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Three major losses

We have commented several times in these pages in the past that the rapid expansion of university economics in the UK in the '50s and '60s was bound to produce a high mortality rate in the present era. Nonetheless it is particularly sad to have to notice the passing of three towering figures of the profession in the same issue. Sir Tony Atkinson was a past-president of the Society and a world authority on poverty and inequality, while Thomas Schelling probably did more than anyone to further our understanding of conflict and cooperation through game theory. And it speaks volumes for Kenneth Arrow's contribution to the subject that, by pure coincidence, the issue of this *Newsletter* that carries his obituary also contains two contributions that draw on his 'impossibility theorem'.

Members of the society will be particularly interested in the item under 'RES News' that explains the recent (and continuing) changes in the administration of the Society. This includes the setting up of a permanent office in Westminster and the appointment of a Chief Executive, Leighton Chipperfield, and Operations Manager, Marie-Luiza de Menezes. We wish them both well in their new positions.

Because this is the April issue the regular items include another very topical Letter from America by Angus Deaton as well as the Secretary-General's Annual Report. We go to press on the eve of the Society's Annual Conference, this year in Bristol. We shall have a full report in the July issue.

Just in case — a few words of apology might be appropriate. The timing of the Conference and the Easter public holiday, could mean that readers receive this *Newsletter* a few days later than usual. We hope not, but just in case...

THE ROYAL ECONOMIC SOCIETY

- President: Professor Andrew Chesher (UCL and cemmap)
- President-elect: Professor Peter Neary (Oxford)
- Past-president: Professor John Moore (Edinburgh)
- Secretary-General: Professor Denise Osborn (University of Manchester)
- Second Secretary: Professor Robin Naylor (University of Warwick)

For other members of the Executive Committee, go to the Society pages on the website where all those involved in the structure and governance of the Society are listed.

The Society's Newsletter

The Royal Economic Society is one of the oldest and most prestigious economic associations in the world. It is a learned society, founded in 1890 with the aim 'to promote the study of economic science.' Initially called the British Economic Association, it became the Royal Economic Society on receiving its Royal Charter in 1902. The current officers of the Executive Committee are listed above.

The Society's bee logo

The Society's logo, shown below, has been used from its earliest days. The story behind the use of the bee refers to the 'Fable of the Bees' by Bernard Mandeville, an 18th Century essayist which alludes to the benefits of decentralisation by looking at co-operation amongst bees and showing how the pursuit of self-interest can be beneficial to society. The Latin quote comes from Virgil and speaks of the drive of bees.



For membership benefits, subscription fees and how to join the Society, see back cover or go to: www.res.org.uk

The *Newsletter* is first and foremost a vehicle for the dissemination of news and comment of interest to its readers. Contributions from readers are always warmly welcomed. We are particularly interested to receive **letters, reports of conferences and meetings, and news of major research projects** as well as **comment on recent events**.

Visit our website at:
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The *Newsletter* is published quarterly in
January, April, July and October

Newsletter - subscription rates

The *Newsletter* is distributed to members of the Society free of charge. Non-members may obtain copies at the following subscription rates:

• UK £5.00 • Europe (outside UK) £6.50 • Non-Europe (by airmail) £8.00

Next issue No. 178 July 2017 Deadline for submissions 16 June 2017

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Letter from America —

‘Madmen in authority’ and health care reform

In his latest letter, Angus Deaton exposes the incoherence of the Trump administration’s attempts to reform health care in the USA (as well as its ignorance of the late Kenneth Arrow).

The new administration in Washington, together with the Republican majorities in the House and Senate, have taken up healthcare reform as their first major legislative task. Republicans have wanted to repeal Obamacare since it was passed against their united opposition, and campaigned on repealing it in 2016, as did President Trump. As the debate progressed, it has been hard not to think of Ken Arrow, who died on February 21st at the age of 95. Keynes famously wrote of ‘madmen in authority’ who hear the voices of past academic scribblers, and ‘practical men,’ who are the ‘slaves of some defunct economist.’ ‘Madmen in authority’ could hardly be improved upon as a description of Washington today, though one might wish that the defunct economist were Arrow, and not, as seems to be the case, the authors of those elementary economics texts that ‘demonstrate’ that markets maximize well-being. Arrow’s 1963 *American Economic Review* paper on ‘Uncertainty and the welfare economics of medical care’ contains a careful characterization of why and how the standard free-market theorems break down when we try to think about healthcare as a commodity like a phone or an automobile. As experience around the world has shown, and as Arrow anticipated, there is no ideal delivery system for healthcare, though it is only in the United States that policy has consistently tried to prove that Arrow was wrong about markets, and today, yet another attempt waits in the wings.

Out with the experts!

In the Trump administration, as has happened in the past, economists have been largely excluded from positions of authority in Washington. The Council of Economic Advisors has been demoted from Cabinet status and no new Chairman of the Council has been nominated at the time of writing. The health reformers, led by House Leader Paul Ryan, are driven in part by their unshakeable political commitment to the repeal of Obamacare, which has insured an additional 16 million people. But they also share a genuine intellectual belief that healthcare would be better with more market and less government; Ryan has often noted his intellectual indebtedness to Ayn Rand and has said that it was her *Atlas Shrugged* that got him

interested in economics. Trump meanwhile displays an unsurprising ignorance. ‘Nobody knew health care could be so complicated’ fits someone who promised that he would give everyone higher quality coverage at lower cost. And the American public has long greatly disliked and distrusted their health care system, providing fertile ground for those who would blame Obamacare. Of course, difficult cases are common in using almost any medical system, and it is unclear what people really want or would pay for. When recently asked, 46 per cent of Americans were opposed to Obamacare, while only 26 per cent were opposed to the Affordable Care Act, which is the official title of Obamacare.

Yet there are certainly arguments for the free market case. If there were no subsidies, and no government programs, we could better benefit from the fierce cost control that competitive markets yield for other technologically complicated commodities, like TVs or phones. The absence of government might also help eliminate the gigantically expensive industries that live off and lobby for government favours and government programs, with the willing help of legislators. Yet pervasive insurance would still stand in the way of cost control and some have proposed banning insurance, except for catastrophically expensive treatment, though this is hardly a policy that would appeal to those who believe in the magic of markets. Arrow lurks around every corner!

Choice may be a ‘good’...

Republicans promise choice, arguing that people should be able to choose the healthcare plans that they want and not have the government restrict their choice. Ryan talks about giving people ‘access to quality, affordable health care’ meaning that they can purchase it. Jason Chaffetz, Chairman of the House Oversight Committee, noted that ‘Americans have choices . . . and so, maybe rather than getting that new iPhone that they just love. . . maybe they should invest in their own health care. They’ve got to make those decisions themselves.’ In these discussions, healthcare is a commodity like any other, and if people do not choose to purchase it, they should be free to

“ As experience around the world has shown, and as Arrow anticipated, there is no ideal delivery system for healthcare, though it is only in the United States that policy has consistently tried to prove that Arrow was wrong ... ”

choose. Choice is unproblematic, and little recognition is given to the possibility that people might choose badly. In such a world, well-informed consumers will drive out deceptive insurance policies, just as consumers will drive out financial advisors whose investment vehicles are designed to profit the advisors, not the investors. Eliminating regulations on such products is a clear early aim of the Trump administration. For those of us who disagree, it is easy to see such policies as sops to the insurers or advisors who are enriched by deception, but there is also a genuine difference of belief, and an economics literature in support. Indeed, much of the 'Chicago' economics of Stigler, Coase, and Friedman can be thought of as demonstrations that the problems that bothered Arrow are either not so bad after all, or have cures that are worse than the disease. As in that literature, today's reformers say little about the ability to pay. Jeb Hansarling, another House Chairman and Texan Republican, has claimed that he didn't know why he was a Republican until he studied economics (from Professor Phil Gramm, later an influential and powerful Senator from Texas) and 'I suddenly saw how free-market economics provided maximum good to the maximum number,' and was convinced that 'I'd like to serve in public office and further the case of the free market.'

...but it comes at a terrible price

Another great American health economist, Victor Fuchs, who played a role in urging Arrow to write the 1963 paper, and who is happily (and productively) still with us at the age of 93, has long noted that there is no reason why every country should have the same healthcare system. Americans are less egalitarian than Europeans, and are much less trusting of government. So perhaps their healthcare system ought to be more market-based. Yet Fuchs now believes that, at a price of around a trillion dollars a year, we are paying far too much for our tastes. Life expectancy in the US is among the lowest in all rich countries, and in the last two years has been falling, uniquely among comparable countries. Working-class whites are dying from an epidemic of suicides, drug addiction and alcoholism, and are facing rising death rates from heart disease. The mixed system of government and private provision has generated a machine that is perfectly designed for profitable rent seeking, but appallingly designed for improving or even maintaining health. And because so many Americans have health insurance 'provided' by their employers, and believe it to be free, they do not see how the cost of healthcare is holding down their wages.

At the end of his paper, Arrow wrote: 'It is the general social consensus, clearly, that the laissez-faire solution for medicine is intolerable.' This is perhaps one of the few sentences in the paper that has not stood the test of time, though there is nothing at all wrong with the last clause.

European Economic Association uncovers questionable research practices

In a recent survey of its 2250 registered members, the EEA finds a striking mismatch between economists' perceptions of appropriate research behaviour and the practices to which they are prepared to admit. The survey, said to be very representative of the Association's membership, consisted of responses from 426 individuals.

In order to shed light on economists' *norms*, respondents were asked 'how do you assess the following [22] behaviours?' When it comes to choosing a research topic, for example, 85 per cent felt that personal interest or intrinsic motivation provided the best basis, whilst 60 per cent felt that prospects for publication should be taken into account and 19 per cent thought that choice should not be driven by data availability. Some behaviour was universally condemned: copying work from others without citing (by 100 per cent); fabricating data as well as excluding part of the data are rejected (by 97 per cent); using tricks to improve test values (by 96 per cent) and incorrectly crediting co-authorship (by 93 per cent). Strategic behaviour in the publication process is also frowned upon but less forcefully than practices applicable when analyzing data or writing papers. Citing strategically or maximizing the number of publications by slicing into the smallest publishable unit is rejected by 64 per cent. Complying with suggestions by referees even though one thinks they are wrong is considered unjustifiable by 61 per cent.

When it came to *practice*, the respondents were asked whether they had engaged in any of 26 different behaviours. Consistent with their declared norms, 96 per cent stated that personal interest determined the choice of their research topic, while publication prospects were reported to have been decisive for 67 per cent. More disturbingly, about 20 per cent admitted to having refrained from citing others' work that contradicted their own analysis and about the same confessed to having maximized the number of publications by slicing their work into the smallest publishable unit. Even more, 24 per cent, said they copied from their own previous work without citing. 32-38 per cent admitted to questionable practices of data analysis. Even sexual or financial favours were sometimes countenanced (albeit by only 1-2 per cent).

In order to elicit their perceptions of misbehaviour on *the part of others*, respondents were given a scale of 'up to ...%' in deciles. The fabrication of data was not thought to be widespread with a median response of 'up to 10 per cent'. Using tricks to improve test statistics and data mining were more commonly suspected with a median response of 'up to 30 per cent'. About a third of respondents had observed at least one case of 'scientific misconduct' within their own department or institution.

Further details can be found in the paper by Sarah Necker, 'Scientific misbehavior in economics', *Research Policy*, 43 (2014), pp.1747-59.

Secretary-General's Annual Report

The Secretary-General, Denise Osborn, presented her second annual report to the Society's AGM at the University of Bristol on Tuesday 11th April.

The last year has been very eventful for the Society, with important decisions being made about the nature of RES administrative support while continuing to maintain a wide range of activities. Although this report concentrates primarily on the past year, I will also take the opportunity to make a few remarks about plans for the remainder of 2017 and beyond.

I would like to start by thanking some of the many people who have contributed a great deal to the work of the Society. Last year I noted that Mark Robson would step down as Honorary Treasurer at the end of June 2016 after eight years of great service to the Society. Sue Holloway has taken over from Mark as Honorary Treasurer and has quickly become embedded in the Society's work. As also noted last year, Charlie Bean completed his term as Past President and a member of the Executive Committee at the 2016 AGM. I would like to thank Charlie and Mark again and to note that we are delighted that both have accepted invitations, endorsed by both the Council and the Executive Committee, to be Vice Presidents of the Society.

The new presidential 'triumvirate', approved at last year's AGM, has now been working for a year, with Andrew Chesher as President with John Moore as Past-President and Peter Neary as President-Elect. The Society has benefited from the active involvement of all three during the year, and this has been especially helpful in a period when important decisions were taken about the most appropriate administrative structure for the RES moving forward. All three have worked together very well, sometimes consulting within their 'group' and amicably making decisions when required about who would act as the president in terms of representation on committees, etc. Especially when the triumvirate system has been in operation for a while, it is hoped that this new system will lessen the burden on any single individual of being RES President.

