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The Impact of the Great Recession on Economic Wellbeing

How Different Are OECD Nations and Why?

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Introduction

Since 1998, the Centre for the Study of Living Standards has published the Index of Economic Wellbeing (IEWB) (Osberg & Sharpe, 1998, 2002a, 2002b),[1] which attempts to estimate the level and trend of aggregate economic wellbeing in Canada and other Organisation for Economic Cooperation and Development (OECD) nations (Osberg & Sharpe, 2006). However, in September 2008 the global economy sank into recession and the long-run trend in some (but not all) countries became dominated by short-run shocks. The sudden onset of the global recession, and the particular combination of financial crisis and real economy decline that has characterized this recession, raises many questions for the measurement of aggregate economic wellbeing.

This chapter presents estimates of the IEWB for Australia*, Belgium, Canada*, Denmark, Finland, France, Germany*, Italy, the Netherlands, Norway*, Spain, Sweden*, the United Kingdom* and the United States* between 1995 and 2010.[2] However, because discussion of 14 different countries rapidly becomes very unwieldy, we focus initially on four nations—the United States, Canada, Germany, and Spain. These particular countries are chosen because within both the "Anglo" and "Continental European" welfare state regimes one can observe great variation in the impacts of the Great Recession, and it is interesting to compare countries where the recession has had a large and continuing impact (Spain and the United States) with countries that had largely recovered by 2010 (Germany and Canada). We then compare all 14 countries' experiences.

We pose three questions. First, how has the recession changed the level of wellbeing in different countries, as indicated by the IEWB? Second, did countries have similar or different shocks to the different components of their economic wellbeing in the 2007 to 2010 period? Third, how different is the within-country cyclical relationship between changes in dimensions of economic wellbeing and gross domestic product (GDP) growth or unemployment?

Because we can be sure that some readers of this chapter will not have read our earlier papers, we begin with a brief outline of the methodology of the IEWB, as well as a summary of how the Great Recession differed across countries in its impact on GDP and employment. To set the context for our discussion of cyclical impacts on the IEWB, we then discuss trends of the IEWB in Canada, the United States, Germany, and Spain from 1995 to 2010. The next section then compares the differing impacts of the Great Recession on the components of economic wellbeing during the 2007–2010 period across all 14 countries. The final part of the chapter discusses the sensitivity of different dimensions of wellbeing to year-to-year changes in output and unemployment and we conclude by summarizing possible implications.

The Index of Economic Wellbeing: Motivation and Framework

The IEWB is an intermediate type of index (Osberg & Sharpe, 2005). While broader in conception than GDP per capita, it still aims only at the "economic" dimension of life. The philosophy of the IEWB is that there

Table 5.1. Dimensions of Economic Wellbeing.

Concept	Present	Future
"Typical citizen" or "representative agent"	[A] *Average flow of current income*	[B] *Aggregate accumulation of productive stocks*
Heterogeneity of individual citizens	[C] *Distribution of potential consumption—income inequality and poverty*	[D] *Insecurity of future incomes*

is more to "wellbeing" than economic wellbeing, but there is more to economic wellbeing than GDP per capita, and it is useful to have better measures of the economic wellbeing of society because better measurement may help guide better decisions (Osberg, 1985; Sharpe & Salzman, 2003). The IEWB avoids consideration of broader "quality of life" issues (Di Tella, MacCulloch, & Oswald, 2003) (such as crime rates) on the grounds that too much aggregation of the dissimilar dimensions of social and political wellbeing can obscure understanding. Rather, the IEWB takes a broad view of "economic wellbeing" as "access to the resources needed for material consumption" because the narrow focus of GDP accounting omits consideration of many issues (for example, leisure time, longevity of life, asset stock levels) which are important to the command over resources of individuals. The IEWB is based on four dimensions of economic wellbeing—average current consumption flows, aggregate accumulation for future consumption (i.e. per capita wealth—broadly conceived), income distribution and economic security.

Table 5.1 illustrates our identification of four components of wellbeing, which recognize trends in both average outcomes and in the diversity of outcomes, both now and in the future.

When an average income flow concept, like GDP per capita, is used as a summative index of society's wellbeing, the analyst implicitly is stopping in quadrant [A]. This assumes (a) that the experience of a representative agent can summarize the wellbeing of society and (b) that the measured income flow optimally weights consumption and savings, so that one need not explicitly distinguish between present consumption flows and the accumulation of asset stocks which will enable future consumption flows. However, if society is composed of diverse individuals living in an uncertain world who typically "live in the present, anticipating the future," each individual's estimate
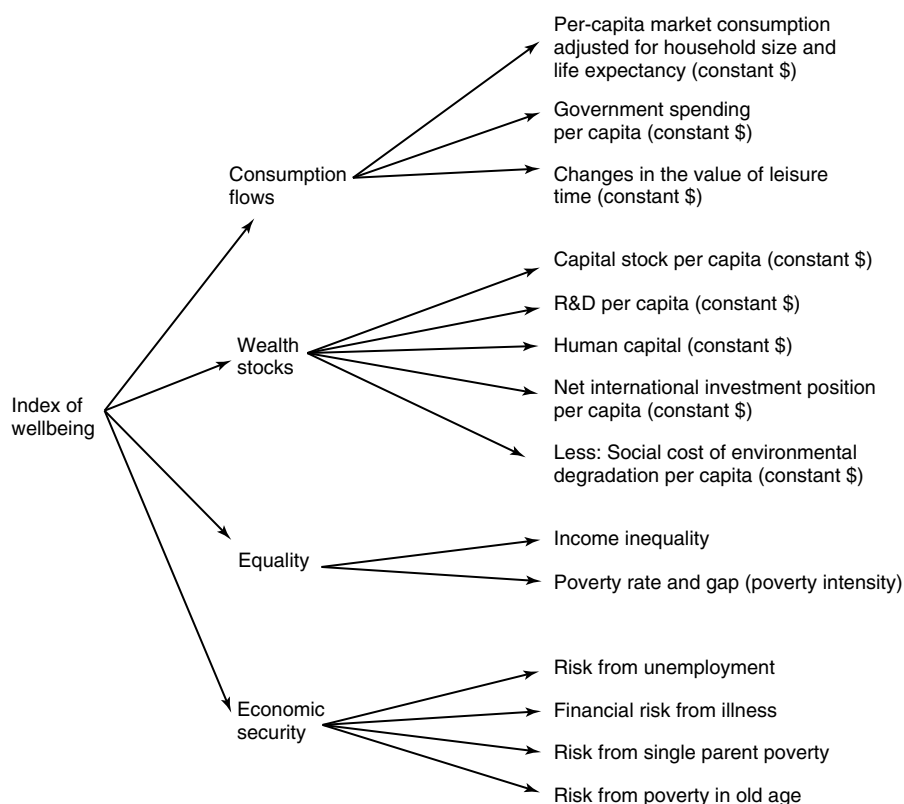
Figure 5.1. Index of Wellbeing Tree.

