NTA results for Spain:  
Measuring  
the degree of intervention of the public sector  
on intergenerational intra family transfers  
in Spain using NTA/GA  

Preliminary draft  
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Outine

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2. Measuring the degree of intervention of public sector in intergenerational intra family transfers using GA/NTA
   1. Theoretical Background
   2. NTA application
   3. GA application
1. Motivation: rethinking the role of the welfare state

**Before the welfare state: “Extended family”**

- Intergenerational intra family transfers:
  - Backwards: from kids to old parents
  - Forward: from parents to kids
- ¿Financed? PAYG:
  - PAYG – except for some renters in the absence of capital markets

Overlapping generations
Public pensions system

Substitutes ONLY backward transfers
PAYGO Financing
Subject to demographic risk
¿causing decrease in fertility? social security hypothesis

The transition problem:

Initial “gift” - “pensions to non contributors” - must be now supported by the transition generation who bears “2 burden”

In fact three “burdens”
Raising children = future contributors to pensions for all the aged
2.1. Theoretical framework

Two main strands of literature:

• Private motives for intergenerational intra family transfers (IIT) and for government intervention on it
  – Saving motives: bequest motive
  – Motives for other IIT (inter-vivos donation, bequest, gifts to parents) – including fertility
  – Public sector intervention: Social policy as government intervention on IIT.

• Population ageing:
  – Effects on the economy and on the public budget
  – Is the demographic transition endogenous (economic decision)

Theoretical tool: Dynamic macroeconomic general equilibrium models (Overlapping generations models, GE-OLG): allowing for the analysis of IIT, i.e. with

• Backward and forward altruism
• Strategic behavior

Applied techniques: GA, NTA, large scale OLG, / microsimulation
Previous well known result:

Diamond model without any altruism –non private IIT– and exogenous fertility

**Competitive economy is not Pareto optimal** in Diamond model: Over or under accumulation. Pension policy:
- Under accumulation: Funding Though NOT Pareto optimal
- Over accumulation: PAYG is Pareto optimal

**Samuelson’s Serendipity Theorem**: the only golden rule that is a steady state of the CE is the goldenest (optimal $n$ planner), only reached by chance –$n^* = n$ in the CE
- The policy above does not lead to the goldenest, nor to the golden rule.

**Why?**:
- Both “production factors” need to be optimized at once.
- We need to consider endogenous fertility.
Endogenous fertility Effects of increasing $n$ (both external)

$$f(k_t) + (1 - \delta)k_t = c_t + \frac{d_{t+1}}{(1+n)} + (1+n)k_t$$

Interest: More that “optimal $n$“ be aware that policy interacts with fertility
• A unique instrument internalizing the externality
  pension = children contributions (IBC system)
• You can “save” in both “assets” – returns equated, GR reached.
• Unfeasible policy? Forgets status quo rights, insurance aspects…
• Equivalent policy:
  • PAYG family allowance of the same size
  • If transition: partially funded system equilibrating 3 burdens

¿General practice?:
• First socializing the old, though asset market can do the job. ¿Poverty?
• Second: socializing child –educational investment (effects on $g$!!)
• Lessons for DC both at the same time!
  Spanish case: very low intervention on backward, very low fertility!!
NTA for Spain

Background

- Population
  - 2000 - 40,499,000 hab
  - 2006 - 44,708,000 hab
- High recent immigration
  - 2000 - 2.23%
  - 2006 - 9.26%
- TFR: Huge and quick fall from 3 at the end of 70s
  - 1998 - 1.155
  - 2006 - 1.382
- \( e_0 \) in 2000
  - Women - 82.46 || Men - 75.64
Objectives

First approach to the Lifecycle Deficit in Spain for 2000

First approach of the Public transfers profiles by age for the year 2000 in Spain

Comparison of both profiles: measuring the degree of intervention of public sector in intergenerational intra family transfers using NTA/GA
Data sources

All data bases used were from 2000

**ECPF - Household Budget Survey**
- Longitudinal Data
- 3766 households - 11840 individuals
- Only consumption information

**PHOGUE - European Household Panel**
- 15614 households - 46045 individuals
- Only income information

**MTAS - Ministry of Labor and Social Security**
- Information about pensions and social benefits

**INE - National Statistical Institute**
Labor Income per capita

Source: PHOGUE 2000
Labor Income

Self-employment income represents 13% of total labor income.