Meanwhile, the 2017 AGM marks the end of John Moore's term as Past President and I would like to thank him for his many contributions over the last three years. On a personal level, I have greatly enjoyed working with John and I will miss his many lively contributions to RES meetings. The AGM also marks the transition of Peter Neary as President and Andrew Chesher as Past President. Both Andrew and Peter have made many

important contributions over the past year, and I am sure will continue to do so. Subject to ratification at this meeting, Nick Stern will today become RES President-Elect 2017-2018 and President for one year from the 2018 AGM. Nick will bring a great deal of experience to the role and the Society looks forward to working closely with him.

At this meeting we say farewell to six Council members who have served since 2012, namely Martin Browning, Tim Harford, Paul Johnson, Kimberley Scharf, Sarah Smith and Peter Sinclair. All have contributed in a variety of ways to the activities of the Society and we are indebted to them. I would particularly like to thank Paul and Sarah for their work as Council representatives on the Executive Committee. Subject to ratification at this meeting, Hasan Bahkshi, Brit Grosskopf, Friederike Mengel, Mary Morgan, Martin Sandbu and Chris Wallace join Council until 2022.

The members of the Executive Committee are the Society's trustees under charity law and all play key roles in the administration of its affairs. In addition to people mentioned above, I would also like to note that Rachel Griffith completed her term as representative of the *Economic Journal* Managing Editors on the Executive Committee in the autumn of 2016 and also stepped down from her editorial role at the end of March this year. Rachel has had a great influence on the journal and the Society's affairs more generally, and I am sure that all who have worked with her at the RES will join me in thanking her for her contributions. Morten Ravn has taken on the role since September.

In addition, the *Econometrics Journal* Managing Editor Richard J Smith will step down at the end of April this year after ten years in the role, which has also involved membership of the Executive Committee. The Society is very grateful to Richard for his outstanding service. Jaap Abbring, currently a Co-Editor, will take up the position of Managing Editor from the beginning of May.

The Society

Membership of the Society showed further substantial growth in 2016, reaching a total of 4,232 at the end of December, up from 3,544 in 2015. Over a 5-year period membership has grown by 44 per cent, with online membership rising to 80 per cent of all subscriptions, com-

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pared to 74 per cent in 2015. It may be that the option of online membership is itself encouraging growth in membership. More likely, the growth is being driven by underlying growth in submissions to the *Economic Journal*, increases in the size of the conference and the higher profile of the Society through our increasing range of activities — especially those appealing to students (including PhD students).

The Society continues to have a healthy international membership, growing by 32 per cent since 2012, with 55 per cent of members based outside the UK. Perhaps most notably, the number of student members has grown dramatically, rising from 706 in 2012 to 1,312 (almost one-third of total membership) in 2016. The overwhelming majority (86 per cent) of non-student members registering their profession identify themselves as academics.

The financial health of the Society remains very sound, as the Honorary Treasurer will report. Much of our income continues to come through publishing the *Economic Journal* and the *Econometrics Journal*, with this income being quite steady in a difficult environment with institutional budgets being squeezed and the rise of open access publishing. In terms of income and expenditure, the Society had a net deficit of approximately £100,000 in 2016, which was less than anticipated when the budget was set for last year. The deficit is financed through the sale of investment assets, but the Society's total assets nevertheless stood at over £6 million at the end of 2016.

Journals and Conference

The *Economic Journal*, one of the oldest and most prestigious academic Economics journals in the world, continues to do extremely well in terms of impact statistics as measured by citations in academic papers (its 2-year impact statistic was 2.37 last year) and in terms of its impact as measured by citations in the press and on social media. Downloads of *EJ* articles from our publisher Wiley have shown a strong upward trend over time, increasing by 7 per cent in 2016 to almost 375,000. Alongside these impressive usage and impact statistics, the *EJ* has witnessed large increases in the number of submissions over the last few years: in 2016 alone, the increase was 16 percent. One consequence is the publication of an additional *EJ* issue beyond the norm last year, with further additional issues planned in the future, due to the number of papers now in the publication pipeline. An additional editor has also been appointed to help deal with the increased workload.

The *Econometrics Journal* (*EctJ*) is now in its 20th year and continues to be one of the most highly respected journals within Econometrics and its five-year Impact Factor is now at its highest ever figure at 1.579. With the full support of the Executive Committee, the *EctJ* has recently implemented a fundamental change in editorial

policy intended to facilitate the rapid publication of high quality research papers relevant to contemporary econometrics in which the primary emphasis is placed on important and original contributions of substantive direct or potential value in applications.

Various prizes are awarded by the Society in relation to papers published in our journals. The 2016 RES Prize for the best unsolicited paper published in the *EJ* in a given year was awarded to Dan Anderberg, Helmut Rainer, Jonathan Wadsworth and Tanya Wilson. Prizes are also awarded for the best unsolicited paper by an author within five years of their PhD. The Austin Robinson Prize for the *EJ* in 2016 has been awarded to Sergey Nigai, with Igor L Kheifets being the Denis Sargan Prizewinner for the *Econometrics Journal* in 2015.

The Society remains grateful to the editors of both journals for the hard and highly professional work they continue to perform on our behalf.

The 2016 Royal Economic Society Conference took place at the University of Sussex and was extremely successful. More than 550 paying delegates attended, a similar number to 2015 (which marked the 125th Anniversary of the *EJ* and the Society), while a record number (1,450) papers were submitted for presentation in general sessions in 2016. Programme highlights included keynote lectures by Esther Duflo (MIT), Kristen Forbes (MIT and Bank of England Monetary Policy Committee) and Susanne Schennach (Brown), together with Plenary Sessions on Brexit and Minimum Wages. Social events featured a drinks reception at Brighton's Museum and Art Gallery (with delegates able to take advantage of an optional tour of the Royal Pavilion) and the Gala Dinner at The Grand Hotel. Thanks go to the Programme Chair (Richard Dickens), Deputy Programme Chair (Holger Breinlich) and Local Organiser (Dimitri Petropoulou).

All indications are that the current 2017 conference will also be very successful, under programme chair Sarah Smith, deputy programme chair Michael McMahon and local organisers Senay Sokullu and Leandro de Magalhaes, together with the Society's Conference Secretary (Neil Rickman). At this point I would also like to mention Jo McWhirter. Since her appointment as the Society's Conference and Events Assistant just a year ago, she has provided great support for the organisation of the Annual Conference and other RES events.

Communication and Engagement

A strategic aim for the RES is to promote economics as an academic discipline to young people. Specific events designed for this purpose are the Annual Public Lecture and the Young Economist Competition.

The Society initiated its Public Lectures back in 2001, with these designed to engage primarily with A Level Economics students. The series is now well-established and the 2016 lecture was given by Philipp Kircher, with the title: 'In Search of the Perfect Match — the economics of picking our partners and jobs', and enthusiastically received by nearly 1000 people across the two venues in London and Manchester.

As part of the London event, the prize for the Young Economist of the Year Competition was presented by Charles Bean on behalf of the judging panel. The competition is open to students studying A-Level Economics and 1900 essays were entered last year. Although a little down on the 2100 entries received in 2015, this nevertheless represents a substantial increase on pre-2015 levels. The winner of the 2016 competition was Sherwood Lam, who received an engraved trophy and a cheque for £1,000.

Although it was hoped that the Society would organise two policy lectures in 2016, neither was able to be scheduled due to the availability of the proposed speakers. However, Mervyn King, former Governor of the Bank of England, will speak at an RES public event, organised in conjunction with the Festival of Ideas, at the end of the 2017 Annual Conference in Bristol.

A new initiative for 2017 is the RES Undergraduate Video Competition, which is being organised in conjunction with the Economics Network. Groups of undergraduate students are invited to produce short films to illustrate how economics can be used to make sense of the world we live in today, with entries closing at the end of April.

Also new for 2017 is the series of public events, organised in conjunction with the Bristol Festival of Ideas, taking place in the early evenings during the 2017 Conference under the heading 'RES Presents'. Debates on Post-Brexit Economics and Re-Skilling the UK are featured, together with a presentation by Mervyn King. Alongside her key role for the Conference, Sarah Smith has been active in the organisation of these 'fringe events'.

Since 2012, external communication has been led by Robin Naylor as Deputy Secretary-General. More specifically, he leads on most aspects of the Society's website and, along with the RES Office, works to expand the scope and depth of information and services provided through the website. In his role, Robin also liaises with the Media Consultant, the RES *Newsletter* Editor, the Events Manager, the Conference Committee (especially on matters relating to filming), the Economics Network and with Wiley, who are the current publishers of the Society's journals and host the RES website. In 2016, he developed a process by which the RES endorses training workshops run by the Economics

Network for Higher Education teaching staff, setting up a review panel chaired by Professor Wyn Morgan (University of Sheffield - see p.9 below).

I would also like to mention Peter Howells, the Editor of the RES *Newsletter*. Each quarter Peter continues to ensure the *Newsletter* contains interesting articles, correspondence, obituaries and general information. Peter performs a terrific service on behalf of the Society and our members.

Postgraduate Support

The Society supports postgraduate students in the discipline in a number of ways. The RES PhD and Job Market Meeting has been held annually since 2006 and in both January 2016 and 2017 took place at Westminster Business School (WBS), London. The format of the event is now quite settled; keynote talks were tailored to the audience of delegates who were in the early stages of their careers in economics. Over 300 students from the UK, rest of Europe and the US registered for each of these events, with 100 presenting their research either through paper or poster presentations. A feature of this meeting is the attendance of recruiting institutions, with students who are on the job market available for formal and informal interviews. Although there is no registration fee, all students attending have to hold current RES membership. The number of recruiting institutions attending in 2017 was a little disappointing, at 16 (compared to 23 in 2016). However, the timing just after the new year holiday may have been the reason and this is being taken into account in planning the next meeting.

Following from the success of the inaugural event in 2015, the Symposium of Junior Researchers met for the second year in 2016. at the University of Sussex, immediately after the conference,. This event brings together students at all stages of their theses to provide the opportunity for young economists to discuss and disseminate their research. An impressive total of 381 papers were submitted for presentation last year (compared with 204 for the first event) from which 75 were selected for presentation as papers or posters. The Symposium has quickly become international, with half of the presenters in 2016 travelling from overseas, primarily mainland Europe.

Thanks go to the organisers of both the Job Market Meeting and the PhD Symposium. It is especially notable that the organisation for the latter is largely undertaken by students, who have done a great job in both 2015 and 2016. The Symposium is again taking place in 2017 immediately after this Annual Conference.

For its 125th Anniversary Conference in 2015, the Society allowed any PhD student registered in a UK Economics departments to attend the Annual

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Conference, including social events, for a nominal £10 fee. This scheme has since been repeated for 2016, when 43 such students took up the offer, and the current conference. It is additional to the on-going scheme through which the RES provides financial support that covers the registration fee, accommodation expenses and a substantial contribution towards travel expenses for those who have their papers accepted and presented at the conference.

The 2016 RES Easter School lectures for advanced post-graduate students and early career economists were organised at the University of Essex under the direction of Eric Smith, after being organised for many years by Peter Sinclair. The 2016 lectures were given by Professor Charles Manski of Northwestern University and Professor Ken Wolpin of Rice University on the econometric analysis of public policy. As in the past, the school was heavily oversubscribed. There were over 50 applicants from 27 UK and EU institutions. The 24 selected applicants represented 14 universities. As in the past years, participants evaluations were very positive and the event once again a success.

Since 1995, the Society has provided Junior Fellowship to doctoral candidates at UK universities to provide financial support to complete their studies. In 2016, 47 applications were received from 18 universities. Although it was planned to offer 10 awards, two successful candidates withdrew just before the start of the award as they wished to accept other funding offers. The Society reluctantly decided to suspend the scheme for 2017, in the light of pressure on the Society's administrative resources due to the relocation of the office, as discussed below. The Executive Committee and Council agreed that the opportunity should be taken to review the scheme, and this review will shortly take place.

Other Activities

In addition to the activities above, the Society continues to support research and scholarship through a range of other schemes, including Special Projects Grants, Conference Grants and Small Academic Expenditure Schemes. The last two have been administered by Anton Muscatelli over a long period, and the Society is very grateful for his continued practical support. The Conference Grant scheme helped 49 individuals to attend economics conferences (delivering papers or as discussants) in 2016), the Small Budget Scheme supported the work of five individuals, and the Special Project Grant Scheme contributed to, among other things, conferences in York and Glasgow.

