

# RATIONALE

MICHAELMAS TERM 2018

Search and  
Match Theory  
Navigating the modern  
economy



ECONOMICS, RACE,  
AND GENDER TODAY

TOO MUCH MATHS,  
TOO LITTLE HISTORY?

DO SANCTIONS WORK?



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*Rationale* is the official magazine of the LSESU Economics Society – written, edited and produced by LSE students, for LSE students. In this edition we have worked on curating opinions from students and academics alike on issues ranging from theoretical economic ideas to wider landscapes of thoughts on climate change and philosophy. We also find articles that deal with what the very study and profession of economics today entails – are we using the right methods? are we talking about the most important things?

I would like to thank the entire team of editors for their fine work in brainstorming, collecting and editing articles, and conducting the interviews. I would also like to thank the professors who agreed to be interviewed for their time and for their infectious enthusiasm about their work, which I am confident shines through in the interviews. Special thanks go out to Dr Judith Shapiro for her constant help and guidance, to Raghav for working on the exciting quizzes scattered through the issue, and to Arsalan Kamal and Tom Glinnan, current and former president of the LSESU Economics Society respectively for working with me on the word search, the final designing and the publication. I hope readers enjoy this edition and find that *Rationale* has indeed succeeded in its mission to get students to think more broadly, deeply and critically about economics and how it relates to the rest of the world.

Krittika Ray



# Contents

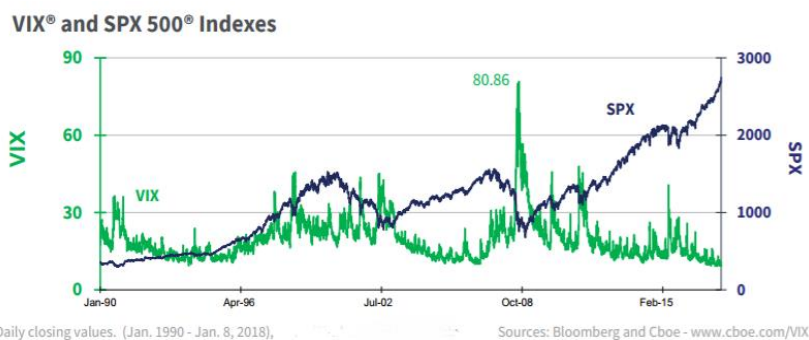
Volatility in Financial Markets: Is this time different?	4
Dr Guy Michaels on Labour Economics	7
Agent Based Modelling: The future of economics	10
Economic Development of African Oil and Commodity Exporters: The costs of non-diversification	13
Professor Bernhard von Stengel on Game Theory	16
Why we really care about Climate Change	18
Word Search: Find the Economist	25
Dr Johanna Thoma on Philosophy of Economics	26
Exchanging Sanctions: Problems of using economic tools in foreign policy	29
Economics, Race and Gender Today: Are we studying what's important?	32
Dr Francesco Nava on Games and Economic Behaviour	34
The Search and Match Theory: Navigating the modern economy	37
Dr Daniel Reck on Public Economics	40
Too much Maths, too little History: Does economics really face an identity crisis?	42
Answers to Quizzes and Word Search	46

# Volatility in Financial Markets

## Is this time different?

DUMANI HEADLEY

Despite the story of the US economy being one of a boom, a bust, and a slow recovery<sup>1</sup>, there has been a sustained upward trend in the equity markets since 2012, leading to a period of low volatility in the financial market. The VIX index has shown that the average volatility has been below the 10-year long-term average of 20, reaching record low levels in the final quarter of 2017. Following the return to volatility seen in the first week of February 2018, there are questions about whether the high levels of credit and asset valuations seen in financial markets are sustainable.



A long tradition links large credit expansions with over-optimism in equity markets<sup>2</sup>. While it may be difficult to find definitive evidence of excessive valuations in general, there has been strong apprehension in the media about excessive valuations in the Western markets<sup>3</sup>.

<sup>1</sup> A Moreira, A Savov, 2014, The macroeconomics of shadow banking, THE JOURNAL OF FINANCE•VOL. LXXII, NO. 6•DECEMBER 2017

<sup>2</sup> Kindleberger Charles, Manias, Panics, and Crashes: A History of Financial Crises (New York: Basic Books, 1978).

<sup>3</sup> Matthew Baron, Wei Xiong; Credit Expansion and Neglected Crash Risk, The Quarterly Journal of Economics, Volume 132, Issue 2, 1 May 2017, Pages 713–764

However, all credit booms are not born equal. Several studies, including one produced by Dell Ariccia et al, show that two-thirds of credit booms do not result in financial crisis<sup>4</sup>. Distinguishing a good boom from disastrous has mainly been done by examining financial frictions<sup>5</sup>. However, the dynamics of bad credit booms are difficult to explain based solely on these frictions<sup>6</sup>.

Minsky, however highlights the macroeconomic impacts of irrational behaviour. He identifies three behavioural stages of the credit cycle which leads to the accumulation of insolvent debt: hedge finance, in which borrowers can meet all debt payments from their cash flows from investment; speculative finance, in which borrowers can meet their interest payments from investment, but must roll over their debt

over to pay back the original loan; and Ponzi finance, where borrowers can neither repay the interest nor the original debt from the original investment, and rely entirely on rising asset prices to allow them to continually refinance their debt.<sup>7</sup> According to this type of framework, if expectations regarding cash

<sup>4</sup> Giovanni Dell’Ariccia, Deniz Igan, Luc Laeven, Hui Tong; Credit booms and macrofinancial stability, Economic Policy, Volume 31, Issue 86, 1 April 2016, Pages 299–355

<sup>5</sup> David López-Salido, Jeremy C. Stein, Egon Zakrajšek; Credit-Market Sentiment and the Business Cycle, The Quarterly Journal of Economics, Volume 132, Issue 3, 1 August 2017, Pages 1373–1426

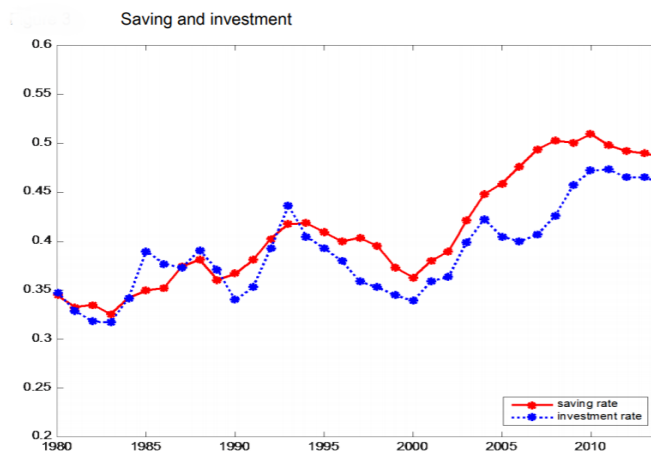
<sup>6</sup> Divya Kirti, Lending Standards and Output Growth, IMF Working Paper, WP/18/23

<sup>7</sup> Minsky HP (1980a) Capitalist financial processes and the instability of capitalism. J Econ Issues 14:505– 23

## RATIONALE MT 2018

flows from investments are excessively reliant on data available during a smooth economic period, are unrealistic, and/or are highly reliant on output-price inflation, the economy is

amplified by the Chinese financial sector, where small and mid-sized banks have doubled in asset size as a share of GDP since 2009, and have become more reliant on



Data source: China Statistical Yearbook

relatively more fragile<sup>8</sup>. Minsky's ideas have returned to fashion after the 2008 crisis as a method to explain the irrational investment in the housing market, which underemphasised the risk of default on mortgage debt and overemphasised the likelihood of perpetual rises in house prices.

This kind of over-optimism may obscure potential shocks to the business cycle. While the study of economics is not usually focused on predictive efforts, there may be value in seeing where these potential shocks in the global economy may arise and how they may be transmitted and propagated in the economy. The risks which are most apparent may be potential shocks coming from the EM, financial innovations and rising interest rates.

The rising debts in the Chinese economy for example, may create shocks for the economy, especially if there are more debts than previously accounted for. These risks could be

wholesale funding. Opaque shadow banking activities have also expanded strongly. The transmission channels may include a reduction in Chinese investment into US government debt, less international trade with China, or a fall in domestic consumer spending. These transmission channels may be less serious as the Chinese financial markets are not as integrated with the domestic economy as

*"The current period may create potential for more significantly dangerous euphoria."*

western financial systems with their economies. However, this difference may be shrinking as Chinese authorities have emphasised their desire for greater financial openness and capital account liberalisation.<sup>9</sup> Greater connectedness could make global financial markets more sensitive to slowdown in China<sup>10</sup>. Furthermore, in contrast to the credit boom in the great recession where credit was given with minimum down payment and no need to prove income, credit standards have been increasing as households are required to put larger down payments on mortgage loans with 20% and 30% for first and second homes

<sup>8</sup> Eric Tymoigne, Measuring macroprudential risk through financial fragility: a Minskian approach, Journal of Post Keynesian Economics, 722

<sup>9</sup> Chuanglian Chena, Shujie Yao, Peiwei Hu, Yuting Lin, Optimal government investment and public debt in an

economic growth model, China Economic Review (2017) Volume 45, September 2017, Pages 257-278

<sup>10</sup>

## RATIONALE MT 2018

respectively. 50% down payments are sometimes required in popular areas.

However, as the Finnish Central Bank noted in their risk report, Chinese private firms have finance mostly out of retained earnings and have a savings rate. This is crucially important as the Chinese private sector provides 80% of urban employment in the economy. This means default by the state-owned enterprises will have a reduced effect on employment of highly paid labour and thus a reduced effect on consumer spending. As such, risk of Chinese debt and the following economic slowdown is not likely to pose an immediate risk to the US economy.

The Chinese authorities also have experience in managing large amounts of bad debt through their management of bad debt of the public sector in the 1990s and early 2000s. This is crucial in order to resolve debt without disrupting the economic production likely to cause international shocks.

Another potential risk may be generated by the unregulated systemic risks arising from financial innovation. This risk was seen in the previous crises with contagion effects of credit default swaps and asset-backed securities which had a large spike in issuance in the run up to the 2008 crisis.

A similar spike has been seen in the issuance of exchange traded funds which were first sold in 1993 and now have more than \$ 4 trillion of assets under management globally. Exchange Traded Funds (ETFs) played little role in the previous financial crisis<sup>11</sup>. However, corporate bond ETFs have been flagged by regulators and practitioners as a potential systemic threat due to the sharp contrast between the liquid and transparent ETF market and the illiquid over-the-counter (OTC) bond market <sup>12</sup> . Parallels may be drawn with the liquid

mortgage backed securities and the opaque loans which underpinned the assets. However as corporate bond ETFs make up a small minority of the total ETFs issued, it is likely that further time is necessary for significant systemic risk to be borne by these products.

Finally, Central banks may raise interest rates at speeds faster than anticipated if global growth continues robustly. Central banks are likely to refrain from doing this, however, in order to avoid a premature rise of rates leading to a downturn in the economy. This is similar to what is called the "Mistake of 1937" during the great depression which led to a GNP contraction by 9%, contraction in industrial production by 32%, and where the stock market lost almost half of its value. In the current cycle, the Federal Reserve Board and the ECB has given clear forward guidance towards their inflation targets, creating a good idea of the speed at which the interest rate will rise. The main Central Banks are making efforts to be cautious and consistent in their management of interest rates, meaning that it is unlikely that there will be a shock arising from monetary policy.

In conclusion, the current period may create potential for more significantly dangerous euphoria in the future, if financial market actors who have survived this period of volatility interpret their survival as evidence of fundamental robustness post-crisis regulatory system. While it is unlikely that the end of the current credit cycle will lead to a deep systemic crisis like those seen in 1929 or 2008, the potential ensuing complacency will likely put the global financial system at risk further in the future, as the national systems become further interconnected, nascent financial innovations mature and current regulatory tools become obsolete.

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<sup>11</sup> Trainor W. J. ( 2010 ) Do leveraged ETFs increase volatility , *Technology and Investment* 1 , 215 – 220

<sup>12</sup> Caitlin D. Dannhauser, The impact of innovation: Evidence from corporate bond exchange-traded funds (ETFs), *Journal of financial economics*

# Dr Guy Michaels

## LABOUR ECONOMICS



*Dr Guy Michaels is Associate Professor of Economics at the London School of Economics and Political Science.*

*His research interests lie in Labour Economics, Economic Development, and Economic Geography. He lectures in EC317, the Labour Economics module for undergraduates.*

### **What would you say Labour Economics today primarily deals with?**

Well labour is generally a big field, and it deals with lots of issues, such as labour supply and demand, welfare issues, unemployment, immigration, minimum wages - a lot of things that are important for people's lives and for government policies. I think it's an exciting time to do research in labour economics, in part because the set of questions that labour economists study today is much broader than it used to be, so it's growing and a much more inclusive field than it used to be.

In addition, the quality and quantity of data – the fact there are now huge datasets on aspects of people's working lives – that you can actually follow individuals over time, people from different backgrounds etc – is really amazing. This really gives you so many more potential insights now.

