



**EUROPEAN NETWORK OF  
ECONOMIC POLICY RESEARCH INSTITUTES**

*OCCASIONAL PAPER No. 2/OCTOBER 2003*

**WELFARE, INTERGENERATIONAL DISTRIBUTION  
AND HOUSEHOLDS**

**WHAT DOES GENERATIONAL ACCOUNTING TELL US?**

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ISBN 92-9079-456-9

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## EXECUTIVE SUMMARY

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The present work is a collection of the contributions presented at the workshop “Welfare, Intergenerational Distribution and Households: What Do Generational Accounting Tell Us?” held at the Istituto di Studi e Analisi Economica (ISAE) in Rome on 25 May 2002. Its purpose is to take part in the debate on long-term financial solvency of public debt and on the effects of current fiscal and social policies on both inter- and intra-generational distribution. Particular attention is paid to the effect of public policy on intra-family resources allocation.

These themes are becoming ever more important as the present welfare system exerts a heavy pressure on all European countries. The demographic structure is changing considerably and significant important social changes are occurring. The longer life expectancy and the drop in fertility rate yield a higher dependency ratio. Nowadays, for each European citizen aged 60+, there are 2.5 persons between 20 and 60, while in 35 years for the same age individual there will be only slightly more than one younger person.

One of the main issues in the current debate on the implications of aging, alongside the consequently rising need to evaluate the long-run implications of the present public policy, is whether traditional public finance indicators can provide a comprehensive viewpoint on the phenomenon. New criteria able to shed light on the intertemporal dimension of fiscal policies and assess their effects both on the sustainability of the public budget and on the resource redistribution among different cohorts are indeed desirable. Even the European institutions suggest the adoption of indicators of long-run sustainability.<sup>1</sup> One of the possible methods proposed is *Generational Accounting* (GA), elaborated more than a decade ago by Auerbach, Gokhale and Kotlikoff (1991, 1994) and Kotlikoff (1992) and applied, so far, in 25 countries all over the world. As is well known, GA is aimed at evaluating: a) the long-term sustainability of public debt, in terms of Intertemporal Budget Constraint<sup>2</sup> and b) the degree of intergenerational equity brought about by current fiscal policy.

GA refers to the discounted value of what are known as *net taxes* (taxes paid minus transfers received from the general government by a generation over its remaining lifetime) under a variety of assumptions.<sup>3</sup> The sum of net taxes paid by current and future generations plus net financial liabilities must equal the discounted value of non-imputable general government expenditure. Whenever this constraint is not satisfied, the present fiscal policy is unsustainable in the long-run and it is generationally unbalanced. Hence, compared to deficit accounting, GA is a cross-analysis, meaning that it is not expressed by an annual value. It follows net payments through time, so that the share of deficit (or surplus) arising from each living generation during its remaining lifetime is computed under the unchanged fiscal policy assumption.<sup>4</sup>

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<sup>1</sup> European Council (2001).

<sup>2</sup> It requires the discounted values of future primary budget surpluses to be equal to the current debt.

<sup>3</sup> There are two categories of hypotheses. The former concerns both some macroeconomic variables – productivity growth, discount, fertility and mortality rates – and different policy scenarios. The latter deals with the economic evaluation of some of the items which appear in public intertemporal budget constraints. As for the policy context, experts generally assume that generational accounts are solely affected by the economic policy that has already been implemented and not by changes that may possibly occur.

<sup>4</sup> The variation in the amount of *per capita* taxes (or expenditure) capable of repaying the debt is conventionally and exclusively attributed to future generations.

Apart from the viewpoint of sustainability, GA can be useful for fiscal policy decisions to know who is expected to finance government measures, and to identify the individuals facing the costs and benefits of such operation. Moreover, GA highlights some possible measures to restore intergenerational equity.<sup>5</sup>

Focusing on the equity issue, a potential extension of the GA approach is proposed in the paper “Intragenerational Distribution across Families: What do generational accounts tell us?” by Nicola Sartor et al., in which the focus switches from individuals to families as reference units. So far, GA has taken into account the individuals as tax units, thereby avoiding any analysis of the intragenerational redistribution of taxes and transfers across families of different kind and size.

At present, family support is high on the policy agenda because of demographic trends and changes in the family structure. Firstly, within the EU the fertility rate is persistently below the replacement rate (it declined on average in EU member states from 2.78 in 1964 to 1.42 in 1995, remaining constant henceforth). As a consequence, an increase in workforce participation required to counterbalance the raising dependency ratio will need to be attained in ways that do not discourage fertility decisions. Secondly, behavioural modifications – such as the increase in the likelihood of marriage dissolution and in out-of-wedlock births – pose important challenges to social policy. The lower stability of couples, by increasing the weight of lone-parent families, affects the risk of poverty. The diffusion of this phenomenon has increased the concern of European institutions for issues of social exclusion and on the increase of social risks for a number of categories. More attention is devoted to a careful monitoring of fiscal and social policy impacts on families’ well-being. The need for a welfare system that is targeted to provide a minimum income – supporting low-income such as single- and non-working-parent families – and that is more consistent with a growing labour force participation is advocated.<sup>6</sup>

Apart from cash and in-kind benefits specifically meant for families with children (tax relief, family allowances, maternity and parental leave and the like), the feasible set of measures may include all public policies affecting their financial position. Moreover, those provisions may be implemented according to selective or universal schemes. A deeper analysis and a careful comparison of different social protection and taxation systems should be carried out, so as to analyse the combined effect of the enacted mix of policies. To this end, traditional methods may be integrated with an approach that allows one to evaluate the overall economic and financial relationship between the State and families.

All these issues are addressed in the three papers presented below.

The first paper on “Generational Accounts, Business Cycles, Fiscal and Family Policy in Finland, 1990-2000” by Reijo Vanne presents an updated application of GA for Finland

*Traditional  
GA: An  
updated  
exercise for  
Finland*

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<sup>5</sup> Some drawbacks of GA framework are highlighted in the literature. One of them lies in the oversimplifying use of a constant discount and productivity growth rate for forecasting, as well as in the application of a unique discount rate for all public budget items. This choice implies that the risk factor is the same for all the items contained in the public budget and for all generations. A number of theoretical shortcomings related to the exclusion of feedback effects (for example on the products price or on the modifications of the government’s behaviour), to the possible liquidity constraints of individuals and to the absence of intergenerational altruism that would eventually lead to counterbalance the GA results on differential incidence of taxes and transfers. See Haveman (1994).

<sup>6</sup> In particular, during the late 1990s, three important Communications by the European Commission (1995, 1997 and 1999) on Social Protection were enacted. During the year 2000, National Action Plans were required in order to fight against poverty and social exclusion. Furthermore, some structural indicators of social cohesion were established by the European Council in Laeken (December 2001).

following a traditional approach. It explores how the effects of fiscal policy and business cycles have been impacting on the generational fiscal burdens over the past decade, by comparing an application of GA conducted in the base year 1995 (European Commission, 1999) with a new one based on 2000. Following a deep recession in the first half of the 1990s, the Finnish economy has been experiencing high growth rates for the past seven years. Economic growth, together with a fiscal policy tightening, has led to an improvement of public finance indicators. A high primary balance of 6% of GDP was reached in 2000 after the deficit of the early 1990s.

GA conducted in 2000 highlights that these changes have led to a considerable decrease in IPLs (Intertemporal Public Liabilities) from 253 in 1995 to -95 in 2000 as a percentage of GDP. The intergenerational balance would therefore have required a tax rate increase of 8.8% in 1995. Indeed, according to the simulation for 2000, the governments can reduce taxes by 3.4%. It is worth noting that the budget-side adjustment is not neutral from a generational viewpoint. If the intergenerational balance were reached by (reducing) receipts, younger people would benefit more than elderly. It is completely the opposite whenever the adjustment occurs via (increasing) expenditures.

Some peculiarities of the Finnish economy ought to be taken into account when these results are considered. High variability of real growth rate and remarkable volatility of asset prices have characterised the business cycle and therefore affect GA computation.

According to this point of view, the impact of different components on IPLs proves interesting. The latter consist of: explicit government net debt (as traditionally computed) and the shares related to “ageing” and “macroeconomics and fiscal policy”. Compared to the 1995 value, the ageing effect has risen, meaning that the population structure is still shifting towards older ages. In contrast, the explicit net debt was decreased, as was the wider “macroeconomics and fiscal policy” effect.

In the 1995 EC study, a favourable economic and policy scenario was presented, which included measures to adopt in order to reach a generational balance. The economic performance prevailing over the past few years proved better than forecasted and the policies implemented have been consistent with the set of measures proposed in the EU study. Macroeconomics and fiscal policy factors caused a reduction in IPLs from a positive value of 147% to -191% as a percentage of GDP from 1995 to 2000. The effect of explicit net debt works in the same direction, even though it is smaller, ranging from -8% to -64% as a percentage of GDP. The improvement of intergenerational sustainability is therefore mostly due to macroeconomics and fiscal policy effect which reflects partly the business cycle.<sup>7</sup>

As to the volatility of asset prices, the paper raises the issue of how to manage such volatility. These features are usually disregarded, because the GA approach is risk- and inflation-free. The case of Finland presents however a particular feature, as a large share of public wealth is invested in domestic and foreign financial markets and the central government owns a remarkable amount of quoted stocks as well as pension institutions.

Moving from the traditional method to the implementation of a new application of GA based on the family as the unit analysis (that is, tax unit) rather than individuals is attempted in the second paper by Nicola Sartor et al. on “Intragenerational Distribution across Families: What do generational accounts tell us?”. In this approach the assessment of net taxes is subject to family fiscal entitlements in addition to individual ones. As for expenditure, many public budget items are often granted through a non-universal system

*Family GA.  
First  
application to  
Italy*

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<sup>7</sup> One possible adjustment proposed by the literature (Haveman, 1994, Cutler, 1993 and Diamond, 1996) is to correct the GA results for business-cycle effects.

and vary according to specific family features based on current legislation. As for receipts, the taxation burden strongly depends on family characteristics.

In order to gain a broader understanding of the effects of social and fiscal policies, the extension of the GA approach to families is important. It aims at evaluating the overall system of relations between the government on the one hand and families on the other, so as to identify the presence of redistribution across different types of families.

The paper highlights the results of the extension of the traditional model to Italy, by exploring the impact on net taxes of some characteristics relevant for a number of fiscal and social policies – such as educational levels, marital and working status and the number of dependents. The paper assesses the family net costs as compared to important events occurring during the family lifetime (such as births) and detects any possible loopholes in the safety net.

In the so-called Family Generational Accounts (henceforth FGAs), the analysis is divided into three phases of analysis, dealing respectively with: a) the structure of Italian families, b) the attribution of taxes and benefits to individuals taking account of their belonging to a given family-type and c) FGA computation.

The first phase enables us to calculate the timing of some important family events such as marriage, births, financial independence and the composition of Italian families according to the following parameters: gender, marital status, level of education (graduate or undergraduate) and working status (employed, self-employed, non-working). Sample data indicate that: a) the Italian modal family consists of a couple with two children, where both are undergraduate, the husband is an employee and the wife is non-working; b) the out-of-wedlock births and non-traditional living arrangements are not statistically relevant in Italy; the first childbearing occurs at an high average age (25 years for undergraduate women with two or three children); and c) a non-negligible gap emerges at childbearing average age between graduate and undergraduate females (ranging from 4 years for the first child for women with two children to 1 year for the third child for women with three children). As for family formation, 50% of men are financially independent at the age of 24 (25 for women) and are married at the age of 29 with a one-year-younger wife on average.

The second step lies in calculating the individual age profiles, by attributing all public revenues and expenses to individuals taking account of his/her characteristics, together with those of the family he/she belongs to. This procedure yields a very large age-profiles dataset, which be useful for objectives from a generational viewpoint: for example, it is possible to calculate Family Generational Accounts, the final step in the analysis. In the paper, generational accounts for each family type are computed, under the assumption that individuals live in a certain family for their remaining lifetime. This has been done by summing up the individual generational accounts of each family member.

The application of the above methodology has led to some important and interesting findings. Variations in fiscal burden according to differences in the number of dependents, the difference between net taxes paid by families of a certain type and those paid by the same type of family with one child less (the so-called marginal net subsidy or MNS) are calculated. This thus permits the evaluation of both direct effects due to the cash and in-kind transfers benefiting families with children and the effect due to tax variations indirectly related to the presence of one additional child, due to a different consumption behaviour and/or level of earnings and wealth.

It is worth noting that in Italy direct programmes are those mainly affecting the MNS, and among them a leading role is played by in-kind benefits (mainly education) rather than by cash transfers. The former are granted through a universal system. Limited amounts are transferred through a set of ad hoc family policies (such as family allowances, tax relief for

dependents; maternity and parental leave) and, in most cases, by a categorical scheme. A cross-family analysis illustrates that the MNS is strictly affected by tax variations caused by changes in family consumption patterns related to an additional child.

Following these guidelines and focusing on the regulation viewpoint, the paper by Bernhard Seidel on “Family Burdens and the Transfers/Tax System in Germany” examines how families with children in Germany are subsidised by the government through specific programmes.

*Family  
burdens and  
tax/transfer  
system in  
Germany*

The substantial number of large families facing a high poverty risk and the persistence of child poverty have raised concerns as to the effectiveness of current policies.

The current set of provisions does not however sufficiently support low-income families with children on the one hand, and it might discourage workforce participation on the other. The support payment for dependent children (*Kindergeld*) – the most important direct benefit in terms of amount granted – shows many shortcomings mainly due to its inadequacy to offset child-raising costs. Moreover, social assistance for children living in jobless families is often higher than wages plus support payments for children gained by any family member who eventually finds a job.

The issue of setting up a support system that reduces work disincentives is a challenge to be faced by institutions, especially in light of the large number of poor families in Germany with several children. Their low income is mainly related to the poor work qualifications possessed by adult family members. Moreover, it is all too natural to think that single parents (mostly females) have so much responsibility for their children’s education and caring that they cannot be employed in a full-time job – that is, a higher-wage job. In order to reconcile jobs and families and to encourage a higher female workforce participation, a wider diffusion of part-time work and in-kind benefits (such as a larger number of vacancies in nurseries and in all-day school) would be desirable.

Focusing on policy issues, the necessity of establishing the family as the reference unit in order to cope with demographic, economic and social changes emerges. Cross-national similarities in these patterns require a common data set which is useful for the comparison of the different policies implemented within individual European countries. Nowadays, national policies targeted at the family differ in their use of cash vs. in-kind benefits, as well as in their degree of selectivity. Family-support provisions are therefore likely to show different levels of effectiveness. For this purpose, GA represents a suitable tool for addressing the issues of how and to what extent different public policies affect families’ well-being and for estimating the effects to be gained from policy reform.

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**CHAPTER 1**  
**GENERATIONAL ACCOUNTS, FISCAL POLICY AND BUSINESS CYCLES**  
**IN FINLAND, 1990-2000**

**REIJO VANNE\***

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The development of the Finnish economy has fluctuated the most among the present EU countries in terms of real growth and employment during the last 15 years. Foreign and domestic demand and technological change have been the underlying driving forces. In the late 1980s, inflation and real income expectations maintained domestic demand and private agents were running into debt. Due for example to the policy of the Bank of Finland, the inflation expectations were never met, and the inconsistency of the plans were exposed in the early 1990s. The debt crisis was strengthened by declining foreign demand. On the other hand, technological restructuring was rapid, and due to high unemployment, wages have risen slower than productivity since the mid 1990s.

The minimum of annual real economic growth was -7% in 1992. The maximum, +5.7%, was reached in 2000. The maximum rate of unemployment, 16%, was reached in 1994, and the minimum of 3% is from the year 1989. In a Nordic-type welfare economy with high tax rates and large transfer schemes, the high unemployment rate variation resulted in a roller-coaster pattern also in public sector revenue and expenditure aggregates. The minimum of primary balance, -8% of the GDP, was reached in 1993. The recent maximum was +6.4% in 2000.

In addition to being a small open economy and having Nordic welfare state properties, there are some other institutional features that complicate assessing the state of current policy and public economy in the long run in Finland. The Finnish public pension system includes also the so-called second pillar of pension-scheme categories. Thus, the main part of public pension benefits are earnings-related and there are no ceilings for the benefits. The national pension benefits are means-tested against the earnings-related pensions and the scheme is of the pay-as-you-go type.

The earnings-related pensions are partly funded, the funding rate being approximately 25% (Risku, 2001). The schemes for private sector employees and self-employed persons are run by private mutual pension insurance companies, industry-wide or company pension funds. The total value of their assets is nearly 60% of the annual GDP. Domestic and foreign bonds form 40% and shares quoted on the exchange 30% of the market value of the assets. All pension institutions as well as contributions and benefits are included in the general government sector in the national accounts.

The Finnish central government owns quoted stocks as well as pension institutions. However, the gross debt of the central government is approximately the same size as the value of its assets, and the net financial wealth of the general government is almost equal to the wealth of pension institutions. The volatility of asset prices is another important point when assessing the state of the Finnish public economy.

In an EU-wide project a research group produced generational accounts and related indicators for the member countries (European Commission, 1999 and Raffelhüschen,

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1999a). The indicators showed a large intergenerational imbalance in Finland. The base-year of the report was 1995, and as the above stylised facts indicate, the Finnish economy has changed a lot since then. Policy changes have taken place as well. The former standard of national accounts has been replaced with the European System of Accounts (ESA95). Nowadays it is also a common view that increasing longevity should be assumed to continue for a rather long period.

The aim of this paper is to show how sensitive generational accounts are to business cycles and to discuss whether this sensitivity could be captured by the sensitivity analysis typically presented in association with baseline generational accounts. As a starting point we have the results of Feist et al. (1999) published in the above-mentioned EU-wide report. In this paper, the study whose base year is 1995, is called the EU study. The base year of the calculations of the present paper is 2000.

In section 1 we outline the rather well-known approach of generational accounts. In section 2 we present the data. The general results are presented and discussed in section 3. Conclusions are drawn in section 4.

## 1. Generational Accounting

We follow generational accounting as presented in Raffelhüschen (1999b), and begin to determine generational accounts for current and future generations by calculating a set of figures as follows:

$$(1) \quad N_{t,k} = \sum_{s=\max(t,k)}^{k+D} T_{s,k} P_{s,k} (1+r)^{t-s}.$$

In equation (1)  $N_{t,k}$  denotes the net present value (NPV) of all the future net taxes paid by the generation born in year  $k$  under the policy considered and discounted to the beginning of the base-year  $t$ . Net tax is defined as taxes paid minus transfers received and the value of public services consumed.  $r$  is the assumed annual discount rate. In equation (1), NPVs for the future generations, i.e. generations born after the year  $t$ , are also discounted to the year  $t$ , and not to the birth-year of the generation. NPVs are calculated separately for both genders, although this is not denoted in the equations. For generations born in year  $t$  or later, the result is the NPV of their life-time net taxes, and for generations born before  $t$ , the result is the NPV of the net taxes of the remaining life-span.

$P_{s,k}$  stands for the number of members of a generation born in year  $k$  who survive until the year  $s$ .  $D$  represents the assumed maximum length of life-time, typically and also here 100 years. In practice,  $P_{s,k}$  is drawn from a population projection, which are typically produced by the so-called cohort component method. We move beyond the explicit presentation and discussion of the method and assume increasing longevity until the year 2050. The assumption is implemented by decreasing mortality rates, i.e. increasing survival probabilities, for ages below 100 years, and assuming a certain death at the age of 100 years. Decreasing mortality has a significant impact on the length of retirement days, and thus on the NPV of the life-time net taxes, *ceteris paribus*. In a more general case, we could also consider probability changes of “softer” transitions. We could, e.g. model transitions between labour market positions. One of the most remarkable cases is a rising effective retirement age. However, increasing longevity is the only type of transition we have assumed in this study.

$T_{s,k}$  denotes the average net tax paid in the year  $s$  by a representative member of the generation born in the year  $k$ , and all types of taxes, transfers and services are taken into

account.  $T_{s,k}$  includes, among other variables, also the collective public services, and in this study the depreciation of the fixed capital as part of the value of public services. In the original version of generational accounting, neither individual nor collective public services were included in generational accounts. Public services were taken into account as a stream which should only be financed intertemporally by taxes (Auerbach et al., 1991).

