Cambridge Economics

News from the Cambridge Faculty of Economics

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Welcome

Cambridge Economics this year reflects the broad range of Cambridge alumni views on Brexit: from Lord (John) Eatwell of Queens' on the one hand to Ryan Bourne of the Cato Institute in Washington D.C. on the other, with UK Business Secretary Greg Clark trying hard to make sure the transition as Britain prepares to leave the European Union will be as smooth as possible.

Two aspects of the Economics Faculty's current research programme, which is supported variously by the Keynes Fund, the Cambridge–INET Institute and other major competitively-won grants and endowments, are covered. Vasco Carvalho gives an overview of his work on the supply network impact of the Great East Japan Earthquake of 2011, while Sriya Iyer reports on the international roundtable conference she convened on the Economics of Religion in July this year in Cambridge.

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In addition, there are reports on the contributions of some of our distinguished guests during the past twelve months: Thomas Piketty (the Marshall Lectures); Tim Besley (the Richard Stone Lecture) and Dani Rodrik (the inaugural James Meade Lecture, in association with Christ's College).

And two of our recent students show that there is career-oriented life after graduation for both Tripos and Doctoral candidates.

We welcome correspondence from our readers about the annual newsletter (to: www.econalum.@hermes.cam.ac.uk). We are grateful to all our contributors.

Prof Tony Cockerill
Prof Sanjeev Goyal FBA, Chair of Faculty

INSIDE:

Dr Greg Clark MP: Getting Down to Business

Britain's Business Secretary is drawing on all his knowledge and experience of economic incentives in dealing with the opportunities and challenges of Brexit.

Greg Clark (Magd. 1986-89) wrote his dissertation for the Economics Tripos on incentives. He drew on personal experience. He chose to apply to Magdalene not because of its reputation for Economics teaching but because it offered free overnight accommodation for those coming to Open Days. This was crucial for a state-school educated prospective student travelling a long distance from home in a relatively deprived region of England whose father was a door-step delivery milkman.

Newly reappointed as Business Secretary in Prime Minister Theresa May's minority government, formed after June's indecisive General (Parliamentary) Election, Clark finds time to reflect on the life chances and opportunities that so far have helped him climb the greasy pole of politics.

He grew up in Middlesbrough in the north-east of England, a region of mining and heavy industry. Most children left school at sixteen; Clark's state secondary school did not offer A-Level courses, essential for university entrance. He transferred to a Sixth Form College where he discovered his interest in, and aptitude for, Economics. This was with the encouragement of an enthusiastic and dedicated teacher who was keen on applying Economics to current affairs and to issues of public policy.

Clark says that he 'began to hear of a mysterious place called Oxbridge'. He could not find it on a map but people spoke of it in glowing terms. He was intrigued and set about finding out more. At the Magdalene Open Day he was welcomed by Brian Deakin, Fellow and Director of Studies in Economics: they discussed the aims, structure and content of the Economics Tripos. Clark was encouraged to apply and was accepted as one of a group of six freshers for Economics.

Then as now, Magdalene Economics supervisions were arranged as part of a network of co-operation with other colleges. In addition to Deakin's careful tuition and support, Clark recalls in particular encounters with Brian Mitchell and Peter Tyler. Mitchell's work with Phyllis Deane on British historical statistics broke new ground[1], while Tyler was already prominent in regional economics.

In the Economics Faculty, the Post-Keynesian debates were at their most intense. Analysis was mainly in terms of concepts and theory; the tidal wave of modern mathematics-based microeconomics had not yet swept over Cambridge. Clark's interests remained firmly in applied economics. He took courses that included analysis of industry, labour and regional economics, laying a firm foundation for his future career. He was elected to be a student representative on the Faculty Board.

Among the wider student body, Clark became Chair of the Cambridge University Social Democrats. He supported Shirley (now Baroness) Williams, who contested (unsuccessfully) the Cambridge constituency for the Social Democratic Party (SDP) at the 1987 General Election. Williams was one of the 'Gang of Four' that had founded the SDP in 1981 in a breakaway from the Labour Party. When

"I began to hear of a mysterious place called Oxbridge. I couldn't find it on a map but people spoke of it in glowing terms."

the SDP itself split in 1988, most party members left to merge with the Liberal Party, forming the Liberal Democrats. Clark moved to the Conservatives.

Faced with life after Cambridge, Clark says he called to mind his family origins and 'went on the milk round' of potential employers. He secured a place with the Boston Consulting Group (BCG). He was allowed to defer his starting date in order to work for his PhD at the London School of Economics (LSE).

His Cambridge dissertation had been supervised by two LSE staff. It made a smooth transition to work on wage incentives, specifically the effectiveness of performance-related payment schemes. He extended his model beyond Economics to take account of other relevant disciplines, in particular Psychology.

At BCG, Clark's work gave him intense, diverse and very valuable experience. His international assignments included reports on topics as varied as the Mexican economy; the manufacture of cement, furniture, and breathing equipment; and services in the City of London. Prefiguring his present Ministerial position, between 1995 and 1997 he became Special Adviser to Ian Lang MP (now Lord Lang), the Secretary of State for an antecedent of the present Business Department.

Out of office when the Labour Government under Tony Blair as Prime Minister was returned at the 1997 General Election, Clark joined the BBC. He was Controller, Commercial Policy with responsibility for the Corporation's for-profit international activities, in particular BBC Worldwide. It was a time of rapid technological change and of increasing competition for media distribution and content. Clark saw the launch of the 24-hour rolling news channel and the joint venture with the Discovery Channel that led to renowned series such as Frozen Planet and Planet Earth.

After a period as Policy Director for the Conservative Party, Clarke was elected to Parliament in 2005 as Member for the Kent constituency of Tunbridge Wells. His first experience of Ministerial responsibility was in the Conservative-LibDem coalition government of 2010-2015 when he was able to use and to extend his policy interests in decentralisation and devolution. Among several legislative initiatives he sponsored was the provision for elected mayors in selected city and metropolitan areas. Keeping his cities brief, in the coalition's last year Clark also took responsibility for universities and for science.

In the Conservative Government of 2015-2017 Clark headed first the Department for Communities and Local Government before moving to the newly-reorganised Department for Business, Energy and Industrial Strategy, a Cabinet post to which he was reappointed in June this year. Now he is called on to support, promote and regulate business during the process of Britain leaving the European Union. This has to be done in conditions of great political and economic uncertainty. Clark will need to make use of all he knows about incentives.

Tony Cockerill

1. Mitchell, B.R. and Phyllis Deane (1962). *Abstract of British historical statistics*. Cambridge University Press.

***** Interview took place on 20 June 2017.

The Economics of Self-Harm

Lord (John) Eatwell, President of Queens' College, looks at the economic impact of the EU Referendum result and at the measures that need to be taken.

