

How price elastic is the demand for retirement saving ?



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Background

- Life expectancy on the rise :
- + 14% every year in OECD countries since the 60s (Ined, 2010)
- Future public pensions expected to shrink
- Retirement savings accounts and private pensions have been encouraged by governments
- They are supposed to palliate public pensions gaps

- However : private pensions are not a good hedge against rising life expectancy :
- As pensions do, annuities deliver a *lifelong* income to retirees
- If life length increases, someone must pay ...
- Insurers pass on cost increases to insurees by raising annuity prices
- annuity price : the inverse of conversion rate (the fraction of accumulated wealth converted into a periodic annuity at retirement)

- How : by updating mortality tables
- The longer expected longevity in mortality tables insurers use, the lower the conversion rate

Secular downward trend of annuities



- Conversion rate for a 65 y.o. annuitant for a fixed immediate annuity in 1907 : around 10% (source : Le Sauveur)
- Today : around 5%

International evidence

- in the UK : recent reduction of conversion rates explained by strong revision of annuitants' life expectancy (Cannon and Tonks, 2009)
- In Switzerland : insurance companies have significantly reduced for the same reasons the conversion rate in the unregulated segment of the annuity market (Bütler, Staubli and Zito, 2013).

Objective of the article

- How do savers react to a large conversion rate reduction ?
- Two cases :
 1. price effect dominates : demand for annuity is reduced, this amplifies the reduction of annuity income after retirement
 2. income effect dominates : demand is increased, this compensates (at least partially) the reduction of the conversion rate and may preserve standard of living

Event study

- In France, mortality tables are updated stepwise on an irregular basis
- 2007 : reform of mortality table
- before 2007 : unisex tables (TPRV93)
- after 2007 : new tables :
 - one for women (TGF05) with a large revision of mortality rates
 - one for men (TGH05) with minor revision

- Women : two negative impacts
 - longevity revised upward since the last updating of tables in 1993 (-)
 - they are ascribed their own mortality rates (-)
- Men : one negative and one positive effect
 - longevity revised upward since the last updating of tables in 1993 (-)
 - their tables are now men-specific (+)

Annuity products studied :

- French retirement saving « Madelin contracts », with two phases :
 - a preliminary phase of accumulation during working age
 - a second phase of annuity distribution after retirement
- annuitization at retirement is mandatory

Impact of the 2007 reform

- without survivor option :
 - female conversion rate falls by 10%
 - male conversion rate approx. unchanged
- possibility of a survivor option: 60% or 100% of the annuity is reversed to the surviving spouse

- with a 60% survivor option :
 - for women : conversion rate reduced by 7% on average instead of 10%, but very few choose the option
 - for men : conversion rate reduced by around 5% (instead of approx. 0%)

- Survivor option is not observed during the accumulation phase : decision taken at retirement
- but marital status at the time of subscription is known
- Paper's assumption : single men (single, divorced, separated or widowed) do not expect to opt for survivor annuity at the time they subscribe a contract.