of societal economic wellbeing will depend on the proportion of national income saved for the future—i.e. both quadrants [A] and [B] matter.

In addition, real societies are not equal. There is a long tradition in economics that "social welfare" depends on both average incomes and the degree of inequality and poverty in the distribution of incomes—quadrant [C]. Putting individual heterogeneity and multiple time periods together, we have quadrant [D]. *Ex ante*, individuals do not know who will be hit by the hazards of economic life. When the future is uncertain, and complete insurance is unobtainable (either privately or through the welfare state), risk-averse individuals will care about the degree to which their economic future is secure.

The four components of the IEWB used in this chapter are made up of a number of variables, as shown in the weighting tree in Figure 5.1.[3]

The consumption component, measured in prices on a per capita basis, includes private consumption, with adjustments for family size and life expectancy, public consumption, and changes in the value of leisure as proxied by changes in working time. The wealth component, measured in prices on a per capita basis, includes estimates of residential and non-residential physical capital, research and development (R & D) capital, human capital, the net international investment position, and environmental degradation, as proxied by the social costs of greenhouse gases.

The equality component of Figure 5.1, measured as an index, includes a measure of income distribution, the Gini coefficient, and poverty intensity (the product of the poverty rate and gap) for all persons. The Gini is given a weight of 0.25 and poverty intensity is weighted 0.75. The economic security component, also measured as an index, consists of four subcomponents: the risk from unemployment; the financial risk from illness; the risk from single-parent poverty; and the risk from poverty in old age. Each subcomponent is weighted by the relative importance of the population affected by the risk.

These four components therefore have a logical rationale and a manageable dimensionality—the IEWB is then calculated as the weighted sum of [A] + [B] + [C] + [D]. However, although we may all agree that these four dimensions of wellbeing are all valuable to some degree, individuals differ in their relative preferences for each component. Some people, for example, consider equality to be more important than environmental preservation or per capita wealth, while others think the opposite. Different individuals often assign differing degrees of relative importance to each dimension of wellbeing. Indeed, each citizen in a democratic society has the right to come to a personal conclusion about the relative weight of each dimension. But because all citizens are occasionally called upon, in a democracy, to exercise choices (e.g., in voting) on issues that affect the collectivity (and some individuals, such as civil servants, make such decisions on a daily basis), they all also have reason sometimes to ask questions of the form

Would public policy X make "society" better off?

A measure of social wellbeing can be useful if some people, at least some of the time, want to answer such questions in an evidence-based way. We can assume that individuals know more about their own preferences and their own life situation than anyone else is likely to, so individuals probably do not need help in calculating the implications for their own personal utility of

public policy on any given issue. However, individuals who care about some combination of their own wellbeing and society's wellbeing can be seen as maximizing:

$U_i = \alpha_1$ (own utility) $+ \alpha_2$ (Social Index expressing own estimate of society's wellbeing).

If $\alpha_2 = 0$ for all persons, at all times, then there is no point in constructing the IEWB—or any other social index. We are presuming that for some people, at least some of the time, $\alpha_2 \neq 0$.

In the real world, citizens are frequently called upon to choose between public policies affecting dimensions of life (e.g., education, or health, or the environment) that cannot be measured in directly comparable units. Hence, individuals often have to come to a summative decision—i.e., have a way of "adding it all up"—across domains that are conceptually dissimilar. We argue that the role of people who construct social indices should be one of helping citizens—e.g., as voters in elections and as bureaucrats in policy making—to come to reasonable summative decisions about the level of society's wellbeing. From this perspective, the purpose of index construction should be to help individuals think systematically about public policy, without necessarily presuming that all individuals have the same values. Although it may not be possible to define an *objective* index of societal wellbeing, individuals still have the problem (indeed, the moral responsibility) of coming to a *subjective* evaluation of social states, and they need organized, objective data if they are to do it in a reasonable way.

The Differing Impacts of the Great Recession

Conventional summary statistics on the impacts of the Great Recession do not, to put it mildly, tell a consistent story across countries. In Table 5.2, columns 1 and 2 report the total percentage change in employment and in GDP per capita between 2007 and 2010 in the 14 countries examined.[4] Comparing 2007 and 2010, total employment was up by 5.7% in Australia and down by 9.4% in Spain. Column 1 shows that there is a nearly even split between the eight countries with a net increase in employment over the period among the population aged 15 to 64 and the six countries which have experienced a net decline in employment. Differentials in growth of

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Table 5.2. The Varying Impacts of the Great Recession.

