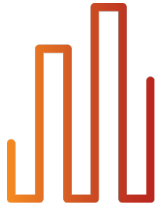


Utrecht (The Netherlands)

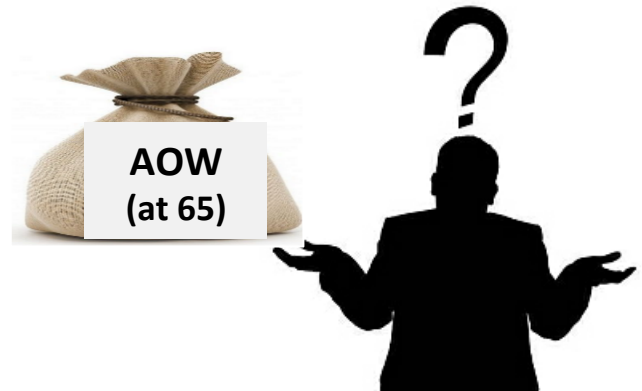
Labour Market decisions of self-employed after 65 years old in The Netherlands

Work in progress

Amparo Nagore García, LISER
Mariacristina Rossi, University of Turin
Arthur van Soest, Netspar & Tilburg University

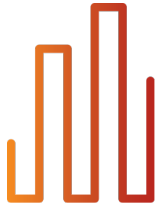


Labour Market decisions of self-employed after 65 years old in The Netherlands



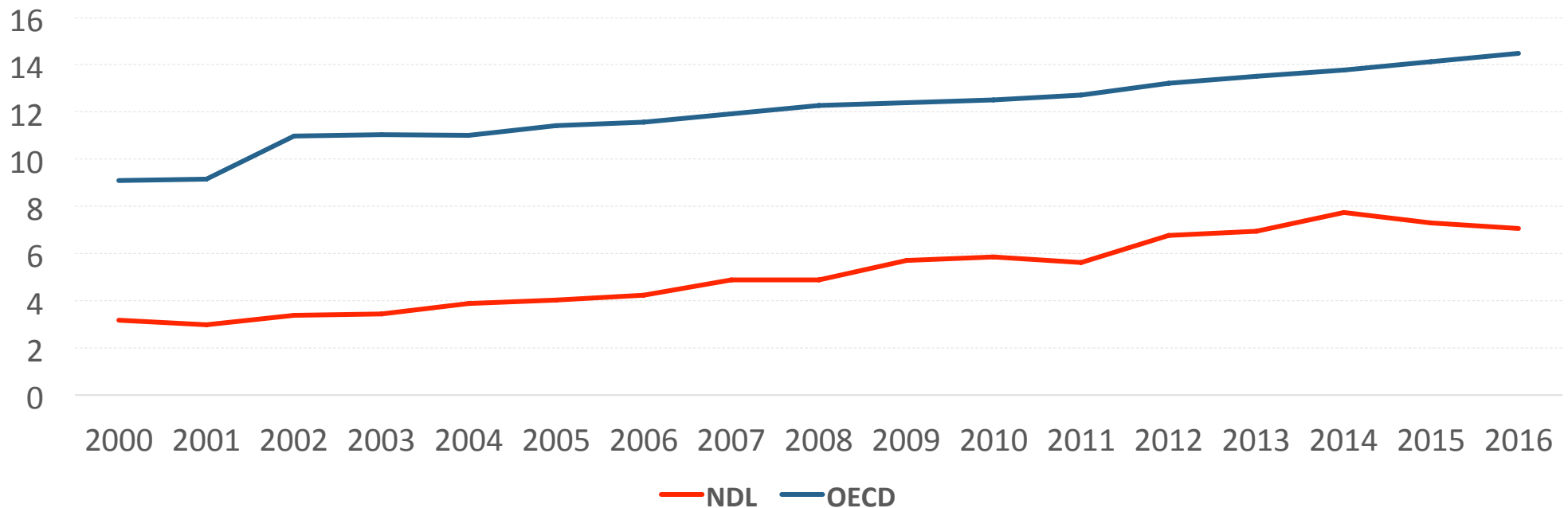
Self-employed

1.- Motivation

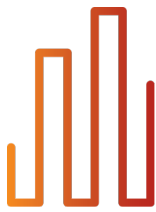


- Test the **validity** of one prediction of the **LCM**
- Retirement decision of self-employed (no mandatory retirement) around 65 years old

Figure 1. Labour force participation rate 2000-2016. 65 years old or more. % in same age group



OECD (2017), Labour force participation rate (indicator). doi: 10.1787/8a801325-en (Accessed on 04 October 2017)

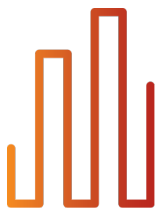


1.- Statutory Age Pension in The Netherlands (AOW)

- **AOW** is a State Pension for people **living** or working legally in the Netherlands between the **ages 15 and 65**
- Eligible **AOW** is received from the statutory retirement age (sra)