There has been a lot of debate, both before and after the Referendum, about the likely impact leaving the EU will have on the UK economy. To date there have been two indisputable impacts, both negative:

First, the fall in the pound has the direct effect of reducing real income.

The second negative impact has been on the content of Government policy.

For the next two years at least Government energy and parliamentary time will be totally absorbed by the legislation needed to leave the EU. No energy will be devoted to tackling the long term trends in the UK economy, trends that herald very difficult times ahead, whatever may be the eventual deal reached in Brussels.

Consider the following:

- Investment in the UK as a proportion of GDP is lower than in both the US and the EU, and indeed below the average of OECD countries.
- Corporate investment in fixed assets (not including construction) fell from 11 per cent of GDP in 1997 to 8 per cent in 2014 – well below the rate of capital depreciation. In other words the corporate capital stock is eroding.
- Research and development spending, as a proportion of GDP, is just a little over half the level it is in the US or in Germany.
- Output per worker hour is lower than in the US and all the major European economies, excepting Italy where it is about the same. And since the financial crisis a decade ago, productivity has not grown at all.

These trends have resulted in a seriously uncompetitive UK economy with a falling share of world trade (our share has halved in 40 years whilst Germany's share has been stable) and a persistent deterioration in the balance of payments – last year a deficit of 5% of GDP. We rely, as the Governor of the Bank of England put it, on "the kindness of strangers". The idea that Britain is on the verge of conquering new global markets is an ignorant fantasy.

Given that it is unlikely that the result of the Referendum will be reversed (though events with zero probability *can* occur) what measures might be taken to turn these negative trends around?

Low investment in the UK is related to the interaction of the financial markets and corporate behaviour. Bank of England research has shown that the UK's capital markets are more 'short-termist' than they used to be, and are more so than those of other countries There has been an observable increase in the priority that investors give to short-term returns over long-term returns.

A result is that, over the last quarter of a century, the proportion of profit that UK companies have been distributing to shareholders, rather than reinvesting, has been increasing. The interaction between British finance and corporate governance is resulting in the wrong sort of incentives.

In many ways, UK finance is a great success story. The sector accounts for nearly 12 per cent of economic output, and without the trade surplus in financial services strangers would have to be even more generous if living standards were to be sustained.

But this success has been bought at a price. The financial sector injects international instability and risk into the domestic economy. No wonder there is an emphasis on short-term liquidity, a ubiquitous desire for easy exit, and an unwillingness to commit to the long-term, when the long-term will be regularly punctuated by financial disorder.

Attempts to address these failings were made in the Financial Services Act of 2013, which sought to erect a ring-fence between, on the one hand, commercial banking for households and small and medium sized firms, and on the other hand, banking for large companies, investment banking and more risky market activities. This was a pale imitation of the 1930s Glass-Steagall Act in the US. It might be relevant to America, but failed to take into account the reality of the UK economy.

Once the real structure of UK finance is taken into account, it becomes clear that the ring-fence is in the wrong place. The fence should be between domestic finance and international finance. The stability of comprehensive financial services for

"Britain has some of the finest research universities in the world. Leaving the European Union threatens to do significant damage to this precious research base."

UK firms should be rigorously enforced, whilst the booming, if unstable, international financial centre should be encouraged to do what it does best – sell outstanding services to the rest of the world.

A stable domestic financial system would provide the motivation for, and the possibility of, a reform of corporate governance, including the regulation of mergers, to incentivise a longer-term investment culture.

Britain has some of the finest research universities in the world. Leaving the European Union threatens to do significant damage to this precious research base. It's not good enough just to promise to replace European research funding for a couple of years. R&D policy requires a complete re-think, learning from others. In both Germany and the United States publicly funded R&D underpins their superior innovative performance. Every significant innovation that went into the iPhone was developed in the public sector.

But these changes, and the many others that are necessary to create a long-term competitiveness culture, will not work unless the prospect of stable and growing demand provides a sustained incentive to invest – growing demand at home and growing demand from abroad.

The state of the UK economy requires that all government policy should be directed toward the long-term recovery of competitiveness. Instead, all Government policy is directed towards a complex divorce from the European Union – a huge misdirection of time and effort that in itself will do lasting damage to the UK economy.

Where Economists Went Wrong on Brexit

Ryan Bourne of the Cato Institute in Washington D.C. critiques economists' conventional wisdom and analysis.

"The curious task of economics is to demonstrate to men how little they really know about what they imagine they can design."

Friedrich Hayek

Brexit will dominate economic policy discussions over the coming years. A majority of academic economists remain convinced it will be economically harmful. But if the public doubt this, the academy only have themselves to blame. The Treasury, the OECD, the IMF and others suggested that Brexit would lead to, or highly risk, recession in the short-term. Few notable academic economists critiqued these short-run predictions at the time, and we now know they were utterly wrong.

As a reminder, the Treasury claimed GDP would be 6.2 per cent smaller after 15 years if Britain exited the EU and single market (replaced with an EU-UK bilateral trade deal, which the government desires). More pertinently, they forecast voting to leave would trigger a 4-quarter recession with 500,000 people losing jobs, higher inflation and lower house prices. The IMF warned a path towards leaving the single market would mean a recession in 2017. An *Economists for Remain* letter signed by 12 Nobel Laureates likewise said "a recession causing job losses will become significantly more likely."

Yet immediate financial market turbulence dissipated. Far from contracting at the Treasury's forecast 0.4 per cent annualized rate, the economy is growing at 2.8 per cent per year. The employment rate for 16 to 64 year olds reached its highest ever level, 74.6 per cent. House prices increased by 6.2 per cent per year. Annual broad money growth was 6.6 percent in January – suggesting good nominal GDP growth through 2017, even after Theresa May pledged to leave the single market and customs union. Forecasters have since revised growth upwards.

The economic consensus did forecast correctly the pound's fall on a trade-weighted index (around 13 percent decline), but even Leave groups predicted this. What happens to the pound in the longer term of course depends on the economic fundamentals, but what is clear is that so far the doom-mongers have been wrong on most of the macroeconomic impact.

Why did so many get it so wrong? Some claim it was because Article 50 was not triggered immediately, or because the Bank of England took action. But consumers and investors are forward looking, and monetary policy operates with a lag.

No, the faulty forecast came about because forecasters made a host of negative assumptions in their long-run modelling. Their work implied that pro-market policies adopted alongside EU membership would be reversed. They assumed Britain would maintain EU-level tariffs on the rest of the world and not sign any new trade deals. They assumed Britain would not change any EU regulations nor would benefit from better using its annual gross EU contribution.

On every major issue, only the potential downsides of Brexit were examined. Britain in the EU was the pinnacle of economic dynamism. This drove the short-term results. Believing they would be worse off after Brexit, the British Treasury thought consumers and investors would tighten their belts now.