	2007 to 2010			
	Change in employment (%)	Change in GDP/capita (%)	Change in unemployment rate	Change in IEWB
Australia	5.7	−0.2	0.8	0.005
Belgium	2.4	1.2	0.8	0.023
Canada	0.6	−2.5	2.0	0.007
Denmark	−3.5	−1.6	3.7	−0.026
Finland	−2.0	−3.5	1.5	0.026
France	0.5	−1.4	1.4	−0.021
Germany	1.8	0.7	−1.6	0.032
Italy	−1.5	−4.8	2.5	−0.002
The Netherlands	0.9	−0.9	1.3	0.011
Norway	1.9	−2.0	1.1	0.054
Spain	−9.4	−5.3	11.8	−0.071
Sweden	−0.3	−2.2	2.4	−0.006
United Kingdom	1.1	−4.5	2.5	−0.001
United States	−5.4	−3.5	5.0	0.012

GDP per capita are not quite as dramatic—as column 3 shows, only in Belgium and Germany was the recovery in employment large enough to produce a net improvement in GDP per capita. But, although one would normally expect the direction of change in employment and growth in GDP per capita to be the same, this is only true in half the countries.

Both Belgium and Germany had more jobs and higher GDP per capita in 2010 than in 2007. There were six other countries with net employment creation (Australia, Canada, France, the Netherlands, Norway, and the United Kingdom) but with negative GDP per capita growth. By contrast, the period was unambiguously bad news in Finland, Italy, Spain, Sweden, and the United States, where both employment and GDP per capita were lower in 2010 than in 2007. Indeed, U.S. employment in 2010 was still 5.4% below its 2007 level and employment in Spain was still down by 9.4%.

Conventional statistics thus reveal large differences, across countries, in the depth and duration of the impacts of the recession which followed the financial crisis of 2008. We turn now to looking at what indices of wellbeing indicate.
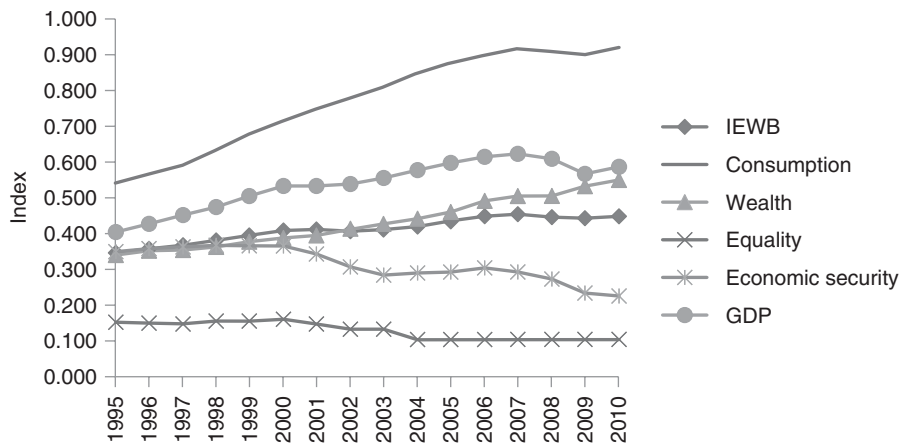
Figure 5.2. Trends in the IEWB, Its Components, & Scaled GDP per Capita, United States, 1995–2010. Data tables corresponding to Figures 5.2 to 5.20 are available from http://www.csls.ca/iwb/articles.asp.

Trends in the IEWB in Canada, Germany, Spain, and the United States 1995 to 2010

Figures 5.2 to 5.5 compare long-run trends in the four components of economic wellbeing, and the IEWB as a whole, with trends in GDP for four illustrative countries, the United States, Canada, Germany, and Spain.[5] For each country, we compare trends in the "base" index with trends in GDP per capita.[6] The four figures show the level in each year of the index of each component of economic wellbeing (i.e., consumption, accumulation, distribution, and economic security), as well as the level of the aggregate IEWB when each component receives equal weight. To facilitate comparisons, we also apply the Linear Scaling methodology to GDP per capita. To keep all our comparisons on a common footing, we use the [Max-Min] range defined by data from the 14 countries for which we construct the IEWB. Figure 5.2 looks at the United States, showing the level of aggregate indices (GDP per capita and the IEWB) and the components of the IEWB [consumption, accumulation (wealth), equality, and economic security]. The U.S. IEWB illustrates how aggregate wellbeing can be driven by diverging trends in the components of wellbeing. If the four components are equally weighted, as in Figure 5.2, the IEWB shows a lower
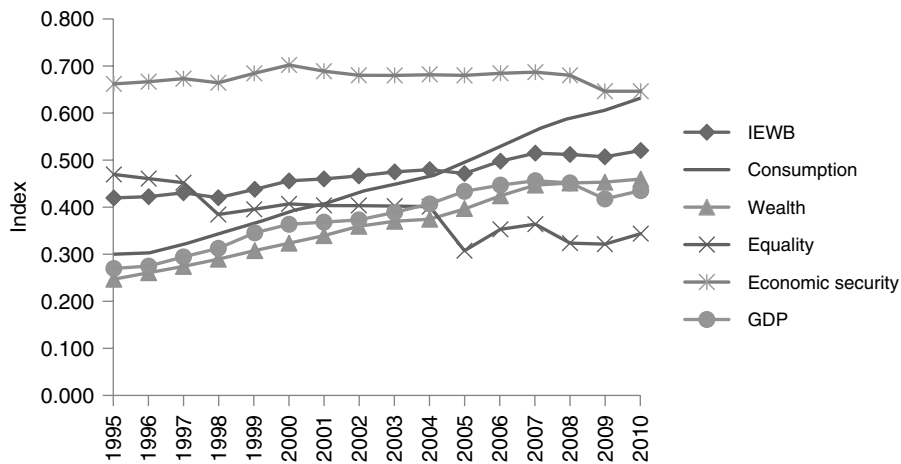
Figure 5.3. Trends in the IEWB, Its Components, & Scaled GDP per Capita, Canada, 1995–2010.

level and a flatter trend over the period than per capita consumption (which rose strongly) and aggregate wealth (a somewhat smaller increase than for consumption). Both market consumption and investment are important components of GDP, and the upward trend in GDP per capita exceeds that in the IEWB. However, compared to the other countries examined here, the United States sits low in the range of observed equality and security, with a downward trend over time. As a consequence, when all four components are weighted equally in the IEWB, the downward trend in equality and security offsets the high level and upward trend of average consumption and aggregate wealth. This implies that the aggregate IEWB is quite flat, especially compared to consumption trends.

