

# Mandatory Pension Contributions Perceived as Tax: Survey Evidence and Welfare Implications

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Netspar Lunch Seminar, June 18<sup>th</sup> 2009

*Work-in-Progress*



Network for Studies on Pensions, Aging and Retirement

## Overview

1. Motivation
2. Related literature and findings
3. Welfare analysis
4. Survey part
5. Final remarks



# 1. Motivation



## Motivation (1)

### Central Hypothesis:

Participants in mandatory saving schemes fail to recognize the full value of their pension accumulations

That is:

- Utility value of accruals lower than market value
  - The utility value of accruals is lower than the contribution paid (even if scheme fair in actuarial terms)



## Motivation (2)

Contribution level



Market value of accruals  
received in return



Utility value of accruals



## Motivation (3)

### Why do mandatory pension contributions matter?

Ricardian equivalence / Modigliani Miller:

*"Mandatory pension policy can be undone by borrowing or saving on a private account"*

However:

Pension policy cannot be undone by individual for two reasons:

1. Borrowing constraint
2. Inability to replicate investment strategy



## Motivation (4)

### Why do people dislike mandatory pension contributions?

#### Irrational reasons

1. Myopia (time-inconsistent preferences)
2. No awareness of the relation between contributions and benefits (employer contributions, salience)
3. Financial illiteracy

#### Rational reasons

1. No desire for high replacement rate
2. Consumption smoothing hindered if wage profile increasing
3. Consumption smoothing is hindered if savings are illiquid and cannot be used as self-insurance against income risk
4. In case of DB scheme: political risk (underfunding / incomplete pension contract)



## Motivation (5)

### Consequences:

Pension contributions are *perceived* as a net tax on labor income

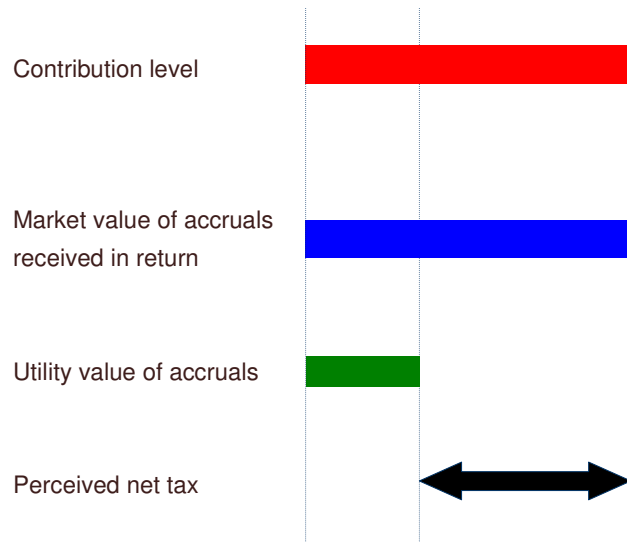
$$\text{Perceived wage rate} = \text{gross wage rate} - \text{taxes} - \text{pension contribution} + \text{utility value of accruals}$$

perceived net tax  
from mandatory pension plan

Mandatory pension schemes distort labor supply decisions if labor supply decisions are elastic with respect to the *perceived* wage rate



## Motivation (6)



## Motivation (7)

	Labor supply is <b>elastic</b> w.r.t. the perceived wage rate	Labor supply is <b>inelastic</b> w.r.t. the perceived wage rate
<b>Rational</b> reason to dislike mandatory contribution	<b>Welfare loss:</b> ✗ Paternalism not justified ✗ Labor supply distortions	<b>Welfare loss:</b> ✗ Paternalism not justified No labor supply distortions
<b>Irrational</b> reason to dislike mandatory contribution	<b>Mixed welfare effect</b> ✓ Justified paternalism ✗ Labor supply distortions	<b>Welfare gain:</b> ✓ Justified paternalism No labor supply distortions



## Motivation (8)

### Central research question

Are mandatory retirement contributions being perceived as a net tax on labor supply by individuals?

And if so:

- What is (are) the reason(s)?
- Which individual characteristics are of influence?
- What are the welfare implications?
- What are the policy implications?

