Institution: University of Bristol		
Unit of Assessment: 17 - Business and Management		
Title of case study: Retirement income research informs UK and European policy debates		
Period when the underpinning research was undertaken: 2001 – 2016		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): Edmund Cannon Ian Tonks	**Role(s) (e.g. job title):** Professor of Economics Professor of Finance	**Period(s) employed by submitting HEI:** 08/1996 – present 04/1996 – 08/2003; & 09/2018 – present.
Period when the claimed impact occurred: 2013 – 2020		
Is this case study continued from a case study submitted in 2014? No		

1. Summary of the impact

The University of Bristol is at the forefront of research addressing challenges in the provision of retirement incomes caused by an ageing population. This research, conducted by Edmund Cannon and Ian Tonks, explores the markets for pension products and life annuities in particular, and is highly cited in policy documents at the heart of key policy debates on how to ensure robust private-sector pension systems that are both fairly priced and reliable for pensioners. Cannon and Tonks' research has directly benefited UK and European policymakers and regulators by equipping them with valuable, evidence-based insights into annuity markets and the risks in retirement incomes.

2. Underpinning research

In the UK and around the world, there has been a movement away from employers providing defined benefit occupational pensions to individuals being responsible for their own pension provision through defined contribution (DC) personal pensions (for example, the UK's Auto-enrolment scheme introduced in 2012).

Starting with a 2001 ESRC grant, Cannon and Tonks (C&T) have built up an extensive and significant body of work addressing issues in DC pensions, exploring both the accumulation phase of DC pensions, during which time an individual saves into their pension fund, and the decumulation phase, when savings are withdrawn to finance retirement. Annuities provide one method of decumulating this pension wealth and insure the pensioner against longevity risk and running out of their savings. Understanding the issues in private-sector annuity markets is important in ensuring the design of robust pension systems which are able to both provide a reliable stream of income to pensioners and function efficiently despite an ageing population.

Between 2003 and 2018, Tonks moved to positions at the Universities of Exeter and Bath, before returning to the University of Bristol. Cannon and Tonks continued their close research partnership, working wholly collaboratively, throughout this time and up to the present day, with a strong focus on determining the value-for-money provided by annuities.

Value-for-money of compulsory and voluntary annuity markets in the UK

The UK has a conventional voluntary annuity market (open to anyone) and a separate market for DC pensioners (for whom annuitisation was compulsory up to 2015). In 2002, C&T provided the first time series estimates of the value-for-money of annuities in the UK voluntary annuity market over the period 1957-2002 (R3.1). Value-for-money is evaluated using the 'money's worth' which should equal 100% if annuity providers had zero costs and annuities were fairly priced: typically the money's worth should lie in the range of 90-100% to be regarded as good value-for-money for pensioners, in that their contributions to their pot would provide good value in relation to the payments they receive in retirement.

This research estimated the value-for-money in the voluntary annuities market averaged around 98%. In 2010, C&T updated these findings for the period 1994-2009 (R3.2) and results for the compulsory market (around 90%) were compared with the results for the voluntary market (closer to 100%). The research findings suggest that any reluctance by individuals to purchase annuities, dubbed 'the annuities puzzle', cannot be due to mispricing. This directly addressed an important policy question in the compulsory market, given that HM Revenue & Customs (HMRC) regulations at the time required most individuals to convert their DC pension wealth into an annuity at retirement: evidence of unfair pricing would have undermined the case for compulsion.

Different annuity products: risks and capital requirements for prudential regulation

The UK annuity market is also rare in providing a range of annuity products. C&T estimated money's worth over the period 1994-2012 of these different types of annuity products and examined the effect of purchasing annuities at different ages (R3.3). They demonstrated that money's worth estimates were sensitive to the historical data on pensioners' survival probabilities (life tables) used in the calculations, which is important given uncertainties within the actuarial profession on forecasting improvements in life expectancy. The research showed that value-for-money could appear to be falling over time – which was politically sensitive – but that this was due to the infrequent updating of publicly available life tables. The research concluded that, over the whole sample, conventional level annuities for 65-year old males had an average money's worth of 93.5% but had fallen to 85.9% by the end of the period. This study provides the first evidence on the complex issue of valuing annuities when mortality projections are changing over time.