Academics and the Treasury might be right about the longer term, of course. Britain may make a host of bad policy choices outside of the EU, which result in more restricted trade and migration without offsetting gains. But so far consumers and investors do not believe this. Now we are leaving, economists should have the humility to examine the many options in a host of areas which result from repatriating powers over trade, regulation, migration, agriculture and fisheries.

Brexit is a supply-side shock. Whether it is a positive or negative one depends on how Britain

"Economists should have the humility to examine the many options that result from repatriating powers [from the European Union]."

uses these freedoms. The fact some economists are so sure Brexit will be damaging reflects their own priors about the politics rather than economics.

Ryan Bourne (Magd.) read for the Economics Tripos and the MPhil in Economics (2005-09). He occupies the R. Evan Scharf Chair for The Public Understanding of Economics at the Cato Institute, Washington D.C. Before joining Cato in 2016, he was Head of Economic Research at the Centre for Policy Studies and then Head of Public Policy at the Institute of Economic Affairs in London.

Reflections on inequality and capital in the 21st century

Thomas Piketty: The Marshall Lectures 2016–17

Piketty brings up-to-date his seminal work on income and wealth inequalities.

Dubbed by some as 'the modern Marx', Thomas Piketty, this year's Marshall Lecturer, is at pains to show that the forces driving income and wealth inequalities within and between countries are far more complex than the standard conflict of views about malevolent or benign market mechanisms would suggest. He dismisses the analyses both of Marx, from the malevolent side, and of Kuznets from the benign side.

Each argued that wealth and income inequalities would eventually cease increasing and would start to reduce, violently or otherwise. Marx' inevitable crisis of capitalism theorem is well known. The American economist Simon Kuznets (1901-1985) argued, in the setting of the development of Western-style market economies, that capital versus income inequality would at first increase as entrepreneurs exploited plentiful investment opportunities, gaining rentier profits on the backs of cheap rural labour. But, as these workers moved into industry and into the cities, labour quality, and therefore incomes, would rise, reducing capital-income inequalities. Assuming, unrealistically, symmetry, this process can be represented as an inverted U-shaped function (the 'Kuznets Curve'), in which a measure of inequality first rises with increasing income, to reach a maximum before declining as income increases still more.

Piketty argues that there is nothing in these economic processes that will lead inevitably to a convergence of shares in wealth or income among different classes in society. His historically-based model asserts that the return on capital (*r*) is inherently greater than the rate of economic growth (*g*). With $r > g$, increasing inequalities in wealth will be the outcome, unless shocks and institutional and political factors intervene. Together, shocks (wars, for example), institutions (customs and belief-systems) and policies (towards taxation, education, and labour markets, for example) give rise to a diversity of economic, social and political outcomes.

"Present-day increases in inequalities come from a diverse mixture of causes that go beyond the traditional class-based struggle for redistribution between capital and labour."

He begins by reviewing and bringing up to date his seminal analysis in *Capital in the 21st Century* of income and wealth inequalities in (mainly) Western economies, a study that uses a unique empirical data set stretching back to the 18th century. But he stresses that it is important now to go beyond these boundaries so as to examine and to understand the causes and magnitude of inequalities in developing and post-colonial economies.

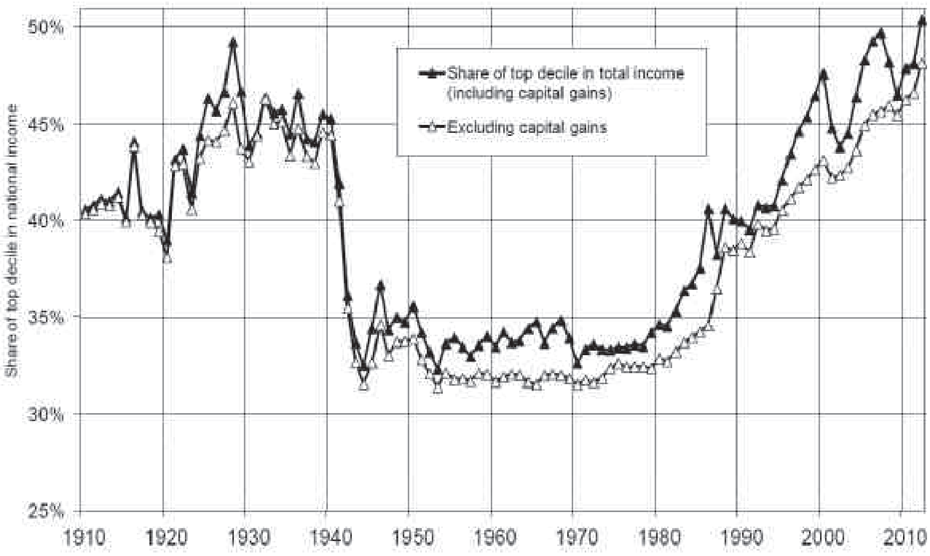
Piketty uses movements in the share in total income of the top ten per cent of earners in the US between 1910 and 2012 to challenge the ubiquity of the Kuznets Curve (see chart). He attributes the sharp reduction in income inequality at the end of the 1930s and its subsequent stabilisation during the post-World War II period until the early-1980s not to Kuznets' systematic economic drivers but to the shock of, first, the Great Depression and then of war on politics and policies. These shocks led to consensual measures that, in his words, 'forced élites to accept new social and fiscal institutions which they [had] refused until then'.

With income inequalities now back to their pre-Depression levels, Piketty draws our attention to the collapse in the share in total income of the bottom 50 per cent, which he sees as a consequence of the increased demand for higher skilled and educated workers; the competitive pressure on the low-skilled from globalisation; and, in the US at least, a falling minimum wage. To this has to be added severe gender inequality. In France and the US, within the top one per cent of earners, only one-sixth are women.

Piketty is concerned also about the current resurgence in wealth inequality. He asks if we are returning to a 'patrimonial' (wealth-based) society? He associates the increase in the capital-to-income ratio in part to slow economic growth since the global financial crisis, suggesting that in these conditions, wealth accumulated across generations will become increasingly important. He sees the need for new regulations to cover physical and intellectual property ownership and enterprise governance, together with a progressive wealth tax.

Piketty's most interesting work and analysis come when he extends his vision to the developing and post-colonial world. He finds that the issues associated with income and wealth inequalities are even more severe than in the developed economies and, relying on his own database, that official measures vastly underestimate inequality.

In South Africa and Brazil he finds racial discrimination and failure to redistribute resources to be the chief causes of extreme inequality. In spite of Apartheid coming to an end in South Africa in 1994, the top ten per cent receive almost two-thirds of total income.



The top decile share in U.S. national income dropped from 45-50% in the 1910s-1920s to less than 35% in the 1950s (this is the fall documented by Kuznets); it then rose from less than 35% in the 1970s to 45-50% in the 2000s-2010s.