(for instance: participation in pension plans not mandatory for certain groups, such as self-employed workers)



## 2. Related literature and findings



## Related literature and findings (1)

### Lans' Pyramid: the Connection Between Taxes and Benefits (based on Disney, 2004)

1. (Almost) **perfect connection** between mandatory payments and benefits: (2<sup>nd</sup> pillar)-pension contributions.
2. **benefits in expected terms**: e.g. unemployment insurance tax, disability insurance tax. The higher your income, the more premium you pay, but also the higher your expected benefits.
3. **ear-marked taxes**: e.g. the 3% tax on the wage bill for a national food-program for children in Columbia.
4. **"moral" connection**: e.g. the Social Security premiums in the Netherlands. The system is paygo, but the people who pay now, expect the system will exist when they retire.
5. **no connection with benefits**: "burned-money"



## Related literature and findings (2)

The former slide assumed that tax-payers:

1. are aware that they pay taxes
2. have some idea of the amount of taxes they pay

Both may not be true:

- Many people in the Netherlands do not know they pay premium for long-term care (AWBZ) through pay-roll taxes
- Most of them also do not know the amount of this tax – on average 300 Euro per worker per month (12% over the first two tax brackets)
- This tax is in addition to the (mandatory) health insurance premium (around 100 Euro per month)
- In addition to this, employees pay a tax of 7% of their gross wage as health premium. However, employers have to compensate employees for the full amount.
- Also see the labor market effects of rising health insurance premiums (Baicker & Chandra, 2005)



### 3. Welfare analysis



#### Welfare analysis (1)

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## Welfare analysis (2)

### Model characteristics

- Deterministic age of retirement and age of death
- Constant wage profile
- Mandatory scheme is actuarially fair and optimized
- If interest rate equals interest rate: contribution rate is constant and wealth is converted into an annuity such that the replacement ratio is 100% (taking labor supply distortions into account)
- Individual preferences are characterized by *myopia*
  - ✓ Paternalism is justified
- Labor supply is *elastic* w.r.t. perceived wage rate
  - ✗ Distortions in labor supply decisions



## Welfare analysis (3)

### Preferences

Time-separable utility increasing in consumption  $C(t)$  and decreasing in labor supply  $h(t)$  at discrete points in time  $t = S, S + 1, \dots, T$  is characterized by myopia:

$$U_t = u(C(t), h(t)) + \beta \mathbf{E}_t \left[ \sum_{s=t+1}^T \delta^{(s-t)} u(C(s), h(s)) \right]$$

$$u(C(t), h(t)) = \frac{1}{1-\gamma} \left( C(t) - \frac{\epsilon}{\epsilon+1} h(t)^{\frac{\epsilon+1}{\epsilon}} + \frac{\epsilon}{\epsilon+1} (h^*)^{\frac{\epsilon+1}{\epsilon}} \right)^{1-\gamma}$$

$$h^* = (w(t))^\epsilon$$

$$h(t) = (w(t)(1 - (1 - \beta)\pi(t)))^\epsilon$$



## Welfare analysis (4)

### Behavior

- *Naïve hyperbolic discounting*: the individual incorrectly predicts that she will not be myopic in the future, and consequently underestimates the cost of procrastinating at present
- Time-inconsistent preferences cause individual to *undersave* in a voluntary retirement savings scheme
- Time-inconsistent preferences cause individual to *fail to recognize* the full value of pension accruals in a mandatory retirement savings scheme, resulting in labor supply distortions



## Welfare analysis (5)

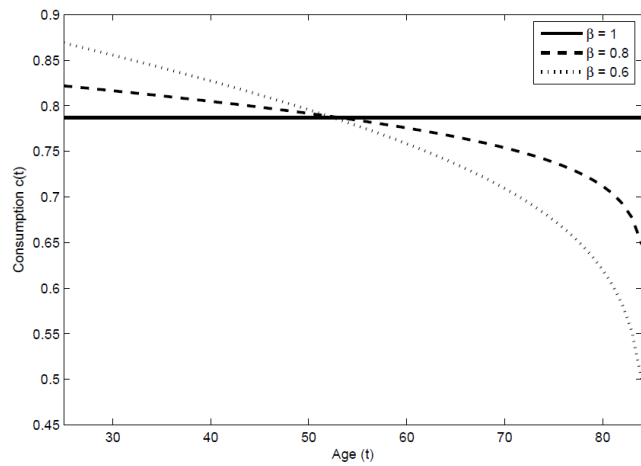
### The welfare criterion

- Welfare comparisons for people with time inconsistent preferences are in principle *problematic*
- We follow O'Donoghue and Rabin (1999) in evaluating welfare from the '*long-run perspective*'
- There is a *fictitious* period  $S - 1$  where the person has no consumption (causing the bias for the present to become irrelevant) and evaluates all lifetime utility on the basis of time-consistent exponential discounting