### **How did you yourself get interested in Labour Economics?**

That's an interesting question. I actually did my undergraduate degree in math, so I focused on that, but tried different things, sort of experimented in different areas. I wanted to combine math with history or philosophy or sociology and other things, and eventually kind of wandered into economics. Some of the things that interested me in labour economics have to do with technological change and thinking about interesting methodology to do with causality in social sciences, something labour economics has always pushed at the frontiers of. I have always been particularly interested in technological change and inequality, and the fact that in labour you can really ask a broad set of questions and use powerful computing and analysis to find answers drew me to it.

### **What has your recent research in Labour Economics or indeed any other fields of economics been in?**

A variety of different things really. In labour economics it's mostly been about technological change and how it is impacting working people. Recently we've done some work on robots and how they are contributing to productivity, and how they are affecting employment in different groups with different levels of education. Similarly, we previously did work on information communication technologies, a bit on technology and business cycles. More broadly, we've done work with other co-authors on content of occupation – so what are the main kinds of verbs, kinds of actions that are used in describing different sorts of occupations and how that varies across areas that are urban or rural and how that's changed over long periods of time.

*"AI, while in some senses a continuation of automation, also has powers that we don't always have full control of."*

**We wanted to ask you a little more about the robots and AI aspect of your field, since that is one of the most contentious issues being discussed these days.**

It is a very, very important topic, and something that we are gradually only beginning to understand. So I think that even though in general we have a much better understanding nowadays in labour economics of how to think about causal effects, that has in some sense paradoxically made us more cautious in pushing forward what we can say, so that is an interesting aspect of it. There's often a trade-off between how interesting the question is and how convincing an answer you can give. In terms of the work that we have done, I think the evidence we have studied suggest that robots do contribute to productivity. They are not really a complete game-changer in terms of productivity, they are roughly comparable to some of the bigger technologies that have been around over the last 150 to 200 years, so it is not substantially different. They have of course lowered prices for many goods and made them accessible to consumers, something that has not been appreciated in discussions as much. Some of it has also translated into higher wages for workers.

On the massively important question of employment, that is something that is still being debated and argued about. In our research, we seem to find that there aren't actually very large disemployment effects – the only group that does seem to suffer over the period we studies is some of the lower skilled workers. But of course, this is changing, this is kind of a characterisation of what's happened in the past few decades, and this is shifting up the skill distribution gradually.

*“Understanding more about immigration and how to successfully integrate immigrants is a first order question.”*

**What is the intuition behind robots leading to higher wages for workers?**

The idea is that the robots, by increasing productivity, allow firms to actually produce more. Of course, robots also replace workers, so you can think about the selection effects of that are. But the way we think about it is that the wage gains that are associated with the use of robots don't just come from firms replacing low-skilled workers – even accounting for the compensational changes of that, we are seeing that workers are more productive working along robots, and this allows firms to pay them higher wages.

**There has also been a lot of debate about whether Artificial Intelligence is inherently different from general technological advancement that has been happening for millennia. Do you think there are ways in which AI is different to the rest, and does that have some kind of extra scope of analysis?**

That's a fantastic question, and something we would love to understand more about. In some sense, it is a continuation, in the sense that AI will basically increase the capability of machines to replace people. If you look at the replacement of occupations, the kind of things that people were doing a thousand years ago,

a hundred years ago, the most common occupations were agricultural. Now in much of the world these have largely been displaced, even if not completely, because higher productivity means we won't need as

many people (as long as demand for agricultural output doesn't explode). In that respect, we are going to keep seeing this continuous process where there is churn and where occupations or some things that people do get replaced by machines. AI is also not different in terms of the benefits it brings, such



## RATIONALE MT 2018

as higher wages and mostly lower prices paid by consumers, and a larger set of things that consumers can benefit from both in terms of goods and services. These are all things that AI would undoubtedly contribute to.

Now I think that some of the aspects of AI that are not completely well understood are its risks and downsides – the fact that these are some powerful machines that we don't always have full control of, that we don't always understand how they are arriving at whatever decisions they're making. The legal system is not always catching up, our institutional system is not always up to speed with all of these things. On top of that, you have to take this broad insight from economics and psychology - that people will welcome benefits, but they are often very anxious about risks and downsides. I think there isn't enough discussion and work in the private and public sector about how to anticipate risks and how to mitigate them and how to reassure people, because for sure technological change has costs – there are going to be losers and winners from this process.

### **Apart from AI and robots, what else would you say are on the frontiers of research in Labour Economics?**

I think there are lots of really interesting questions. Understanding more about immigration and how to successfully integrate immigrants is a first order question. Another first order question is how to deal with ageing in an economy where people are living potentially longer, healthier working lives. Some of it has to do with people working for longer periods of time, but some of it is also social aspects of how to deal with an ageing population. And of course, a lot of these topics, technological change, ageing, immigration, they interact in a lot of myriad and fascinating ways and I think that it's a great time to think about these issues.

### **Finally, what advice would you have for young people starting their degrees in economics or related subjects on how to think about the world and about economics?**

I think the main thing is to stay curious. A lot of people get here by keeping an open mind and thinking about the big questions, but then you have to come in and learn the language, the maths, the statistics, all the techniques. It's very important, because these tools allow you to answer questions in useful and constructive ways. But the main thing is not to lose sight of asking the big questions along the way even while learning these tools.

## **Quiz #1**

- 1. Who is the first non-British Governor of the Bank of England?*
- 2. Who served as Master of the Royal Mint between 1700 and 1727?*
- 3. Which Nobel laureate appeared alongside Selena Gomez in the 2015 movie "The Big Short" to explain the Hot Hand Fallacy, according which people believe that whatever is happening in the present will continue into the future?*

*(Answers on page 46)*

# Agent-Based Modelling

## The future of economics

UJJWALL UPPULURI

Traditionally, economics as taught at university and practiced in academia revolves around the concept of equilibria and their application to the study of social, political, business and financial phenomena and involves the study of scarcity. When applied to policymaking, the models used by economists have been constrained by a set of assumptions such as the concept of rationality and optimization. These assumptions are then turned into causal models which are tested using regression analysis or other forms of statistical analysis. However, I argue that this way of thinking about formulating models and evaluating policy choices is outdated.

Recent advances in the field of complex systems science has led to the creation of interdisciplinary institutes at MIT, Chicago, Oxford, Imperial and other institutions who apply the principles of evolutionary biological theory and system dynamics (drawn from Physics) to the study of social phenomena. The model that they use to test their hypothesis is classified as an Agent Based Model. A Complex System is defined as a system made up of a large number of constituent entities that interact with each other and also with the environment. They exhibit nonlinear behaviour, that is, even seemingly insignificant causes can snowball into significant effects, whose behaviour is intrinsically difficult to model due to the dependencies, relationships, or interactions between their parts or between a given system and its environment. An agent based model is the framework utilized by computational

*"By treating the economy as a dynamic system – one that is ever changing and evolving – the paradigm allows one to think about systems as being in disequilibria."*

scientists and scholars to characterize the economy as a dynamic living system, an organism, made up of agents at the micro level who interact with each other based on rules, space, and time.

What makes this thinking so powerful is that it allows one to account for heterogeneity and complexity, two factors that traditional economic models do not address. By treating the economy as a dynamic system – one that is ever changing and evolving – the paradigm allows one to think about systems as being in disequilibria. Now one might wonder how one does create agents, or rules, or behaviour and how does one differentiate between agents and model their interactions? The answer lies in a concept known as Group Theory.

A group is a set of elements, which has 1) one operation 2) an inverse, 3) is a closed system in which when you combine any two elements of the system you get another element which is part of that closed system. A group also has an inverse that one calls the identity element and finally the system is characterized as one which is associative. This definition of a group has been proven mathematically by Evariste Galois a French mathematician. By combining evolutionary and group theory with systems dynamics, one is able to utilize agent-based models to study how the interactions between different actors at the micro level lead to changes that reflect themselves at the macro level.

How does one apply this abstraction to reality? Imagine that the state exists on a 3-dimensional plane. The z axis represents the state's objective, the x axis represents the resources (tangible and intangible) available to the state and the y axis represents the risks the

## RATIONALE MT 2018

state faces. For example, the objective of the state could be economic growth. How does it achieve this objective to efficiently manage the resources and mitigate the effects of externalities? Imagine that there does not exist one such state, but many states each in their own axis. These states employ strategies based on the constraints of resources and risk management to achieve some objective which could be economic growth or something else. Based on the definition of a group, we can categorize each state as being its own group. Each state is a closed system, one which is made up of micro level agents who have their own vectors and pursue strategies to achieve some sub-objectives. The state also has an identity, the inverse being anarchy or the existence of no state structure. Finally, the agents making up a state interact with each other through competition and collaboration to mitigate risks and achieve sub-objectives that fall within the primary objective. Thus, one can categorize the state as an organism that reflects the sum of the output of the interactions pursued by agents at the micro level. When states compete, they employ a strategy and the state with the better strategy manages to acquire some resource, mitigate some risk or fulfil some objective.

For example, imagine that the state is an organism which is climbing a mountain. This mountain's environment is made up of risks the state faces and the state has given resource endowments. This mountain is also layered in the sense that it has multiple peaks that must be overcome to reach the tallest peak. A state that sticks to a single strategy or pursues a strategy that is not conducive to each specific peak it is climbing, then it

stagnates. As such, to overcome the obstacle in the state's path, it has to innovate.

If we imagine this mountain to be defined as the z axis, e.g. the result of reaching the mountaintop is achieving perfect levels of development (however that is defined by the state), therefore the unequal distribution of power between different states can be explained by the analogy above. Different states are at different stages of development (on different peaks) and the challenges that one state faces to overcome a peak is different from the challenges faced by another state to overcome a different peak. However, it should

*“What makes this simulation so powerful is that through accounting for heterogeneity, strategy and micro-level behaviour one is able to create an environment in which they can test and predict policy outcomes before they happen.”*

be noted that the strategy a state must employ to overcome a peak is heterogeneous. As a generalization, given states have different challenges and have different resource endowments, no two states in this system are able to overcome the peak in the same way. You could have two states who are similar to

each other in terms of risks faced and resources and objectives and they could pursue similar strategies to overcome a peak, but not all states. Each state has its own unique developmental path to reach the top. We can model this hypothesis using an agent-based model. We can create the x, y, and z axis described above in a computational environment. Within this environment you have a complex system. The tallest mountain and the longest x and y vector can be considered to represent the global economy. The agents climbing this mountain can be characterized as states. Within each state there exists more agents who through competition and exchanging information facilitate the movement of the state up the mountain.

## RATIONALE MT 2018

What makes this simulation so powerful is that through accounting for heterogeneity, strategy and micro-level behaviour one is able to create an environment in which they can test and predict policy outcomes before they happen. Say an economist comes up with a policy prescription for a developing country. This could be something akin to *liberalize your markets*. Well, one can create an agent-based model in which using evolutionary and group theory create the environment described above and input into the state agent a strategy in which it liberalizes her markets. At the same time one can also populate the state with more agents. These can be different political or social groups and institutions that make up the state and model their individual behaviour and interactions with each other. In this way one can test whether or not their policy would allow the state to climb the mountain to reach the top to achieve the objective. If the state is unable to climb the mountain (possibly due to internal forces, e.g. one group of agents who are against free trade policy outcompete other agents who are for the policy) than one knows that they must go back to the drawing board to come up with either a revision to their policy or a new policy.

The beauty of the agent-based model is that it is able to show policy outcomes to users before they happen, and this saves users time, money, resources, and capital involved in implementing a policy that carries significant risks with it. Many question this model and claim that unlike traditional regression analysis, this model is a black box and can't be proven empirically. Such an argument does not hold, because the model has been proven using mathematical formulae. There are three underlying principles that define the structure of an agent-based model: the theory of groups, evolutionary theory and systems dynamics. All three principals have been proven using mathematical formulae. There has been a proof for evolutionary theory by Peter

Schuster, Systems dynamics has been proven by Kevin Iga, and Galois has proven group theory. Given the three underlying principles have their basis in formal mathematical proofs, the agent-based model is, from the mathematical perspective, internally consistent and valid.

This article concludes by asserting that though the theoretical foundations for agent-based modelling have been laid, there does exist space for traditional forms of economic analysis and policymaking. However economic thinking must change in order to adapt to the changing technological environment. Advances in computing have now allowed STEM professionals to collaborate with Social Scientists to create models that better reflect the complexity of the world we live in.. The global economy is a changing and dynamic system and a fundamental component scholars are grappling to understand, thus I see no reason why we cannot apply the principles of Biology, Physics and Mathematics alongside the Humanities and Social sciences disciplines to the study of this system.

### Bibliography

- "Samuelson's definition of Economics." BrainKart. Accessed February 23, 2018. <http://www.brainkart.com/article/Samuelson---s-Definition--Modern-Definition-of-Economics-1511/>.
- Gupta, Amit. "Insights from Complexity Theory: Understanding Organizations Better." Accessed February 23, 2018. <http://tejas.iimb.ac.in/articles/12.php>.
- Herstein, I. N. *Topics in Algebra*. Place of publication not identified: Wiley, 1975.
- Weintraub, Steven H. *Galois Theory*. New York: Springer, 2009.
- Bell, Eric Temple. *Men of mathematics*. New York: Simon & Schuster, 1986.
- Schuster, Peter. "The Mathematics of Darwin's Theory of Evolution: 1859 and 150 Years Later." *The Mathematics of Darwin's Legacy*, 2011, 27-66.
- Iga, Kevin. "A Dynamical Systems Proof of Fermat's Little Theorem." *Mathematics Magazine* 76, no. 1 (2003): 48.

