The Paradox of Prudence - macroprudential regulation of life insurance and macroeconomic models of the financial sector

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About the speaker

- **Jochen Kienberger**
- One.Finance Program Manager
- 10 years of experience in various IT and Actuarial roles
- Joined the Allianz Group in 2011
- Degree in Mathematics from the University of Heidelberg
- Qualified DAV actuary

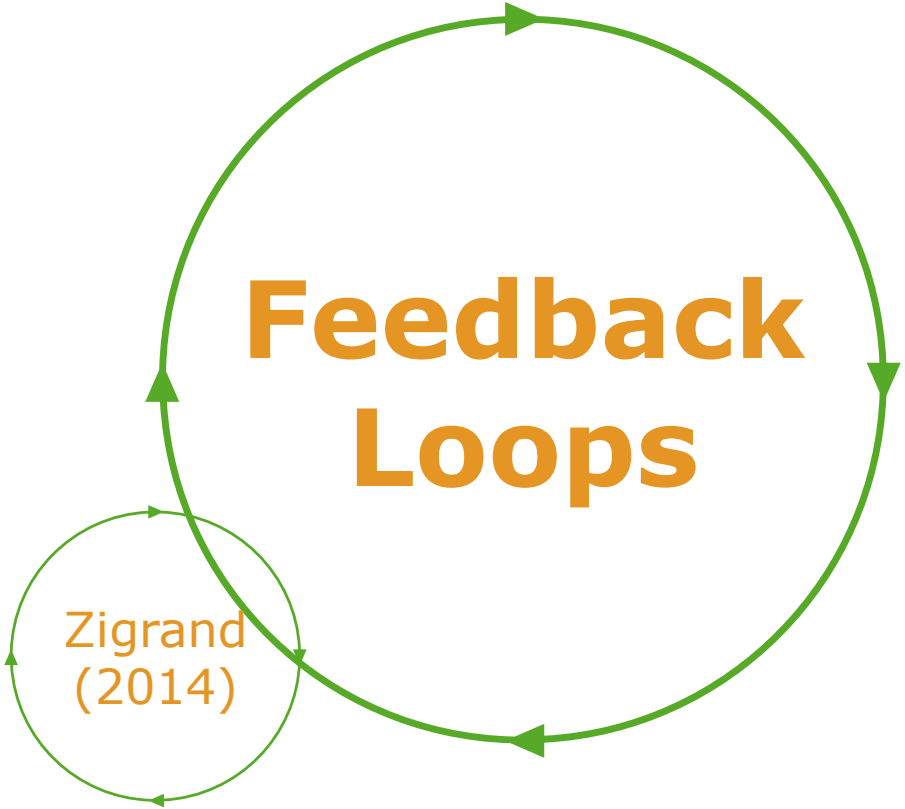
- **Allianz Global Life dac**
- Fully owned by Allianz SE and based in Dublin, is one of the leading pan-European insurers for hedged life products
- Bringing innovative Unit-Linked and Protection products to 7+ European countries
- Employing 20+ actuaries
- Having combined 20+bn Euro of AuM as cross border Irish Operations

