

New Cross-National Architecture for Labour Market Statistics Project

Investigating Subjective and Objective Notions of Well-Being across
National Labour Markets

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Abstract

The principal aim of the paper is to add to an understanding of how to measure well-being of people participating in the labour market. A brief survey of the literature shows that well-being consists of both subjective and objective aspects and that the problems of selection and aggregation of indicators are inherently normative in nature. A definition of labour market well-being is introduced as a set of four components: (1) basic values such as income, leisure, choice and security, (2) subjective preferences for each of these values, (3) objective indicators related to these values and (4) economic interdependences between the objective indicators. The relationship between values, preferences and indicators is tested for the case of member countries of the European Union. Data on job satisfaction is used to find out which objective indicators such as the incidence of part-time work explain well-being empirically. Finally, a pooled cross-section analysis shows how labour market well-being may be under- or overstated by the use of simple unemployment rates for given countries. It also shows that there may be serious conflicts between social and political preferences on the one hand, and economic necessities in terms of interdependences between indicators on the other.

1. Introduction

The „LM Stats Project“ started with the observation that unemployment is an insufficient indicator for the well-being of employed people in industrialised countries. Among other things, variations in legal entitlements and socio-economic factors suggest that the aggregate well-being accrued in national labour markets differs from a simple account of unemployed people (cf. Lettieri in this volume). More specifically, unemployment is an insufficient measure when talking about the well-being of people inserted in labour markets. It is true that higher unemployment rates may be related to higher levels of job insecurity. But there may be other factors with an even stronger relation to well-being of employed people such as wages or working-time arrangements. These caveats prompt the question in what ways the traditional unemployment rate under- or overestimate the well-being of participants in contemporaneous labour markets.

To deal with this question, this paper starts with a general discussion of what we mean when we speak of 'well-being'. A brief survey of the literature on general notions of well-being shows that a consensus how to define and measure well-being is necessarily difficult to achieve. The second section of this paper elaborates some of the reasons for this problem. Its main point is that the plurality of different notions of well-being is due to the fact that 'well-being' is both inherently normative and, in practice, complex. The paper proposes a combination of both subjective and objective indicators to address these features of well-being.

More specifically, the paper delivers a stylised definition of labour market well-being, or LMWB for short. In general, well-being may be seen as a set of basic values in a society, the perceptions in the society how important these values in this society are indicators that attempt to measure these values, and the relationships between these indicators. Given such a notion of well-being, the third section elaborates which indicators may be important for defining well-being for participants in labour markets. In other words, it tries to nail down a specific notion of well-being adapted to the particular concerns prevalent in national labour markets. Methodologically, this part adheres to a two-step procedure suggested by Praag et al. (2001). To illustrate this approach the section presents an illustrative example of LMWB: job satisfaction in the EU. It shows how overall job satisfaction is related to four basic values – Income, Leisure, Choice and Security –, and how these values, in turn, are correlated with objective indicators such as national rates of unemployment.

With the set of objective indicators suggested in the previous part, section four compares LMWB with the standard unemployment rate. This is done with the help of an analysis of pooled cross-section data for OECD countries using unemployment as the dependent variable. Hence, the traditional unemployment rate serves as a yardstick necessary to attach weights to different indicators that are of LMWB. The thereby constructed

artificial unemployment rate deviates from actual unemployment, and allows us to analyse by how much the unemployment rate over- or underrates the 'true' level of labour market well-being. In addition, using the unemployment rate as a yardstick also shows conflicts between different norms, since trade-offs between indicators allow for the possibility that subjective preferences for some of the values may clash. This is to say that a certain policy, for instance, may well improve people's satisfaction, but it also could produce negative indirect effects that actually lower total well-being.

All the results, of course, are contingent on the claim that our constructed 'objective' measure of LMWB, endorsed by 'subjective' data on European job satisfaction, actually holds. The synthetic indicator developed in this paper does not claim to overcome the basic normative and comparative problems mentioned in the second section. We state, however, that filtering indicators by the use of survey data, leads to an in-built reflexivity and accounts – at least partially – for the empirically discernible plurality of opinions. Throughout the paper the problems and pitfalls of such an approach are underlined. Correspondingly, the main aim of the paper is to add to the methodology of investigating LMWB, rather than to propose an uncontroversial measure thereof.

2. A Brief Survey of the Literature on Notions of Well-Being

Before we engage with specific measures of well-being for labour markets, this section gives a brief overview of theoretical and empirical approaches to the general notion of well-being. Surveying the relevant literature, some of the major problems with constructing measures that are highly normative in nature come to the fore.

Finding an optimal indicator for the well-being of nations is an old and huge, if not titanic, task of social sciences (Banting et al. '01). The more scholars investigate this question and the more scientific suggestions are made, the more diversity prevails in academic debates. This holds for both more theoretically and empirically inspired academic scholarship.

One common means of grouping approaches to human well-being is the distinction between objective and subjective measures (Paim '95). Both approaches have normative justifications of their own. For public policy reasons it is insightful to analyse objective indicators such as the incidence of unemployment. Well-being as the degree of 'happiness' people ascribe subjectively to themselves is beyond the scope of direct government control. This is probably the key reason why in most policy evaluation studies the use of objective indicators prevails, although these indicators are always a limited proxy for the subjective feelings of people.

Objective indicators are usually based on some form of consumption and other, frequently rather materialistic, components. However, these indicators are adapted to the specific needs (and wants) of people in different regions across the world. Whereas well-being indicators for developing countries stress, for example, the importance of health or nutrition (Isham et al. '02; Paim '95), researchers constructing indices for OECD countries use fairly different sets of indicators including, for example, leisure as a 'postmaterial' value (Inglehart '00). One of the most encompassing approaches in this direction (Osberg and Sharpe '02) focuses on aspects of inter-temporality and uncertainty. But the agenda is expansive as these days more and more ingredients are "put into the pie". To give but one example, the OECD (Healy et al. '01) pleads for the inclusion of human capital in the analysis of individual well-being.