# Economic Development of African Oil and Commodity Exporters

## The costs of non-diversification

MAX MARIAN

The African continent is currently undergoing an extreme population boom. According to the UN Department of Economic and Social Affairs, its total population is forecast to double by 2050 (UN, n.d.). With already 3 in 5 current Africans younger than 24 years old, the population growth will increase even further its proportion of young people. For the continent, this represents a huge potential for GDP growth as more people working also usually means more goods are created.

*"African states are commonly considered as a risky place to invest..."*

However, high population growth also often coincides with high youth unemployment, which can contribute to social unrest, which in turn can lead to movements such as the Arab spring. It is hard to predict how the population boom will shape Africa but it will undoubtedly be one of the major drivers of its development. As the lone increase of human capital usually yields diminishing marginal returns, the economists should ask at this point whether physical capital and technology will also increase in availability in the African continent. As such, sustainable development in Africa is dependent on foreign investment to facilitate infrastructure projects.

From 2000 to 2016, the African continent has experienced an average yearly GDP growth of

4.6%, driven by growth in sectors of telecommunication, water, electricity, agriculture, services and resources. Overall the growth in the resources sector, mostly constituted of oil and gas producers, accounted for approximately one third of the GDP growth. African natural resource reserves are abundant and are far from being fully discovered yet, meaning there is still a potential for further increase of quarrying, mining and exporting of commodities. As it is hard to assess the whole of Africa in a single article, this one will mostly focus on oil exporting countries, the economies of which also relate with African exporters of other commodities.

The lack of economic diversification of major resource exporting countries in Africa leads to a strong reliance on the price of, and international demand for these resources. The recent slump of commodity prices and its severe effect on African economies has shown the drawback of an economy which mostly relies on the demand for a single type of good, namely commodities.



*Bouri Oil Platform, off the coast of Libya, the largest in the Mediterranean Sea.*

To understand the economic situation of an African oil or gas exporting country one should consider the interplay of export revenues, the local currency and the other economic sectors. A common scenario, as encountered by

## RATIONALE MT 2018

Nigeria and Angola, West-Africa's two biggest oil exporters, is a substantial increase in the valuation of these countries' local currencies during the times of a high oil price; a strong local currency then reduces the ability of other economic sectors in these countries to export and develop. As a result, exporting more oil at better prices forces the rest of the economy, especially the agricultural sector, to grow very slowly or even recess. For instance, Nigeria's share of world output of cocoa decreased while its oil exports surged (MAFAP SPAAA, 2013).

To support further economic diversification, Africa relies on foreign investments and good state governance to finance and implement deeply needed infrastructure projects. Hence, one of the most important challenges of development in Africa will be political instability as it correlates with bad state governance and represents a risk for investors. Substantial political change will be hard to predict but has some common triggers such as regime change due to a coup d'état, an election, or a health emergency of a leader. According to a report by the CSIS Africa program, common pressures on stability in the continent are the population growth, corruption, rapid urbanization, youth unemployment and climate change.

For the above reasons, African states are commonly considered as a risky place to invest and hence, African institutions issue bonds with high yields to attract investors on the search for high returns. Despite the risks, the flow of foreign capital into Africa went from US\$20 billion in 1990 to above US\$120 billion in 2012. This is an improvement, but far from enough to finance the African continent's development. Nevertheless, in the context of western economies' current addiction to ultra-

low interest rates, African high yield debt becomes more attractive and Bloomberg Economist Mark Bohlund suggests the rising demand for it will again be met in 2018 by Africa's biggest borrowers; amongst which are Nigeria, Egypt, Ivory Coast and Ghana (Bohlund M., 2017). This rising demand indicates that African borrowers would be able to refinance their debt, if needed, through further borrowing. However, investors should be aware that if interest rates rise again in the west (which was a major cause of the African debt crisis in the late 20<sup>th</sup> century (FONDAD, 1992)), African borrowers will not be able to service their debt anymore.

But where does the money go? And will African bond issuers be able to cope with the financial pressure of servicing their high yield debt? These questions reveal the underlying problems of African development. The local authorities' ability to carry out these infrastructure projects is often questionable due to a lack of know-how on their part. Furthermore, African states, the biggest issuers of bonds in the continent, have to navigate between servicing debt both in local and foreign currencies; indeed, they can no longer devalue their local currency to inflate out of their debt issued in the local currency if they need to keep a stable exchange rate with foreign currencies to service the debt issued in these (Bohlund I. c., 2018).

In conclusion, it seems that the development of non-diversified economies in Africa is inherently unsustainable from an economic point of view. Indeed, it seems like the current situation, characterised by many African economies being dependent on commodity prices and in-flowing capital from the west, is shockingly similar to the scenario of the African debt crisis of the late 20<sup>th</sup> century.

*“The development of non-diversified economies in Africa is inherently unsustainable from an economic point of view.”*

## RATIONALE MT 2018

Although African state debt-to-GDP ratios still seem relatively low now, it is probable that interest rates will stay low in the west due to the high US, Japan and Europe state indebtedness, thus sustaining the incentive for investors to accept the risk of African debt, keep lending, and underestimate the risk of a new broad African debt crisis.

### Bibliography

- Bohlund, I. c. (2018). Bloomberg Intelligence.
- Bohlund, M. (2017). AFRICA INSIGHT: Steady Stream of Eurobonds, But No New Entrants. *Bloomberg Insight*.
- FONDAD. (1992). *African debt revisited: procrastination or progress? (Background to the African debt crisis)*.
- Ghana Stock Exchange. (n.d.). *Five year Govt. of Ghana bonds*. Retrieved from gse.com: <https://gse.com.gh/MarketStatistics/five-year-govt-of-ghana-bonds>
- MAFAP SPAAA. (2013). Analysis of incentives and disincentives for cocoa in Nigeria. *Monitoring African food and agricultural policies*.
- Trading Economics. (2018). *Ghana inflation rate*. Retrieved from Trading economics: <https://tradingeconomics.com/ghana/inflation-cpi>
- UN. (n.d.). *Africa*. Retrieved from esa.un.org: <https://esa.un.org/unpd/wpp/Graphs/Probabilistic/POP/TOT/>
- World bank. (2017). *The World Bank in Ghana (Overview)*. Retrieved from worldbank.org: <http://www.worldbank.org/en/country/ghana/overview>
- XE. (2018). *XE Currency Converter: USD to GHS*. Retrieved from xe.com: <http://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=GHS#>

## Quiz #2

4. *What is the Communist-sounding name of the policy advocated by Jeremy Corbyn, that would require the Bank of England to create money to finance government infrastructural investment via a National Investment Bank?*
5. *The phrase "\_\_\_\_\_ " was first coined by Milton Friedman in 1969 when he described dropping money from the sky to illustrate monetary expansion. This phrase is now being used to describe the monetary policy of Japan. Fill in the blank.*
6. *What two Greek words is the term "Economics" derived from? What do they mean?*

*(Answers on page 46)*

# Professor Bernhard von Stengel

## GAME THEORY



*Professor  
Bernhard von  
Stengel is  
Professor of  
Mathematics at  
London School of  
Economics and*

*Political Science. His main research is on mathematical and computational questions of game theory, in particular the structure and computation of equilibria in games. He teaches introductory courses on pure mathematics, computing, optimisation, and game theory.*

### **How would you describe game theory, in your own words?**

The main insight of game theory is that when you model a situation, it is often an interactive situation, so it doesn't only matter what you do, but what others do, and their actions can be more important than yours. For instance, a traffic route. There is a famous story from "Thinking Strategically": In the 1980s, there were two types of printers: a dot matrix printer, which was very cheap, and a laser printer, which was quite expensive. The laser printer is now ubiquitous, and let me tell you why. Laser printers were made by HP, and dot matrix printers by Epson. Epson saw that laser printers were selling for \$1000, and thought that they could make them for \$500. HP responded by lowering prices to \$600, who was still the market leader, and a price war erupted. Ultimately, laser printers became very cheap, Epson failed to profit in the laser printer market, and the market for dot matrix printers

(made by Epson) disappeared. If Epson had realized that this was a game, they would have considered their entry into the market differently, perhaps by pricing their new laser printers more expensively to avoid a price war.

### **Tell us about your research.**

I am a game theorist and mathematician, starting with doing decision theory, which is about mathematical models of how people decide. This research started around the 1950s. I chose this area because the theorems and problems you study are more accessible than pure mathematics, where the main problems have been posed 200 years ago, and you would need to study for three years before understanding the problems at the point of research. Decision theory is a young science, and it is relatively accessible, as the mathematics is not too complicated. I have now specialized in models of a specific problem: my specialty is how to analyse games, the structure of Nash equilibria, and the mathematical structures behind them, which has a lot to do with geometry, surprisingly. What I am doing is very popular in computer science in the form of algorithmic game theory. Equilibrium computation, which is my specialty, is part of it. Another part of it is mechanism design. The LSE course EC319 (Games and Economic Behaviour) has a lot of mechanism design. In mathematics, I teach MA301 Game Theory along with a colleague of mine who is a mechanism design expert. You could take both together!

Through mechanism design, Google makes a lot of its money (60 billion euros a year or something). When you click on advertisements, Google gets money. Firms bid to be first in line, and pay according to their place in the line. They make a lot of money by people clicking on their ads, and it is an auction design problem. This is how it would happen: you don't pay how much you bid, but what the next



## RATIONALE MT 2018

person bids, and the prices then stabilize. This makes things more profitable for Google. This is a variant of the second price auction, by Vickrey. Auctions on telecom spectrums have grossed 100 billion pounds worldwide.

### **What are the other frontiers in game theory research?**

A lot. Market design, of which auction theory is a part. You cannot buy and sell in all markets, some of which will be matching markets. For instance, schools. Students and schools have preferences, and there should be no misrepresentation of preferences. You want to make the outcome efficient. Alvin Roth won the Nobel Prize in Economics for this. He actually talks about kidney exchange. For instance, a patient may have a relative who is willing to donate a kidney, but you aren't compatible. There may be another such pair. But you may be able to swap! And all this should be done in a way to maximize successes. Note that all operations have to take place simultaneously, because donating a kidney cannot be legally enforced. And these markets have constraints.

There are also mathematical questions, some of which are very abstract, such as the existence of equilibria in games such as the quitting game.

### **Are there any books you would recommend for interested students?**

Dixit and Nalebuff, Thinking Strategically (not too hard), Joerg Bewersdorff (Luck, Logic and White Lies) about the Game Theory of Parlor Games.

Why we  
*really* care  
about  
climate  
change  
Consensus,  
the afterlife  
conjecture,  
and value-  
laden lives  
RIDHI THUKRAL



Hurricane Maria strikes Puerto Rico, September 2017.

The WEF's global risks perception survey stated climate-change related issues (extreme weather events, natural disasters, and failure of climate change mitigation and adaptation) as the top problems facing the world<sup>1</sup>. Yet, nation-state unilateralism and widespread public scepticism still plague international discourse. With the 'death of expertise' phenomenon on the rise, it appears rash to take current public accord for granted. In the face of such escalating uncooperativeness, it is, one may argue, imperative to re-examine first principles. Why do we fundamentally, *really* care about climate change? In much existing literature, the badness of climate change seemingly inheres in the fact of the *obligations* we think we have towards people who, through our acts, are caused to exist (or have existences worth living). That is, the issue of climate change has been framed in terms of Parfit's infamous non-identity problem<sup>2</sup>. Yet, this article will appraise an alternate, potentially more nuanced and deep-set, motivation for our concern, quite distinct from

the domain of population ethics. Building on Scheffler's (2013) analytic philosophy, namely the afterlife conjecture, our concern for future generations, one may argue, appears a necessary condition for us to lead value-laden lives here and now. The prospect of humanity's extinction, salient, as the earth's sixth mass extinction is apparently underway, threatens to diminish our engagement with pursuits we value. Our intriguingly primeval, non-particularistic impulse to personalise our relation to the future and conserve what we value could potentially emerge as our biggest reason to take action. First, the fault lines in the current 'consensus' on climate change will be delineated. It will be emphasised that reverting to first principles is consequently necessary. Subsequently, we will sketch Scheffler's account of why, at a very fundamental philosophic level, the existence of future generations matters to us, and as such, relate this to the issue of climate change.

### Consensus Threatened

<sup>1</sup> <https://www.weforum.org/reports/the-global-risks-report-2018>

<sup>2</sup> <https://plato.stanford.edu/entries/nonidentity-problem/>

*"The scepticism that I advocate amounts only to this: (1) that when the experts are agreed, the opposite opinion cannot be held to be certain; (2) that when they are not agreed, no opinion can be regarded as certain by a non-expert; and (3) that when they all hold that no sufficient grounds for a positive opinion exist, the ordinary...[person]...would do well to suspend...judgement"* <sup>3</sup> – Bertrand Russell

"I believe in clean air", Donald Trump recently stated. "I believe in crystal-clear, beautiful water. I believe in just having good cleanliness in all."<sup>4</sup> Almost poetic remarks for a person known to have tweeted that "the concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive"<sup>5</sup>. But this sense of lyrical promise was indeed fleeting, promptly quashed by mention of the "horrible deal" – namely, the Paris Accord.

