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Economic well-being in Italy: The role of income insecurity and intergenerational inequality

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Abstract

This paper provides a measure of economic well-being for the Italian context. In the last two decades Italy experienced a sharp increase in labour market flexibility and a relative loss of command over resources of young generations with respect to older ones. We include new measures of temporary work and intergenerational inequality in the IEWB, and analyse its evolution in Italy and in Lombardy (the leading Italian region) over the 1995-2007 period. We find that well-being advanced at a slower rate than GDP, mainly because of the negative effect of a reduction in employment security and a rise in income inequality, which was more pronounced in Lombardy.

Keywords: well-being, inequality, income insecurity.
JEL classification: I31, I32, D31.

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1. Introduction

The attempt to measure economic well-being in a broader sense is on the agenda of many international institutions, and it is a research topic for economists, social scientists and statisticians. A reliable measure of economic well-being is important to facilitate public policy discussion and for providing decision-making at all levels with a solid basis (OECD 2008a; Pulselli et al. 2006). The recognition that GDP is neither a sufficient nor a proper indicator for the evaluation of the well-being of a complex society is increasingly widespread among scholars and leading international institutions. The question is "whether alternative measures of economic well-being are possible, plausible, and make some difference" (Osberg and Sharpe 2009, p.2).

In order to address this issue, several methodologies have been developed; one of the most widely-used is the composite indicators approach (Stiglitz Commission 2008; OECD 2008b). Composite indicators aggregate elementary indexes to encompass several dimensions of well-being. On the one hand, they allow synthetic analysis of the phenomenon; on the other hand, they can be broken down, enabling a deeper examination of the different components. One of the most recent and complete composite indicators is the Index of Economic Well-Being (IEWB), developed by the Centre for the Study of Living Standards. This index measures economic well-being in terms of command over resources. The idea behind it is that the measure of the access to the resources needed for a decent standard of living should go beyond standard economic variables and integrate sustainable, distributional and environmental issues (Osberg and Sharpe 2009).

This paper takes the IEWB as a starting point for the measurement of economic well-being in Italy. Evaluations of economic well-being in Italy must take into account the reforms in the labour market and in the pension system that occurred over the 1990s. These changes negatively affected young generations who face lower entry wages, lower wage growth and higher income risk over the life cycle, lower protections, lower expected value and higher uncertainty of future pensions. In this context, we should include appropriate measures of present and future income insecurity in the evaluation of a society's well-being.

Since these changes may have been more pronounced in contexts where the private sector is more important relatively to public spending, we will compare trends in

economic well-being in Italy and in the leading Italian region, Lombardy. The latter is the most economically advanced region in Italy (it has the highest GDP per-capita among all Italian regions), with a share of public expenses over GDP that is lower than the national average (and lower than in other regions of Northern Italy). Furthermore, the construction of reliable measures of economic well-being at a local level will become more and more important because local authorities are responsible for the development of social and economic infrastructures and for the definition of local policies (Ferrarini et al. 2001; Pulselli et al. 2006.). These measures will therefore assist the monitoring of local development and the impact of policies.

The paper is organized as follows. Section two illustrates the Italian context in the last two decades, focusing on the reforms of the labour market and of the pensions system. Section three discusses the changes that we introduced in the Index of Economic Well-Being in order to encompass new aspects of the economic security and inequality dimensions that are relevant for the Italian context. Section four presents the main results, by comparing trends in the Index and its components with trends in GDP per-capita. Section five concludes.

2. The Italian context

In the last two decades the Italian economy has been characterized by sluggish growth (the average annual growth rate over the 1995-2007 period was about 1%, with lower rates after 2001), various reforms of the labour market and the pension system, and a sharp increase in both house prices and rents. As regards the labour market, relevant changes of its institutional framework occurred over the 1990s. In 1992 and 1993 the abolition of the wage indexation (*scala mobile*) and the reform of the collective bargaining system halted the wage inflation spiral and initiated a long period of wage moderation (Brandolini et al. 2007). At the same time, a reform was implemented that introduced new forms of temporary labour contracts (those used for the so called *parasubordinati* and *interinali*[1]). By enhancing flexibility, the use of these contracts allows firms to adjust the labour input in a context of fierce international competition and demand uncertainty (Cipollone and Guelfi 2006), and reduces labour costs because

[1] Most of p*arasubordinati* are similar to fixed-term employees except for being remunerated less and paid lower social security contributions, and for not benefiting from employment protection legislation (Brandolini et al 2007). *Interinali* are individuals who work through a temporary employment agency.

of the lower social security contributions required for them (Brandolini et al. 2007). However, on the other side, these workers are more vulnerable in the face of economic crisis: they are more likely to loose the job and at the same time they are less protected by social security cushion (Brandolini 2009b). Besides increasing job insecurity, the sharp diffusion of temporary contracts contributed to curb wage dynamics: mean earnings declined over the 1986-2004 period (Rosolia 2009), with a reduction in entry wages which was not compensated by faster subsequent wage growth (Rosolia and Torrini 2007).

These changes determined a segmentation of the Italian labour market with an increasing proportion of workers (called 'outsiders') that are characterized by low income levels, inadequate social protection and discontinuous careers, and older cohort of workers (the 'insiders') that face higher wages, greater job security, and higher opportunities for promotions (Brandolini 2009a; Cipollone 2001). This segmentation is more pronounced when temporary contracts are used as replacements for (or alternatives to) permanent ones, with the consequence that being precarious becomes a long term status. Young people and women are more exposed to this risk (Brandolini et al. 2007). For example, Barbieri and Scherer (2005) find that the proportion of persons aged 35 with a work history of precariousness increased considerably for the cohorts born in 1963-1967 relatively to the older cohorts born in 1958-1962 and 1948-1957.

The Italian social protection system is inadequate "to cope with the greater individual insecurity associated with a more flexible labour market", because of "the lack of wage subsidies for the low-paid, and the poor coverage of the unemployment benefits (Brandolini et al. 2007; p. 63 and 59). This inadequacy leads to an increase in the probability of being poor for households with non-standard workers; Bank of Italy (2009) shows that in 2006 the incidence of poverty for households with only atypical workers was about 47%.

The condition of youths was also negatively affected by the reforms of the pension system implemented during the 1990s. Three key features of the pension system were modified: (i) benefit computation rules (from earnings-related to contributions-related schemes); (ii) indexation rules (benefits are no longer indexed to real wage growth); (iii) retirement age and eligibility criteria (modified on actuarial bases). The changes introduced apply differently to individuals, mainly according to their seniority at the

time of the 1995 reform. As a result, while old cohorts maintain, at least partially, their rights according to the old and more favourable rules (generous pension benefits and the possibility of early retirement), young cohorts will have meagre pension benefits, they will retire at an older age, and they have to save a larger share of their current labour income to complement their future pensions benefits with supplementary social security entitlements (Berloffa and Villa 2007).

Difficulties for young cohorts were also amplified by the evolution of housing costs. Since the early 1990s, both house prices and rents exhibited a substantial growth (in real terms). Brandolini et al. (2004) report that the increase in housing prices between 1989 and 2000 exceeded by 40% that of consumer prices. Nomisma (2005) documented that mean prices of new housing increased by 70.4% over the 1998-2004 period (by 46.1% in constant prices). Rents increased dramatically between 1989 and 2004 by 58%. The sharp growth in housing and rental costs was particularly relevant after the introduction of the Euro currency (Modena and Rondinelli 2010).