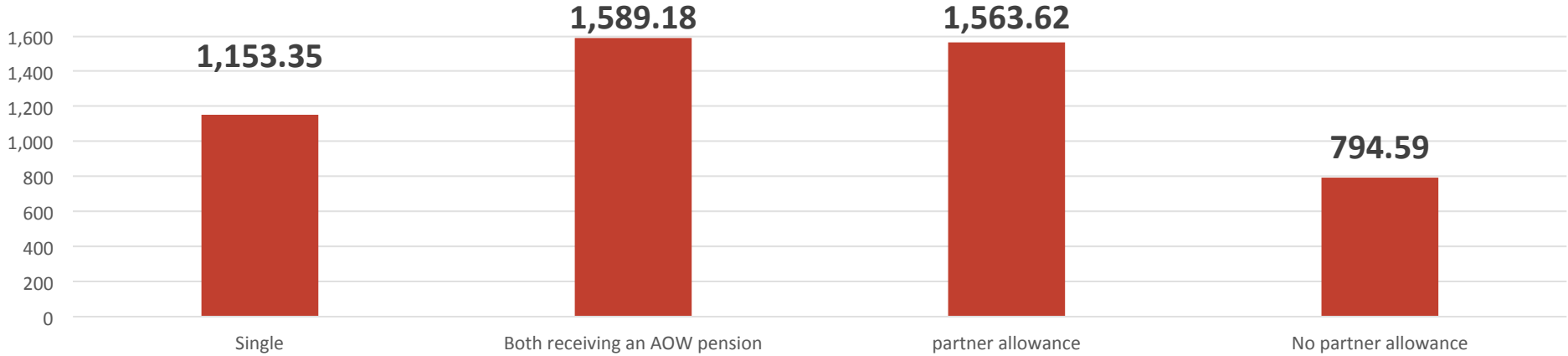
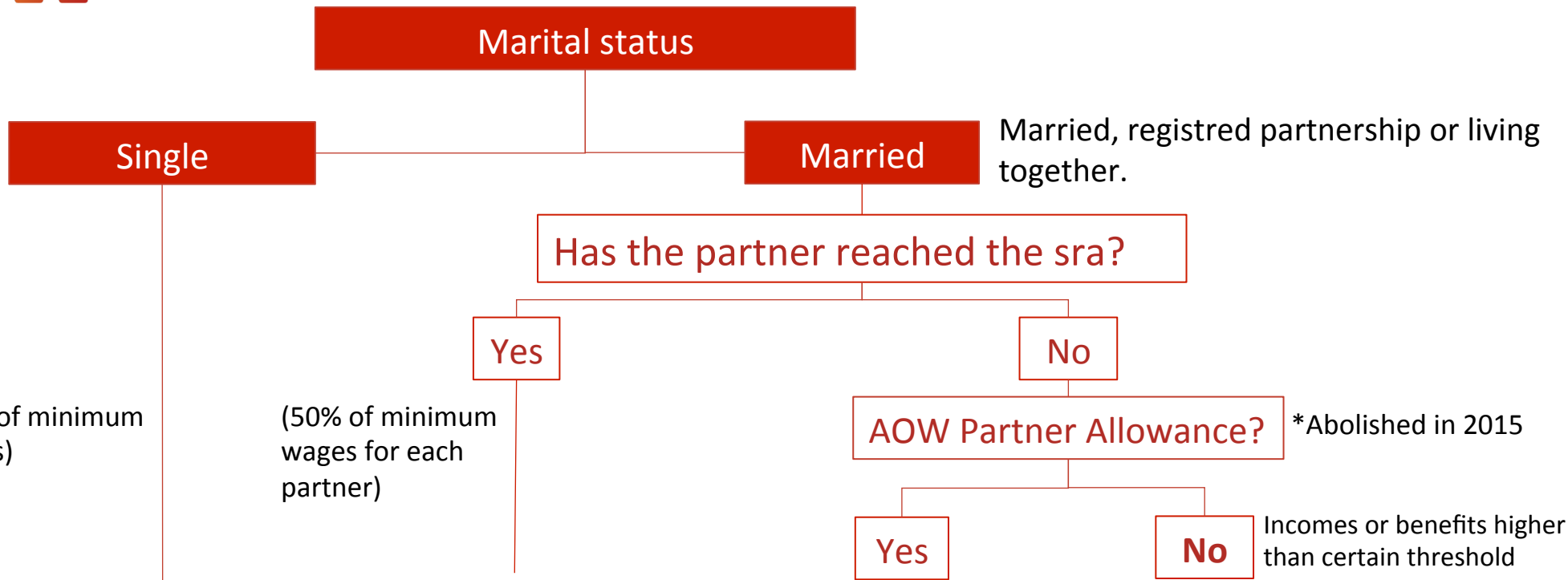
Year	Statutory Retirement Age	Birthdate
2008-2012	65	1 January Year-65
2013	65 +1 month	1 January 1948 to 30 November 1948
2014	65+2 months	1 December 1948 to 31 October 1949
2015	65+3 months	1 November 1949 to 30 September 1950

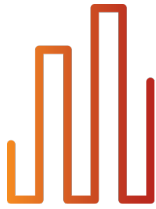
- **AOW** Amount (related with the minimum wage) depends on:
 - The number of **years living** in the Netherlands,
 - The **partnership status**
 - The **age and the other incomes of the partner**



1.- Statutory Age Pension in The Netherlands (AOW)

Household full AOW amount. Gross monthly amounts. July 2016



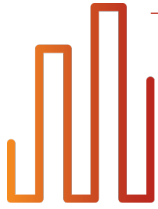


1.- Motivation: Why self-employed?

- They are entitled to the **AOW** State Pension (not dependent on contributions)
- They do **not** face a **mandatory retirement age**
- No **other constraints** than their preferences and health status in **deciding** their labour supply
- **No accrual effects** of continued working as self-employed on Social Security wealth

Retirement is entirely a supply side decision for self-employed

1.- Motivation: Life Cycle Model (LCM)



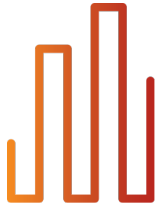
LCM predicts how individuals can be expected to behave

$$\left\{ \begin{array}{l} \text{Max } U(C_t, L_t) + \dots + u(C_R, L_R) + \dots + u(C_T, L_T) \\ \text{Based on the permanent incomes} \end{array} \right.$$

How does gain in anticipated non-labour income affect retirement?

Model	Assumptions	Prediction
Standard LCM	No liquidity constraints →	No effect on retirement
LCM	Liquidity constraints →	It may affect to retirement if ids could not have reached the optimal due to liquidity constraints

1.- Literature



Empirical literature on the life cycle model

- ✓ Many studies: **Expected non-labour income** changes on **consumption & savings**
 - ➔ Little effect on economic decisions (Borella et al. 2014)
- ✓ Few studies: **Expected non-labour income** changes on **leisure** and **labour supply** decision
 - ➔ Inheritance receipt is associated with earlier retirement, especially when inheritance is **unexpected** (Brown et al. 2010)

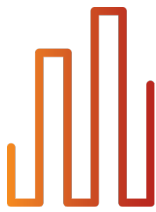
Scarce empirical literature on wealth and retirement decision

- ✓ **No** effects of pension wealth on the retirement transitions (Zissimopoulos & Karoly, 2007)
- ✓ Private wealth **increase** the probability to exit into early retirement (Bloemen, 2011)

Few studies analyzing retirement of self-employed

- ✓ Determinants of self-employment retirement in Britain (Parker and Rogier, 2007)

1.- Research Question and contribution



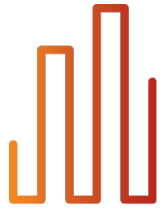
How do entrepreneurs react to reaching the SRA (start receiving the public pension) in terms of labour supply (extensive margin)?