A moderate upward trend for the IEWB was observed for Canada (Figure 5.3). One can see in the data both the stronger upward trend in GDP per capita and the deviation downward which marked the recession of 2007–2009. In Canada, the IEWB has been less volatile than GDP because the components of the IEWB are heavily influenced by factors that do not necessarily vary with the business cycle or respond directly to economic growth. For example, security from the risks of uninsured health care costs has declined over time in Canada—but on a secular trend, as, for most people, prescription drug costs are not, for example, covered under Canadian public health insurance and they have risen over time. Looking only at the period discussed in this chapter (1995–2010), one will not be
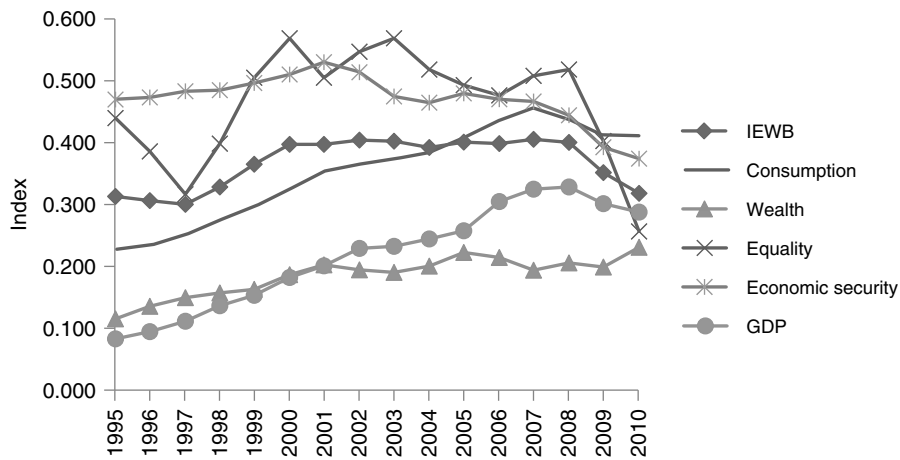
Figure 5.4. Trends in the IEWB, Its Components, & Scaled GDP per Capita, Spain, 1995–2010.
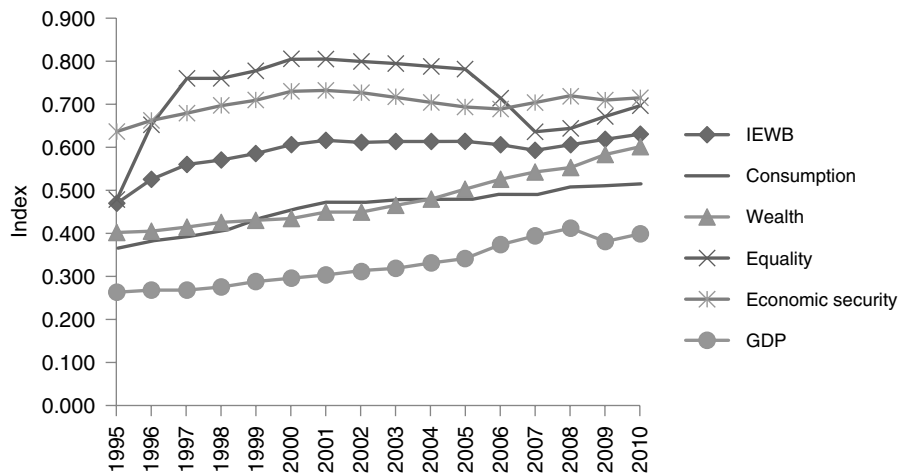

Figure 5.5. Trends in the IEWB, Its Components, & Scaled GDP per Capita, Germany, 1995–2010.

able to observe the impact on equality in Canada of the substantial cuts to social assistance and unemployment insurance made in 1995–1996. Even so, a downward shift in equality in Canada, together with some decline in security offset much of the strong long-run growth in consumption and wealth.[7]

The Great Recession may be a smallish bump in Canadian trends, but it is all too apparent in the Spanish data for 2008–2010 seen in Figure 5.4. Indeed, in Spain between 2007 and 2010, a moderate increase (from 12.9% to 14.4%) in the poverty rate interacts multiplicatively with a large increase in the poverty gap (from 0.242 to 0.355) to cause a large increase in poverty intensity [= (poverty rate)*(average poverty gap)]. Because the IEWB index of equality trends is 0.25 weighted to the Gini index of equivalent income and 0.75 weighted to poverty intensity, the downward dive in the equality component of the IEWB after 2007 is especially notable. The unemployment rate increase (from 8.3% to 20.2%) in Spain also shows up clearly in the economic security component of the IEWB. The wealth and consumption components of the IEWB also declined in the recession, but not to the same degree. Since consumption is a large fraction of GDP, it is not surprising that trends in consumption and GDP are quite similar.

Together, the large declines in equality and economic security in Spain mean that the IEWB fell there by considerably more than the change in GDP per capita. Unlike the pattern observed in Canada (where the IEWB was less volatile), economic wellbeing in Spain changed more in this recession than did GDP per capita. Later in this chapter we will see that within-country year-to-year changes in output and employment often do not significantly affect the IEWB index of equality—presumably because most such changes have historically been marginal impacts on the income distribution. However, the Spanish example of 2007–2010 may be a reminder that sometimes changes in output and employment are more than marginal, with large and multiplicative impacts on equality.