The combination of these institutional and market changes had serious negative consequences for young generations in Italy, while older cohorts where only partially affected: youths face lower entry wages, lower wage growth over the life cycle, lower protections, lower expected value and higher uncertainty on future pensions, and higher housing costs. Given the inadequacy of the Italian social protection system, these changes make young people more dependent on intergenerational transfers and lead them to postpone emancipation choices (delay in family formation and fertility decisions), with clear consequences for the present and future well-being of the society. In the next section we will discuss how to consider these issues in the measurement of economic well-being in Italy.

3. Methodology

3.1. Enlarging the economic security and inequality dimensions of the IEWB

The Index of Economic Well-Being was developed by the Centre for the Study of Living Standards (Osberg 1985; Osberg and Sharpe 2002b, 2005; Smith 2003) and it is one of the best known indexes used in the estimation of economic well-being (Sharpe 1999). The IEWB follows the "composite indicators approach", which combines several

elementary sub-indexes to cover a broad spectrum of domains affecting well-being (Stiglitz Commission 2008). The weighting procedure used to aggregate elementary indexes is arbitrary. Indeed, as suggested by Osberg and Sharpe, a society's well-being is not a single, objective number; rather, individuals in a society make subjective evaluations of objective data (Osberg and Sharpe 2005).

The IEWB measures well-being in terms of command over resources, and it covers four dimensions: current effective per-capita consumption flows, net societal accumulation of stocks of productive resources, income distribution and economic security. Each dimension combines several variables. The four components of IEWB recognize "both trends in average outcomes and in the diversity of outcomes, both now and in the future", as shown in Table 1 (Osberg and Sharpe 2005, p. 314).

Table 1. Dimensions of economic well-being or command over resources

	Time period	
Concept	***Present***	***Future***
"Typical citizen" or "representative agent"	Average flow of current income	Aggregate accumulation of productive stocks
Heterogeneous citizens	Distribution – income inequality and poverty	Insecurity on future income

Source: Osberg and Sharpe (2005)

In the application to the Italian context, some changes to the original index proposed by Osberg and Sharpe are needed, particularly with respect to the distribution of income and economic insecurity. As regards the latter, Osberg (2009) underlines the importance of including the economic security domain in a context where labour market regulation and social protection have been reduced in order to encourage economic growth. "The construction of the IEWB was motivated in part by the perception that both costs in reduced economic security and benefits in aggregate growth should be considered in any evaluation of trends in aggregate well-being" (Osberg 2009, p.1). The importance of employment security has been emphasized also by the Stiglitz Commission: "fear of job loss can have negative consequences for the quality of life of each worker, for firms, and for society as a whole" (Stiglitz Commission 2009, p. 48). For these reasons, the Canadian Index of Economic Well-being includes the risk from unemployment

measured as the probability of becoming unemployed (proxied by the unemployment rate, see Osberg 2009 and Osberg and Sharpe 2009).

As we discussed in section 2, economic insecurity has become a real issue in the Italian context after the labour market reforms of the 1990s, especially for certain subgroups of the population (those who entered the labour market after the mid 1990s). This insecurity is mainly linked to the adoption of new forms of temporary labour contracts with very low social security benefits. For individuals with these contracts, the "fear of job loss" is replaced by the "fear of not finding a new job" at the end of the current one, and by the fear of not being able to accumulate enough contribution for future pension benefits. Therefore, when measuring employment insecurity in Italy it is necessary to account for the risk associated with being temporary worker, as well as for the risk of unemployment. As simple way to do this is to consider the share of the labour force that is represented by unemployed and temporary workers.

Besides employment security, the hazard of poverty in old age is one of the major issues in the evaluation of economic security. The Canadian IEWB accounts for this issue by computing the intensity of poverty among seniors. In the Italian context, given the recent reforms of the pensions system discussed in section 2, this would underestimate the risk of poverty in old age for young workers because the expected value of their pensions is lower than current ones, and the degree of uncertainty associated with them is higher. In this context, it would be necessary to include an appropriate measure of security in the event of old age by estimating expected pension benefits for young generations. However, due to the complexity of the issue, we do not elaborate further on this in the current versions of the Italian Index of Economic Well-being.

Following the IEWB methodology, the equality dimension includes income inequality and the intensity of poverty. As underlined by Osberg and Sharpe (1998), the inclusion of the inequality and the poverty dimensions in the IEWB is justified because the level of social welfare is generally considered a positive function of average incomes and a negative function of the inequality of incomes. The authors also highlight that "by using measures of aggregate inequality, and aggregate poverty, we implicitly impose the ethical value of anonymity, and count the poverty of any person as being of equal social concern, regardless of their identity or such characteristics as age or gender. Those who are concerned with norms of equity between groups may in addition wish to consider

additional indicators of inequality, such as the earnings gap between men and women" (Osberg and Sharpe 1998, p. 24).

One issue that is of particular social concern, at least for Italy, is the way in which the command over resources is distributed between young and more adult people. The income that a person can rely on in the stage of the life-cycle devoted to household formation and fertility decisions plays a crucial role, especially with imperfect financial markets: an income that is too low compared to rents or house prices, or to the average standard of living may cause a delay in leaving the parental home, a delay in family formation and a delay in fertility decisions, with clear consequences for the future of the society itself. For the same average income, if the earnings gap between those in this stage of the life-cycle and the adults increases, there is an on-going redistributive process that weakens the position of the young, making them more dependent on intergenerational transfers, especially if the welfare system does not compensate for this relative loss.

We therefore argue that the index of economic well-being should explicitly consider the evolution of the earnings gap between the young (i.e. those who are at the age of starting to live independently and deciding about having children) and the adults (i.e. those who have already faced these choices). Clearly the age that distinguishes the two groups can be different from country to country and over time because of institutional and cultural differences. As regards the measure to be included in the index, it must be noted that, since the concern is not about simple inequality between groups but about the redistribution from the young to the old, we cannot use the between-group inequality measure of decomposable inequality indices, but we need to use something that considers explicitly the "direction" of the inequality. For this reason, the more transparent measure seems the earnings gap between the two groups (see also Brandolini et al. 2007).

The equality dimension for the Italian IEWB includes therefore three sub-components: income inequality, intensity of poverty, and a measure of redistribution of resources from youths to adults. These sub-indexes are aggregated using weights reflecting the relative importance of one dimension with respect to the others. Following Osberg and Sharpe (2002a), poverty was given a higher weight than inequality, hence we assigned a

weight of 0.5 to poverty and of 0.25 each to income inequality and intergenerational inequality.

For consumption flows and wealth stocks we follow the traditional approach. In particular, for consumption flows we include four sub-components: i) consumption of market goods and services adjusted for variations in household size (economies of scale) and life expectancy[2], ii) current government spending (for staff, goods and services), iii) unpaid work (charity and housework), and iv) defensive expenditures (commuting costs and costs of road accidents), which are subtracted from the above components. For wealth stocks, we include three sub-components[3]: i) fixed capital stock, ii) accumulated stock of research and development[4] and iii) the stock of human capital.