Empirical methodology

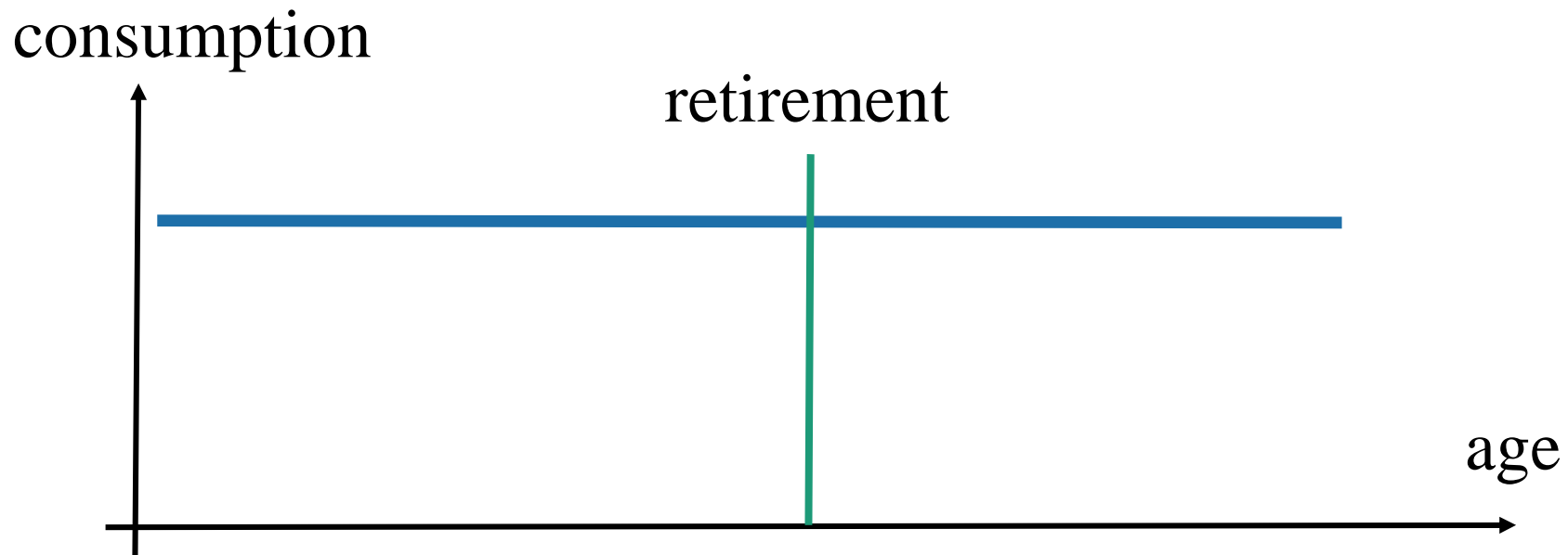
- Two groups :
 - a « treated » group : women
 - a control group : single men
- How women's demand for annuity changes after 2007 compared to single men's demand ?

Three margins

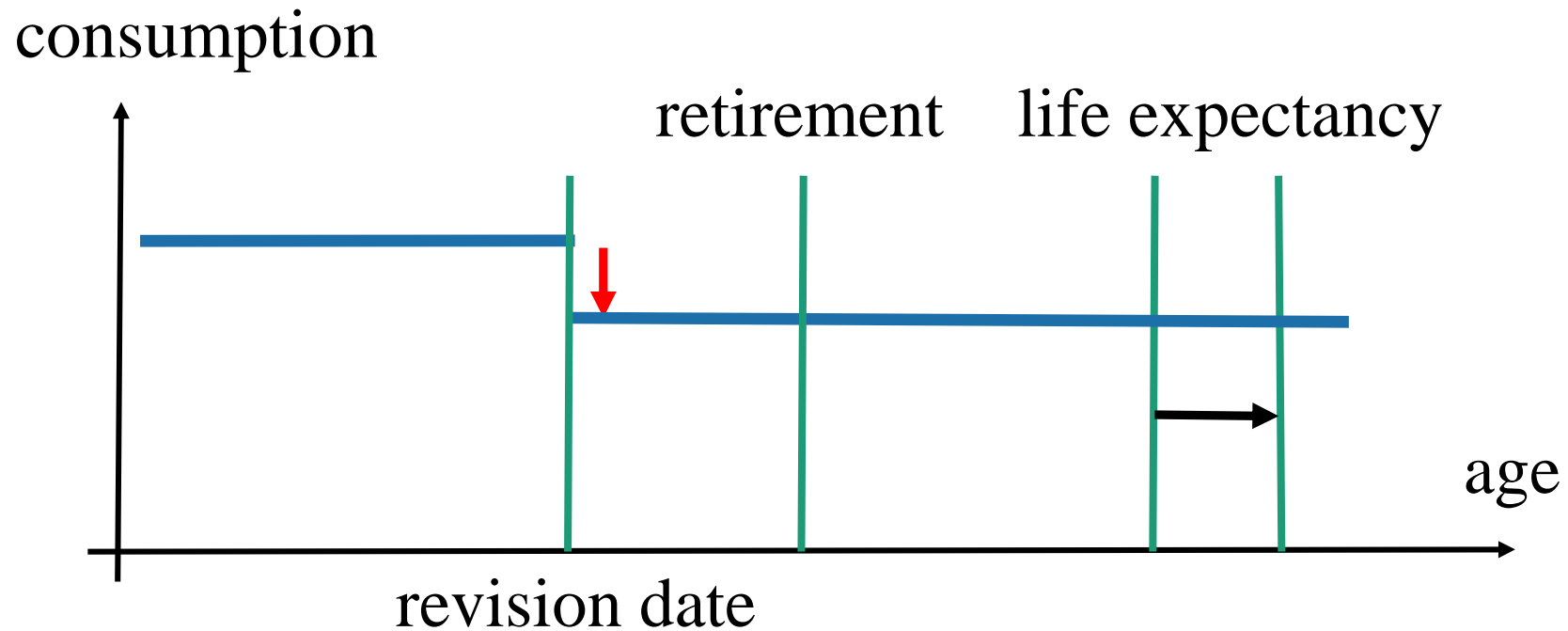
- ex ante anticipation effects
- ex post extensive margin : number of savers who choose to annuitize
- ex post intensive margin : amount paid in the saving account