The Society's Women's Committee aims to identify the current position of women economists in academic departments and in business; to monitor changes in the position of women and to make these data widely available; to support women throughout the economics pro-

cession by the establishment of networks; to increase contacts of women in similar situations; to identify the underlying causes of the under-representation of women in economics and to seek to change or affect them. Activities in 2016 included a 'Special Session' at the Annual Conference, with senior women presenting in a panel format, the now annual departmental survey of academic staff with biennial checking and report presentation, additional studies of the editorial gender balance in UK based economics journals (2001 and 2016), analysis of the gender gap in REF submission probabilities for Lecturers, and contributions to the RES *Newsletter*. The chair of the Women's Committee changed at the end of June 2016, with Silvana Tenreyro taking over from Karen Mumford. Both have put a great deal into the role and I would like to publically thank them both.

CHUDE, the Conference of Heads of University Departments of Economics, provides a key link to those who lecture and research in Economics 'at the chalk-face'. Under the continued chairmanship of Eric Pentecost and supported by Daniel Zizzo as secretary, CHUDE has discussed a range of matters during 2016 and on a number of occasions taken the lead for the Society in providing feedback on official consultations. In particular CHUDE led the drafting of the responses, submitted jointly with the RES, to the consultation on the Teaching Excellence Framework (TEF) in 2016 and the 2017 Research Excellence Framework (REF) consultation.

The RES Office

During 2016, the Society's Executive Committee asked a sub-committee consisting of the three Presidents, Secretary-General, Second Secretary and the Honorary Treasurer to consider whether improvements could be made to the existing administrative support based in three different universities in the UK. Following a review, the recommendation was to appoint a Chief Executive and gradually move all the current support functions into a central team to be based in London. This was approved by the Executive Committee and Council, who agreed that this will allow the Society to maximise its resources and expand the range of activities it can undertake in pursuit of its objectives.

Marie-Luiza de Menezes commenced work for the Society as Operations Manager, based in the London office, at the beginning of 2017. She is the first person to be directly employed by the RES, rather than working for the Society through a university or other institution. She has quickly got to grips with the wide-ranging work of the Society and is already playing a key role. Leighton Chipperfield has been appointed as the Society's first Chief Executive to assist in developing and delivering a coherent strategy to promote Economics at all levels and across a range of audiences. Leighton is currently Director of Commercial Affairs at the

Microbiology Society and will take up his RES post in early May. We wholeheartedly welcome both Marie-Luiza and Leighton as RES staff members. Further appointments to the office will be made during 2017 and beyond.

The Society has rented office accommodation from the National Institute of Economic and Social Research in Westminster. By the end of June, the Society's office in St Andrews will close and all administrative functions will transfer to the London office. The Society is sad to say farewell to Amanda Wilman and Cheryl Dochard who have staffed the St Andrews office, with Amanda working as Office Manager for the Society for more than eight years. We sincerely wish them both well in their future careers.

Other Future Plans

The Society will be reviewing our journal publishing contract, as December 31st 2017 is the deadline for informing the current publisher, Wiley, as to whether or not the current contract is to roll over. The Society will be engaging the services of a publishing consultant to support us through this review and any subsequent processes associated with tendering and contracting. The review will also consider whether the publishing contract will continue to cover journal publishing, website hosting and membership services or whether these should be unbundled, with the possibility of some services moving to the Society's new office at some future date.

The Society will also be reviewing much of its organisation and many of its administrative processes over the coming year. Throughout this period, the RES will continue to foster and encourage the communication of economic information through its financial support of projects and grants to individuals, and through its publications. As always, RES members are key stakeholders; your support for the Society and its work is invaluable.

Economic History Society Annual Conference

The Society's 2017 Annual Conference was held this year at Royal Holloway, University of London, 31st March to 2nd April.

Amongst the many presentations, Jim Tomlinson (University of Glasgow), David Thackeray (University of Exeter) and Adrian Williamson (University of Cambridge) gave papers with a Brexit focus.

Details of these and many other papers of interest to economists can be found at:

<http://www.ehs.org.uk/news/ehs-annual-conference-press-releases>



Economics Network

Economics: the Profession and the Public

5 May, HM Treasury

This one-day symposium has been organised by the Economics Network with the support of the Government Economic Service and Royal Economic Society. It will bring together economists from academia, the media and government to discuss the difficulties of communicating and discussing economics with the general public. Panels at the event will focus on economic literacy and public understanding of economics, as well as the relationship between economists and the media.

To find out more, please visit: <https://economicsnetwork.ac.uk/events/professionandpublic>.

Developments in Economics Education Conference 2017

6-8 September, University College London

The DEE conference is the UK's leading conference on economics education. Sessions at the conference include paper presentations and interactive workshops which introduce new and innovative ideas on teaching and learning methods, the economics curriculum and student engagement.

The 2017 conference will be run in collaboration with UCL's Centre for Teaching and Learning Economics (CTaLE).

Workshop endorsement

The Economics Network's programme of workshops for early career economics teaching staff was recently reviewed by an independent panel, chaired by Prof Wyn Morgan. The role of the panel was to establish if the workshop provision is of a high quality, appropriate for new lecturers and graduate teaching assistants of economics, and meets the needs of the HE economics sector in the UK.

Following the detailed review, the panel concluded that the workshops 'are of high quality and appropriate for the intended purpose of supporting new lecturers and GTAs as they begin their careers as teachers of economics'. Furthermore, they reported that 'it is clear that appropriately experienced and qualified people deliver the courses'.

The Economics Network is generously supported by the Royal Economic Society, the Scottish Economic Society and over 50 UK higher education economics departments. More information on our supporters and joining the Network is available on our website at:

www.economicsnetwork.ac.uk/about/supporters

A science, not an ideology

Christian Gollier, Founder and former Director of the Toulouse School of Economics, currently on sabbatical at UCL talks to Tim Phillips (Editor of the CORE project) about TSE's first year of teaching CORE to its undergraduates.^{1,2}

Not every economist would consider teaching introductory students to be tempting, but the attraction of teaching the first CORE program at the Toulouse School of Economics (TSE) attracted its co-creator and director back from a sabbatical at Columbia University.

TSE has 800 students of all abilities in its first year (in the French system, universities cannot select their students until year three), and this year Christian Gollier was one of the teachers for the first CORE classes that took place between September and December. 'Typically the most experienced researchers don't teach undergraduates, and I hadn't done any teaching for 15 years,' he admits, 'So they warned me: your students won't do the work, and they don't go to lectures. But that hasn't been the case. I told my students: thank you for being our guinea pigs, and they were happy to do that.'

Currently the French version of CORE is not interactive, although the 2017 release (in development) will be delivered online in French and English, with exactly the same functionality. Gollier argues that, nevertheless, CORE's main advantage compared to a traditional syllabus is that he can teach students about how to solve economic problems, using principles, measurement and observation, rather than losing them in abstract ideas.

'When our students take their first course, most are not good at mathematics. So they focus on this, and they forget all about the purpose of economics,' he says. 'Instead, we should try to explain to students what economics is, what our methodology is. Let's show them as many practical examples as possible. If you try to study economics just by learning mathematics, you don't get even one minute of excitement out of any course.'

Also, CORE frees undergraduate from the problem that it repeats the same topics, in exactly the same order, each year. 'You don't always need to start with Walrasian supply and demand,' he says, 'We need to ask ourselves how boring student life is when we teach the same topics four times, with a little bit more complexity in the mathematics each time. It's time for a change.'

Gollier prefers to introduce the subject with as many examples as possible of how economic data and experiments, applied to simple models, helps to describe the world that students experience (he'd like to see even more data and experimentation in CORE's course material, he admits). This year he used some of his classroom time to show how theory might not always match their real-world experience -- but to use this as a way to spark their imagination by looking for an explanation.

'In class, we played a prisoners dilemma game. The theory that we teach undergraduates predicts a Nash

Equilibrium that is not the one we see when we do the experiment in the classroom. So then we can discuss why this happens, how a different outcome is possible,' he says.

“ We have a problem in France that the public does not perceive economics as a science, but as an ideology. There are still too many important questions that economists simply do not ask, and the catastrophe of the the last 50 years is that we have taught the subject as if all these exciting new ideas do not exist. ”

Academic economics in France has rarely been more creative — he cites his colleague Jean Tirole, winner of

the Nobel prize in 2014, and Thomas Piketty, author of *Capital* as examples of economists who 'start from the view that society has failed to create an efficient allocation of resources, and then find out why that is.' But this mindset is still too rare in teaching, he says, and too few economists are open to new ideas in disciplines such as psychology and sociology.

'We have a problem in France that the public does not perceive economics as a science, but as an ideology. There are still too many important questions that economists simply do not ask, and the catastrophe of the last 50 years is that we have taught the subject as if all these exciting new ideas do not exist,' he explains.

Notes:

1. The Nuffield Foundation has granted CORE £340,000 to develop a new course to introduce students who do not intend to specialise in economics to the discipline as a method of social enquiry, and encourage the development of quantitative social science. If you are interested in getting involved in CORE's EQuSS (Economics as a Quantitative Social Science) project, contact stella@core-econ.org

2. The CORE website is: www.core-econ.org

The Inomics 2016 Salary Survey

INOMICS has been offering students and professionals a comprehensive online resource for their academic and career choices since 1998. Amongst the services it provides is an Annual Salary Report. The 2016 Report was published just after our January issue went to press. Here is a summary of its main findings. Full details of the survey and of INOMICS' other activities can be found at their website, <https://inomics.com/SR2016>

The results of this report were compiled from information collected by an online questionnaire between August and October 2016. In addition, the questionnaire was circulated through social media channels and by email.

The sample

In all, 1,959 respondents from 99 countries took part in the survey, more than twice the number that contributed to the 2015 report. All were currently in employment, most of them in universities and representing different career stages from PhD student to full professor. Compared to the 2015 Salary Report, the 2016 edition includes more data from the private sector in order to construct salary comparisons between the private sector and academia. The 2016 questionnaire also asked additional questions such as salary satisfaction level, main motivations at work and skills/experiences justifying higher salaries.

Table 1: Distribution of respondents by age and location

Age		Region	
	%		%
<25	1	North America	21
25-35	25	Central and South America	7
36-45	39	Western Europe	45
46-55	21	Eastern and SE Europe	9
56-65	10	Asia	11
66-75	4	Africa	4
		Australia & Oceania	3

The age distribution of the respondents is shown in table 1. It also shows the wide geographical dispersion of respondents across the world, making regional salary comparisons feasible. The survey does not, however, take into account living costs which will differ substantially between regions. 75 per cent of respondents were male.

Table 2: Distribution of respondents by type of employer

	%
University	73
Research institute/Think Tank	9
Government	6
NGO/International Organisation	5
Private Company	4
Consultancy	2
Bank	1

Participants were asked to indicate their type of employer. Results (Table 2) show that a large majority, 73 per cent, work for a university.

Table 3: Distribution of respondents by occupation

Occupation in academia		Occupation in private sector	
	%		%
Full professor	32	Researcher/Analyst (Sen/Mid)	39
Associate professor	26	Senior Level Position	19
Assistant professor	18	Middle Level	13
Lecturer/Reader	6	Researcher/Analyst (Junior)	7
PhD candidate	6	Consultant	7
Post-Doc	5	Junior Level	5
Researcher (Sen/Mid)	3	Entrepreneur	3
Researcher (Junior)	2	Others	7
Teaching Assistant	1		
Other	1		

When it comes to qualification by discipline, 85 per cent of respondents had an Economics background with eight per cent coming from Accounting and Finance. The remainder were spread across Business Administration, Management, Marketing and Statistics in roughly equal numbers. Two per cent had a bachelor's degree; 12 per cent had a master's and 85 per cent had a PhD or higher qualification.

Salaries

- by highest academic degree

Figure 1: Average salary (worldwide), in US\$

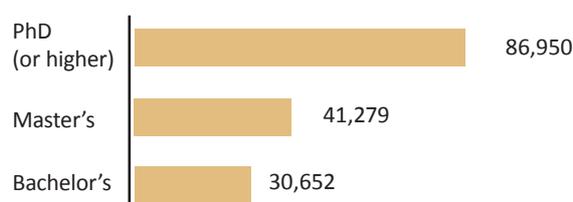
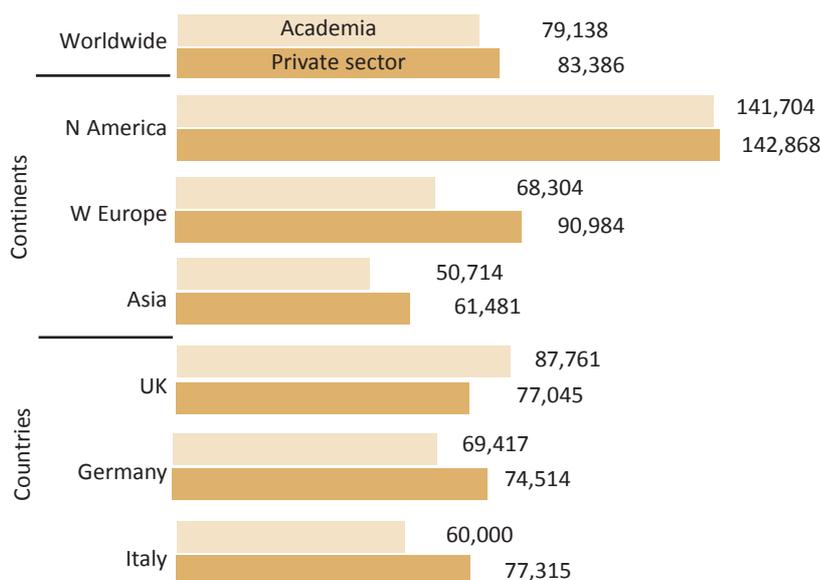


Figure 1 shows a positive correlation between level of qualification and salary. While this might be expected, it's striking that the return to a PhD over a Master's is more than double while the benefit from a Master's is only 35 per cent greater than a Bachelor's degree.

