

# Dissertation draft

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Standard economic theory suggests that retirement annuities should be highly prized by individuals as a way to insure against the risk of late death Yaari (1965). However, in developed countries rates of annuitization are far below the levels that theory predicts. In this paper I test two competing hypotheses for the annuity problem: bequests and pessimistic life expectancy. Under the coalition government in the UK the law regarding the use of private defined contribution pensions changed. Individuals were no longer forced to annuitise their pension pots and could access them in a variety of ways such as lump sum withdrawals or income drawdown and subsequently the number of annuities sold in the UK dropped precipitously.

Depending on the reason for the lack of annuitization in the UK, the consumption response of retirees to the pension reform will differ. If individuals do not annuitise because of pessimistic life expectancy I will show that their consumption should increase. If, on the other hand, individuals do not annuitise because of a bequest motive, consumption should not change much as a result of the reform. I will solve lifecycle models for both of these cases and simulate consumption decisions with, and without, forced annuitization. I will then use a variety of empirical models to measure the consumption change in early retirement that resulted from the policy reform. The size and magnitude of this change will be indicative of the mechanism causing the annuitization problem.

The importance of retirement policy to individuals in the UK is growing. The number of individuals of pensionable age is expected to grow from 11.9 million in 2020 to 15.2 million in 2045 according to the latest ONS statistics and for every 1000 people of working age there will be 341 of pensionable age in 2045 compared to 280 in 2020 ONS (2020). The increase in absolute and relative numbers of elderly makes retirement policy more important. Moreover, private, defined contribution (DC), pensions are becoming increasingly common and are predicted to grow as current cohorts age Cribb and Karjalainen (2023). Therefore, policies regarding how private pensions can be accessed will have a larger impact on overall welfare for retirees.

The so called "pensions freedom act" received Royal Assent in December 2014 marked

the end of a series of pension reforms carried out by the coalition government between 2010 and 2015. The reform was announced in the Spring budget and made it possible to withdraw money from a private pension pot subject to the marginal rate of income tax that an individual faced. In the June 2010 budget the government made a first reform to the annuitization rules, creating an minimum income requirement above which individuals would not need to annuitise more HMT (2011). However, this was set at £20,000 and therefore few individuals were eligible. The minimum income requirement was scrapped in the 2014 bill finally eliminating the compulsory annuities market. The impact of the reforms on annuity demand has been documented by Cannon et al. (2016). Using data from the Association of British Insurers they show that annuity demand dropped by 75% from its maximum.

## 0.1 Literature review

My paper draws on three main strands of literature. The annuity problem, the retirement saving problem and lifecycle models. **this intro is rubbish**

Yaari (1965) was the first to show that under standard assumptions we would expect individuals to annuitise all of their wealth at retirement to insure against the risk of long life. Since then there has been much literature discussing possible reasons that people do not annuitise. Finkelstein and Poterba (2002) and Finkelstein and Poterba (2004) find evidence of adverse selection, thereby making the 'money's worth' of annuities lower for the general population as opposed to the population of annuitants. However, they also find that theory would still predict annuitization.

Friedman and Warshawsky (1990) show that annuitization decisions can be fully explained by a mixture of bequest motives and actuarially unfair annuities. They solve an augmented life-cycle model with a range of parameters on how severe the rate of return is on the annuity versus market rates. For plausible values they find that individuals would optimally not annuitise much wealth. Similarly to Finkelstein and Poterba (2004), Friedman and Warshawsky (1988) show that there is a significant difference between the life expectancy of annuitants and the general population in the American annuity market but this cannot fully explain the annuitization problem. Only when bequest motives are added to the model can annuitization rates be rationalized.

Lockwood (2012) builds on this and shows that a realistic bequest motive in lifecycle simulations achieves realistic annuitization rates. He solves a simple lifecycle model with bequest motives taken from several recent papers in the literature. The bequest motives he picks therefore match other important aspects of the lifecycle model such as how much individuals actually bequest and how rich individuals are when they bequest.

Lockwood (2018)

Vidal-Melia and Lejárraga-García (2004) have some interesting results. Need to talk about that.

## 0.2 Methodology

I first solve a modified retirement lifecycle model. Retirees face

$$E(U) = \sum_{t=x}^{110-w} [u(c_t)]$$

## 0.3 Rough plan

- Intro
  1. I think Eric French wrote something about population that I could use in then intro to say why it is important.
  2. "Latest data from HM Revenue Customs (published in April) showed more than £45bn has been taken from pots since 2015." <https://www.ftadviser.com/pensions/2022/04/freedom-funds-were-they-really-a-good-idea/>
  3. Need annuity theory references – Yarri?
- Lit review
- Models
- Empirical
  1. Diff in diff
  2. RDD
  3. Matching?
  4. can I use anything I learnt in panel? In some sense the decision to annuitise is a discrete choice problem so I could use something from there.
- Conclusion

## References

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