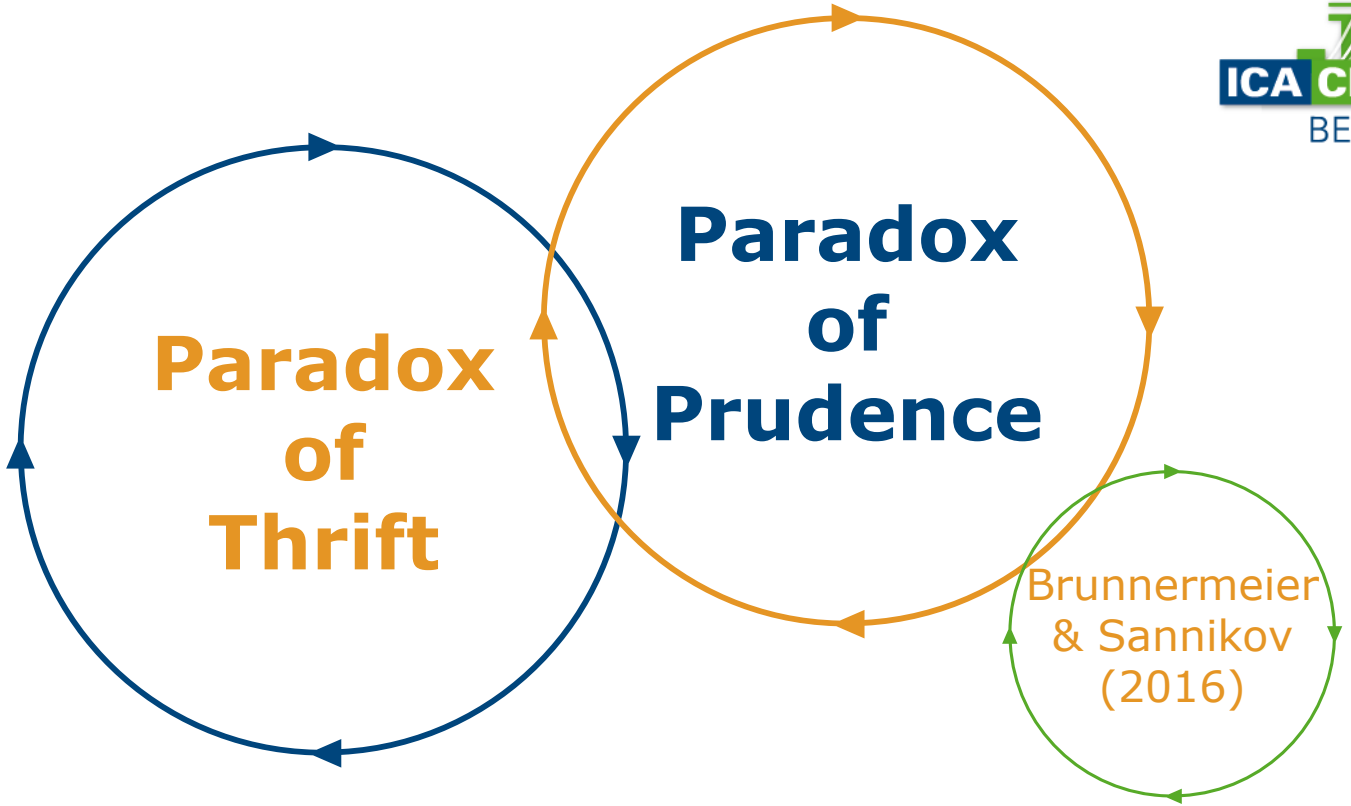
A **systemic event** is

"the disruption to the flow of financial services that is (i) caused by an impairment of all or parts of the financial system; and (ii) has the potential to have serious negative consequences for the real economy"

- IMF, BIS & FSB (2009)