A significant feature of the German data in Figure 5.5 is the strong upward movement of the poverty rate (from 6.7% to 9.5%) and the poverty gap (from 0.174 to 0.219) between 2005 and 2007, that is, *before* the Great Recession. This gives a strong downward push to our equality index prior to the recession. It then improves slightly over the same period during which other countries (e.g., Spain) experienced strong deterioration. Although the recession did produce a slight downward bump in GDP in 2009, it is hard to see in the German data evidence of any impact at all on indicators of economic wellbeing. However, this is partly an issue of idiosyncratic context—the fact that the rate and depth of German poverty had increased so strongly *before* the recession. Obtaining a fuller understanding of German trends over the 2005 to 2007 period is an important objective of our future research.
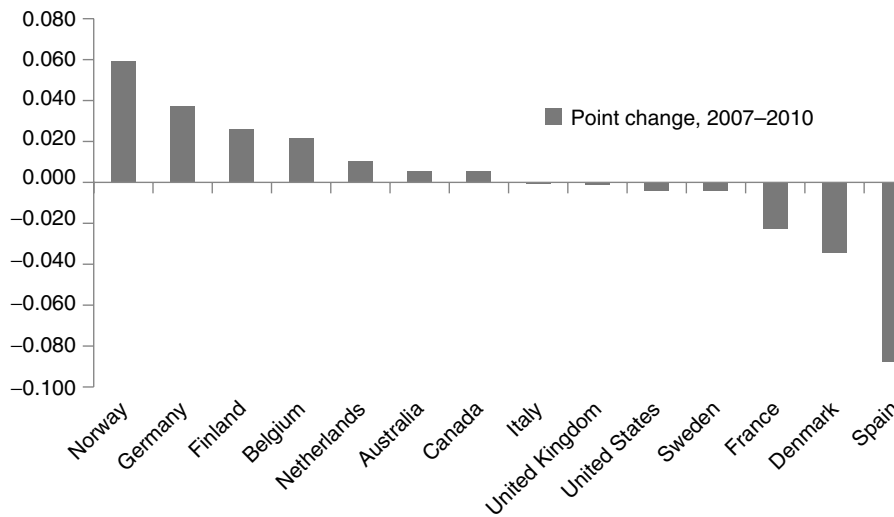
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Figure 5.6.   Change in Index of Economic Wellbeing, 2007–2010.

Divergences and Commonalities in Economic Wellbeing within Countries: 2007–2010

Figure 5.6 compares the overall movement in economic wellbeing between 2007 and 2010 in the 14 countries examined in this study. Figures 5.7 to 5.10 then compare movements in the four components of wellbeing—average consumption, per capita wealth, equality, and economic security. Although Figure 5.6 indicates a wide divergence across nations in the direction and size of trends in aggregate economic wellbeing, those results on aggregate wellbeing depend crucially on the fact that this figure weights each component of wellbeing equally. Denmark and Spain have done poorly on most dimensions of wellbeing while Norway, Germany, and Finland have done well—but in between the rankings of countries differ widely. If all the components of economic wellbeing had followed similar trends over time, the relative weights placed on each component would not matter much—but that is not the case for most of the countries examined here. Hence, one way of reading the comparisons of Figures 5.7 to 5.10 is to say that they illustrate the importance of the relative weights assigned to each component of economic wellbeing.

As Figure 5.7 illustrates, most nations actually avoided a decrease in per-capita consumption between 2007 and 2010. Spain and the United Kingdom are outliers, with declines of 0.044 and 0.053 index points
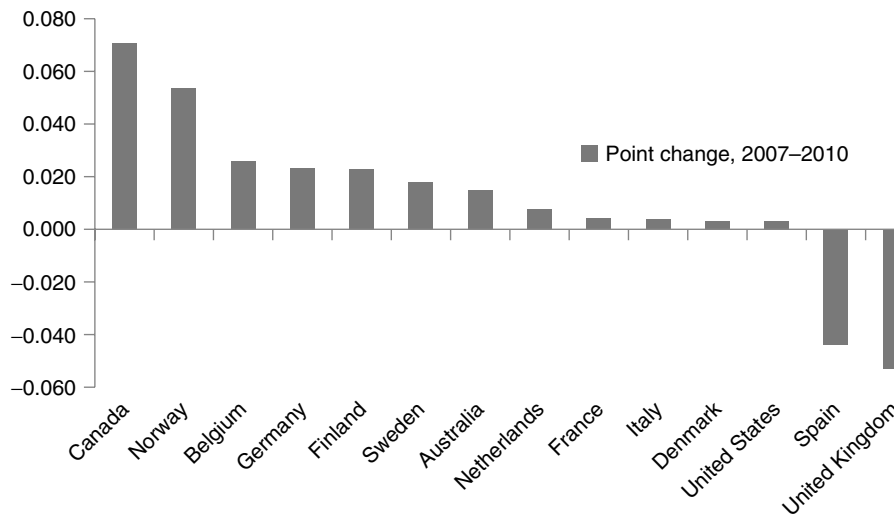
Figure 5.7. Change in Consumption Index, 2007–2010.

respectively. This is about the same as the difference in 2010 between Australia and Belgium in per capita consumption. Hence, an analyst who believed that the most important component in economic wellbeing is the level of per capita consumption, and assigned a high relative weight to that component, would tend to conclude that economic wellbeing had increased over the 2007–2010 period—at least for 12 of the 14 countries.

Figure 5.8 tells an even more positive story for aggregate wealth. Spain did poorly on other dimensions, but the rise in its wealth index (by 0.037) was near the median of country performance. The only nation with a decline over the period 2007 to 2010 was Sweden (a change which was very small −0.009 index points). Hence, an analyst whose values emphasized the importance of aggregate sustainability, and who therefore assigned a large weight to the aggregate accumulation of productive resources, could easily come to the conclusion that 2007–2010 was a period of positive outcomes for almost all countries.