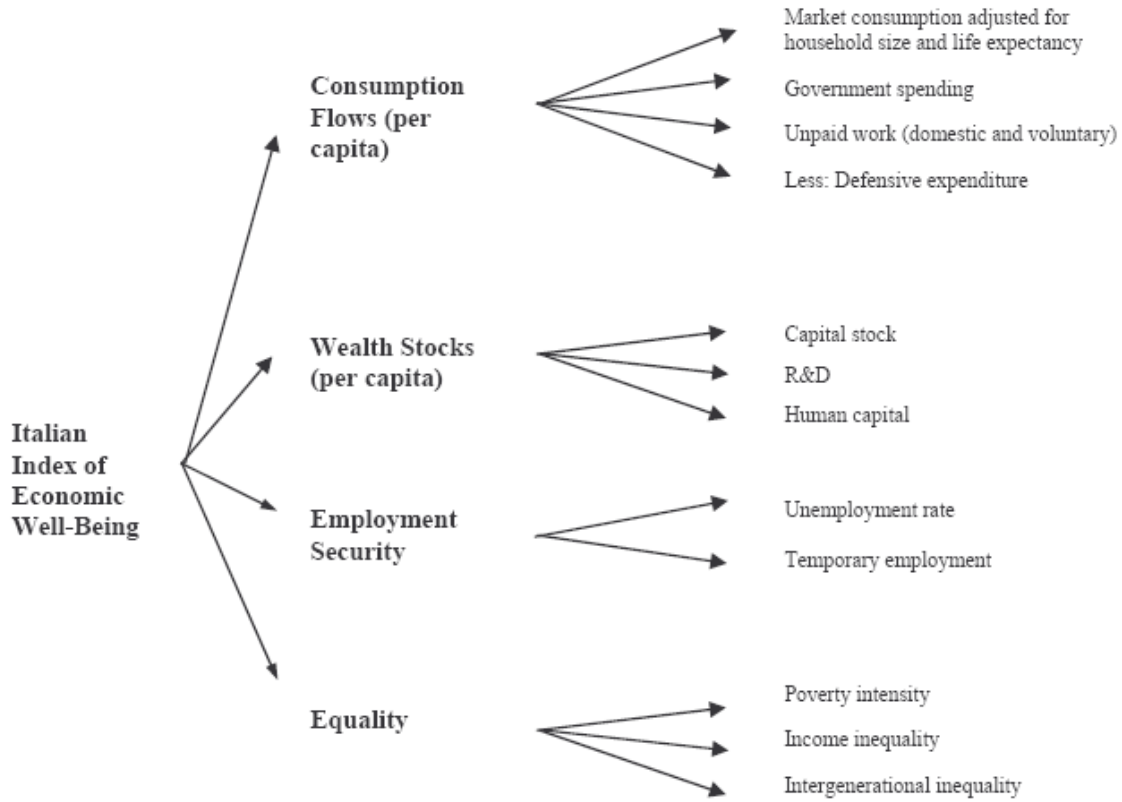
The structure of the overall IEWB is illustrated in Figure 1 and more details about its construction are reported in Appendix A. We want only to recall here that the index is a weighted average of the four dimensions, with weights subjectively determined according to the relative importance attached to each dimension. Weighting schemes are discussed in section 4.2 and 4.3.

[2] Final market consumption was multiplied by the index number of the Carbonaro equivalence scale (1995 is the base year); this measure of corrected consumption was then multiplied by an index measuring the increase in life expectancy to capture the effect on well-being relative to improvements in living conditions.

[3] Because of the lack of data at a regional level, we do not consider the value of stocks of natural resources and the costs of environmental degradation due to CO_2 emissions, which are included in the IEWB proposed by Osberg and Sharpe.

[4] We included both public and private research expenditures.

Figure 1 – The Italian Index of Economic Well-Being



3.2. Data

This section details how we estimated the four dimensions of the index and their data sources. The first component, consumption flows, was constructed using data from Istat (mainly National and Regional accounts) for final consumption of goods and services, the value of housework and charity work services[5], and costs related to commuting activities and road accidents[6]. Current public expenditures on staff and good and services were computed through Regional Public Accounts- Finance Minister.

The stock value of fixed capital was provided by ISTAT. The share attributed to Lombardy was derived from research carried out by CRENoS in 1994 (18.2% of the national amount). ISTAT data on R&D annual expenses were cumulated over time,

[5] The values of both housework and charity work were computed as the product of hourly wages, the number of average yearly hours devoted to each activity, and the population aged over 15.

[6] The cost of commuting was computed by applying to transport expenditures the share that can be attributed to commuting. The costs of road accidents at the national level where provided by ISTAT. For Lombardy, they were computed by multiplying these national costs by the share of regional road accidents (i.e. the number of road accidents in Lombardy over the total number for Italy).

considering a depreciation rate of 20%, in order to have a stock measure. Following the IEWB methodology, human capital was estimated from the cost side using data on average expenditure per years of schooling (OECD data) and the educational attainment of the population aged 15 or more (ISTAT, Labour Force).

As regard the employment security domain, first we constructed a measure of employment *insecurity* as the ratio between unemployed plus temporary workers and the labour force. Temporary workers are defined as *parasubordinati*[7], *interinali* and irregular workers. Data sources are INPS, EBITEMP and ISTAT respectively. Data on unemployed are provided by ISTAT (Labour Force). In order to associate a decrease in employment insecurity to an increase in well-being we then computed changes in 1-employment insecurity.

Consistently with the IEWB approach, we evaluated income inequality by means of the Gini coefficient and the intensity of poverty by means of the Sen-Shorrocks-Thon index (SST). Our estimates were based on the Survey of Household Income and Wealth (SHIW) conducted by the Bank of Italy.[8] We used a broad definition of after-tax monthly real equivalent incomes[9]. We followed the methodology adopted by Boeri and Brandolini (2005) which considers households as the economic units of aggregation, while individuals are the welfare units. Income inequality among individuals was measured by attributing to every person his or her household's equivalent income on the basis of the OECD equivalence scale. Since a decrease in poverty and inequality corresponds to an increase in the index of well-being, we converted the Gini and SST coefficients into "positive" indexes (i.e. 1-Gini and 1-SST, see Appendix A). As a measure of redistribution of resources from youths to adults we computed earnings differentials between two groups of workers: those with less and those with more than

[7] We considered only the so called "collaboratori". Parasubordinati have been introduced in 1996; we compute the 1995 value as a forecast based on data for the of following years.

[8] The Historical Archive covers the years 1991, 1993, 1995, 1998, 2000, 2002, 2004 and 2006 and reports information at the household level. Missing years are estimated as linear interpolations between the two adjacent years covered by the survey.

[9] It comprises wages and salaries, income from self-employment, pensions, public assistance, private transfers, income from real properties, imputed rental income from owner-occupied dwellings, and yields on financial assets net of interest paid on mortgages. We obtained real income by dividing self-reported income by the Household final consumption Expenditure Deflator (HED) available in national accounts.

35 years of age. We considered after tax earnings for both employees and self-employed available from the Bank of Italy's Survey of Household Income and Wealth (SHIW)[10].

4. Trends in economic well-being in Italy and Lombardy, 1995-2007

In this section we present first the evolution of the four dimensions of the IEWB, and compare the trend of each dimension and its sub-components in Lombardy and in the whole country (section 4.1). Second, we show the effect of aggregating the four components for the changes in economic well-being in the two areas, and compare the trend of the IEWB with that of GDP (section 4.2).

4.1 The evolution of the four dimensions of the Index of Economic Well-being

Figures 2 and 3 describe the evolution of the four dimensions of the index for Italy (I) and Lombardy (L). Figure 4 shows the total change of each specific sub-component for the period 1995-2007. Both consumption flows and the wealth stocks grew in the period 1995-2007, but the magnitude of the increase and the evolution over time differ significantly for the two dimensions. Consumption growth was significant until 2001, then it declined with a new upturn in 2004 leading to an overall increase of about 8.4% in Italy. The same pattern can be observed for Lombardy, but a higher growth rate in the late 1990s implied a larger total variation of consumption compared to the rest of the country (11.3%). Looking at the four sub-components of consumption flows, this trend was mainly driven by the evolution of private consumption which is the largest contributor to total consumption flows[11]. Its positive variation (12.3% and 12.7% in I and L respectively) was reinforced by the increase in current public expenditure, which was particularly high in Lombardy (10.7% and 30%, respectively; see Figure 4 and Tables B.1 and B.2 in Appendix B), and it was slightly reduced by the decrease in housework and charity work (-6.3% in I and -2.5% in L, with major reductions in 2002-03 and subsequent recovery) and the increase in the costs related to commuting

[10] Average earnings were computed by considering the sample of people reporting to be employed at the time of the interview. All observations were weighted by the adjusted sampling weights available in the historical archive. Missing years are estimated as linear interpolation between the two adjacent years covered by the survey.