Some simple theoretical predictions

- In standard consumption-saving models with uncertain longevity, competitive markets and time-separable intertemporal utility functions, consumption evolves smoothly over the life-cycle if consumers fully annuitize their wealth.



- If longevity is revised upward during the saving phase, life-cycle consumption should be immediately reduced leading to more savings.



Why it may not hold in the annuity markets :

- annuity prices do not continuously track changes in savers' average life expectations. They are adjusted stepwise on an irregular basis
- savers may underweight (or ignore altogether) the longevity gains at the origin of the price increase
- hence a fall of conversion rate may be interpreted as a pure price effect (whereas, *on average*, the price increase is justified by an insurance extension)

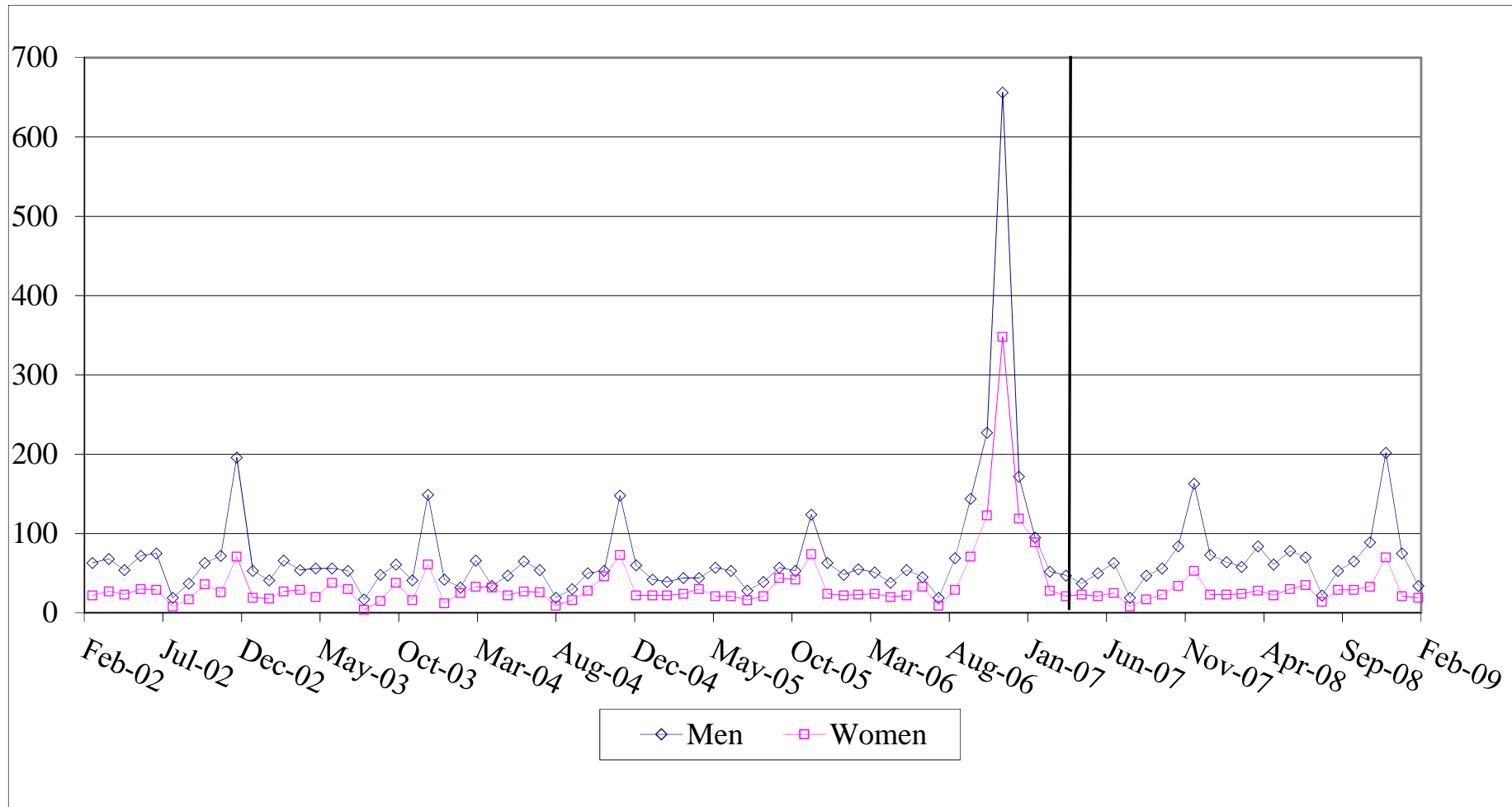
Data set

- Subscribers of contrats Madelin of a large French insurance company between 2002 and 2008
- Many information on savers (age, occupation, ...) and contracts (subscription date, payments, ...)

1) Anticipation effects ?

- large effects :
- on average a sixfold increase during the last six months before the reform implementation !
- no visible displacement effect : net gain of subscribers
- men and women have reacted a similar way

Impact on sales (monthly sales 2002-2009)