Features

- by academia v private sector

Figure 2: Average annual salary by academia and private sector, US\$



As Figure 2 shows, average salary in the private sector is higher than that in academia. The exception is the UK. The gap between academia and the private sector is largest in Western Europe, where people employed in academia receive on average 25 per cent lower average salary compared to the private sector. North America and Germany appear to have a smaller salary disparity between academia and the private sector. North America has the highest average salary for both sectors across all countries/continents and Asia has the lowest average salary among the regions included in the report.

Table 4 compares salaries in both academia and the private sector, across a range of positions and continents. Unsurprisingly, salaries are generally highest in the USA, followed by Western Europe and Asia. Salaries in the UK lie about midway between the US and W European averages.

Within each continent (and the UK) full professors and senior appointments in the private sector enjoy broadly equal compensation. However, when it comes to middle-level appointments, the private sector offers better rewards than academia.

On average, someone working as a researcher/analyst is better financially compensated in the private sector than in academia. The difference is larger in mid/senior level than junior level.

- by years of experience

In a departure from previous years, the latest Inomics Salary Report contains data on the relationship between salary and length of experience (Report, p.16). As might be expected, this shows a positive correlation between salary and years of experience (using worldwide averages). This is especially clear for those working in academia. Two points of interest emerge, however. The first is that there is a large jump in academic salaries for those with the longest service (beyond 20 years). The second is that while the positive correlation holds for both sectors,

progression for economists working in the private sector is very slow in the first few years. It appears to take at least three years' experience before private sector economists can expect a significant improvement in salary.

-by gender

We have reported many times in this *Newsletter* on gender-related differences in the economics profession (often based on research by the Society's own Committee on Women in the Economics Profession). Furthermore, we know from reader reactions that it's an issue of some importance.

Table 4: Average Salary by Position (Selected Continents/Countries), annual US\$

		North America	Western Europe	Asia	United Kingdom	Germany	Italy
Academia	Full Professor	172,446	99,779	86,397	139,306	112,273	91,458
	Associate Professor	130,610	60,833	53,098	80,000	65,000	60,233
	Assistant Professor	118,214	52,222	45,357	67,391	65,000	40,789
	Lecturer / Reader	97,500	52,500	24,125	66,023	55,000	38,000
	PostDoc	69,000	56,481	38,333	48,333	57,000	25,000
	Researcher (Mid/Senior Level) in Academia	107,500	77,857	16,600	51,667	40,000	41,364
	Researcher (Junior Level) in Academia	85,000	61,000	25,000	45,000	25,000	31,667
	PhD Candidate	31,667	32,500	18,500	30,000	30,833	20,000
	Teaching Assistant	25,000	25,000	13,750	-*	-	10,000
Private Sector	Senior Level Position	170,217	120,833	104,444	128,125	-	123,000
	Entrepreneur	200,000	-	104,000	-	107,500	-
	Middle Level Position	170,000	108,750	56,923	65,000	110,833	108,500
	Researcher/Analyst (Mid/Senior Level) in Private Sector	136,111	82,636	44,833	50,000	71,765	58,667
	Consultant	91,111	86,875	65,833	-	85,000	25,000
	Junior Level Position	59,167	62,188	27,500	-	25,000	25,000
	Researcher/Analyst (Junior Level) in Private Sector	100,500	45,000	37,500	45,000	61,500	-

* = Insufficient data

For this reason, we reproduce the following figure from the Inomics 2016 Salary Report which shows average salary across a range of positions, countries and continents, by gender.

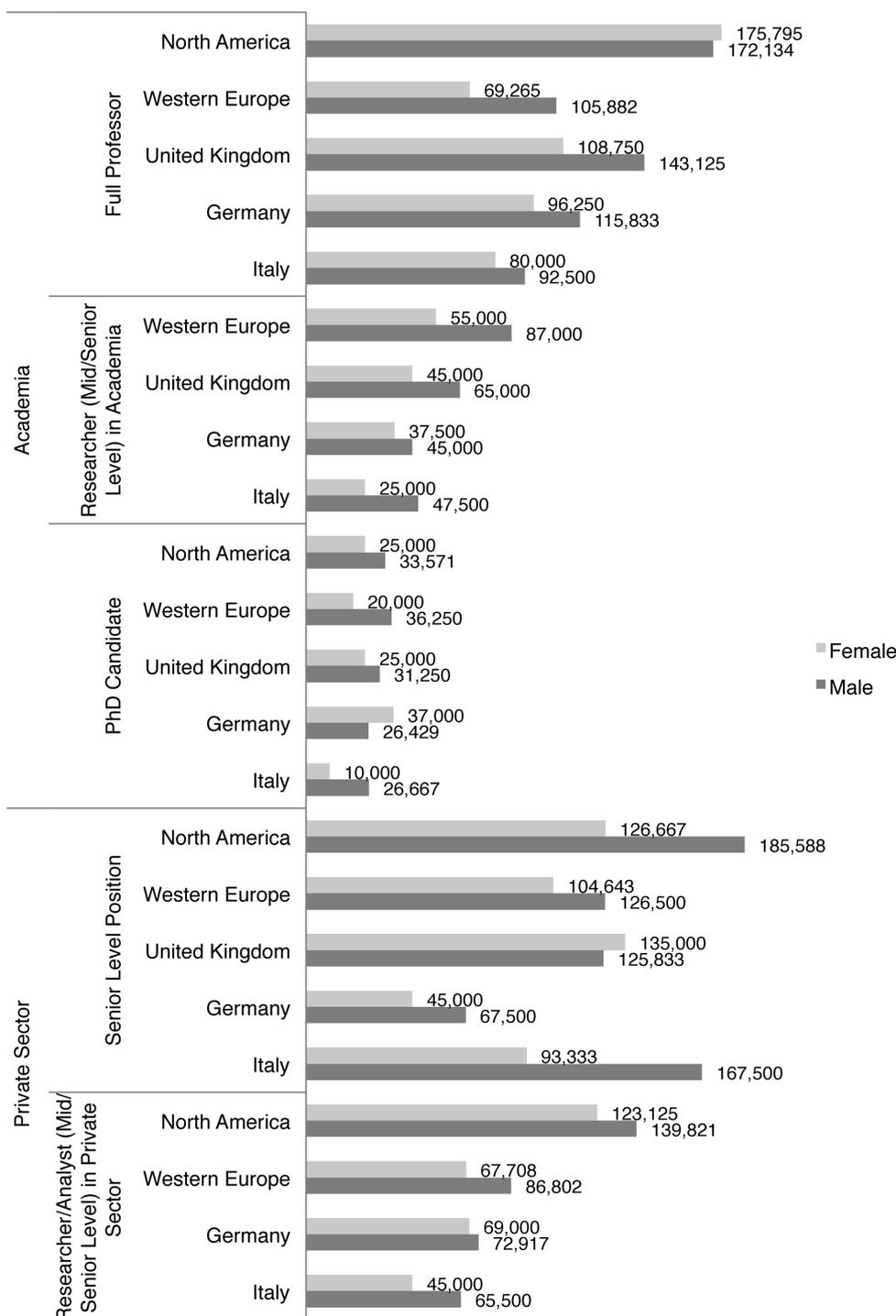
The virtually universal presence of a gender gap favouring male employees is immediately obvious. The only

geographic areas and positions. Leaving aside senior academics, women in Italy appear to experience a large proportionate disadvantage.

Motivation

Another departure from earlier surveys were the questions

Figure 3: Average Salary of Main Positions by Gender (Selected Continents/Countries), annual US\$



exceptions are full professors in the USA and women at the senior level in the UK's private sector. Elsewhere, the traditional gender pay gap appears to be the norm, though there are substantial variations in its size between

put to respondents regarding motivation. In both academia and the private sector, personal satisfaction was the most important motivation. For respondents in academia 'academic interest' ran this a close second while the impact their work had on society featured as the second highest motivation for economists in the private sector.

Within academia these results were remarkably consistent across countries/continents, though 'financial motivation', which came in sixth place out of nine listed motivations, was particularly low for economists in Germany and Italy.

For economists in the private sector there was rather more dispersion of results across continents/countries, and 'financial motivation' scored more highly, for most economists ranking about fourth out of nine.

Salary satisfaction

Respondents were also asked to rank their satisfaction with salary on a scale from 1 (very dissatisfied) to 5 (very satisfied). Amongst academics, satisfaction varied positively with salary level though it is worth noting that even at the top, full professors gave a score of only 3.5 on average. In Germany, however, the score was 4.2. Italian academics were generally less satisfied than others. A

broadly similar pattern emerged in the private sector with higher salaries conferring higher satisfaction. Interestingly perhaps it was entrepreneurs who returned the highest score, of 3.7.

Voting theory and the Brexit referendum question

The Brexit referendum question was flawed in its design by ignoring Kenneth Arrow's impossibility theorem. Thomas Colignatus¹ explains.

Theresa May's government, with support from the UK parliament, has adopted Brexit as its policy aim and has invoked Article 50. Yet, economic theory assumes rational agents, and even governments might be open for rational reconsideration.

The unsatisfactory referendum question

Based upon voting theory, the Brexit referendum question can be rejected as technically unsatisfactory. One could even argue that the UK government should have annulled the outcome based on this basis alone. Even more ambitiously, one might imagine that economists and political scientists across Europe take up this issue and hence provide a basis for the EU Commission to negotiate for a proper referendum question. The big question is why the UK procedures didn't produce a sound referendum choice in the first place.

Renwick *et al.* (2016) in an opinion in *The Telegraph* June 14 protested: 'A referendum result is democratically legitimate only if voters can make an informed decision. Yet the level of misinformation in the current campaign is so great that democratic legitimacy is called into question'.

Their letter complains about the quality of information available to voters (an issue about which the RES has raised complaints with the BBC). It doesn't make the point that the UK government, by ignoring voting theory, has posed a very misleading question given the complexity of the issue under decision. Quite unsettling is the Grassegger and Krogerus (2017) report about voter manipulation by Big Data, originally on Brexit and later for the election of Donald Trump. But the key point here concerns the referendum question itself.

The problem with the question

The question assumes a binary choice — Remain or Leave the EU — while voting theory warns that allowing only two options can easily be a misleading representation of the real choice. When the true situation is more complex, and especially if it is one that arouses strong passions, then reducing the question to a binary one might suggest a political motivation. As a result of the present process, we actually don't know how people would have voted when they had been offered the true options.

Compare the question: 'Do you still beat your mother?' When you are allowed only a Yes or No answer, then you are blocked from answering:

'I will not answer that question because if I say No then it suggests that I agree that I have beaten her in the past.'

In the case of Brexit, the hidden complexity concerned:

- Leave, and adopt an EFTA or WTO framework?
- Leave, while the UK remains intact or while it splits up?
- Remain, in what manner?

Voting theory generally suggests that representative democracy — Parliament — is better than relying on referenda, since the representatives can bargain about the complex choices involved.

Deadlocks can lurk in hiding

When there are only two options then everyone knows about the possibility of a stalemate. This means a collective indifference. There are various ways to break the deadlock: voting again, the chairperson decides, flip a coin, using the alphabet, and so on. There is a crucial distinction between voting (vote results) and deciding. When there are three options or more there can be a deadlock as well. It is less well-known that there can also be cycles. It is even less recognised that such cycles are actually a disguised form of a deadlock.

Take for example three candidates A , B and C and a particular distribution of preferences. When the vote is between A and B then A wins. We denote this as $A > B$. When the vote is between B and C then B wins, or $B > C$. When the vote is between C and A then C wins or $C > A$. Collectively $A > B > C > A$. Collectively, there is indifference. It is a key notion in voting theory that there can be distributions of preferences, such that a collective binary choice seems to result into a clear decision, while in reality there is a deadlock in hiding.