[11] On average, given the different magnitudes of the sub-components, a 10% increase in personal consumption translates into a 6.8% increase in the consumption flow index (7.3% in L), whereas the same variation in public expenditures, household work and voluntary work and defensive expenses leads to a change of 2%, 1.7%, and -0.6% respectively (2%, 1.2%, -0.5% in L).

activities and road accidents (10.6% in I and 21.9% in L, with peaks of 39.1% in I in 2003 and 48.4% in L in 2001).

Per-capita wealth stocks showed an upward trend throughout the whole period with an overall increase of about 17% and 14% in Italy and Lombardy respectively. The variation in all the three sub-components (physical and human capital stocks, R&D expenses stock) was larger in Italy than in Lombardy, but while the difference is quite small for physical[12] and human capital, it is impressive for R&D expenses (see figure 4). The evolution of this component however has little effect on the wealth stocks index due to the low magnitude of R&D expenses with respect to physical and human capital: a 10% increase in physical capital, human capital and R&D expenses translates into a variation of the wealth stocks index of about 7%, 3% and 0.1% in both Italy and Lombardy.

As illustrated in the previous section, the third component of the Index is a measure of employment security which is negatively affected by the risk of unemployment and by the increase in income uncertainty and vulnerability due to the greater reliance on fixed-term contracts in Italy. The total index of employment security slightly decreased over the 1995-2007 period in both Italy and Lombardy (about -1.2%). This was the result of two opposing effects: the incidence of temporary work increased in both areas leading to a reduction in employment security of 8% and 4.6% in Italy and Lombardy respectively; the unemployment rate decreased with a positive effect (6.9% in I and 3.4% in L). The evolution of the index was different: Italy experienced a strong reduction in the first three years (-3.8%) and a subsequent recovery which took the value of the index in 2007 almost back to the 1995 one; Lombardy, instead, in 2000 had already recovered more than what was lost in the first three years, but then employment security declined slightly but steadily until 2007. The reason for the different trends in employment security in the two areas after 2000 is that, while temporary work increased in both cases in similar proportions, the fall in the unemployment rate was significantly larger in Italy (from 10% to 6%) and it compensated the increase in temporary work (it must be noted that in Lombardy the unemployment rate was quite low, 6% in 1995, and it declined to 3.4% in 2007). However, it is important to underline that the increase in

[12] Due to the lack of data at the regional level, the stock value of physical capital for Lombardy was computed as a share of the Italian one. Differences in the trends of per-capita physical capital are therefore due only to different population growth rates.

the incidence of temporary work was higher in Italy than in Lombardy (from 15% to 21% in I, from 17.4% to 21% in L), due to a faster growth between 1995 and 2000[13].

The fourth dimension of the Index of Economic Well-being captures inequality and poverty issues. It includes measures of inequality in income distribution (Gini), the intensity of poverty (SST), and a measure of the relative loss of command over resources of young generations. Lombardy experienced a higher decrease of overall income equality than Italy (-4.4% and -0.9% respectively), mainly due to a much larger increase in the income gap between young and older individuals (see Figure 4). In Lombardy, the ratio between average earnings of individuals with less than 35 years of age, and individuals older than 35, decreased from 0.75 to 0.65 over the period considered, while in Italy the variation was only of 7 percentage points (from 0.78 to 0.71). The larger loss in Lombardy is due to two different phenomena over the sub-periods 1995-2000 and 2000-2006. In the late 1990s, while adult earnings increased in similar proportions in Lombardy and in Italy (7% and 9% respectively), young workers in Lombardy experienced a drop in labour incomes of about 6% compared to a 3% increase in the whole country[14]. In the new Millennium, instead, adult earnings increased much more in Lombardy than in Italy (13% and 7% respectively), while those for young people showed a similar negative trend (about -1%).

As regards the other two components of the equality dimension, the intensity of poverty decreased in both Lombardy and Italy, with a higher reduction for the whole country (the 1-SST index increased by 2.5% in I and 0.6% in L)[15]. Income inequality exhibited minute positive and negative changes in Lombardy and Italy respectively (the 1-Gini index changed by less than 1%, see Figure 4).

[13] This confirms the regional differences in the Italian labour market, with Southern regions that have a higher incidence of atypical and irregular workers than the Northern ones.

[14] It must be noted, however, that average earnings are higher in Lombardy than in the whole country for both groups. In 2000, average monthly after-tax labour income in Lombardy was 1095 and 1617 euro for individuals younger and older than 35 respectively; in Italy these figures were 1038 and 1396 euro.

[15] In both areas, the intensity of poverty grew in the first phase, until 1998, and decreased in the following years. It is worth noting, however, that poverty intensity is double in Italy than in Lombardy, 7.2% and 3.6%, in 2007).

Figure 2 – Evolution of the four components of the Index of Economic Well-Being for Italy

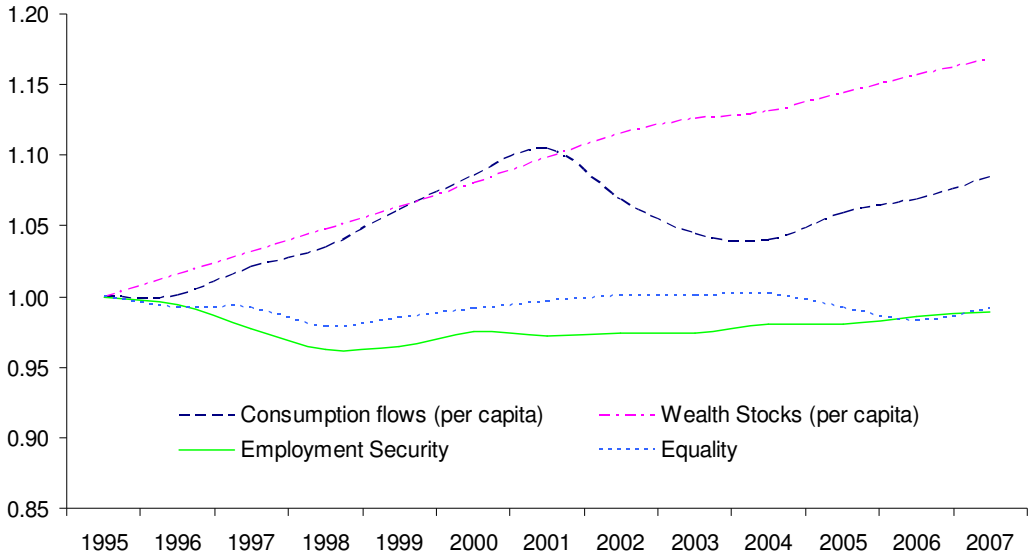


Figure 3 – Evolution of the four components of the Index of Economic Well-Being for Lombardy