It is assumed that current policy is prevailing indefinitely.  $T_{s,k}$  is a sum of various types of taxes, transfers and services:

$$(2) \quad T_{s,k} = \sum_i h_{s,k,i} ,$$

where  $i$  denotes the type of tax, transfer of service. If  $h_{s,k,i} > 0$ , it is a tax, and if it is negative, it is a transfer of service. The difference  $s-k$  refers to the age of the generation in the year  $s$ . The future streams are first projected by age. Generally, projections based on sophisticated methods or expert knowledge may be available, but especially if that is not the case, projections are based on the assumed annual rate of productivity growth,  $g$ :

$$(3) \quad h_{s,k,i} = z_{s,k,i} h_{t,t-(s-k),i} (1 + g)^{s-t} .$$

Equation (3) assigns to each agent of age  $s-k$  in year  $s$  the same payment observed for agents of the same age in the year  $t$ , adjusted for productivity. The coefficients  $z$  are policy parameters to capture the changes that have taken place or are assumed to take place. Parameters may also be used as endogenous variables, which are solved in order to find an intertemporal balance.

The generational account in the year  $t$  of the cohort born in the year  $k \leq t$ , is:

$$(3) \quad A_{t,k} = \frac{N_{t,k}}{P_{t,k}} .$$

The generational accounts for the future generations are defined as follows:

$$(4) \quad A_{k,k} = \frac{N_{k,k}}{P_{k,k}} .$$

$P_{k,k}$  is the number of children born in the year  $k$  and who are alive at the end of the year. According to equation (4) the generational accounts for future generations are NPVs of lifetime net taxes in the birth-year.

If we compare the accounts of future generations to each other or to the account of the newly-born generation, we have to do the corresponding productivity adjustment, and when operating at the level of public economy, as in equation (1), we have to calculate the NPVs at the same moment.

We now define the basic indicator of generational imbalance or unsustainability of the policy. The uncovered intertemporal public liabilities (IPL) of the base-year  $t$ ,  $L_t$ , are defined as:

$$(5) \quad L_t = B_t - \sum_{k=t-D}^{\infty} N_{t,k} .$$

$B_t$  is the net public debt at the beginning of the year  $t$ , and the  $N$ -values are defined in equation (1). Due to comparability across countries or the same country at different points of time,  $L_t$  should be related e.g. to the GDP of the year  $t$ . If  $L_t$  is unequal to zero, the policy considered is not sustainable. In case  $L_t$  is positive, taxes should be raised or transfers and services cut. In case  $L_t$  is negative, taxes are allowed to be lowered or benefits raised.

The only indicators we consider here are  $L_t$  and a tax change in terms of the parameter  $z_{s,tax}$  which would make  $L_t$  zero.

## 2. Data

The population forecast is basically that of Eurostat published in 1997. We have slightly modified the Eurostat baseline projection, and also continued the projections until the year 2100. Eurostat has published a new revision in 2000 (European Commission, 2000), but the difference between the new and old versions is not remarkable. We assumed a total fertility rate of 1.75, net immigration of 5,000 persons annually and an increasing life expectancy until the year 2050, and constant mortality thereafter. The increase of life expectancy was approximately one year in a decade. The assumed annual net immigration figure is relatively small compared to the original population, only 0.1%. We have not applied any separate immigrant population modelling (Bonin et al., 1999).

The growth rate of the Finnish economy has varied a lot during the last 15 years. Annual real growth rates of the output are presented in Figure 1. Growth rate variability is naturally reflected in the unemployment rates of Figure 2. Further, in a Nordic-type welfare society economic fluctuations have a strong impact on public expenditures and revenues. The development of primary balance related to the GDP is shown in Figure 3. Further, primary balances accumulate or decrease public net financial wealth, which was one of the key variables when calculating the IPL in equation (6).

The real output was contracting for three years, in 1991-93, and the record decline was 6.3% in 1991. On the other hand, the growth rates observed since 1994 have also been exceptionally high. The value of GDP was €95 billion in 1995 and €132 billion in 2000.

Unemployment rates were rising rapidly in 1991-94, but they have declined rather slowly since then despite the rapid real growth. This is due to both rising participation rates and high productivity growth. The unemployment rate was 15.4% in 1995, in the base-year of the EU study, and in 2000 the rate was 9.8% of the labour force.

There are two exceptional features in the Finnish public economy compared to the majority of the European countries. The Finnish public pension system is partially funded, and the pension institutions own stocks and other financial assets. Also the central government owns a remarkable amount of financial assets in addition to a remarkable loan portfolio. The volatility of stock prices strengthens the business cycle effects on the IPLs. In Figure 4 we present the development of the public net financial wealth in the 1990s.

Due to the partially pre-funded pensions, the public economy has typically run surpluses, as can be seen in Figure 3. In 1995 the net wealth was 12% of GDP according to the new financial statistics. The share was 8% according to the former standard, and the value was used in the EU study. At the end of 1999 the figure was as high as 64% of GDP, which is used here.

The main part of assets are covering the liabilities of the statutory earnings-related pension schemes, which are mainly run by private mutual insurance companies. The portfolios are managed as private investors manage their portfolios, but there are rather sophisticated rules for the part of total liabilities, which should be covered, as well as for a proper risk management. The pension funds ran surpluses also during the recession, and the gross debt was accumulated with the central government.

In Tables 1 and 2, we desegregate public revenues and expenditures in 1995 and in 2000. The statistics standard has also changed here, and we follow the new standard also as to the year 1995. The aggregates are slightly different from those used in the EU study. The main statistical improvement from the point of generational accounting is that collective public services are separated from the individual public services.

The tax rate has risen slightly from 1995 to 2000, which is due to higher employment, higher profits and thus higher income taxes. In fact, the nominal tax rates have been lowered. Lowering of taxes is also the expressed policy of the present cabinet which took office in spring of 1999. Social insurance contributions have declined, because the unemployment benefits can be financed by lower rates.

The policy of the present government is that the expenditure of the central government, including the interest payments, should be kept constant in nominal terms. The policy has not completely succeeded, but it is reflected in the above expenditure figures. It should be noted that only one-fifth of the total pension expenditure is in the books of the central government. On the other hand, unemployment benefit expenditure has declined remarkably since 1995, and has made the cutting job easier for the government. The total pension expenditure was 10.8% of GDP in 2000, compared to 13.1% in 1995.

As age profiles of the base-year taxes, transfers and services, we use the profiles of the EU study. For pensions we use a profile from the year 1999 (Central Pension Security Institute, 2000), as well as for health insurance benefits (Social Insurance Institution, 2000). For social and health services we use a profile from the year 1998 (Ministry of Social Affairs and Health, 2001). All the profiles are adjusted for the year 2000 so that the corresponding aggregates of national accounts are fulfilled.

The profiles in Figures 5 and 6 are non-deflated. Increasing prices, wages and indexed transfers have a positive impact on the net taxes where they are originally positive, and a negative impact where net taxes are originally negative. However, the higher age where net taxes are equal to zero has shifted 3 years forward for both genders. The crucial age was 59 years for women and 61 years for men. Also positive net taxes have changed more than negative net taxes, especially at the prime ages from 30 to 55 years. Rising employment rates are the underlying reason. Naturally, these changes are no surprise given the aggregate changes reported in Tables 1 and 2. Rising employment rates are observed also at higher ages of labour force, and in fact, the effective retirement age has started to rise.

### **3. Results**

The generational accounts of current generations defined in equation (3) are presented in Figure 7. Also the account for the generation to be born in 2001 is presented as defined in equation (4). The other curve in Figure 7 describes the accounts given that the IPLs are reset to zero by a sustainable tax rate change assumed to come in force in 2001.

The two ages where the value of the generational account is zero are 6 and 49 years in the unbalanced current policy path. Positive accounts, denoting positive NPVs of net taxes, appear in a 12-year wider age range than in 1995. The lower age has declined and the higher age has risen by 6 years since 1995.

In Table 3 we present the IPLs and the respective required aggregate tax rate change to reset the IPL to zero at the baseline of this study and a comparison to the EU study baseline.

The generational balance has improved dramatically from 1995 to 2000. The IPL indicator was 253% of GDP in 1995 and with the same productivity growth and interest rate assumptions it is -95% of GDP in 2000. In terms of a sustainable tax rate, instead of a requirement of raising the current tax rate by 8.8 percentages of GDP in 1995, the sustainable tax rate is now 3.4 percentage points below the rate of the year 2000. The tax rate was 46.4% in 2000, and thus 43.0% would be a sustainable tax rate, *ceteris paribus*.

Following the approach of the EU study, we have separated the effect of population ageing on the IPLs. In 1995 it appeared to be 114% of GDP, and until the year 2000 it has increased to 159% of GDP. The reason is that the main part of the burden of ageing will materialise in the future also in 2000, but the burden will be met in a nearer future. However, in terms of primary surplus or deficit, population ageing started in 1995 in Finland. In order to find this out, we calculated the resulting primary deficit year by year in the 1990s using the 1995 age profiles and the age structures of the particular years. It appeared that the pure ageing effect on the annual deficit started to rise in 1995. The difference between the 2000 and 1995 deficits was approximately 0.5% of GDP.

Table 4 includes a sensitivity analysis with respect to productivity growth and interest rate. The sensitivity results are organised in a rising order by the difference between the interest rate and productivity growth rate.

The IPLs are in the range of 44 and -100% of GDP. The sustainable tax rate changes vary between 0.5 and -4.1 percentages of GDP. In Finnish long-run projections the annual productivity growth rate is typically assumed to be 1.5% and the real interest rate is assumed to be 3% (Klaavo et al., 1999). If this is the case, the IPLs were -24% of GDP, i.e. implicit public net wealth was positive. The sustainable tax rate change would be -0.4% of GDP. If productivity would grow 2% annually, taxes should be increased by 0.5 percentages of GDP for the balance. The conclusion is that the public economy is now quite near an intertemporal and intergenerational balance in Finland. As to the tax and other decisions for the year 2001 made by the government and parliament, the net effect on the primary balance is assessed to be a deterioration of approximately 0.5% of GDP, which could be interpreted as sustainable policy if the productivity growth rate turns out to be 1.5% and real interest rate turns out to be 3% in the long run.

We next discuss whether the current situation was included in the sensitivity analysis scenarios of the EU study. A combined macroeconomic and fiscal policy scenario was presented in the EU study where IPLs appeared to be slightly negative as seems to be the case in light of the 2000 data. The combined policy included the following elements:

1. halving the unemployment rate from the 1995 level until the year 2005,
2. raising the effective retirement age by five years until 2015,
3. raising the social insurance contribution rates as high as 1.5 times the current value until 2035, and
4. cutting all the public services by 20% until 2010.

The unemployment rate has not yet been halved from the 1995 level, but it has declined more rapidly than in the halving path. The effective retirement age has naturally not increased by five years in the past five years, but it is likely that the age indicator has been near the combined policy path. Unfortunately, there is not any precise new statistics on this issue available. It is clear that in practice a five-year increase in 20 years is a very ambitious target, and it cannot be reached by current policy. *Ceteris paribus*, the assumed rise of

contribution rates would result in a 6% rise in the tax rate in 40 years, i.e. a 0.15% rise annually. In Table 1 we find that the tax rate has risen at the required pace in the passed five years. We find as well in Table 2 that public services have been cut approximately by 10% compared to the 1995 level in terms of GDP percentages.

Broadly speaking, the Finnish economy and fiscal policy have followed the best path from the point of view of intergenerational balance outlined in the EU study. However, the assumed phasing-in periods of the policy are not yet finished, and the assumed target values of the policy parameters have not yet been reached either, but it seems that intergenerational balance has already been achieved.

In fact, in addition to the policy outlined in the EU study, there are two other instruments that have been used. First, social transfers and production subsidies have been cut. The decrease of social transfers is partly due to diminished unemployment, but especially transfers related to children or family policy have been decreased in relative terms. They are typically non-indexed, and adjustment decisions have not been made. Pension cuts have also been made but combined with earlier decisions and long transition periods, the overall result is that average pension benefits follow the productivity growth rate (Klaavo et al., 1999) as was assumed in the EU study. Another issue is that the GDP share of pension expenditure has decreased due to the fact that factor income distribution has changed in favour of capital income.

The development of capital income leads us to the other reason underlying the favourable intertemporal public debt position of the Finnish economy compared to the most favourable scenario of the EU study. Both capital income tax revenues and the value of public wealth react to changes in the market values of stocks and real estates. Capital income tax revenues are partly dependent on capital gains and partly on profits. Both are heavily dependent on business cycles, and the assumption of productivity growth rate cannot capture these effects, even though a variable rate was assumed.

In the case of public asset values, the effects could be captured, in terms of generational accounts, by a variable interest rate or a variable rate of return on investments,  $r_s$  or by separating the real interest rate of public gross debt and the real return on public financial assets. To manage these instruments in deterministic calculations, one should have an enlightened view on the rates of return in the near future. The interest rate of public debt is a much easier variable to predict. In the Finnish case the large public financial wealth is a special feature compared to other countries.

#### **4. Conclusions**

The intergenerational balance has improved dramatically in the five years from 1995 to 2000 in Finland. The economy has grown rapidly due to reallocated resources and product innovations as well as the favourable international economic development. Fiscal policy has aimed at decreasing public gross debt, and the pension institutions have taken measures to raise the actual funding rate of the earnings-related pension schemes. The mainstream has been to improve the return on the investments of the funds.

In 1995 the Finnish public economy showed a severe unsustainability and intergenerational imbalance. In 2000 it is near balance, and probably, depending on the assumptions about the future, on the positive side.

When comparing the generational accounting results of the year 2000 to the results in the EU study with 1995 as the base year, we find that the development has been even better than the most-favourable scenario presented in the 1995 study. The comparisons also raise

the methodological question of dealing with the variables that are the most dependent on business cycles, capital income tax revenues being a good example.

There is a large public financial wealth in Finland. The wealth also includes risky assets, whose value is determined on the financial markets and the value is highly dependent on the business cycles. Stochastic approaches may be worth studying as to the management of high-risk variables in generational accounting. The difference between returns on risky assets and on government bonds is an argument for separating them in generational accounting.



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## TABLES

*Table 1. Public revenue aggregates in Finland, 1995 and 2000 (% of GDP)*

Revenue	1995	2000
Income taxes	17.4	21.0
VAT and other indirect taxes	13.7	13.3
Employers' social insurance contributions	10.1	8.8
Insured persons' social insurance contributions	4.5	3.3
Total = tax rate	45.7	46.4

*Source:* Statistics Finland, National Accounts.

*Table 2. Public expenditure aggregates in Finland, 1995 and 2000 (% of GDP)*

Expenditure	1995	2000
Pensions	13.1	10.8
Unemployment	3.7	2.0
Family policy (transfers related to children)	2.6	1.7
Other social transfers	2.8	2.0
Subsidies	2.8	1.5
Individual public services	14.5	12.9
Collective public services	8.3	7.6
Other expenditures minus other revenues	1.1	1.5
Total	48.9	40.0
Primary surplus (+) or deficit (-)	-3.2	6.4

*Source:* Statistics Finland, National Accounts.

*Table 3. Intertemporal public liabilities (IPLs) with its components and balanced tax rate changes required at the baseline in 1995 and 2000 in Finland (% GDP)*

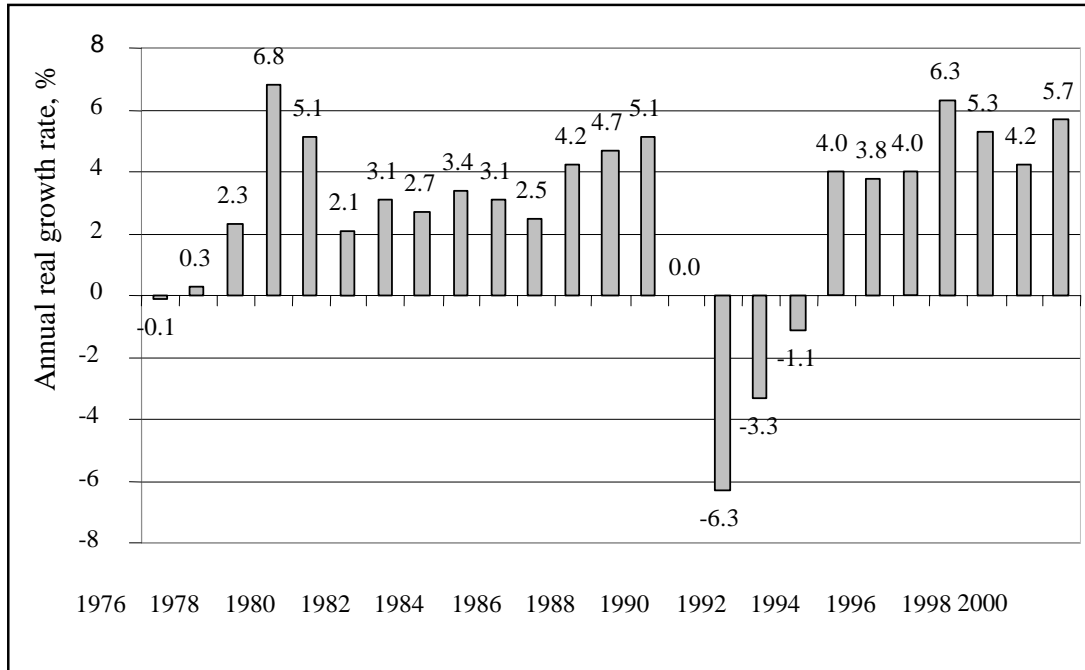
Item	1995	2000
	EU study $g=0.015$ $r=0.05$	Current study $g=0.015$ $r=0.05$
Intertemporal public liabilities, total	253	-95
Ageing	114	159
Explicit net debt	-8	-64
Macroeconomy and fiscal policy	147	-191
Balancing change of tax rate	8.8	-3.4

*Table 4. Sensitivity of intertemporal public liabilities and balanced tax rate changes to productivity growth rate and interest rate, base-year 2000 (% of GDP)*

	$g=0.015$ $r=0.03$	$g=0.02$ $r=0.03$	$g=0.01$ $r=0.03$	$g=0.02$ $r=0.05$	$g=0.01$ $r=0.05$
Intertemporal public liabilities, total	-24	44	-58	-88	-100
Balanced change of tax rate	-0.4	0.5	-1.3	-2.7	-4.1

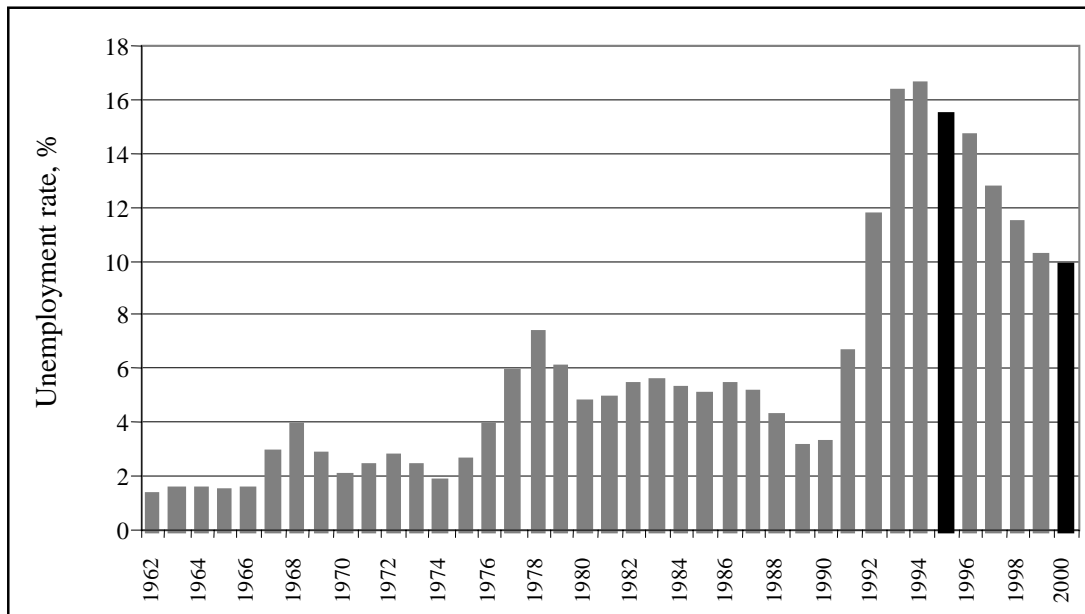
## FIGURES

Figure 1. Annual real growth rates of GDP in Finland, 1976-2000 (%)



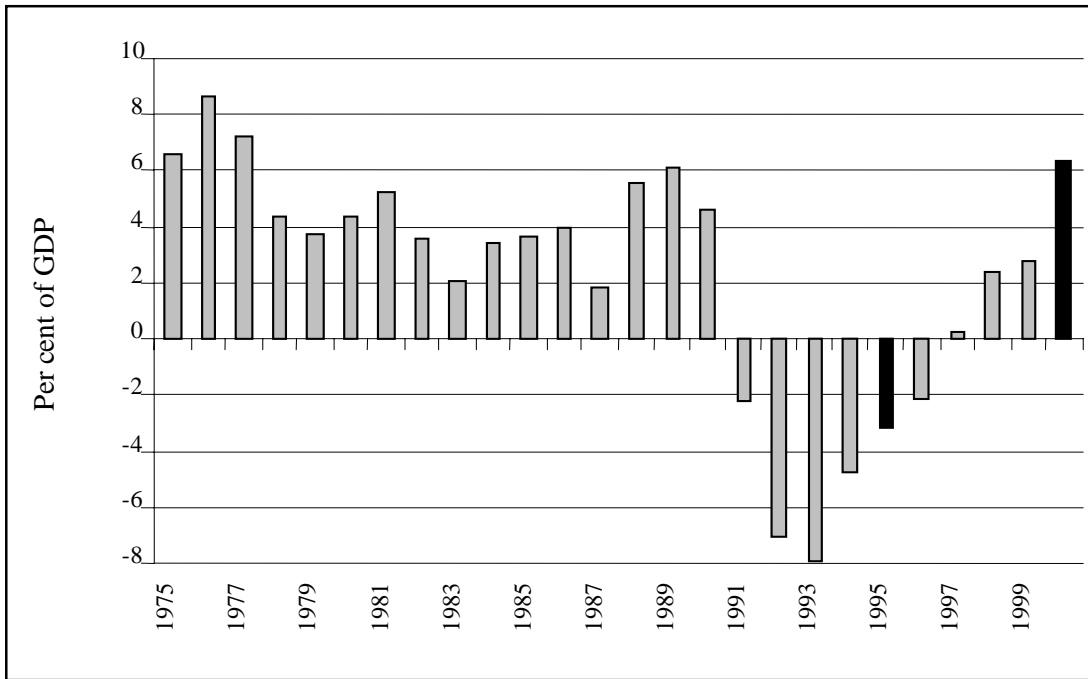
Source: Statistics Finland, National Accounts.