Our measures of consumption per capita and aggregate accumulation extend national income accounting measures in several important ways (e.g., we make allowance for the impact on effective consumption of trends in household size and include environmental stocks and depreciated research and development spending as part of the accumulation of productive assets). Nevertheless, they are heavily influenced by trends in the underlying System of National Accounts (SNA) measures of consumption and investment. They
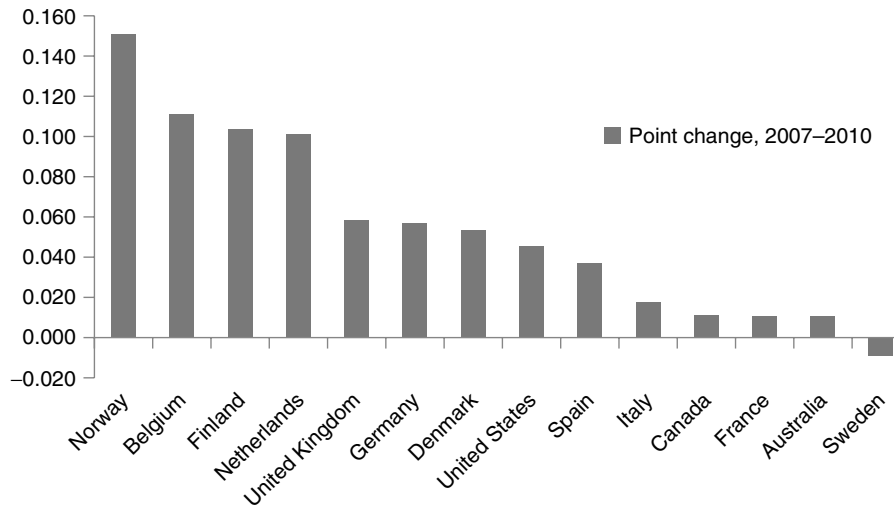
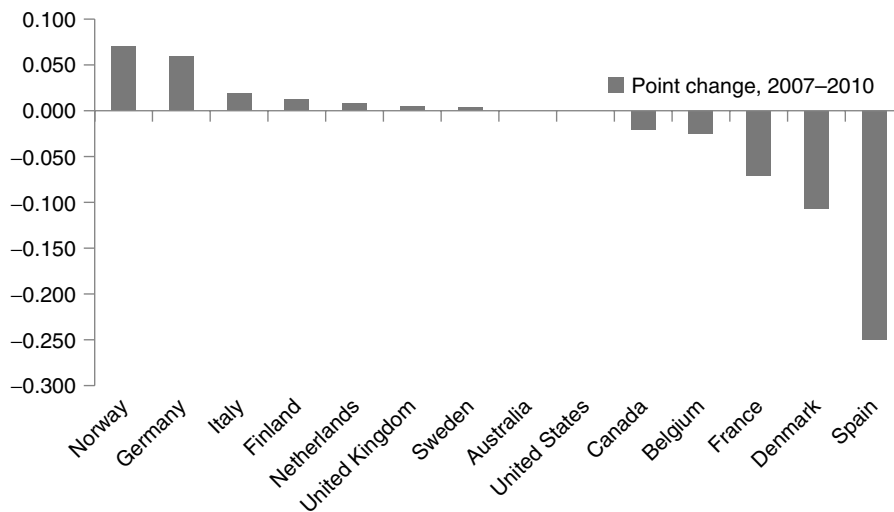**Figure 5.8.**   Change in Wealth Index, 2007–2010.

Figure 5.9.   Change in Equality Index, 2007–2010.

also share with GDP calculations the fact that they are aggregate measures, which entirely ignore distributional issues and uncertainty about the future.

In constructing the IEWB, we have argued repeatedly for a methodology that does not always and automatically assign a zero weight to distributional and insecurity issues. As Figures 5.9 and 5.10 indicate, when these issues
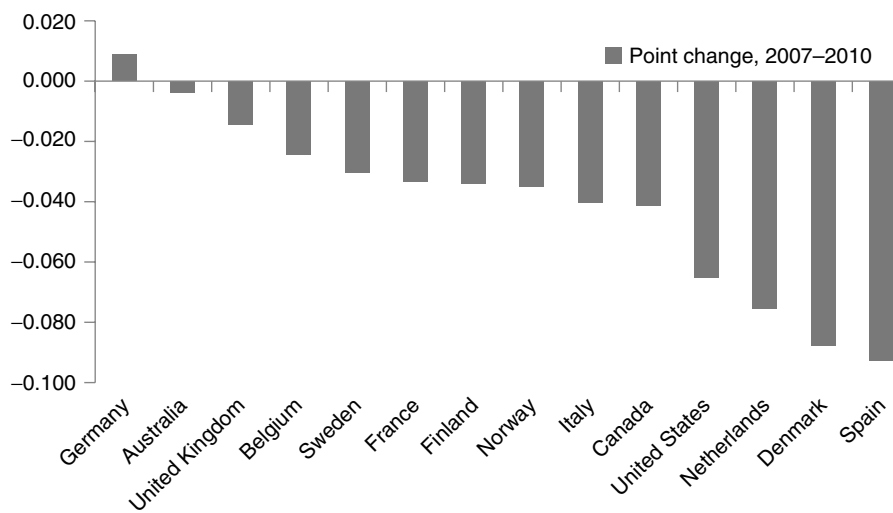
Figure 5.10.   Change in Economic Security Index, 2007–2010.

are considered the 2007–2010 period generally looks much less positive than when they are ignored (as in Figures 5.7 and 5.8). Figure 5.9 shows how adverse movements in poverty and inequality were quite significant in several countries (as already discussed, worst in Spain, not just because the poverty rate increased but also because the average depth of poverty grew significantly). Marginal improvements in our equality index in Norway and Germany contrast with declines in Canada, France, Belgium, Denmark, and Sweden. Figure 5.10 shows that our economic security index declined in 13 of 14 countries.