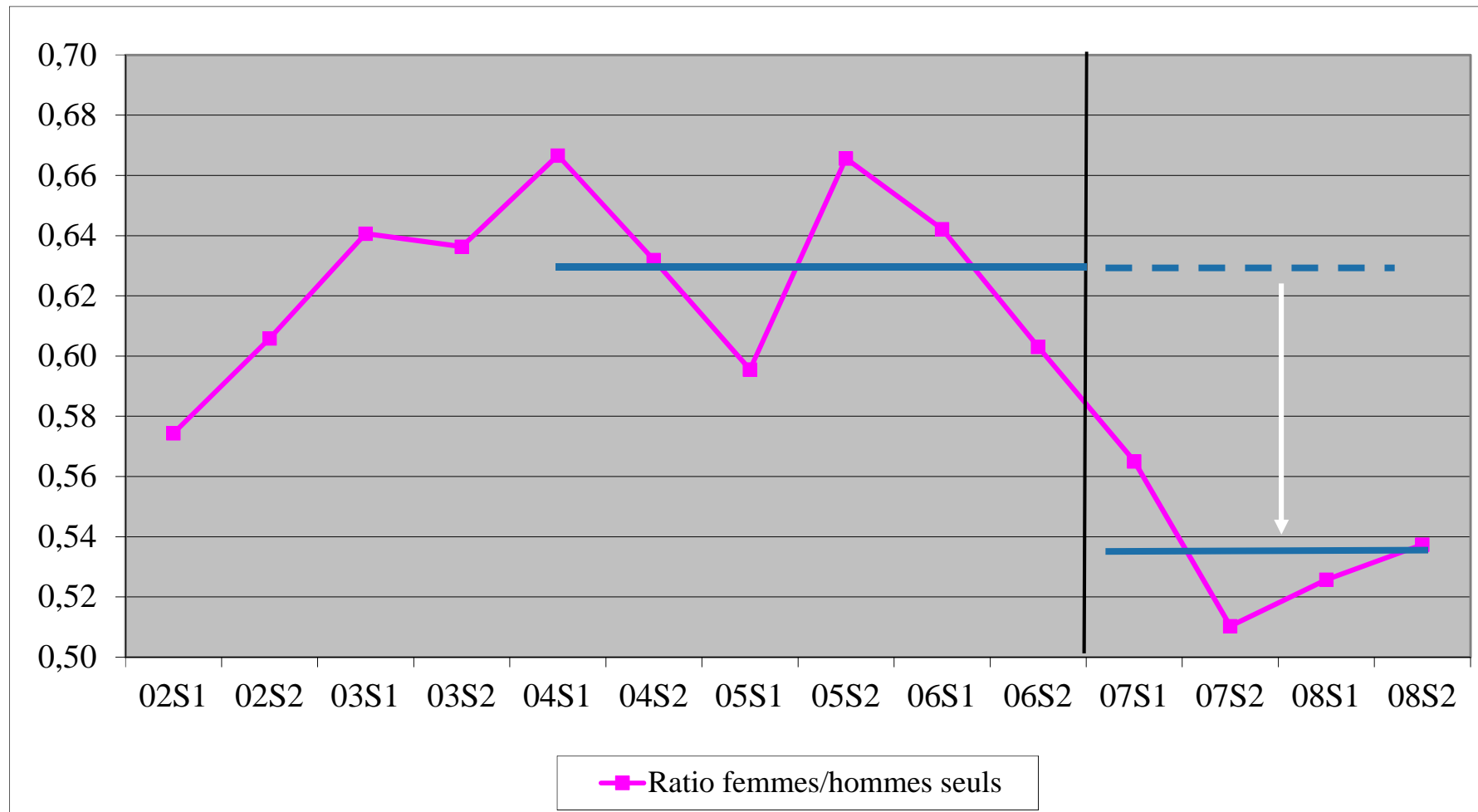


2) Extensive margin

- compared to single men, women's demand experienced a fall right after the reform : 15 percentage points graphically (and up to 20 % econometrically, see paper)
- Implied price elasticity of -1.5 :
 - a 1% reduction of conversion rate reduces the demand of contracts by 1.5%