Our Main Contributions

- Test empirically the **validity** one of the **predictions** of the **LCM** in a very clean way (anticipated changes in non-labour income affecting all citizens)
- We analyze the **labour** supply response of older **entrepreneurs** (few studies, small samples)
- We explore the **heterogeneous** effects on retirement of different demographic groups (gender, marital status or wealth levels)

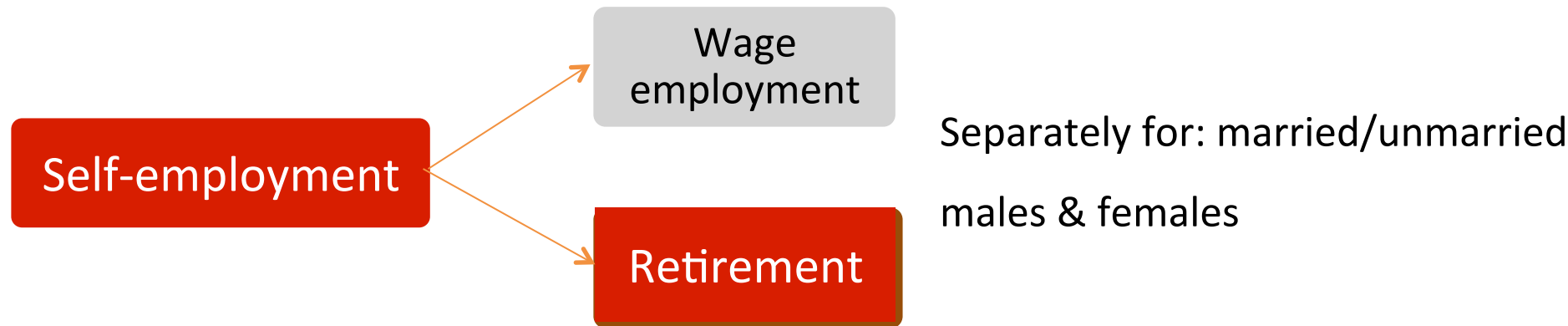
1.- What do we do to answer the research questions?



Approach: Sharp RD to identify the treatment effect of the eligibility age (SRA)

Identifying assumption: In the absence of AOW at the SRA there should be **no differences** in **transition rates** out of self-emp. **before** & **after** the SRA

We model the **transitions out of self-employment** using a **discrete hazard** model with a **multinomial logit** functional form



Other main drivers:

- ✓ **Liquidity constraints** ~ household financial wealth quintiles
- ✓ Type of households: **married** (with **younger/older** partner) & **unmarried**

3.- Data & Sample selection

□ Datasets provided by *Statistics Netherlands*

❖ *Pinkzelfst*

- **Dutch** administrative dataset on personal incomes for **self-employed** based on tax declarations
- **Sample**: whole population of self-employed
- Collected **annually** for **2007-2015**
- **Yearly** information on incomes, type of self-employment, firm-size, industry, seniority in self-employment

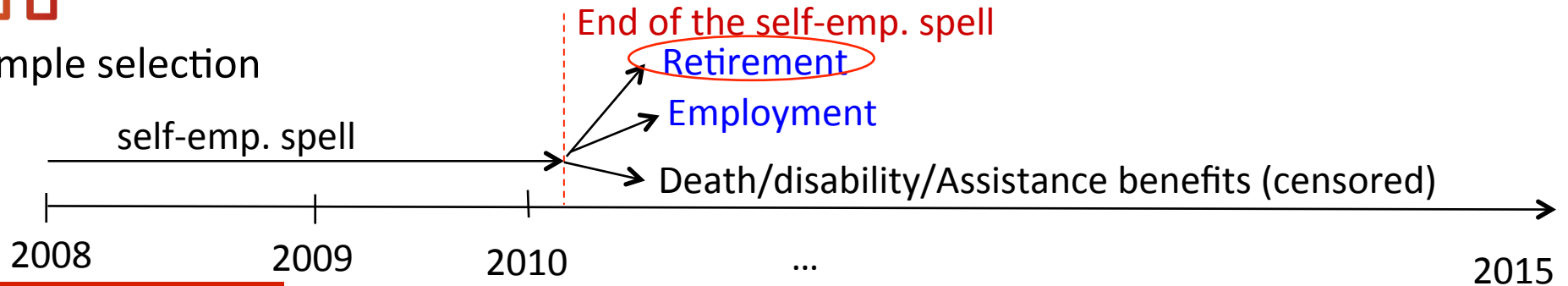
❖ *Other administrative datasets*:

- To construct the destination states: employment, death, assistance benefits
- To complete the panel:
 - **Individual** level (entrepreneur and spouse): birthdate, gender, civil status, children, occupational pension
 - **Household** level: wealth, household incomes

3.- Data & Sample selection



➤ Sample selection



Entrepreneurs
(business owners)
Born: 1943-1950

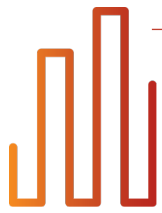
➤ Composition of the sample

	Married		Unmarried		Total
	males	females	males	females	
Number	70,461	30,687	17,136	8,535	126,819
Percentage	56%	24%	14%	7%	100%