Trump's bombastic brand of climate change scepticism constitutes a rejection of the 97% consensus. The 97% consensus refers to the decades-long enterprise of scientists reaching a scientific consensus on anthropogenic (originated/caused by humans) global warming. The idea was that an accurate perception of the degree of scientific consensus, in addition to communicating the consensus, would be critical to gaining public support, and indeed motivating calls for appropriate climate change public policy. In a comprehensive analysis, Cook et al. (2013) extended the analysis of peer-reviewed

<sup>3</sup> <https://www.nytimes.com/2017/03/21/books/the-death-of-expertise-explores-how-ignorance-became-a-virtue.html>

<sup>4</sup> <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/feb/01/its-not-okay-how-clueless-donald-trump-is-about-climate-change>

climate (on atmospheric physics, meteorology, geography, marine science, economics, land use etc.) papers to a large sample of scientific literature on global climate change over a 21-year period so as to determine the extent of scientific consensus regarding anthropogenic global warming. Yet, with the rise of populism and anti-establishment sentiment, increasingly fractured discourse escalating mistrust between experts and the populace, and the 'echo chamber' effect, the presumed



US Vice-President Mike Pence at a rally.

connection between communicating the consensus and sparking policy change, seems over simplistic, if not naïve. Assuming that the days of labelling climate change an "expensive" liberal "hoax", or a "canard"<sup>6</sup> are long gone is not only fallacious, but also, frankly, dangerous. Tom Nichols (2017), in fact, notes that Americans are at a point in their public consciousness where ignorance, especially regarding what seems to be viewed as established knowledge in public policy, is increasingly considered a virtue. Rejecting the advice or pronouncements of experts constitutes an expression of autonomy, which seems to go beyond a mere distaste for intellectuals and know-it-alls. Indeed, we are approaching the 'death of expertise'. As such,

<sup>5</sup> <https://www.vox.com/policy-and-politics/2017/6/1/15726472/trump-tweets-global-warming-paris-climate-agreement>

<sup>6</sup> <https://www.vox.com/policy-and-politics/2017/6/1/15726472/trump-tweets-global-warming-paris-climate-agreement>

## RATIONALE MT 2018

Bertrand Russell's conception of the proper attitude of a person towards experts in light of this is an outmoded one.

Many may see this 'death of expertise' pessimism as overdone. Climate change, and the consensus surrounding it, unlike a number of other global issues, is arguably not as subject to outright public opposition as perhaps *indifference*. Nonetheless, with the President of the United States of America announcing his intention to withdraw the US from the Paris Agreement of 2015<sup>7</sup>, and actually submitting formal notice, it would be brazen to take this for granted, to infer rigid law from fragile tendency, and presume climate realism immune from today's tectonic geopolitical, economic, ideological shifts. Indeed, we need to countenance the possibility of renewed public antipathy towards climate change. There may be (and there has been) a new round of denial and scepticism from parts of developed economies afflicted with secular stagnation, intractable demographics, and the depredations of globalisation<sup>8</sup>. From Obama positing action against climate change a national security imperative, to Trump's 'America First' assertion – "I was elected to represent the citizens of Pittsburgh, not Paris"<sup>9</sup> – there appears to have been, not only a discontinuity, but a shift in the way in the establishment is defining environmental concerns that goes beyond indifference.

So how are we to mobilise democratic citizenship to effect transformative, socio-ecological change? Academic literature has tended to partition the debate in the following way<sup>10</sup>. On one hand, there is the 'consensus-

building perspective', which deems the politicisation of climate change as an impediment to climate action. Public engagement is instead fostered through depoliticised strategies (observed, discerned, quantified and managed through science). The alternative, 'critical debate' perspective instead sees depoliticised discussion about climate change as problematic. Politicising climate change discourse activates democratic debate and civic consciousness, inducing action. This article will sketch a potential alternative, based on Scheffler's consideration of the collective afterlife. This alternative considers why we fundamentally, deeply care about climate change. It is by appealing to first principles, and articulating these, that we can find a robust, though latent, motivation to act against climate change – a motivation maybe not totally immune to today's politics, but at least perhaps more resilient. By illustrating that our ability to lead value-laden lives here and now is somehow, if obliquely, contingent on the existence of future generations, we seem to have a deep impulse, as temporally-extend creatures living in the flux that is humanity, to care, and then potentially do something, about the phenomenon that threatens to destroy this.

### **Scheffler, the Collective Afterlife, and Value-Laden Lives**

*"Now we are asked to address the wellbeing of unborn individuals we will never meet and who, contrary to the usual terms of human interaction, will not be returning the favour."<sup>11</sup>*  
– Ian McEwan

Having established that the consensus on

<sup>7</sup> <https://www.reuters.com/article/us-un-climate-usa-paris/us-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM>

<sup>8</sup> <https://www.theatlantic.com/politics/archive/2016/11/trump-s-road-to-victory/507203/>

<sup>9</sup> <https://www.washingtonpost.com/video/national/trump-i-was-elected-to-represent-the-citizens-of-pittsburgh-not->

[paris/2017/06/01/11007d80-4707-11e7-8de1-ccc59a9bf4b1\\_video.html?utm\\_term=.5aadda030f2f](https://www.reuters.com/article/us-un-climate-usa-paris/us-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM)

<sup>10</sup> <http://onlinelibrary.wiley.com/store/10.1002/wcc.405/asset/wcc405.pdf?v=1&t=jdvpxs7&s=ad216f2f70e49e5f1dfa4859649ace511aa5b73c>

<sup>11</sup> [https://www.opendemocracy.net/globalization-climate\\_change\\_debate/article\\_2439.jsp](https://www.opendemocracy.net/globalization-climate_change_debate/article_2439.jsp)

## RATIONALE MT 2018

climate change is susceptible to rupture, we must revert to first principles, excavating and articulating some of our most deep-set motivations to take action against climate change.

In the context of climate change we usually conceive of intergenerational relationships (insofar as we can characterise them as relationships) as asymmetric. We are familiar with arguments along the lines that we are duty-bound to preserve environmental resources for future generations. Scheffler turns orthodoxy on its head, however, with his novel insight that our capacity to lead lives full of valuable pursuits and engagements today, here and now, is intriguingly tied to our confidence that there will be future people (not just our relatives, or close ones) who will live on after we ourselves die. Indeed, the intergenerational relationship under this discourse on climate change, is less skewed. Taking action against climate change is not just addressing “the wellbeing of unborn individuals we will never meet”, but of our own. And McEwan’s comment that “contrary to the usual terms of human interaction” these future people “will not be returning the favour” appears false.

To begin, we must outline Scheffler’s argument: namely, that the question of humanity’s survival after we die affects our ability to live value-laden lives today. Yet, we must also qualify our discussion. First, Scheffler’s account concerns empirical judgement regarding what people will do in various scenarios, and hence is susceptible to verification. Pronouncing the afterlife conjecture ‘right’ without empirical testing appears suspect. So, given his enquiry’s conjectural nature, we will consider its plausibility. Second, Scheffler does not make universal claims. He characterizes *his* attitudes, and the attitudes of others, however numerous, who share these.

Now we can sketch Scheffler’s argument. Firstly, he identifies two seemingly necessary conditions in order for us to lead value-laden lives:

- (1) TEMPORAL SCARCITY: we as individuals, at some point, must die.
- (2) COLLECTIVE AFTERLIFE: other human beings must live on after we ourselves die. Here, ‘afterlife’ is deployed in the idiosyncratic, secular sense of people living on after we as individuals meet our own deaths.

We will examine how our confidence in the collective afterlife affects our capacity to lead value-laden lives.

Simply, a value-laden life is one where we wholeheartedly engage with pursuits we value. Now, valuing, as a phenomenon, comprises a “complex syndrome of interrelated attitudes and dispositions” (Scheffler, 2013: 16). Here are some defining characteristics of valuing. Firstly, things apart from our individual experiences matter to us. So, valuing is *non-experientialist*. Further, valuing is *non-consequentialist*: we do not always want the best consequences to obtain. Finally, valuing is conservative; there seems to be somewhat of a conceptual connection between valuing something and desiring its preservation. Now we can proceed to see how our confidence in the collective afterlife affects this attitudinal phenomenon of valuing.

Scheffler’s rudimentary argument is as follows. We engage with pursuits we value, when we live a value-laden life. At the prospect of no collective afterlife (or, humanity’s extinction), our engagement with pursuits that we value diminishes. This is the afterlife conjecture. Yet, intriguingly, our engagement with said pursuits does not diminish at the prospect of

## RATIONALE MT 2018

our own individual deaths. So, in some specific and significant respects, the collective afterlife matters to us more than our own individual deaths.

Consider a specific scenario of humanity's extinction: namely, doomsday. Say, you know that although you will live a normal lifespan, the entire earth will be annihilated 30 days after your death due to an asteroid collision. Now, ascertaining exactly *which* pursuits' value would diminish given this doomsday scenario is difficult, and we must acknowledge people will react differently. Nevertheless, here is an approximation to a plausible response. Engagement with instrumental projects with practical aims, such as cancer research, may diminish. Since projects' ultimate success would be well into the future, and projects are valuable insofar as they seem to benefit a large number over a long time period in the future, it may seem less worthwhile to engage with such pursuits. The effect of doomsday, however, becomes increasingly ambiguous when it comes to "creative and scholarly projects" (Scheffler, 2013: 25). Although not always goal-oriented, such projects are often undertaken to reach an actual/imagined future audience. Would such projects be worth undertaking? Possibly, though not *surely*.

We can discharge a preliminary objection here. Surely activities like listening to Beethoven, or reading *Hamlet*, would not lose value, because pursued *for their own sake*, or in a 'carpe diem' spirit. The key point is, many humanistic endeavours and artistic activities are valuable to the extent that they provide internal individual creative fulfilment. Yet, Scheffler's modest point remains intact. Due to doomsday, *many things* that previously



A Quidditch match underway.

mattered to us no longer would. This does not imply nothing would matter, nor that the concept of valuing would disappear. Rather, our ability to confidently, assuredly apply the concept would be undermined, and the *breadth* and *variety* of activities formerly deemed worthwhile reduced. "The realm of value, for us, would shrink dramatically", and our ability to lead value-laden lives compromised (Scheffler, 2013). In addition, even though we may consider such creative pursuits as intrinsically valuable, and not necessarily goal-oriented, there is something to be said for the way in which such activities are diachronically important. That is, they are key installations in the temporally extended flux of ongoing, collaborative, creative, human enterprise.

Having established that the, melancholic yet gratifying, experience of reading Edward Thomas need not be immune from the diminished value heralded by the prospect of humanity's extinction, here is why the afterlife conjecture appears sound. On the one hand, our individual deaths are problematic for our *conservatism* about value. Death destroys our capacity to *preserve what we value*. A banal observation. So, Scheffler poses, we participate in group-based activities (ranging from the

## RATIONALE MT 2018

superstructures of religion, cults such as the KKK, to ostensibly trivial *Quidditch* tournaments), becoming custodians of what we value, exercising efforts to ensure the future survival of what we value. On a micro scale, we can see this impulse to preserve what we value with the patrilineal tradition or primogeniture. On the other hand, death further poses a grave problem for our relationship with time. We wish to *personalize our relation to the future* (so that the future seems less alien, forbidding, and empty). Yet, for much of the future we will be dead. So, we build valuable personal relationships. After death, given we predecease some loved ones, we can conceptualize the future with reference to an ongoing social world where we retain a social identity. Doomsday destroys our belief in the collective afterlife, depleting motivations to preserve what we value and personalize our relation to the future by engaging in group-based activities and social relational pursuits, as this no longer seems possible. Hence, if we believe the prospect of humanity's extinction, our ability to lead value-laden lives would be, to some extent at least, compromised. Not only would our conservatism about value be upended, but also our ability to personalize our relation to the future undermined. Thus, the afterlife conjecture seems, broadly, sound.

Yet, this substantiation of the afterlife conjecture may mislead in implying only certain people's/groups' survival matters. That is, that our concern with the collective afterlife is derived from a particularistic concern with our relationship with a specific people 'x', or conservatism about a specific (aesthetic) sensibility, 'y'. But we have already seen why this is not necessarily the case. In the cancer research example, pursuing research would not seem less valuable to a scientist simply because doomsday involves specific loved ones'/traditions' premature death. That is, it is important to emphasise, and appreciate, that

bafflingly, our concern for the collective afterlife is not merely *particularistic*.