A basic subjective indicator found in the literature asks the simple question how happy people are. This approach has seen a remarkable academic renaissance in the last years (Alesina et al. '01; Clark '98; Oswald '97; Welzel et al. '01). Such an account of well-being avoids most of the empirical problems of selecting and weighing different indicators, but, exactly for this reason, remains opaque. Why is well-being, defined as happiness or overall satisfaction, higher or lower in some countries or between social groups? What could be done to improve the well-being of citizens in specific countries? How valid and reliable is this empirical instrument for the purposes of analysis? As for the latter, many authors have doubted the relevance of survey data for the quest of well-being indicators (Fernández Macías and Muñoz de Bustillo Llorente '02). People do tend to give biased or sometimes erratic responses that contain little information. From a methodologically point of view it suffices to say that, while objective indicators share the problem of selecting and weighing, subjective indicators may not always be reliable instruments for the concept of well-being.

In short, empirical accounts have produced more diversity than unanimity in the quest for suitable well-being indicators. A brief glance at the state-of-the-art in theoretical discussions shows: first, it is haunted by similar problems; second, there are good reasons to believe that this is necessarily the case.

To begin with the second point, a first remark deals with the way academics treat individual well-being. Microeconomic theory of utility leaves the sources of utility unexplained (Ackerman '97). Whether they consist of material and non-material values or entirely different categorisations is beyond the scope of an analysis of individual choice that takes preferences as given. Psychology or sociology may open up this black box, but only for the sake of more diversity in delivering accounts of individual happiness (Helliwell '02). Indeed, there is good reason to believe that – due to processes of individualisation or modernisation (Inglehart 2000) – well-being in OECD countries is a heteroscedastic phenomenon in the sense that its variance rises with the level of economic

activity. To take one example: the number of consumption goods has constantly increased over the last couple of decades. Today people face much more complex consumption choices than years ago when no computers or long-distance vacation trips were available.

Recent, more encompassing theoretical accounts of well-being such as 'human development' (Sen '99; Welzel, Inglehart, and Klingemann '01), acknowledge this fact. They include an increasing number of elements in the utility function of individuals. Once more, this multiplies the possibilities of understanding individual well-being for scientific purposes. Figure 1 gives some anecdotal evidence for the strong growth of academic interest in well-being. The number of scientific articles that contain the word 'well-being' in its title has constantly increased. The increase has even been stronger than for related traditional concepts such as 'welfare'. But once the sources and perceptions of individual well-being differ, so do people's preferences for attempts of improving their well-being.

Correspondingly, a second remark has to deal with the way individual preferences are aggregated on a national level of well-being. Long ago, Arrow (Arrow '51) has stated that the likelihood of a socially optimal aggregation of individual wills is very small for any democratic procedure. The aggregation of preferences is a normatively disputed, social and political result generated by institutional settings (Przeworski '00). The upshot of this argument is, therefore, to say that both the definition and the means of improving well-being are prone to political contestation and converse societal judgements. The nuisance of finding merely imperfect or distorted indicators of national well-being reveals the substance of how to unify different beliefs and attitudes.

This issue is related to a third remark. The more we try to eradicate the vagaries of diversity, the more restrictive the theoretical assumptions of welfare economic theory become. The result is a shrinking applicability of theory for real world cases. Take a real-value social welfare function as an example. This function consists of a set of variables. Since only a dictator could tell us what is optimal for the whole of society, in democracies such a social welfare function should rest on individual utilities. But for the sake of aggregation these utilities must be cardinal and comparable between individuals (Mueller '89: 375). The consequence is that the application of a real-value function is only non-controversial for those cases where Pareto efficiency is relevant. But Pareto efficiency is a highly restrictive criterion that is rarely met. For the purposes of constructing indices of national labour markets, trade-offs between people show up in aggregate national statistics. How, for example, do we deal with the problem that a certain policy or institution like unemployment benefits maybe beneficial for the unemployed, but has negative spill-over effects for the employed in the form of higher taxes? By the very nature of the topic, the quest for indicators of well-being runs into all kinds of

problems modern scientific literature on social choice has brought to the fore.

To conclude, well-being is a concept that allows for many controversies for at least two major reasons. First, since it is a highly normative construct, any authoritative or ultimate attempt to define well-being must fail. It is therefore highly recommendable to make any claims about the empirical estimation of well-being contingent on the normative assumptions to be adopted explicitly in any definition of well-being. In that respect, the next section aims at specifying a set of normative assumptions for the case of labour market well-being. Second, since well-being is a 'diffuse' construct, it entails objective and subjective characteristics. People may experience social facts such as unemployment, but they do so differently. Hence, how people feel about these facts depends as much on their perceptions as on their empirically measurable exposure to these facts. Combining subjective and objective notions of well-being could allow restricting plurality of indicators while allowing for the fact that people's preference may be heterogeneous.

3. Constructing an Index of Labour Market Well-Being: The Case of the EU

3.1. Defining Labour Market Well-Being

The aim of this section is to pin down a way of constructing a specific approach to well-being of people involved in the labour market. An interesting way how to combine an explicitly normative point of view with the need for disentangling the diffuse notion of well-being is to use a set of fundamental values. Some scholars have proposed shortlists of such basic values in pluralist societies (e.g. Quizilbash 1997). Whether these values may be 'inter-subjectively' meaningful to all people affected as Quizilbash argues (ibid.) is a topic to be discussed among philosophers and scholars involved in the theory of science.¹ For the purposes of this paper, it is enough to motivate a specific set of values for LMWB that captures the overall satisfaction with professional life. For this reason, four basic values are arbitrarily chosen to proceed with the argument: Income, Leisure, Choice and Security. In the following each of these values is briefly discussed in turn.