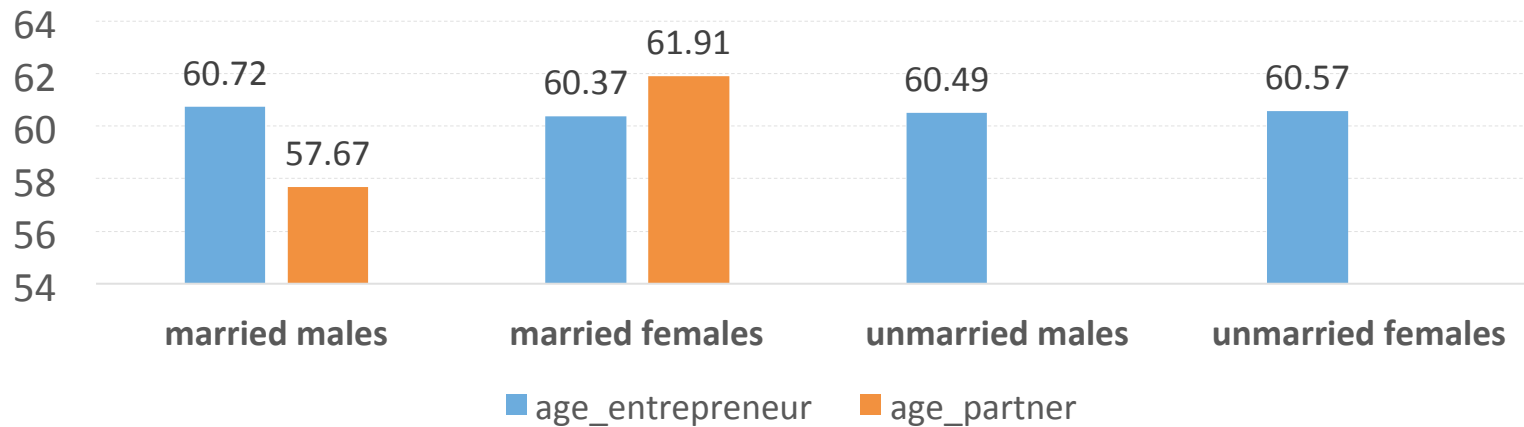
Note: Married: couples

Unmarried: singles, divorced & widows

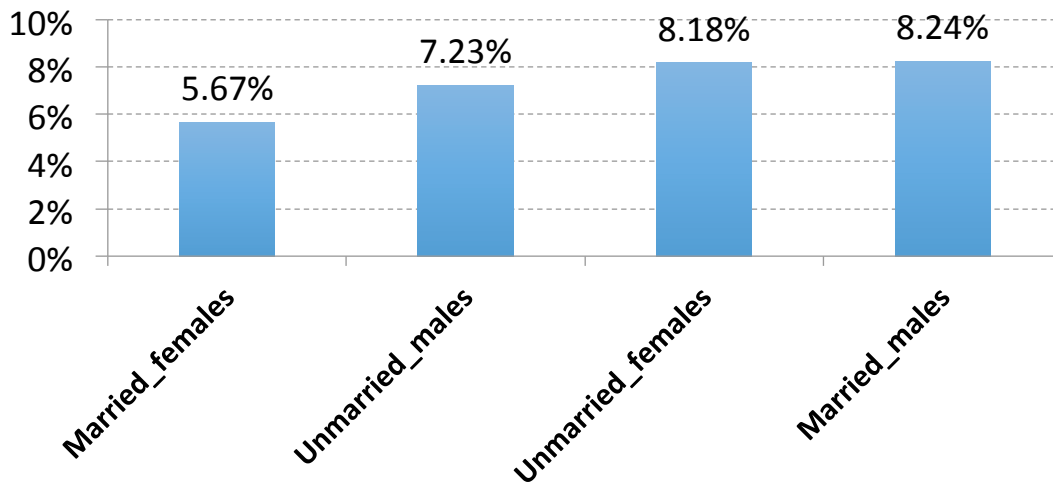
4.- Descriptive analysis



Mean **age** of entrepreneurs and their partners. Beginning of 2008

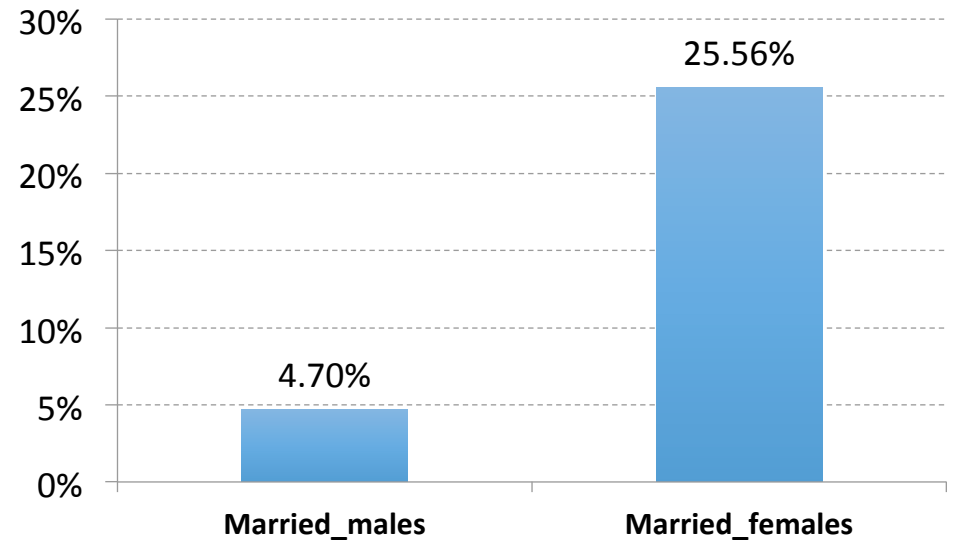


Proportion of entrepreneurs reaching the SRA in 2008

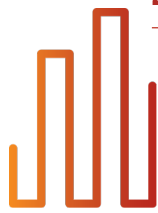


Note: SRA: 1 if age >= 65

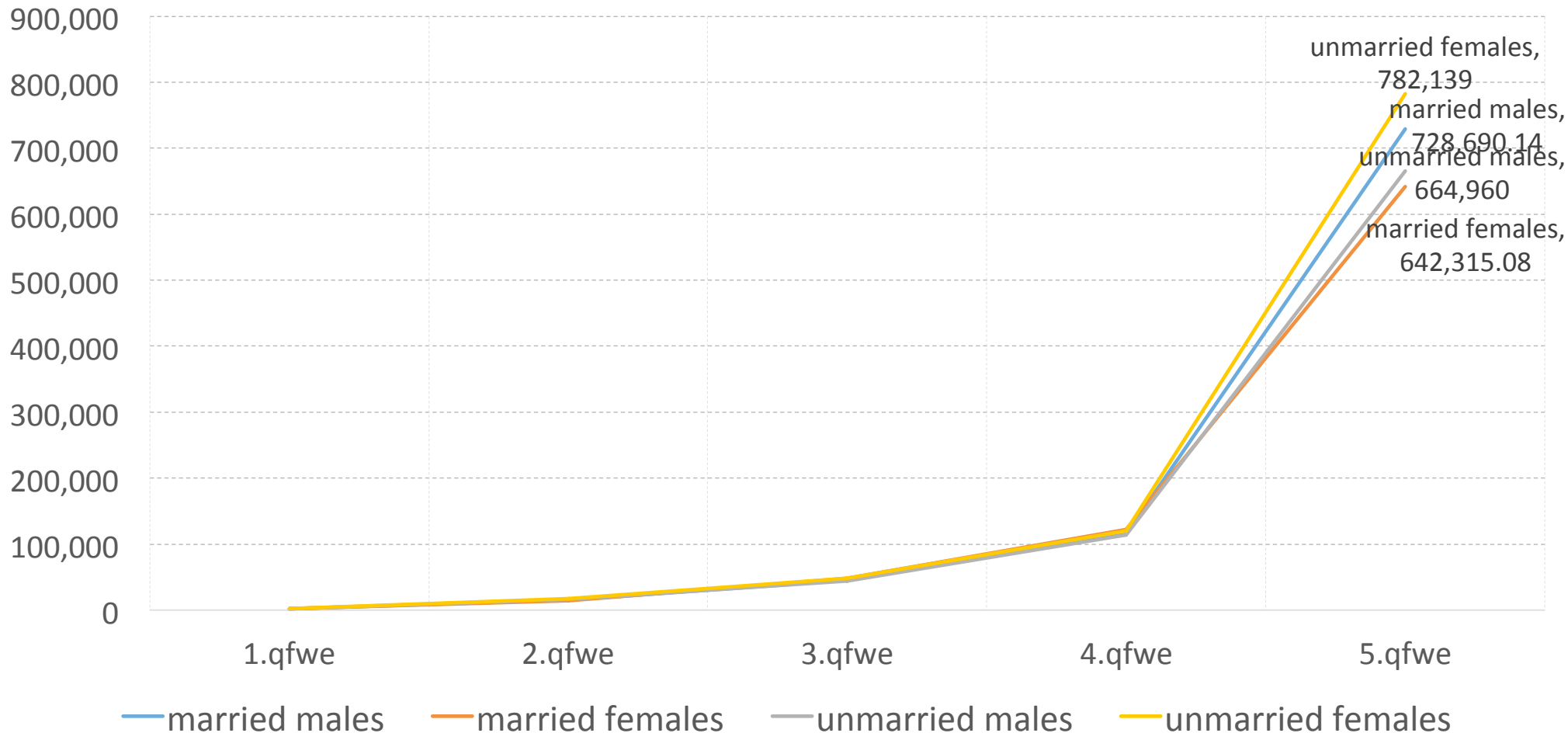
Proportion of partners who have reached the SRA in 2008 or before