Kenneth Arrow who passed away on February 21 (see p 22 of this issue) used these cycles to create his 1951 'impossibility theorem'. Indeed, if you interpret a cycle as a decision then this causes an inconsistency or an 'impossibility' with respect to the required transitivity of a (collective) preference ordering. However, reality is consistent and people do really make choices collective-

ly, and thus the proper interpretation is an ‘indifference’ or deadlock. It was and is a major confusion in voting theory that Arrow’s mathematics are correct but that his own verbal interpretation was incorrect.²

Representative government is better than referenda

Obviously a deadlock must be broken. Again, it may be political motivation that reduces the choice from three options *A*, *B* and *C* to only two. Who selects those two might take the pair that fits his or her interests. A selection in successive rounds as in France at the moment is no solution. There are ample horror scenarios when bad election designs cause minority winners. Decisions are made preferably via discussion in Parliament. Parliamentary choice of the Prime Minister is better than direct election like for the US President.

Voting theory is not well understood in general. The UK referendum in 2011 on Proportional Representation (PR) presented a design that was far too complex. Best is that Parliament is chosen in proportional manner as in Holland, rather than in districts as in the UK or the USA. It suffices when people can vote for the party of their choice (with the national threshold of a seat), and that the professionals in Parliament use the more complex voting mechanisms (like bargaining or the Borda Fixed Point method). It is also crucial to be aware that the Trias Politica model for democracy fails and that more checks and balances are required, notably with an Economic Supreme Court.³

The UK Electoral Commission goofed too

The UK Electoral Commission might be abstractly aware of this issue in voting theory, but they didn’t protest, and they only checked that the Brexit referendum question could be ‘understood’. The latter is an ambiguous notion. People might ‘understand’ quite a lot but they might not truly understand the hidden complexity and the pitfalls of voting theory. Even Nobel Prize winner Kenneth Arrow gave a problematic interpretation of his theorem. The Electoral Commission is to be praised for the effort to remove bias, where the chosen words ‘Remain’ and ‘Leave’ are neutral, and where both statements were included and not only one. (Some people don’t want to say ‘No’. Some don’t want to say ‘Yes’.) Still, the Commission gives an interpretation of the ‘intelligibility’ of the question that doesn’t square with voting theory and that doesn’t protect the electorate from a voting disaster.

A test on this issue involves asking yourself: Given the referendum outcome, do you really think that the UK population is clear in its position, whatever the issues of *how* to leave or the risk of a UK breakup? If you have doubts on the latter, then you agree that something is amiss. The outcome of the referendum really doesn’t give us a clue as to what UK voters want. Scotland wants to remain in the EU and then break up? This is okay for

the others who want to Leave? (And how?) The issue can be seen as a statistical enquiry into what views people have, and the referendum question is biased and cannot be used for sound conclusions.

In an email to the author in July 2016 a spokesman for the Electoral Commission said its role: ‘... is to evaluate the intelligibility of referendum questions in line with the intent of Parliament; it is not to re-evaluate the premise of the question. Other than that, I don’t believe there is anything I can usefully add to our previously published statements on this matter.’

Apparently the Commission knows the ‘intent of Parliament’, while Parliament itself might not do so. Is the Commission only a facilitator of deception, and don’t they have a mission to put voters first? At best the Commission holds that Whitehall and Parliament fully understood voting theory and therefore *intentionally* presented the UK population with a biased choice, so that voters would be compelled to neglect the complexities of leaving or even a break-up of the Union. Obviously the assumption that Whitehall and Parliament fully grasp voting theory is dubious. The better response by the Commission would have been to explain the pitfalls of voting theory and the misleading character of the referendum question, rather than facilitate the voting disaster.

Any recognition that something is (very) wrong here, should also imply the annulment of the Brexit referendum outcome. Subsequently, to protect voters from such manipulation by Whitehall, one may think of a law that gives the Electoral Commission the right to veto a biased Yes / No selection, which veto might be overruled by a 2/3 majority in Parliament. Best is not to have referenda at all, unless you are really sure that a coin can only fall either way, and not land on its side (by a hidden deadlock).

Notes:

1. Colignatus is the name in science of Thomas Cool, econometrician and teacher of mathematics, Scheveningen, Holland
2. See Colignatus (2001, 2014), ‘Voting theory for democracy?’, pdf online, <https://zenodo.org/record/291985>
3. Colignatus (2014), ‘An Economic Supreme Court’, *RES Newsletter* issue no. 167, October 2014, pp.20-21, <http://www.res.org.uk/view/art7Oct14Features.html>

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The creation of money — good practice in evidence-based economics¹

Michael Joffe has argued the merits of an 'evidence-based economics' in these pages before. Here he provides an example of good practice.

In recent years, a sound understanding has emerged in relation to money — specifically, how it is created and destroyed in a modern economy such as the UK and the USA.² The understanding is based on a careful description of the actual behaviour of commercial banks, central banks and other participants, with special attention paid to the actually-occurring causal processes. The account is also supported by statistical analysis.

This makes it a prime example of good practice in 'evidence-based economics': the effort to construct economic theory from systematic observation of the world, rather than e.g. from axioms. The idea is to combine evidence with good explanations, thereby generating reliable knowledge in the form of empirically-based causal theories.³

How money creation and destruction works

Money is anything that is widely accepted as payment, especially by the government for tax payment. This means that it involves a social relationship, and a degree of trust. Of the different types of private sector assets, the most liquid ones — banknotes and current accounts (commercial bank money) — are unequivocally money, whereas less liquid forms such as time deposits can be considered as 'near money'. By far the most important type of money in the modern economy is commercial bank money, in the form of digital records. In Britain nowadays, it constitutes 97 percent of all money. The question is, how are these bank deposits created?

There are two major common misconceptions in the economics literature. One is that banks act simply as intermediaries, lending out the deposits that savers place with them — giving a primary causal role to households' saving decisions. The other is that the central bank determines the quantity of loans and deposits in the economy by controlling the quantity of central bank money — base money. This is then 'multiplied up' to produce a much larger amount of broad money — the 'money multiplier' idea which is commonly found in textbooks. Here the primary causal role is given to the central bank.

In fact, money is created when commercial banks make loans, and destroyed when the loans are repaid.⁴ The main causal impulse is located here, and depends on households' and businesses' demand for loans, together with banks' perceptions of the risk-adjusted prospect of profit. Thus, money is generated as a side effect of bank lending.

This operation of demand and supply is not simple and symmetrical. The most important features of money creation depend on banks, whereas repayment — and therefore money destruction — depends on borrowers. In money creation, banks ration credit based on their confidence that the loan will be repaid, and confidence in the solvency of other banks and in the system as a whole. They also decide where to allocate money: their incentives favour lending to borrowers with collateral, which in practice means existing assets rather than productive investment, or consumption. The historical evidence shows that bank lending for productive purposes declined in the UK following deregulation: broad money expanded much faster than GDP.⁵ The rationale for deregulation was based on the erroneous assumption that banks do not perform any unique function, and are merely financial intermediaries.

The Basel regulations accentuate this tendency: risk weighting is 100 per cent for existing assets (because of the possibility of repossession), and 35 per cent for business investment. The latter therefore has to be three times as profitable, in terms of capital requirements, to be worthwhile. And limited liability of companies increases banks' risks — in such conditions, they prefer to use the entrepreneur's house as collateral instead. Banks' preference for lending to borrowers with collateral has major implications for the economy. Capital is allocated mainly to existing assets, primarily real estate and the financial sector itself rather than the productive economy. There are two major consequences. The resulting asset price inflation has led to an ever-present tendency to bubbles and crashes, plus an inter-generational imbalance in home ownership; and, potential real-economy investors have been deprived of credit.

The ability of banks to initiate loans is subject to a degree of constraint. On the liquidity side, they need enough central bank reserves to ensure that payments can be made to other banks; and they need enough of their demand deposits in the form of cash to allow customers access to cash at all times. These are currently quite weak constraints, as banks can borrow from other banks on the interbank market and from the central bank. There is also a solvency constraint: each bank needs enough capital to be able to cover the situation where customers default on their loans. In addition, banks' behaviour is constrained by prudential regulation, and influenced by the interest rate which is set by the central bank.

There are other widespread misconceptions. (1) that the interest rate is the sole determinant when a bank makes a loan — actually it is just one factor, albeit an important one (less so for business than for mortgage lending). (2) that the government has direct involvement in money creation. (3) that capital adequacy requirements affect money creation, and therefore have an effect on bubbles — in a boom the risk estimates are lower, optimism leads to more loans so that more money is created, leading to increased bank profits and thus more own capital; in the aggregate, because banks lend to each other, they do not bump up against capital limits.

Government borrowing by issuing bonds does not alter the quantity of money. And government spending does not displace that of the financial sector. The important question is the composition of spending — which is more productive, not who spends it. Private investment can go to existing assets, to mergers and acquisitions with asset stripping, or abroad; and productive investment is less likely in a recession. Government spending can be on housing or infrastructure, e.g. transport, and often involves redistribution and hence an increase in velocity. Also, direction to productive uses, not real estate, finance or consumption, implies less inflation (except when there is no spare capacity in the economy).

So: money is a social relationship backed by the state - the state determines the unit of account, and guarantees future exchange by (i) acceptability as tax payment, (ii) taxpayer-backed insurance of bank deposits, (iii) an implicit guarantee to bail out banks in trouble. All money is credit, but not all credit is money.

Implications for evidence-based economics

This body of work is a careful descriptive study showing how a particular sub-system of the economy works. The result is an account of the money supply that has the virtue of being obvious, in the sense that participants (e.g. central bankers) have apparently been aware of it all along.⁶

It demonstrates a basic contention of evidence-based economics, that good economics can be generated from observations; the difficulty of conducting experiments in many branches of economics is not necessarily a barrier, as is sometimes thought. One objection could be that this is "merely" a description, whereas what is needed is "theory". This is based on an over-restricted view that equates theory with formal modelling, rather than with an account of the causal processes that corresponds with the real world, as in the natural sciences.⁷ Admittedly there is no ingenious model here. But there is a debunking of the money multiplier model, of the notion of loanable funds, and of banks as intermediaries. The description replaces false theory with facts. This is crucial. And models could be nested within this broader account — which would allow transparency about what is omitted in the modelling process.⁸

It is also sometimes said that the generation of evidence is dependent on theory. This is true to an extent, in the sense that one needs a framework to suggest what sorts of things could be relevant. But it need not be a straight-jacket. In this case, little prior structure was imposed, allowing the account to emerge from the evidence.

This allowed the notions of loanable funds, banks as mere intermediaries, and the textbook money multiplier model to be exposed as false. It is quite a different criticism of orthodox economic theory from that which is often heard, that its assumptions are unrealistic and/or that its models are over-simplified. Here the charge is that the world works in a different way from that depicted in textbooks — error is quite different from simplification. The account of money creation and destruction is formulated in the causal language of capacities. Central to it are the capacity of commercial banks to create money by making loans, and the specific capacities of central banks. Flows also have causal effects: commercial banks' preference for existing assets directs the flow of money into some parts of the economy rather than others, with important consequences for economic activity. Buying power is placed in the hands of real estate and financial traders rather than real-economy businesses.

The primary task is here seen as identifying the causal driving force — rather than quantification or prediction, as is common in economics. Causal direction is emphasized, i.e. that lending has its own dynamic, and is not secondary to saving; also, the provision of reserves by the central bank is responsive to the needs of commercial banks, it does not 'cause' commercial-bank lending, or the quantity of such lending. And the account allows for multiple causation, in the sense that there is nothing to stop the description being supplemented with additional causal factors that may be relevant in certain circumstances.

Finally, heterogeneity is important in evidence-based economics. The description of the system of money creation/destruction applies to most countries with an advanced banking system. It may be similar in other places and at other times, but that needs to be established by examining the evidence.⁹ A comparative perspective might show that there are systematic differences, and these could be informative. More generally, it is dangerous to claim that the same laws apply to all economies, irrespective of place and time. This account has identified capacities and other characteristics of the system, but they are not necessarily immutable. For example, they are likely to depend on institutions which may be different elsewhere, and which can change over time.

Policy implications

Evidence-based economics is concerned with explaining how the economy works. It does not have direct policy implications, but is important to policy in providing the factual basis for decision making. In the present context,

a proper understanding of money shows the existence of a range of policy options that are not at present on the agenda. These include measures that could boost both public and private investment in the real economy.