Ratio women – single men

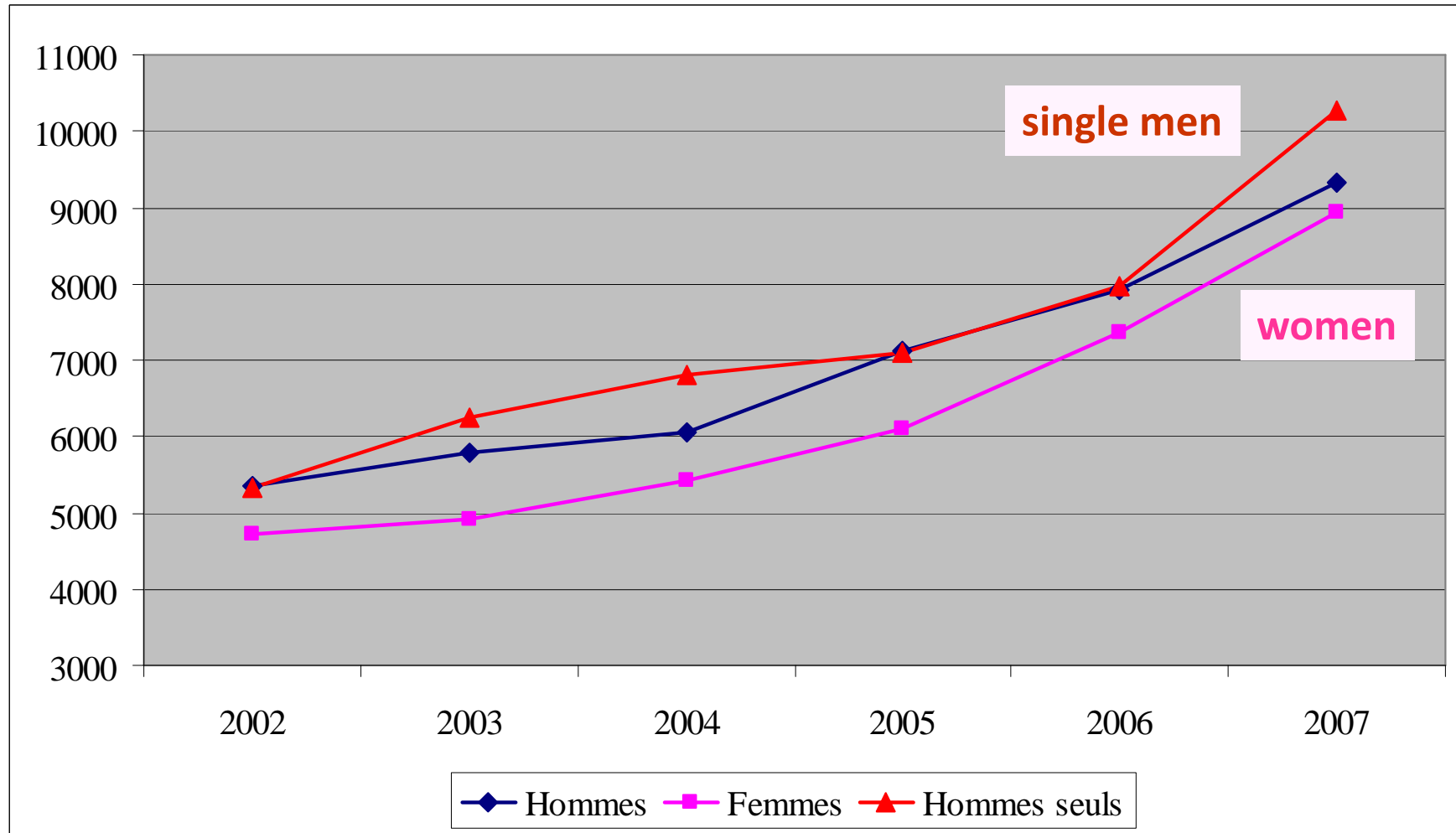
A fall of about 15 percentage points



3) Intensive margin

- Did the reform affect payments in retirement accounts for those who subscribed a plan ?
- No visible break of payments by women compared to single men (confirmed econometrically, see paper)