There are policy concerns that annuity markets may suffer from market failures due to 'adverse selection' because pensioners potentially know more about their own individual life expectancy than annuity providers (e.g. those in poor health are less likely to purchase annuities than those in good health). Previous research had concluded that adverse selection was a problem because the money's worth appeared to be lower for index-linked annuities. However, these conclusions were overturned by C&T in (R3.3) because insurance companies that supply annuities are subject to prudential regulations. C&T showed that the costs of prudential regulation are higher for inflation-protected annuities than conventional annuities because the former products have a higher duration (are more long term) and hence more subject to risk in forecasting improvements in life expectancy, and this can explain the lower value-for-money of index-linked annuities. This argument makes clear the regulatory trade-off between requiring insurance companies to set aside more capital to ensure annuities are low risk but at the cost of lower annuity payments.

International comparisons and the Netherlands' annuity market

C&T extended their work to consider the fair price of annuity products in the Netherlands (R3.4, R3.5) providing this country's first analysis of annuity rates for the period 2001-2012. In a comparative analysis C&T found that the market for annuities is efficient by international standards, with a value-for-money above 90% for the whole period and close to 100% by the end of the period.

3. References to the research

R3.1 **Cannon, E**. and I. Tonks "UK Annuity Rates and Pension Replacement Ratios 1957-2002" *Geneva Papers on Risk and Insurance*, Vol. 29, no. 3, July 2004, 371-393. DOI: 10.1111/j.1468-0440.2004.00293.x. First published as: **Cannon, E**. and **I. Tonks** CMPO Working Paper, University of Bristol, No. 02/051 (2002). http://www.bristol.ac.uk/media-library/sites/cmpo/migrated/documents/wp51.pdf

R3.2. **Cannon, E.** and I. Tonks, "Compulsory and Voluntary Annuity Markets in the UK", Chapter in Securing Lifelong Retirement Income: Global Annuity Markets and Policy, edited by Olivia S. Mitchell, John Piggott and Noriyuki Takayama (Oxford University Press, 2010), Chapter 10, pp. 171-196. ISBN 978-0-19-959484-9

R3.3. **Cannon, E**. and I. Tonks, "Cohort mortality risk or adverse selection in annuity markets?", *Journal of Public Economics*, 2016. DOI: 10.1016/j.jpubeco.2016.07.002. First published as "Cohort Mortality Risk or Adverse Selection in UK Annuity Markets", (2013), Pensions Institute DISCUSSION PAPER PI-1304.

R3.4. **Cannon, E**. and I. Tonks, "Annuity Markets: Welfare, Money's worth and Policy Implications", Netspar Panel Paper, June 2011. https://www.netspar.nl/assets/uploads/PP_24_WEB.pdf

R3.5. **Cannon, E.,** R. Stevens and I. Tonks, "Price Efficiency in the Dutch Annuity Market", *Journal of Pension Economics and Finance*, Vol. 14, no. 1, January 2015, pp 1-18. DOI: http://dx.doi.org/10.1017/S1474747213000279. (online version available since 2013)

4. Details of the impact

The UK's annuity market is still one of the largest in the world, currently valued at GBP3 billion per year, even after the pension freedoms introduced in 2015. Almost half a million individuals or couples retire each year and, in 2017/18, 10.4 million individuals had a DC pension in the UK (Source: HMRC, Sept. 2019). In 2018/19, 645,000 pension plans worth GBP39.7 billion were accessed to convert into a retirement income product (annuity, drawdown or first cash withdrawal: Source: FCA, Sept 2019).

C&T's established reputations as world experts in annuity markets has led to the extensive use of their research to shape policymakers' understanding of the annuities market and inform a breadth of policy discussions – in the EU as well as the UK, by both government and regulators, and across the political spectrum. Their research, in turn, benefits pension providers and retirees by providing policymakers with the insights needed to help ensure that pension systems are stable, fairly priced for pensioners and can honour annuity payments to pensioners despite risks to retirement incomes.