The first value to be discussed is 'Income'. Empirical studies agree that the earnings received from economic activity are a key concern for individuals in the labour market and determine their well-being (Praag et

¹ 'Inter-subjectively' means that people share a common understanding as well as equal judgements about these values. This conception is based on the philosophy of language developed by philosophers such as Ludwig Wittgenstein or John Searle. In our opinion, this does not allow for refuting the problems of Arrow as Quizilbash argues. People may agree on basic values, but not on their relative weights once included in a welfare function.

al. '01). There is less of a consensus, however, to what extent pay actually raises the well-being or job satisfaction perceived by participants in the labour market (Alesina, Tella, and MacCulloch '01; Clark and Oswald '95). Hence, the relationship between income and well-being is in no ways simple. Some studies have even argued that there is a negative relationship between the economic prosperity of a country and the level of satisfaction people show. There is evidence that this is particularly the case if developing and industrialised economies are compared, but it may also be true for different segments within national labour markets (Oswald '97).

A related topic extensively discussed in the literature deals with absolute or relative measures of wealth and income (e.g. Clark and Oswald '95; Sen '99). Many scholars have argued that people pay more attention to relative income than to the absolute amount of real earnings they receive. In theoretical terms this means that utility functions between individuals are interdependent and that social and cultural norms may play a decisive role in this context. It also corresponds to the more normatively inspired literature that argues for the inclusion of equity concerns in the overall welfare function (Sen '99). In a similar vein, comparative analysts of welfare states have argued that wage compression is a deliberate policy strategy to enhance well-being of employees (Esping-Andersen '90).

Working comes at an opportunity cost, which is a decrease of 'Leisure'. It is the second basic value to be taken into consideration when talking about LMWB. The weight attached to leisure may differ across countries and times. For instance, some scholars argue that leisure and other 'postmodern' values have increased in importance over time (Ingleheart 2000). In addition, individual attitudes towards leisure are very heterogeneous, as, for example, some people actively choose part-time work whereas others are forced to do so, because they cannot find a full-time equivalent.² In some empirical studies over-time work seems to be one of the strongest indicators capable of negatively influencing job satisfaction (Fernández Macias and Munoz de Bustillo Llorente '02). As a consequence, well-being should differ for people employed part-time, full-time, and over-time. It comes as no surprise that the relationship between e.g. average working hours per week and job satisfaction may be nonlinear.

One of the values notoriously difficult to define is 'Choice'. In modern labour markets it is assumed that LMWB rises with the degree of choice a worker can exert when choosing a job. For labour market activities, choice must refer to the possibility of choosing a job that fits individual needs. This issue also may be related to the issue of

² A standard way to deal with this problem is to distinguish between voluntary and involuntary part-time work. If, however, this distinction is, in turn, affected by social norms or political institutions it loses much of its 'analytical bite'. Therefore we have deliberately chosen not to use such distinctions in the following analyses.

'empowerment' or the degree of control employees, in particular, can exert on their own work. Unions may play a role in here, since they can enhance workers' empowerment by the mechanism of collective bargaining (Lechner '89).

The more markets are unstable and go through periods of substantive structural change, the more the concern for job security comes to the fore. Therefore, 'Security' has been included as the last basic value that raises LMWB. Job loss has profoundly negative consequences for individuals. Most people lose firm-specific human capital and have to reorient themselves in the labour market. Moreover, job loss also signifies substantive losses in income and social status. As for the latter, unemployment frequently means becoming stigmatised in a society (Larsen '02). Hence, the subjective impact of unemployment may be even larger than the incidence of unemployment would suggest. In addition, the hardship the unemployed experience may differ for countries with different social settings and welfare state institutions. Family ties or public transfer mechanisms such as unemployment benefits mitigate at least the financial problem of the person affected.

Our list of basic values necessarily remains incomplete. Clark (Clark '98), for instance, uses a much more encompassing list of basic concerns that also deals with the issues of social networks or the degree to which jobs are difficult or very demanding. This prompts the question how to evaluate the basic arbitrariness and selectivity in choosing these four values and not other ones. Contrary to Quizilbash, we cannot think of a mechanism of society to draft a complete shortlist of basic prudential values. Opinions may and will differ.

However, it is one of the crucial insights in the normative construction of LMWB that opinions do not differ on values as such, but on the relative weights these values have.³ To give an example, opinions could differ whether a policy may increase earnings or leisure for given societies. Political debates take such a form, for there is usually no controversy that either of the two basic values is important, but individuals or political parties may have differing opinions on the question which value is more important. In short, all values not considered here may be seen as values with zero weights attached to them. The omission of these values may lead to biased results, but the level of this bias should be empirically observable as a lack of statistical fit in empirical estimations.

All things considered, a crude definition of LMWB inspired by the literature on social choice (Hinich and Munger '97) may be given as follows: LMWB consists of four components: 1) a set of fundamental values or concerns. We have suggested the consideration of four basic norms – Income, Leisure, Choice and Security – that constitute overall

³ Values, in the terms of a leading German sociologist, are 'non-refutable items' (Luhmann '01: 105).

LMWB. 2) A set of preferences for these values shaped by cultural or individual perceptions that act as weights or filters for these values. 3) A set of objectively measurable variables related to these weighted values. 4) A matrix of relationships that accounts for interdependence between these variables. Thus, LMWB is a combination of subjective and objective aspects of particular features of national labour markets. We have already discussed the four basic values. The next subsection will give an example for measuring preferences and their relation to objective indicators using the case of the EU-15. Section 4 will then attempt to add the last component, which is the relationship between these objective indicators.

3.2. An Illustrative Example: Labour Market Well-Being in the European Union

In the following the EU-15 serves as an example for comparing subjective and objective notions of well-being. We make use of an approach developed by Praag et al. (Praag, Frijters, and Ferrer-i-Carbonell '01) who employ a two-step strategy: first they define basic values, or 'domains' as they call them, and show their relation to overall job satisfaction. Second they use objective indicators in order to explain subjective perceptions of each domain. Empirically, we refer to the Eurobarometer 54.2 (Eurobarometer '01) which contains information on overall satisfaction of labour market participants as well as satisfaction uttered in relation to four different aspects: pay levels (Income, in our terminology), working hours (Leisure), type of work (Choice), job security (Security).