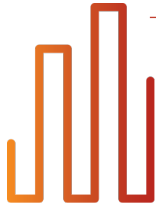
4.- Descriptive analysis



Mean of **financial wealth by quintiles** for (un)married men & women.
Wealth at the beginning of 2008



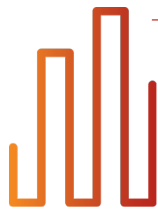
4.- Descriptive analysis



Mean values of other descriptive characteristics. Beginning of 2008

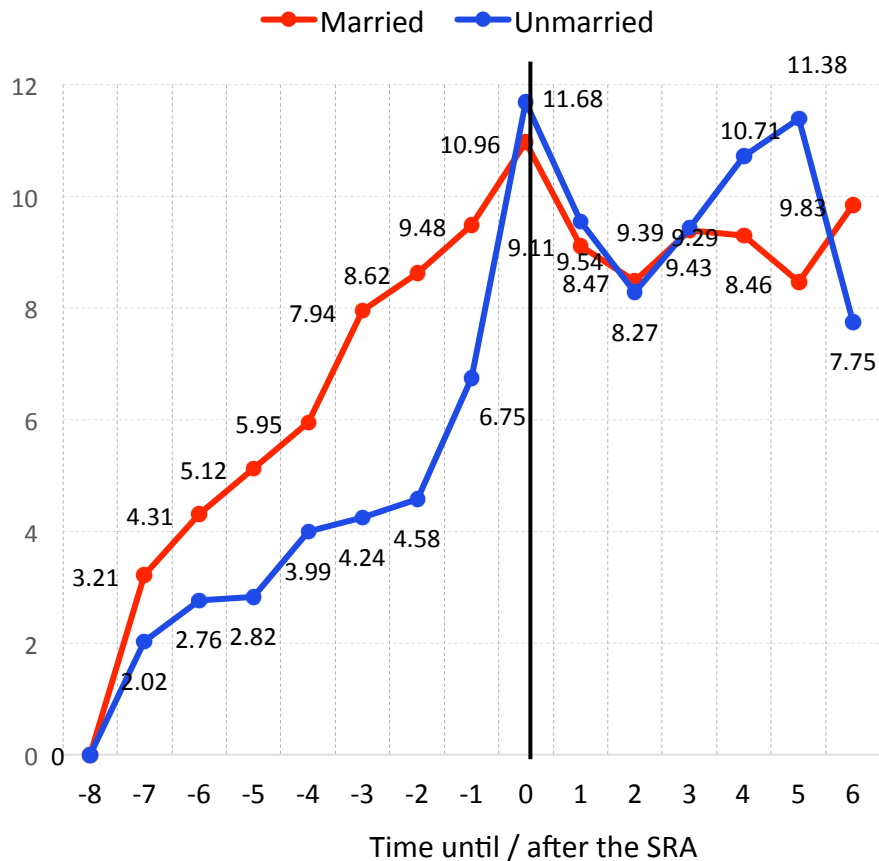
	Married		Unmarried	
	Males	Females	Males	Females
Personal characteristics				
Children	92.80%	92.69%	63.31%	73%
Job characteristics				
Agriculture	14.88%	18.37%	11.08%	5.26%
Construction	9.26%	2.51%	8.95%	0.59%
Manufacturing	4%	3.47%	4%	2.14%
Services	71.73%	75.64%	75.96%	92.01%
Time_self-employment	26.75	29.31	26.37%	26.98
Macroeconomic variable				
Regional unemp. rate	2.55	3.04	2.56	2.96
Initial conditions				
self_income	71.56%	88.51%	72.88%	62.54%
emp_07 (paid job)	18%	13%	16.8%	18%
Employees (firm-size)	87.18%	86.22%	83.60%	77.43%
homeownership	81.54%	82.18%	63.15%	64.20%
ln_GIH	13.89	13.89	13.87	13.87
ln_bw_n	14.58	14.59	14.57	14.57
d_pension	40.70%	27.72%	39.62%	44.50%
ln_pension	3.87%	2.32	3.62	3.82
d_pension_p	44.80%	41.93%		
ln_pension_p	3.92	3.99		