Feedback Loops

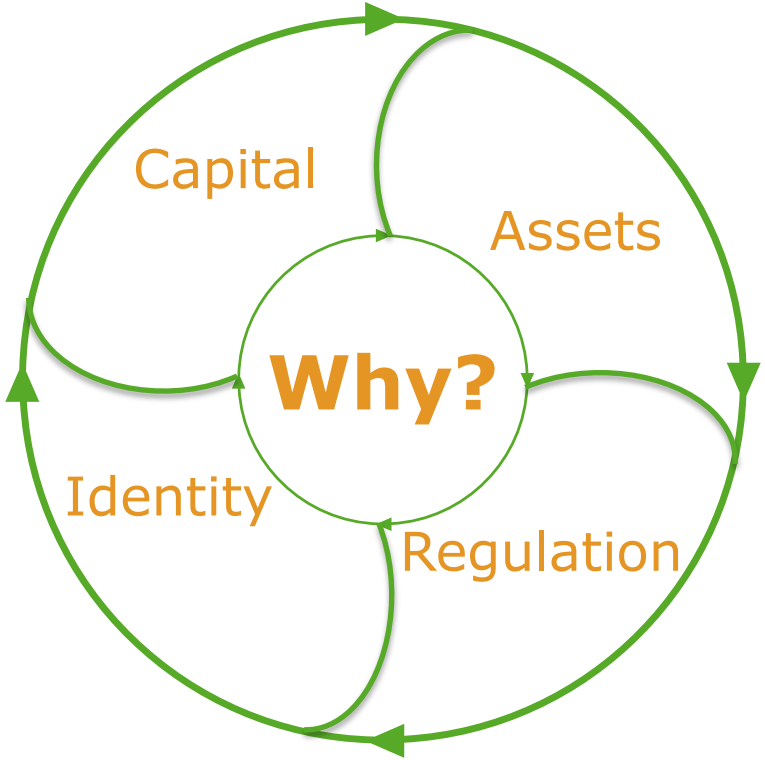



Paradox
of
Thrift
Paradox
of
Prudence
Brunnermeier
& Sannikov
(2016)