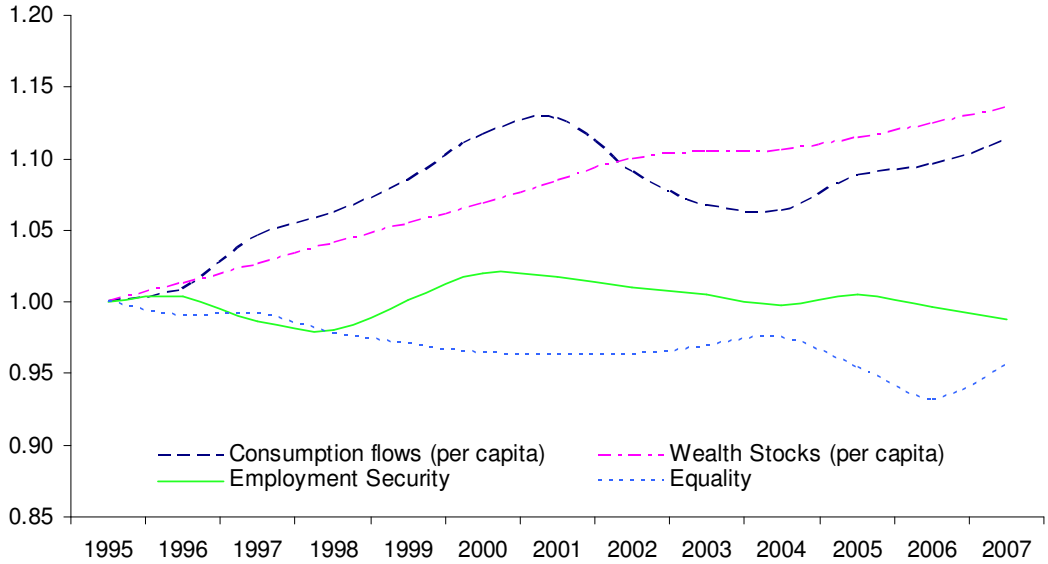
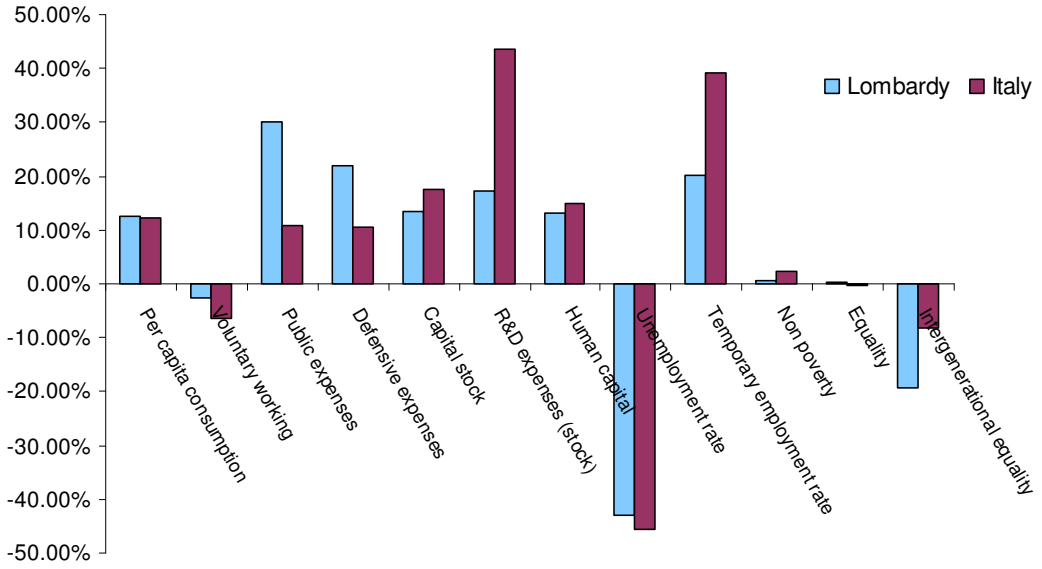


Figure 4 – Overall variation of each specific sub-component (1995-2007)



4.2 The evolution of the Index of Economic Well-being

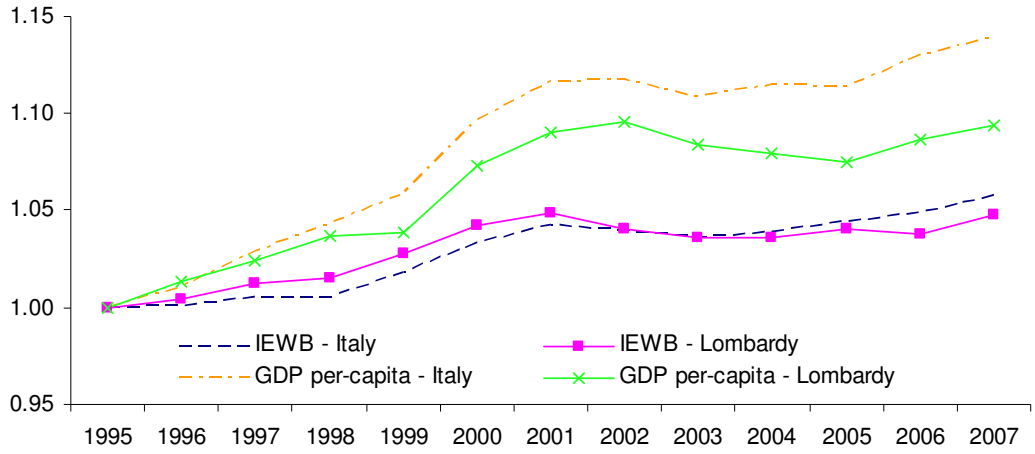
In order to obtain the general Index of Economic Well-Being, all components were aggregated by using subjective weights. According to Osberg and Sharpe's approach (2002a, 2005, 2009), we first assign the same value to all weights[16]. As noted previously, the choice of weights is subjective and reflects the relative importance that the policy maker or the scholar attaches to each dimension. In section 4.3 we will discuss weighting issues and provide estimates of the Index with alternative weighting schemes.

Figure 5 shows the evolution of the Index of Economic Well-Being for Italy and Lombardy compared with the evolution of per-capita GDP. Consistently with Osberg and Sharpe (2009), the Index of Economic Well-being advanced at a slower rate than GDP: the average annual growth in Italy was 0.5% and 1.1% respectively. The gap between the two measures widened especially in the late 1990s, while it remained quite stable after 2001. This gap is lower in Lombardy, mainly because per-capita GDP growth was lower (the overall change was 13.9% in Italy and 9.4% in Lombardy). The

[16] In the literature, most composite indexes assign equal weight to each component; the best known example is the Human Development Index.

evolution of well-being followed, instead, very similar patterns: a positive trend throughout the whole period, with a faster growth between 1998 and 2001, leading to an overall variation of 5.8% in Italy and 4.8% in Lombardy. The latter area experienced a slightly faster growth in the first phase due to the robust increase in consumption, while Italian well-being grew slightly more after 2003.

