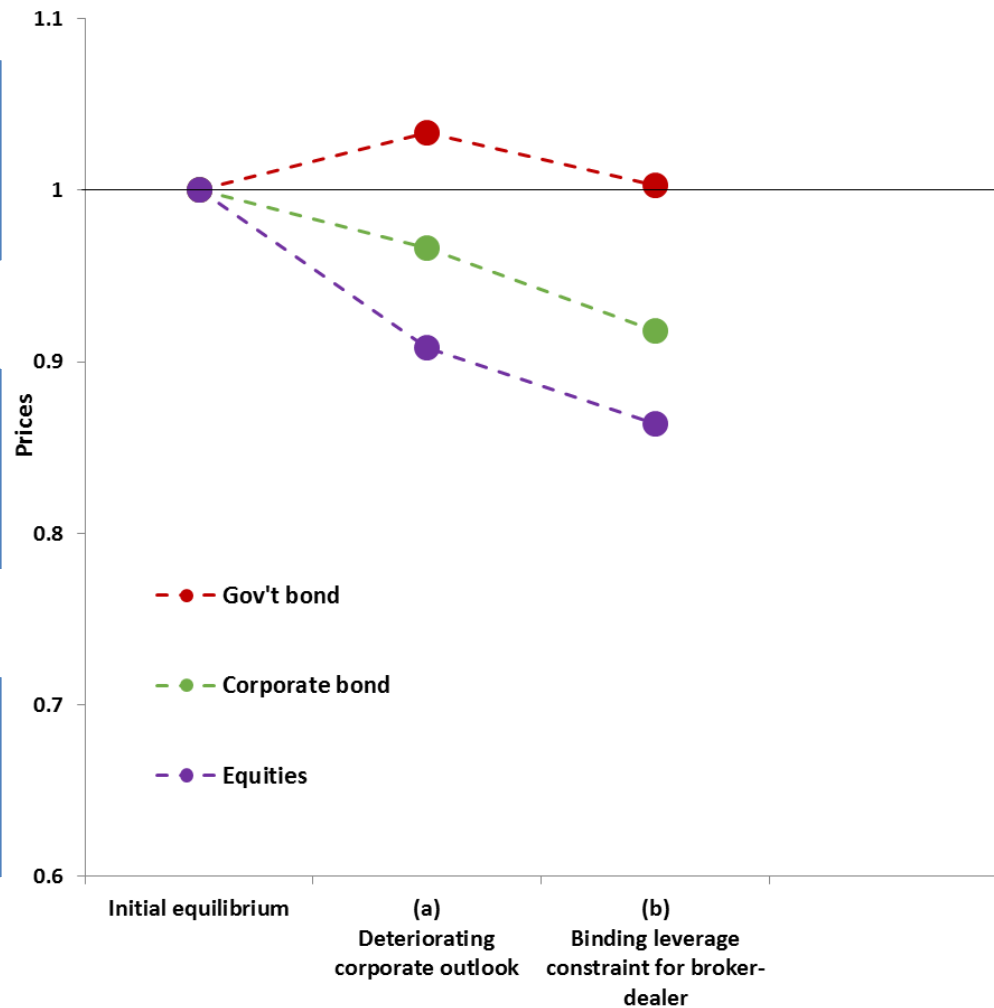
Deteriorating corporate outlook
(Higher default probability, lower
expected dividend growth)



Stress scenario

Deteriorating corporate outlook
(Higher default probability, lower
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Binding leverage constraint
for broker-dealer