Table 1 shows national averages of responses ranging from 1 ('completely unsatisfied') to 10 ('completely satisfied') for the five questions. Starting with overall job satisfaction, there is a certain degree of cross-national diversity in spite of the notorious regression to the mean in survey questionnaires. Danish workers seem to be the happiest of all, whereas Greeks are those with the lowest level of satisfaction. When asked about single domains, income is, in general, perceived to be less satisfactory than the degree of choice EU-workers are disposing of. Cross-sectional variation is, however, limited as the small standard deviation of national averages relative to the EU-15 average shows. In comparison, within-country variation is typically between five and nine of the scale, and hence much stronger than between countries. The low cross-sectional variation stands in sharp contrast to the empirical observable strong variation in terms of objective indicators such as the unemployment rate.⁴ Hence, self-reported well-being does not seem to be very different across countries. One has to be cautious about such a conclusion, as it assumes

⁴ The cross-national coefficient of variation for the unemployment rate was around 45 percent in 1997 (based on KILM 2001 data), whereas this coefficient was only about 5 percent for satisfaction with job security.

that absolute levels of satisfaction have a substantive meaning. This is far from being obvious. Since the data is ordinal in nature, it is more likely to exhibit relative well-being compared to national averages. This caveat is necessary for the interpretation of the empirical results.

A simple regression analysis may suffice to show which of the domains actually drives overall job satisfaction. Table 2 shows the results of this regression. Most importantly, not all of the four domains affect overall job satisfaction. The Choice variable, in particular, does not seem to be relevant for explaining the dependent variable. Of course, part of the reason for this may lie in the fact that people do not really know what to answer, when they are asked whether they are satisfied with the type of work they have. But, taking preferences seriously, income, leisure and security concerns seem to matter much more than choice. Therefore, we proceed with investigating the nature of only those three domains that drive overall job satisfaction.

Given such a basic intuition which concerns are important for analysing LMWB, the second step of the analysis lies in explaining each of the domains with the help of objective indicators. For this purpose, we have performed three ordered logit regressions, one for each of the three values, to investigate which of the standard national indicators may explain the satisfaction people utter when asked about income, leisure and job security. Table 3 shows a digest of these estimations.

To explain the satisfaction in relation to working hours (Leisure), two variables are found to be influential. These two variables are the rate of part-time employed people – defined as those employees working less than 20 hours a week – and the rate of over-time employed people – defined as employees working more than 40 hours a week. Well-being rises with the former and declines with the latter. Average family size does not seem to be significantly related to job satisfaction in the realm of Leisure. It is difficult to judge the overall goodness of fit of the model, since the reported pseudo- R^2 values are generally difficult to interpret (Borooah '01: 22). Accompanying regression analyses, however, would show that the two variables part-time and over-time employment suffice to explain about 70 percent of the stated cross-national variation in satisfaction with working time. More encompassing model specification, of course, state that other national and individual factors are able to explain job satisfaction with respect to working hours (Praag, Frijters, and Ferrer-i-Carbonell '01: 20).

In contrast to leisure, it is much more difficult to explain people's attitudes towards pay levels. There is some evidence that rising inequality, measured as the ratio between top and bottom deciles of income distribution, decreases the well-being of people in terms of satisfaction with pay levels. The actual pay level, hourly compensations in purchasing power parities, is also significant for explaining subjective well-being. Moreover, in the simple cross-sectional analysis, non-wage labour costs do not exhibit a significant impact on well-being. Looking at other empirical

studies, inequality does relate to people's well-being in Europe, but not in the U.S. (Alesina, Tella, and MacCulloch '01). It is one of the major issues where perceptions seem to differ across countries. This is also shown in a number of studies comparing the well-being of people of Eastern and Western Europe. Inequality is much more of a concern for people in post-communist countries than in the West (Suhrcke '01). But even within EU-15 countries the fit is not particularly high, suggesting that individual factors drive people's attitudes towards pay levels. It is somewhat surprising that taxes and social security contributions do not decrease satisfaction with pay levels. This stands in contrast to most economic accounts that show how higher taxation causes lower material well-being in terms of consumption and savings (Sabelhaus and Schneider '97).

Security, finally, produces somewhat counter-intuitive results. Concerns about job security rise with decreasing employment-to-population ratios more than with increasing unemployment rates. Even long-term unemployment is only weakly associated with satisfaction in relation to job security. Other empirical studies have found a stronger impact of unemployment on satisfaction, and concluded that unemployment belongs to an aggregate welfare function (DiTella and MacCulloch '01). Moreover, it is shown to be one of the issues with highest political salience (Baxandall '01) in Europe. Some studies, however, have generated results similar to ours (Fernández Macías and Muñoz de Bustillo Llorente '02). To reconcile this mixed evidence, analysis of individual effects may be of help. Studies based on micro data show that the well-being of employed and unemployed differs considerably. In a recent investigation performed by the EU, the stated job satisfaction of unemployed has been up to 30 percent lower than for employed people (Commission '02: 109).

One of the reasons, why unemployment may be only a weak direct concern for most people lies in the fact that institutional provisions reduce either the risk or the consequences of becoming unemployed. Table 3 shows that higher unemployment benefits indeed raise satisfaction with job security whereas employment protection legislation actually decreases it.⁵

The results are preliminary in nature, but they contribute to the screening for viable socio-economic indicators to compare LMWB across countries. Table 3 suggests a set of objective indicators that are relevant for explaining three components of well-being: Income, Leisure and Security. In the following section we compare this set of indicators to the standard unemployment rate. But before doing so, a final qualification about the use of satisfaction data has to be made.

⁵ A possible explanation may be related to causality. Agell (2002), for instance, assumes that high levels of experienced job market insecurity lead to higher levels of employment protection rather than vice versa.