Notes and references:

1. I would like to thank Victoria Chick, Josh Ryan-Collins and Peter Howells for helpful comments.
2. Ryan-Collins J *et al.* 2011 *Where does money come from?*, New Economics Foundation; McLeay M *et al.* 2014 'Money creation in the modern economy', *Bank of England Quarterly Bulletin*. Q1: 14-27; Benes J and Kumhof M, 2012, *The Chicago Plan revisited*. IMF Working Paper No. 12/202. <http://www.imf.org/external/pubs/ft/wp/2012/wp12202.pdf>. Carpenter SB & Demiralp S 2010. *Money, reserves, and the transmission of monetary policy: does the money multiplier exist?* US Federal Reserve Staff Working Paper 2010-41 <https://www.federalreserve.gov/pubs/feds/2010/201041/201041pap.pdf>. This account was standard in the early twentieth century, and was well understood by Schumpeter and others, but became displaced by other theories — for a historical review see Chick V, 2005, 'Lost and found. Some history of endogenous money in the twentieth century', in Fontana G *et al* (eds.), *The monetary theory of production*, Palgrave Macmillan.
3. Joffe M. 2014. 'Can economics be evidence based?' <http://www.res.org.uk/view/art4aApr14Features.html>.
4. It is also created when banks purchase assets, and destroyed when banks issue long-term debt or equity, but these are quantitatively less important.
5. Ryan-Collins J *et al.* p51, figure 9. There is no monitoring system of whether newly-created credit is used for existing assets or for the productive economy.
6. 'Virtually every monetary economist believes that the CB [central bank] can control the monetary base ... and ... the broader monetary aggregates as well. ... Almost all those who have worked in a CB believe that this view is totally mistaken; in particular it ignores the implications of several of the crucial institutional features of a modern commercial banking system'. Goodhart CAE, 1994, 'What should central banks do? What should be their macroeconomic objectives and operations?' *Economic Journal*, 104, p.1424.
7. Joffe M, 2017, 'Causal theories, models and evidence in economics — some reflections from the natural sciences', *Cogent Economics and Finance* <https://www.cogentoa.com/article/10.1080/23322039.2017.1280983>.
8. For example, the Bank of England has developed a stock-flow consistent model that fully incorporates the role of credit creation and the financial sector more broadly. See Burgess S *et al.*, 2016, <http://www.bankofengland.co.uk/research/Documents/working-papers/2016/swp614.pdf>
9. Chick V, 1992, 'The evolution of the banking system and the theory of saving, investment and interest', in Arestis P and Dow SC (eds.), *On money, method and Keynes*. St Martin's Press.

RES Prize Winners

Economic Journal

The **2016 Austin Robinson Prize** for best unsolicited paper published in the *Economic Journal* by authors who are within 5 years of receiving their PhD, was awarded to: Sergey Nigai — 'On Measuring the Welfare Gains from Trade under Consumer Heterogeneity'.

The **2016 RES Prize for the best paper** published in the *Economic Journal* was awarded to:

Dan Anderberg, Helmut Rainer, Jonathan Wadsworth and Tanya Wilson — 'Unemployment and Domestic Violence: Theory and Evidence'.

Referees' Prizes 2016

Raymond Fisman (Boston University)
David Hemous (University of Zurich)
Hillel Rapoport (Paris School of Economics)
Jan Stuhler (Universidad Carlos III de Madrid)
John Bailey Jones (University at Albany-SUNY)
Kate Smith (Institute for Fiscal Studies)
Luigi Pascali (Pompeu Fabra University/U of Warwick)
Matthew Elliot (University of Cambridge)
Kevin Lang (Boston University)
Anna Aizer (Brown University)
Lucas Maestri (FGV/EPGE)
Massimiliano Amarante (Université de Montréal)
Vincent Sterk (University College London)
Nora Traum (North Carolina State University)

Econometrics Journal

The **Denis Sargan Prize** for best unsolicited paper published in the *Econometrics Journal* by authors who are within 5 years of receiving their PhD, was awarded to: Dr Igor L Kheifets — 'Specification Tests for Nonlinear Dynamic Models'.

The 2017 RES-York Symposium and Mini-Courses on Game Theory

The 8th of the series of York Annual Symposium on Game Theory, will be held on **11-13 June 2017** at the Department of Economics and Related Studies, University of York, UK.

The four keynote speakers of the Symposium (11-12 June 2017) are:

Alessandro Pavan (Northwestern) Kai Konrad (MPI)
Hamid Sabourian (Cambridge)
Christopher Chambers (UCSD)

On 13 June, we will run two mini-courses given by Professor Pavan and Professor Sabourian, respectively. Invitations are extended to all academics, PhD students and early career researchers.

The event is organised by the Micro Theory Research Cluster at the Department of Economics and Related Studies (www.york.ac.uk/economics/), University of York, and is jointly supported by the Royal Economic Society and the departmental Research Impact Support (RIS) Fund at DERS, University of York.

Obituaries

Thomas Schelling

Thomas Schelling is probably best known in economics for his contributions to game theory. Indeed the citation for his 2005 Nobel Prize states it was for ‘having enhanced our understanding of conflict and cooperation through game theory analysis’.

In the early, tense years of the Cold War between America and the Soviet Union in the late 1940s and 1950s, the US government invested heavily in the then new science of game theory. Schelling’s ideas were enormously influential in preventing nuclear conflict from breaking out. The opening lines of his Nobel Prize lecture point out the real danger that existed: ‘The most spectacular event of the past half century is one that did not occur. We have enjoyed sixty years without nuclear weapons exploded in anger’.

How do you handle a weapon which is so devastating you do not want to use it, whilst at the same time you must convince the other side that you might? Schelling was instrumental in creating the strategy of credible threats.

His Nobel lecture focused exclusively on game theory, the area par excellence of rational agent behaviour. This was a rather curious decision on his part. For his mind ranged powerfully over a wide range of issues.

Schelling made seminal contributions both to complex systems theory and to the rigorous analysis of agent behaviour on networks. It took time for scholars to appreciate the importance of this work. But these two themes are now at the forefront of science in the 21st century.

His 1971 paper in the *Journal of Mathematical Sociology*, entitled ‘Dynamic Models of Segregation’, was a brilliant illustration of the principle of emergence in complex systems. Schelling postulated a giant chess-board populated by an equal number of two types of agent located at random, and a few vacant squares. Each agent has a very weak preference for being in a majority in its local neighbourhood. This latter concept can be defined in a number of ways, but the simplest is the eight immediately adjacent squares plus the square the agent is on. If only four of its neighbours are of its own type, and four are not, the agent is happy. But if it is a minority, it moves at random to an empty square.

Although the individual preferences for location are weak, the board segments rapidly into a highly segregated pattern, with blocks of agents all of the same type. As Schelling puts it: ‘The systemic effects are overwhelm-

ing: there is no simple correspondence of individual incentive to collective results’. In other words, the properties of the system emerge from the interactions of the individual agents.

Schelling described the ‘analytics of neighbourhood tipping’, and stated that ‘a general theory of tipping begins to emerge’. Nowadays, of course, the phrase ‘tipping point’ is in common parlance, not least because of Malcolm Gladwell’s popular book on the topic, written thirty years after Schelling’s paper.

Our understanding of crime, obesity, smoking, binge drinking — a whole host of social problems — has been improved substantially by Schelling’s work. He saw that there are underlying similarities in how they develop.

His most important work in this area was published in 1973, in a paper in the *Journal of Conflict Resolution* with the wonderful title ‘Hockey Helmets, Concealed Weapons and Daylight Saving’. Schelling’s inspiration was a piece in the sports section of a newspaper about ice hockey, a game even more brutal than Rugby League.

A star player had suffered serious head injuries from the flying puck whilst not wearing a helmet. The reporter interviewed other leading players, none of whom wore helmets. It was clear that they understood the very real dangers involved. A rational economic person, weighing up the costs and benefits, would always wear a helmet. But when asked why not, a top boy answered ‘I don’t because the other guys don’t’.

Schelling crystallised this into a mathematical concept he called ‘binary choice with externalities’. The choice facing an individual is binary. Either you wear a helmet or you don’t. Either you smoke, or you don’t. But your choice may affect how other people in your peer group make their choices. If no one else wears a helmet, you look soft by wearing one. If all your friends smoke, you may do so just to fit in. So the decision of an individual can have effects which are ‘external’ to the decision itself. Understanding this is crucial to policy makers trying to influence the outcome. Rational choice theory may not always apply.

Schelling’s segregation paper was all the more remarkable because, nearly five decades ago, he essentially had to work out its properties by hand. In the same way, the concept of binary choice with externalities was set out with diagrams.

Advances in computer technology enabled the mathematical sociologist Duncan Watts to develop the idea dramatically in a 2002 paper entitled ‘A Simple Model of Global Cascades on Random Networks’. Agents in the Watts model, as in the original Schelling piece, take no account of the attributes of the alternatives facing them. Instead, they select using a variety of rules, all

based on the principle of the choices made by agents to which they are connected. At the start, all agents are in the same state of the world. A small number is selected to switch the other. Watts analyses and simulates the cascade properties — how many will eventually switch— when agents are connected on different types of network.

Schelling made strikingly powerful and original contributions in a range of disparate areas. Much of his work was decades ahead of its time. Overall, he was a true polymath of genius.

*Paul Ormerod,
University College, London and Volterra Partners LLP.*

Sir Tony Atkinson

On January 1, the world lost one of its greatest, and one of its kindest, economists — Anthony Barnes Atkinson. He was a revered teacher and colleague and a devoted public intellectual, who gave of his enormous talents and energies to creating a world with greater social justice—the motivating force behind his entering the economics profession. Knowing that he had incurable cancer, Tony spent his last year chairing a World Bank Commission on Global Poverty, addressing a question to which he had already made important contributions: how best to monitor and measure poverty. A year earlier, he had set out an original and insightful agenda for dealing with inequality in his book, *Inequality — What Can be Done?*

That book and the Commission Report reflected his lifelong passions: the belief that something could be done about poverty and inequality, that economics was a moral science, and that the study of economics and in particular the measurement of inequality and poverty could help our society do something about these scourges. There is no doubt that Atkinson's contributions have made an enormous difference.

Atkinson was devoted to serving this Society and the economics profession with devotion throughout his life.¹ He was President of the Royal Economic Society from 1995 to 1998 and president of the International Economic Association, the European Economic Association, the Econometric Society, and Section F of the British Association for the Advancement of Science. He was the leader in the field of public economics; he founded and for a quarter century was the editor of the *Journal of Public Economics* in 1971, still the leading journal in that field.

He was a serial institution builder — after being appointed professor of economics at the University of Essex at the age of 27, he along with luminaries like Chris Bliss helped build that school into a leading institution. After stints as a visiting professor at MIT, professor of political economy at UCL, and, for 12 years, at LSE, with a

brief interlude as a Professor at his alma mater, Cambridge, he spent the last 14 years at Nuffield College, 11 as Warden. At LSE, he helped found and chaired the Suntory-Toyota International Centre for Economics and Related Disciplines.

His contributions were amply recognized by society and his peers. He was knighted in 2000 and made a Chevalier de la Légion d'Honneur in 2001. He was a fellow of the British Academy, an honorary member of the American Academy of Arts and Sciences and the American Economic Association, and a member of the Accademia Nazionale dei Lincei — and awarded 21 honorary doctorates.

Tony was my first student, in 1966. Frank Hahn, his tutor at Churchill College and my supervisor as a Fulbright Fellow, asked me to give him supervisions. I was perhaps misled into thinking that all students would be of that caliber. Thus began a half century of collaboration and friendship with both Tony and his wife Judith, who shared so many of the same social commitments and interests. Interestingly, our first collaboration, 'A New View of Technological Change', published in *The Economic Journal* in 1969, was not on public finance but on the nature of technical progress, inspired by lectures of Nicky Kaldor. It was selected by the *EJ* in 2015 as one of the best ten articles of the past century.

Our friendship continued as Judith and Tony spent the next year at MIT, where I had returned to MIT as an assistant professor. Here, Tony was to begin his lifelong work of studying inequality, and begin one of his most influential papers, on the measurement of inequality. I was working with Mike Rothschild on the question of ranking of probability distributions: when could one say that one distribution was more disperse than another. Tony saw that the same issue arose in comparing income distributions. His 1970 paper published in the *Journal of Economic Theory*, 'On the Measurement of Inequality', demonstrated a remarkable result: one distribution would be preferred to another by all inequality averse societies if and only if its Lorenz curve lay inside the other. He was concerned too about the inadequate normative basis for the most commonly used measures of inequality, like the Gini coefficient. He proposed an easily computable measure that has since come to be called the Atkinson measure: what fraction of income would society be willing to give up to get rid of all its inequality. For plausible values of inequality aversion, the number, for an unequal society like the US, are striking, upwards of a third.

At the time, Peter Diamond and James Mirrlees were founding the theory of optimal taxation, based on the earlier work of Frank Ramsey. Tony and I had both entered economics with a belief that we could establish a more scientific basis for understanding and addressing inequality. But Ramsey's analysis had a very disturbing

implication: one should tax necessities, like food, at a higher rate than luxuries, because of the low demand elasticity. Something was fundamentally wrong with Ramsey's formulation. We discovered two critical flaws: Ramsey ignored concerns about distribution and assumed that the only taxes available were indirect taxes. Our paper 'The Structure of Indirect Taxation and Economic Efficiency', published in 1972 in the *Journal of Public Economics*, reformulated Ramsey, deriving simple formulae that embedded distributional weights and giving results that were more in accord with our intuitions about just taxation. Then our paper 'The Design of Tax Structure: Direct Versus Indirect Taxation', published in 1976, upset the Ramsey analysis in a more fundamental way: with a conventional separability assumption, we showed that there should be no indirect taxation if one could impose an optimal income tax.