Taken together, Figures 5.6 to 5.10 imply a potential for differing values to drive divergence in assessment of the implications of the Great Recession. Those who favor the view that measures of economic wellbeing should focus on aggregates or averages—such as per capita consumption or wealth—will be likely to assess the 2007 to 2010 period as predominantly positive in almost all of the 14 nations we study. Those who emphasize the importance of equality in the distribution of current income and economic security about future income will be likely to come to the opposite conclusion—and especially so if concerns about greater economic insecurity are considered more relatively important. The weighting of the different dimensions of wellbeing thus matters significantly. Indeed, making more transparent this sensitivity of aggregate measures of wellbeing to the underlying components of wellbeing has always been one of our major objectives in constructing the IEWB.

The Relationship between Changes in the IEWB, Its Components, and GDP per Capita or Unemployment

When a recession occurs its impact is often discussed with reference to changes in output or unemployment. This chapter has been urging that the welfare implications of business cycle variations should be assessed using the IEWB and has argued that business cycle impacts on the components of wellbeing differ significantly. How can one assess the relationship between conventional measures of business cycle impacts and the IEWB? Can one argue that some countries do a better job than others in reducing the volatility of wellbeing—that is, for a given size of shock to unemployment or output, do some countries do better than others in limiting the impact on indicators of wellbeing of business cycle variations in output and unemployment?

Arthur Okun's (1962) estimation of the relationship between changes in GDP and changes in the unemployment rate has attained the status of being labeled "Okun's Law". To assess the relationship between output variability (or unemployment changes) and changes in economic wellbeing, we rely on a similar specification. Specifically, we start by estimating OLS equations of the form:

$$\Delta \text{IEWB} = k_1 + c_1^*(\Delta \text{ unemployment}) \tag{5.1}$$

$$\Delta \text{IEWB} = k_2 + c_2^*(\%\Delta \text{ output}) \tag{5.2}$$

We estimate equations (5.1) and (5.2) by ordinary least squares (OLS) separately for each country—since our data is limited to 15 annual observations for each country, the standard error of these estimates is necessarily large.[8] We discuss first the results for changes in the aggregate IEWB (equally weighted), and then proceed to discuss the results of similar regression estimates of the relationship between changes in the components (wealth accumulation, consumption, equality, and security) of the IEWB and changes in unemployment and output. Each figure presents, for each country and for the pooled sample, bar graph representations of our estimates of coefficients c1 and c2 respectively, with the plus or minus two standard error confidence interval marked (where this interval spans zero, the interpretation is that one cannot reject, at 95% confidence, the hypothesis that the value of the coefficient is really zero).
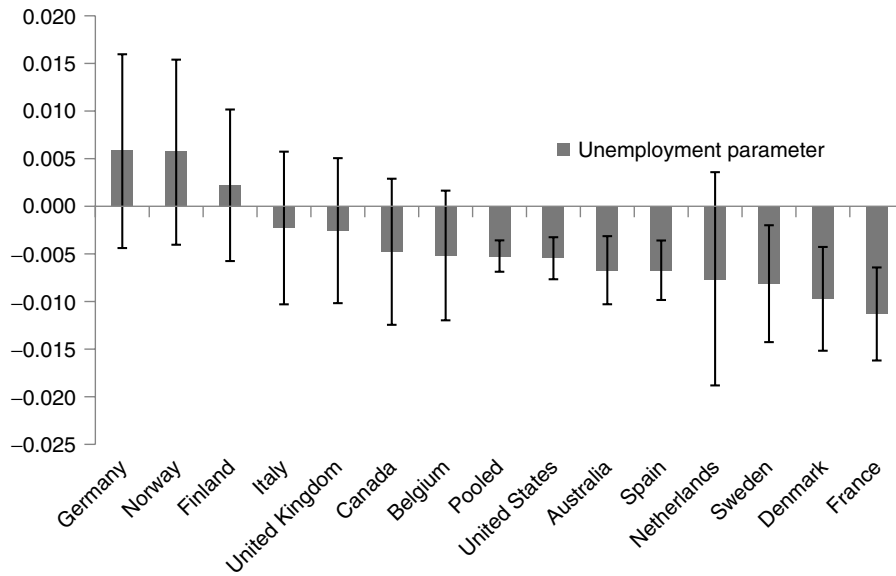
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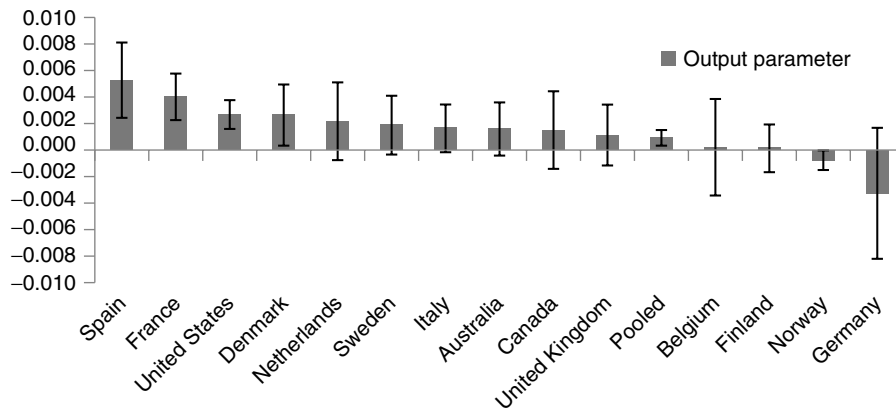**Figure 5.11.** Unemployment Changes & IEWB Changes.

Figure 5.12. Output Changes & IEWB Changes.