Figure 2. Unemployment rates in Finland, 1962-2000 (% of labour force)



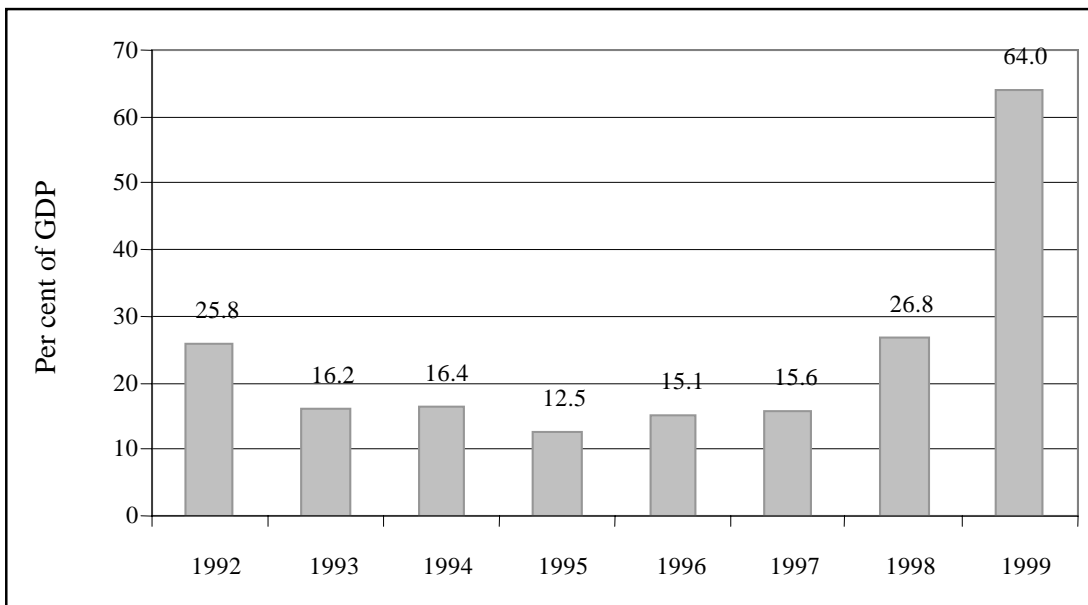
Source: Statistics Finland, Labour Force Survey.

Figure 3. Primary balances in Finland, 1975-2000 (% of GDP)



Source: Statistics Finland, National Accounts.

Figure 4. Net financial wealth of the general government in Finland, 1992-99 (% of GDP)



Source: Statistics Finland, Financial Accounts.

Figure 5. Age profiles of net taxes of males in Finland, 1995 and 2000

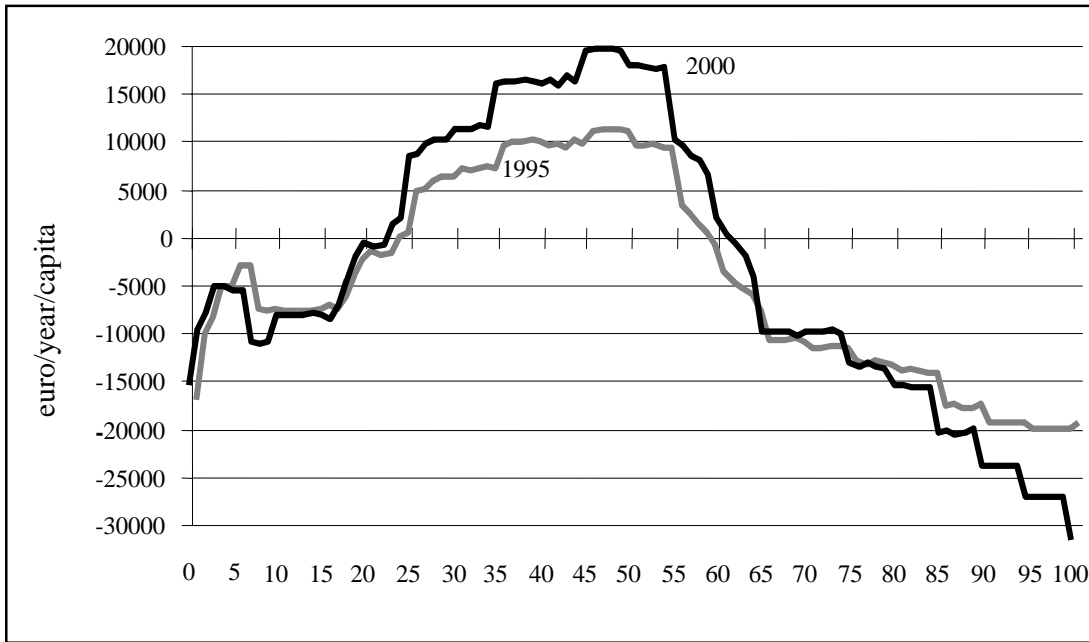


Figure 6. Age profiles of net taxes of females in Finland, 1995 and 2000

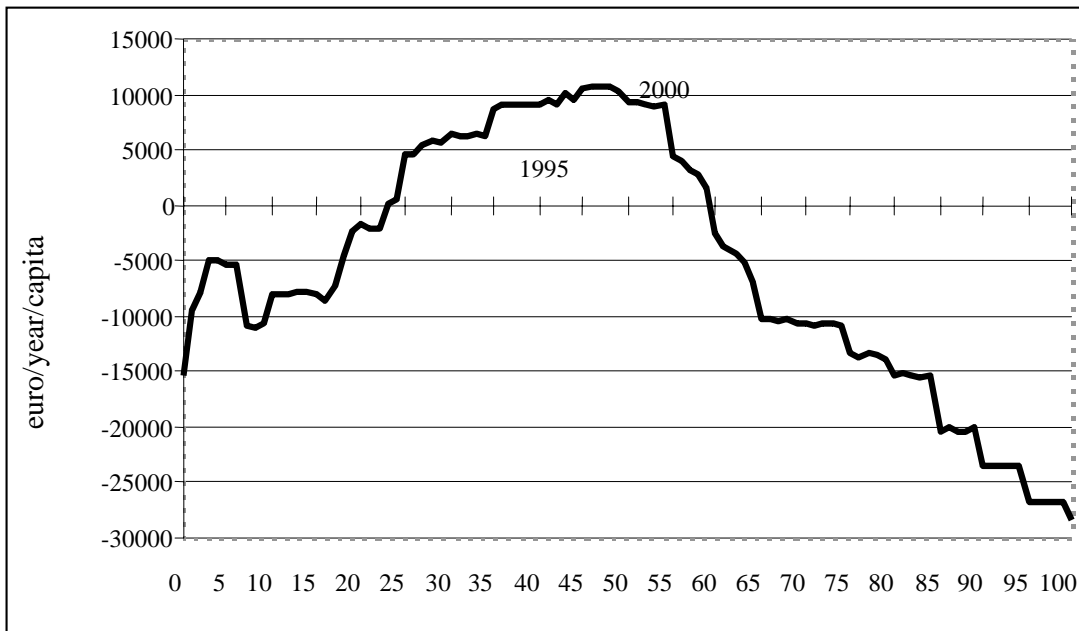
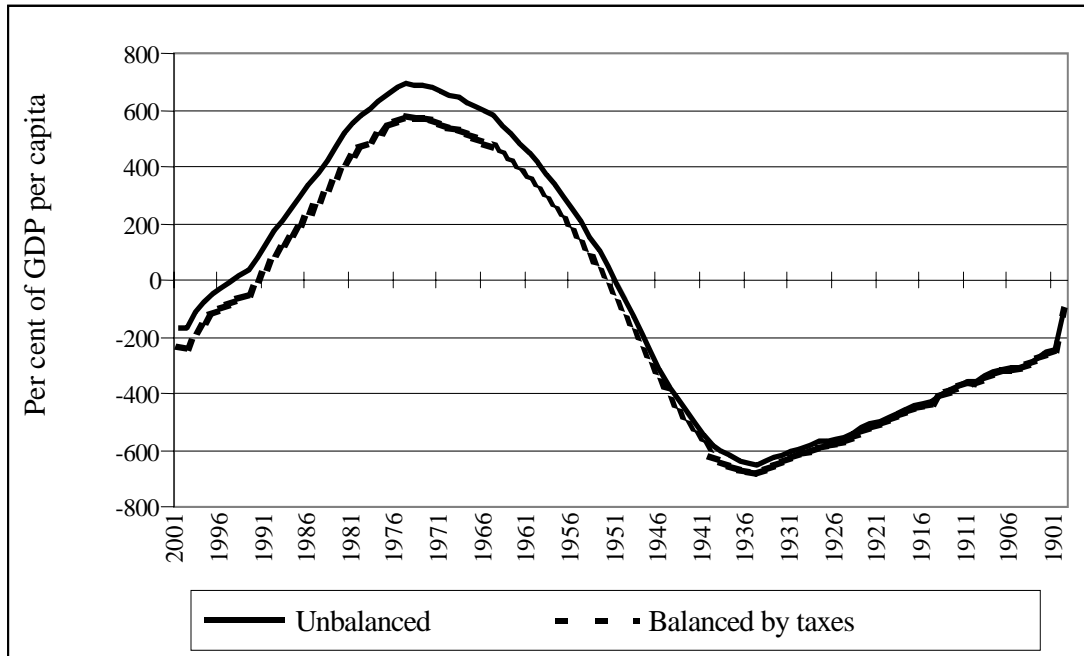


Figure 7. Generational accounts of the year 2000 for the generations born in 1900-2001 (% of GDP per capita)



**CHAPTER 2**  
**INTRAGENERATIONAL DISTRIBUTION ACROSS FAMILIES:**  
**WHAT DO GENERATIONAL ACCOUNTS TELL US?**

**NICOLA SARTOR, CARLO AZZARRI, MARIA COZZOLINO, CARLO DECLICH,**  
**VERONICA POLIN AND ALBERTO ROVEDA\***

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In recent years, the Italian debate on fiscal and social policies toward families has focused on the issue of dependents for two important reasons. The first one is related to the sharp and persistent decline of the fertility rate. Fertility decline is partly responsible for the increase in the old-age dependency ratio. This, in turn, causes a significant deterioration of the public finance outlook for the next decades. As a consequence, the highly questionable issue about the desirability and effectiveness of demographic policies is surfacing again in the political debate.

The second reason is related to poverty, as the likelihood of belonging to a poor family significantly increases with the number of dependents. According to recent estimates by an ad-hoc Commission,<sup>1</sup> in year 2000 the relative poverty rate amounts to 12.3% among all Italian families. The ratio increases to 15.1% if there is at least one dependent aged less than 18 and further to 25.8% if the family with young dependents lives in the “Mezzogiorno”. The last two rates increase respectively to 25.5% (nationwide) and 33.7% (Mezzogiorno) for families with three or more children.

As for the demographic issue, Italy experiences one of the lowest fertility rates in the world. Total fertility is below replacement since the late 1970s and reached its lowest value in 1995 (1.18). Currently, Italy is second to Spain (1.22 and 1.15, respectively). Completed cohort fertility rates show a steady decline from 2.1 for women born in 1944 to 1.6 for the 1963 cohort. At the same time, life expectancy at birth has increased by 22 years over the last 60 years.<sup>2</sup> As one would expect, net migration flows have reversed their direction since the early 1970s, from net emigration to net immigration.<sup>3</sup>

The dreary demographic scenario, summarised by steady population decline and old-age dependency ratio increase,<sup>4</sup> and the persistence of poverty among families with dependents has stimulated a policy debate on the desirability of an increase of social protection of households with young dependents.

The Italian welfare system is a mixture of the most recent approach based on universal programmes and the legacy of some of the old categorical schemes based on profession. As for families with dependents, the current system is mainly based on the public provision of health

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<sup>1</sup> The Commission on social exclusion, appointed by the Minister of Labour. See Commissione d’indagine sull’esclusione sociale (2001, tab. II-1,2).

<sup>2</sup> From 54 in 1930 to 74 in 1993 for men, and from 56 to 81 for women.

<sup>3</sup> Currently, the net immigration flow is estimated at 50,000 individuals per year.

<sup>4</sup> On the basis of the latest official demographic projections (see ISTAT 1997), total population begins a slow but steady decline from current 57 million to 24 million in 2115. The old-age dependency ratio increases from the current 26.9% to 38.2% in 2020, and reaches 60% in 2045 before settling at around 55% thereafter.



care and education, the role of cash transfers and tax allowance being minor. Public transfers are supported by a rather generous regulation in favour of employed mothers. In the most recent years, the benefits have been gradually extended to fathers. A different approach is sometimes advocated, proposing the full income tax deductability of the expenses incurred by families in raising children. The debate reflects the apparently never-ending struggle between selectivity versus universality, on one hand, and between cash transfers versus merit goods on the other.

The following work is part of a larger research project aimed at evaluating the financial effects on family incomes of the current set of public tax and transfer programmes. By estimating the net taxes paid/received by different families, the research aims at contributing to the analysis of any possible loophole in the social security net.

In order to derive a concise measure of the financial effect of the various public programmes, the conventional generational accounting methodology (henceforth GA) will be applied to Italian families. The objective is to evaluate how public finances redistribute resources within generations when families are taken as the tax units. As a first approximation, only income effects will be estimated, as the model does not allow for any feedback effect (or substitution effect) from the existing policy instruments to individual behaviour. It will be discussed whether adding this intra-generational dimension modifies the results of traditional GA and its implications for the welfare systems

## **1. Conventional Generational Accounting**

Generational accounting assesses the impact of public finances and welfare systems on current and future generations. As is well known,<sup>5</sup> GA allows one to jointly consider: i) currently legislated entitlements to tax and transfers; ii) demographic changes and iii) the intertemporal constraints that ensure long-term public debt sustainability.

For each representative member of the living cohorts, GA allows us to estimate the net present value of transfers paid and/or received from the state during its remaining lifetime, in accordance with sex and age. A generational account is obtained by summing up the discounted value of the various public programmes the cohort will receive/pay. For each individual member of a cohort, characterised by a certain age and sex, the value of the various public programmes is estimated on the basis of sample surveys, legal arrangements and entitlement rules. The estimate is such that, for each programme, the sum of values times the number of individuals alive in a certain year adds to the total outlays reported in the general government appropriations account for each of the tax and spending programmes.

A set of GA is the present value of net tax/transfers the representative member of each of the living cohorts expects to receive/pay in the rest of his/her life.

For a given base year, GA allow us to assess the long-term debt sustainability as well as the degree of intergenerational equity, under the assumption of unchanged fiscal policies. The public budget is projected into the future on the basis of a demographic forecast and of the estimate of the per capita tax and transfers. As for debt sustainability, the evolution of the primary balance (e.g. net of interest payments) into the future is compared to the intertemporal budget constraint. As is well known, the latter requires that the present value of future primary surpluses equals the level of the outstanding public debt in the base year. If the stance of the current fiscal policy is not sustainable in the long-run, the required change in the net per capita transfers is conventionally imputed to the unborn. The comparison between the net taxes paid

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<sup>5</sup> Generational accounting has been developed by Auerbach, Gokhale and Kotlikoff (1991). Recent applications to the Italian case can be found in Sartor (1999, 2001), Cardarelli and Sartor (2000), Franco and Sartor (1999) and ISAE (1999). For an international comparison, see Auerbach, Kotlikoff and Leibfritz (1999) and European Commission (1999).

by the newborn (in the base year) and the unborn allows us to derive a measure of the degree of intergenerational equity.<sup>6</sup>

Table 1 reports the set of GA for the representative members of Italian cohorts alive in 1999. It can be noted that the accounts remarkably differ according to gender. While a male born in 1999 expects to pay net taxes during the entire lifetime equal to €48,000,<sup>7</sup> a female belonging to the same cohorts will receive a net transfer equal to €74,000. The reason for such a large difference entirely depends on the lower labour participation in the labour market for women. A lower rate implies low labour income taxes and social security contributions; at the same time, non-active women are entitled to many public programmes, such as health care and survivors' pensions.

Table 2 reports the long-term sustainability, as well as a measure of intergenerational equity, based on the hypothesis that future fiscal policy will be the same as in 1999. Because of the unfavourable demographic scenario, the Italian fiscal policy still needs some tightening, as the intertemporal disequilibrium (a measure of public debt unsustainability<sup>8</sup>) equals 31% of the outstanding public debt. At the same time, fiscal policy still appears to be generationally unbalanced, as, under unchanged entitlement policies for the current generations, future generations would be required to pay €27,000 more than 1999 newborns. Alternatively, intergenerational equity could be restored by a 2.5% tax increase or a 2.7% expenditure cut for all generations (living as well as unborn).

## **2. Generational Accounting for Families**

So far, GA has focused on individuals as tax units, thereby avoiding any analysis of the intragenerational redistribution of taxes and transfers across families of different kinds and sizes. The paper reports the methodological aspects and the first batch of empirical results of a new approach that has been developed to derive the family GA. As a first step, the research has followed a static approach, according to which a certain number of different types of families has been identified. Each of the individuals living in a certain year belongs to one family type, and will belong to the same type for the entire lifetime.<sup>9</sup>

The first problems to be dealt with are the choice of the unit (family or household) and the identification of the time horizon. Traditional GA deals with individuals, whose life is precisely identified by a date of birth and a date of death. In the case of families and households, there is no unique way to define a start and an end. According to infinite time-horizon models and dynastic models, a family can be seen as a never-ending social institution. For the purpose of the present research, the analysis has been focused on families.<sup>10</sup> While it is acknowledged that

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<sup>6</sup> However, see Cardarelli and Sartor (2000) for a concise survey of alternative indicators of sustainability and intergenerational equity.

<sup>7</sup> Under the standard hypothesis of a 5% discount rate and a 1.5% rate of per-capita productivity growth.

<sup>8</sup> See Cardarelli and Sartor (2000) for a discussion on the measurement of debt sustainability within the GA framework.

<sup>9</sup> The next step will bring some dynamics into the model, in order to allow individuals to switch from one family type to another (for example, from "married with children" to "single with children"), on the basis of a transition matrix.