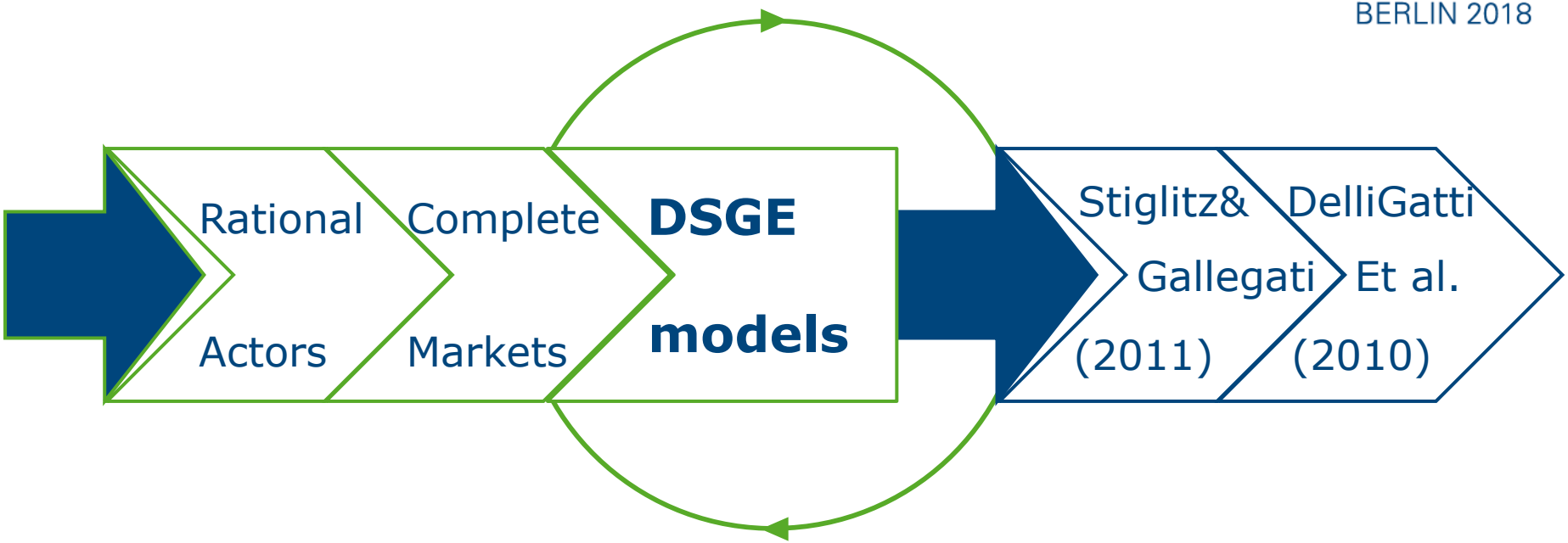
Fallacy of composition

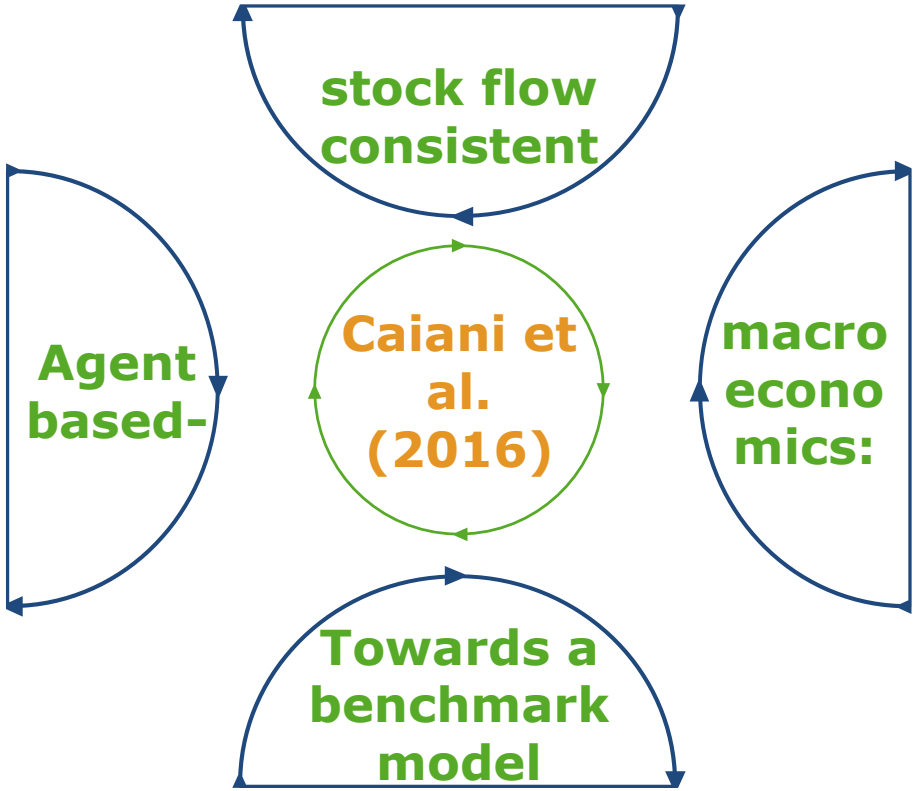
"The great mistake everyone makes is to confuse what is true for the individual with what is true for society as a whole. This is the most fascinating thing about economics."

- Milton Friedman (1980)


Capital
Assets
Why?
Identity
Regulation

From a financial to a modelling crisis




stock flow consistent
Agent based-
Caiani et al. (2016)
macro econo mics:
Towards a benchmark model

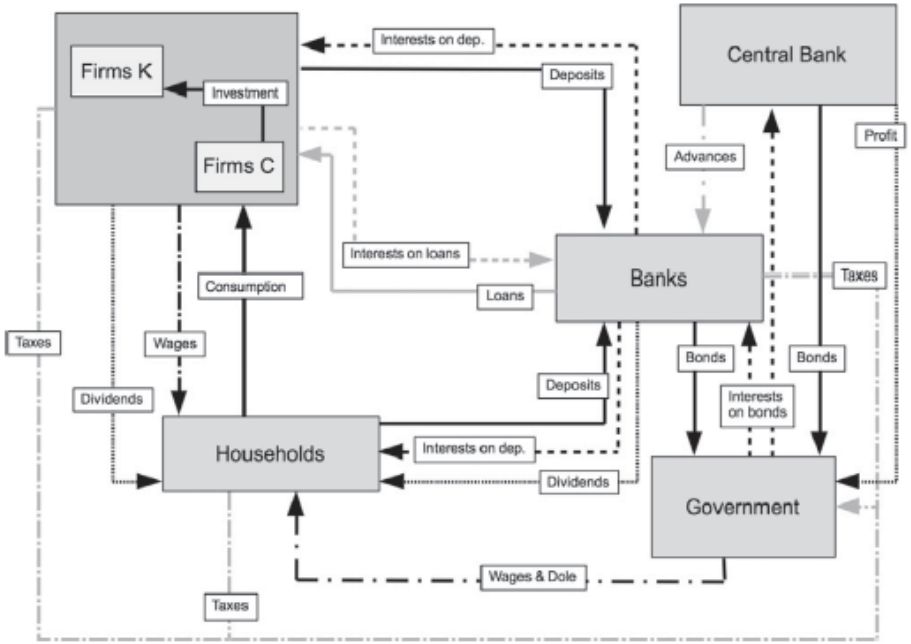
Stock flow consistency

Table 2
Aggregate transaction flow matrix (initial situation).

