SHOULD ECONOMICS STUDENTS BE GIVEN A NEW PERSPECTIVE?

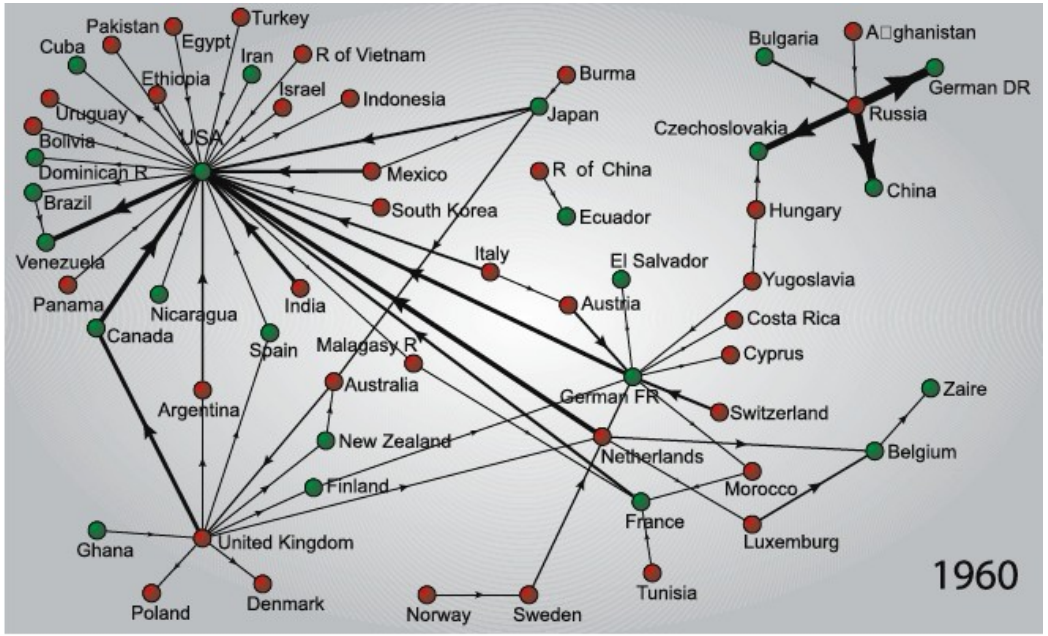
By Katie Chapman

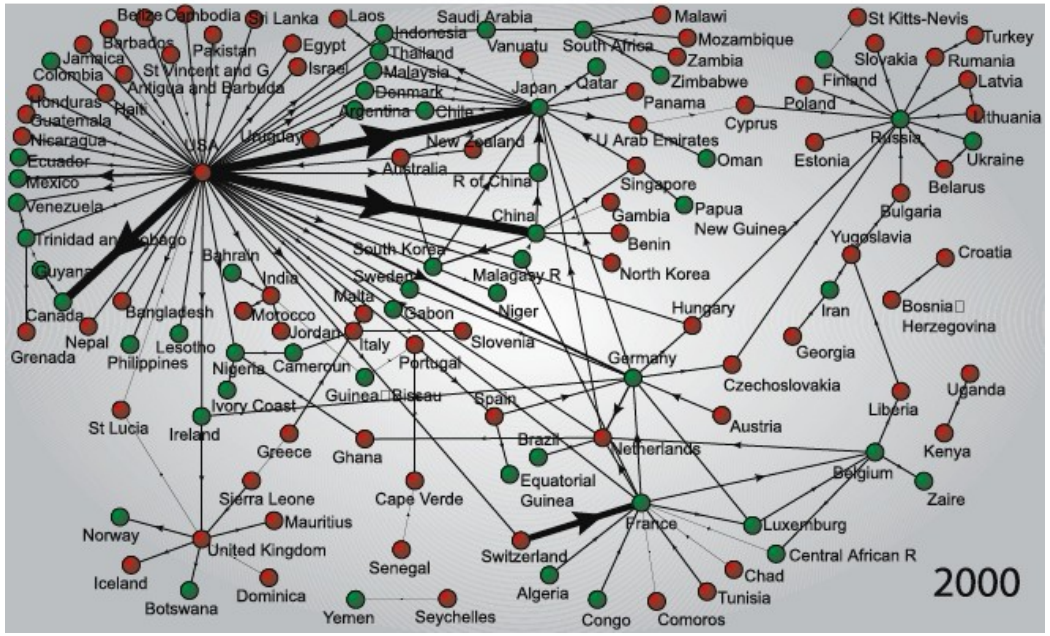
WHAT ARE THE PROBLEMS WE FACE TODAY?