<sup>10</sup> By "family" is meant a group of individuals linked by marriage (or any equivalent social arrangement) or parenthood. Thus a family is represented by parents and children. A "household" is a family line or a dynasty; it is used to indicate a group of individuals sharing the same house. Therefore a household is made up by two or more families. In the current paper, different families may well share the same house (we ignore this piece of information), therefore belonging to the same household.

households are better suited to deal with some economic and financial relationships,<sup>11</sup> the analysis of families allows us to better determine the birth and the dissolution of this institution.

The research has borrowed the notion of the “minimal household unit (MHU)” proposed by Ermisch and Overton (1985). According to Ermisch (1988, p. 24), “(a)nalysis is easier if the units are such that demographic influences on household formation and composition can be separated from economic influences. In particular, it would be helpful to separate instances of *family* formation and dissolution from *household* formation and dissolution. [...] A minimal household unit is the smallest group of persons within a household that can be considered to constitute a *demographically* definable entity. It is definable in purely demographic terms in the sense that an individual, over his lifetime, moves from one type of MHU to another by means of a simple demographic transition or event”.<sup>12</sup>

Similarly, a “minimal family unit” (MFU) has been defined as a single adult or a couple of adults who are financially independent of their parents, regardless whether they still live in their parents’ house. During their life span, the couple/single may decide to have children, which will be part of the family as long as they are financially dependent from them. The family ceases to exist when all the adults have passed away.<sup>13</sup>

As for couple formation, the model considers the age at which one of the adults joins the other (conventionally, the male) and the average age difference of the couple, conditional upon the age at which the couple starts its life.

The characteristics that have been taken into account in order to define the different types of families are:

1. the number of children (0, 1, 2, 3+);<sup>14</sup>
2. the level of education of each adult (with or without university degree); and
3. the occupation of each adult (dependent worker, self-employed, not employed).

As for the family formation process, the frequency distribution of the probability of the following states, conditional upon the age, have been estimated:

4. being financially independent of their parents;
5. being married;
6. (for women) delivering a child of n-th order, conditional upon having a certain level of education.

As for the structure of the Italian families and the states 5 and 6, the probabilities are based on the sub-sample of cohorts aged 36-55.<sup>15</sup> The probabilities have been applied to the entire population, therefore assuming that social lifestyles and the structure of the labour market are

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<sup>11</sup> For example, households share some fixed costs, such as housing expenses.

<sup>12</sup> The four basic MHU types identified by Ermisch and Overton (1985) are:

1. childless, non-married adults;
2. single parents with their dependent children;
3. childless married couples; and
4. married couples with dependent children.

<sup>13</sup> Therefore, a widow as such is not considered as a “single”, but a member of a “married couple”, being the last survivor of that particular type of family.

<sup>14</sup> For the Italian case, the average number of children for families with more than 2 dependents is 3.1.

<sup>15</sup> The reason for choosing this age interval is two-fold. On one hand, empirical investigation based on the sample survey shows that at the age of 36 all individuals are financially independent. On the other, at the age of 55 all women have delivered their children and most adults are still working (only a small fraction of public employees enjoyed, before 1993, the possibility of an early-retirement scheme based on seniority – See Sartor, 2001, on this point).

cohort-independent.<sup>16</sup> Combining all the different characteristics, 174 different kind of MFUs have been identified: 144 couples, 24 single women and 6 single men.<sup>17</sup> A detailed account of the analytical framework used to generate family data can be found in Appendix I.

### 3. The Structure of Italian Families

The structure of Italian MFUs has been derived from the 1997 survey on households' expenditures run by ISTAT (the National Institute for Statistics) which examines the expenditure structure, the level of income and the individual characteristics of 22,362 households sampled out of 21.5 million. More than one MFU may be derived from one household, as the expenditure survey interviews all individuals sharing the same house.

The structure of MFUs and the frequency distribution of the relevant events mentioned above are summarised in Tables 3a-b and 4 and Figures 1-3. According to the number of children, the modal type of MFU is represented by a couple with 2 dependents (Table 3a). When looking at each of the 174 different MFUs (Table 3b), the model family appears to be made up of two undergraduate adults (a male dependent worker and a non-working female) with 2 children (14.7% of all MFUs), followed by a similar family characterised by both adults being employees (9.0%) and by a family similar to the model type, but with one child only (6.8%). In general, sample data confirm the irrelevance of out-of-wedlock births and living arrangements different from marriage which emerges from previous demographic studies.<sup>18</sup>

As for family formation (Figure 1), non-zero frequencies are observed in the 15-35<sup>19</sup> range of age, 50% of individuals becoming independent by the age of 24 and 75% by the age of 28. Marriage occurs in the 20-43 range of age (Figure 2): 50% of married men get married by the age of 29, and 75% by the age of 32. The average difference of age between men and women monotonically increases with the age of marriage from -2 to +4 years, being equal to +1 and +2 respectively at the age of 29 and 32.

Table 4 and Figure 3a-f report the age at which females deliver their children, divided by graduate and non-graduate women. Overall, the average age ranges from 25 (relative to the first child for undergraduate women with two or three dependents) to 33 (the third child for graduate women). As one would expect, the age at which graduate women deliver their babies is higher than non-graduates, the difference ranging from a minimum of one year (the third child for women with three dependents) to a maximum of four years (the first child for women with two children). The higher volatility of frequency distributions for graduate women depends on the smaller size of the sub-sample, as 90% of women do not hold a university degree.<sup>20 21</sup>

<sup>16</sup> A more realistic approach would require us to estimate the probabilities separately for each of the living cohorts. This, in turn, would require the availability of longitudinal data.

<sup>17</sup> Only single men without children have been considered, as sample data show that no single men appear to have dependent children at the third decimal level. Moreover, the scarcity of single men with children prevented further desegregation of data among different family types.

<sup>18</sup> See, for example, Palomba (1995).

<sup>19</sup> The relatively high age at which some Italians become financially independent is the counterpart of unemployment mostly affecting first-job seekers and the irrelevance of unemployment compensation to the latter category.

<sup>20</sup> The hypothesis that the two fertility sample distributions are generated by the same population distribution was tested. The null hypothesis was rejected at the 5% confidence interval using a Chi-square test (see Hogg and Craig, 1989, pp. 274-75).

<sup>21</sup> It is worth noting that the proportion of graduate men is lower than women.

#### 4. Family GA: Some Results

For each of the 174 MFUs, a generational account has been calculated by summing up the GA of each of its members. It is worth stressing that individual GAs relevant to MFUs substantially differ from traditional GAs. Both are calculated by summing up the net present value<sup>22</sup> of the different tax and spending programmes, whose algebraic sum gives the net tax which is expected to be paid in the remaining lifetime. However, while traditional GAs consider the entire lifetime, each individual GA relevant for any MFU considers only the part of the life that is spent by the individual as member of a family of a certain type.<sup>23</sup> Moreover, when summing up the individual GAs for families with children, tax and spending programmes which refer to children are added to adults' GA starting from the average age at which the woman has delivered the baby.<sup>24</sup>

Appendix II reports the methodological aspects relative to the estimation of the age, gender, education and occupation profiles relative to each of the 84 different tax and spending programmes into which the general government appropriation account has been divided.<sup>25</sup>

Tables 5a-d report the structure of generational accounts for the 48 family types, each being characterised by a different number of dependents (Table 5a refers to families without dependents, Table 5b to 1 child, and so forth). The variability of net taxes is substantial. It ranges from €+141,500 (a net tax) to €56,500 (a net transfer). All childless families face a positive net tax (ranging from €141,500 to €2,700), while 42% of couples with 3 or more dependents receive a net subsidy (a negative net tax, whose largest value reaches €56,500). The fraction of families with 1 or 2 dependents being in a credit position vis-à-vis the state is substantially smaller, being in both cases equal to 13%. As one would expect, families which, for a given demographic structure, pay the smallest amount of net taxes are represented by the unemployed, the singles and single earner couples. At the other extreme of the spectrum, employees pay higher net taxes than the self-employed, despite the fact that the Italian welfare system provides a higher coverage to the former. This is largely explained by the higher incomes reported, on average, by dependent workers.<sup>26</sup>

Along with the net tax paid, the value of the "marginal net subsidy" (henceforth MNS) has been calculated. The MNS represents the difference between the net taxes paid by on MFU of type  $j$  with  $n$  dependents (let's define it  $MNS_{j,n}$ ) and the net taxes paid by a MFU of the same type with one less dependant ( $MNS_{j,n-1}$ ). From a financial point of view, an  $MNS_{j,n}$  indicates the amount of money that should be transferred to a MFU of type  $j$  at the beginning of its life in order to compensate it against a hypothetical situation in which all tax and transfer programmes related to the "marginal" dependent are abolished. Note that the value of the MNS reflects not only transfer programmes, public services and tax allowances directly aimed at dependents, but also tax payments that indirectly relate to the existence of an extra dependent because of any change of adults' earning and spending arrangements.

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<sup>22</sup> Unless otherwise stated, a 5% discount rate has been used, as this value has been used as the baseline scenario in all GAs so far.

<sup>23</sup> For example, an individual spends the first 20 years as a member of a family made up by a couple and three children. From age 21 onwards, that individual may become a member of a childless couple.

<sup>24</sup> Therefore, the net tax paid/received by a one-year old child is added to the mother's net tax when her age is  $i+1$ , where  $i$  is the average age at which the baby is delivered.

<sup>25</sup> The level of desegregation is the same as the one adopted for the traditional GA, summarised in Tables 1 and 2. See also ISAE (1999) and Cardarelli and Sartor (2000) on this point.

<sup>26</sup> Note, however, that the higher average income may also reflect the higher tax evasion and erosion among the self-employed. Although data refer to sample surveys, and not to tax files, higher tax evasion partly affects individual reports to sample surveys.

Figure 4 reports the value of the MNS for four different family-types: i) a family constituted by an employee male and a non-working female (the so-called “modal family”); ii) a nucleus similar to i) but with a self-employed male; iii) a family with both adults being employees, and iv) a single undergraduate employee woman.<sup>27</sup> In each case the amount of MNS is presented according to the number of children (from 0 to 3). For the single woman and the family with the self-employed male, the MNS decreases with the number of children, whereas for the types where there is at least one employee the reduction of MNS is only related to the transition from the second to the third child.

Tables 5a-d also present the main components of net taxes and highlight their relative importance for each of the different family-types. In general, it is worth noting that the net tax decreases as the number of children rises. In case of three children, it becomes negative for the “modal family” and for the one with the self-employed male (the types sub i) and ii)). Such nuclei are expected to receive from the Government net transfers whose net present value respectively amounts to €2,500 and €17,000.

As for the MNS, it depends on: i) tax and spending programmes directly aimed at dependents and ii) the above-mentioned indirect effects caused by the change in family earning and spending patterns due to the presence of dependents. As for i), the direct programmes represent the largest source of subsidy. For the modal family, its net present value amounts to €54,000. The value is largely independent of family type, as most of public programmes are provided on a citizenship basis. Some differences exist among families with most of income represented by wages and salaries, on one side, and the remaining family types, on the other, reflecting the residual categorical component of the Italian welfare system. Cash transfers (maternity and family allowances) are more generous when the share of wages and salaries into family income exceeds 70%.

As for ii), the indirect effects on MNS (Table 6) are primarily caused by the changes in spending patterns and, to a lesser degree, by changes in earnings. Different spending patterns imply a different amount of indirect taxes paid to the government, other things being equal. Three points are worth stressing on this point. First, the increase in indirect taxes paid (because of the larger expenditures needed to raise a child) more than offsets the amount of cash transfers linked to parenthood (tax credits and family allowances) so that, on average, a child still represents a source of a net tax burden to the family. Secondly, this effect is magnified when the share of wages and salaries as a percentage of family income is less than 70%. In other words, not only the cash subsidy is negative, but the burden is larger for families where the major source of income is not from employment. This implies that the risk of poverty is higher for some workers than others. Third, the size of the changes in the indirect component of the MNS are positively related to the level of education. When comparing the indirect taxes paid by a couple of graduate employees (family type FGEMMGEM – see the legend attached to Tables 5a-d) with a couple of undergraduates (FNGEMMNGEM), the increase related to the first child is smaller for graduates (€1,209 as compared with €2,130).

In most of the cases the amount of the indirect taxes paid reduces when the number of children exceeds one, reflecting the existence of economies of scale in spending. For example, during its entire lifetime the “modal” family with two children pays indirect taxes equal to about €5,700 at present value more than one-child family, whereas the additional burden amounts to less than €3,600 for the third son.

Turning back to the overall size of the MNS, a difference can be observed with respect to the degree of education. When adults hold a university degree, the MNS is lower, as the net present value of benefits is smaller. As an example, for the first child the MNS for the modal family is

<sup>27</sup> These are the characteristics of the most frequent single woman.

equal to €4,500 in net present value, while it equals €3,100 for a family identical to the modal one except for the education level of the adults. The diversity reflects two effects. The first one, which is relevant to the direct component of MNSs, depends on discounting. As mentioned in the previous paragraph, the average age at which women deliver their children is higher for graduate women. This implies that families with graduate women will receive public benefits at a later stage of their life, therefore reducing the net present value of the transfers. The second effect refers to the indirect component of MNSs. It is caused by the differences in the absolute amount of both direct and indirect taxes, and is independent of discounting. Tax payments are larger for families with graduated adults, as their incomes are, on average, higher than the undergraduates. However, as graduates enter the labour market later than undergraduates, the difference is partly offset by discounting.

Finally, Table 7 reports the annual value of public programmes directly benefiting a family with dependents. Both the annual values and the net present values show that the largest programme is represented by education (59% of the net present value, or 54% of the undiscounted value of the MNS enjoyed by the “modal” family), followed by health care and by cash transfers – as far as a family characterised by a large incidence of wages and salaries is concerned. Given the low likelihood to incur health problems when young, the universal public health care system plays an insurance role rather than being a source of subsidy for the family with children, as it represents less than 11% of the MNS for the “modal” family. As for money transfers, a one-child family yearly receives direct cash benefits whose magnitude declines with age, from about €7,500 when the son is 10 years old to €2,200 when he is 25.

All in all, the Italian welfare system conveys the largest proportion of the subsidies aimed at children by the public provision of education. This perspective increases the relevance of the issues on the efficiency of public education, as well as its coverage of the population – particularly for higher levels (secondary and university) which still benefit too small a proportion of the young. The role of monetary transfers is limited in size and scope, as this instrument is still characterised by a categorical scheme which favours dependent workers. There is ample scope for increasing the role of cash transfers as an effective way of fighting poverty among families whose adults are not employees. The major obstacle to the transformation of the current categorical system into an effective universal one is represented by tax evasion and erosion, which still substantially affects non-salary incomes. With high differences in tax avoidance, reference to a standard income threshold for granting cash transfers may increase inequalities.

This study has shown that a relevant source of variability of the MNSs across family types is represented by the indirect effects of tax changes caused by the different income and spending behaviours. The effects of different spending patterns dominate the difference in earning profiles. Overall, the indirect change in taxes paid by families with different reproductive patterns offsets direct cash transfers. According to our estimates, the current set of cash transfers is not enough to fully offset the higher taxation even for the most-favoured family types (e.g. employees). Apart from the above-mentioned distributional issues, an increase in cash transfers is advisable to offset the higher indirect taxation that affects families with dependents.

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## Annex 1

### The Analytical Framework of Family Generational Accounting

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This annex illustrates the analytical computations needed to get the GAs for each family type.

Let  $P_{m,i}$  and  $P_{f,i}$  be respectively the male and the female population aged  $i$  years,  $i$  ranging from 0 to 101.

Let  $\Pi_{m,i}$ ,  $\Pi_{f,i}$  and  $\bar{\Pi}_i$  be respectively male, female and mean surviving rates at age  $i$ .

Let  $\alpha_{1,G,i}$ ,  $\alpha_{1,NG,i}$  be fertility rates by age of respectively graduate and undergraduate women having only one child.

Let  $\alpha_{1,G,i}$ ,  $\alpha_{2,G,i}$ ,  $\alpha_{1,NG,i}$ ,  $\alpha_{2,NG,i}$  be fertility rates by age of respectively graduate and undergraduate women having two children.

Let  $\alpha_{1,G,i}$ ,  $\alpha_{2,G,i}$ ,  $\alpha\gamma_{3,G,i}$ ,  $\alpha\gamma_{1,NG,i}$ ,  $\alpha_{2,NG,i}$  e  $\alpha_{3,NG,i}$  be fertility rates by age of respectively graduate and undergraduate women having three or more children.

The general case is  $\alpha_{nc,sc,i}$ .

Let  $\Omega_{m,i}$ ,  $\Omega_{f,i}$  be the cumulated frequencies by age of male and female financial independence.

Let  $\Psi_{m,i}$ ,  $\Psi_{f,i}$  be respectively the male and female marriage cumulated frequencies by age.

Let  $W_k$  be the weight of family  $k$ .

Let  $M_{m,i,M}$  be the number of surviving married males aged  $i$ ; Let  $M_{m,i,S}$  be the number of surviving single males aged  $i$ ; Let  $F_{m,i,M}$  be the number of surviving married females aged  $i$ ; Let  $F_{m,i,S}$  be the number of surviving single females aged  $i$ .  $M_{m,i,M} = P_{m,i} * \Omega_{m,i} * \Psi_{m,i}$ , where  $M_{m,i,S}$  and  $F_{m,i,S}$  denote the marital status.

Let  $Pro_{j,k,m,i}$  be the  $j$ -th profile of a male belonging to the  $k$ -th family at the age  $i$ ,  $Pro_{j,k,f,i}$  be the  $j$ -th profile of a female belonging to the  $k$ -th family at the age  $i$  and  $Ch_{j,k,i}$  be the  $j$ -th profile of a child belonging to the  $k$ -th family at the age  $i$ .

$Profile_{j,k}$  - the weighed  $j$ -th profile of the  $k$ -th family, is defined as follows:

$$Profile_{j,k} = \sum_{i=0}^{101} [Pro_{j,k,m,i} * M_{m,i,S} + Pro_{j,k,f,i} * (F_{m,i,S} + Ch_{j,k,i} * nCh)] * W_k$$

where  $nCh$  is the number of children in the family.

In order to ensure that the sum of all profiles across all living individuals equals the *Aggregate\_Value* reported in the General Government Appropriation Account, the mean value of each profile  $j$  ( $MVP_j$ ) is determined as follows:

$$MVP_j = \frac{Aggregate\_Value}{\sum_{k=1}^{n\_family} Profile_{j,k}}$$

For each family type ( $k$ ) the profiles of every components are calculated as follows:

$$Man_{i,j} = \Pi_{m,i} * \Omega_{m,i} * Pr\ of\ file_{j,k,m,i} * MVP_j$$

$$W\ om\ an_{i,j} = \Pi_{f,i} * \Omega_{f,i} * Pr\ of\ file_{j,k,f,i} * MVP_j$$

$$Child_{nc,i,j} = \sum_{i=0}^{101} \alpha_{nc,sc,i} * \bar{\Pi}_i * (1 - \Omega_{m,i}) * Pr\ of\ file_{j,k,f,i} * MVP_j$$

The average age at which each representative women with education  $ns$  delivers the first, second and third child can be easily obtained as

$$MAge = \sum_{i=0}^{101} i * \alpha_{nc,ns,i}$$

For each of the 84 different tax and spending programmes, the annual value paid/received by a family is calculated as the sum of individual values

$$FamGA_{i,j} = Man_{i,j} + Woman_{i,j} + Child_{nc,sc,i+MAge}$$

Finally, the family Generational Account is determined as the sum of the net present values of the programs for the entire lifetime:

$$\sum_{j=1}^{n.pro} \sum_{i=0}^{101} FamGA_{i,j} * \left( \frac{1}{1+ts} \right)^i$$

where  $ts$  is discount factor.

## Annex 2

### The Estimation of Individual Profiles

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Individual profiles – that is, the average per capita value of benefits received and taxes paid by each type of individual – are estimated according to the methodology outlined in this Annex. The estimate is subject to the constraint that, for each of the 84 different tax and spending programmes, the sum of profiles across the population equals the aggregate value reported in the general government appropriation account (see Annex 1 and Table 8).

#### 1. Individual Profiles

Unlike the traditional approach, individual profiles are determined not only by sex and age, but also by the other individual characteristics that are assumed to be relevant to the analysis. Individuals are classified according to:

1. marital status: either single or married, the latter including divorced and unmarried couples;
2. education: graduate or undergraduate;
3. working status: worker or non-worker. In particular, a distinction is drawn between employed, unemployed, retirees with pensions from past working activity, on one hand, and retirees receiving “non-contributory” pensions, non-job-seekers (like housewives), and job-seekers or non-dependant students, on the other;
4. profession: employee or self-employed; and
5. number of children: 0, 1, 2, 3+.