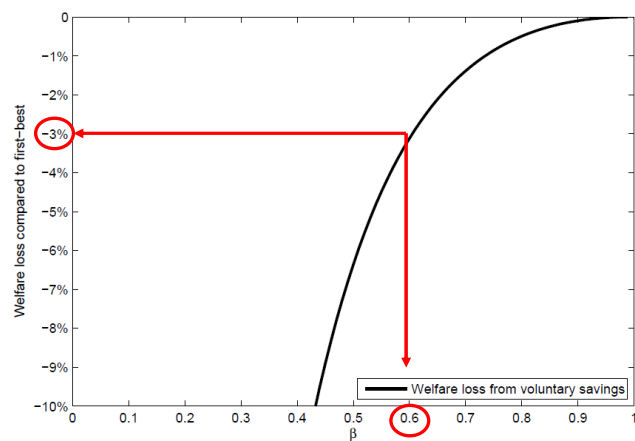
## Welfare analysis (6)

Suboptimal consumption in the voluntary pension scheme



## Welfare analysis (7)

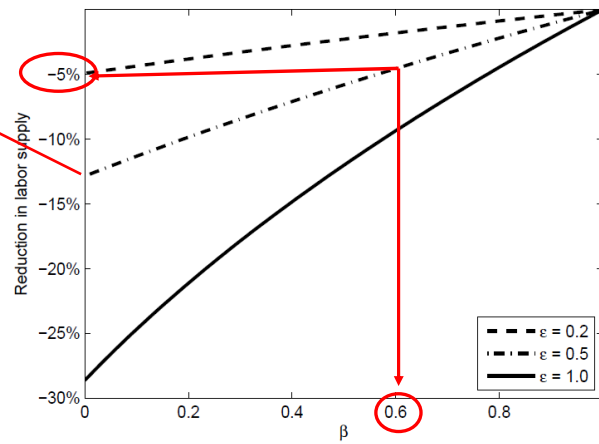
Welfare loss in the voluntary pension scheme



## Welfare analysis (8)

Suboptimal labor supply in the mandatory pension scheme

Reduction in labor supply if individual is unaware of pension accruals

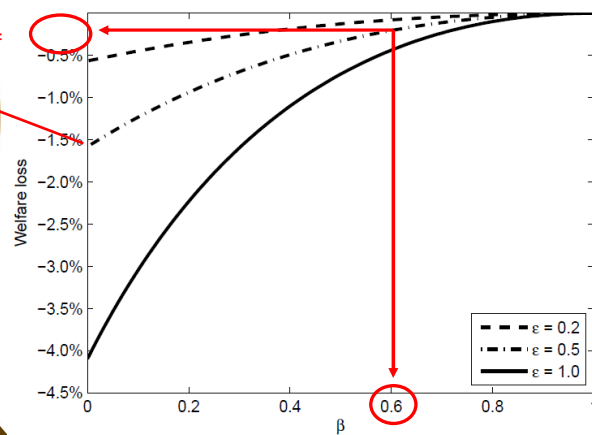


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## Welfare analysis (9)

Welfare loss in the mandatory pension scheme

Welfare loss if individual is unaware of pension accruals



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## 4. Survey Part



### Survey part (1)

**Key Survey Question:**

*“Imagine that your pension plan is terminated as of today:  
How much additional salary would you require to be  
indifferent about this?”*

**Four testable hypotheses:**

1. People in general attach low value to their pension accruals (both rational and behavioral reasons)
2. People closer to their retirement age, attach more value to their pension accruals (compared to younger people)
3. Younger working people are often unaware of the fact that they accumulate pension wealth
4. Higher labor income risk causes people to dislike mandatory pensions contributions





## Survey part (2)

Drawbacks of our approach:

- Results may be varying over time and may be different after the occurrence of a pension crisis (more pension awareness, more political risk, etc.)
- There may be a bias towards 'pension awareness' if we ask pension related questions in a survey/experiment about compensation since people may not take pension issues into account at all when making these decisions in practice



## 5. Final remarks





## Final remarks

- People may dislike mandatory pension schemes
- People may therefore perceive mandatory pension contributions as a tax on income
- If irrational reasons (time-inconsistency) dominate, then paternalism is justified.
- In that case, mandatory saving schemes might be a good idea
- However, if rational reasons (high labor-income risk) dominate, paternalism is not justified.
- In that case, mandatory retirement saving schemes are undesirable for people with high labor-income risk, e.g. self-employed workers.