Figure 5 – Evolution of the Index of Economic Well-Being and per-capita GDP



The weighted contributions of the four components are presented in Table 2. In Italy, the total increase in economic well-being is the result of a positive effect of changes in consumption flows and wealth stocks (6.3%), and a negative effect of the worsening of employment security and equality (-0.5%). In Lombardy, if there had been no changes in employment security and equality, the positive variations of consumption and wealth stocks would have lead to a larger increase in the IEWB (6.2%). However, the negative changes in equality of income distribution and employment security resulted in a much smaller growth of economic well-being (the reduction in the IEWB due to these two components was 1.4%)[17]. As regards the different sub-components, from Figure 6 it is possible to see that changes in per-capita adjusted private consumption and per-capita physical capital were the major determinants of the evolution of economic well-being. Public expenses and human capital contributed to the positive variation of IEWB (in Italy also a slight reduction of poverty intensity), whereas intergenerational inequality,

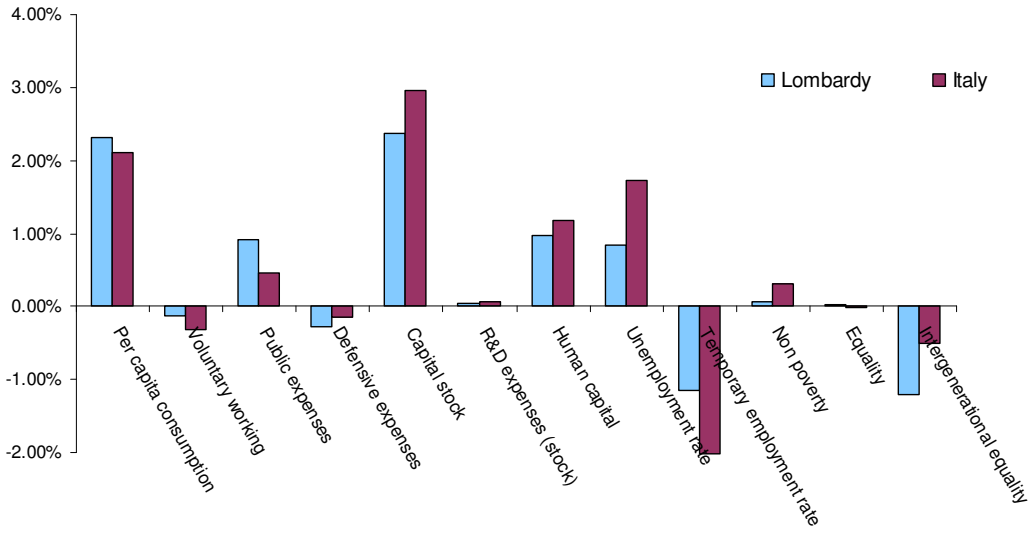
[17] For some years at the beginning of 2000s, employment security and equality increased faster than GDP. This, together with the increase in the stock of wealth and consumption, leads to IEWB annual growth rates higher than per-capita GDP ones (in 2003 and 2005).

job security, charity work and the increase in defensive expenditures negatively affected it.

Table 2. Weighted overall growth rates of IEWB components and growth rates of IEWB and GDP (1995-2007)

	GDP	IEWB	Consumption flows	Wealth stocks	Employment security	Equality
Italy	13.9%	5.8%	2.1%	4.2%	-0.3%	-0.2%
Lombardy	9.4%	4.8%	2.8%	3.4%	-0.3%	-1.1%

Figure 6 – Weighted overall growth rates of each specific sub-component (1995-2007)



4.3. Sensitivity analysis

In this section, we provide estimates of the Index using alternative weighting schemes to explore the sensitivity of the results to the choice of weights. The choice of an equal weight for the four components (the baseline setting used in the in previous sections), reflects the idea that the domains are equally important and implies that every variation of opposite sign and equal magnitude in any component of the index would automatically cancel out. Do changes in consumption have as much weight as changes in employment security or income distribution? Which component should be regarded as the most relevant? There is no prescriptive rule that could provide a univocal answer to this question: weights are subjective and their identification process may vary

according to people's opinions and policy makers' particular purposes. As suggested by the Stiglitz Commission (2008), it would be interesting to identify weights on the basis of a public survey in which people were asked to order different aspects of well-being by a personal judgement on their importance. Since such information is currently unavailable, we decided to adopt the approach suggested by the literature (Osberg and Sharpe 2002a; Osberg and Sharpe 2009) and consider two other sets of weights. In simulation 2 we alter the relative importance of consumption flows and wealth stocks, without changing the one of employment security and equality. More precisely, we associate a weight of 0.4 to consumption, 0.1 to wealth stocks, and – as in simulation one – 0.25 to employment security and 0.25 to equality. The increase in weight given to consumption is reasonable if it is believed that people value current material goods more than accumulated stocks of wealth (i.e. future consumption), employment security and income equality; this may lead to a bias against sustainability (Osberg and Sharpe 2009). Simulation 3, instead, assigns much more importance to employment security and equality compared to consumption and wealth (weights are: 0.2 to consumption flows, 0.1 to wealth stocks, 0.3 to employment security and 0.4 to income distribution). This weighting scheme emphasizes the concept of heterogeneous citizens and economic security for the future, but reduces the importance of economic sustainability granted by the accumulation of productive stocks (see Table 1).

Figure 7 and 8 show the trend in the Italian and Lombardy Index for the three simulations. During the 1995-07 period, the IEWB registered a positive overall variation in both areas in all the three simulations, but the magnitude and the pattern of evolution were sensitive to the chosen weights.

In Italy consumption flows grew at a similar rate than wealth stocks until 2001, thus simulation 1 and 2 are substantially aligned. Between 2001 and 2004, instead, consumption registered a significant reduction, while capital growth rates remained positive. As a consequence, the overall increase in economic well-being in simulation 2 is smaller than in simulation 1 (4.5% vs. 5.8%). In Lombardy, since physical capital grew less than in the rest of the country, the shift in weights from wealth to consumption causes an upward shift of the whole curve until 2001. The positive difference between the two simulations accumulated in the late '90s was more than offset by the strong decline in consumption in 2002-2004. The gap between the changes

in economic well-being under the two weighting schemes slightly decreased in recent years.

Given the reduction in both economic security and equality illustrated in section 4.1, the growth of economic well-being is significantly smaller under simulation 3 than under the other alternatives (only 2.7% in I and 1.5% in L)[18]. The gap between the baseline case and simulation 3 is the same in both Italy and Lombardy.

In order to highlight the importance of the two new sub-components that we included in the IEWB (namely the variation in employment security due to the adoption of temporary contracts, and the change in equality due to the increase in the earnings gap between young and adult workers), we run a final simulation without them. We assign equal weights to the four dimensions; the change in employment security is now entirely due to changes in the unemployment rate, while in the equality index the importance of variations in poverty is three times that of the Gini index. Results are shown in Figure 9.

As expected, ignoring the risk associated with temporary employment and the redistribution from younger generations to older ones, leads to a higher growth of economic well-being (8.2% vs. 5.8% in I, and 7% vs. 4.8% in L). The gap between the two measures increases over time, and it is always larger in the whole country. As discussed in section 4.1, in Italy there was a larger increase in temporary work, and a smaller growth in intergenerational inequality. Clearly, the effect of the former prevails. Indeed, when ignoring temporary work, the employment security index increased by 5.8% in Italy, and by 2.7% in Lombardy (compared to a loss of 1.2% in both areas in the baseline scenario), while – when ignoring intergenerational issues – the equality index increases by 1.9% and 1.4% respectively (compared to a change of 0% and 2% in I and L in simulation 1).

[18] This is in line with the results of Osberg and Sharpe (2009) for OECD countries.