Thomas Piketty has been Professor at the Ecole des hautes études et sciences sociales (EHESS) in Paris since 2000. He holds associated positons with the Paris School of Economics and the London School of Economics, where he earned his doctorate. He taught at MIT between 1993 and 1995 before joining the French National Centre for Scientific Research. His pivotal book, *Capital in the twenty-first century* was published by Harvard University Press in 2014.

Piketty explains that he approaches empirical evidence, such as his historical database on income and wealth inequalities, 'scientifically'. He exercises 'parsimony' in using mathematical models, preferring, he says, 'simple models that give useful results'.

Tony Cockerill

But it is the Middle East that he identifies as the world's most unequal region with respect to income distribution. Unsurprisingly, the geographical concentration of oil reserves across the region is the underlying cause of this. And among the region's several states, inequalities are made worse by Colonial-period boundaries that were drawn arbitrarily. Now, wealth inequalities are being entrenched by sovereign wealth funds that are being invested in global financial markets, and so are transforming current oil rents into almost perpetual financial returns.

Piketty's new work shows that present-day increases in inequalities come from a diverse mixture of causes that go beyond the traditional class-based struggle for redistribution between capital and labour. Why, today, are the demands for redistribution not much stronger? He points to xenophobic populism and to identity-based politics for an explanation. The experience of globalisation and competition between countries is separating communities not by class but in terms of outward-looking progressives versus cautious uneasy nationalists. Inequalities in education reinforce this separation and influence the political balance. Those who are more educated (and higher earning) now tend to migrate to the left of the political spectrum, while the less educated move to the right. The contrast with class-based preferences and politics is plain. Will identity-based politics become the new normal? Piketty thinks not, because its base is unstable.

As a timely and relevant conclusion to his lectures, Piketty showed the strength of his identity-based framework by correctly forecasting, with a week to go, Emmanuel Macron's success in the French presidential election. Though whether the 'modern Marx' will welcome the outcome, which has eclipsed the Socialists, is hard to tell.

From L-R: Professor Sanjeev Goyal, Chair of the Faculty of Economics; Thomas Piketty; Cherie Lee, Undergraduate Office Administrator; Dr Pontus Rendahl; Reader in Economics

Culture, Politics and Economics

Professor Tim Besley: The Richard Stone Lecture 2016

Besley asks how economic models can be made to take account of heterogeneous outcomes.

Like many economists, Tim Besley, who gave this year's lecture in honour of Sir Richard Stone, seeks to understand and to model formally the linkages between organisations, their culture ('belief systems') and their economic performance. But, unlike those other economists, Besley sees formal economic models as being too restrictive in the face of complex and dynamic relationships. Instead he uses cross-disciplinary analysis – in particular economics in conjunction with sociology and organisational behaviour – to explore and explain the evolution and the heterogeneity of economic performance outcomes in organisations.

In his view, the culture that surrounds organisations is socially determined and inevitably will change through time. As a result, the values and preferences of those who make up the organisation will also change. These changes will be transmitted throughout the organisation and beyond by a process of social learning. The guardians of values and preferences are those who hold power at any one time. But, following the work of Ronald Coase, because the 'ownership' of these values and preferences is incomplete, present power-holders cannot commit those who will take their place in the future to maintain the culture. Indeed, cultures and organisations will evolve and different cultures will evoke different economic performance outcomes.

A central part of Besley's analysis is the tension in organisations between (currently fashionable) de-centralisation and devolution strategies on the one hand, and (currently unfashionable) centralisation ones on the other. Here, the role and preferences of the leader are crucial to the effectiveness of the outcome. The model he has developed is an enhanced and complex derivation from the standard relationship between Principal and Agent, in which there are differences in their aims and in the amount and quality of information that is available to each of them. These differences can lead to misalignment of objectives and of motivational incentives.

Besley's theoretical model is of an organisation that is structured vertically. At the top is a 'leader' (the principal) who has authority and responsibility for the organisation's operations and performance. Below the leader are two tiers of managers (the agents). Senior experienced managers populate the Upper Tier. Each manager may be either a 'collectivist' or an 'individualist'. Collectivists care about the joint welfare of the managers at both levels. Individualists care only about their own interests and gain.

In the Lower Tier are junior, inexperienced, managers. They need appropriate incentives (wages, guidance, encouragement, etc.) to get them to supply the required amount of effort. They will be influenced ('socialised') in part by the styles and values of management that they observe among the Upper Tier managers and by their own organisational preferences. One day, these junior managers will migrate to the Upper Tier, taking their experience and values with them.

In line with standard Principal-Agent theory, the leader seeks to maximise the overall performance of the organisation but, inevitably, is less well-informed about the detail of its operations and internal cultural values than are the Upper Tier managers.

The decision to centralise or de-centralise authority and responsibility then depends upon how far the leader's managerial preferences match those of collectivist managers. If the alignment is close, the leader will decentralise only when the collectivists have the most influence among the Upper Tier. If, on the other hand, the leader's preferences are not collectivist, decentralisation will take place only when the collectivists' influence is weak.
Looking to their own interests, the Lower Tier managers will be influenced by the degree of harmony (or lack of it) that exists between the leader and the Upper Tier managers and will align themselves with whatever appears to them to be the dominant culture – collectivist or individualist. As, with the passage of time, these managers migrate to the Upper Tier, the dominant culture will become self-sustaining – a slowly-evolving capital 'stock' of culture. The interesting marginal condition is when neither culture is dominant. Then the transmission of culture may go either way.

The strong lesson to be drawn from the model is that a diversity of organisational forms and cultures can emerge among organisations that have common economic underpinnings. Rigorous economic analysis must take account of the evidence and theories of cognate disciplines (for example, sociology, psychology, politics) and incorporate them.

Tim Besley holds the W. Arthur Lewis Chair of Development Economics at LSE. Prior to this he was at Princeton, after first degree and doctoral work at Oxford. The general theme of his research is the study of economic policy formation in developed and emerging market economies. Since 2015 he has been a member of the UK's National Infrastructure Commission. Independent of Government, the Commission is charged with monitoring and reviewing the role and effectiveness of infrastructure provision and projects over the longer term.

Besley was a member of the Bank of England's Monetary Policy Committee 2006-09. At LSE, he was co-author with Peter Hennessey of the letter in reply to HM The Queen's question to economists at the time of the onset of the global financial crisis: 'Why did nobody notice it?'

Tony Cockerill

Manufacturing and the Globalisation Paradox

Dani Rodrik: The James Meade Lecture 2017

Reflecting on Meade's early work on economic development, Rodrik asks whether manufacturing can still be a major source of economic growth and jobs.