Equating job satisfaction with well-being in labour markets is, of course, susceptible to critique. Because of the low level of cross-national variation of job satisfaction as well as the low correlation with objective indicators such as unemployment, Fernández Macias and Muñoz de Bustillo conclude:

“Hence, if we wish to know not only the behaviour of the labour market in terms of number of people employed, but also the quality of the jobs created, we must resort to the always difficult task of constructing new indicators comprising job quality. This is a task in which the indicator of job satisfaction will be of little help (Fernández Macias and Munoz de Bustillo Llorente '02: 25).”

We share the scepticism about subjective survey data, but its cautious use is nevertheless appropriate for the purposes laid out in this paper. Since we do not dispose of a final answer on which factors to include into well-being, one of the possible short-cuts is asking the people directly. Hence, the use of job satisfaction, though far from being perfect, does justice to the idea of ‘taking other people’s preferences seriously’.

Moreover, the use of job satisfaction data leads to two empirical problems. First, the interpretation of survey responses as absolute values measurable across countries is problematic (see above). Second, low statistical association between objective indicators and job satisfaction is an interesting fact to be explained. If, for instance, unemployment does not drive job satisfaction, one answer may be that job satisfaction does not serve the purpose. An equally possible answer, however, would say that unemployment exerts ambiguous effects – potentially distorted by intervening variables – and, correspondingly, its overall impact seems to be stochastic. As a way of tackling both problems, the next step avoids the opaque nature of subjective indicators while its emphasis lies on the deviations of well-being from unemployment, not its similarities.

4. Comparing Labour Market Well-Being to the Unemployment Rate

The last step in this paper is to investigate the appropriateness of the unemployment rate as an indicator of LMWB. It is one of the prime indicators politicians think of as a source of negative well-being in labour markets. The question remains whether unemployment is a reliable indicator in that respect. At least for the set of European Union member countries, the previous section has given some hints which objective indicators are driving LMWB. A comparison between unemployment and the set of indicators for LMWB may show in which countries the traditional unemployment rate seriously under- or overestimates well-being.

In addition, the unemployment rate has a more general function. For comparative reasons, an aggregation of indicators is necessary. One of the strongest arguments in favour of subjective indicators was its simplicity. Hence, the battery of objective indicators filtered in the previous step has to be 'compressed' in some way or another. Under such circumstances, the unemployment rate may serve as a yardstick to measure the impact and deviation each objective indicator has on aggregate well-being. Empirically, this is achieved by the following method: the actual unemployment rate (UR) may be seen as a function of the set of objective indicators (cf. Table 4). This function may be estimated with the help of regression analysis, which has the advantage that it provides weights for all indicators in the following equation:

$$UR = a_0 + a_1 * PTER + a_2 * OTER + a_3 * HWPPP + a_4 * ER + a_5 * UB + a_6 * EPL + a_7 * IE + \varepsilon$$

(for abbreviations cf. Table 4)

A1 to A7 represent statistical weights attached to the set of objective indicators derived in the previous subsection. They allow the aggregation into a single index. Most importantly, these weights are not related to the subjective preferences of people for one value or the other. Instead, the empirically measurable coefficients deliver some insights into the economic interdependences between the indicators and unemployment. If for instance, unemployment benefits raise unemployment across countries – one of the arguments of the neo-institutional literature on unemployment (Nickell and Layard '99) – this may be seen as a social dilemma. In the previous part it has been shown that net replacement rates increase job satisfaction in respect with job security. A positive regression coefficient hence implies that it indirectly lowers average well-being. Subjective preferences and objective interdependences may well contradict each other.

The residuals, ε , give us a measure how much the actual UR deviates from the artificially constructed one. The simple idea is that the smaller ε is, the more the traditional unemployment rate catches the notion of labour market well-being. Given the assumption that our set of indicators is appropriate, it produces an objective indicator of labour market well-being which is the estimate of the UR. Whenever the actual values for UR deviate from the estimated ones, UR over- or underrates the 'true' level of well-being.

$$\text{Objective LMWB} = \text{predicted UR} = UR - \bullet$$

If, for example, our set of indicators produces a lower predicted UR for a given country than the actually observed UR, we assume that UR

understates the 'true' level of well-being which is observable by the help of the set of LMWB-indicators. Note that objective LMWB is a decreasing function of the predicted UR: the higher the predicted UR the lower well-being is in that particular labour market given our definition of LMWB.

Table 5 shows the results of three regressions using the unemployment rate as dependent variable. Since data on inequality that is internationally comparable is only available for few countries and few years, we have estimated one equation with and one without earnings equality data.⁶ Moreover, we have added a third regression excluding the employment-to-population ratio as its potential endogeneity may cause the estimates to be biased. In order to address further econometric problems, we have used five-year averages and included fixed-time effects.⁷

Since the paper does not provide any theory what the causes of unemployment are, the results of the regressions do not pretend to model causalities. For our purposes it is much more interesting to interpret the deviation between the actual and the estimated unemployment rate, as well as to deal with the issue of interdependence between the variables.

The signs of the coefficients are suggesting the following picture: Part-time is inversely related to unemployment implying that redistributing the volume of total work in a society helps combating unemployment. Hence, it is also a proper means of increasing aggregate LMWB. A bit of a surprise is that the same holds for over-time employment. Auxiliary regressions would show that the effect vanishes when unemployment is controlled for economic growth. Next, higher wages are associated with declining unemployment, although the effect is clearly limited. Similarly, the employment-to-population ratio decreases unemployment. In terms of institutions, unemployment benefits increase unemployment, whereas employment protection legislation actually decreases it. Both findings may not be very robust, once compared to other empirical studies (e.g. Nickell/Layard 1999), but we stick to these results since we are more interested in normative than in causal investigations in the course of constructing an index of LMWB. Inequality, finally, is inversely related to unemployment. Once again, there are empirical studies trying to refute such a reciprocal relationship between efficiency and equality (e.g. Garrett '98).

In terms of labour market well-being, the following conclusions may be drawn. Most of the indicators increase average well-being in contemporary labour markets. This holds for part-time work, the employment rate, wages and employment protection. It is somewhat counterintuitive that

⁶ We have estimated a set of pooled cross-section data containing 18 countries (14 for the third regression) and 4 years. It was necessary to include fixed time-effects. Moreover, since residuals show typical problems of panel data, panel-corrected panel errors were used instead of the normal standard errors.