Figure 7 – Evolution of the Index of Economic Well-Being for Italy with different weights

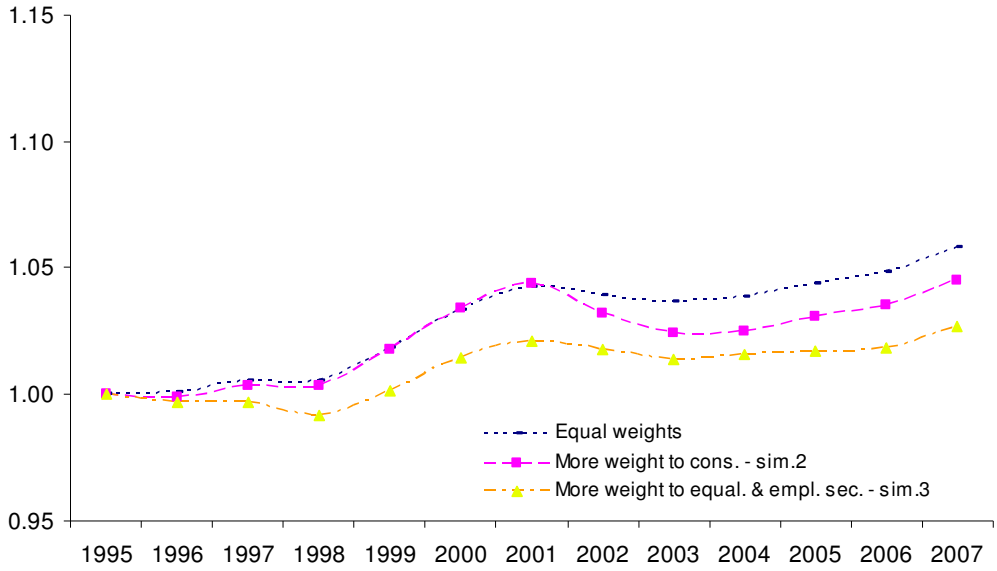


Figure 8 –Evolution of the Index of Economic Well-Being for Lombardy with different weights

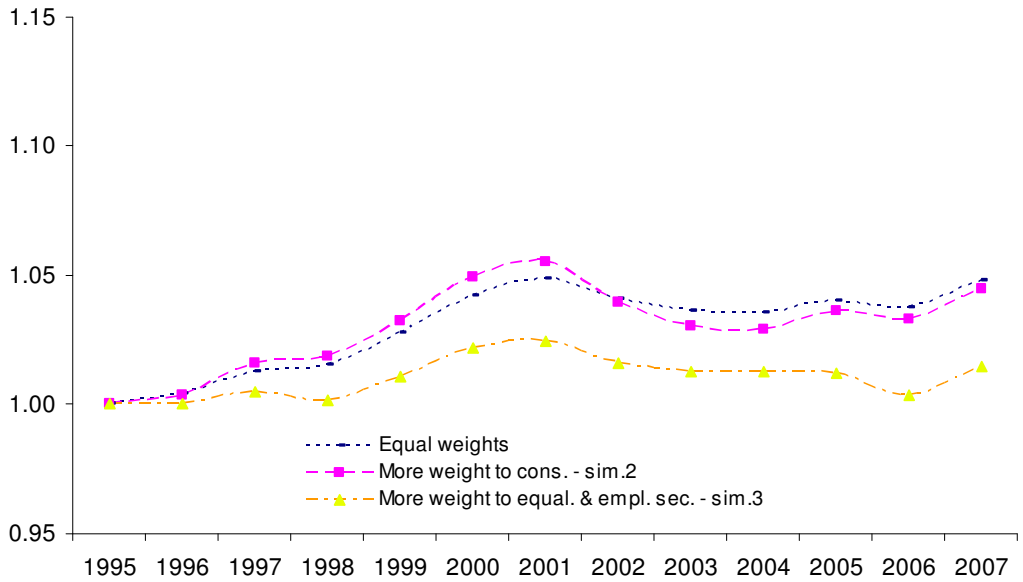
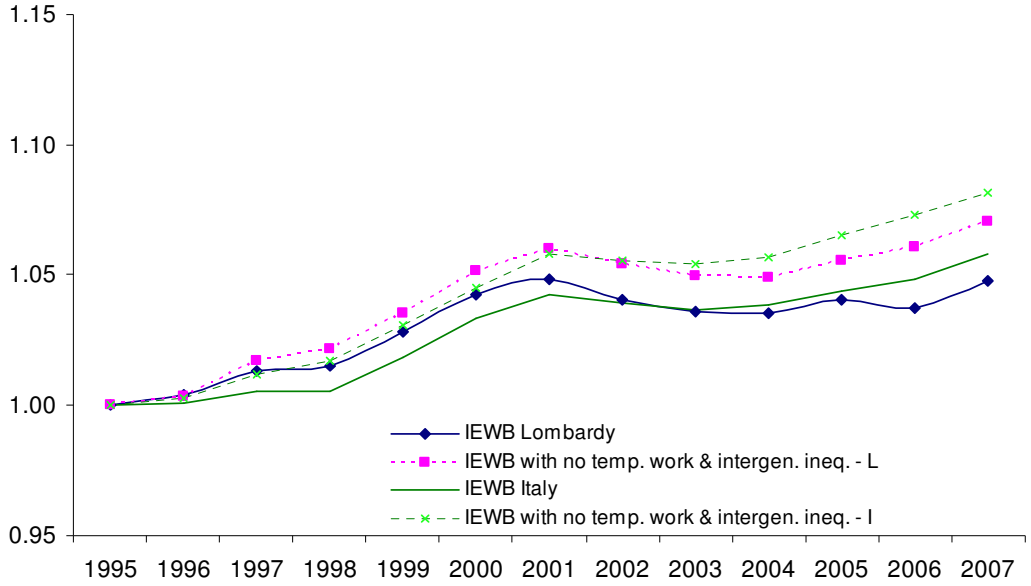


Figure 9 – Evolution of the Index of Economic Well-Being with and without intergenerational inequality and temporary employment



5. Conclusions

The awareness that GDP is neither a sufficient nor a proper indicator for the evaluation of the well-being of a society has led to the development of several indexes which combine economic and social trends, and address environmental and sustainability issues. In this paper we discuss the application to the Italian case of one of the best known and most important indexes, the Index of Economic Well-Being developed by Osberg and Sharpe. The IEWB shifts emphasis from production to consumption, emphasizes the household perspective, measures non-market activities, includes information on wealth, gives prominence to the distribution of income, and highlights economic security. We argue that the application of this index to the Italian context requires some changes in the consideration of the income distribution and economic security domains.

More precisely, after the labour market reforms of the '90s economic insecurity increased considerably because new forms of labour contracts were introduced, which were all fixed-term, with very low social security contribution and social protection. The use of these contracts spread very rapidly in the whole country, replacing the "fear

of job loss" with the "fear of not finding a new job" at the end of the current one, and with the fear of not being able to accumulate enough contribution for future pension benefits. Therefore, the incidence of this phenomenon is an important component of employment insecurity in Italy. We account for it by specifying the index of employment security as the evolution of 1 minus the share of unemployed and temporary workers over the labour force.

A second issue regards the equality dimension. We argue that the IEWB should explicitly consider the evolution of the earnings gap between young generations (i.e. those who are at the stage of the life cycle devoted to household formation and fertility decisions) and older ones (i.e. those who have already faced these choices). Indeed, if the earnings gap between these two groups increases, the position of the younger ones weakens, making them more dependent on intergenerational transfers, especially if the welfare system does not compensate for this relative loss. This may cause a delay in leaving the parental home, in family formation and in fertility decisions, with clear consequences for the future of the society itself. Therefore we add the earnings gap between the young (less than 35 years of age) and the adults (more than 35), as a sub-component of the inequality dimension.

We used the revised version of the IEWB to analyse the trends in economic well-being in Italy and in Lombardy (the leading Italian region) over the 1995-2007 period. Consistently with the findings of Osberg and Sharpe (2009), the Index of Economic Well-being advanced at a slower rate than GDP, and the gap between the two measures widened especially in the late 1990s. This gap is lower in Lombardy, mainly because per-capita GDP growth was lower, whereas the overall variation of the IEWB was very similar in the two areas. The rise in economic well-being is the result of an increase in consumption flows and wealth stocks, and a small reduction in economic security and equality. The negligible change of the employment security index was the result of an increase in the incidence of temporary work, which lead to a reduction in employment security (-8% and -4.6% in Italy and Lombardy respectively), and a decrease in the unemployment rate which translated into a rise of the index (+6.9% in I and +3.4% in L). The variation in overall income equality was larger in Lombardy than in the whole country (-4.4% and -0.9% respectively), mainly due to a much larger increase in the income gap between young and older individuals.