Impact of the reform on (annualized) payments



Methodological issues

- The peak of demand before the application date is a source of concern for estimation for two reasons
- 1) On the extensive margin : potential bias on the effect on contracts sold.
- The displacement of customers may dry up demand in the saving market after the reform ...

- but :
 - the displacement effect also affected the control group in a similar magnitude,
 - the ratio of women to single men remains stable during the peak

- On the intensive margin :
- Women who anticipated the reform may be different from women who did not,
- and those differences may be correlated with payments in savings account (composition bias)

Assessing the composition bias

- Right question : if a composition bias, to what extent is it different from the one affecting the control group?
- Extensive analysis of change in sales composition during the sales peak shows :
- very few covariates jump at this period
- those which do are common to women and men

Fig. 7.5 Share of "high income" subscribers

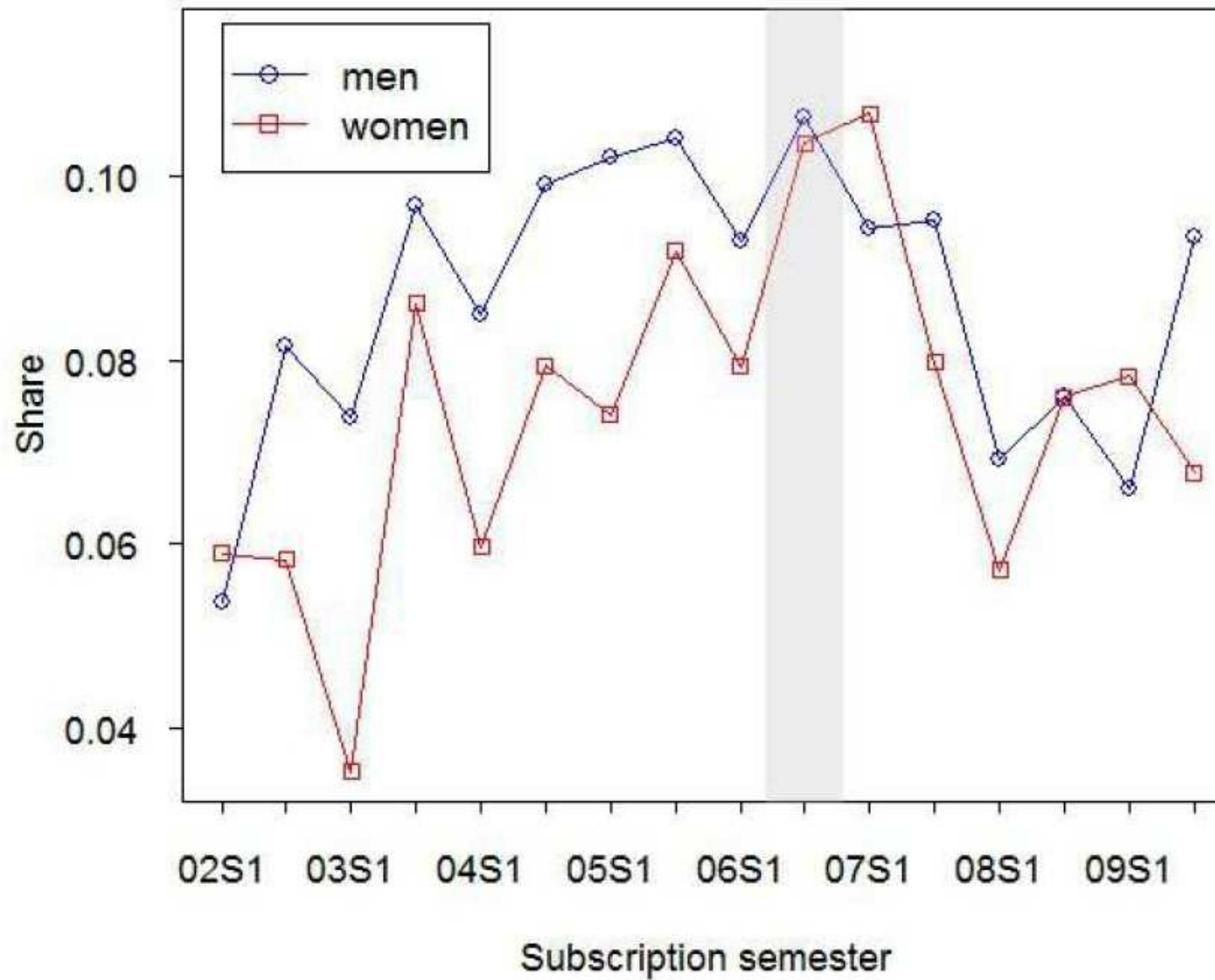