In the early-1960s James Meade visited Mauritius as a member of a Commission charged with advising the Government of the independence-seeking British colony in the Indian Ocean on policies for economic development. The island's economy depended heavily on a single crop – sugar – and its low-income population was growing fast. There were signs of a looming Malthusian crisis. In his report, Meade recommended rapid industrialisation so as to create jobs, improve productivity and efficiency, and generate an export surplus. Between 1971 and 1991, Mauritius' real annual per capita growth rate was 4.6%, among the fastest of all developing countries over that period.

Dani Rodrik, who holds the Chair of International Political Economy at Harvard, took this 'fast-growth miracle' as his theme for the first James Meade Lecture, sponsored jointly by Christ's College, where Meade was a Senior Research Fellow for many years, and the Faculty of Economics. Its aims are to critically explore the part played by industrialisation – and by manufacturing in particular – in fast-growth achievements by some developing countries in the second half of last century, and to ask whether such fast-growth episodes can be expected in the future.

In Rodrik's view, the conventional analysis is inadequate for these purposes for two main reasons. First, the 'catch-up' theory, where growth rates among countries converge on those of the richest as they reach economic maturity, is flawed. True, growth rates slow down as economies expand, but there is no systematic evidence of convergence: countries have their own distinctive and persisting underlying growth rates.

Second, structural reforms of the 'Washington consensus' type, which emphasise macroeconomic stability and sound governance; investment in human and physical capital; and market liberalisation, are effective only over a very long time-frame.

In line with Meade's analysis, manufacturing is special in driving economic growth and development. It offers clear and strong productivity gains and is able to absorb low-skilled labour. Exporting manufactures to meet expanding global demand will generally not damage the developing country's terms of trade. And promoting a 'dual economy', in which a modern sector stands alongside the traditional sector of primary and subsistence activity (Meade's gradualism), can be more straightforward and successful than trying to transform the whole economy.

But echoing Meade's later work on international trade, Rodrik says that sustaining developing countries' export-based growth needs interventions to protect the home market. The measures include import tariffs and export subsidies; managed currencies; local content rules; and special investment zones. Rodrik draws attention to Japan, South Korea and other East Asian countries as examples of such strategies in action. These justified market distortions stand in sharp relief against the 'pure' model of globalisation, in which unhindered movement of resources is paramount. For Rodrik, there is a paradox: globalisation is essential for exports, but exports require protection, at least in the initial stages of growth.

Looking ahead, Rodrik is much less sanguine about the prospects for more fast-growth miracles. Manufacturing is becoming a high-technology activity that requires skilled labour; does not absorb low-skilled workers; and, as productivity improves, sheds rather than adds to jobs. More important still, the development path for countries is moving to run directly from primary activities to services, by-passing the manufacturing stage altogether. Productivity gains in services are hard to measure and hard to achieve; and while manufactures are readily tradeable internationally, services are not.

So the age of fast growth via industrialisation may be over. But there will be exceptions. To lighten the gloom, Rodrik notes the rapid growth of international services in India, based on private sector investment and firms' informal organisation.

Tony Cockerill

The First James Meade Lecture 'Is the Era of Growth Miracles Over?' was delivered at Christ's College on 1 March 2017. The Economics Faculty Lectures 2016-17 can be found at: www.econ.cam.ac.uk/seminars

Making Sense of Religion

Dr Sriya Iyer reports on the International Economic Association Roundtable on the Economics of Religion, St. Catharine's College, 10-11 July 2017.

Over the past twenty years, economists have come to realize that religion is linked inextricably to their subject matter, from fertility choices in the household, to risk-sharing schemes in a village, to large-scale political movements, and to economic growth. A deeper understanding of religion is perhaps now more important than ever before.

The International Economic Association Roundtable on the Economics of Religion was held at St. Catharine's College, Cambridge on 10-11 July 2017 to take stock of developments to date in the economics of religion and to chart new directions for the field. Organised by Dr Sriya Iyer, Dr Jean-Paul Carvalho (University of California, Irvine) and Dr Jared Rubin (Chapman) with the able assistance of the Cambridge-INET Institute, the Roundtable brought together some of the world's most distinguished economists and other scholars to debate and discuss the role of religion in society today.

The conference began with an opening address by Bishop Marcelo Sánchez Sorondo, Chancellor of the Pontifical Academies of Sciences and Social Sciences from the Vatican, who spoke about key points from the *Laudato Si*, the Papal Encyclical document on environmental protection and climate change, highlighting the need for effective action in these areas. The highlight of the conference was a panel discussion on the role of state religion, religious freedoms, institutions and growth featuring Robert Barro, Timur Kuran, Tim Besley and Sascha Becker; and a second panel on how religion had shaped the world with Partha Dasgupta, Rachel McCleary, David Maxwell, Larry Iannaccone and Michael McBride. The first panel which was very wide-ranging, explored questions such as religion and innovation, religious education, role of women, findings on religious participation and economic growth, the role of state religion, the debates about the clash of civilizations, and the role of Islamic and Christian fundamentalism in the world today. The second panel keenly discussed Pentacostalism in Africa and Latin America, how to think about definitions of religion, the relationship between religion and the natural world, and how this relates to economic development.

The individual sessions ranged from exploring economic theory and religion, history and religion, religious giving, and reformations and religious freedoms. Sriya Iyer and Mark Koyama talked about their forthcoming books on the economics of religion in India, and religious freedom and state capacity respectively. The paper presentations also encompassed how personal liberties and religiosity are related, the effects of the Protestant Reformation, and how religion and politics are related today in the US.

Listening to all this exciting research in the economics of religion suggests that this is a thriving field with scholars and graduate students from many different fields of economics interested to do research in this area. The event was also very well-attended by members of different Cambridge faculties and departments including those from economics, law, divinity, engineering, history, sociology, geography, land economy and the business school. To that end, the dialogue about religion at the Roundtable was truly inter-disciplinary in every sense.

The quality of discussion to determine what is the kind of religion we need today and how economic research needs to adapt to aid policy-making, was a key aspect of the Roundtable. A contributed volume entitled *Advances in the Economics of Religion* published by Palgrave Macmillan will be forthcoming under the IEA Series after the Roundtable that will consolidate the many interesting debates and lively discussions.

Dr Sriya Iyer

Supply Chain Disruptions: The micro and macro effects of the 2011 Japanese Earthquake

Professor Vasco Carvalho's work on input-output analysis shows how supply chain linkages can greatly amplify the initial effects of shocks such as natural disasters, terrorism or cyber-attacks.

The production of goods and services in any modern economy is organized around complex, interlocking supply chains, as firms rely on a variety of different inputs for production. Due to the key role of intermediate goods in the production process, disruptions to the orderly flow of goods and services have been increasingly recognized by policymakers as a source of aggregate risk.