A little misunderstood theory can be dangerous: a whole strand of work grew out of this analysis, erroneously concluding that there should be no capital taxation.

Around this time we decided to write our graduate text, which we titled *Lectures in Public Economics*. We didn't want to provide a comprehensive treatise of the subject; what we wanted to do was to change the way the profession thought about public economics. Writing the book with Tony was inspiring; as we wrote up old results in a way that we hoped would be easily understood by graduate students, we kept deriving new results. On every galley I would scribble a new theorem or conjecture. Tony kept a copy of a page of my notes to him, supposedly as evidence that there was someone with worse handwriting than his. The book would never have been completed were it not for his calm but firm hand: we had to stop revising.

That firm reasoned calmness was typically Tony — or at least so it appeared to me, a brash American. But we cared deeply about the same things. After I left the UK in 1979, our paths frequently crossed. We had toyed with the idea of doing a new edition, but both of us had moved on to other projects, and it proved impossible to carve out the time to do it. But when Princeton University Press decided to reprint the book in 2015, we decided to write a preface together describing broadly how a book written now would have been different from the one we had written 35 years earlier. I was amazed how coincident our ideas and perspectives were. And we were both surprised that there were so many rich nuggets that we had laid out that had not yet been adequately taken up, rethinking, for instance, the incidence of taxation in the presence of problems of credit rationing, corporate governance problems, or market power.

Tony was committed to the notion that better data and a better understanding of the data on poverty and inequality was necessary if we are to monitor what is happening and devise strategies to combat inequality and poverty.

He made major contributions, was President of the Luxembourg Income Study (providing the most comprehensive data base for cross country comparisons of income and wealth distribution) from 2011 until his death, and became the mentor of distinguished scholars like Thomas Piketty and Emmanuel Saez, with whom he collaborated extensively. Together, they have made landmark achievements—so important at this moment when inequality is soaring.

We shall all miss Tony dearly.

*Joseph E Stiglitz,
Columbia University, New York*

Note:

1. I have omitted from this obituary mention of the long list of public bodies on which he served, showing the high regard in which he was held, his commitment to public service, and the range of his interests. He served as chairman of the Taxation Review Committee of the Fabian Society, of the Atkinson Review of the Measurement of Government Output, ONS, and of the Economics Committee of the Social Science Research Council.

The breadth of his interests and commitments was also reflected in other committees on which he served: the Social Justice Commission, the Economic and Social Research Council, the Royal Commission on the Distribution of Income and Wealth, the Retail Prices Index Advisory Committee, and the Pension Law Review Committee. For 14 years, he served as Trustee of the Nuffield Foundation. His engagements were not limited to the UK: he was, for instance, chair of the Academic Advisory Board of the Anglo-German Foundation, and a member of the Conseil d'Analyse Economique, advising the French Prime Minister, and of the European Statistics Governance Advisory Board. He was also a member of the international Commission on the Measurement of Economic Performance and Social Progress, which I chaired. I witnessed the magnitude of his contribution, especially when it came to the subtleties of the measurement of government output.

Kenneth Arrow

My mother's brother, the Nobel economist Kenneth Arrow, died this week at the age of 95. He was a dear man and a hero to me and many others. No one else I have ever known so embodied the scholarly life well lived.

I remember like yesterday the moment when Kenneth won the Nobel Prize in 1972. Paul Samuelson—another Nobel economist and, as it happens, also my uncle—hosted a party in his honor, to which I, then a sophomore at MIT, was invited. It was a festive if slightly nerdy occasion.

As the night wore on, Paul and Kenneth were standing in a corner discussing various theorems in mathematical economics. Kenneth raised something known as the maximum principle and the writings of the Russian mathematician Pontryagin. Paul began a story about the

great British mathematical economist and philosopher Frank Ramsey. My ride depended on this conversation ending, so I watched alertly without understanding a word.

But I did grasp this: There were two people in the room who had won Nobel Prizes. They were the two people who, after everyone else was exhausted and heading home, talked on and on into the evening about the subject they loved. I learned that night about my uncles about their passion for ideas and about the importance and excitement of what scholars do.

Kenneth's writings resolved age-old questions and opened up vast new areas for others to explore. He likely was the most important economic theorist of the second half of the 20th century.

Is there a voting system that can be relied on to express the will of a group of people? Many mathematicians have theorems named after them. Arrow's impossibility theorem regarding voting and combining preferences is one of the very few named after economists.

Drawing upon mathematical logic, it shows that there is no possible voting scheme that can consistently and sensibly reflect the preferences of a set of individuals with diverse views. Any scheme that could ever be invented will be at risk of perverse outcomes, where, for example, the choice between options A and B is affected by the presence or absence of option C; or where a vote switch by one person toward option A makes it less likely to prevail. Mathematical and abstruse it was. But it also explained why committees have so much trouble coming to consistent conclusions and why, with an increasingly polarized electorate, democracy can become increasingly dysfunctional.

Economists have been drawn to Adam Smith's idea of the 'invisible hand' for hundreds of years. But until Kenneth drew on the techniques of topology (that is, the study of geometric properties and spatial relations), no one had ever been able to establish precise conditions under which there would be prices that would clear all markets, or under which one could assume that the market outcome was optimal. Writing in the early 1950s, he clarified the very specific conditions under which market outcomes were for the best and, of equal importance, the far more general conditions under which public interventions in markets had the potential to make things better.

For the rest of his life, Kenneth explored these conditions, writing articles on topics ranging from health insurance to public investment policy to economic growth to the limits of organizations. It is hard to imagine what economics would be like today without his contributions.

I saw him every Thanksgiving for the past 49 years with the extended family that he loved. In a family of professors, the conversation ranged widely. Save for the NFL,

there was no topic — from politics to music, from classics to physics — on which Kenneth was not infinitely curious and apparently omniscient.

Kenneth knew more about everything than most know about anything, but he never flaunted his intelligence. It was another lesson for me when, many years ago, a paper was published correcting a famous analysis published by one of Kenneth's teachers. At the time, it created a stir. I asked him what he thought. He said quietly that he had known of the error for decades, but such was his respect for his teacher that he did not publish his insight.

Rest in peace, gentle genius.

Lawrence H Summers

President Emeritus, Harvard University

Editor's note:

This is a revised version of the appreciation that appeared in the *Wall Street Journal* on 25th February 2017.

New student blog

The Economics Network runs two student websites; www.studyingeconomics.ac.uk and www.whystudyeconomics.ac.uk. The Studying Economics website is explicitly aimed at economics students to help support their undergraduate study and make what they are learning applicable to the real world. The website's content helps with exam revision and essay writing and offers advice on postgraduate study options and careers.

Our intern Samantha has been working to improve and update these websites and above all to build a blog for undergraduate economics students (www.studyingeconomics.ac.uk/blog/). We hope that the blog will become a useful resource for economics students, where they can read about economics news stories and the application of their subject to the real world. Our aim is to expand the blog further so that we have a wide readership and pool of contributing authors.

Recent blog posts have discussed the real world applicability of Game Theory, the argument surrounding selective admissions in schools and the growing debate around Universal Basic Income. It would be great to have more undergraduates involved both in terms of readership and authoring blog posts and would appreciate it if you could make your students aware of the blog.

RES News

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The Society appoints Leighton Chipperfield as its first chief executive

The Society has appointed Leighton Chipperfield as its first Chief Executive to assist in developing and delivering a coherent strategy to promote economics at all levels and across a range of audiences — from academia to the general public. A new office is being established in Dean Trench Street, Westminster, which will be the centre of the Society's administration and the hub for all its activities.

Leighton Chipperfield joins the RES from the Microbiology Society, where he is currently Director of Commercial Affairs. In this role, Leighton has modernised the Microbiology Society's publishing operations, developed strategies to diversify its income, and introduced sales and marketing expertise to the organisation. He holds a Postgraduate diploma in Voluntary Sector Management from Cass Business School, and is a Trustee of the British Institute of Radiology. He will take up the post in early May.

Commenting on the appointment, Leighton Chipperfield said: 'I am delighted to be joining the Royal Economic Society as it enters a new and exciting phase. I look forward to engaging with the Society's many stakeholders to develop ambitious plans that build on the organisation's outstanding heritage.'

Leighton joins Marie-Luiza de Menezes, the recently appointed RES Operations Manager who started working for the Society in January 2017. Marie-Luiza has an extensive background as a senior manager within the Charity Sector specialising in new projects around organisational change, operations and internal communications.

Annual General Meeting (AGM)

The Annual General Meeting of the Society was held during the RES Conference at the University of Bristol on Tuesday 11th April 2017. Agenda and papers can be found on the website:

<http://www.res.org.uk/view/governanceStructure.html>
 or requested from the RES Office.

Society prizewinners — see p.18

Society appointments and thanks

Professor Peter Neary (Oxford) becomes President of the Society from AGM 2017-2018.

Professor Andrew Chesher (UCL, IFS) stands down as President of the Society from AGM 2017 to become Past President until 2018.

Professor Lord Nicholas Stern becomes President-Elect of the Society from AGM 2017-2018.

Professor Morten Ravn became *Economic Journal* representative on the Executive Committee from 1st September.

Professor Silvana Tenreyro became the Chair of the Women's Committee from AGM 2016.

Professor Sarah Brown has accepted the invitation to join the Executive Committee as a Council Representative 2017-2018.

Professor Jaap Abbring becomes Managing Editor of the *Econometrics Journal* from 1st May 2017.

Marie-Luiza de Menezes became Operations Manager of the RES from 1st January 2017.

Leighton Chipperfield becomes Chief Executive of the RES from the 3rd May 2017

Thanks to the following for their hard work and commitment to the Society:

Professor John Hardman Moore (Edinburgh, LSE) who stands down as Past President from AGM 2017.

Professor Sarah Smith who stands down from Council and as Council representative on the Executive Committee from AGM 2017.

Paul Johnson who stands down from Council and as Council representative on the Executive Committee from AGM 2017.

Professor Richard Smith who stands down as Managing Editor of the *Econometrics Journal* on 30th April 2017.

Council members

The Council of the Society consists of the President, the Immediate Past President (in accordance with the by-laws available on the website), and the President-Elect as a co-opted member together with the Life Vice Presidents, the Treasurer, the Secretary or Secretaries, and thirty Councillors. Elected RES Council members assist the Society through working groups and meet annually in the Autumn. Council members elected for the term 2017-2022 are:

Hasan Bakshi, NESTA
 Professor Britt Grosskopf, University of Exeter
 Professor Friederike Mengel, University of Essex
 Professor Mary S Morgan, London School of Economics
 Martin Sandbu, *Financial Times*
 Professor Chris Wallace, University of Leicester

Financial assistance

Special Projects Grants

Applications are invited from Members of the Society for financial assistance on a one-off basis for the support of activities that further the understanding and use of economics. Examples might include seminars, workshops and mini-conferences, events to disseminate research and policy findings, and activities that support teaching and learning in the subject. Grants are not designed to provide financial support for undertaking a research project. Deadline for the next round is **20th May 2017**.

Conference Grant Fund

The Society's Conference Grant Fund is available to members who are presenting an economics paper, or acting as a principal discussant at a conference; support of up to £500 is available. Awards are made at least three times a year. The next closing date will be **31 May 2017** in respect of conferences which take place in the ensuing four months 31 May (for conferences in June, July, August, September).

Please note that the awards under the conference grant scheme are highly competitive and selection will be based on the following criteria which should be addressed by the Head of Department in his/her supporting statement on the application form. Preference will be given:

- to applicants who are new entrants to the profession.
- for attendance at high-impact international conferences.
- to applicants whose attendance cannot ordinarily be funded from other sources, such as existing research grants.

Support for Small Academic Expenses

The Society is able to offer financial support to RES members who require small sums for unexpected expenditures in connection with independent economics research work. The type of expenditures which could qualify for support under this scheme include travel expenses in connection with independent economics research work, the purchase of a relevant piece of software, the defrayal of expenses for a speaker at an economics conference being organised by the applicant's University or Institute, etc.

Please note that the awards under the grant scheme are highly competitive, and selection will be based on the following criteria which should be addressed in the application:

- Preference will be given for initiatives which are for the benefit of new entrants to the profession.
- Preference will be given to initiatives which cannot ordinarily be funded from other sources, such as existing research grants.
- Applications will only be considered for projects/conferences in the area of economics

For further information on all of these schemes please visit <http://www.res.org.uk/view/financialCareer.html>

Conference diary

2017

april

20-21 April

Darwin, Australia

The **Seventeenth International Conference on Knowledge, Culture, and Change in Organizations**, will be held at Charles Darwin University.