⁷ Taking averages reduces the problem of autocorrelation in time-series data, but does not reduce the problem of non-stationarity. First differencing could do this, but is not possible for the case of EPL. Since we do not interpret the results in terms of causality, we accept this econometric problem rather than deleting EPL in the regressions.

unemployment benefits decrease and over-time employment increases labour market well-being. Equally, higher inequality increases well-being of participants in labour markets. This is in contrast to the findings of the previous parts, where satisfaction with pay levels was negatively related to higher income inequality. It is a source of political contestations, whenever objectively calculated average well-being runs against the subjective feelings of people. The finding corroborates the idea that there is a trade-off between efficiency and equity. While people in many countries prefer lower degrees of inequality, there seems to be a negative interdependence between unemployment and income inequality.

Moreover, the three cases show a crucial problem for constructing optimal policies influencing labour market well-being. Certain policies rightfully claim to increase the well-being of individuals. Legislation to improve the material situation of unemployment or to combat over-time is such attempts. But according to our model the overall well-being effects for all participants in the labour market is negative.

With this notion of an objective LMWB, it is possible to compare the predicted vs. the actual levels of the unemployment rate. Figures 1 and 2 show the results of the regression including income inequality (Model III) for 1980 and 1985, as well as 1990 and 1995 respectively. Points to the right of the 45-degree-line imply that the actual unemployment rate underrates LMWB, whereas points to the left imply the opposite. To give an example: Figure 1 shows that well-being in Finland in 1980 and 1985 was lower than expected by a simple look at unemployment figures. In 1985, a Finnish politician would judge well being based on the observed unemployment rate as quite o.k. while in fact it is not. Our constructed indicator shows a higher predicted unemployment rate suggesting that Finnish people are less well off than our politician believes. Moreover, comparing 1980 to 1990 (Figure 2) the difference between actual and predicted values has increased. This situation was reversed in 1995, when the unemployment rate understated the true level of LMWB considerably. The US of the 1990s is another example, where an apparently low unemployment rate hides a low level of LMWB.

For the whole sample of countries, the differences between the actual and predicted unemployment rate have risen by a significant proportion. The cross-country variation of most of the objective indicators as gained importance, and it is not closely mirrored by national trends in unemployment. A final conclusion of this part is therefore to say that well-being seems to be less and less attached to unemployment. This could explain why academic interest in the construction of new indices has risen over the last decades.

5. Conclusions

The empirical evidence given in the last two sections is clearly not beyond doubt. A change in the set of indicators or estimation techniques may produce fairly important modifications. However, the comparison of subjective and objective components of LMWB helped to point out some of the crucial problems encountered in constructing aggregate, cross-national indicators.

The principal aim of this paper was to show some of these problems arising in the course of constructing an index for LMWB. It started with a brief overview over different theoretical and empirical approaches to general well-being. This section highlighted that there is an important difference between subjective and objective ways of dealing with well-being. Moreover, it provided some reasons why an aggregation of different notions of well-being is inherently problematic. The next section focussed the discussion on the well-being of people inserted in the labour market. It gave a definition of well-being containing four major aspects: values, preferences, indicators, and interdependences. The relationship between values – or basic concerns –, the preferences people have for each of these values, and a set of indicators has been exemplified for the case of EU countries. The last section focussed on the problem of interdependence showing for which countries under- or overestimates LMWB given the set of indicators.

The major conclusions to be drawn are the following: First, plurality of different notions of well-being is an empirical fact to be explained. It is more than a mere obstacle when trying to construct synthetic indices. Second, subjective data on people's preferences may help to inscribe this plurality into an index of well-being. However limited the nature of survey data may be, it is a fruitful area of scientific research the prospects of which should not be underestimated. Third, disaggregating overall job satisfaction helps to find a set of objective indicators relevant when talking about the well-being of labour market participants. It is a way of taking advantage of the information both subjective and objective data contains. Fourth, subjective preferences and objective interdependences were shown to clash for some values. This is an interesting field of academic research not least for explaining voters' resilience against apparently efficient labour market reforms. Fifth, the paper gave some preliminary evidence that the unemployment rate has lost some of its power as an indicator for well-being in the last couple of decades. Contrary to the beliefs of some critics of globalisation, we have not found an increasing convergence of the underlying social and political variables. To the contrary, today there may be even more diversity of well-being across countries. These findings could be put on more solid grounds with the help of micro data which is comparable across countries.

Table 1 Subjective Indicators of LMWB for EU countries

Average of Responses to the Question of Job Satisfaction in 15 EU countries with respect to:

Country	Income	Security	Choice	Leisure	Overall Satisfaction
Belgium (B)	6.69	7.27	7.90	7.44	7.74
Denmark (DK)	6.80	8.08	8.32	7.96	8.11
Germany (D)	6.78	7.41	7.91	7.26	7.68
Greece (GR)	5.59	5.62	6.56	5.89	6.15
Spain (E)	5.77	6.64	7.05	5.96	7.01
France (F)	6.07	6.66	7.23	6.49	7.12
Ireland (IRL)	6.62	7.20	7.76	7.16	7.56
Italy (I)	6.10	6.77	7.30	6.69	7.00
Luxembourg (L)	6.83	7.44	7.68	7.40	7.42
Netherlands (NL)	6.85	7.50	7.61	7.41	7.44
Austria (A)	7.06	7.64	7.94	7.46	7.68
Portugal (P)	5.48	6.39	6.85	6.24	6.58
Finland (FIN)	6.35	7.39	7.57	7.32	7.51
Sweden (S)	5.45	7.42	7.88	6.94	7.46
United Kingdom (UK)	6.13	6.84	7.31	7.15	6.99
EU-15 mean	6.27	6.98	7.46	6.87	7.23
EU-15 std. Dev.	0.28	0.35	0.21	0.35	0.23
EU-15 mean std. Dev.	2.27	2.29	2.02	2.27	2.04

Notes: Values are averaged responses of people asked how satisfied they are about their professional activities in respect to each of the five categories; scale from 1 ('completely unsatisfied') to 10 ('completely satisfied'); EU-15 std. Dev. Is the standard deviation of national averages from the EU-15 average; EU-15 mean std. Dev. Is the average over all 15 national standard deviations.