In many cases, the legal arrangement is such that transfers benefiting a specific family member (e.g. the spouse or the child) are paid to the head of household (or to a working family member). Similarly, taxes are originated (at least partially) by family members different from those who actually pay the tax due. As a general rule, taxes paid or benefits received have been imputed to the family components causing them, even if he/she differs from the payer/receiver.

Children's profiles have been associated with their mothers' attributes, the only exception being represented by the cases (such as family allowances) in which the fathers' characteristics may be relevant for the transfer/tax attribution to children.

In all cases where the many relevant characteristics cause a fragmentation of the reference population into very small sub-groups,<sup>28</sup> due to the sample size, aggregations were made referring to the less relevant characteristics.<sup>29</sup> In these cases a standard profile was applied to all sub-group members.

The following sections describe the methodology followed to estimate the most relevant profiles (in terms of overall financial effects on the public budget).

#### 1.1 General government revenue

Four different tax categories have been identified: direct taxes on labour, real capital (equities and real estates), taxes on financial capital and indirect taxes.

##### *Direct taxes*

The ISAE static micro-simulation model (Itaxmod) was used for the items concerning labour income taxation and real estate taxes. The model computes direct taxes and monetary benefits

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<sup>28</sup> By considering 2 modalities for gender, 2 for the civil status, 2 for education, 3 for the working and professional status and 4 for the number of children, 96 population sub-groups emerge.

<sup>29</sup> Interpolated values are computed for profiles presenting some age brackets gaps.

by applying current legal arrangements to the 1998 Bank of Italy Survey on Households' Income and Wealth. The survey covers 7,147 families for a total of 20,901 individuals and includes detailed information on the main demographic and professional characteristics of the individuals, as well as their incomes, savings and wealth.

As for the imputation criterion, the direct taxation burden is attributed to taxpayers, an exception being represented by taxes on residence home, which are split between parents and children.

### *Indirect taxes*

Individual profiles have been derived from ISAE's "Ivamod" simulation model, based on ISTAT (Italian Institute for Statistics) Survey on Households' Consumption for the year 1997.<sup>30</sup> The ISTAT sample surveys more than 22,000 families (about 64,000 individuals). There are approximately 500 variables relevant for the analysis, 300 of which refer to expenditure items. This allows to take account of detailed information on households' consumption and their demographic and social-economic characteristics.

In estimating indirect tax profiles, all family members of any age or working status have been assumed to give rise to some consumption of goods and are responsible for a share of the indirect taxes paid by the family. A set of the so-called "OECD modified equivalence scales" was used for the purpose. According to this approach, families of different sizes and compositions are transformed into "equivalent individuals". The scale-composing coefficients indicate the larger or smaller amount of expenditure (or income) that is necessary for two households of different sizes and/or social-economic status to have the same well-being, under the simplified hypothesis that disposable income and expenditures on consumption goods determine family welfare.

Letting  $\sigma^i$  be the scale coefficient for the  $i^{\text{th}}$  family,  $C^i$  total consumption and  $CEQ^i$  the equivalent consumption,

$$[1] \quad CEQ^i = \frac{C^i}{\sigma^i}.$$

The so-called "OECD modified scale" proves particularly suitable to the present purposes, as it attaches a different weight to individuals according to their age. In particular, it is expressed by

$$[2] \quad \sigma^i = 1 + 0,5(NAD^i - 1) + 0,3NMIN^i,$$

where  $NAD$  and  $NMIN$  denote respectively the number of adults and minors (up to 17 years of age) living in the  $i^{\text{th}}$  family.

According to the OECD approach, dependents are assigned the larger consumption share for which they are responsible: their share of total consumption may be computed by comparing the total family expenditure with the expenditure the family should bear to maintain the same level of well-being, in the absence of dependents. The estimate is obtained by taking the ratio of the equivalence coefficients  $\sigma^i$ .

Finally, to correctly compute the VAT. imputed to each member of the family, some expenditure items have been split into sub-groups, according to the different VAT. rates applied, using the official weighting coefficients relevant to the consumer price index.

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<sup>30</sup> 1997 survey data were updated to 1999 on the basis of the percentage change of National Accounts aggregate data between the two years.

## **1.2 General government expenditures**

Four main categories are identified: pensions, social assistance, health care and education. Health care expenditure is further divided into expenditure for hospital care, drugs and other health services, while education is split into expenditures related to the school system and universities. Both are assumed to depend on age and gender as well as parents' working status and level of education.

Most expenditure profiles are computed on the basis of administrative data provided by ISTAT and INPS (National Institute for Social Security).

Non-administrative data sources are used for family allowance profiles (computed through the Itaxmod model), and indemnity allowances covering professional risks (estimated on the basis of the Bank of Italy survey data). Old age and seniority pensions profiles are derived from an ad-hoc simulation model developed by Cardarelli and Sartor (2000) that allows us to take into account the future effects of the pension reforms enacted in the 1990s.

Table 1. Generational accounts for all living cohorts (1999 euros ;  $r = 5\%$ ,  $g = 1.5\%$ )

Age	Total	Taxes on labour	Taxes on capital	Taxes on real estate	Indirect taxes	Social contributions	Other revenues	Health	Education	Pensions	Labour market and family	Other social security	Assistance	Other expenditures
Males														
0	24,871	47,438	18,488	4,362	50,562	67,818	30,489	-20,716	-53,048	-29,823	-8,634	-1,368	-3,146	-77,553
10	91,366	65,929	25,687	6,061	65,384	92,083	30,358	-21,524	-40,400	-38,233	-12,000	-1,787	-3,941	-76,251
20	188,136	89,321	34,964	8,248	83,685	114,784	29,712	-24,821	-6,087	-45,615	-16,162	-2,254	-4,371	-73,269
30	200,004	100,239	44,953	10,018	93,165	108,330	27,818	-27,810	-114	-63,127	-18,909	-2,717	-4,350	-67,492
40	154,270	84,736	53,346	10,104	84,633	83,551	25,241	-32,272	0	-70,262	-16,119	-3,094	-4,356	-61,236
50	-5,327	48,700	48,653	8,240	64,664	46,678	21,444	-37,119	0	-134,266	-11,867	-3,397	-4,740	-52,317
60	-136,177	12,477	34,820	4,762	41,354	3,387	16,824	-39,588	0	-154,844	-6,021	-3,044	-5,785	-40,517
70	-138,077	1,045	16,339	1,947	23,527	0	12,085	-35,676	0	-115,463	-5,141	-2,196	-6,027	-28,517
80	-97,276	138	3,406	752	12,049	0	7,621	-24,207	0	-70,080	-3,004	-1,335	-5,128	-17,489
90+	-56,822	33	174	30	6,375	0	4,638	-13,642	0	-38,476	-1,371	-732	-4,481	-9,369
Females														
0	-38,079	27,705	6,815	2,363	34,530	42,724	28,403	-18,781	-52,217	-25,713	-5,318	-1,065	-4,503	-73,023
10	2,790	38,612	9,493	3,292	43,503	58,437	28,228	-19,996	-40,035	-32,068	-7,412	-1,370	-5,929	-71,962
20	69,557	52,473	12,986	4,492	54,223	73,650	27,601	-24,108	-5,857	-37,404	-9,964	-1,693	-7,345	-69,497
30	61,728	52,226	16,657	5,468	57,426	69,069	26,087	-26,165	-70	-53,681	-9,513	-1,956	-8,791	-65,030
40	2,084	38,132	19,350	5,785	51,060	45,076	24,284	-28,372	0	-73,566	-6,356	-2,204	-10,841	-60,265
50	-82,829	15,851	21,847	5,076	41,260	16,618	21,694	-31,822	0	-100,769	-3,700	-2,409	-13,520	-52,955
60	-121,103	2,352	18,448	4,029	32,944	305	18,222	-33,385	0	-99,215	-2,536	-2,227	-16,782	-43,259
70	-100,534	531	14,209	2,518	23,112	0	13,610	-30,564	0	-72,675	-2,082	-1,650	-16,089	-31,454
80	-72,711	110	5,008	750	14,036	0	8,757	-22,682	0	-45,338	-1,270	-1,043	-11,722	-19,317
90+	-40,937	36	134	74	7,507	0	4,699	-12,509	0	-22,022	-689	-514	-8,255	-9,396

*Table 2. Conventional generational accounts, 1999*

Indicators of disequilibrium	
Difference in net taxes (future generations minus born in 1999)	€14,233
Tax increase for future generations	7.9%
Intertemporal disequilibrium (% of debt)	31.4%
Tax increase for all generations	2.50%
Expenditure reduction for all generations	-2.65%

*Table 3a. Italian family composition*

	Couples	Single M	Single F	Total
Childless	6.44	6.17	4.41	17.02
1 child	23.18	0.00	3.04	26.22
2 children	40.77	0.00	2.35	43.12
3+ children	12.63	0.00	1.02	13.65
Total	83.02	6.17	10.81	100.00

*Source:* Our elaborations on Istat (1997) data.

Table 3b. Italian family composition

Childless	Couples							Single	
	FEMALE	Non-graduate			Graduate			MALE	FEMALE
MALE		Non-working	Employee	Self-employed	Non-working	Employee	Self-employed		
Non-graduate	Non-working	0.12	0.09	0.02	0.00	0.01	0.00	0.48	0.83
	Employee	1.67	1.69	0.18	0.04	0.20	0.01	3.44	2.39
	Self-employed	0.52	0.40	0.41	0.05	0.07	0.05	1.36	0.45
Graduate	Non-working	0.00	0.02	0.00	0.00	0.00	0.00	0.07	0.01
	Employee	0.11	0.13	0.00	0.01	0.35	0.01	0.58	0.63
	Self-employed	0.02	0.07	0.05	0.01	0.11	0.01	0.24	0.11

1 Child	Couples							Single	
	FEMALE	Non-graduate			Graduate			MALE	FEMALE
MALE		Non-working	Employee	Self-employed	Non-working	Employee	Self-employed		
Non-graduate	Non-working	0.61	0.25	0.13	0.01	0.02	0.01	0.00	0.72
	Employee	6.88	6.35	0.82	0.18	0.46	0.11	0.00	1.62
	Self-employed	2.19	1.29	1.16	0.06	0.15	0.04	0.00	0.30
Graduate	Non working	0.05	0.02	0.00	0.00	0.01	0.00	0.00	0.01
	Employee	0.47	0.56	0.08	0.09	0.65	0.05	0.00	0.32
	Self-employed	0.12	0.11	0.05	0.06	0.08	0.08	0.00	0.07

2 Child	Couples							Single	
	FEMALE	Non-graduate			Graduate			MALE	FEMALE
MALE		Non-working	Employee	Self-employed	Non-working	Employee	Self-employed		
Non-graduate	Non-working	1.35	0.50	0.07	0.01	0.00	0.00	0.00	0.87
	Employee	14.75	9.02	1.12	0.13	0.92	0.04	0.00	1.08
	Self-employed	4.48	1.73	2.01	0.06	0.31	0.05	0.00	0.20
Graduate	Non-working	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.01
	Employee	0.74	0.77	0.07	0.18	1.15	0.13	0.00	0.18
	Self-employed	0.33	0.20	0.07	0.11	0.22	0.24	0.00	0.01

3+ Child	Couples							Single	
	FEMALE	Non-graduate			Graduate			MALE	FEMALE
MALE		Non-working	Employee	Self-employed	Non-working	Employee	Self-employed		
Non-graduate	Non-working	0.69	0.08	0.07	0.00	0.01	0.00	0.00	0.53
	Employee	5.18	1.94	0.17	0.05	0.18	0.01	0.00	0.30
	Self-employed	2.09	0.34	0.70	0.01	0.08	0.04	0.00	0.12
Graduate	Non-working	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	Employee	0.21	0.19	0.01	0.06	0.26	0.01	0.00	0.06
	Self-employed	0.05	0.04	0.04	0.04	0.06	0.04	0.00	0.01

Source: Our elaborations on Istat (1997) data.



*Table 4. Average age at birth*

	1 child	2 children		3 children		
		1st	2nd	1st	2nd	3rd
Non-graduate	29	25	30	25	28	32
Graduate	31	29	32	28	30	33

*Source:* Our elaborations on Istat (1997) data.

**Legend to Tables 5a-5d and Table 6 on the following pages:**

In the following order:

Gender: M=Male, F=Female

Education: NG =Non-graduate; G=Graduate

Occupation: NW=Non-working, E=Employee, SE= Self-employed

Marital Status: S=Single, M=Married

E.g. FNGNWMMGEM1 = Female Non-graduate Non-working Married Men Graduate Employee with 1 child

Table 5a. Generational accounts for Italian families – Childless (euro)

Family types	REVENUES					EXPENDITURES							NET TAXES	
	DIRECT TAXES		INDIRECT TAXES	SOCIAL CONTRIB.	OTHER	HEALTH	EDUCATION	PENSIONS	TAX CREDITS	FAMILY ALLOWAN.	UNEM. BENEFITS AND POV. RELIEF	MATERNITY ALLOWAN.		OTHER
	Labour tax	Capital tax												
FNGNWMNGNWM0	0	9,660	39,350	0	9,076	-10,835	0	-4,584	0	0	-637	0	-35,285	6,745
FNGEMMNGNWM0	33,110	9,360	44,552	54,047	9,122	-10,835	0	-22,777	-1,611	-2,292	-2,164	0	-38,573	71,939
FNGSEMMNGNWM0	30,412	10,381	44,873	15,954	9,233	-10,835	0	-9,331	-1,656	0	-276	0	-35,284	53,471
FGNWMNGNWM0	0	9,660	39,350	0	9,076	-8,643	0	-4,584	0	0	-637	0	-35,285	8,937
FGEMMNGNWM0	28,910	9,535	42,617	38,570	9,055	-8,643	0	-22,777	-1,611	-2,292	-2,164	0	-38,552	52,648
FGSEMMNGNWM0	37,503	10,381	44,142	15,954	9,148	-8,643	0	-9,331	-1,656	0	-276	0	-35,284	61,939
FNGNWMNGEM0	27,120	12,995	44,925	44,825	9,228	-10,835	0	-17,644	-2,950	-1,110	-1,650	0	-36,017	68,887
FNGEMMNGEM0	60,229	12,695	50,127	98,872	9,275	-10,835	0	-35,836	-224	-345	-3,178	0	-39,306	141,475
FNGSEMMNGEM0	57,532	13,716	50,448	60,779	9,385	-10,835	0	-22,390	-269	-340	-1,290	0	-36,016	120,721
FGNWMNGEM0	27,120	12,995	44,925	44,825	9,228	-8,643	0	-17,644	-2,950	-1,110	-1,650	0	-36,017	71,079
FGEMMNGEM0	56,029	12,870	48,192	83,395	9,207	-8,643	0	-35,836	-224	-345	-3,178	0	-39,284	122,185
FGSEMMNGEM0	64,623	13,716	49,717	60,779	9,301	-8,643	0	-22,390	-269	-340	-1,290	0	-36,016	129,188
FNGNWMNGSEM0	23,534	14,682	46,195	12,591	9,343	-10,835	0	-8,119	-2,961	0	-361	0	-32,482	51,587
FNGEMMNGSEM0	56,644	14,383	51,396	66,638	9,389	-10,835	0	-26,312	-235	-350	-1,888	0	-35,771	123,060
FNGSEMMNGSEM0	53,946	15,404	51,717	28,545	9,500	-10,835	0	-12,866	-281	0	0	0	-32,481	102,650
FGNWMNGSEM0	23,534	14,682	46,195	12,591	9,343	-8,643	0	-8,119	-2,961	0	-361	0	-32,482	53,779
FGEMMNGSEM0	52,444	14,558	49,461	51,161	9,322	-8,643	0	-26,312	-235	-350	-1,888	0	-35,749	103,769
FGSEMMNGSEM0	61,037	15,404	50,987	28,545	9,415	-8,643	0	-12,866	-281	0	0	0	-32,481	111,118
FNGNWMGNWM0	0	9,660	39,350	0	9,076	-8,643	0	-4,584	0	0	-637	0	-35,285	8,937
FNGEMMGNWM0	33,110	9,360	44,552	54,047	9,122	-8,643	0	-22,777	-1,611	-2,292	-2,164	0	-38,573	74,131
FNGSEMMGNWM0	30,412	10,381	44,873	15,954	9,233	-8,643	0	-9,331	-1,656	0	-276	0	-35,284	55,663
FGNWMGNWM0	0	9,660	39,350	0	9,076	-8,643	0	-4,584	0	0	-637	0	-35,285	8,937
FGEMMGNWM0	28,910	9,535	42,617	38,570	9,055	-8,643	0	-22,777	-1,611	-2,292	-2,164	0	-38,552	52,648
FGSEMMGNWM0	37,503	10,381	44,142	15,954	9,148	-8,643	0	-9,331	-1,656	0	-276	0	-35,284	61,939
FNGNWMNGEM0	27,403	13,142	43,066	42,779	9,168	-8,643	0	-17,644	-2,950	-340	-1,650	0	-36,185	68,146
FNGEMMGEM0	60,513	12,842	48,267	96,825	9,214	-8,643	0	-35,836	-224	-345	-3,178	0	-39,473	139,963
FNGSEMMGEM0	57,815	13,864	48,589	58,732	9,325	-8,643	0	-22,390	-269	-340	-1,290	0	-36,183	119,209
FGNWMNGEM0	27,403	13,142	43,066	42,779	9,168	-8,643	0	-17,644	-2,950	-340	-1,650	0	-36,185	68,146
FGEMMGEM0	56,313	13,018	46,333	81,349	9,147	-8,643	0	-35,836	-224	-345	-3,178	0	-39,452	118,481
FGSEMMGEM0	64,906	13,864	47,858	58,732	9,240	-8,643	0	-22,390	-269	-340	-1,290	0	-36,183	125,484
FNGNWMNGSEM0	26,948	14,619	43,126	9,856	9,207	-8,643	0	-8,119	-2,961	0	-361	0	-32,413	51,260
FNGEMMGSEM0	60,058	14,320	48,327	63,903	9,253	-8,643	0	-26,312	-235	-2,292	-1,888	0	-35,702	120,790
FNGSEMMGSEM0	57,360	15,341	48,648	25,810	9,364	-8,643	0	-12,866	-281	0	0	0	-32,412	102,322
FGNWMNGSEM0	26,948	14,619	43,126	9,856	9,207	-8,643	0	-8,119	-2,961	0	-361	0	-32,413	51,260
FGEMMGSEM0	55,858	14,495	46,393	48,427	9,186	-8,643	0	-26,312	-235	-2,292	-1,888	0	-35,680	99,308
FGSEMMGSEM0	64,451	15,341	47,918	25,810	9,279	-8,643	0	-12,866	-281	0	0	0	-32,412	108,598
FNGNWS0	0	7,975	25,831	0	5,661	-6,743	0	-268	0	0	-361	0	-20,175	11,921
FNGES0	33,995	7,596	30,508	58,602	5,657	-6,743	0	-18,285	0	0	-1,981	0	-23,634	85,715
FNGSES0	45,845	8,641	33,854	22,099	5,698	-6,743	0	-6,355	0	0	0	0	-20,181	82,858
FGNWS0	0	7,975	26,387	0	5,681	-5,340	0	-268	0	0	-361	0	-20,175	13,899
FGES0	33,964	7,769	30,503	40,312	5,657	-5,340	0	-18,285	0	0	-1,981	0	-23,830	68,769
FGSES0	45,845	8,641	34,216	22,099	5,739	-5,340	0	-6,355	0	0	0	0	-20,181	84,664
MNGNWS0	0	2,297	22,042	0	5,423	-4,924	0	-124	0	0	-276	0	-21,688	2,750
MNGES0	34,997	5,747	26,840	56,817	5,442	-4,924	0	-13,212	0	0	-1,405	0	-22,592	87,709
MNGSES0	23,961	7,439	26,313	17,245	5,555	-4,924	0	-3,659	0	0	0	0	-18,576	53,355
MGNWS0	0	2,297	21,453	0	5,442	-3,972	0	-124	0	0	-276	0	-21,688	3,134
MGES0	34,997	5,747	28,681	48,155	5,556	-3,972	0	-13,212	0	0	-1,405	0	-22,430	82,117
MGSES0	23,961	7,439	28,506	17,245	5,593	-3,972	0	-3,659	0	0	0	0	-18,576	56,538

Table 5b. Generational accounts for Italian families – 1 child (euro)