Indeed, overlapping policy initiatives at the international, regional, and national levels rely on the premise that firm-level or regional shocks — such as natural disasters, terrorism, or cyber-attacks — can propagate through input-output linkages to a wide array of firms and industries, with potentially adverse macroeconomic impacts. For example, the U.S. National Strategy for Global Supply Chain Security issued in January 2012 is based on the premise that supply chain linkages "serve to propagate risk that arises from a local or regional disruption across a wide geographic area," which in turn "can adversely impact global economic growth and productivity". In parallel, a growing academic literature has explored whether the presence of supply chain linkages can translate microeconomic shocks into aggregate, business cycle fluctuations. Despite the interest of academics and policymakers alike, evidence on the role of input-output linkages as a channel for the propagation of shocks and a source of macroeconomic risk has been scant.

The research of Vasco M. Carvalho, together with researchers at Columbia University, the University of Tokyo and the Japanese Research Institute of Economy, Trade and Industry, provides a systematic quantification of the role of input-output linkages as a mechanism for propagation and amplification of shocks. They exploit a large, but localized, natural disaster —the Great East Japan Earthquake of 2011. Relying on information on firms' locations, the researchers exploit the exposure of Japanese firms to the earthquake to obtain measures of firm-level disturbances. They then combine this information with extensive micro-data on firm-to-firm input transactions to trace the extent of shock propagation along supply chains.

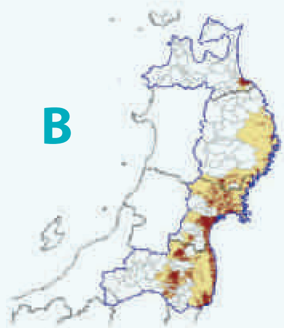
To study the earthquake's effects, the authors mapped out concentric networks of firms located upstream and downstream from disaster-hit companies on the supply chain. Customers that relied on earthquake-impacted firms directly, predictably felt the greatest impact; compared to a control group of firms with no direct or indirect exposure to the disaster, their growth rate was on average 2 percentage points smaller in the year after the disaster. The upstream supplier firms felt a smaller jolt, but it was still significant, with sales growth that was 1.2 percentage points smaller than that of the control group in the following year.

But firms did not need to have direct business partners in disaster areas to be affected, the researchers found. In fact, much of the economic damage was indirect. Tight business relationships among firms meant that supply chains transmitted the shocks further and further away, to firms' customers' customers and suppliers' suppliers. Downstream firms up to four business relationships removed from disaster-hit companies still experienced a noticeable drop in sales growth, of 1.1 percentage points. That effect was 0.1 percentage point for similarly removed upstream firms.

Summing up all those effects offers a more complete picture of the national economic hangover the earthquake created. The authors found that supply chain disruptions caused by the quake may have knocked as much as 1.2 percentage points off Japan's aggregate gross output in the following year, an effect far greater than the economic output of the disaster-hit region by itself would suggest. The research establishes that supply-chain linkages can greatly amplify the economic damage of events like natural disasters. To the same extent that an interconnected economy can propel growth, it can also hamper it.

A

B



A: A map of the geographic distribution of headquarters locations of firms located in the disaster-stricken prefectures of Aomori, Fukushima, Iwate, and Miyagi, and the headquarters of firms one (bright red), two (orange), three (green), and four (blue) links away on the supply chain, either upstream or downstream. The blue curve represents the boundary of the four disaster-stricken prefectures.

B: The disaster area, displayed as the shaded area on the map, is defined as the 41 municipalities covered by three decrees issued by Ministry of Land, Infrastructure, Transport and Tourism and the Prime Minister's Office. Each dot on the map corresponds to the location of a firm in the sample located in the disaster area. The dark blue curve indicates the boundary of the four prefectures that encompass the disaster area.

© Vasco M. Carvalho, Makoto Nirei, Yukiko Saito, and Alireza Tahbaz-Salehi. "Supply Chain Disruptions: Evidence from the Great East Japan Earthquake." Columbia Business School, December 2016.

One year after graduation

Ekta Mehta finds she can make use of her Economics degree in her new role in investment banking.

Almost a year ago today, I found myself in a lecture theatre sitting through four exam papers that would ultimately determine my life after graduation. Soon after, I was handed a piece of paper as my reward for the three years of work that had led up to that moment. Whilst actually receiving my degree, I was focussed on ensuring I carried out the customary graduation routine as rehearsed; however, as I walked out the Senate House, with degree in hand, I distinctly remember thinking, I have no idea of what to expect over the next year, as for the first time in my life I would no longer be defined by 'school'.

Studying an economics degree at Cambridge, students were naturally propelled into the typical career routes in investment banking, consultancy and financial services as a whole. I was one of those students. Following on from graduation, I began my career in investment banking and whilst the hours are exactly what they say on the tin, the steep learning curve has bought about new experiences and challenges each day. The first few months have been thoroughly rewarding. I was able to immerse myself in my team's work from a very early stage and I struggle to recall a time when I've learnt so much in such a short period of time. Key to my role is aiming to provide clients with innovative solutions to meet their financial needs. Every project involves a new team and dynamic environment as you work across a range of live deals and pitches. In the office, I am surrounded by graduates from a wide range of backgrounds and academic pathways, each bringing in a different perspective. This fast-paced and driven culture continually reminds me of an environment I can distinctly envisage; the environment I found myself in during my three years at Cambridge.

In a high pressured setting, where you are constantly thrown into the deep end and expected to think creatively to solve complex problems, it becomes almost impossible not to recall the lessons that my degree at Cambridge has taught me. Throughout my studies, it was continuously emphasised that we focus on the bigger picture and the finer details, an outlook that has been highly valuable to me in the real world.

Looking back over the past year, it is encouraging to know how much more there is that I can do and learn. I have found myself under some challenging and time-pressuring situations, but all in all, Cambridge has done well to mould and prepare its graduates for exactly this. This past year following on from graduation has flown by, and one key motto that has stuck in the back of my mind from my days as a Magdalene undergraduate is always, *"Garde ta foy"*.

Ekta Mehta graduated in June 2016. She is an investment banking analyst with Quayle Munro, an independent mergers and acquisitions adviser.

The reluctant PhD economist

Dr Konstantin Matthies tells of five surprises from his doctoral experience.

I completed my PhD in Economics at Cambridge in October 2015 and finished my viva shortly after. Since then I have graduated, moved to Singapore and joined αlphaβeta, a strategy and economics advisory firm, helping private, public and not-for-profit sector clients to identify how economic forces shape their markets and develop solutions to harness economics for generating lasting impact to their performance and operations. This seems as if I had it all worked out clearly and according to plan. However, wind back 5 years to when I embarked on my PhD and I can tell you that none of the things I listed above were part of any plan. In fact, there was no plan.

When writing this I thought it might be useful to share with students planning to embark on the PhD, things that I did not see coming myself, and that, in hindsight, may or may not be useful.