Source: Eurobarometer 54.2 (2001): 75

Table 2 Regression Results for Overall Job Satisfaction

		Overall Job Satisfaction	
Income		0.38 (0.05)	***
Leisure		0.65 (0.07)	***
Choice		-0.00 (0.10)	
Security		0.19 (0.07)	**
Adj. R ² (F-Value)		0.75	***
Nobs.	150		
White-Test Chi ² (DF)	27.05 (14)		*
Condition Index	15.985		

Notes: cf. Table 1

Levels of Significance: "*" < .05, "**" < .01, "***" < 0.001

White-Test is testing the presence of heteroscedasticity.

Condition Index is an indicator for multicollinearity.

Table 3 Ordered Logit Results with three Satisfaction Scores as Dependent Variables

	Leisure	Income	Security
Over-Time Employment	-0.04 **	-	-
Part-Time Employment	0.01 ***	-	-
Average Family Size	0.38	-	-
Hourly Compensation	-	-0.01 ***	-
Income Inequality	-	0.04 **	-
Non-wage labour costs	-	0.02	-
Unemployment Long-Term	-	-	0.04
Unemployment Long-Term	-	-	0.06 *
Unemployment Rate	-	-	-0.02 **
Unemployment Benefits	-	-	-0.02 **
Employment Protection Legislation	-	-	0.24 ***
Nobs.	138	140	138
Chi ² (DF) beta =	16.54(24)	9.70(24)	39.53(40)
0			
Likelihood Ratio Chi ² (DF)	60.39(3) ***	44.88(3) ***	54.54(5) ***
Pseudo R ²	0.09	0.07	0.09

Notes:

Levels of Significance: "*" < .05, "***" < .01, "****" < 0.001

Average Family Size is average number of people living in one household (Eurostat 2002); Income Inequality is measured as S80/S20-percentiles (Eurostat 2002); Non-wage labour costs is the share of taxes and social security contribution of total labour costs (KILM 2001); Long-term unemployment is the ratio of long-term unemployed to total unemployment (KILM 2001); for definitions of other variables cf. Table 4.

Table 4 Set of Objective Indicators for pooled regressions

Label	Description	Source
Unemployment Rate UR	No. of unemployed people relative to total labour force	KILM 2001
Part-Time Employment Rate PTER	No. of people working less than 20 hours relative to total employment	KILM 2001
Over-Time Employment Rate OTER	No. of people working more than 40 hours relative to total employment	KILM 2001
Hourly compensation HC	Hourly Compensation in Purchasing Power Parities	KILM 2001
Earnings Inequality IE	T80/T20-ratio	OECD 1996
Employment Rate ER	No. of employed people relative to total working-age population	
Unemployment Benefits UB	Net replacement rates for married average production worker with two children	Blanchard/Wolfers 2000
Employment Protection Legislation EPL	Summary Index of various institutions for employment protection	Blanchard/Wolfers 2000 based on OECD

Table 5 Panel Regressions on Unemployment

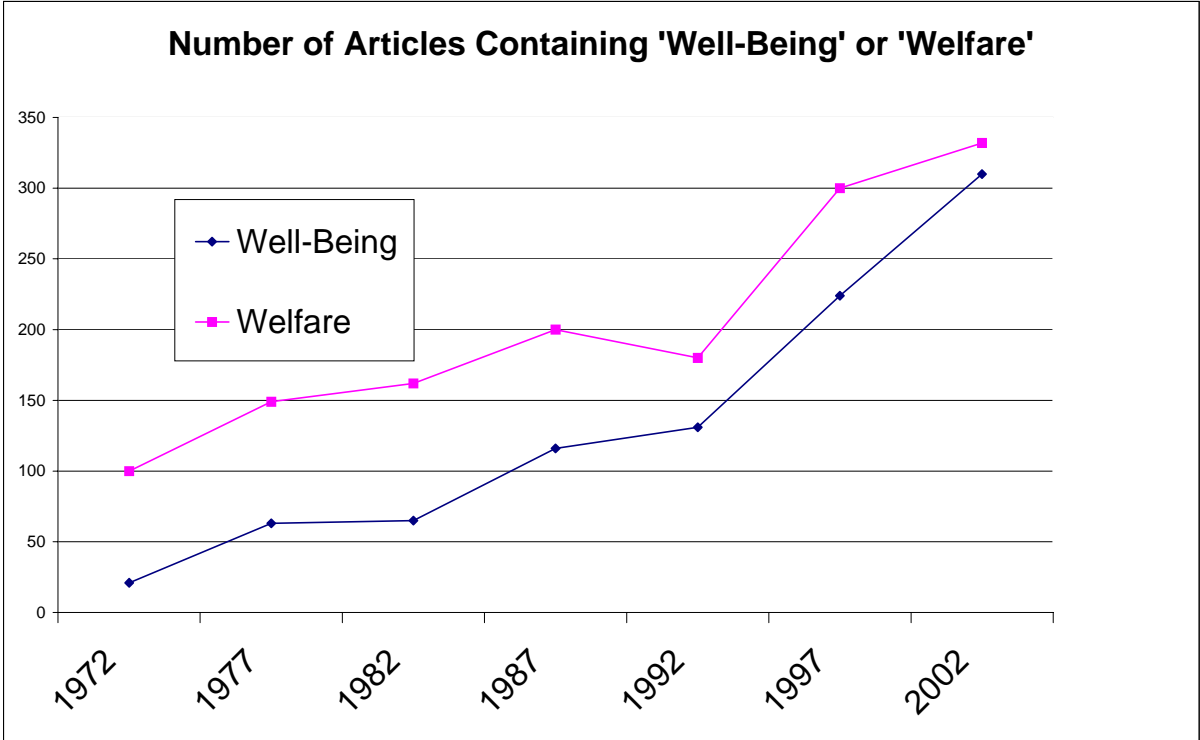
	Unemployment Rate (OLS/ PCSE)					
	Model I		Model II		Model III	
Part-Time Employment Rate	-29.94	***	-35.30	***	-30.36	**
	(8.27)		(7.58)		(8.41)	
Over-Time Employment Rate	-2.61	*	-2.56	***	-2.56	**
	(1.31)		(0.92)		(1.23)	
Hourly Wages in PPPs	-0.24	*	-0.15	*	-0.01	
	(0.12)		(0.08)		(0.03)	
Employment Rate	-		-0.33	***	-0.33	***
			(0.06)		(0.07)	
Unemployment Benefits	0.01		0.04	**	0.02	*
	(0.01)		(0.02)		(0.01)	
Employment Protection Legislation	0.11	**	-0.15	***	-0.27	**
	(0.05)		(0.06)		(0.10)	
Earnings Inequality	-		-		-3.23	*
					(1.69)	
Intercept			36.62	***	38.20	***
			(4.41)		(4.72)	
R ²	0.52		0.62		0.58	
Nobs.	43		71		43	