4.- Descriptive analysis

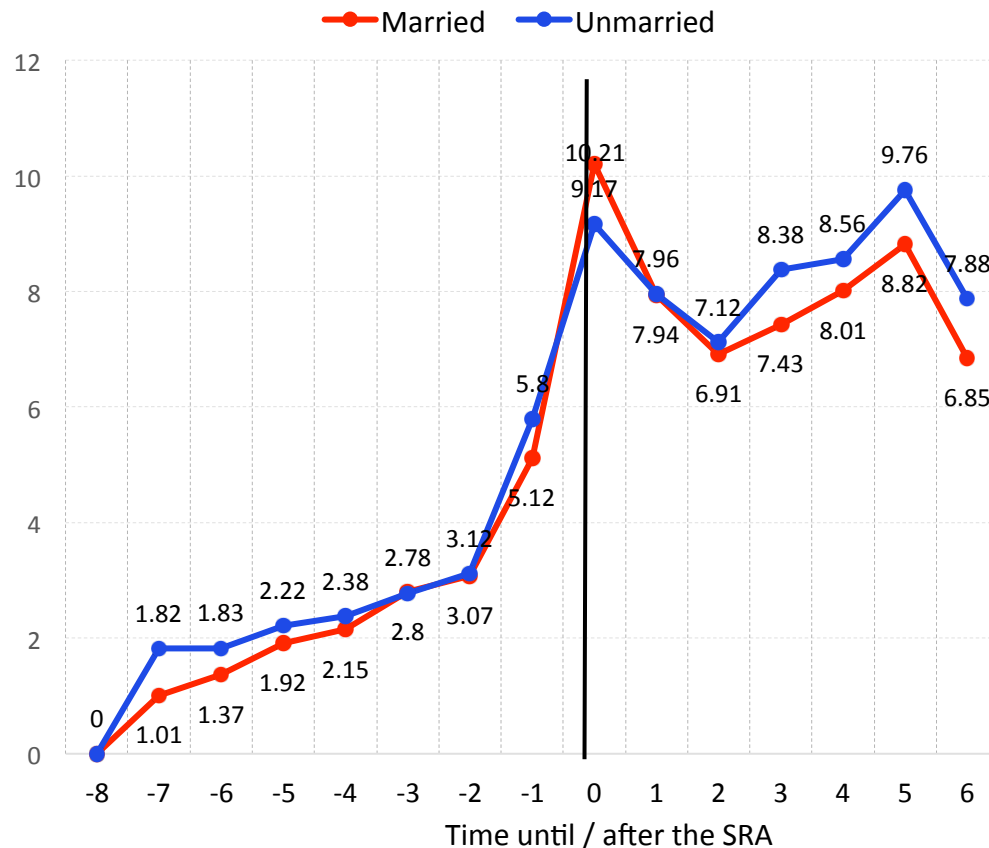


Transition rates from self-employment to retirement of women & men by marital status around the SRA. Percentage

Women



Men



Note: Ages centred at the SRA

Discrete hazard Model with a Multinomial Logit Model

Transitions from **Self-employment** to **employment** (j=2) and **retirement** (j=3) respect to self-employment (j=0). Other exits are censored

$$y_{ij}^* = \beta_{0j} + \tau D_{ij} + \sum_{k=2}^4 \beta_{1kj} \cdot (D \times q_{fw_k}) + \beta_{5j} \cdot (D \times 1\{age_p \geq SRA\}) + \beta_{6j} \cdot (D \times emp_{07}) \\ + \beta_{7j} u_rate + X'_{it} \gamma + S'_{it} \delta + W'_{it} \vartheta + \varepsilon_{ij}$$

Where:

and interact with:

- Quantiles of **financial wealth** (initial condition) → LCM with **liquidity constraints**
- **SRA** of the **partner** → joint retirement decision & partner allowance

5.- Multinomial Logit Model

Model	SRA	Control variables	Interactions	Sample
Model 1	SRA: 1{age>=SRA}	All	No	Whole population & (un)married (wo)men
Model 2	SRAb: 1{age=SRA} SRAb2: 1{age>SRA}	All	No	Whole population & (un)married (wo)men
Model 3	SRA: 1{age>=SRA}	All	Yes	(un)married men/ women

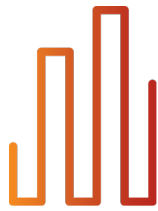
Individual (entrepreneur and spouse): age, gender, marital status, children, occupational pension (initial condition), employee (initial condition)

Job characteristics: industry, time of self-employment, self-employment source of incomes (initial condition), employees (initial condition)

Household (initial conditions): Gross household incomes, homeownership, business wealth,

Macroeconomic: regional unemployment rate

6 - Estimation results



Average Marginal Effects (dydx) and Coefficients of the statutory retirement age on transitions into retirement for the whole population. Model 1 and 2

	Model 1		Model 2	
	dydx	coeff.	dydx	coeff.
1.SRA	0.023729*** (0.001)	0.485369*** (0.018)		
1.SRAb			0.031468*** (0.001)	0.566875*** (0.018)
1.SRAb2			0.008919*** (0.001)	0.188255*** (0.024)
Observations	755,169		755,169	

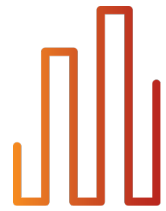
Note: Stata command: margins, dydx(sra_1); SRA: 1 if age>=SRA; SRAb: 1 if age=SRA; SRAB2: 1 if age>SRA.

Predict probability is 0.0533 using Model 1 and Model 2.

All controls included. Models without interactions.