	Households	Cons. Firms		Cap. Firms		Banks		Govt.	Central Bank		Σ
		CA	KA	CA	KA	CA	KA		CA	KA	
Consumption	−32 971.4	+32 971.4	0	0	0	0	0	0	0	0	0
Wages	+36 800	−25 000	0	−5000	0	0	0	−6800	0	0	0
Dole	+1280	0	0	0	0	0	0	−1280	0	0	0
CG on inventories	0	+22.3	−22.3	+3.7	−3.7	0	0	0	0	0	0
Investments	0	0	−5375	+5375	0	0	0	0	0	0	0
Capital amortization	0	−4974	+4974	0	0	0	0	0	0	0	0
Taxes	−7084.7	−484.8	0	−68.7	0	−39.3	0	+7677.4	0	0	0
Dep. interest	+200.3	+62	0	+12.4	0	−274.7	0	0	0	0	0
Bonds interest	0	0	0	0	0	+95	0	−165.9	+70.9	0	0
Loans interest	0	−388.5	0	−9.7	0	+398.2	0	0	0	0	0
Advances interest	0	0	0	0	0	0	0	0	0	0	0
Profits	+2367.6	−2208.4	+220.8	−312.8	+31.3	−179.1	+71.7	0	0	0	0
CB profits	0	0	0	0	0	0	0	+70.9	−70.9	0	0
Δ Deposits	−600.8	0	−186.1	0	−37.2	0	+824.1	0	0	0	0
Δ Advances	0	0	0	0	0	0	0	0	0	0	0
Δ Reserves	0	0	0	0	0	0	−212.6	0	0	+212.6	0
Δ Gov. bonds	0	0	0	0	0	0	−284.9	+497.6	0	−212.6	0
Δ Loans	0	0	+388.5	0	+9.7	0	−398.2	0	0	0	0
Δ Total	0	0	0	0	0	0	0	0	0	0	0

Caiani et al. (2016)

Flow diagram benchmark model



Caiani et al. (2016)

Fig. 1. Flow diagram of the model. Arrows point from paying sectors to receiving sectors.