Family types	REVENUES					EXPENDITURES							NET TAXES	
	DIRECT TAXES		INDIRECT TAXES	SOCIAL CONTRIB.	OTHER	HEALTH	EDUCATION	PENSIONS	TAX CREDITS	FAMILY ALLOWAN.	UNEM. BENEFITS AND POV. RELIEF	MATERNITY ALLOWAN.		OTHER
	Labour tax	Capital tax												
FNGNWMNGNWM1	0	9,671	42,765	0	10,909	-13,230	-13,257	-4,699	0	0	-637	0	-45,933	-14,411
FNGEMMNGNWM1	33,110	9,469	48,011	54,047	10,971	-13,230	-13,326	-22,872	-2,176	-3,398	-2,164	-1,426	-49,325	47,692
FNGSEMMNGNWM1	30,412	10,416	47,429	15,954	11,050	-13,230	-13,324	-9,956	-2,253	0	-276	0	-46,021	30,199
FGNWMNGNWM1	0	9,670	42,181	0	10,715	-10,763	-12,472	-4,688	0	0	-637	0	-44,943	-10,937
FGEMMNGNWM1	28,910	9,646	45,250	38,570	10,736	-10,763	-12,472	-22,863	-1,590	-3,199	-2,164	-1,290	-48,317	30,455
FGSEMMNGNWM1	37,503	10,413	47,298	15,954	10,793	-10,763	-12,472	-9,898	-1,641	0	-276	0	-45,023	41,889
FNGNWMNGEM1	27,120	13,006	47,011	44,825	11,014	-13,230	-13,257	-17,758	-3,210	-2,864	-1,650	0	-46,666	44,341
FNGEMMNGEM1	60,229	12,804	52,257	98,872	11,076	-13,230	-13,326	-35,931	-789	-1,430	-3,178	-1,426	-50,057	115,872
FNGSEMMNGEM1	57,532	13,751	51,674	60,779	11,155	-13,230	-13,324	-23,015	-867	-1,165	-1,290	0	-46,753	95,246
FGNWMNGEM1	27,120	13,005	46,426	44,825	10,820	-10,763	-12,472	-17,748	-3,150	-2,710	-1,650	0	-45,676	48,029
FGEMMNGEM1	56,029	12,981	49,495	83,395	10,842	-10,763	-12,472	-35,922	-734	-1,350	-3,178	-1,290	-49,049	97,985
FGSEMMNGEM1	64,623	13,748	51,544	60,779	10,899	-10,763	-12,472	-22,957	-810	-1,093	-1,290	0	-45,755	106,454
FNGNWMNGSEM1	23,534	14,694	46,774	12,591	11,085	-13,230	-13,257	-8,234	-3,222	0	-361	0	-43,131	27,245
FNGEMMNGSEM1	56,644	14,492	52,020	66,638	11,147	-13,230	-13,326	-26,406	-800	-1,585	-1,888	-1,426	-46,522	95,757
FNGSEMMNGSEM1	53,946	15,439	51,437	28,545	11,226	-13,230	-13,324	-13,491	-878	0	0	0	-43,218	76,452
FGNWMNGSEM1	23,534	14,693	46,190	12,591	10,891	-10,763	-12,472	-8,223	-3,162	0	-361	0	-42,141	30,778
FGEMMNGSEM1	52,444	14,669	49,259	51,161	10,912	-10,763	-12,472	-26,398	-746	-1,491	-1,888	-1,290	-45,514	77,884
FGSEMMNGSEM1	61,037	15,436	51,307	28,545	10,970	-10,763	-12,472	-13,432	-821	0	0	0	-42,220	87,586
FNGNWMGNWM1	0	9,671	42,765	0	10,909	-10,980	-13,750	-4,699	0	0	-637	0	-45,933	-12,654
FNGEMMGNWM1	33,110	9,469	48,011	54,047	10,971	-10,980	-13,750	-22,872	-2,176	-3,398	-2,164	-1,426	-49,325	49,517
FNGSEMMGNWM1	30,412	10,416	47,429	15,954	11,050	-10,980	-13,750	-9,956	-2,253	0	-276	0	-46,021	32,023
FGNWMGNWM1	0	9,670	42,181	0	10,715	-10,763	-12,472	-4,688	0	0	-637	0	-44,943	-10,937
FGEMMGNWM1	28,910	9,646	45,250	38,570	10,736	-10,763	-12,472	-22,863	-2,121	-3,199	-2,164	-1,290	-48,317	29,924
FGSEMMGNWM1	37,503	10,413	47,298	15,954	10,793	-10,763	-12,472	-9,898	-2,196	0	-276	0	-45,023	41,334
FNGNWMNGEM1	27,403	13,154	45,057	42,779	10,964	-10,980	-13,750	-17,758	-3,210	-2,045	-1,650	0	-46,833	43,129
FNGEMMGEM1	60,513	12,951	50,303	96,825	11,026	-10,980	-13,750	-35,931	-789	-1,430	-3,178	-1,426	-50,225	113,910
FNGSEMMGEM1	57,815	13,899	49,720	58,732	11,105	-10,980	-13,750	-23,015	-867	-1,165	-1,290	0	-46,921	93,283
FGNWMNGEM1	27,403	13,152	44,472	42,779	10,770	-10,763	-12,472	-17,748	-3,150	-1,891	-1,650	0	-45,843	45,059
FGEMMGEM1	56,313	13,128	47,541	81,349	10,791	-10,763	-12,472	-35,922	-734	-1,350	-3,178	-1,290	-49,217	94,197
FGSEMMGEM1	64,906	13,895	49,590	58,732	10,848	-10,763	-12,472	-22,957	-810	-1,093	-1,290	0	-45,923	102,665
FNGNWMNGSEM1	26,948	14,631	46,541	9,856	11,040	-10,980	-13,750	-8,234	-3,222	0	-361	0	-43,062	29,409
FNGEMMGSEM1	60,058	14,429	51,787	63,903	11,102	-10,980	-13,750	-26,406	-800	-2,263	-1,888	-1,426	-46,453	97,311
FGSEMMGSEM1	57,360	15,373	50,596	25,810	10,985	-10,763	-12,472	-13,432	-821	0	0	0	-42,151	80,485
FGNWMNGSEM1	26,948	14,630	45,956	9,856	10,846	-10,763	-12,472	-8,223	-3,162	0	-361	0	-42,072	31,185
FGEMMGSEM1	55,858	14,606	49,025	48,427	10,867	-10,763	-12,472	-26,398	-746	-2,169	-1,888	-1,290	-45,445	77,612
FGSEMMGSEM1	64,451	15,373	51,074	25,810	10,925	-10,763	-12,472	-13,432	-821	0	0	0	-42,151	87,993
FNGNWS1	0	7,987	31,097	0	7,407	-9,139	-13,257	-322	0	0	-361	0	-30,823	-7,411
FNGES1	33,995	7,601	32,600	58,602	7,487	-9,139	-13,326	-18,315	-737	-2,441	-1,981	-1,426	-34,272	58,648
FNGSES1	45,845	8,676	33,891	22,099	7,667	-9,139	-13,324	-6,960	-737	0	0	0	-30,919	57,100
FGNWS1	0	7,986	30,357	0	7,213	-7,460	-12,472	-317	0	0	-361	0	-29,833	-4,888
FGES1	33,964	7,769	32,026	40,312	7,292	-7,460	-12,472	-18,312	-668	-2,301	-1,981	-1,290	-33,475	43,404
FGSES1	45,845	8,673	33,586	22,099	7,471	-7,460	-12,472	-6,903	-668	0	0	0	-29,920	60,250
MNGNWS1	0	2,297	22,042	0	5,423	-4,924	0	-124	0	0	-276	0	-21,688	2,750
MNGES1	34,997	5,747	26,840	56,817	5,442	-4,924	0	-13,212	0	0	-1,405	0	-22,592	87,709
MNGSES1	23,961	7,439	26,313	17,245	5,555	-4,924	0	-3,659	0	0	0	0	-18,576	53,355
MGNWS1	0	2,297	21,453	0	5,442	-3,972	0	-124	0	0	-276	0	-21,688	3,134
MGES1	34,997	5,747	28,681	48,155	5,556	-3,972	0	-13,212	0	0	-1,405	0	-22,430	82,117
MGSES1	23,961	7,439	28,506	17,245	5,593	-3,972	0	-3,659	0	0	0	0	-18,576	56,538

Table 5c. Generational accounts for Italian families – 2 children (euro)

Family types	REVENUES					EXPENDITURES							NET TAXES	
	DIRECT TAXES		INDIRECT TAXES	SOCIAL CONTRIB.	OTHER	HEALTH	EDUCATION	PENSIONS	TAX CREDITS	FAMILY ALLOWAN.	UNEM. BENEFITS AND POV. RELIEF	MATERNITY ALLOWAN.		OTHER
	Labour tax	Capital tax												
FNGNWMMNGNWM2	0	9,685	49,089	0	13,322	-16,028	-28,739	-4,833	0	0	-637	0	-58,370	-36,510
FNGEMMNGNWM2	33,110	9,576	53,885	54,047	13,385	-16,028	-28,888	-22,982	-2,873	-6,157	-2,164	-3,035	-61,859	20,017
FNGSEMMNGNWM2	30,412	10,457	53,897	15,954	13,487	-16,028	-28,886	-10,686	-3,221	0	-276	0	-58,561	6,549
FGNWMMNGNWM2	0	9,682	47,252	0	12,688	-12,999	-25,629	-4,798	0	0	-637	0	-55,132	-29,572
FGEMMNGNWM2	28,910	9,540	49,534	38,570	12,711	-12,999	-25,629	-22,953	-1,605	-5,487	-2,164	-2,624	-58,374	7,431
FGSEMMNGNWM2	37,503	10,447	53,268	15,954	12,811	-12,999	-25,629	-10,496	-1,626	0	-276	0	-55,296	23,661
FNGNWMMNGEM2	27,120	13,020	52,665	44,825	13,397	-16,028	-28,739	-17,892	-3,877	-5,423	-1,650	0	-59,102	18,316
FNGEMMNGEM2	60,229	12,911	57,461	98,872	13,460	-16,028	-28,888	-36,041	-1,486	-2,559	-3,178	-3,035	-62,592	89,127
FNGSEMMNGEM2	57,532	13,792	57,474	60,779	13,561	-16,028	-28,886	-23,745	-1,834	-2,384	-1,290	0	-59,294	69,678
FGNWMMNGEM2	27,120	13,017	50,828	44,825	12,763	-12,999	-25,629	-17,857	-3,694	-4,839	-1,650	0	-55,864	26,021
FGEMMNGEM2	56,029	12,875	53,111	83,395	12,786	-12,999	-25,629	-36,012	-1,308	-2,291	-3,177	-2,624	-59,106	75,050
FGSEMMNGEM2	64,623	13,782	56,845	60,779	12,886	-12,999	-25,629	-23,555	-1,611	-2,110	-1,290	0	-56,029	85,693
FNGNWMMNGSEM2	23,534	14,708	52,824	12,591	13,465	-16,028	-28,739	-8,368	-3,889	0	-361	0	-55,567	4,171
FNGEMMNGSEM2	56,644	14,599	57,620	66,638	13,528	-16,028	-28,888	-26,517	-1,497	-2,899	-1,888	-3,035	-59,056	69,220
FNGSEMMNGSEM2	53,946	15,480	57,633	28,545	13,629	-16,028	-28,886	-14,220	-1,846	0	0	0	-55,758	52,494
FGNWMMNGSEM2	23,534	14,704	50,987	12,591	12,830	-12,999	-25,629	-8,333	-3,705	0	-361	0	-52,329	11,292
FGEMMNGSEM2	52,444	14,563	53,270	51,161	12,853	-12,999	-25,629	-26,488	-1,320	-2,585	-1,888	-2,624	-55,571	55,189
FGSEMMNGSEM2	61,037	15,469	57,004	28,545	12,953	-12,999	-25,629	-14,030	-1,622	0	0	0	-52,494	68,235
FNGNWMMGNWM2	0	9,685	49,089	0	13,322	-13,709	-29,810	-4,833	0	0	-637	0	-58,370	-35,261
FNGEMMGNWM2	33,110	9,576	53,885	54,047	13,385	-13,709	-29,810	-22,982	-2,873	-6,157	-2,164	-3,035	-61,859	21,415
FNGSEMMGNWM2	30,412	10,457	53,897	15,954	13,487	-13,709	-29,810	-10,686	-3,221	0	-276	0	-58,561	7,944
FGNWMMGNWM2	0	9,682	47,252	0	12,688	-12,999	-25,629	-4,798	0	0	-637	0	-55,132	-29,572
FGEMMGNWM2	28,910	9,540	49,534	38,570	12,711	-12,999	-25,629	-22,953	-2,695	-5,487	-2,164	-2,624	-58,374	6,341
FGSEMMGNWM2	37,503	10,447	53,268	15,954	12,811	-12,999	-25,629	-10,496	-2,997	0	-276	0	-55,296	22,290
FNGNWMMGM2	27,403	13,167	50,623	42,779	13,332	-13,709	-29,810	-17,892	-3,877	-4,592	-1,650	0	-59,269	16,505
FNGEMMGEM2	60,513	13,058	55,419	96,825	13,396	-13,709	-29,810	-36,041	-1,486	-2,559	-3,178	-3,035	-62,759	86,635
FNGSEMMGM2	57,815	13,939	55,432	58,732	13,497	-13,709	-29,810	-23,745	-1,834	-2,384	-1,290	0	-59,461	67,183
FGNWMMGM2	27,403	13,164	48,786	42,779	12,698	-12,999	-25,629	-17,857	-3,694	-4,007	-1,650	0	-56,032	22,962
FGEMMGEM2	56,313	13,022	51,069	81,349	12,721	-12,999	-25,629	-36,012	-1,308	-2,291	-3,177	-2,624	-59,273	71,159
FGSEMMGM2	64,906	13,929	54,802	58,732	12,821	-12,999	-25,629	-23,555	-1,611	-2,110	-1,290	0	-56,196	81,803
FNGNWMMGSEM2	26,948	14,645	50,477	9,856	13,397	-13,709	-29,810	-8,368	-3,889	0	-361	0	-55,498	3,690
FNGEMMGSEM2	60,058	14,536	55,273	63,903	13,461	-13,709	-29,810	-26,517	-1,497	-3,627	-1,888	-3,035	-58,988	68,160
FNGSEMMGSEM2	57,360	15,406	53,409	25,810	12,923	-12,999	-25,629	-14,030	-1,622	0	0	0	-52,425	58,205
FGNWMMGSEM2	26,948	14,641	48,640	9,856	12,763	-12,999	-25,629	-8,333	-3,705	0	-361	0	-52,260	9,563
FGEMMGSEM2	55,858	14,500	50,922	48,427	12,786	-12,999	-25,629	-26,488	-1,320	-3,313	-1,888	-2,624	-55,502	52,731
FGSEMMGSEM2	64,451	15,406	54,656	25,810	12,886	-12,999	-25,629	-14,030	-1,622	0	0	0	-52,425	66,505
FNGNWS2	0	8,001	40,032	0	9,843	-11,936	-28,739	-385	0	0	-361	0	-43,259	-26,804
FNGES2	33,995	7,607	39,049	58,602	9,923	-11,936	-28,888	-18,350	-1,597	-4,201	-1,981	-3,035	-46,696	32,492
FNGSES2	45,845	8,717	36,810	22,099	10,114	-11,936	-28,886	-7,666	-1,597	0	0	0	-43,459	30,041
FGNWS2	0	7,997	37,587	0	9,209	-9,696	-25,629	-369	0	0	-361	0	-40,021	-21,282
FGES2	33,964	7,770	37,192	40,312	9,289	-9,696	-25,629	-18,340	-1,373	-3,743	-1,981	-2,624	-43,648	21,492
FGSES2	45,845	8,707	35,742	22,099	9,475	-9,696	-25,629	-7,482	-1,373	0	0	0	-40,194	37,493
MNGNWS2	0	2,297	22,042	0	5,423	-4,924	0	-124	0	0	-276	0	-21,688	2,750
MNGES2	34,997	5,747	26,840	56,817	5,442	-4,924	0	-13,212	0	0	-1,405	0	-22,592	87,709
MNGSES2	23,961	7,439	26,313	17,245	5,555	-4,924	0	-3,659	0	0	0	0	-18,576	53,355
MGNWS2	0	2,297	21,453	0	5,442	-3,972	0	-124	0	0	-276	0	-21,688	3,134
MGES2	34,997	5,747	28,681	48,155	5,556	-3,972	0	-13,212	0	0	-1,405	0	-22,430	82,117
MGSES2	23,961	7,439	28,506	17,245	5,593	-3,972	0	-3,659	0	0	0	0	-18,576	56,538

Table 5d. Generational accounts for Italian families – 3 + children (euro)