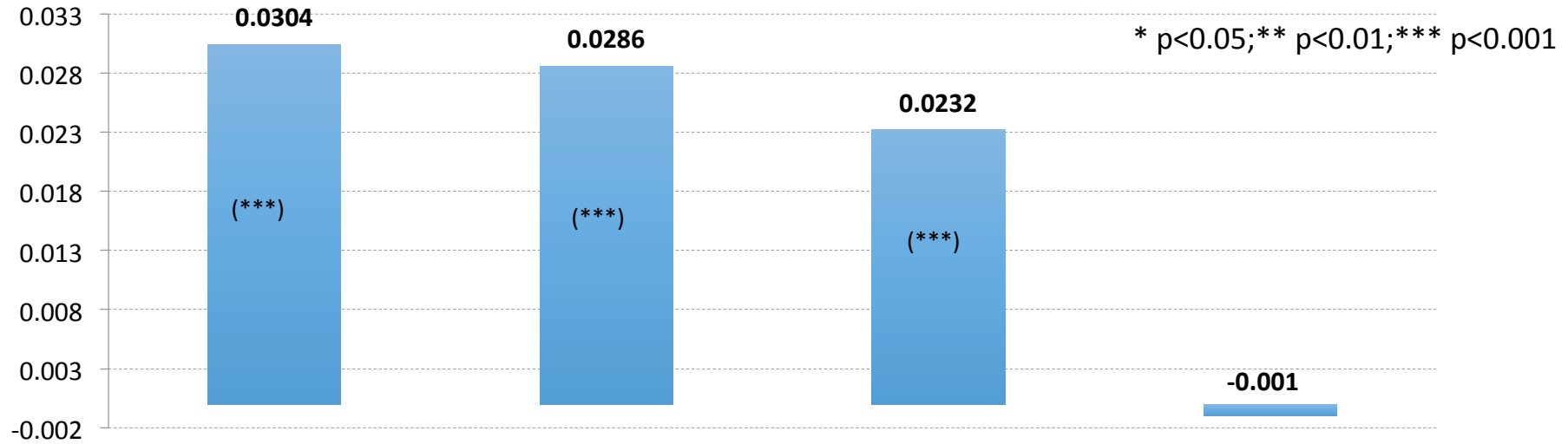
* p<0.05; ** p<0.01; *** p<0.001

6 - Estimation results

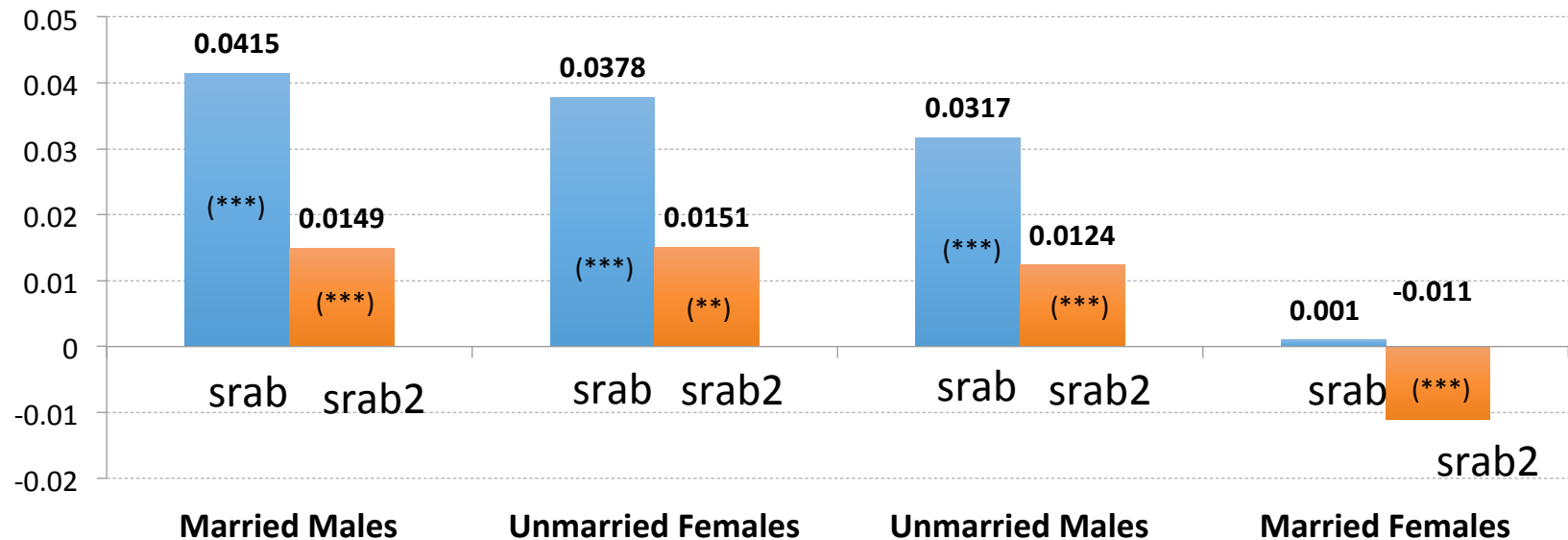


Average Marginal Effects of reaching the SRA on the probability of the transition into retirement by gender and marital status. Models 1 and 2

Model 1

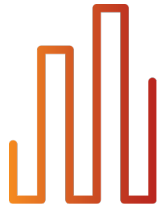


Model 2

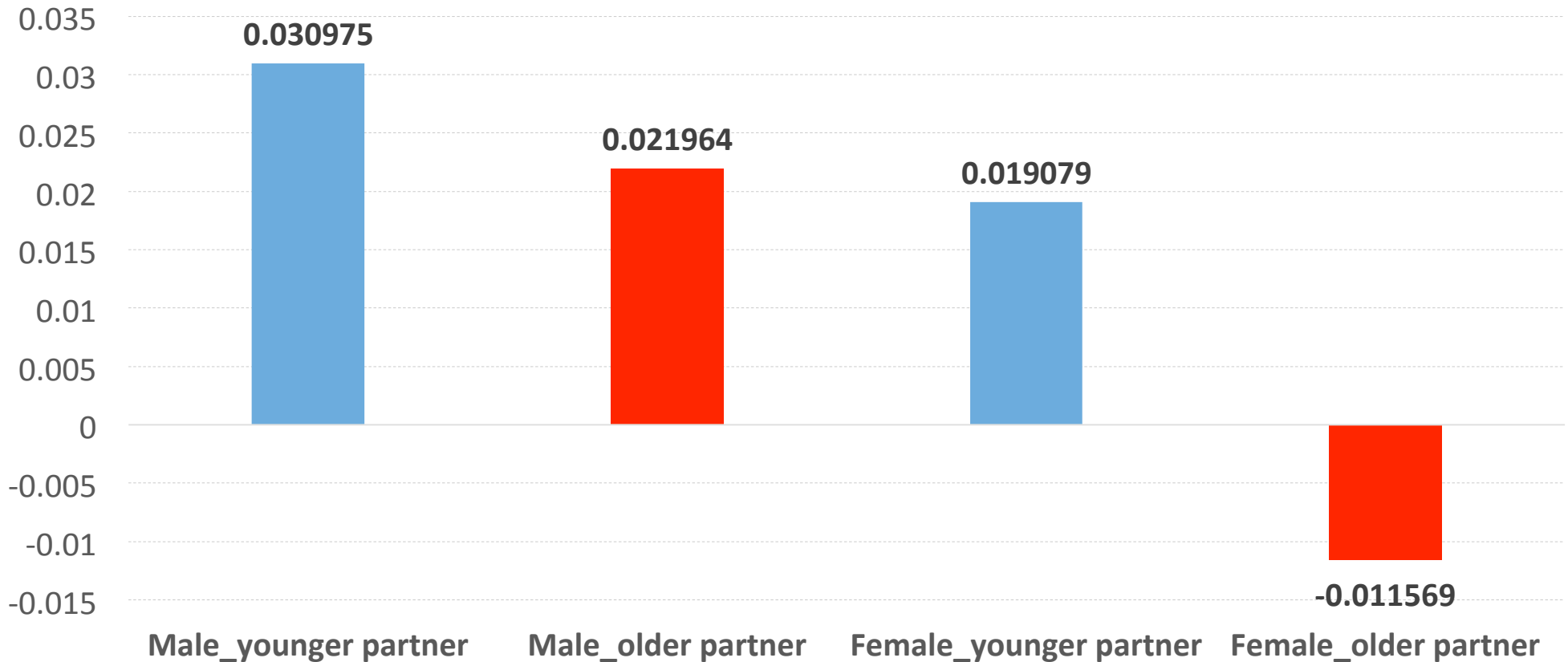


Predicted probabilities are: 0.041 (0.068) for married males (females), 0.046 (0.06) for unmarried males(females)