This is better illustrated by another thought experiment: namely, the infertility scenario. As per P.D. James' *The Children of Men*, humans have become infertile, and humanity as a result faces imminent extinction (within the next generation) as the final generation born begins to die out. Here, no one necessarily dies prematurely. Nonetheless, James envisions universal negativism, eroded institutions, impaired solidarity, environmental decay, and diminished engagement with valued pursuits (Scheffler, 2013: 40). In addition to goal-oriented projects, creative projects, and traditions, engagement with activities such as visual arts appreciation, knowledge acquisition, and appetitive pleasures, is diminished. What is key, in this speculative exercise, is not questioning James' literary authority, nor exhaustively listing activities whose value would diminish, but acknowledging there would plausibly be diminished engagement with formerly valuable pursuits. That is, the sphere of valued pursuits would shrink. It is notable that is not one's own death exerting this depressive effect on our motivations (our own individual deaths are indeed deemed *necessary* to leading value-laden lives), neither particular loved ones'/groups' either. Rather, the nonexistence of *indeterminate future* people undercuts our ability to lead value-laden lives. The "coming into existence of" strangers seemingly, intriguingly, "matters to us more than our own survival and the survival of the people we...love" (Scheffler, 2013: 46). Unprecedented stuff.

Hence, using Scheffler's two thought experiments, our belief in the collective afterlife appears a non-particularistic condition of our engagement with valued pursuits, and ability to lead value-laden lives. That our ability to lead value-laden lives here and now is seemingly so intertwined with the

## RATIONALE MT 2018

(non)existence of indeterminate future humans is a deeply revealing insight into the human condition. The prospect of humanity's extinction compromising our capacity to lead value-laden lives (and hence find meaning) is *plausible*. That "this World is not Conclusion./A species stands beyond - /Invisible, as Music" (Emily Dickinson) is apparently necessary to us as inherently conservative, temporally extended creatures.

### From Consensus to the Human Condition

*"Thus self-preservation, and the propagation of the species, are the great ends which Nature seems to have proposed in the formation of all animals...Love of life...dread of dissolution...desire of the continuance and perpetuity of the species, and with an aversion to the thoughts of its entire extinction"* – Smith, *The Theory of Moral Sentiments*

The climate change consensus is fragile. As such, we seek more resilient *first principles*, or more deep-set rationale, for action against climate change. The 'first principle' this article has explored and recommended is Scheffler's philosophic insight: our ability to lead value-laden lives here and now is contingent upon the existence of a collective afterlife. Yet, we need to continuously articulate these, and a number of other, deep-set motivations, facets of the human condition, in order to ensure action against climate change is robustly founded. Perhaps, "without in the least teaching it [viz. human reason] anything new, we only, as did Socrates, make it attentive to its own principle."<sup>12</sup>

### Bibliography:

1. <https://www.weforum.org/reports/the-global-risks-report-2018>
2. <https://plato.stanford.edu/entries/nonidentity-problem/>

3. <https://www.nytimes.com/2017/03/21/books/the-death-of-expertise-explores-how-ignorance-became-a-virtue.html>
4. <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/feb/01/its-not-okay-how-clueless-donald-trump-is-about-climate-change>
5. <https://www.vox.com/policy-and-politics/2017/6/1/15726472/trump-tweets-global-warming-paris-climate-agreement>
6. <https://www.vox.com/policy-and-politics/2017/6/1/15726472/trump-tweets-global-warming-paris-climate-agreement>
7. <https://www.reuters.com/article/us-un-climate-usa-paris/u-s-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM>
8. <https://www.theatlantic.com/politics/archive/2016/11/trumps-road-to-victory/507203/>
9. [https://www.washingtonpost.com/video/national/trump-i-was-elected-to-represent-the-citizens-of-pittsburgh-not-paris/2017/06/01/11007d80-4707-11e7-8de1-ccc59a9bf4b1\\_video.html?utm\\_term=.5aadda030f2f](https://www.washingtonpost.com/video/national/trump-i-was-elected-to-represent-the-citizens-of-pittsburgh-not-paris/2017/06/01/11007d80-4707-11e7-8de1-ccc59a9bf4b1_video.html?utm_term=.5aadda030f2f)
10. <http://onlinelibrary.wiley.com/store/10.1002/wcc.405/asset/wcc405.pdf?v=1&t=jdvpxs7&s=ad216f2f70e49e5f1dfa4859649ace511aa5b73c>
11. [https://www.opendemocracy.net/globalization-climate-change-debate/article\\_2439.jsp](https://www.opendemocracy.net/globalization-climate-change-debate/article_2439.jsp)
12. Bielefeldt, H. (2003). *Symbolic Representation in Kant's Practical Philosophy*. Cambridge University Press

## Quiz #3

7. *This individual served as a civil servant in the India Office, but became bored and returned to Cambridge in 1908 to continue his work on probability theory (he had graduated with a maths degree from Cambridge). His first publication came in 1913, and was titled Indian Currency and Finance. Who is this individual?*

*(Answers on page 46)*

<sup>12</sup> Bielefeldt, H. (2003). *Symbolic Representation in Kant's Practical Philosophy*. Cambridge University Press



## Find the Economist!

L	L	L	N	E	S	R	E	M	M	U	S	R	O
N	U	O	R	O	B	I	N	S	O	N	S	C	S
S	E	N	Y	E	K	L	T	N	E	A	I	E	T
S	H	R	L	T	S	U	P	S	L	E	S	C	R
B	O	R	L	S	M	O	M	B	Y	T	I	N	O
T	P	P	A	K	E	R	L	O	F	I	E	I	M
S	T	A	R	R	O	W	P	R	N	S	N	O	T
B	N	O	S	M	I	T	H	Y	E	L	L	E	N
L	K	B	N	K	Y	T	T	E	K	I	P	T	H
A	N	I	B	O	T	E	H	A	A	O	I	S	A
Y	U	A	S	S	A	M	U	E	L	S	O	N	Y
S	E	R	R	E	T	E	P	M	U	H	C	S	E
S	T	I	G	L	I	T	Z	O	S	E	N	T	K
N	L	R	S	F	E	M	K	U	K	B	I	E	N

1. Famous macroeconomist everybody knows. His old house is a two-minute walk from Passfield. (6)
2. Wrote the 'theory of moral sentiments' in 1759; arguably not his most famous work. (5)
3. This economist and philosopher gave his name to the Economics Society club you should be attending. (3)
4. He represented LSE in the intellectual battle vs. (1) in the 1930s (and in the rap battle you have probably seen). (5)
5. Married to (6), he has a strangely strong interest in second-hand cars and citrus fruits. (7)
6. She is the first woman to have been Chair of the United States Federal Reserve. (6)
7. Popularised the theory of 'creative destruction'. (10)
8. Wrote *Foundations of Economic Analysis*, arguably redirecting economic study towards mathematics. (9)
9. His "impossibility theorem" is central to social choice theory. (5)
10. Former Chief Economist of the World Bank and Director of Obama's National Economic Council, he is the nephew of both (8) and (9). (7)
11. The only woman to win the Nobel Prize in Economics till date, she is known for her work on the commons. (6)
12. Nobel Laureate famous for his criticism of international institutions like the IMF and World Bank, he used to be the chief Economist of the latter. (8)
13. Another Nobel Laureate known for pioneering contributions to the study of investment, famous for his  $q$ . (5)
14. Economist famed for his best-selling book where he discusses repercussions of  $r > g$ . (7)
15. A central figure in post-Keynesian Economics, she taught both (3) and (12). (8)

(answers on page 46)

# Dr Johanna Thoma

## PHILOSOPHY OF ECONOMICS



*Dr Johanna Thoma is Assistant Professor at the Department of Philosophy, Logic and Scientific Method at the London School of*

*Economics. Her main research is in practical rationality and decision theory. She is particularly interested in questions of rationality over time, and in the context of uncertainty, and also works on ethics and the philosophy of science, in particular the philosophy of social science and economics. She lectures PH311, the Philosophy of Economics module for undergraduates.*

### **What are the big questions the Philosophy of Economics tries to answer?**

Broadly, you can split the Philosophy of Economics into three different kinds of branches. So one is methodology, where you discuss the methods economists use to find out about the world, and whether they are adequate for finding out about the world. Their core questions are to do with how we can learn from idealised models, for instance. The second big part of the philosophy of economics is to do with decision theory and rationality, and mostly what I'm working on right now is on those questions. Then there's ethics and economics broadly construed, and there is a ton of stuff there – some of it is kind of continuous with welfare economics and

*"In decision theory you think about questions from your everyday life..."*

normative economics, some of it is about the evaluation of economic institutions, such as markets, and then you usually also put in there when people use methods from economics in moral philosophy. For instance, I've worked on using game theory and social contract theory.

### **Why do you specifically enjoy the Philosophy of Economics and your research?**

I think I first got into philosophy of economics because I was studying as an undergraduate both philosophy and economics and I had so many questions about what the terms mean that economists use - like, what really is utility? I wasn't really getting answers to those questions from my economics tutors. And so, I wanted to explore that more by myself. Then I discovered this area of philosophy of economics. It's nice to be working on something where you have a constant input, and object of study. You look at economic practice, and there's always new things to discover in what economists are doing. So that makes it a bit more straightforward than other fields of philosophy where you're just tapping in the dark. I love decision theory just because it's so applicable to your everyday life. I'm working on questions to do with repeated risk-taking, and those are things you just ponder everyday as you're commuting to work. I used to cycle in Toronto where it was very dangerous, and so you wonder, it doesn't feel so dangerous on one day. But you look back over the last four years, there was actually significant chance for you to have a big accident, or something. So in decision theory you think about questions from your everyday life and I really enjoy that.

### **What are some current questions at the frontier of philosophy of economics research?**

## RATIONALE MT 2018

So, in all three branches a nice development is that there's a lot of overlap in what economists and philosophers are interested in than there used to be. In my area, people are starting to think a lot more about where preferences come from. They used to be just taken for granted; but really, they are formed in response to some sort of underlying concerns that we have. Will I prefer one good to another, and will I do it because of the characteristics it has - and so how does my attitude to those characteristics relate to my overall preferences? Economists are working on it and philosophers as well. Some of my own work is on this observation that preferences really are formed from underlying attitudes; what does that mean for the standard axioms of rationality, for instance?

### **What are some introductory texts you would recommend for the Philosophy of Economics?**

On the more ethics and economics questions, there's actually a new edition out, the Hausman – *Economic Analysis and Public Policy* – and that's very accessible to undergrads on the ethics questions. There's only really one on the methodology side, a textbook, Julian Reiss' *Philosophy of Economics*. I think that does a pretty good job of introducing some of the basic questions on methodology. For a long time in methodology people were talking about the very simple theoretical models such as Akerlof's market for lemons, but really there's so much more to economics, there's empirical work, there's macroeconomics – and I think methodologists are now catching up to that. Maybe one important figure in thinking about macroeconomics is Kenneth Hoover – he's got a series of lectures called the *Philosophy of*

*Empirical Macroeconomics*, and he's very accessible to undergrads if you want to broaden your horizons.

### **What is your view of the claim that philosophy is not a social science?**

Philosophy is not a social science, but the way we do philosophy here in this department is quite integrated with the sciences. Some work on natural sciences, a lot of us work on philosophy either of some social science, or that's involved with the social sciences. I think philosophy can enrich the study of social sciences because it makes you better at constructing arguments which you have to do when you study social science, but it also makes you think more critically about the basic concepts that you're working with, what they really mean, whether they are the appropriate concepts, or whether you're using the most appropriate method for studying your topic of choice. In the other way around, the social sciences can enrich philosophy in that our arguments are going to be better empirically informed. We get a lot of the subject matter of our work from the social sciences, because we want to do work that is socially relevant. For instance, right now I'm trying to figure out what some of the things I've written on repeated risk-taking would mean for applications in the precautionary principle which is a legal principle or principle for public policy decision-making; and so it helps us do philosophy in a way that is more socially relevant.

### **What are some highlights of the Philosophy of Economics module taught at LSE?**

All of the topics have some sort of relation to what economists themselves think about, and

## RATIONALE MT 2018

the students might have encountered in their own study of economics. It is a very appropriate course to take for someone who is studying economics. I find all the topics kind of exciting – what students find most interesting might not overlap with what I find most interesting. Some of my favourite topics are measurement, for example measurement of inflation, because it's something where it seems so surprising to find out how central value judgements are to measuring inflation and how bound our measures of inflation are with highly idealised economic theory and how many problematic methodological choices are being made, or have to be made if you want to measure something like inflation. I found that really surprising – that's why I enjoy the topic a lot. I think one topic the students find interesting, and it's also one of the hot topics of philosophy of economics is performativity, the idea that sometimes the introduction of an economic model might cause the world to fit the model more closely. That there's a kind of self-fulfilling prophecy element to some economic models. That's interesting as a phenomenon, but it also raises questions about the objectivity of economics as a science. I think students find that interesting. I'm trying to give equal weight to the different branches of the philosophy of economics. My experience is that it is harder to make methodology exciting to students, that's why I try to link it to current debates in economics. The whole first half of the course is methodology. There's a bit of rationality and decision theory in there, so that is questions of how to interpret decision theory. The whole second half of the course is on ethics and economics both welfare economics as well as the evaluation of economic institutions. This year I

added a week on taxation – that's an instance where we morally evaluate economic institutions and markets. I try to tie things together at the end by discussing facts and values in economics and whether we can so neatly distinguish between positive and normative economics as economists claim we can, which is surprisingly difficult.