Family types	REVENUES					EXPENDITURES							NET TAXES	
	DIRECT TAXES		INDIRECT TAXES	SOCIAL CONTRIB.	OTHER	HEALTH	EDUCATION	PENSIONS	TAX CREDITS	FAMILY ALLOWAN.	UNEM. BENEFITS AND POV. RELIEF	MATERNITY ALLOWAN.		OTHER
	Labour tax	Capital tax												
FNGNWMMNGNWM3	0	9,697	52,509	0	15,307	-18,331	-41,484	-4,943	0	0	-637	0	-68,608	-56,490
FNGEMMNGNWM3	33,110	9,532	58,890	54,047	15,355	-18,331	-41,700	-23,073	-3,567	-6,977	-2,164	-4,440	-72,034	-1,352
FNGSEMMNGNWM3	30,412	10,491	58,766	15,954	15,430	-18,331	-41,696	-11,286	-3,777	0	-276	0	-68,885	-13,200
FGNWMMNGNWM3	0	9,693	50,701	0	14,670	-15,245	-38,846	-4,908	0	0	-637	0	-65,368	-49,940
FGEMMNGNWM3	28,910	9,669	53,664	38,570	14,683	-15,245	-38,846	-23,044	-1,622	-6,494	-2,164	-4,040	-68,735	-14,693
FGSEMMNGNWM3	37,503	10,480	55,658	15,954	14,733	-15,245	-38,846	-11,096	-1,649	0	-276	0	-65,618	1,597
FNGNWMMNGEM3	27,120	13,032	56,208	44,825	15,363	-18,331	-41,484	-18,002	-4,542	-5,643	-1,650	0	-69,340	-2,446
FNGEMMNGEM3	60,229	12,867	62,588	98,872	15,410	-18,331	-41,700	-36,132	-2,180	-2,652	-3,178	-4,440	-72,766	68,589
FNGSEMMNGEM3	57,532	13,826	62,464	60,779	15,485	-18,331	-41,696	-24,345	-2,390	-2,504	-1,290	0	-69,617	49,911
FGNWMMNGEM3	27,120	13,028	54,399	44,825	14,725	-15,245	-38,846	-17,967	-4,352	-5,143	-1,650	0	-66,100	4,794
FGEMMNGEM3	56,029	13,004	57,363	83,395	14,739	-15,245	-38,846	-36,103	-1,991	-2,484	-3,177	-4,040	-69,467	53,176
FGSEMMNGEM3	64,623	13,815	59,356	60,779	14,788	-15,245	-38,846	-24,155	-2,184	-2,268	-1,290	0	-66,550	63,024
FNGNWMMNGSEM3	23,534	14,719	55,702	12,591	15,433	-18,331	-41,484	-8,478	-4,554	0	-361	0	-65,805	-17,033
FNGEMMNGSEM3	56,644	14,555	62,083	66,638	15,480	-18,331	-41,700	-26,607	-2,191	-2,911	-1,888	-4,440	-69,231	48,100
FNGSEMMNGSEM3	53,946	15,514	61,959	28,545	15,555	-18,331	-41,696	-14,821	-2,402	0	0	0	-66,082	32,186
FGNWMMNGSEM3	23,534	14,716	53,894	12,591	14,795	-15,245	-38,846	-8,443	-4,364	0	-361	0	-62,565	-10,293
FGEMMNGSEM3	52,444	14,691	56,857	51,161	14,809	-15,245	-38,846	-26,579	-2,002	-2,714	-1,888	-4,040	-65,932	32,716
FGSEMMNGSEM3	61,037	15,503	58,851	28,545	14,859	-15,245	-38,846	-14,631	-2,195	0	0	0	-62,815	45,062
FNGNWMMGNWM3	0	9,697	52,509	0	15,307	-15,956	-43,030	-4,943	0	0	-637	0	-68,608	-55,660
FNGEMMGNWM3	33,110	9,532	58,890	54,047	15,355	-15,956	-43,030	-23,073	-3,567	-6,977	-2,164	-4,440	-72,034	-306
FNGSEMMGNWM3	30,412	10,491	58,766	15,954	15,430	-15,956	-43,030	-11,286	-3,777	0	-276	0	-68,885	-12,158
FGNWMMGNWM3	0	9,693	50,701	0	14,670	-15,245	-38,846	-4,908	0	0	-637	0	-65,368	-49,940
FGEMMGNWM3	28,910	9,669	53,664	38,570	14,683	-15,245	-38,846	-23,044	-3,378	-6,494	-2,164	-4,040	-68,735	-16,449
FGSEMMGNWM3	37,503	10,480	55,658	15,954	14,733	-15,245	-38,846	-11,096	-3,570	0	-276	0	-65,618	-323
FNGNWMMGMEM3	27,403	13,179	53,237	42,779	15,255	-15,956	-43,030	-18,002	-4,542	-6,413	-1,650	0	-69,507	-7,249
FNGEMMGEM3	60,513	13,014	59,618	96,825	15,302	-15,956	-43,030	-36,132	-2,180	-3,201	-3,178	-4,440	-72,933	64,223
FNGSEMMGMEM3	57,815	13,973	59,493	58,732	15,377	-15,956	-43,030	-24,345	-2,390	-3,281	-1,290	0	-69,784	45,314
FGNWMMGMEM3	27,403	13,175	51,429	42,779	14,617	-15,245	-38,846	-17,967	-4,352	-4,273	-1,650	0	-66,267	802
FGEMMGEM3	56,313	13,151	54,392	81,349	14,630	-15,245	-38,846	-36,103	-1,991	-2,484	-3,177	-4,040	-69,634	48,313
FGSEMMGMEM3	64,906	13,962	56,386	58,732	14,680	-15,245	-38,846	-24,155	-2,184	-2,268	-1,290	0	-66,518	58,162
FNGNWMMGSEM3	26,948	14,656	53,897	9,856	15,383	-15,956	-43,030	-8,478	-4,554	0	-361	0	-65,736	-17,373
FNGEMMGSEM3	60,058	14,492	60,278	63,903	15,430	-15,956	-43,030	-26,607	-2,191	-4,342	-1,888	-4,440	-69,162	46,545
FNGSEMMGSEM3	57,360	15,440	58,296	25,810	14,869	-15,245	-38,846	-14,631	-2,195	0	0	0	-62,746	38,113
FGNWMMGSEM3	26,948	14,653	52,089	9,856	14,745	-15,245	-38,846	-8,443	-4,364	0	-361	0	-62,496	-11,463
FGEMMGSEM3	55,858	14,628	55,052	48,427	14,759	-15,245	-38,846	-26,579	-2,002	-3,500	-1,888	-4,040	-65,863	30,760
FGSEMMGSEM3	64,451	15,440	57,046	25,810	14,808	-15,245	-38,846	-14,631	-2,195	0	0	0	-62,746	43,892
FNGNWS3	0	8,012	47,394	0	11,853	-14,240	-41,484	-437	0	0	-361	0	-53,497	-42,760
FNGES3	33,995	7,612	44,282	58,602	11,929	-14,240	-41,700	-18,378	-2,306	-5,651	-1,981	-4,440	-56,924	10,801
FNGSES3	45,845	8,751	38,750	22,099	12,070	-14,240	-41,696	-8,247	-2,306	0	0	0	-53,782	7,243
FGNWS3	0	8,009	44,852	0	11,215	-11,942	-38,846	-421	0	0	-361	0	-50,257	-37,751
FGES3	33,964	7,770	41,307	40,312	11,293	-11,942	-38,846	-18,369	-2,082	-5,192	-1,981	-4,040	-53,869	-1,675
FGSES3	45,845	8,740	37,761	22,099	11,434	-11,942	-38,846	-8,063	-2,082	0	0	0	-50,515	14,431
MNGNWS3	0	2,297	22,042	0	5,423	-4,924	0	-124	0	0	-276	0	-21,688	2,750
MNGES3	34,997	5,747	26,840	56,817	5,442	-4,924	0	-13,212	0	0	-1,405	0	-22,592	87,709
MNGSES3	23,961	7,439	26,313	17,245	5,555	-4,924	0	-3,659	0	0	0	0	-18,576	53,355
MGNWS3	0	2,297	21,453	0	5,442	-3,972	0	-124	0	0	-276	0	-21,688	3,134
MGES3	34,997	5,747	28,681	48,155	5,556	-3,972	0	-13,212	0	0	-1,405	0	-22,430	82,117
MGSES3	23,961	7,439	28,506	17,245	5,593	-3,972	0	-3,659	0	0	0	0	-18,576	56,538

Table 6. Marginal net subsidy (euro)

Family types	First child		Second child		Third child	
	Net taxes	of which Indirect taxes	Net taxes	of which Indirect taxes	Net taxes	of which Indirect taxes
FNGNWMMNGNWM	-21,156	3,415	-22,099	6,324	-19,980	3,420
FNGEMMNGNWM	-24,247	3,459	-27,675	5,874	-21,369	5,005
FNGSEMMNGNWM	-23,272	2,556	-23,650	6,469	-19,749	4,868
FGNWMMNGNWM	-19,874	2,830	-18,635	5,071	-20,368	3,449
FGEMMNGNWM	-22,193	2,633	-23,024	4,285	-22,124	4,130
FGSEMMNGNWM	-20,050	3,156	-18,228	5,970	-22,064	2,390
FNGNWMMNGEM	-24,546	2,085	-26,026	5,654	-20,762	3,543
FNGEMMNGEM	-25,603	2,130	-26,745	5,205	-20,538	5,127
FNGSEMMNGEM	-25,474	1,226	-25,569	5,800	-19,767	4,990
FGNWMMNGEM	-23,051	1,501	-22,008	4,402	-21,227	3,571
FGEMMNGEM	-24,200	1,303	-22,935	3,615	-21,874	4,252
FGSEMMNGEM	-22,735	1,826	-20,761	5,301	-22,669	2,512
FNGNWMMNGSEM	-24,342	579	-23,074	6,050	-21,204	2,878
FNGEMMNGSEM	-27,302	624	-26,538	5,600	-21,119	4,463
FGSEMMNGSEM	-26,199	-280	-23,957	6,195	-20,309	4,326
FGNWMMNGSEM	-23,001	-5	-19,486	4,798	-21,585	2,906
FGEMMNGSEM	-25,886	-203	-22,695	4,011	-22,473	3,588
FGSEMMNGSEM	-23,531	321	-19,351	5,696	-23,173	1,847
FNGNWMMGNWM	-21,591	3,415	-22,607	6,324	-20,398	3,420
FNGEMMGNWM	-24,613	3,459	-28,102	5,874	-21,721	5,005
FNGSEMMGNWM	-23,640	2,556	-24,079	6,469	-20,102	4,868
FGNWMMGNWM	-19,874	2,830	-18,635	5,071	-20,368	3,449
FGEMMGNWM	-22,725	2,633	-23,582	4,285	-22,790	4,130
FGSEMMGNWM	-20,605	3,156	-19,044	5,970	-22,613	2,390
FNGNWMMGEM	-25,017	1,991	-26,623	5,566	-23,754	2,614
FNGEMMGEM	-26,053	2,035	-27,275	5,116	-22,412	4,199
FNGSEMMGEM	-25,926	1,132	-26,100	5,712	-21,868	4,062
FGNWMMGEM	-23,087	1,406	-22,097	4,314	-22,160	2,643
FGEMMGEM	-24,284	1,209	-23,037	3,527	-22,846	3,324
FGSEMMGEM	-22,819	1,732	-20,863	5,213	-23,641	1,583
FNGNWMMGSEM	-21,851	3,415	-25,718	3,936	-21,063	3,420
FNGEMMGSEM	-23,479	3,459	-29,151	3,486	-21,615	5,005
FNGSEMMGSEM	-21,838	1,947	-22,280	2,814	-20,092	4,887
FGNWMMGSEM	-20,075	2,830	-21,622	2,683	-21,026	3,449
FGEMMGSEM	-21,696	2,633	-24,881	1,897	-21,971	4,130
FGSEMMGSEM	-20,605	3,156	-21,488	3,582	-22,613	2,390
FNGNWS	-19,331	5,266	-19,394	8,935	-15,956	7,362
FNGES	-27,066	2,092	-26,157	6,449	-21,690	5,233
FNGSES	-25,758	37	-27,059	2,919	-22,798	1,940
FGNWS	-18,787	3,970	-16,395	7,231	-16,469	7,265
FGES	-25,364	1,523	-21,913	5,166	-23,167	4,115
FGSES	-24,413	-630	-22,757	2,156	-23,062	2,019

*Table 7. Public programmes for families with children – annual values (euro)*

Age	Health	Education		Tax credit	Family Allowances <sup>a</sup> (1)	Maternity Allowances <sup>b</sup> (2)	Total
		School	University				
0	-1,412	0	0	-178	-771	-376	-2,738
5	-636	-4,482	0	-184	-767	0	-6,068
10	-377	-6,295	0	-191	-617	0	-7,479
15	-425	-5,496	0	-221	-514	0	-6,657
20	-596	-1,891	-2,221	-242	-298	0	-5,249
25	-834	-56	-907	-194	-167	0	-2,157

(a) When the share of wages on family income exceeds 70%.

(b) For employed women only.

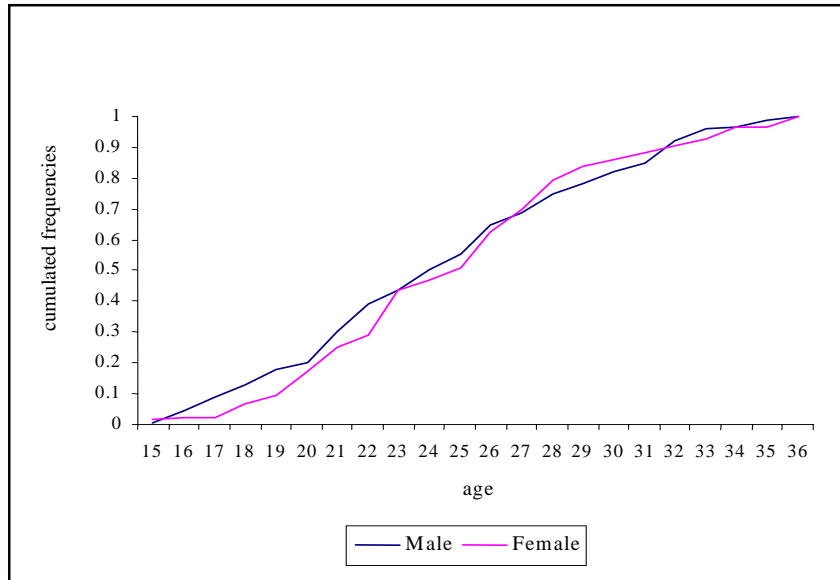
Table 8. Revenues and expenditure of the public sector in Italy, 1999 (thousands of euro)

Revenues		Expenditure	
1. Net operating surplus	592	1. Compensation of employees	117,371
2. Direct taxes	170,919	Social security	2,326
2.1 Taxes on labour	99,307	Health	23,226
IRPEF on labour income (net of tax allowances)	99,307	Assistance	1,204
Tax allowances	-5,542	Education	35,821
As spouse	-3,707	School	30,986
As children	-1,835	University	4,836
2.2 Taxes on real capital	53,976	Other labor income	54,793
2.2.1 Equity and stocks	44,310	2. Intermediate consumption	77,883
Irpef on capital	15,826	2.1 Social benefits in kind	24,001
Irpeg	27,559	Health	22,943
Tax on dividends	412	Hospital care	4,945
Tax on net wealth of firms	513	Other health serv.	10,626
2.2.2 Real estate	4,833	Drugs	7,372
Irpef on real estate	2,738	Assistance	3,965
Invim	1,222	2.2 Other intermediate consumption	53,882
ICI on building sites	873	Social security	1,404
2.3 Taxes on financial capital	8,918	Health	11,673
Tax on income from financial capital	8,918	Assistance	1,668
2.4 ILOR	0	Education	6,043
2.5 Vehicle tax on families	3,259	School	5,640
2.6 Other direct taxes	5,458	University	402
3. Indirect taxes	155,282	Other	33,095
(net of those paid by public sector)		3. Revenues from sales of goods and serv.	-23,632
VAT	64,922	Litter tax	-4,106
IRAP on labour income	14,977	4. Contribution to production	14,480
IRAP on income from capital	2,800	5. Social expenditure	191,279
ICI (local tax on real estate)	8,177	5.1 Social security	178,794
Stamp duties	12,690	5.1.1 Retirement pensions	156,473
Hydrocarbons oil tax	23,996	Old age and seniority	123,553
Petroleum and gas tax	4,939	Employees	110,819
Electric energy	2,839	Self employed	12,734
Tobacco	7,164	Survival	29,729
Betting, gaming and lottery	6,659	Employees	26,665
Concessions	2,076	Self employed	3,064
Vehicle tax on families	1,978	Invalidity	3,192
Other indirect taxes	2,065	Employees	2,863
4. Social contributions	139,866	Self employed	329
4.1 Workers	39,863	5.1.2 Labor market and family	22,321
Employee	27,514	Unemployment and mobility benefit	3,926
Self employed	12,349	Income support for the unemployed	671
4.2 Employers	100,003	Sickness and injuries allowance	2,050
5. Other transfers	12,423	Maternity allowance	1,352
6. International transfers	774	Industrial injuries rent	3,700
7. Other current revenues	5,348	Severance pay	5,220
8. Capital tax	1,164	Family benefits	4,896
Inheritance tax	907	Other	505
Other capital tax	257	5.2 Assistance	12,485
9. Contributions to investment	1,949	Social pensions	2,091
10. Other capital revenues	2,457	Disability pensions	8,289
11. Interests	2,269	War pensions	1,120
		Other	985
		6. Transfers to non profit institutions	3,785
		7. International transfers	6,224
		8. Other transfers	2,894
		9. Other current expenditure	363
		10. Interests	75,261
		11. Investments	28,980
		Social security and assistance	452
		Health	1,553
		Housing	5,286
		Education	2,672
		Other	19,016
		12. Contribution to investments	10,750
		13. Other capital account transfers	3,494
Total revenues	488,209	Total Expenditure	509,132
		<b>Net borrowing requirement</b>	<b>-20,922</b>

Source: Our elaborations on ISTAT (2001) and Ministero del Tesoro, del Bilancio e della Programmazione Economica (2000).

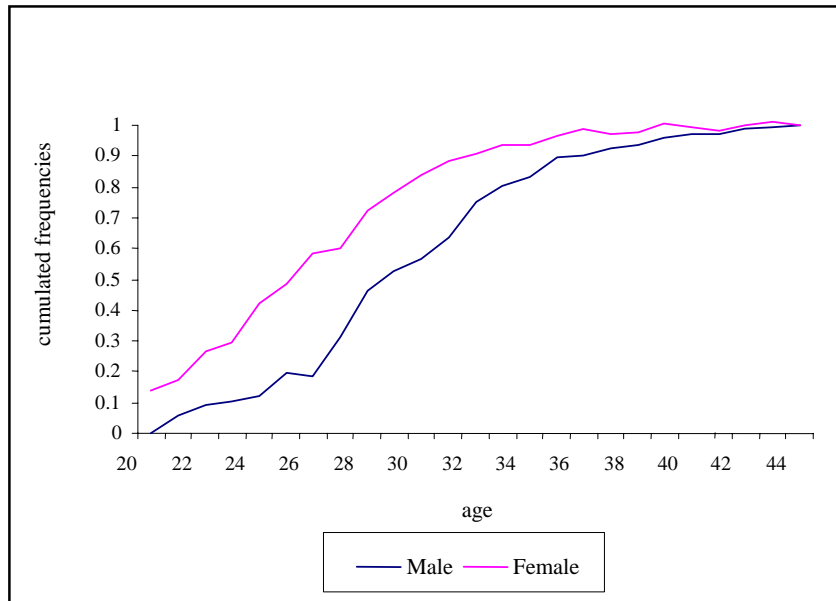


Figure 1. Family formation (financial independence)



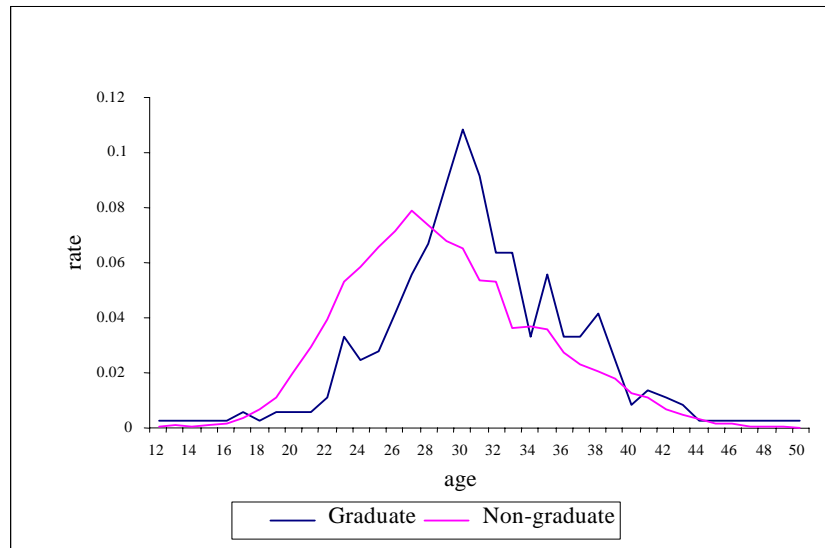
Source: Our elaborations on ISTAT (1997) data.

Figure 2. Marriage



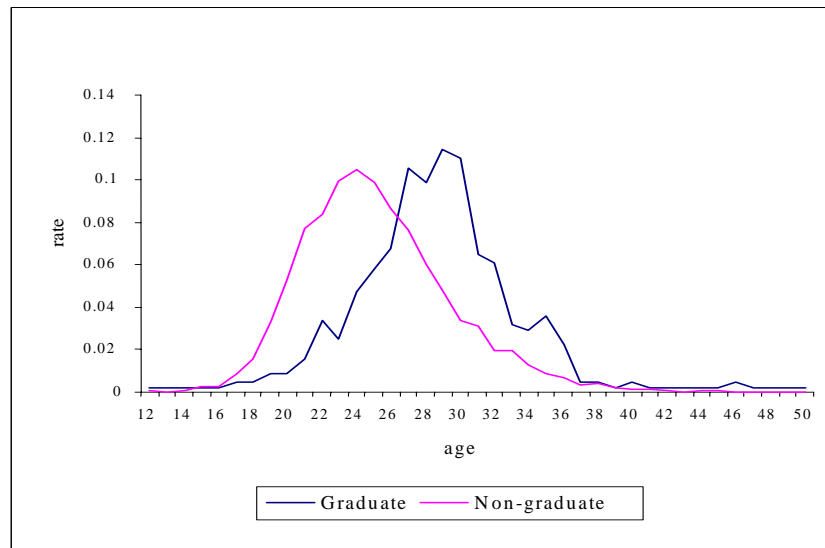
Source: Our elaborations on ISTAT (1997) data.

Figure 3a. Fertility rate – one child



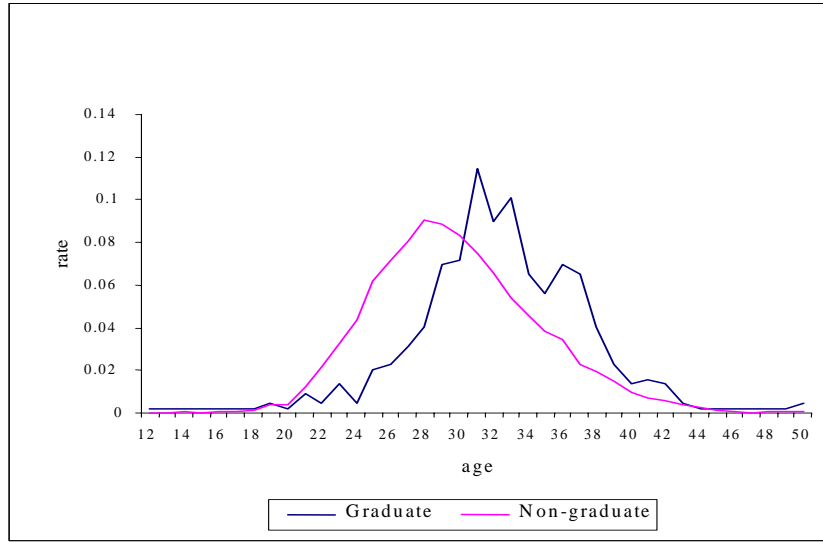
Source: Our elaborations on Istat (1997) data.