- How do we model the increased complexity and interconnectedness of our economy?
- Over-simplification and heroic assumptions of classic/ Static/ DSGE models mean that theses models do not accurately reflect the current economy.
- Will the models we are conventionally taught leave us unequipped to effectively understand the most important economic issues we are facing today:
  - Globalisation
  - Financialisation
  - Cashlessness
  - Artificial Intelligence and Robots
- Data driven networks and granular macro-net models can provide answers

GLOBALISATION

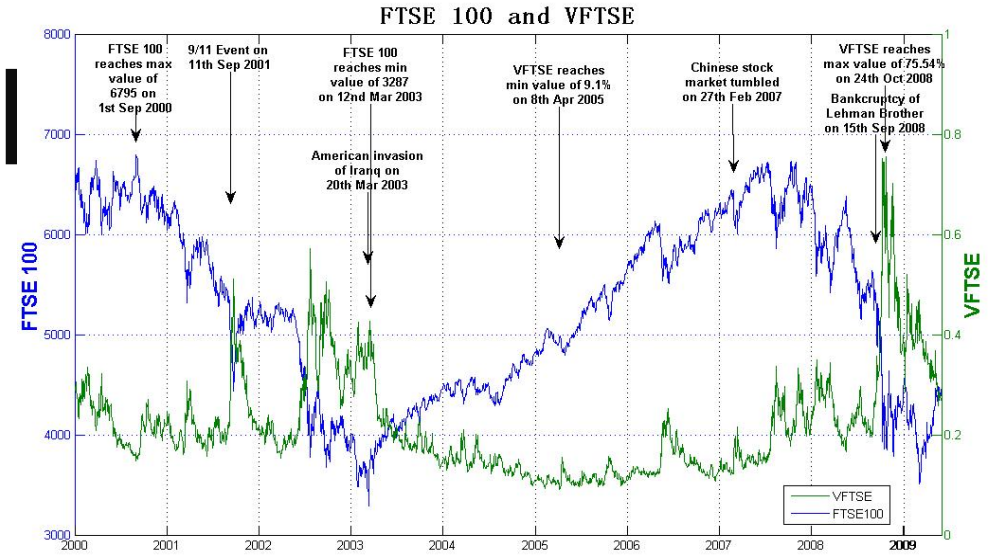
- Increased inter-country and intra-industry trade has increased the complexity and interconnectedness of the global trade network
- Traditional economic models of trade (Gravity, Ricardian, etc) often over-simplify and under explain trading relationships
- Many classical models have an aggregate sector and no inclusion of value added trade, both of which are highly important elements of trade today
- We now have huge international production networks
- Network models can effectively model the complexity and interconnectedness of trade linkages and global value chains and can be sector specific
- Brexit is a good example of a trade shock that can be modelled using granular network modelling to predict outcomes

