

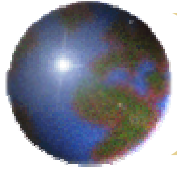
*The Political Economy of
Government Issued
Longevity Bonds*

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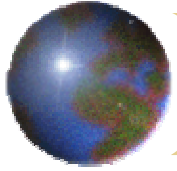
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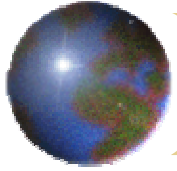
Overview: Why did we write this paper?

- ✦ The provision of longevity insurance is a central function of governments
- ✦ Annuities are welfare enhancing
- ✦ Private markets not well developed
- ✦ Adverse selection is a market failure that is well understood
- ✦ Inability to insure aggregate mortality risk is second, less understood, market failure
 - ❑ How important is it?
 - ❑ What can the government do about it?



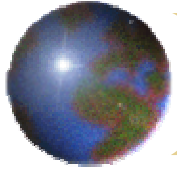
Overview: It is all about Trade-Offs

- ✦ Government issued longevity bonds may help to complete markets and enhance intergenerational risk sharing
 - ⊠ Government has one key risk spreading advantage over private markets
- ✦ But no guarantee that efficient allocation of risk will be achieved through political system
 - ⊠ Politicians may have incentive to shift more risk than is optimal to future generations
 - ⊠ Government may not efficiently share risk within each generation



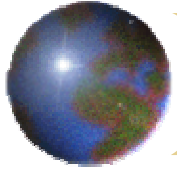
Overview: Other Issues Raised in Paper

- ✦ New estimates of how large the price effect might be
- ✦ Discussion of effect on government borrowing costs
- ✦ Discussion of political aspects of how bond proceeds might be used



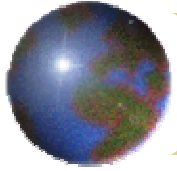
Outline

- ✦ Why do we care about annuities?
- ✦ Information problems and annuity supply
 - ▣ Adverse selection
 - ▣ Aggregate mortality risk
- ✦ Pros of government issuance
 - ▣ Intergenerational risk sharing
- ✦ Cons of government issuance
 - ▣ Across generations
 - ▣ Within generations
- ✦ Other political economy considerations
- ✦ Conclusions



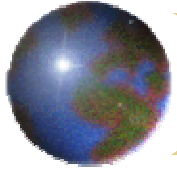
Why do we care about annuities?

- ✦ They enhance individual welfare
 - ✦ With complete markets, individuals without bequest motives should annuitize all wealth if the return to survivors exceeds that of the unannuitized version of the same asset
 - ✦ Even with incomplete markets and a severe mismatch between desired consumption and available annuity stream, the optimal fraction of annuitized wealth is quite high



Why do we care about annuities?

- ✦ There are “social” gains from annuitization
 - ❑ Absent annuitization, individuals have an incentive spend their financial wealth too quickly, knowing that they can fall back on means-tested government benefits
 - ❑ Such behavior is individually optimal, but socially costly



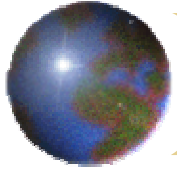
Information Problems - 1

✦ Adverse selection

- ✦ Money's worth ratios → adverse selection reduces payouts by approx. 10%

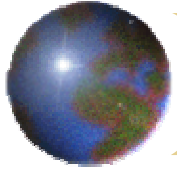
✦ Solution?

- ✦ Mandatory annuitization
- ✦ Note: gov't need not be annuity provider
- ✦ This solution does have other consequences



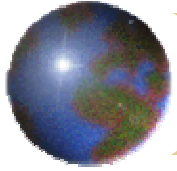
Information Problems - 2

- ✦ Aggregate Mortality Risk
 - ⊠ Idiosyncratic mortality risk can be diversified away by holding diversified mortality portfolio
 - ⊠ Aggregate mortality risk is correlated across individuals and cannot be diversified away simply by insuring more individuals



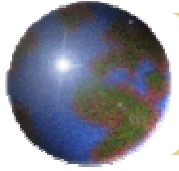
How might insurers react to aggregate risk?