1. Informing EU policy discussions: cross-European decumulation policies and value-for money-issues

In 2016, the EU Directorate General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA) launched a study on the performance and adequacy of pension decumulation practices (the process of converting pension savings to retirement income) in EU countries, conducted by the external consultant Ernst & Young Actuaires-Conseils. The resulting report (I5.1) extensively cites C&T's research, on nine occasions in total, demonstrating the core value of C&T's work to policy discussions. Specifically, the report draws on their work into compulsory and voluntary annuity markets in the UK (R3.2), money's worth of life annuities (R3.3) and annuity markets in the Netherlands (R3.4/R3.5). It highlights key issues in relation to fair pricing, appropriate life tables and the amount of reserves that insurance companies hold to make guaranteed annuity payments to pensioners.

A testimonial from a Consultant at Ernst & Young states "*Our work on decumulation pension practices in the UK and the Netherlands is based to a great extent on the above published papers written by Professors Cannon and Tonks. . . . The work of Professors Cannon and Tonks has enabled us to identify issues in annuity markets… and their data has been most useful in enabling us to calculate money's worth ratios of decumulation products*" (I5.1).

2. Informing UK policy debates

a. UK financial market regulation: Value-for-money issues FSA and FCA papers and consultation

C&T's work has been widely used by UK financial regulators to improve their understanding of annuity markets, in particular, of how the markets operate, whether annuities offer value-for-money and the implications of abolishing compulsory annuities. More specifically:

- In 2013, the Financial Services Authority (FSA) commissioned C&T to review and advise on the FSA's annuities research into the workings of the annuities market. Some of this work was subsequently published in the FSA Thematic Review of Annuities, TR14/2 (2014); and in the Financial Conduct Authority (FCA) Retirement income market study (2015).
- A report for the FCA by Wells (2014) cited the work of C&T from the perspective of consumer behaviour towards annuity purchases. The Financial Services Consumer Panel cited C&T's work in November 2014 on whether annuities offer good value-for-money (Pitt-Watson et al,

2014) and the implications for costs of providing annuities. This research, in turn, was cited by the FSA/DWP in their March 2015 Consultation Paper on disclosure of transaction costs in workplace pensions (page 16) (I5.3).

- In March 2014, the FCA invited C&T to submit a response to the FCA Consultation on Retirement Income. Following the changes to the compulsory annuitisation requirements announced in March 2014, they were invited again to submit a response to the Revised FCA Consultation in July 2014 (I5.4).
- An FCA occasional paper (Aquilina, Baker and Majer, 2014) on annuities' value-for-money (I5.5) cited C&T's work on annuities 18 times. It drew heavily on their money's worth research (R3.3), in particular the evidence on the fall in in value-for-money of annuities since 2004. This paper was used as the basis for the FCA "Retirement Income Market Study" in March 2015 (see footnote 3 page 7) and annual updates which identified areas in which the annuity market was not functioning well (I5.5). This is an ongoing area of research for the FCA. A testimonial from a Technical Specialist at the FCA confirms that C&T's research "*has been very influential*" within the FCA, and that the findings of the occasional paper, which followed C&T's methodologies, were "*then used by the FCA to design policy interventions in the pension sector*" (I5.5).

b. UK government policy: Solvency-2 regulations and capital requirements for prudential regulation

In the summer of 2018, HM Treasury commissioned C&T to write a confidential assessment of the UK Annuity Market (I5.6). The report, published August 2019, was in the context of the EU-wide Solvency-2's regulatory requirements for life insurance companies (introduced in 2016) and also the consequences of the pensions freedoms (abolition of compulsory markets) from 2014, and built on the research on insurance market prudential regulations (R3.3). The Solvency-2 regulations are designed to ensure that insurance companies manage their money responsibly in order to fulfil their annuity promises, i.e. it is invested wisely and pensioners can continue to receive payments over several decades, until death. Of particular concern for HM Treasury was the fair pricing of the schemes – not too expensive for pension holders, nor too cheap to undermine the long-term viability of the provider and its ability to make pension payments: the trade-off identified and quantified in C&T (R3.3). This report's development involved a series of six meetings in 2018 with C&T in attendance with representatives from the Cabinet Office, HM Treasury, FCA, the Association of British Insurers, and the Bank of England.