We explored the sensitivity of our results to the choice of weights given to the different dimensions. We showed that a shift in weights from consumption flows and wealth stocks to equality and employment security, causes a significantly smaller growth of economic well-being (only 2.7% in Italy and 1.5% in Lombardy). This is due to the reduction in both economic security and equality dimensions. Instead, if we ignore the risk associated with temporary employment and the redistribution from younger generations to older ones, we obtain a higher growth of economic well-being (8.2% vs. 5.8% in Italy, and 7% vs. 4.8% in Lombardy), and this difference increases over time.

These results highlight the role of the new dimensions that we have introduced in the Italian version of IEWB. In particular, they suggest that policy makers interested in improving the economic well-being in Italy should pay careful attention to the distribution of earnings between generations, and consider the effect of increasing labour market flexibility on present and future economic insecurity.

Appendix A. Methodology

The index has been constructed according to the following formula (consistent with the IEWB approach):

$$IEWB_t = \sum_{k=1}^{4} \alpha_k \; I_t^k \qquad (\sum \alpha_k = 1),$$

where α_k is the subjective weight attached to dimension k, and I_t^k is the index number of dimension k at time t (the basic year is 1995). Each dimension can have more than one sub-component:

$$I_t^1 = \frac{{}_{pc}C_t^A + {}_{pc}G_t + {}_{pc}UP_t - {}_{pc}D_t}{{}_{pc}C_0^A + {}_{pc}G_0 + {}_{pc}UP_0 - {}_{pc}D_0}$$

$$I_t^2 = \frac{{}_{pc}K_t + {}_{pc}R\&D_t + {}_{pc}HC_t}{{}_{pc}K_0 + {}_{pc}R\&D_0 + {}_{pc}HC_0}$$

$$I_t^3 = \frac{1-\left[(U_t + TW_t)/LF_t\right]}{1-\left[(U_0 + TW_0)/LF_o\right]} = \frac{LF_0}{LF_0 - U_0 - TW_0} - \frac{U_t}{LF_t}\frac{LF_0}{U_0}\frac{U_0}{LF_0 - U_0 - TW_0} - \frac{TW_t}{LF_t}\frac{LF_0}{TW_0}\frac{TW_0}{LF_0 - U_0 - TW_0}$$

$$I_t^4 = \beta\frac{1-SST_t}{1-SST_0} + \gamma\frac{1-Gini_t}{1-Gini_0} + (1-\beta-\gamma)\frac{(Y_Y/Y_A)_t}{(Y_Y/Y_A)_0}$$

Where:

Consumption Flows Index:

${}_{pc}C^A$ = per-capita consumption expenditures on final goods and services (at constant prices) adjusted for the index of equivalence scales and life expectancy index

${}_{pc}G$ = per-capita current public expenditures at constant prices

${}_{pc}UP$ = per-capita value of non-paid work (housework and charity work) at constant prices

${}_{pc}D$ = per-capita defensive expenses (costs due to commuting activities and road accidents) at constant prices

Wealth Stocks Index :

${}_{pc}K$= per-capita physical capital stock at constant prices

${}_{pc}R\&D$ = per-capita R&D stock at constant prices

${}_{pc}HC$ = per-capita human capital stock at constant prices

Employment Security Index:

U = unemployed

TW = temporary workers (*parasubordinati*, *interinali* and irregular workers)

LF = labour force

Equality Index:

SST = intensity of poverty (Sen–Shorrocks–Thon Index)

Gini = Gini coefficient of income inequality

Y_Y = average earning of young workers (with less than 35 of age)

Y_A = average earning of adult workers (with more than 35 of age)

β, γ = subjective relative weights associated with poverty and inequality

Appendix B.

Table B.1 – Indexes of the specific sub-components for Italy, 1995-2007

year	Per-capita consumption	Housework and charity work	Public expenses	Defensive expenses	Capital stock	R&D expenses (stock)	Human capital	Unemployment rate	Temporary Employment rate	Non poverty	Equality	Intergenerational equality
1995	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996	1.006	0.981	1.008	1.014	1.015	1.063	1.016	1.000	1.026	0.994	0.999	0.981
1997	1.038	1.007	0.989	1.085	1.029	1.106	1.033	1.009	1.106	0.996	1.000	0.976
1998	1.068	1.002	1.007	1.239	1.045	1.140	1.049	1.009	1.172	0.988	0.985	0.951
1999	1.097	1.008	1.055	1.283	1.063	1.177	1.062	0.973	1.188	0.995	0.994	0.954
2000	1.124	1.037	1.058	1.279	1.083	1.229	1.074	0.902	1.189	1.002	1.002	0.958
2001	1.126	1.073	1.133	1.338	1.103	1.292	1.086	0.813	1.272	1.006	1.006	0.965
2002	1.117	0.974	1.085	1.379	1.121	1.354	1.098	0.768	1.295	1.010	1.010	0.973
2003	1.109	0.870	1.109	1.391	1.132	1.380	1.109	0.750	1.306	1.013	1.022	0.955
2004	1.094	0.892	1.103	1.359	1.140	1.388	1.108	0.718	1.300	1.017	1.035	0.937
2005	1.116	0.916	1.087	1.325	1.151	1.388	1.125	0.690	1.319	1.020	1.015	0.913
2006	1.119	0.907	1.105	1.205	1.164	1.411	1.138	0.606	1.359	1.023	0.995	0.889
2007	1.123	0.937	1.107	1.106	1.175	1.437	1.149	0.544	1.391	1.025	0.996	0.919

Table B.2 – Indexes of the specific sub-components for Lombardy, 1995-2007

year	Per-capita consumption	Housework and charity work	Public expenses	Defensive expenses	Capital stock	R&D expenses (stock)	Human capital	Unemployment rate	Temporary Employment rate	Non poverty	Equality	Intergenerational equality
1995	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996	1.023	0.965	1.002	1.024	1.014	1.031	1.010	0.983	0.990	0.997	0.971	0.999
1997	1.064	1.002	1.028	1.079	1.026	1.053	1.027	0.933	1.082	0.998	0.974	0.999
1998	1.094	0.999	1.088	1.321	1.040	1.011	1.045	0.883	1.124	0.989	0.935	0.997
1999	1.113	1.031	1.125	1.379	1.055	1.038	1.056	0.767	1.073	0.996	0.962	0.928
2000	1.130	1.079	1.232	1.419	1.071	1.068	1.064	0.667	1.026	1.003	0.990	0.860
2001	1.129	1.117	1.293	1.484	1.088	1.110	1.075	0.567	1.070	1.003	0.989	0.858
2002	1.114	1.015	1.236	1.467	1.103	1.157	1.090	0.583	1.103	1.003	0.988	0.857
2003	1.102	0.908	1.257	1.384	1.109	1.176	1.089	0.600	1.117	1.005	0.992	0.873
2004	1.084	0.922	1.286	1.324	1.112	1.157	1.091	0.671	1.121	1.007	0.996	0.890
2005	1.109	0.960	1.263	1.295	1.116	1.142	1.107	0.679	1.086	1.007	0.983	0.818
2006	1.119	0.952	1.254	1.231	1.126	1.154	1.120	0.617	1.148	1.006	0.971	0.746
2007	1.127	0.975	1.300	1.219	1.136	1.172	1.132	0.571	1.201	1.006	1.004	0.808

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