6 - Estimation results



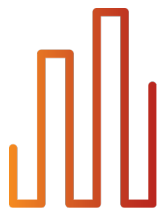
Average Marginal Effects of reaching the SRA on the probability of a transition into retirement by gender and **age of the partner. Model 3**



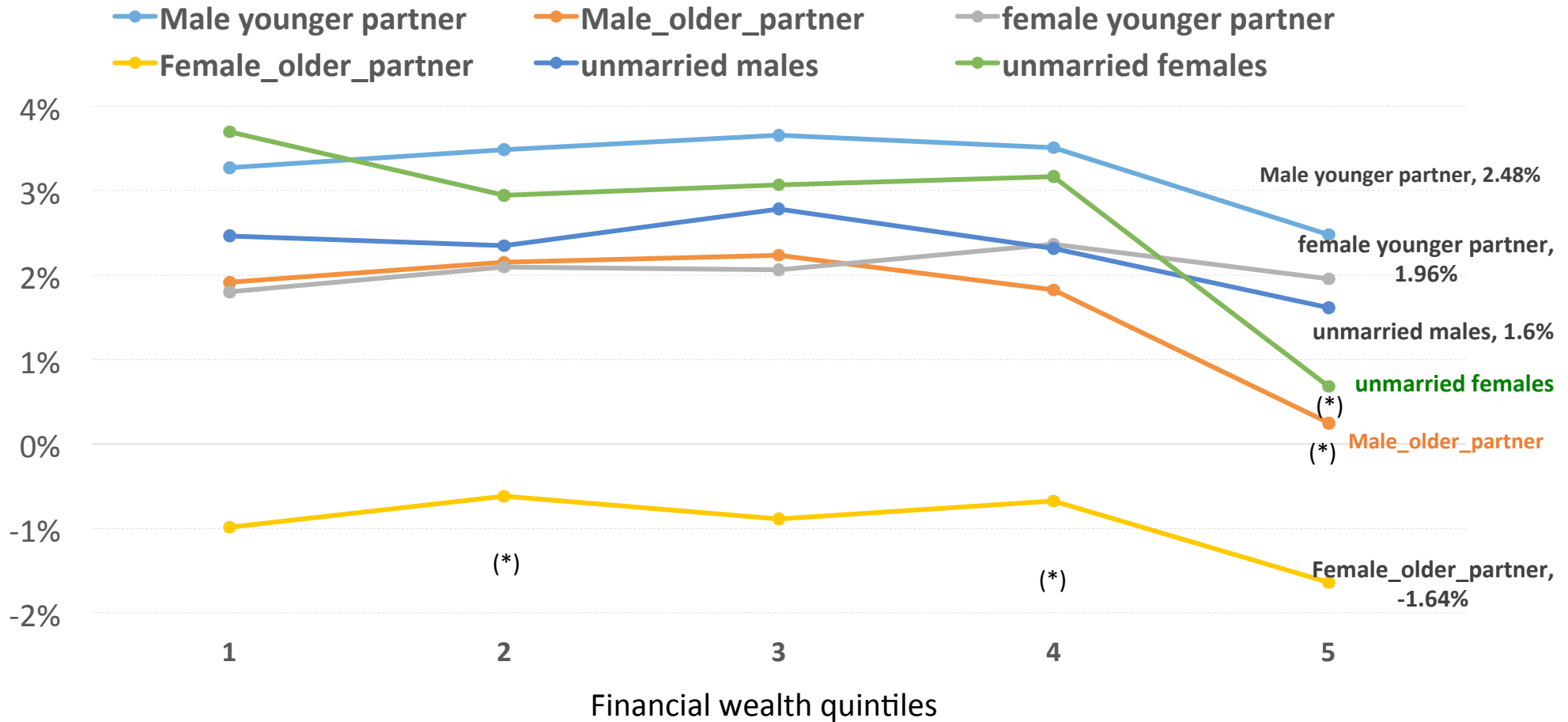
Note: All controls included. All coefficients are significant at 0.1% level.

Contrasts of these ME are **significant** for men and women

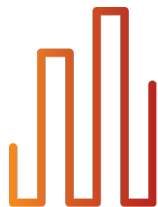
6 - Estimation results



Average Marginal Effects of reaching the SRA on the probability of a transition into retirement over quintiles of financial wealth by genderage of the partner. Model 3

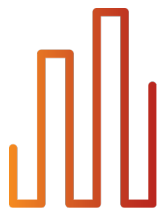


Note: All coefficients are significant at 0.1% except those with () that are not significant at 5%
Only significant contrast 5.qfw vs 1.qfw (except for married females)*



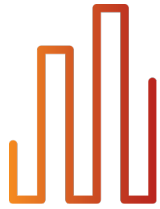
7.- Main findings

- Entrepreneurs **over react** to reaching the SRA and particularly in that year
- Who do react **more** considering gender, marital status and age of the partner? Unmarried women, those with a younger partner, unmarried men, those with an older partner
 - ➔ Those with an **older partner** may be responding to the **disincentive** effect of the **partner allowance** and preferences for **shared leisure**



7.- Main findings

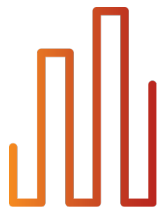
- The **richest react less** than the rest of the distribution (except for married women) partially in line with the LCM with liquidity constraints
 - Those **richest who react** (unmarried men & men with younger partners): **Do not verify** the **LCM** with **liquidity constraints**. Liquidity constraints explains partially this pattern and they probably respond to the **social norm** of retiring at 65
 - Those **richest who do not react** at all (unmarried females & males with older partner): **verify** the **LCM** prediction with **liquidity constraints**
 - Absence of differences across the wealth distribution (women with younger partner reacting): **Do not verify** the standard **LCM** and this is not explained by liquidity constraints.
 - **Negative response** of **women** with older partner across the wealth distribution...



Next steps

- Explore the effect of AOW on the **intensive margin (proxied by profits)**
- Explore the exit **from self-employment to employment**
- Implement some **sensitivity analysis**

...



Thanks for your attention

Merci de votre attention