Results benchmark model

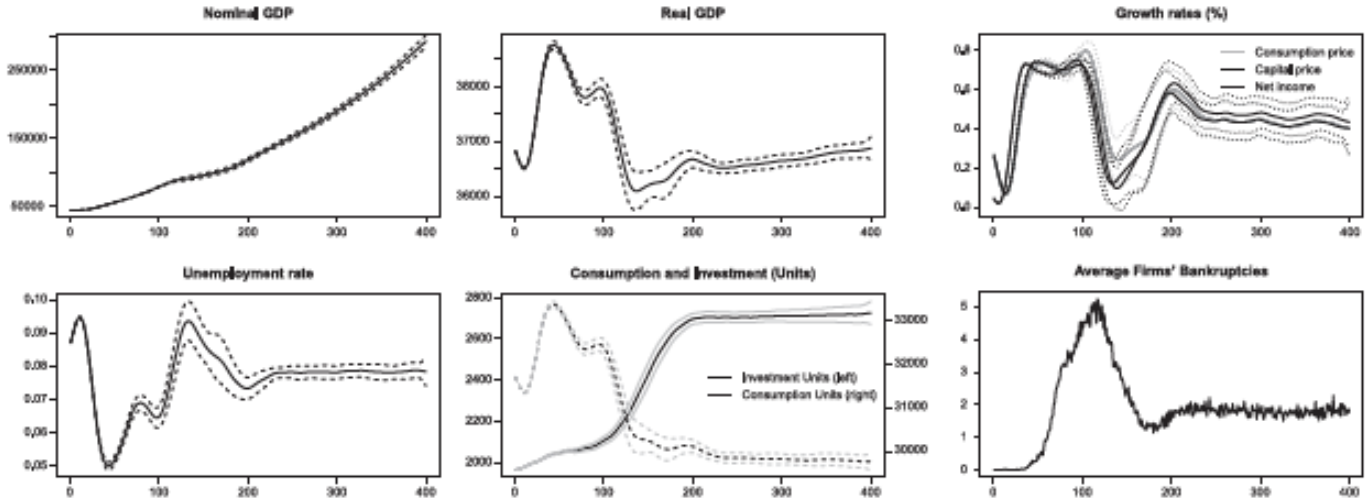
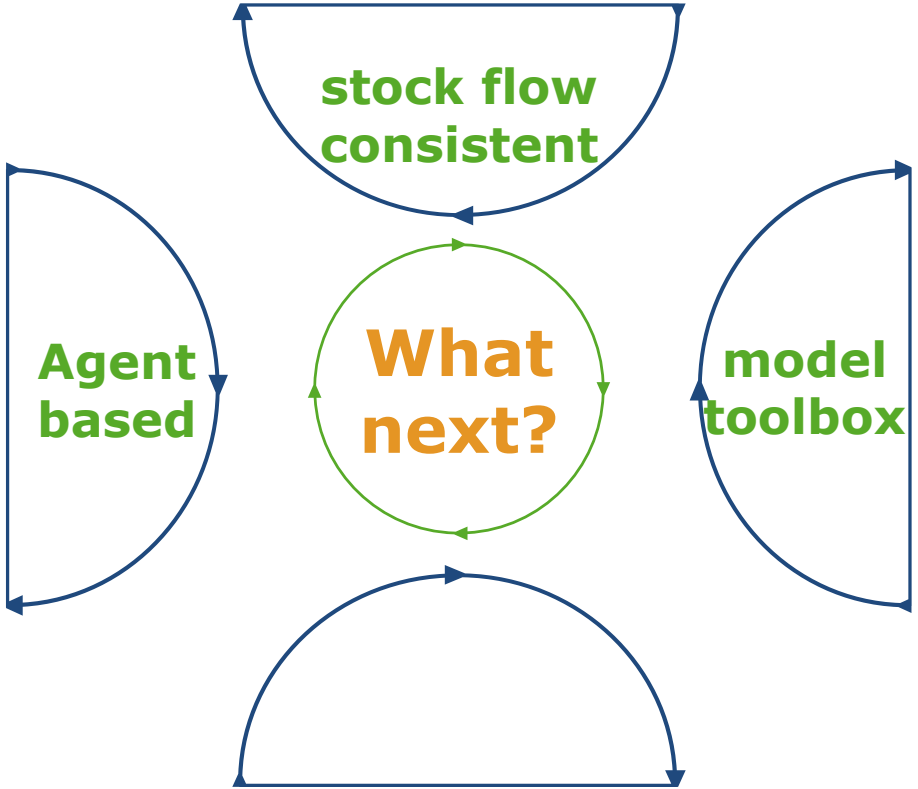


Fig. 2. Top Left: Nominal GDP. Top Center: real GDP. Top Right: net-income, consumption prices, and capital prices rates of growth. Growth rates of prices

Caiani et al. (2016)


stock flow
consistent
Agent
based
What
next?
model
toolbox

Appendix I Sources

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Appendix II Abbreviations

- **AB-SFC Model – A**gent **B**ased **S**tock **F**low **C**onsistent Model
- **BIS** - **B**ank of **I**nternational **S**ettelements
- **DSGE Model** – **D**ynamic **S**tochastic **G**eneral **E**quilibrium Model
- **EU CMU** – **E**uropean **U**nion action plan **C**apital **M**arkets **U**nion
- **FSB** – **F**inancial **S**tability **B**oard
- **IMF** – **I**nternational **M**onetary **F**und
- **SBBS - S**overeign **B**ond **B**acked **S**ecurities

Thank you very much for your attention!

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