NATIONAL TRANSFER ACCOUNTS (NTA):
SOME POLICY APPLICATIONS IN ITALY
WITH SPECIAL REFERENCE TO FISCAL POLICY

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5 CASES WILL BE PRESENTED HIGHLIGHTING THE POSSIBILITY OF ANALYSING KEY POLICY ISSUES WITH TOOLS THAT MATCH THE DEMOGRAPHIC STRUCTURE (CURRENT AND EXPECTED) AND NATIONAL ACCOUNT DATA
“TRADITIONAL” APPLICATIONS

Case 1: ASSESSING THE LONG-RUN EFFECTS OF A PENSION REFORM ON PUBLIC FINANCE SUSTAINABILITY AND ON GENERATIONAL EQUITY

Case 2: THE NET FISCAL IMPACT OF IMMIGRATION

MORE “INNOVATIVE” APPLICATIONS

Case 3: THE EFFECTS OF BUDGETARY POLICY ON THE YOUNG – A COHORT ANALYSIS

Case 4: HOW TO DEAL WITH THE FAMILY AS THE RELEVANT UNIT

Case 5: TOWARD NTA: A MICROECONOMIC MODEL OF FAMILY BEHAVIOUR (work in progress)
Case 1

ASSESSING THE LONG-RUN EFFECTS OF A PENSION REFORM ON PUBLIC FINANCE SUSTAINABILITY AND ON GENERATIONAL EQUITY

(Sartor, 2001 and 2010)
THE ITALIAN DEMOGRAPHIC OUTLOOK
ITALY: Demographic situation and forecast 1990-2050 – baseline scenario

[Graph showing the trend of Deaths and Births from 1990 to 2050.]

Source: ISTAT (2007)
Italy: Population Structure in 2006 and 2050 (baseline forecast)

Source: Istat
1995 PENSION REFORM

VERY LONG AND INEQUITABLE TRANSITION TO THE NEW SYSTEM

THE LEGISLATED TRANSITION RULES THAT:

- WORKERS WITH SENIORITY $\geq$ 18 YEARS IN 1995 WOULD BE ENTITLED TO THE OLD RULES FOREVER

- WORKERS WITH SENIORITY $<$ 18 YEARS IN 1995 WOULD BE ENTITLED TO THE “PRO RATA” SYSTEM
WHAT WOULD HAVE BEEN A FAIR TRANSITION:

APPLY “PRO RATA” THE OLD AND THE NEW SYSTEM TO ALL CURRENT WORKERS

E.G. FOR A WORKER WITH 18 YEARS OF SENIORITY IN 1995, PENSION BENEFITS WOULD BE CALCULATED:

- ON THE BASIS OF OLD ENTITLEMENT RULES FOR THE FIRST 18 YEARS OF CONTRIBUTION
- ON THE BASIS OF THE NEW RULES FOR THE REMAINING N-18 YEARS OF CONTRIBUTIONS)
Generational Accounts under Alternative Pension Transitions
(thousand of ECU)

<table>
<thead>
<tr>
<th>Age in 1995</th>
<th>1996 Legislated transition</th>
<th>Alternative pro rata transition</th>
<th>Percentage difference</th>
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<td>48,8</td>
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<td>80,8</td>
<td>23,3</td>
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<td>95,3</td>
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<td>111,5</td>
<td>24,9</td>
<td>104,5</td>
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<td>80</td>
<td>93,8</td>
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<td>69,3</td>
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</tr>
</tbody>
</table>

Baseline (r=0.05, g=0.015), thousands of ECU (present 1995-value).
Source: Sartor, 2001
Pension Profiles in 1995

Source: Sartor, 2001
Effective Equilibrium Contributory Rates before and after NDC introduction (legislated transition)

\( r = 3.0\% \); \( g = 1.5\% \)
NOTE:

A FULLY-FUNDED PENSION SCHEME WOULD NOT ELIMINATE THE GLOBAL IMBALANCE
Chart 3. 1995 Pension Reform - Net Savings Under a Hypothetical Fully-Funded Scheme

\[(r = 3.0\% \text{ and } g = 1.5\%)

- Stationary Population
- Current Fertility Rate (1.2)
Case 2

THE NET FISCAL IMPACT OF
IMMIGRATION
(Rizza and Romanelli, 2010)
CROSS SECTION ANALYSIS
FOCUSING ON A SINGLE FISCAL YEAR
MAY BE MISLEADING:
THE DEMOGRAPHIC STRUCTURE OF
IMMIGRANTS IS SIGNIFICANTLY
DIFFERENT FROM NATIVES
### Long-Run Effects of Immigration on Italian Public Finance (billions euro)

**An NTA Approach (1)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Immigrants</th>
<th>Italians</th>
<th>Immigrants per capita (2)</th>
<th>Immigrants</th>
<th>Italians</th>
<th>Immigrants per capita (2)</th>
<th>Immigrants</th>
<th>Italians</th>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>2030</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2050</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

- **Total Revenues**
  - 2006: 20.8
  - 2030: 83.4
  - 2050: 176.3

- **Total Expenditures**
  - 2006: 10.1
  - 2030: 74.7
  - 2050: 173.8

- **Balance**
  - 2006: 10.7
  - 2030: 8.7
  - 2050: 2.5

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(2) As a percentage of per capita values for Italians.
Generational Accounts: Net Present value of Lifetime Tax and Transfers (per capita 000s euros)

<table>
<thead>
<tr>
<th></th>
<th>Immigrants 1st Generation</th>
<th>Italians</th>
<th>Immigrants 2nd Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxes and SSC</td>
<td>295.5</td>
<td>443.5</td>
<td>321.0</td>
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<tr>
<td>Transfers and Service</td>
<td>186.5</td>
<td>366.0</td>
<td>289.0</td>
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<tr>
<td>Balance</td>
<td>109.0</td>
<td>77.5</td>
<td>32.0</td>
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</tbody>
</table>