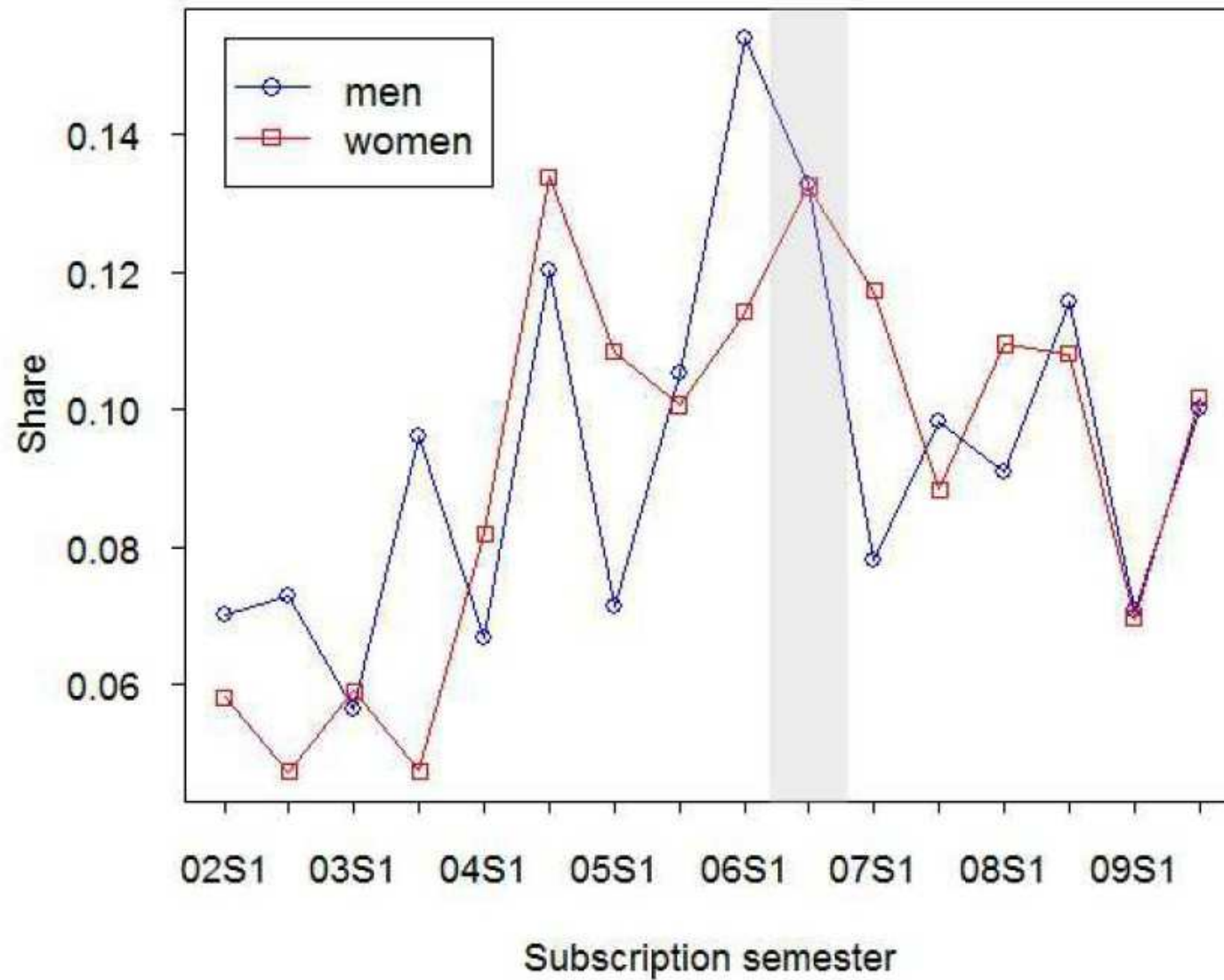
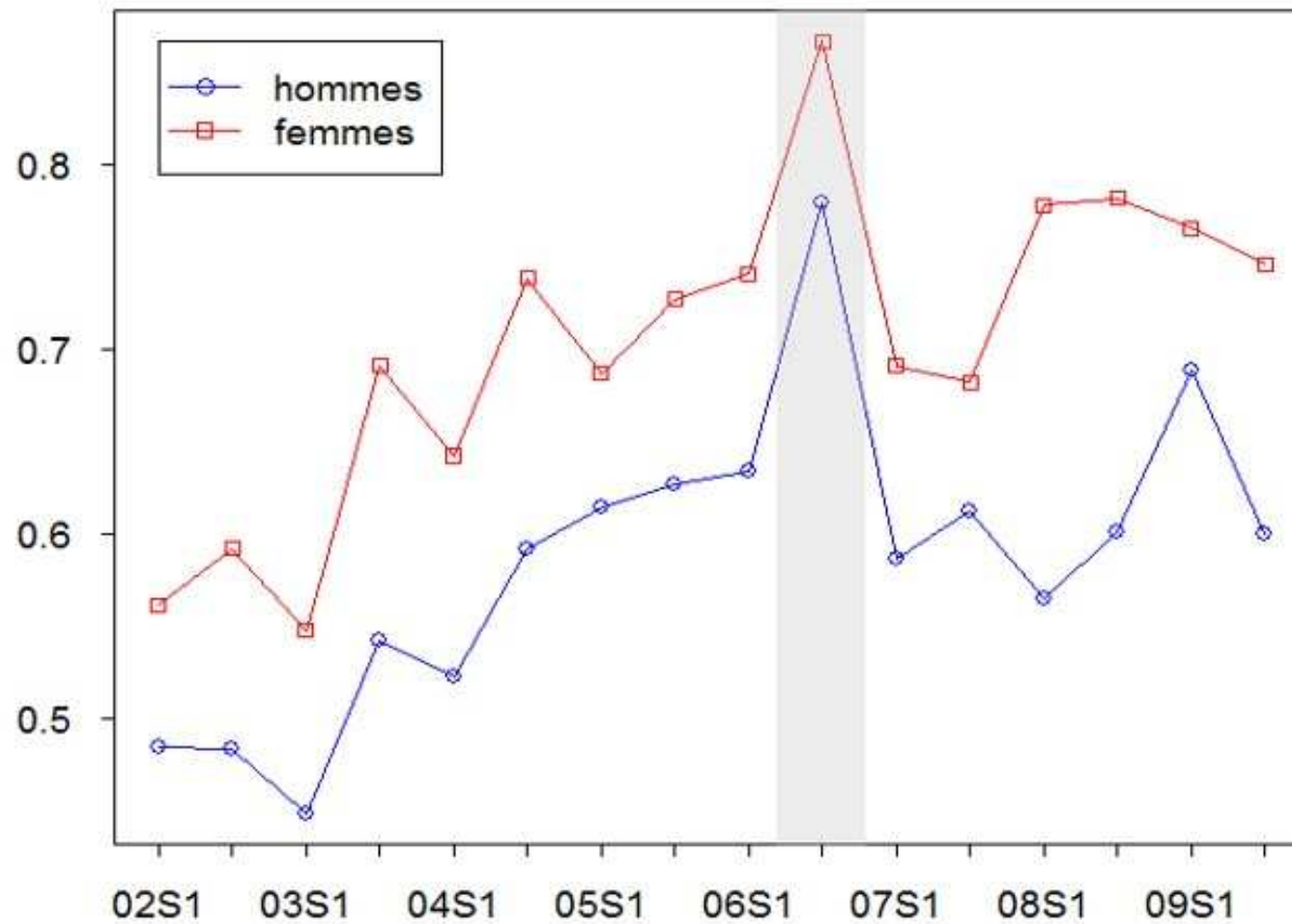


Fig. 7.6 Share of "high wealth" subscribers



Sales share of insurance agents specialized in saving (vs general agents)



Conclusion

- What are the effects of an increase in the price of annuities ?
 - less contracts sold after the policy change : price elasticity of about -1.5
 - no significant change in payment in saving accounts
 - a strong anticipation effect which outweighs the post-reform effect for a very long time ...

number
of subs-
criptions