## Quiz #4

8. *While working towards his PhD in mathematics, this individual recalled the only economics course he had taken, as an undergraduate at Carnegie, an international economics elective. In his 28-page thesis, he proved the existence of a ground-breaking concept, which is fundamental to modern economics. He also has an "embedding theorem" in mathematics named after him. Who?*
9. *What is the MONIAC Computer? Its inventor is from New Zealand, and a former crocodile hunter. Its full name is the Monetary National Income Analogue Computer.*
10. *This award is given to an American economist under the age of forty, or rather, an economist working at an American university. It is considered the second most prestigious prize in economics after the Nobel. Only one LSE PhD student has received this prize. This individual is originally from Turkey, and did the MSc in EME at LSE as well. Name the award and the individual.*

*(Answers on page 46)*



## Exchanging sanctions Problems of using economic tools in foreign policy

EDGAR AKOPYAN

Historically sanctions and embargos have emerged as one of the most favourite instruments of diplomacy. After one of the coalition wars, Napoleonic France dragged Russia into the Continental blockade of Britain. Meanwhile, the American Congress passed Embargo Act in 1807 that sanctioned trade with both Britain and France. While sanctions became less frequent in the next hundred years, partly due to free trade advanced by British Empire, the second half of the 20th century has brought a string of US sanctions against North Korea, Cuba, Syria, Sudan and Iran as well as targeted sanctions

*“The main economic issue of sanctions is that they can easily be avoided. Other countries can step in and help the trade to go on.”*

against individuals from many states. Economic sanctions are not relics of the past—they are still popular today. Since 2013, Russia and the West have repeatedly exchanged sanctions. After the Crimean annexation, the US and other Western States created targeted sanctions- lists of individuals in the Russian government that the US deemed to be the primary troublemakers. This was later extended to include financial institutions and other businesses; Western sanctions have contributed to problems faced by many banks like Vnesheconombank- one of Russia’s largest banks- and others. Following that, as a measure of ‘proportional response’, the Russian government responded with sanctions

on the West's agricultural imports. A question naturally comes up: do sanctions work?

Before going on with this question, the author would want to iterate: this article is not political. It does not seek to address the issue whether the West is right in pursuing pro-Ukrainian policy or whether Russia is wrong in its Ukrainian strategy. The aim is more technical: given that those actors have such goals, have sanctions been useful as a tool securing achievement of such goals.

### General discussion of economic sanctions

Traditional rationalist reasoning would make one think that sanctions should indeed work. If a stronger state forces economic hardship on the weaker one (or the economically smaller one), the cost-benefit analysis would mean that at some point economic losses from sanctions would be high enough to make the weaker state more perceptive to concessions. Does this work empirically? The short answer is often no, and there are good reasons for that - both political and economic. The main economic issue of sanctions is that they can easily be avoided. Other countries can step in and help the trade to go on, and those are often allied states.

In the book "Busted Sanctions", Early puts forward two simple mechanisms of avoiding sanctions: (1) the sanctioned country can either continue the trade with the sanctioning state via so-called "sanction busters" or (2) the sanctioned country can be significantly supported by another major state that can help to offset the problems brought by the sanctions. Examples of the last type of nations are Cuba and North Korea that have been supported by erstwhile USSR and China

respectively. The first approach, however, is more interesting as its findings are more unexpected. When it comes to trade busting of the US sanctions the most striking result of Early was that US allies were the ones that were more likely to engage in commerce that would undermine US sanction efforts. Thus, countries like the UK, Italy and Germany would be one of the reasons why US sanctions fail. Indeed, many democracies engage in the busting activity- Japan has done it 328 times, France 164 times and even India has undermined sanctions by trade 45 times.

One might think that financial sanctions coupled with targeted sanctions would fare better than traditional economic ones. However, there is an issue here as well.

*"If targeted and financial sanctions limit options, they can endanger the chances of developing democracy in a state."*

Autocracies that are isolated from global financial markets create more incentives for elites to preserve the authoritarian nature of the regime. Freeman and Quinn in "Economic Origins of Democracy Reconsidered" put forward the argument- financial integration helps to

transform autocracies into democracies by providing an exit option for elites. In financially open countries, as inequality rises, the cost of holding social unrest at some point becomes too high, and the elite can choose to move their money out of the country and allow democratisation. Otherwise, if such option is not possible, the elite will be willing to spend more money to uphold the existing structure. If targeted and financial sanctions limit those exit options, they can endanger the chances of developing democracy in a state.

### Application to Russia/West sanctions

An article in the NATO Review by Edward Christie, NATO's defence economist, argues that sanctions have been successful in hurting

## RATIONALE MT 2018

the Russian economy while presenting no immediate problem for Western economies. The article also cites that unity behind sanctions by Western governments shows common commitment and signals which parties are to be blamed for the conflict.

However, while it asserts that damages have been done, it does not show how much. Indeed, this is excruciatingly difficult to show because parallel to sanctions oil prices fell and those had an enormous effect on the Russian economy. Christie confirms that sanctions have helped to exacerbate the macroeconomic problems already faced by Russia. While there is little evidence of trade busting of sanctions, partly because most Western allies were united on the issue, such analysis seems to suggest that rather than substantially hurting Russia's economy, sanctions just took advantage of the conditions. The marginality of sanctions was reflected in Citibank's Chief Economist on Russia and CIS claim that in 2015, 90% of Russia's economic hardships come from falling oil prices rather than sanctions. Vladimir Osakovsky, BAML chief economist in Moscow, agrees in his New York Times interview- sanctions affect debt and equity but do not impact GDP or living standards of the population. Moreover, as part of the effect of sanctions was based on the complicated macroeconomic situation, rising oil prices and growing GDP made them even less effective.

Record of Russian anti-Western sanctions has also been weak, to say the least. While RT has reported about the sufferings of European farmers, the poorer parts of the Russian population were probably hit harder than Western farmers. According to the Russian Federal Statistical Service, the price of the minimal food basket was approximately 3500 roubles in August 2015 compared to 2500 roubles in August 2014 (for comparison: it took two years before for prices to rise by 500

roubles). While not all of the increase is the result of sanctions, increase in food prices have contributed to falling standards of living. Government statistics show 15% inflation for food in 2014 and 14% in 2015. Among the leaders were meats which rose by some 20% in 2014, along with beans (34%), sugar (40%), sausages, cheese and fish (all 18%). Such inflation would hit the poorer population heavily as some, like pensioners, have seen their income growth frozen. Meanwhile, the decision by Russian authorities to destroy illegally imported sanctioned food has been met with resentment among many sections of society.

However, when one looks at sanctions, one needs to consider its political effects, not just economic ones. After all, the primary aim of sanctions is to force some political concessions- economic mechanism has been one of the fundamental tools. When one looks at political effects, the record of sanctions has been even more dismal. Cutting trade sanctions are effectively removing long-term links between countries and hence decreasing potential future influence. Leonard and Kravtsev were anticipating this problem in their 2014 paper "The European Disorder"- the year that sanction exchange officially began. They have argued that sanctions have undermined the pro-western part of the Russian elite. Sanctions isolate Russia generally, allowing the government to pursue policies that are more clearly guided to autarky and self-reliance. The article warns that sanction regime can bring around a "Fortress Russia" which is precisely what the Russian government wants. According to a former adviser to the Russian Prime Minister, the sanctions have already contributed to the increase in power of hardliners and marginalised "friends of the west".

However, even if sanctions were that effective, a question needs to be asked: was the goal of

sanctions to merely hurt the Russian economy? The answer is that the primary purpose of sanctions against Russia was to force Russian government to return Crimea to Ukraine and end the support of separatists in Donetsk and Lugansk. Has this happened? No. At this point, it seems that sanctions are primarily a symbolic act and have not helped to achieve any substantive political compromise.

## Economics, Race and Gender Today

### Are we studying what's important?

EOIN MCCORKINDALE

In 1849, Economics was called 'the dismal science' by Victorian Historian Thomas Carlyle. The term persists today, and is often used to mock the supposed lack of rigour of economics compared to other sciences. However, the origins of the phrase are entirely different. The quote comes from Carlyle's infamous essay, 'Occasional discourse on the Negro Question'. What motivated Carlyle was an attempt to reintroduce slavery into the West Indies. Every other academic field had convenient excuses for colonialism, but economics, particularly the views of Adam Smith, were resolute: everyone freely making decisions about how to work and consume was both more efficient and more moral.

More recently, we find a very different image of economics. We find a narrow, exceedingly technocratic profession, who would seem to act as though the most pressing issue to the welfare of humanity was assessing the general applicability of the Modigliani-Millar theorem. Perhaps this was motivated by an attempt to

gain a seat at the political table, or maybe the profession couldn't reliably stand up to injustice because it was so internally homogenous. In any case, this left economics on the side-line of some of the most pressing political issues of the 20th century.

Fortunately, this criticism however is becoming increasingly outdated, as economists are finally realising the relevance of race to economic activities. Economists are finally willing to bring their expertise to the actual problems that had been concerning everyone else in politics, the problems of social injustice.

The most recent meeting of the Allied Social Science Association (ASSA), one of the largest meetings of economists in America, and a bellwether of academic interest, had a larger than ever representation of economics papers that took race seriously. This included papers that assessed whether race was relevant to the effects of 'right to work' laws (laws banning union formation), and 'ban the box' laws (laws

*"While theorems about debt-equity ratios are important, they are almost certainly not the places in which the returns to human interest are highest."*

prohibiting employers to enquire about an employee's criminal record). There were even seminars with less headline grabbing topics - one paper refashioned a famous experiment that showed a lower rate in interview offers to otherwise identical applicants with traditionally African-American names, to look at Native

American and Pacific Islander groups, whose discrimination is not as widely publicised. Another paper assessed whether job creation policies in the Trump administration adversely affect highly educated black women, compared to other similarly educated groups.

This trend has important ramifications. Firstly, the timing and scope of this research shows that the economics profession has meaningfully changed. This change coincides with the 'Gender revolution' in economics,



## RATIONALE MT 2018

started by Alice Wu's paper on misogyny among economics graduate students, which started a wave of research and debate over women's representation in the profession and the importance of gender in the workplace. The fact that these two trends are happening at the same time, as well as the fact that not all of this research is necessarily related to hot-button political issues, shows that this has been caused by a structural change in both the make-up of the profession, and the way the profession thinks (or is willing to think) about social structures.

Secondly, this means that a greater amount of academic interest is put towards the pressing issues facing humanity. While obscure theorems about debt-equity ratios are undoubtedly important, they are almost certainly not the places in which the returns to human interest are highest and therefore not the only thing we would like the attention of our best and brightest to be directed towards.

This trend is not universally well received however. With it comes charges from both

inside and outside the academy of 'economic imperialism', that is, the idea that the economics profession is stealing the research topics of other fields, notably sociology and social anthropology. This criticism is mostly misguided. Since these are such important issues, political and otherwise, we should welcome more academic scrutiny into them, from as many perspectives as possible. Moreover, since economics is a positive science, it uses methods vastly different from those used in fields like sociology and anthropology, and therefore isn't 'crowding out' other possible research on the topics.

So, we should welcome the fact that the economics profession is catching up with the rest of academia, and devoting more of their attention to some of the most pertinent political issues facing society today. Our celebrations shouldn't be entirely positive – studies still show economists are on average less willing than any other field to cite outside their discipline, and they are less willing to engage in interdisciplinary research. Progress is promising, but as always, is slow and must be fought for.



*A segregated drinking fountain in Halifax, North Carolina, in 1938.*

## Dr Francesco Nava GAMES AND ECONOMIC BEHAVIOUR



*Dr Francesco Nava is Assistant Professor of Economics at the London School of Economics and*

*Political Science. He is also the Program Director for the MSc in Economics. His research interests lie in Economic Theory, Social Networks and Industrial Organisation. He lectures in the auction theory part of EC319, the undergraduate module on Games and Economic Behaviour.*

### **In your own words, please explain game theory and auction theory, in such a manner that a layperson could understand.**

Game theory is the study of strategic behaviour – how people should behave in environments where their actions affect others. There are different questions that can be answered, and many possible applications. It is also interesting to check whether individuals actually conform to the preference representations and the equilibrium models that we prescribe, in a positive and in a normative sense. As to auctions: Auction theory is a major subfield of game theory that has been very fruitful in terms of academic research and the private sector applications. Many of your peers have developed successful careers in auctions consulting, working on public procurements auctions as well as securities auctions – looking both at bidding strategy and at auction-design (no matter what the objective of such a design may be, say: maximising revenue, well-being, or any

other objective). In my part of EC319, we look at the fundamental, theoretical part of auctions. It is an advanced course, but we go hand-in-hand, so that students can become masters! The theory is important, because even when one thinks about estimating a model, one can exploit game theoretic predictions to identify a distribution of values to determine bidding strategy and expected revenues. Theoretical predictions can thus be of interest to those wishing to work on auction consulting, as they allow you to obtain sound estimates which can then be applied to recommend auction design or bidding strategy, or whatever else.