- ✚ Hedge with other insurance contracts
 - ⊠ Ex: life insurance (but imperfect)
- ✚ Diversify internationally (reinsurance)
 - ⊠ Will still be a non-diversifiable component
- ✚ Securitize the risk (without government)
 - ⊠ But the risk is correlated for buyers too
- ✚ Pass to consumers via participating annuities
 - ⊠ Will have to compensate them for bearing risk
- ✚ Charge a risk premium
 - ⊠ Seems to be basis for encouraging longevity bonds



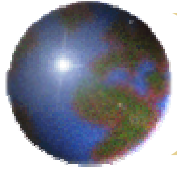
Is it quantitatively important?

- ✦ Friedberg & Webb
- ✦ Blake, Cairns, Dowd
- ✦ We use CBO stochastic mortality projections based on AR(1) of historical mortality rate changes by age
 - ▣ 5% chance that *ex post* annuity costs could increase 5 - 10%
- ✦ Money's Worth ratios suggest that, if insurers are pricing it properly, the upper bound is 5%
 - ▣ "Sizable, but not huge"



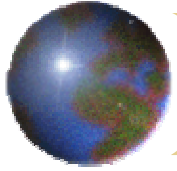
Pros of Government Issuance

- ✦ Bohn: “future generations are naturally excluded from insurance markets”
- ✦ “Welfare improvements are made possible because the government’s power of taxation gives it the unique ability to make commitments on behalf of future generations.”



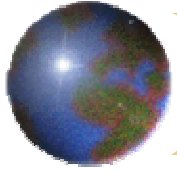
Intergenerational risk sharing

- ✿ If different generations are differentially exposed to risk, fiscal policy can spread the risk across generations
- ✿ While shock to mortality today may also effect future generations (indeed, maybe more so), those future generations have more time to adapt behavior
 - ✿ Today's 80 year old cannot adjust labor supply or savings behavior, while those not yet born can



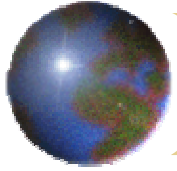
A caveat ...

- ✦ Government can improve social welfare by making (intergenerational) markets more complete
- ✦ But, it is important to consider general equilibrium effects
 - ✦ Shock to longevity → alters capital-labor ratio → alters wages of future generations
 - ✦ Future generations may already be bearing some risk → important to account for this in designing risk sharing policies



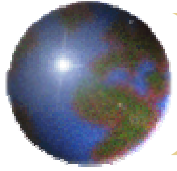
Cons of Government Issuance - 1

- ✦ To maximize social welfare, government must shift the optimal amount, not just any amount, of risk
- ✦ Numerous political economy motivations for politicians to redistribute to current generation
- ✦ U.S. government big in this business
 - ▣ Pay-as-you-go Social Security and Medicare
 - ▣ Underfunded PBGC system
 - ▣ Survivor bonds would increase exposure even more
- ✦ Would we simply exacerbate tendency to shift excessive risk onto future generations?



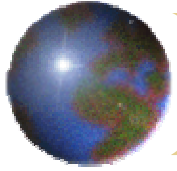
Cons of Government Issuance - 2

- ✦ Optimal risk sharing also requires that we “get it right” within generations
 - ⊠ Efficient financial markets ensure an equilibrium in which risk is borne by those most willing to bear it
- ✦ In practice, tax bases and rates are based on many other considerations
 - ⊠ Unlikely that risk sharing will be first best



Other Issues

- ✦ Cost of borrowing
 - ▣ Additional bond should reduce costs
 - ▣ Thin market would increase costs
- ✦ Investing the proceeds
 - ▣ If bond issuance exceeds need for gov't financing, how would proceeds be invested?
 - ▣ In some political economy models, budget scoring rules could lead such issuance to influence spending patterns



Conclusions

- ✦ While aggregate risk raises annuity prices, we are skeptical as to overall effect of longevity bonds on demand
 - ❑ Price effect may be small
 - ❑ No good estimates of demand price elasticity
 - ❑ Price is not the major barrier to annuitization
- ✦ Welfare effects of government issuance are ambiguous
 - ❑ Better intergenerational risk sharing is a theoretical possibility, but political considerations suggest they may not be realized in practice