Here are some things that I didn't expect from my PhD:

That a PhD is nothing like you expect it to be
I am sure everyone has a different idea of what a PhD is going to be like but the one thing they have in common is that they are most likely going to be wrong. Looking back, I probably couldn't have had a worse understanding of what doing a PhD actually entails. In my head, I was embarking on another degree that was like a bachelor's or master's, just longer and with more thesis writing. And I could not have been more wrong.

A PhD is much more like a job than a degree, with the added downside that you will never be able to fully switch off. If you are anything like most of the people I have met doing a PhD then you will find yourself waking in the middle of the night, solving optimisation problems rather than counting sheep. There is some truth in that people who are most successful in writing a PhD are those that treat it like they would any other job: people that are organised in their daily routine and devote a solid but reasonable amount of time to their research. With a consistent number of hours a day, every day, you will get ahead in your research in no time and not have to run into the problems faced by those who swing between crazy peak times where they are rushing deadlines, and weeks where they hardly come to the office. Consistency and routines are key and will allow you to be efficient in your work while at the same time maximising your leisure to enjoy Cambridge to the fullest.

That it is not all about academia
Despite my best intentions when starting the PhD, I noticed fairly early on that research and academia probably weren't for me. After coming to that sobering realisation, I thought to myself many times that in spending so much time on one topic, I would be hopelessly unemployable once I left Cambridge. That anxiety might have had something to do with my taking my time finishing. So when I – finally - completed my PhD I was dreadfully uncertain about my future. I couldn't really see what my opportunities were outside of academia and research.

However, the truth is that there has probably not been a time in history where it has been more exciting to be a PhD economist. In the wake of the digital revolution we are experiencing right now, the world is creating staggering amounts of data. Economists are uniquely equipped to ask the right questions of these data. From tech firms to governments to non-profit enterprises, organisations are realising the potential and the skills economists can bring to the table.

That people want to help you, but you have to ask for it
Talk to everyone. Conversations with your peers, faculty members and your supervisor will often save you hours, days or even months of research and problem solving. I realise the stern faces you see around the Faculty of Economics can be intimidating and everyone always seems to be lost in their own little world far away. But people actually like to talk and bounce ideas off each other. So get involved, don't be afraid to ask for help or other people's opinions. Provided you have put thought and effort into what you are asking about, you might be surprised who will have a significant impact on your work and in what way.

That you will meet the most interesting people you have ever met, if you are open to it
The great privilege of studying at an institution such as Cambridge is the abundance of fascinating people doing fascinating things, not just in your own faculty. In fact, some of the most interesting and enriching conversations about your field of study you won't have with people from your field of study. The incredible network of individuals you will build at Cambridge is the most valuable thing the place will give you. Alongside that, you will form strong friendships with people that will broaden your horizons, which is truly a gift. All you have to do is go out there and engage. That includes joining societies and sports clubs, attending debates and heading to your local college bar for a beverage of your choice.

That you will have the time of your life
In the end, the PhD experience is one of the strangest things. At times it will be the most rewarding, most stimulating experience and the flexibility you are given means you will be able to have the best life style you can wish for. Then at other times it will the toughest, most draining, punishing, consuming and exhausting thing you will ever do, and you will want to quit, more than once. But the satisfaction and the sense of achievement that follow once you can look back on it is something you will not be able to put into words.

Going back to do my PhD has probably been one of the best decisions of my life. My PhD not only showed me what I wanted from a career, but also what I didn't want. And it equipped me with the tools, skills and experience to make the right decisions and find something that I can truly excel at. In my job I can now put my academic curiosity and rigour to use in a fast-paced environment, working on topics and with like-minded people that advise decision makers and create real impact.

But most importantly it was an amazing time. Doing my PhD allowed me the flexibility to pursue my passions such as rowing and make some of the strongest friendships I have in my life today.

And that is something I will be forever thankful for.

Dr Konstantin Matthies is a Consultant Economist with alphaβeta, Singapore.

Bernard Adams (1890–1917)

Amid the turbulence and uncertainty of the early 21st Century, Professor Willy Brown, formerly Master of Darwin College, reminds us of the creativity, heroism and sacrifice of one of Cambridge's first Economics graduates in the Great War.

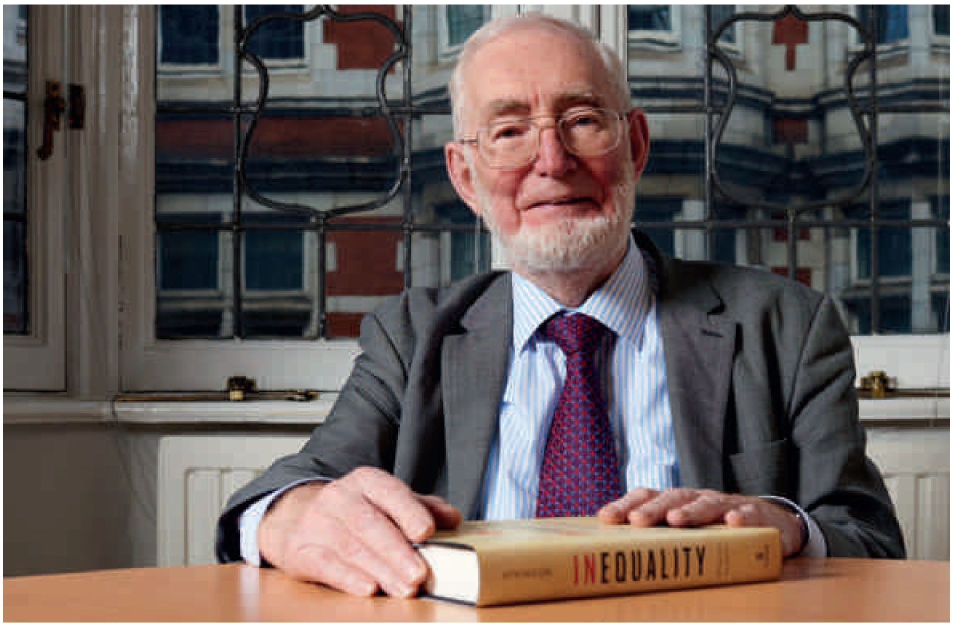
In the centenary year of his death in action it is fitting to recall one of the first graduates of the Economics Tripos. Bernard Adams wrote one of the most influential memoirs of the First World War. Born in 1890, he won a scholarship to St John's College in 1908. There he gained a first class in Part 1 Classics and several prizes. But his ambition was to become a missionary so he then studied for the Part 2 Tripos in Economics and Politics that Alfred Marshall had established a few years earlier. On graduating he became the warden at an India Office hostel for Indian students in South Kensington. With the outbreak of war he enlisted as an officer in the Royal Welsh Fusiliers and served in the trenches until wounded in June 1916. Whilst convalescing he wrote *Nothing of Importance – a record of eight months at the front with a Welsh Battalion, October 1915 to June 1916*. It was the only soldier's account to be published in book form during the war. He returned to the front in January 1917. One month later he was fatally wounded leading his men into action.