### **We'd like to know about your research in these fields, and microeconomic theory in general.**

I don't quite work on auction design, but I'm quite interested in pricing and game theory. I'm a theoretical economist, and my research is mainly about pricing. For instance, I'm interested in strategic pricing in big, decentralised markets (where geography and market structure matter) or in the pricing of durable goods and product lines. A classical result on durable goods pricing is the Coase Conjecture, which establishes that a

*"The notion of being in competition with one's own self is well-documented."*

monopolist selling a durable good must lose all of its market power, because of competition by future selves which are willing to lower prices and because of buyers' anticipation of future price reductions. In a recent piece of work with my colleague, Dr Schiraldi, we establish that such a classical result fails and we identify the monopoly pricing strategy when the seller can trade a product line, consisting of several varieties of

## RATIONALE MT 2018

the same product (for instance, different types of phones, or computers, or cars). In a companion project, we also show that surprisingly competition must increase market power in durables goods markets when the products sold are suitably differentiated. This has important implications for antitrust authorities, who should be aware that when goods are durable, one should scrutinise even competitive markets.

### Could you give an example of such a case?

Well, there are several papers establishing that market power can erode in durable goods monopolies. The notion of being in competition with one's own self is well-documented. There is evidence that firms are aware of this. For instance, it has been noted that recently, a firm was lowering the quality of its older varieties, so that people's willingness to pay would increase for newer varieties. Further, there is evidence that firms exploit product differentiation to gain market power (in the smartphone market for instance).

### What about stuff other than your research?

If we think about economic theory, one of the topics that is "hot" right now is information design. There has been a recent wave of research about trying to establish how one could design information structures to benefit in a game. Say, for instance, a question we could ask is how much should a buyer learn about their value (or willingness-to-pay), when trading with a seller. There are of course many other applications. The flavour is similar to mechanism design; the model is nice; and we can characterise equilibrium payoff sets nicely. It can be applied even to empirical settings to test phenomena when we are uncertain about

the information structure. So, this is a theoretical topic that is publishing a lot of catchy work recently. There is a lot of development in behavioural economics, such as in psychological games.

### How would you test your theoretical results?

Economists often work with strong solution concepts, such as Nash Equilibrium, that impose very stark assumptions, such as rational expectations. These may be good for stable environments, but not for non-stable ones. People need to be a bit cautious, as a result. Being a theorist, once I have made assumptions with which I am comfortable (which may involve less stringent solution concepts), I would go with some structural estimation of the model. I would bring the model to the data, make sure I'm well identified, and then estimate it (possibly with a flexible estimation strategy). On the other hand, one can also start with reduced form approach to check whether the key phenomena documented hold, before proceeding to a more structural approach. But the interpretation of results would have to be more cautious then. Alternatively, RCT or experiments could be used, these are great for internal validity, but may suffer from external validity concerns. My words of wisdom are to be flexible with this. Have the question you are pursuing and the data you have access to speak to you, rather than forcing the data to fit with the model you chose to begin with.

*"Don't shy away from challenging courses."*

*"If we think about economic theory, one of the topics that is "hot" right now is information design."*

**What would you recommend vis-à-vis economics books?**

A great Decision Theory book is "Notes on the Theory of Choice" by Kreps. It motivates many of the classical preference models through very sensible axioms, and shows why economists are keen on such theories. I even bought the book for my mother. As to other economics books, don't limit yourselves; you should be able to take on any topics. Look at textbooks, such as Myerson's Game theory book, it is a fantastic, and if you want to push the envelope, look at it. Schelling is a good introductory level book for Game Theory; many brilliant ideas, but not all of these formally developed; it is intuitive rather than quantitative. It is a more relaxed read.

**What advice would you give to incoming economics students/those who wish to advance?**

Keep challenging yourselves. Choose materials over grades. Don't shy away from challenging courses, you will have the opportunity to learn more in smaller class groups (which is the case for tricky courses). Try to do some independent research or to work as a research assistant work. That can be valuable if you are thinking to get into a good masters, or into a research career whether this be in academia, in the private sector, or in government.

## Quiz #5

11. *This publication has described itself as "a product of the Caledonian liberalism of Adam Smith and David Hume." Some of its columns are named after a 19th century British constitutional expert, an early Middle Ages era emperor, and a type of tree found in the Indian subcontinent. Which publication?*
12. *Which entity's "board" sits in Washington DC, and has "branches" in Boston, New York, Philadelphia, Richmond, Cleveland, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas and San Francisco?*
13. *X is an important commercial centre in Italy, with lots of shops, warehouses as well as banks and insurance agencies. It is mentioned repeatedly in Shakespeare's "The Merchant of Venice". Identify X.*

*(answers on page 46)*

# The Search and Match Theory

## Navigating the Modern Economy

CHRISTOPHER DANN

So far, Uber riders have taken 5 billion trips since its inception, with 50 million riders being chauffeured by 7 million drivers in over 400 cities<sup>1</sup>. There are approximately 1.6 billion Tinder swipes every day, with 20 billion overall matches across 196 countries<sup>2</sup>. More than 200 million guests have been hosted by 4 million Airbnb listings worldwide<sup>3</sup>.

There is no doubt that the ability to match consumers and producers, demand and supply, of various services, even outside the marketplace regarding Tinder, has proliferated at staggering rates. Yet, while a lot of media attention has been paid towards the 'gig economy', academic scrutiny has been directed towards something much more theoretical – the 'search and match' theory.

The concept of 'matching' has been around for a few decades now in economic circles, with its real-life applications to the economy only starting to materialise. This has undoubtedly been made possible due to rapid technological innovations, which have given economists and entrepreneurs the apparatus to employ algorithms which find matches between searchers and finders. From Tinder to labour markets to kidney exchanges, the twenty-first century economy is only starting to come to grips with the power 'matching'

can wield, and this is only going to burgeon within the near future.

### Brief History of the Matching Function

One of the seminal papers in developing the matching theory was published by David Gale and Lloyd Shapsley in 1962 on the 'stable marriage problem'. Essentially, the problem, otherwise known as one-to-one matching, is where given the same number of men and women, where each individual has to rank all members of the opposite sex in an ordinal manner of preference, marry the men and women together such that no man or woman

*"From Tinder to labour markets to kidney exchanges, the twenty-first century economy is only starting to come to grips with the power 'matching' can wield."*

would prefer each other than in their coupled arrangement after matching them based on their ranking. If this is achieved, the match is said to be 'stable'. This problem has been applied in many other scenarios, such as matching hospitals with medical school graduates for their residencies, or matching students with

colleges, even extending to scenarios of many-to-one matching problems, and has had profound influences on other economic works.

The idea of matching in economics differs by subject, for in microeconomics matching is often studied using 'search theory' whilst in macroeconomics it is studied using 'matching theory' or 'search and matching theory' within general equilibrium models. Even within the niche of operations research, algorithmic matching has become an award-winning area, with huge practical uses from electoral politics to college admissions as already mentioned. Although essentially search theory, search and matching theory and matching algorithms are

<sup>1</sup> <https://www.bloomberg.com/news/articles/2017-11-21/uber-concealed-cyberattack-that-exposed-57-million-people-s-data>

<sup>2</sup> <https://www.gotinder.com/press>

<sup>3</sup> <https://press.atairbnb.com/app/uploads/2017/08/4-Million-Listings-Announcement-1.pdf>

## RATIONALE MT 2018

very distinct realms of study within their respective branches of economics. The fundamental concept of finding matches between two or more entities or actors has become very well-established academically, and has impacted the modern economy in multiple ways.

Additionally, matching itself is not restricted to the domain of advanced algorithms. It also has key mathematical properties and mathematical foundations in the models economists love so dearly. In their article for the Journal of Economic Literature, Barbara Petrongolo and Nobel laureate Christopher

Pissarides

*“Bridging the frictional divide between a buyer and seller has never become so facile.”*

highlight how the matching function is able to account for huge complexities in the modelling process, from heterogeneities to imperfect

information amongst trading partners, and can thereby formally explain economic phenomena without the additional complexities of several factors, thus narrowing a model down to salient variables. As such, matching functions have still enabled economists to create parsimonious models that have huge predictive power, and have essentially become a staple topic in most graduate-level macroeconomics textbooks.

The field of ‘mechanism’ or ‘market design’ in economics has also become a critically acclaimed field, whereby an economist plays the role of an engineer and seeks to design a system to achieve the designer’s objective, which is probably most closely associated with matching algorithms themselves<sup>4</sup>. Matching

theory differs, in the respect that an economist similarly seeks to find a mechanism for a system of study, but attempts to satisfy certain properties such as ‘stability’, as evidenced by Gale and Shapley’s ‘stable marriage problem’. Yet, both fields have the power to work in tandem. It is almost not ironic that economists in recent years have gone about applying mechanism design and matching theory to help design and ameliorate the PhD job market for new economists using <https://EconJobMarket.org>.

### Matching in the Modern Economy

The beauty of a matching function or algorithm is its simplicity in accounting for market ‘frictions’. Much of previous economic theory, and the assumptions of late-twentieth century economics, often posit the world as a type of textbook fairyland economic utopia. As felicitously described by Keith Griffin, “the economic system adjusts smoothly to disturbances; markets clear instantaneously; competition ensures that resources are used efficiently [...] we live in the best of all possible



<sup>4</sup> [http://www.sigecom.org/exchanges/volume\\_11/2/BUDISH.pdf](http://www.sigecom.org/exchanges/volume_11/2/BUDISH.pdf)

worlds"<sup>5</sup>. Yet, in reality, the process of motion between a searcher and finder, or some X and some Y, all experience frictional properties, which prevent strictly smooth paths from connecting two variables of interest. On that note, with smartphones, multiplicities of matching markets exist. Bridging the frictional divide between a buyer and seller has never become so facile, and this is why matching has been so successful; it has not only been able to highlight evident market frictions, but has also reduce transaction costs, which exemplify these frictions.

As mentioned in the beginning of this article, a lot of media attention has spotlighted the rise of the 'gig economy', where a highly mobile labour force is employed on short-term contracts for performing 'gigs'. Yet, just as the market structure for a fresh fish market may be described using theories of perfect competition, the marketplace for the gig economy is unambiguously governed by theories of matches. The transaction costs for many provided services have been astoundingly reduced with technology, and thus, matching markets have become the underpinnings of many aspects of the contemporary 'gig economy', where gigs are performed based on a matching between a buyer and seller of a service – Uber, Lyft, Deliveroo, the list goes on.

While the work of macroeconomists employs matching functions primarily to study labour markets, others, even outside of the mainstream branches of economics, such as in operations research, have employed the principles of 'search and match' theory in very practical ways. Nobel laureate Alvin Roth and Lloyd Shapley himself helped algorithmically design a kidney exchange clearinghouse in New England, which according to Roth, has helped facilitate 4,000 transplants that may

not otherwise have been able to happen. Even within the political sphere, Voting Advice Applications (VAA) have enabled voters to find matches with parties and candidates for office based on algorithmic patterns that respond solely to survey responses. As a result, in many realms of the modern economy, matching theory has unambiguously fallen within its remit, and helped completely redefine how transactions occur within several markets and non-markets.

### **Mapping the Future with Matching**

Every Uber ride, every Tinder swipe (left or right) and every Airbnb hosting, is a development out of matching theories. In our increasingly technologized, globalised, and interconnected world, search and match theories have unequivocally become the compass with which to steer the modern economy. As flowery as that may sound, there is no surprise therefore, that the Nobel Memorial Prize in Economic Sciences has been awarded in recent years to innovators of matching theories, such as Peter Diamond, Dale Mortensen and Christopher Pissarides in 2010, and Alvin Roth and Lloyd Shapley in 2012. As such, for those who do question the value of economics and its applicability to the real world, some of the most theoretically grounded theorems can have profound implications for both shaping and understanding real-world phenomena, and this will undoubtedly continue in the years to come.

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<sup>5</sup> [https://link.springer.com/chapter/10.1007/978-3-642-95905-9\\_10](https://link.springer.com/chapter/10.1007/978-3-642-95905-9_10)

# Dr Daniel Reck

## PUBLIC ECONOMICS



*Dr Daniel Reck is Assistant Professor of Economics at the London School of*

*Economics. His research interests are primarily in behavioural welfare economics and public economics. He lectures in EC325, the Public Economics course for undergraduates.*

### **What are the big questions which public economics attempts to answer?**

Public Economics, broadly speaking, is the economics of government policies. Much of the course is about the effect of economic policies on behaviour – how do policies change incentives, how do people react to those incentives and how do we understand policymaking in light of this. A great deal is focused on optimal policy making. Its normative focus is probably what distinguishes it from other areas of economics; We use explicit reasoning to derive what optimal policies should be, what their characteristics are and we try to use that to

*“People don’t always understand policies and don’t always respond optimally.”*

understand public debate about policies. I would outline two general sets of questions we try to answer - what are the effects of policies, and given our goals, what policies should we have to attain them. We explore these

questions in relation to several, concrete topics in public finance – unemployment insurance, retirement pensions and tax policies for example.

### **Is a large part of the course EC325 is also focused on empirical application?**

That’s right. I would consider work in the first two years of the BSc degree to be very technical, mostly about how to use data. In this course, we take a much more applied, empirical focus. We look at data from a wide array of countries and sources to assess what are the impacts of public policies on individuals. We also make use of more recent techniques for doing credible, causal identification and work with papers using newly available, large scale administrative data sets, where you can really study entire population and get a detailed picture of how policies work in that country.