Notes:

Levels of Significance: * < 0.1; ** < 0.05; *** < 0.01

Fixed Time Effects not shown; panel-corrected standard errors in parentheses.

Figure 1 The Rise of Scientific Interest in 'Well-Being'



Source: Social Science Citation Index (ISI Web Science Online, date of access 21.01.03), entries in titles only.

Figure 2 ,Objective' LMWB in OECD countries 1980 and 1985

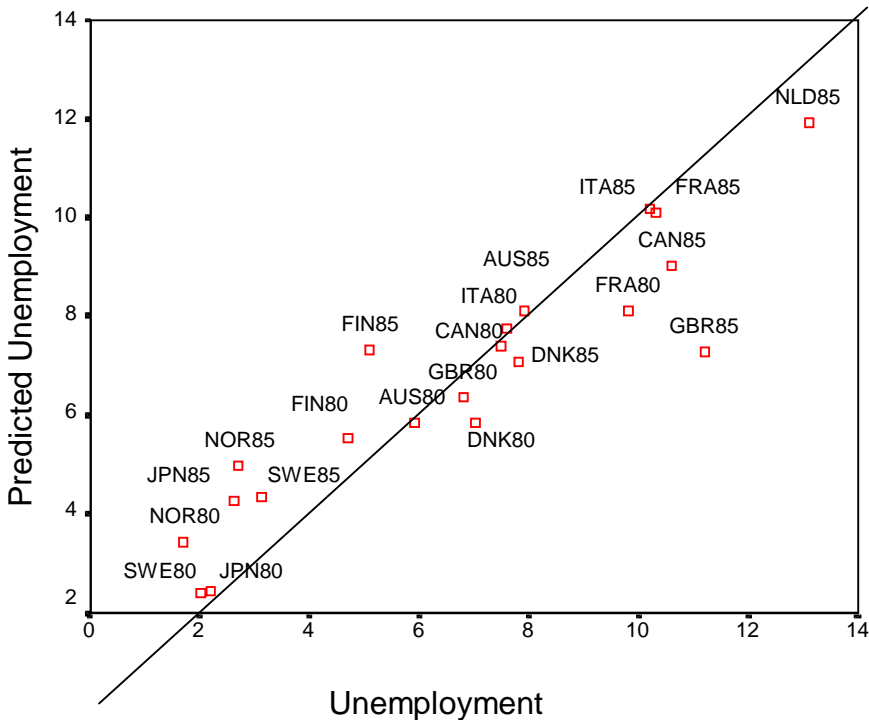
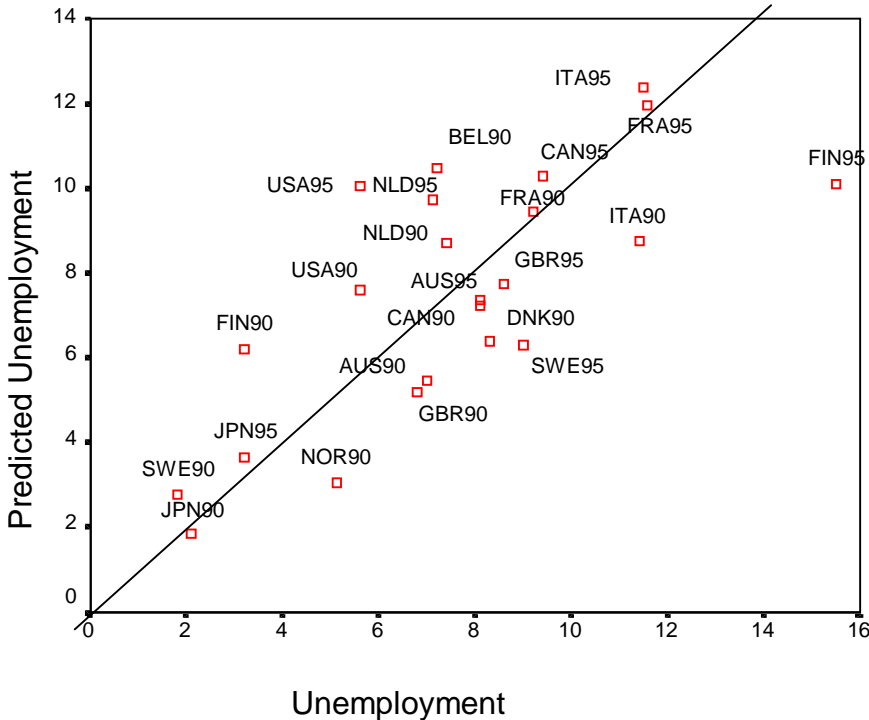


Figure 3 ,Objective' LMWB in OECD countries 1990 and 1995



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