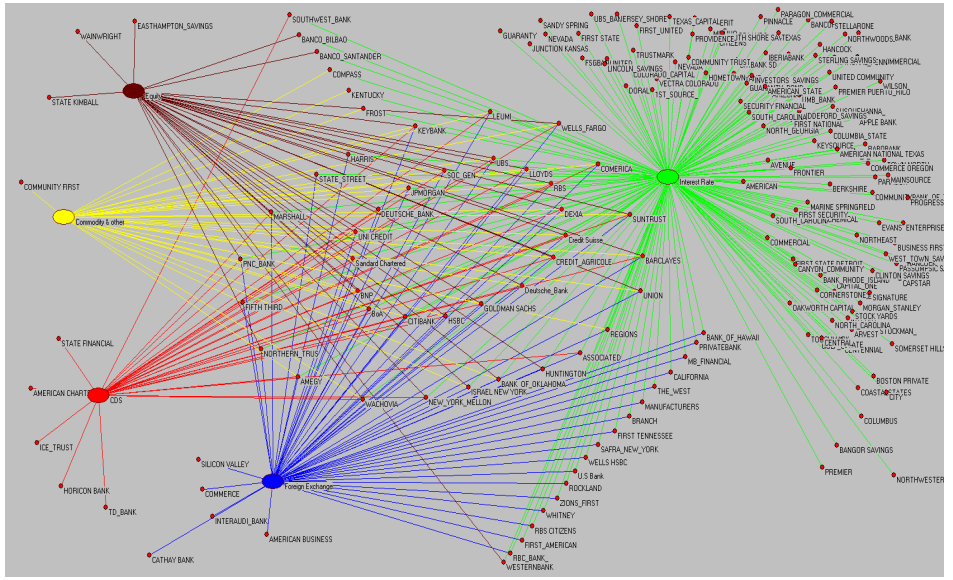




FINANCIALISATIOI

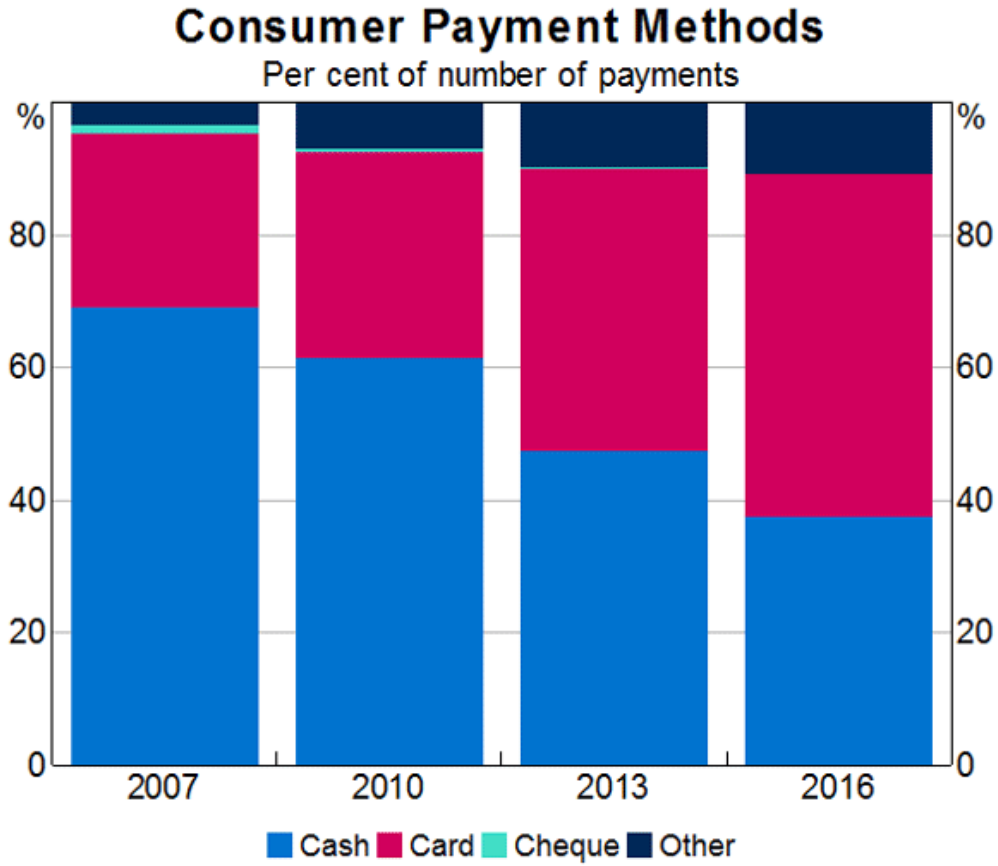
- Many classical macro models do not include a financial sector although as a sector it continues to contribute greatly to many countries' GDP.
- There is an inverse relationship between size of financial sector and GDP growth at a certain point
- Market based systemic Risk measures often do not identify risk until it is too late- the "paradox of stability"
- Econometric measures are often retrospective and do not give students access to causal structural changes in the economy until it is too late
- The Financial crisis emphasised the damage that can be caused as a result of the interconnectedness and complexity of the financial system
- Network based models can effectively measure centrality and contagion of banks and the threat they impose on the network





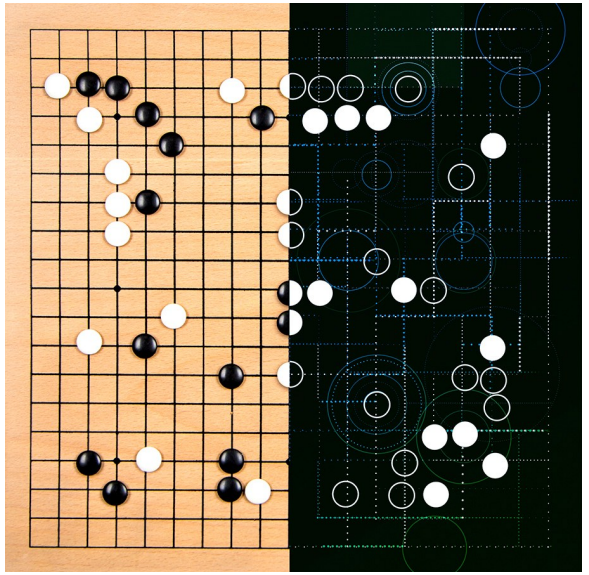
CASHLESSNESS

- Cashless/Electronic payments have transformed the way our society consumes: why do we not have models including cashless payments?
- Use of cashless/electronic payments has huge implications for monetary policy
- Current beliefs on inflation are based on the Phillips Curve, which has not been empirically observed in many countries for over 20 years: should we really be so concerned about inflation?



Source: RBA calculations, based on data from Colmar Brunton, Ipsos and Roy Morgan Research

ARTIFICIAL INTELLIGENC AND ROBOTS



- Cutting edge AI techniques such as deep learning could help us better analyse the data available and predict economic events/ consequences of economic policy

- Some important questions:
  - What effect will machine learning have on the cost of prediction?
  - What effect will AI have on the labour market?
  - Can AI be more rational than humans?
  - How can we utilise AI to replace the economic models we have available to us now?

CONCLUSION

- Must use computational techniques in order to improve and replace the models available to us now
- Need to use granular macro data-driven networks in order to model and understand the complexity of the economy
- We live in the era of “big data” and we need to use it
- Employment of these techniques will help economists to design more effective monetary and fiscal policy suggestions