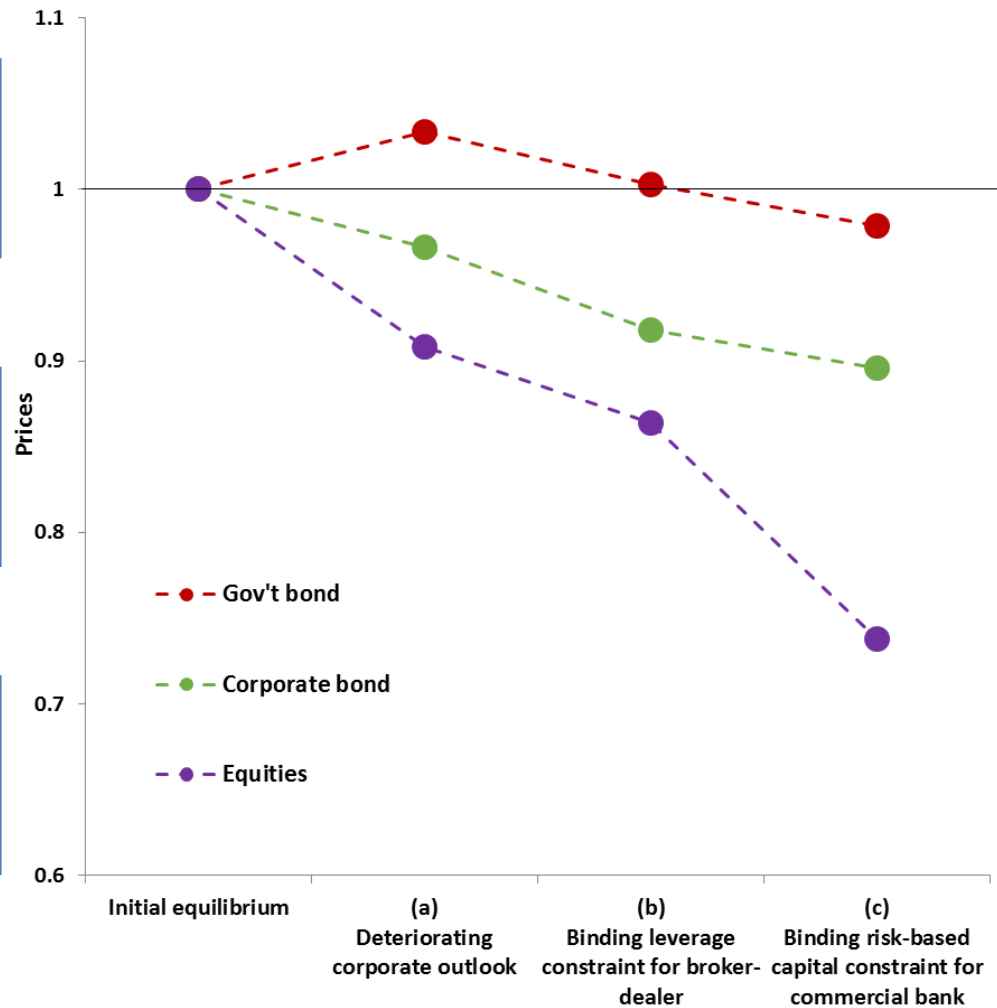


Stress scenario

Deteriorating corporate outlook
(Higher default probability, lower expected dividend growth)

Binding leverage constraint
for broker-dealer

Binding capital constraint for
commercial bank



Impact of alleviating constraints

Impact on value of traded securities in the model

Absolute impact:

Size of injection (£bn) →

	5	10	15	20	25	30
Dealer bank capital	145	169	188	208	219	219
Inv fund liquidity	142	156	168	177	188	198
Hedge fund liquidity	-3	139	143	148	152	156
Comm bank capital	130	130	130	130	130	130
Insurer capital	0	0	0	0	0	0
Dealer bank liquidity	0	0	0	0	0	0

'Bang for buck' ratio:

Size of injection (£bn) →

	5	10	15	20	25	30
Dealer bank capital	29	17	13	10	9	7
Inv fund liquidity	28	16	11	9	8	7
Hedge fund liquidity	-1	14	10	7	6	5
Comm bank capital	26	13	9	7	5	4
Insurer capital	0	0	0	0	0	0
Dealer bank liquidity	0	0	0	0	0	0

Conclusion

- We present a model that can be used to assess the resilience of the UK's system of market-based finance.
 - Focus interactions/spillovers in asset and funding (repo) markets.
 - Where are the key 'tipping points'?
- Next steps:
 - Greater within-sector heterogeneity.
 - Dynamics and links to real economy; integrate with macro-stress tests.
 - Use the model as a guide for developing summary indicators of resilience .