Case 3

THE EFFECTS OF BUDGETARY POLICY ON THE YOUNG:
A COHORT ANALYSIS

(Pertile, Polin, Rizza and Romanelli, 2011)
LIFE-CYCLE TAX RATES
AS A MEASURE OF FAIRNESS BETWEEN GENERATIONS

A COMPREHENSIVE MEASURE OF LIFE-CYCLE TAX RATES
CAN BE CALCULATED AS THE RATIO BETWEEN:

- TAXES A COHORT IS GOING TO PAY THROUGH ITS RESIDUAL LIFE-CYCLE,
  NET OF TRANSFERS (CASH AND IN-KIND) RECEIVED FROM THE PUBLIC SECTOR

- RESIDUAL LIFETIME INCOME

TAX-RATES CAN BE COMPARED ACROSS GENERATIONS
BY ANALYZING SPANS OF YEARS
SUCH THAT STARTING AGE IS THE SAME
INTERGENERATIONAL INEQUALITY FOR ITALY:
RESIDUAL LIFETIME TAX RATES

1952 cohort 15% vs. 1970 cohort 23%

1970 cohort 20% vs. 1988 cohort 20%
THE IMPACT OF THE FISCAL CONSOLIDATION PROCESS
A BREAKDOWN OF THE EFFECTS OF THE 1980 COHORT
(NET PRESENT VALUES OF TAXATION/EXPENDITURE PROGRAMMES)
Case 4

HOW TO DEAL WITH THE FAMILY AS THE RELEVANT UNIT
FROM INDIVIDUAL ACCOUNTS TO FAMILY ACCOUNTS

FAMILY INTERTEMPORAL FISCAL INCIDENCE (FIFI)
A NEW METHODOLOGY FOR ASSESSING PUBLIC POLICIES

Polin and Sartor (2009)
HOW A FAMILY HAS BEEN DEFINED

By modifying Ermish and Overton (1985) concept of a “Minimal Household Unit”,

A MINIMAL FAMILY UNIT (MFU)

has been defined as:

A SINGLE OR A COUPLE OF ADULTS FINANCIALLY INDEPENDENT OF THEIR PARENTS, REGARDLESS WHETHER THEY STILL LIVE IN THEIR PARENTS’ HOUSE.
FAMILY LIFE:

“Birth” of a new MFU: Financial independence
“Death” of the MFU: Passing away of the last adult.

FAMILY FORMATION PROCESS:

Estimate the probability density function of the following states, conditional upon age and gender:

1. Being financially independent
2. Becoming a couple (or staying single)
3. Delivering a child of n-th order, conditional upon having a certain level of education
METHOD

DEFINE THE LIFE CYCLE OF A FAMILY

Determine the FAMILY INTERTEMPORAL FISCAL INCIDENCE (FIFI) = sum of all tax and primary spending programs that affect families during their lifetime.

Determine the MARGINAL NET SUBSIDY FOR CHILDREN (MNS) = Change occurred in FIFI when family of type $k$ has one more child.
Family Formation (Financial Independence)
Marriage / Cohabitation

![Graph showing cumulative frequencies for male and female ages.]

-男性的累积频率
-女性的累积频率
MAIN EMPIRICAL FINDINGS

FIFI

- **SUBSTANTIAL VARIABILITY EVEN WITHIN “AVERAGE” FAMILIES**

- FIFI ranges

  from 9,300 euros (1.9% of NPV of lifetime labour earnings)
  to 168,000 euros (33.6% of NPV of lifetime labour earnings)

- **12.5% OF CHILDLESS FAMILIES PAY NO LIFETIME TAXES (OR RECEIVE A NET SUBSIDY)**
- The above percentage monotonically increases with the number of dependants, as:

- **16.7%** of families with 1 child pay no lifetime taxes (or receive a net subsidy)

- **35.4%** of families with 2 children pay no lifetime taxes (or receive a net subsidy)

- **43.8%** of families with 3+ children pay no lifetime taxes (or receive a net subsidy)
Age Profile of the Marginal Net Subsidy (absolute values)

Age Profile of the Marginal Net Subsidy (% labor earnings)
LARGE (UNPLANNED?) VARIABILITY: FISCAL CHURNING?
Marginal Net Subsidy for All MFUs
Case 5

TOWARD NTA:
A MICROECONOMIC MODEL
OF FAMILY BEHAVIOUR
(Pertile, Polin, Sartor, Sommacal
work in progress)
AIM:

TO ASSESS INDIVIDUAL AND FAMILY INTERTEMPORAL FISCAL INCIDENCE

IN A DYNAMIC MODEL WHERE BEHAVIOURAL RESPONSES ARE TAKEN INTO ACCOUNT

(E.G. EFFECTS OF A PENSION REFORMS ON LABOUR SUPPLY AND SAVINGS)
Tool:

“LARGE SCALE” LIFECYCLE / OLG MODEL

Endogenous variables: Labour supply and savings

Countries: Italy and other European countries

Estimation and calibration procedure based on EU-SILC data
KEY FEATURES OF THE MODEL:

- **Structural approach**: Behavioural responses are modelled as the outcome of the maximization of an intertemporal utility function.

- **Traditional behavioural microsimulation models**: Regression equations with no structural foundation (non-robustness to the Lucas critique).

- **No general equilibrium effect**
(Key features follows)

- **High degree of heterogeneity**: age, gender, civil status, number of children, education level, productivity.

- **Traditional OLG models in the spirit of Auerbach and Kotlikoff**: limited degree of heterogeneity

- **All types of taxes and spending programs are considered.**
Thank You for Your Attention!