Nothing of Importance was published seven months after Adams' death. It is a remarkable account on several levels. Written largely as a diary, much of it as letters, it preserves the freshness of his perceptions at the time. He is fascinated with the routine details of warfare on what was at the time a fairly static front – mining and counter-mining, laying wire, patrolling, sniping, and the billets and the friendships. All this he describes with undramatic accuracy: 'I have nowhere exaggerated; for in this war there is nothing more terrible than the truth'. But the longer he is there, and the more that the men he is living with are arbitrarily maimed and killed, the more his naïve observation turns to anger at the futility of it all. The book earned immediate praise from two of his fellow officers of the Royal Welsh, Siegfried Sassoon and Robert Graves, whose famous memoirs were not to appear for a decade. Sassoon gave his own annotated copy to his friend the poet Wilfred Owen, who was about to return to France for the last time. To Graves he wrote that he thought it '…a very good book – expressing his quiet kindliness to perfection. He saw a lot through those spectacles of his'.

Thanks to the Master and Fellows of St John's College for access to College records.

Tony Atkinson (1944–2017)

Professor David Newbery reflects on the life of a distinguished Cambridge economist



Sir Anthony Barnes Atkinson died aged 72 on 1 January 2017, still at the height of his productive career, not long after his last visit to dine in Churchill College and see old friends in Cambridge. Tony was infectiously enthusiastic and supportive, immensely important in economics, a field too often characterised by competiveness and criticism. My lifelong friendship with Tony and his wife of more than 50 years, Judith, started when he returned from MIT to Cambridge in 1967 to share room 26 with me for four years.

Tony came to Churchill College in 1963, shortly after its foundation as Winston Churchill's vision of a British MIT. He began Cambridge as a mathematician, but graduated as an economist in 1966, taught by Frank Hahn. As an undergraduate Tony was much influenced by James Meade, Professor of Political Economy, with whom Tony shared a passionate sense of social justice and an understanding of how the power of economics could be harnessed to this end. Tony started his PhD in 1966 with a clear objective: to explore the causes and remedies of poverty, reflected in its title (and that of his first book) *Poverty in Britain and the Reform of Social Security* (1969).

Frank Hahn arranged for Tony, immediately after graduation, to visit MIT, where he worked closely with Bob Solow, Joe Stiglitz and Peter Diamond. He was thus in at the start of modern public economics and growth theory (on which he published his first article in 1967). He returned to Cambridge as an Assistant Lecturer in 1967 and lectured with Joe Stiglitz, then a JRF at Christ's, on public economics. The two of them were later to write the definitive graduate text *Lectures in Public Economics* (1980).

A foretaste of how rapidly the importance of his work was recognised came with his appointment at the age of 26 to Professor at Essex in 1971, where he continued to teach and write on public economics. In that spirit he founded the new *Journal of Public Economics* in 1972, which he continued to edit for nearly 20 years. His collaboration with Stiglitz continued with their 1976 proof that if the utility function is separable in labour and consumption then there is no case for non-uniform indirect taxation, thus extending the seminal work of Diamond and Mirrlees. The more provocative implication is that if non-linear income taxation is possible, then there is no need for indirect taxes at all.

In 1976 he moved to University College, London as Professor of Political Economy. Then, in 1980 he accepted the Tooke Chair of Economic Science and Statistics at the London School of Economics, where he stayed until 1992. He was elected to the senior Cambridge economics chair as Professor of Political Economy and to a Professorial Fellowship of Churchill College in 1992. From 1994 to 2005 he was Warden of Nuffield College, Oxford. Thereafter, while remaining a fellow of Nuffield College, he held a variety of Professorships - in Paris, Harvard, the LSE and Oxford.

Tony Atkinson was an immensely distinguished economist. He was committed to the proper measurement and documentation of income and wealth distributions in an increasingly wide set of countries over longer periods of time. He remained concerned with poverty and the design of policy to address distributional justice his entire professional life. His 23 books include *Unequal Shares – Wealth in Britain* (1971), and continued that theme right up to *Inequality – What can be done?* (2015) and *Monitoring Global Poverty* in 2016, the report of the Commission on Global Poverty that he chaired for the World Bank. His name also lives on in the Atkinson index - an inequality measure published in 1970 and the one most cited of the 357 articles and chapters listed on his web site (www.tony-atkinson.com/articles).

His Cambridge links with the measurement and policy analysis of income and wealth distributions continued long after the first book he wrote here. With Holly Sutherland (first of the Department of Applied Economics in Cambridge and later of Essex), he used microsimulation models to analyse the distributional effects of policies and potential policy reforms. Such models were subsequently adapted and used in a variety of countries for similar purposes.

He was elected a Fellow of the British Academy in 1984 and was Vice President from 1988-90. He was knighted in 2000 and made a Chevalier de la Légion d'Honneur in 2001. His many obituary notices reflect the sense of loss of such a creative researcher, effective campaigner, leader of so many institutions and commissions, wise counsellor and most loyal friend to so many. He is greatly, greatly missed.

Professor David Newbery

We welcome:

As Faculty members:

Dr Koen Jochmans (*Econometrics*) as Reader, from SciencesPo.

Dr Alexander Rodnyansky (*International Finance and Macroeconomics*) as University Lecturer, from Princeton.

As Janeway Fellows (Joint Appointments as College Teaching Officers and Cambridge-INET Research Associates):

Dr Juan Block (Murray Edwards College)

Dr Sriya Iyer (St. Catharine's College)

Dr Kamiar Mohaddes (Girton College).

As C-INET Postdoctoral Research Fellows:

Dr Aubrey Clark

Dr Marco Valerio Geraci

Dr Alexey Gorn

Dr Fred Moisan

As Research Assistants:

Dr Lu Han

UNIVERSITY OF CAMBRIDGE

We congratulate on promotion:

Dr Vasco Carvalho, to Professor

Drs Sarah Horrell and **Pontus Rendahl**, to Reader

Dr Petra Geraats, to Senior Lecturer

We say 'Thank you' to:

Professor Tony Lawson and **Dr Sean Holly** who, while formally retiring from their posts at the end of the 2016/17 academic year, will both continue to be active within the Faculty. Tony is an influential force in developing and maintaining alternative paradigms of analysis, in particular with respect to social ontology and to the philosophy and history of economic thought. Sean's work is in macroeconomic analysis applied to optimal policy formulation.

Marie Butcher, Assistant Registrary, who is moving on via a promotion to a senior administrative post in the School of Humanities and Social Sciences.

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