### **What do you study?**

I have a couple of strains of research: One set of work is about behavioural public economics – people don’t always understand policies and don’t always respond optimally. This means we have to rethink a set of older policies in light of these newly discovered behavioural idiosyncrasies. There are also a bunch of new policy tools – setting nudges, defaults – a lot of my work is about deciding how out to set those types of policies. How do we decide which way to nudge someone? What are the paternalistic or other assumptions about welfare that can help us make sense of optimal policies in that kind of space?

The second set is about tax evasion – most recent work done in that subject is to do with people who hide money abroad to evade taxes. There’s been a major crackdown on that in the US and we’re using administrative data to look at the impact of the crackdown.



**And how do you go about studying something like tax evasion, where the thing you're trying to study is in a sense 'not in the data'?**

Well, you sort of have to be clever with the data to look for hints. There's a whole field called forensic economics which is relevant to this. For our purposes, we live off the fact that the crackdown we're studying actually had a huge impact – a lot of people started to report their offshore assets to the IRS and so we can see them doing that. And then we have to run through a whole bunch of different ways of looking at that increase, and looking at who was reporting their foreign assets to the IRS, to make the case that indeed it does come from an impact on tax evasion – so we've looked a lot at these accounts from Switzerland and the Cayman Islands.

**What would you say are the frontiers of research in public economics right now?**

On tax evasion, there is a lot of interest in the role of information. You classically see tax evasion set up as a moral hazard problem where agents have asymmetric information. Increasingly, we're starting to think about tax evasion in the context where the information you have to enforce taxes is endogenous and can be gathered as a matter of public policy –

*"How do we decide which way to nudge someone? What are the assumptions about welfare that can help us make sense of optimal policies in that kind of space?"*

policy makers can go out and gather information (bearing in mind costs). How much improvement can we make to tax compliance by expanding the information available to policymakers given that its costly?

In behavioural economics, the field that I'm studying, there's a lot of confusion on how we understand welfare. A lot of the models we teach on the third-year course assume that people's preferences are revealed by their choices. Once you have all these behavioural phenomena and different ways that people may be making mistakes, you try to study optimal policy making. This is much, much more difficult and we're still trying to wrestle with a lot of those difficulties.

**Do you have any recommended readings for interested students?**

Two books I'd recommend are "Policy and choice – Public finance through the lens of Behavioral Economics" by Congdon, Kling and Mullainathan and "Taxing ourselves: a citizen's guide to the great debate over Tax reform" by Slemrod and Bakija – a bit US centric, but a good primer into public economics.

**Quiz #6**

- 14. Which famous indicator, or index, is partially named after a publisher who also founded the Wall Street Journal?
- 15. What links the following countries/territories? Australia, Canada, Hong Kong, Singapore, Liberia, Jamaica, Namibia, New Zealand, Taiwan, USA.

*(answers on page 46)*

# Too Much Maths, Too Little History?

## Does Economics really face an Identity Crisis?

CHAROO ANAND

One hundred and thirty years ago, there was the 'Methodenstreit'. That means 'a battle over methods' in German and it described the contemporary debate in economics. For over a decade, the German Historical School and the Austrian School argued over the correct way to study economics, and whether that constituted detailed historical investigation or mathematized logic.

Two years ago, LSE SU Economics Society held their 'Too Much Maths, Too Little History' debate. Assembled in the Sheikh Zayed, armed with microphones and a panel of speakers, we had our own little Methodenstreit. And, the battle goes on. This debate has echoed throughout my time at LSE.

However, these discussions rarely reach a satisfying conclusion. I have to assume that future generations of students will solve as many Lagrangians as we have. Of course, I have to assume a lot of things. So I'm writing this commentary on our Methodenstreit, to clarify some points that we often trip up on. By signposting these, I hope to point us towards a more productive debate.

### A tug of war

Imagine a game of tug of war. On one side stand the mathematicians, with the slogan 'maths is just the language of economics' embroidered across their jerseys. The historical team take the other side. 'But you need more context' and 'the model is too simple' are among their most popular chants and they are

guaranteed crowd-pleasers. The audience cheers, every time. The game starts and they begin tugging but, quite soon, both teams realise that they have no interest in dragging the other across the line. They continue trash talking a little but no one pulls too hard in either direction. A young econometrician, waiting eagerly on the bench, is then called to sub in. But when the whistle blows, she realises that she doesn't know which team she's on. She loves the data, a staunch empiricist like her historical

colleagues, but the

mathematicians taught her

everything. Is it

not their models that

she estimates? Now

everyone stops. They're

all looking at each other. 'You look

at old data, too? Why aren't you

on my team? Wait, am I on

your team?' Unclear on how to proceed or

even where to stand, they each concede that

the other side make valid points and retreat

back to their offices.

If you haven't watched the 'Too Much Maths,

Too Little History' debate, that would be my

summary. It motivates a few important points

and I will explore them further.

*"A young econometrician, waiting eagerly on the bench, is then called to sub in. But when the whistle blows, she realises that she doesn't know which team she's on."*

**Too much maths? What is maths?**

A poor definition of terms confounds this

debate. In general, the argument for more

history is premised on the logic that bad

assumptions are endemic to mathematical

economics and that historical methods resolve

this. At some point in the conversation, 'maths'

## RATIONALE MT 2018

becomes a dirty word. It's synonymous with 'a simplifying abstraction' but has negative connotations. As such, the question of 'maths vs. history' rapidly shifts to one of '(bad) theory

*"I reject the argument that our education was entirely ahistorical."*

vs. empiricism'. But, in an age of data-driven economics, this is a straw man argument. Facing modern applied economics, critics often point to the failures of Neo-Classical theory from the '70s. This conflation of

mathematical methods – abstract models, game theory, econometrics, etc – is a fundamental confusion that needs to be corrected. The shift in the debate and a misconception of maths makes it very difficult to hold this conversation and it's why the econometrician, standing on the side-lines, couldn't choose a team.

That being said, I'd still offer a defence for the theories. Specifically, and contrary to the common critique, relying on assumptions doesn't make a theory bad. Rather, relying on bad assumptions makes a theory bad. Calling them out and interrogating them is important – all knowledge demands scepticism – but their existence is not in itself a catch-all failure of modern economics. Importantly, assumptions give us traction. When everything is changing and everyone is connected, it's hard to even imagine the causes of things. So, to predict the effect of some event, it's helpful to hold some things still and to tie some other things together. And, at the forefront of the field, economists keep getting answers while holding fewer things still. Maybe they let them change over time, or across space, or let them move around a fixed point. They're also finding better ways to tie those other things together. Parameterising humanness is impossible but behavioural economists, in particular, are making strides. Of course, there are aspects of

our identity and our relationships and our experiences that cannot be summarised by a vector of relative prices. I know. But, for answering our questions, economists deserve more credit. Assumptions aren't inherently bad and we're getting good at making them less bad.

### Too little history?

Maybe you're thinking that this defence is pointless. The proposition was not to replace maths, it was only to offer more history. There's some truth here. The typical economics undergraduate needn't take a module in economic history or history of economic thought, unless they choose to. We could be looking at a generation of better economists if we did. That being said, I reject the argument that our education was entirely ahistorical.

An interested student can pick their outside options from any department and, in third year, modules in the history and the philosophy of economics are available. Even Macroeconomic Principles (EC210), taken by around 600 students a year, is shot through history. We learn the Malthusian Growth Model, which was penned in 1798, and then we do the Solow model, the 20<sup>th</sup> century upgrade. We see how Keynes modelled the demand for money and how this

subsequently became one side of the IS-LM model, which synthesised Keynesianism with Neo-Classical theories. This takes us to the Philips Curve, how it broke down in the 1970s and the policy questions that this raised. We go from hyperinflation in Weimar Germany to the rise

*"Parameterising humanness is impossible but behavioural economists, in particular, are making strides."*

## RATIONALE MT 2018

of Bitcoin, from the Great Depression to the Euro Crisis.

Framing is important. It doesn't feel so historical when you're just trying to solve for  $dy/dx$  (assuming  $N$  is constant). But maybe the issue isn't that the model takes  $N$  as given. Perhaps it's us taking the models as given. Perhaps we should be reading our course pack as a 200-year evolution of economic thought, intertwined with economic history. I think we're learning more history than we realise.

### **Wait, what is economics?**

Until I sat down to write this, I hadn't considered the range of methods that we find within economics. Macro and micro answer different questions, using different information. It makes sense that the importance of history is also different. As such, homogenising 'economics' in the battle over methods creates another confusion in the debate.

When causal questions define research, microeconomic settings are much easier to navigate. For example, we can conduct experiments or, at least, find natural experiments. State borders, policy changes and eligibility cut-offs each give us (almost) random variation in our treatment and, thus, a way to claim causality. A light bulb, above a microeconomist's head, switches on when they hear any of those words. Macroeconomists, on the other hand, don't get that. It all happens at the same time, it's all endogenous and it all moves together. Conditions shape research, which shapes policy – which, in turn, shapes conditions.

For this reason, I think that macro has more to gain from history than micro. It affords us a catalogue of case studies, pertaining to every condition that we've documented. In the absence of clear treatments and controls,

history gives us a subset of potential outcomes. We don't know what will happen but we know what happened before and this is why it may or may not happen again.

At this point we encounter a particularly thorny question - what is economics? If a tree falls in a forest but it can't be expressed as a system of equations, does it make a sound? If historical knowledge cannot be formalised, does it constitute economics? (According to the Austrian School, it doesn't.)

*"We need to separate the different fields within economics, given that they adopt different methods and face different pitfalls."*

Underwhelmingly, I won't be answering this question. Instead, my key takeaway is two sizable steps behind this; when we have these debates, we need to separate the different fields within economics, given that they adopt different methods and face different pitfalls.

### **Is history better?**

It's dangerous to valorise history, in its universal specificity, as the antidote to the abstraction. Firstly, everything that we do is done with assumptions, history included. Even our choice of where to look in history is an unknown function of our unknown biases. It's a hard problem to solve. With maths, however, there's an elegance of writing in a language that writes back immediately, telling you what you just took for granted. You don't get that from prose.

Secondly, from my knowledge, there isn't a coherent historical framework to follow. If there is 'too little history', how do we get more and what do we do with it? Should we be

## RATIONALE MT 2018

fitting historical data to our models? Or should we be developing theories from historical evidence? Or is it just that everything we do should be imbued with a greater awareness of our past? Without pinning this down, the proposition is too vague to reach a meaningful conclusion.

### **History and the future**

There wasn't an official winner of the Methodenstreit but, given where we are now, it looks like the Austrians are winning. The discipline splintered slightly at the time and efforts were made to toe the line between approaches so, when Alfred Marshall wrote the Principles of Economics (1890), he relegated the equations to the footnotes. Now, however, those fill our textbooks.

I don't expect us to reach a consensus but my aim was to clarify some misconceptions and, in doing so, facilitate a more coherent discussion. I'll conclude with five points that should at least preclude the confusion that prematurely ends our debates.

1. Empiricism does not belong to either side  
∴ Don't try to win by claiming it.
2. Theory is not inherently useless  
∴ Avoid hasty generalisations of modern theory.
3. Our macro course does teach history  
∴ Approach courses with a historical perspective.
4. Different fields in economics require different sets of methods  
∴ Separate debates accordingly.

5. Critique is only constructive if we're specifying an alternative

∴ Specify a framework for incorporating more history.

**Answers to Quizzes**

1. *Mark Carney (He is Canadian)*
2. *Sir Isaac Newton*
3. *Richard Thaler*
4. *People's Quantitative Easing*
5. *Helicopter Money*
6. *Oikos and Nomos, respectively meaning "Household" and "Management"*
7. *John Maynard Keynes*
8. *John Forbes Nash*
9. *The Phillips Machine, of AW Phillips. It aims to demonstrate the workings of an economy through hydraulics.*
10. *John Bates Clark Medal, Daron Acemoglu*
11. *The Economist*
12. *Federal Reserve*
13. *Rialto*
14. *Dow Jones Industrial Average*
15. *All their currencies are called "dollar"*

L	L	L	N	E	S	R	E	M	M	U	S	R	O
N	U	O	R	O	B	I	N	S	O	N	S	C	S
S	E	N	Y	E	K	L	T	N	E	A	I	E	T
S	H	R	L	T	S	U	P	S	L	E	S	C	R
B	O	R	L	S	M	O	M	B	Y	T	I	N	O
T	P	P	A	K	E	R	L	O	F	I	E	I	M
S	T	A	R	R	O	W	P	R	N	S	N	O	T
B	N	O	S	M	I	T	H	Y	E	L	L	E	N
L	K	B	N	K	Y	T	T	E	K	I	P	T	H
A	N	I	B	O	T	E	H	A	A	O	I	S	A
Y	U	A	S	S	A	M	U	E	L	S	O	N	Y
S	E	R	R	E	T	E	P	M	U	H	C	S	E
S	T	I	G	L	I	T	Z	O	S	E	N	T	K
N	L	R	S	F	E	M	K	U	K	B	I	E	N

**Answers to Find the Economist**

1. *Keynes*
2. *Smith*
3. *Sen*
4. *Hayek*
5. *Akerlof*
6. *Yellen*
7. *Schumpeter*
8. *Samuelson*
9. *Arrow*
10. *Summers*
11. *Ostrom*
12. *Stiglitz*
13. *Tobin*
14. *Piketty*
15. *Robinson*