Labor income starts at age 14 and finishes drastically at age 70, both for earnings and self-employment.

In Spain it was not allowed to receive any labor income while you receive retirement benefits.
Consumption

Private

*Education* - Data only includes tuition, which excludes public students consumption in other education related goods

*Health* - Includes private health insurances

Public

*Education* - Official data

*Health* - Using hospital processes expenditures. Represent 50% of public consumption
Private consumption

![Graph showing private consumption categories]

- Private Consumption
- Education
- Health
- Housing
- Other
Public consumption

![Graph showing public consumption and its components]

- **Public Consumption**
- **Education**
- **Health**
- **Other**
Lifecycle Deficit

[Graph showing lifecycle deficit, total consumption, public consumption, private consumption, and labor income over time.]
Lifecycle Deficit

Surplus from 27 to 57 - 30 years

Bigger deficit for the elderly than for the children

Long-term care is included in other public consumption
Public transfers outflows
Public transfers inflows

Education
Health
Retirement benefits
Social Protection benefits
Other public transfers (in-kind and cash)
Transfers from the rest of the world (ROW)

Age profiles from public consumption (health and education) and from MTAS for Social Protection benefits
Net Public Transfers

Graph showing net public transfers over time with different lines indicating total inflows, total public outflows, transfers deficit, and net public transfers.
LCD and TG
Measuring the balance of public intervention in IIF

Public transfers represent a big share of the LCD for elderly

Young ages relay more in other sources than in public transfers to finance their deficit

Indicators? Share of adult income, share LCD…
<table>
<thead>
<tr>
<th>Category</th>
<th>% 2004 GDP</th>
<th>% 2050 GDP</th>
<th>SGap (% interp PIB)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public budget primary balance</strong></td>
<td>+ 1,91</td>
<td>– 7,48</td>
<td>2.02</td>
</tr>
<tr>
<td><strong>Public budget primary balance</strong> (excluding debt)</td>
<td>+ 1,91</td>
<td>– 7,48</td>
<td>0.85</td>
</tr>
<tr>
<td><strong>Balance contributory –bismakian- pensions system</strong></td>
<td>+ 0,9</td>
<td>– 6,17</td>
<td>1.49</td>
</tr>
<tr>
<td><strong>Expenditure in contributory pensions</strong> (Social Security)</td>
<td>– 8,23</td>
<td>– 15,21</td>
<td>10.53</td>
</tr>
<tr>
<td><strong>Health expenditure</strong></td>
<td>– 5,29</td>
<td>– 8,5</td>
<td>6,50</td>
</tr>
<tr>
<td><strong>Long term care expenditure</strong></td>
<td>– 0,33</td>
<td>– 0,97</td>
<td>0,58</td>
</tr>
<tr>
<td><strong>Family expenditure</strong></td>
<td>– 0,5</td>
<td>– 0,47</td>
<td>0,47</td>
</tr>
<tr>
<td><strong>Education expenditure</strong></td>
<td>– 4,41</td>
<td>– 4,21</td>
<td>4,11</td>
</tr>
</tbody>
</table>
Measuring the degree of intervention of the public sector on intergenerational intra family transfers in Spain using GA

<table>
<thead>
<tr>
<th>Transfer</th>
<th>Generational Account</th>
<th>Expenditure/GDP (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From parents to kids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>38,90</td>
<td>4,41</td>
</tr>
<tr>
<td>Family</td>
<td>5,20</td>
<td>0,5</td>
</tr>
<tr>
<td>Health – children</td>
<td>7,80</td>
<td>0,71</td>
</tr>
<tr>
<td>Total</td>
<td>51,9</td>
<td>5,60</td>
</tr>
</tbody>
</table>

| From children to parents      |                      |                     |
| Retirement pensions           | 31,50                | 6,02                |
| Dependency                    | 0,60                 | 0,33                |
| Health – adults               | 14,00                | 4,58                |
| Total                         | 46,10                | 12,16               |

|                      |                      |                     |

2.004 | 2.050
Thanks for your attention