We invite proposals for paper presentations, workshops/interactive sessions, posters/exhibits, colloquia, Virtual Posters, or Virtual Lightning Talks. The conference features research addressing the annual themes and the 2017 Special Focus: 'Succeeding and Achieving in Diverse Communities and Organizations.'

Further information:

<http://organization-studies.com/2017-conference>

20-21 April

Norwich

Symposium on Economic Experiments in Developing Countries (SEEDEC) will be held at the University of East Anglia, Norwich. The aim of the conference is to bring together the community of scholars who employ laboratory experimental economics methods for research in developing countries. Keynote speakers are Eliana La Ferrara (Bocconi University) and Macartan Humphreys (Columbia University). The conference will consist of plenary and parallel sessions.

Further information: seedec2017.wordpress.com
or seedec2017@uea.ac.uk.

21-22 April

Lucerne, Switzerland

The **eleventh History of Recent Economics Conference** (HISRECO) will be held at the University of Lucerne. Since 2007 HISRECO has brought together researchers from various backgrounds to study the history of economics in the postwar period. It is the organizers' belief that this period, during which economics became one of the dominant discourses in contemporary society, is worth studying for its own sake. In particular, this area of research offers good opportunities to young scholars who are interested in interdisciplinary approaches to the history of economics.

Further information: <http://www.hisreco.org>.

24-26 April

Perth, Scotland

The **2017 annual conference of the Scottish Economy Society** will take place at the Mercure Perth Hotel, Perth, Scotland.

Further information: <http://www.scotecon.org/conference.html>

27-28 April *Prague, Czech Republic*

CALL FOR PAPERS

20th International Scientific Conference on Economic and Social Development, to discuss the themes Globalization and Challenges of the Modern World Enterprise in Turbulent Environment Entrepreneurship Caught Between Creativity and Bureaucracy. Deadline for paper submissions: **25 March 2017**

Further information: <http://www.esd-conference.com/?page=conference&id=21>

may

4-5 May *Dublin, Ireland*

CALL FOR PAPERS

The **31st Annual Irish Economic Association Conference** will be held in the Institute of Banking in Dublin. The ESR lecture will be given by Deirdre McCloskey (University of Illinois at Chicago) and The Edgeworth Lecture by Professor John Muellbauer (University of Oxford).

The Association invites submissions of papers to be considered for the conference programme. Papers may be on any area in Economics, Finance or Econometrics. The deadline for submitted articles is the **7 February 2017** and submissions can be made through <https://iea2017.exordo.com>

Further information: <https://inomics.com/irish-economic-association-annual-conference-2017-dublin>

22-23 May *Brussels, Belgium*

The FINANCE research group of Vrije Universiteit Brussel (VUB) is pleased to announce a workshop on **recent developments in dependence modelling** with applications in finance and insurance. The event will take place on the the island of Aegina (Greece). Academic researchers, practitioners, and students in the field of risk management, dependence modeling and actuarial mathematics are most welcome.

Further information:

<http://www.vub.ac.be/en/events/2017/recent-developments-in-dependence-modelling-with-applications-in-finance-and-insurance>

june

1-3 June *Glasgow*

CALL FOR PAPERS

The **7th International Conference ('Financial Markets, Innovation and Regulation')** will be hosted by Strathclyde Business School (<http://febs2017.eventsadmin.com/>) and the Centre for Financial Regulation and Innovation (CFRI). The con-

ference will be under the auspices of the Financial Engineering & Banking Society (<http://febsociety.org>), a non-profit research society, aiming towards the promotion of decision making approaches in the fields of finance, financial engineering and banking. The deadline for paper submissions is **1 February 2017**. Papers presented at the conference will be eligible for publication in a special issue of *The European Journal of Finance*.

Guest speakers

Jonathan Crook, Professor of Business Economics and Director of Research at the University of Edinburgh Business School.

Raghavendra Rau, Sir Evelyn de Rothschild Professor of Finance at Cambridge Judge Business School

Further information: <http://febs2017.eventsadmin.com/>

2-4 June *Antigonish, Canada*

The **2017 Canadian Economics Association (CEA) Annual Conference** will be held at St. Francis Xavier University in Antigonish, Nova Scotia.

Further information: cea.conference@gmail.com.

14-16 June *York*

CALL FOR PAPERS

The **Tenth Conference on Economic Design** will be hosted by the Economics Department, University of York. Keynote speakers will be: Sanjeev Goyal (Cambridge); Parag Pathak (MIT); Philip Reny (Chicago). Conference organisers are Zaifu Yang (Chair), Yuan Ju (Co-chair), Paul Schweinzer (Co-chair) Paper submission deadline: **16 February 2017**.

Further information: www.conf-econ-design-york17.org

15-16 June *Aarhus, Denmark*

CALL FOR PAPERS

We hereby invite papers for the **XIIIth Danish International Economics Workshop**. The workshop will be hosted by The Tuborg Research Centre for Globalisation and Firms, www.tgf.au.dk. The deadline for paper submissions is **1 March 2017**.

Keynote speaker: Esteban Rossi-Hansberg, Princeton University.

Further information: <http://tgf.au.dk/diew2017>

15-17 June *St Petersburg, Russia*

The **Second World Congress of Comparative Economics** will be held at National Research University Higher School of Economics (HSE University, St. Petersburg, Russia). The Congress will include plenary sessions, workshops, as well as the editors' panel and special events. There will also be a small exhibition area which will give participants the opportunity to meet with vendors who specialize in providing e-resources.

Conference diary

Keynote Speakers

Gerard Roland (University of California, Berkeley, USA)

Alexander Auzan (Moscow State University, Russia).

Further Information: <https://spb.hse.ru/en/compecon/>

15-18 June

St Louis, USA

CALL FOR PAPERS

The Econometric Society is now taking submissions for its 2017 North American Summer Meeting to be held June 15-18 at Washington University in St. Louis, MO. At least one of the authors must be a member of the Econometric Society, and all participants must register for the conference. You may join the Society at <http://www.econometricsociety.org>. Each person may submit only one paper and present only one paper. However, each person is allowed to be the co-author of several papers submitted to the conference. The deadline for submissions is **31 January 2017**.

Keynote speakers

Walras-Bowley Lecture by Paul Klemperer (Oxford University), the Cowles Lecture by Yuliy Sannikov (Princeton University), the North Lecture by Robert Townsend (Massachusetts Institute of Technology), the Weidenbaum Lecture by Susanne Schennach (Brown University), the Sargan Lectures by Victor Chernozhukov (Massachusetts Institute of Technology).

Further information:

<http://cowles.yale.edu/news/econometric-society-2017-north-american-summer-meeting>

19-21 June

Nice, France

The 66th Annual Meeting of the French Economic Association (AFSE) is the main one organized in France that covers all aspects of economics relevant for theoretical, empirical, policy-oriented analyses, and for practitioners.

The following Keynote lectures will be delivered: Inaugural Lecture: Rachel Griffith (University of Manchester and IFS); Jean-Jacque Laffont Lecture: Emmanuel Farhi (Harvard University); Presidential Lecture: Philippe Aghion (College de France).

Further information: <https://afse2017.sciencesconf.org/>

19-23 June

Santa Fe, Mexico City

The **International Economic Association (IEA) Eighteenth World Congress**. The congress is jointly organized with the Centro de Investigación y Docencia Económicas, CIDE, Mexico. The theme of the congress is Globalization, Growth and Sustainability.

Further information: <http://www.iea-world.org/congress-2017-mexico/>

25-28 June

Cairns, Australia

CALL FOR PAPERS

The International Symposium on Forecasting (ISF). The ISF Program Committee looks forward to receiving abstracts and hearing inventive presentations that demonstrate again that the annual forecasting symposium is the only forum where the latest forecasting problems are confronted by new solutions. Invited session proposals: **February 28, 2017**. Abstract Submissions: **March 17 2017**.

Further information: <https://forecasters.org/isf/>

25-29 June

San Diego, USA

The **92nd Western Economic Association International Conference** will be held in San Diego. The Presidential Address will be delivered by Nobel Laureate Peter Diamond, Massachusetts Institute of Technology. Join over 1000 economists from around the world for this marketplace of ideas! All areas of economics are welcome — for complete participation and registration information, visit www.weai.org.

Further information: <http://www.weai.org/AC2017>

july

15-17 July

Oxford

International Finance and Banking Society's 2017 Conference will be held at the Said Business School. The theme is 'Towards an Integrated View of Financial Regulation: Key Lessons from the Crisis and Future Challenges'.

Keynote speakers:

Nellie Liang, Director, Program Direction Section, Financial Stability, Board of Governors of the Federal Reserve System

Prof Paul Groot, Bank of England and University of Bristol

Further information:

<http://www.ifabs.org/conference/view/7//>

27-28 July

Sheffield

The annual **Work, Pensions and Labour Economics (WPEG)** conference will take place at "The Edge" at the University of Sheffield. Financial support for the 2017 and the 2018 annual conferences will be provided by the Department for Work and Pensions (DWP). The 2017 plenary address will be given by Professor Thomas Crossley (University of Essex and IFS).

Further information: wpeg@sheffield.ac.uk

august

31 August - 5 September Maastricht, Netherlands

CALL FOR PAPERS

Papers are invited for the **44th Annual Conference of the European Association for Research in Industrial Economics (EARIE)**. Provisional deadline for paper submission is **March 15, 2017**.

Further information: <http://www.earie2017.org/>

september

5-7 September

London

CALL FOR PAPERS

The **49th MMF Annual Conference** will be held at King's College London. The programme committee invites submissions from academic, government and business economists in any area of monetary, macro and financial economics. The Committee also encourage and welcome PhD students to contribute to our PhD student sessions. Selected papers will appear in the conference supplement of the Manchester School. Interested authors are advised to submit unpublished manuscripts via the Conference Maker system by **12 May 2016**.

Invited speakers: Anil Kashyap (University of Chicago and FPC, Bank of England), Ricardo Reis (LSE) and David Laibson (Harvard). MMF Special Lecture: Jagjit Chadha (Director, NIESR).

Further information: www.mmf.ac.uk

6-8 September

London

The **2017 Developments in Economics Conference** will be held at University College London. Organised by the Economics Network, it will be run this year in collaboration with UCL's Centre for Teaching and Learning Economics (CTaLE).

Further information:

www.economicsnetwork.ac.uk/dee2017

21-23 September

St Gallen, Switzerland

CALL FOR PAPERS

29th Annual Conference of the European Association of Labour Economists will be held at the Swiss Institute for Empirical Economic Research, University of St. Gallen.

Keynote speakers

Hillary Hoynes (University of California) and Josef Zweimüller (University of Zürich).

Deadline for paper submissions: **February 1 2017**.

Further information: <http://www.eale.nl/>

28-29 September

Oxford

CALL FOR PAPERS

We invite submissions to **3rd Oxford - Fecereal Reserve Bank of New York Monetary Economics Conference**. We will consider papers relating to all areas of monetary economics. Presenters will be offered accommodation and meals for the duration of the conference at Exeter College, Oxford. All participants are expected to cover their own travelling costs. At this stage, participation has been confirmed by Frank Schorfheide (University of Pennsylvania), Roger Farmer (Warwick University), Pierpaolo Benigno (LUISS) and Mirko Wiederholt (Goethe University Frankfurt). The deadline for submissions is **May 15th, 2017**. Email your paper to ox.nyf.2017@gmail.com. Decisions will be announced by the end of May.

Further information:

<http://users.ox.ac.uk/~exet2581/OxNYFed-3rd-call-for-papers.pdf>

october

5-8 October

Montréal, Canada

The **84th International Atlantic Economic Conference** will be held in Montréal, Canada, in the Autumn of 2017. The mission of the conference is to create a platform where economists and financial experts from academe, government, and the private sector can present their research results, exchange ideas and network in a collegial environment. Meetings also provide opportunities for participants to renew acquaintances and to forge new ones. That is why we are hoping to bring together distinguished delegates from around the world to present, discuss, and exchange valuable information in the fields of economics, business and finance.

Further information: <http://IAES.org>

19-21 October

Budapest, Hungary

The **29th EAEPE Annual Conference** will take place at Corvinus University. The conference theme, 'the role of the State in Economic Development.', is inspired by the most recent history of political and economic transition in Central- and Eastern-Europe.

Further information: www.EAEPE.org

27-29 October

Birmingham

2017 7th International Conference on Business and Economics Research (ICBER 2017). Papers are invited in a wide range of topics (see website) by **10 June 2017**.

Further information (and paper submission):

icber@iedrc.org

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Europe (inc UK), Middle East and Africa Tel: +44 (0)1865 778171

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