Figure 3b. Fertility rate – two children (first child)



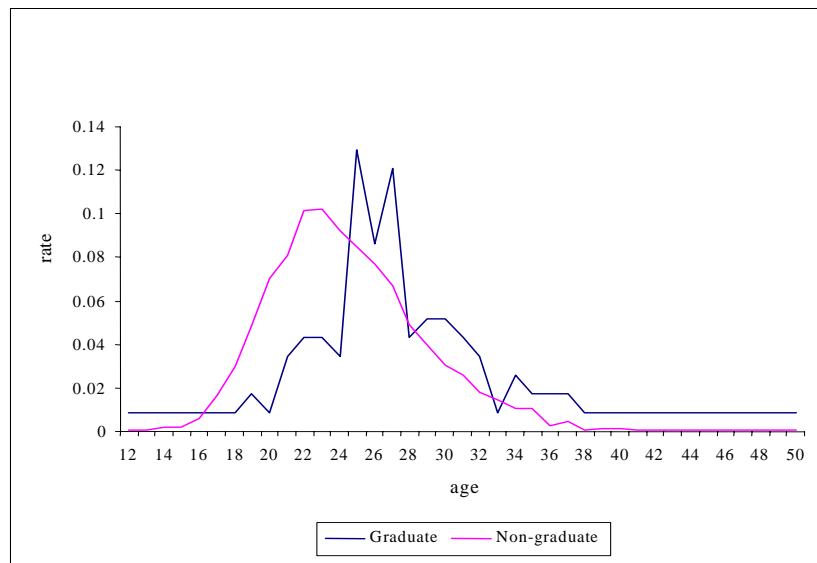
Source: Our elaborations on Istat (1997) data.

Figure 3c. Fertility rate – two children (second child)



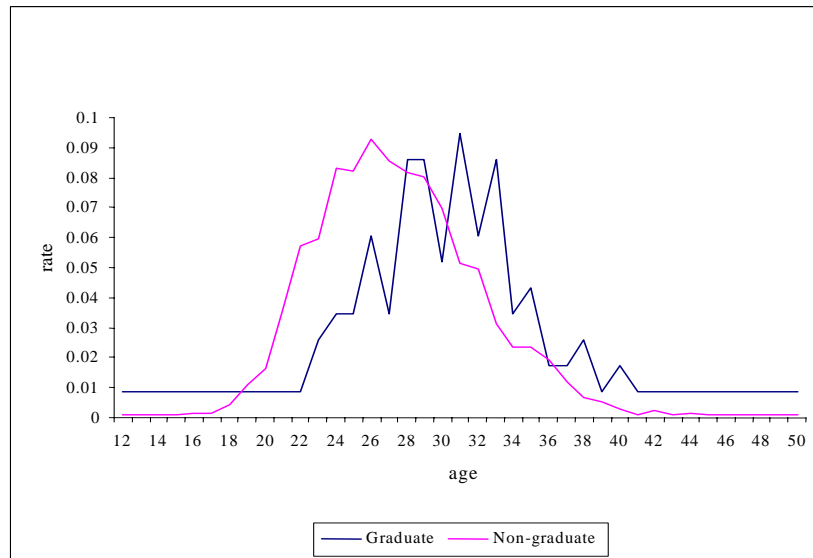
Source: Our elaborations on Istat (1997) data.

Figure 3d. Fertility rate –three children (first child)



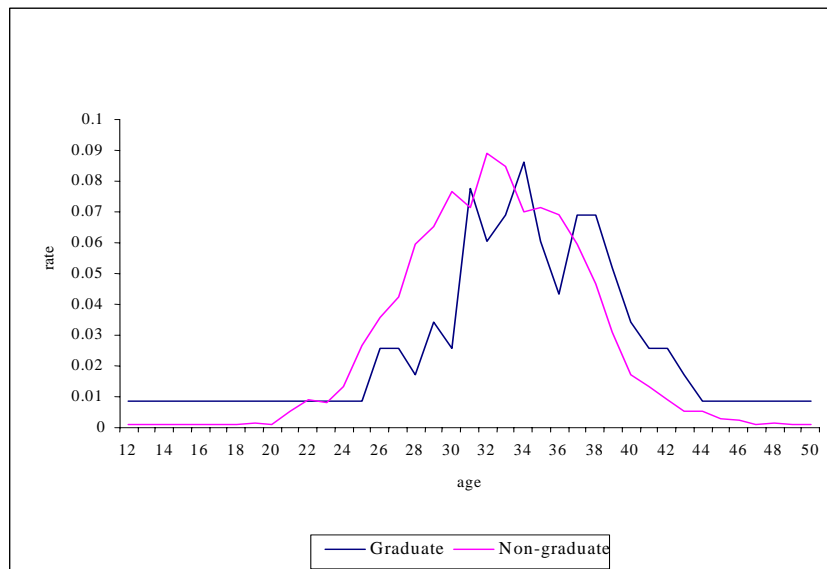
Source: Our elaborations on Istat (1997) data.

Figure 3e. Fertility rate – three children (second child)



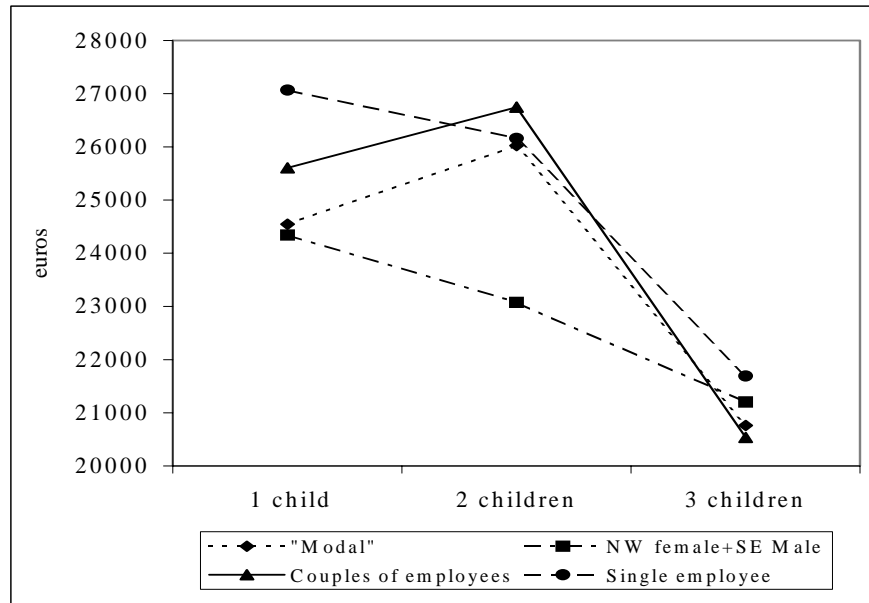
Source: Our elaborations on Istat (1997) data.

Figure 3f. Fertility rate – three children (third child)



Source: Our elaborations on Istat (1997) data.

Figure 4. Marginal net subsidy



Source: Our elaborations.

## CHAPTER 3

### FAMILY BURDENS AND THE TRANSFER/TAX SYSTEM IN GERMANY

BERNHARD SEIDEL\*

Recently, the federal German government published a report on poverty and wealth of private households in Germany.<sup>1</sup> It shows that young families with small children bear an increased risk of becoming poor, mainly because several effects responsible for poverty come together: low income, high needs for establishing the household, constrained ability for full employment or even unemployment. Especially children brought up by single parents – mostly the mother – run a high risk of being poor. If the threshold of poverty is measured by half of the average income, roughly 30% of single-parent households with children have to be classified as poor in 1998. As measured by all private households it was only 10%. The quota of children up to the age of 18 receiving social assistance amounted to 6.8% in 1998 and, therefore, was nearly twice the percentage found in the average population. Even if the great bulk of German families live at much better conditions, the figures show clearly that bringing up children means a heavy financial burden for families. There are several measures to support the families by direct transfers and tax allowances. Obviously, for a substantial part of the population, the tax/transfer-system does not ensure that children do not grow up in poverty. Therefore, one has to ask how those measures to partially alleviate family burdens are structured and what are the advantages and shortcomings. This paper briefly describes and evaluates the tax and transfer measures for families in Germany. The contribution concentrates on the most important direct financial advantages of the German tax and transfer system. Not mentioned are the maternity benefits and the indirect advantages connected with the old-age pension system which provide – compared with the direct paid contributions – higher claims for mothers and with the social health system in which dependent family members are insured together with the employed parents on the basis of a contribution of the same amount as for a single employee.

#### 1. The German Tax and Transfer System to Support Families

The German system contains several strands of family support. On the one hand, there are general transfers granted to families and on the other, specific transfers are awarded for special uses, such as professional training or part-time domestic help. Finally, the income tax system includes certain allowances for taxpayers' expenditures related to children or to marriage. Only a few of those measures are means-tested; some are related to income limits, whereas others are oriented to the factual expenditure or are – within limits - related to the individual's income.

##### 1.1 General support

Among the general measures, the support payment for dependent children (Kindergeld) is the most important one; it is granted in a form of an income tax refund independently of the individual income of the family. It depends on the number of children. In recent years, the Kindergeld has been increased several times. Since 1 January 2000, it amounts to 270 DM (around €135) monthly for the first and second child, 300 DM (€150) for the third child and 350 DM (€175) for the fourth and any subsequent children. The payment is provided for all children up to the age of 18, for children participating in professional training or without a place for apprenticeship up to an age of 27 and for unemployed children of a maximum age of 21 years. If children above 18 years earn on their own a yearly income beyond 13,500 DM (€6,750), Kindergeld does not apply any further. Kindergeld is determined and paid by the family

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<sup>1</sup> Lebenslagen in Deutschland. Der erste Armuts- und Reichtumsbericht der Bundesregierung. <http://www.bma.bund.de/de/Sicherung/armutsbericht/ARBBERicht01.pdf>

exchequers of the Labour Offices or of the civil service. It is paid to the person responsible where the child is living.

Families with a higher income make use of the children's allowance (Kinderfreibetrag) and the child care allowance (Betreuungsfreibetrag) in the context of income taxation. The Kinderfreibetrag amounts yearly to 6,912 DM (around €3,450). The Betreuungsfreibetrag, which is granted for children of an age under 16 years, adds up yearly to 3,024 DM (€1,510). These allowances are charged against the direct support payments for dependent children. Therefore, only families of higher income are profiting by these measures. The tax authorities take the allowances into account officially on the occasion of the income tax assessment.

Single parents can also claim for a special household allowance (Haushaltsfreibetrag). In contrast to the Betreuungsfreibetrag, this benefit is not charged against the Kindergeld. However, the allowance is supposed to be revised next year, because the constitutional court has ruled that the allowance is an unjustified advantage for single parents compared to couples with children and therefore must be changed.

The transfers for children within the framework of social assistance could be seen as a general transfer as well, because it does not oblige the recipient to apply the benefit to special uses. However, it is restricted to certain groups of the population. This is because in contrast to the above-described financial support measures, the social assistance is strictly means-tested. Therefore, only persons without adequate own financial resources can benefit from the social assistance for subsistence (Hilfe zum Lebensunterhalt).

The amounts differ slightly between the German regional levels (Länder) because of differences in the regional costs of living. On average the monthly support for the head of the household and for singles amounts to 550 DM (€275). The transfers for other members of the household differ according to their age. For a child up to 7 years, 50% of this sum (275 DM) is paid, for a child between 7 and 13 years 65% (357 DM), for a child between 14 and 17 years 90% (495 DM), and for older children (and other persons belonging to the household), 80% (440 DM) is paid. In addition to these general transfers, specific social assistance is given especially as housing benefit and as help in special living conditions.

To give more incentives to families to raise children in Germany, a federal child-rearing benefit (Bundesperziehungsgeld) is granted to all mothers or fathers who educate and care for their children by themselves. The corresponding law was recently revised. Since the beginning of 2001, parents get this benefit on application, if they are working part-time up to 30 hours/week. The beneficiaries can choose between two alternatives: A standard maximum amount of 600 DM per month is granted up to the end of the child's second year; a budgetary supplement of a maximum of 900 DM per month is provided for the child's first twelve months. If the net income for the couple with one child does not exceed 100,000 DM yearly (for a single 75,000 DM respectively), the benefit is paid for the first 6 months after the birth of the child as full amount. From the 7<sup>th</sup> month onwards, the benefit is shortened relative to the income of the parents, beginning from an income of 32,200 DM (couple) and 26,400 DM (single parent). It is fully cancelled if the net income of a couple amounts to 46,000 DM (€23,000), of a single parent 40,000 DM (€20,000), respectively. Maternity benefits are charged against the child-rearing benefit. However, receiving unemployment benefits does not interfere with receiving the Bundesperziehungsgeld. Neither it is charged against unemployment help, social assistance, housing benefits or the promotion of vocational training. Some Länder grant further comparable benefits for raising children following the federal benefit.

In addition to the financial benefit, employees have the right to parental free time (Elternzeit) within 3 years, even at the same time. Both can reduce their work week to between 15 and 30 hours, if they are employed in companies with 15 or more employees. During the period of parental free time, parents are protected against layoffs.

## 1.2 Specific support

There are several opportunities offered as special support for families. First, parents can legally claim for child care for a child of age 3 onwards. They have to pay a financial contribution, which depends on their income, but do not bear the full costs of providing child care. Moreover, if the father or mother is insured in the obligatory health care insurance, they can receive domestic help if, because of a stay in hospital or a rehabilitation institution or even in the case of illness, the normal organisation of the household is disrupted. However, one child has to be under 12 years of age or handicapped. For several few years, general support has been available to employ part-time domestic help; yearly costs up to 18,000 DM (€9,000) can be deducted as special expenses from the taxable income, and there are simplified administrative and financial procedures for dealing with the social insurance bodies. This support, however, is not restricted to families but is available to everyone.

In the case of illness of a child under 12 years of age, employed mothers and fathers who are insured under the obligatory health insurance have the right to be absent from work to care for their child. This benefit is restricted to ten days per parent per child and per year or to 20 days per single parent per child and per year. If there is more than one child, it is a maximum of 50 days for a single parent, or 25 days respectively for each parent. If there is no obligation for the employer to make continued payment, under certain conditions the health insurance will provide a sickness benefit.

There are some measures to promote the vocational training of the children and of young parents as well. With respect to children, parents can make use of an educational allowance (Ausbildungsfreibetrag) in the case both of an academic education or professional training of their children. The allowance depends on the age and on the place of residence of the children. For children being trained or educated far from the parental household, the allowance amounts to 1,800 DM yearly if they are under 18 years; otherwise, 4,200 DM. If the children above an age of 18 are living with their parents the educational allowance amounts to 2,400 DM per year. This allowance is granted in addition to the Kindergeld or to the children's allowance. Direct financial support to promote vocational training is charged against the educational allowance. The same is true for any income earned by the children.<sup>2</sup>

Depending on the income of the parents, financial support (BAföG, Bundesausbildungsförderungsgesetz) is granted for promoting visits to secondary general or vocational schools and the universities. For the visit to schools, contributions to the costs of external accommodation is provided; for a study at universities the grant covers half a contribution, and the other half is an interest-free loan. At a maximum, the regular monthly grant for students amounts to 785 DM in the new Bundesländer and to 955 DM in the old Länder, if the students are not living with their parents.<sup>3</sup>

Corresponding to the promotion of university education, apprentices can claim for a financial contribution to the cost of vocational training or preparation courses as well, if their own income and the income of their parents and married partners are not sufficient. In the case of educational measures preparing for a profession, special expenditures are borne by the public independent of the income of the beneficiary or his relatives with statutory support obligations.

If adults with children are participating in vocational training, in qualifying measures or are studying at universities, they can make use of higher grants or softer conditions of the promotion measures.

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<sup>2</sup> From 3,600 DM per year onwards.

<sup>3</sup> In the case of above-average housing rents, the grant amounts to 1,020 DM and 1,030 DM respectively.



Financial support is granted as well for housing. In the framework of general measures to support an adequate supply of housing, additional help is given to families. This is the case for housing subsidies that are paid to low-income households to bear the rent (Wohngeld) or the burden of running one's own house or dwelling (Lastenzuschuss). The means-tested subsidy depends on the number of persons in the household. The law was amended early in 2001, to increase the subsidies mainly for families with two or more children.

Other measures attempt to promote home ownership for one's own use (Eigenheimzulage). Over a period of 8 years, a new owner can claim one time only up to 5,000 DM annually for buying a new house and up to 2,500 DM annually for buying an old one or for the extension or enlargement of his own house. For each child the grant is increased by 1,500 DM annually. The benefit is not awarded to high-income people; the corresponding threshold amounts to 160,000 DM for a single person and 320,000 DM for a couple and is increased by 60,000 per child.

### **1.3 Splitting: Advantage for couples more than for families**

The German income tax law contains a remarkable advantage for married couples: the individual incomes of the spouses are not taxed separately but the joint taxable income is split in two halves which are then taxed under the progressive tax schedule. If both spouses are earning an income of a similar level, splitting will not lead to an advantage. In the case of differences between the incomes of the spouses, the splitting procedure diminishes the effect of tax progression for the higher income. The maximum splitting advantage amounts to roughly 20,000 DM per year. However, the splitting is bound only to marriage, not to children. According to tradition it is based on the socio-political model of the one bread-earner family in which one partner, usually the wife, was caring for the home and the children, while the other was working. In modern times, there is a broad spectrum of models for organising a household and raising children, but this is not reflected in the German income tax law. Reform of this practice of splitting is on the political agenda.

## **2. Evaluation and Reform Perspectives**

Despite the fact that there is a broad spectrum of family support in Germany, several shortcomings may be mentioned. First of all, the system does not prevent a significant number of children from living in poverty. This is because the financial support for children does not correspond to the amount needed to raise children. This is true for low-qualified and low-income groups, mainly for single parents who often are not able to work full-time because of their obligations to care for and educate the children. The Kindergeld as the regular support is significantly lower than the sum granted by social assistance for children to parents who do not earn any income. If there are several children in a family, the pay of a low qualified worker including the regular transfer payments for the children could be only slightly higher or even lower than what is granted to a family as social assistance. Therefore, people who can expect only a low income because of their low qualifications sometimes do not have much incentive to work and to earn the subsistence support for their family.

There is an ongoing debate in Germany to increase the financial support for children. Several proposals are on the political agenda. Recently, the Government decided on a draft of a second law for family support. The first was enacted two years ago. It contains several measures: first, to raise the support payment for the dependent first and second child by roughly 30 DM up to 300 DM monthly beginning next year, second, to increase the children's allowance to 7,135 DM (€3,648) and to extend the child care allowance to children of more than 16 years in case they are participating in general education or professional training. Further, the child care allowance will be combined with a general education allowance. If the effective cost of attending children up to an age of 14 are higher than the general child care allowance, a maximum of an additional 3,000 DM in expenses for institutional care or for care givers could be deducted from the

taxable income. On the other side, cuts of existing measures have also been taken. This is the case as well for costs to employ domestic help. The allowance for the children's general and professional training will be cancelled too. An additional allowance up to 1,807 DM will be granted only in the case that a child of more than 21 does not live in the parental household because of their education and training. Moreover, the household allowance for single parents will be cut in subsequent steps. The draft has to pass Parliament and the Bundesrat, the chamber of the states' representatives.

The Conservative Party is demanding a subsequent increase in the payment so that after ten years the support would amount to 1,000 DM. However, it remains open how this can be financed and be integrated into a consistent concept for the promotion of families. The Green Party is also demanding a substantial increase of the general support payment. This proposal is linked to a demand to restrict the tax income splitting for spouses which in a strict sense is not a support for families because it is bound to the marriage rather than to the children.

What is needed as well in order to encourage adults to become more engaged themselves with their children is to provide more opportunities to reconcile competing job and family duties, not only for mothers but also for fathers as well. For this purpose one could mention inter alia the creation of more places in nurseries and kindergartens and all-day schools. At a minimum, it is important to raise the acceptance for part-time work of both of the parents and to promote the equal labour participation of women. Some steps had been taken in the past; however, more has to be done in the future.

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ENEPRI publications are partially funded by the European Commission under its Fifth Framework Programme – contract no. HPSE-CT-1999-00004.



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