This research has helped HM Treasury understand the impact of Solvency-2 and the pension freedoms on UK annuity markets and has been used in the following ways:

- As part of a briefing prepared for HM Treasury Ministers in preparation for their appearance in front of the Select Committees;
- As part of an internal briefings for HM Treasury Ministers and senior managers on the annuity market;
- As part of the evidence base drawn upon in formulating HM Treasury's strategy on the regulatory framework and design of policy for life insurers in a post-Brexit world.

According to a testimonial from the Head of Prudential Regulation of Insurance Companies, HM Treasury, "*The final report was excellent – thorough and clear … has been used by HM Treasury to understand the impact of Solvency 2 and the pension freedoms on UK annuity markets, specifically, it will be used to inform the appropriate prudential regulatory framework for the insurance sector, and particularly the life insurance sector, to apply from 1 January 2021*" (I5.7).

c. Labour Party-commissioned IRRI study

In 2014, Rachel Reeves MP, then Labour Party's Work and Pensions Secretary, commissioned The Pensions Institute to conduct a two-year study to look at how to boost defined contribution (DC) savers' retirement income following the introduction of the Coalition Government's 'freedom and choice' pension reforms announced in the 2014 Budget. The final Independent Review of Retirement Income (IRRI) (I5.8), published March 2016, cites C&T's annuities research 12 times, and in Recommendation 2.5, specifically recommends that the regulator use their money's worth metric, and provide transparent charges (recommendation 2.6) that the customer can use alongside with the money's worth calculation. This, again, demonstrates the fundamental value of

C&T's research to key policy questions regarding annuities, and for policymakers across the political spectrum.

5. Sources to corroborate the impact

I5.1. Ernst and Young (2017) Supporting statement – Data & Analytics Service Line Leader. European Union (2016) "Study on the performance and adequacy of pension decumulation practices in four EU countries" Report for Directorate-General Financial Stability, Financial Services and capital markets Union, prepared by Ernst & Young Actuaires-Conseils. (The support of Cannon and Tonks is acknowledged on page 2, and their research is cited on pages 16, 32, 36, 56).

I5.2. FSA Thematic Review of Annuities, TR14/2 (2014)

I5.3 Wells, J. "Pension Annuities: A review of consumer behaviour", Report prepared for the Financial Conduct Authority, January 2014
Pitt-Watson, D., C. Sier, S. Moorjani and H. Mann (November 2014), 'Investment costs: An unknown quantity. A literature review and state of play analysis'
FSA/DWP "Transaction Costs Disclosure: Improving Transparency in Workplace Pensions" Consultation Paper DP15/2 (March 2015)

I5.4 Submissions to FCA Consultations in March 2014 and July 2014

I5.5 Aquilina, M., R. Baker and T. Majer (2014), The Value for Money of Annuities and Other Retirement Income Strategies in the UK, Financial Conduct Authority, Occasional Paper No. 5, December (The support of Cannon and Tonks is acknowledged on page 1, and their research is cited on pages 19 (x2), 24 (x2), 32, 40 (x2), 42 (x4), 43,74 (x2)

Financial Conducts Authority (2015) Retirement income market study: Final report – confirmed findings and remedies, MS14/3.3.

Financial Conducts Authority (2021) Supporting statement – Technical Specialist

I5.6 Cannon. E.S. and I. Tonks (2019) "Assessment of UK Annuity Market" study conducted for HM Treasury (in conjunction with Prudential Regulatory Authority, Financial Conducts Authority and Association of British Insurers) **[CONFIDENTIAL]**

I5.7. HM Treasury (2020) Supporting statement - Head of Prudential Regulation of Insurance Companies

I5.8. Pensions Institute (2016) We Need a National Narrative: Building a Consensus around Retirement Income, Report of IRRI, March 2016. (the support of Edmund Cannon in the consultation process is acknowledged on page 1 and Cannon and Tonks's research is cited a total of 12 times on pages 62, 184, 213, 463, 540).