As Figure 5.11 indicates, changes in the unemployment rate do negatively affect the aggregate (equally weighted) IEWB in most countries but only in five countries is this statistically significantly different from zero. Output changes shown in Figure 5.12 are positively correlated—but also often indistinguishable from zero at a 95% level of statistical confidence. Is this a reasonable pattern for a defensible index of economic wellbeing?
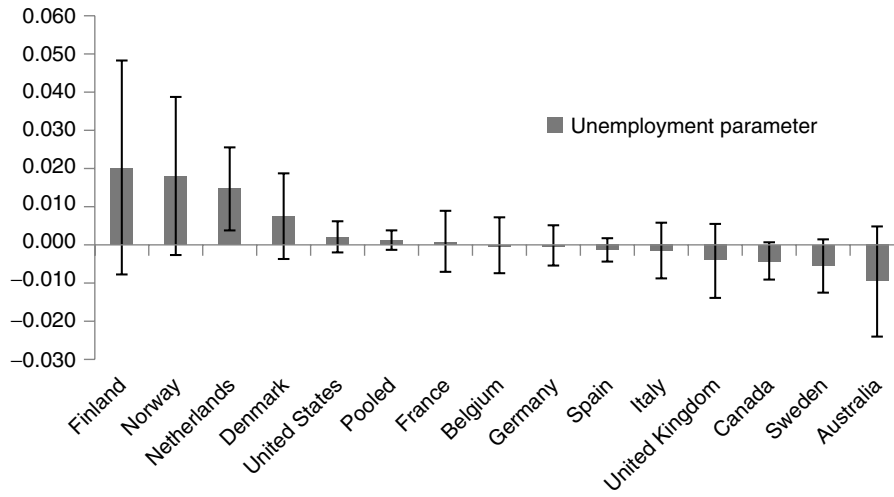
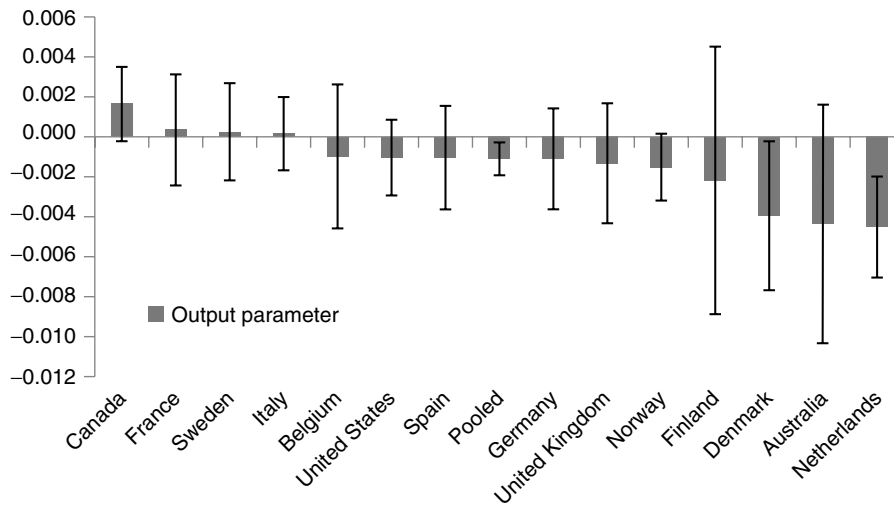**Figure 5.13.** Unemployment Changes & Wealth Index Changes.

Figure 5.14. GDP Changes & Wealth Index Changes.

To illustrate why aggregate indices of economic wellbeing might not be very sensitive to short-run variations in GDP per capita and unemployment, Figure 5.13 presents the c_1 estimates of the relationship between year-to-year changes in unemployment and the wealth index and Figure 5.14 presents the c_2 estimates of the relationship between year-to-year changes
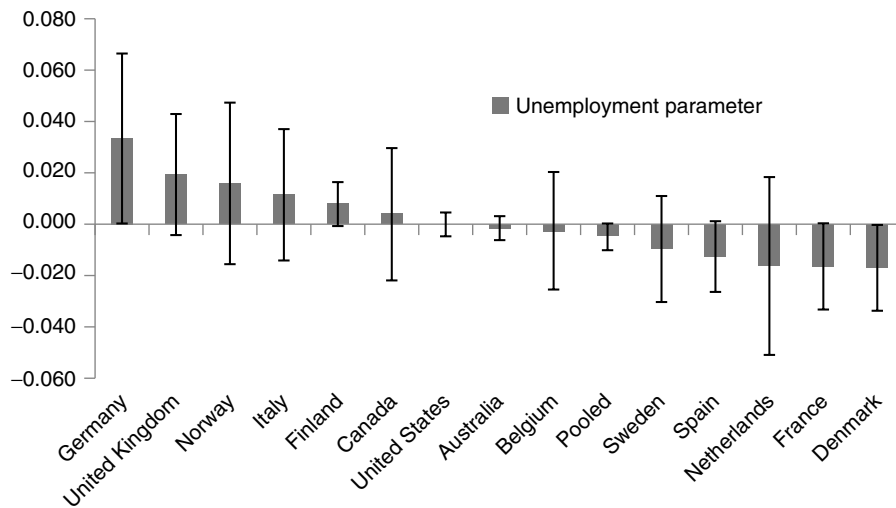
Figure 5.15. Unemployment Changes & Equality Index Changes.

in GDP and the wealth index. Since wealth stocks are built up over many years, it is reasonable to think that they are not likely to be particularly sensitive to year-to-year variations in output or unemployment—as these figures indicate.

Figure 5.15 presents the c_1 estimates of the relationship between year-to-year changes in unemployment and the equality index and Figure 5.16 presents estimates of the c_2 coefficient, linking year-to-year changes in GDP and the equality index. One can sometimes forget that, when the unemployment rate increases from 4% to 6%, one can equally well describe this as the unemployment rate increasing by half or as a decline from 96% to 94% in the percentage of the labor force employed (i.e., a change of 1/48th). In most years, year-to-year changes in output or employment are not large, and measures of inequality within countries are dominated by the continuing inequalities among the vast majority. Figures 5.15 and 5.16 show that year-to-year changes in GDP and unemployment are, for the 1995 to 2010 period as a whole, not strongly related to year-to-year changes in the equality index. However, the 2007–2010 shock to GDP in Spain was strong enough to show up as a statistically significant positive correlation between GDP changes and equality index changes, and our results on in international trends in the IEWB earlier may indicate that non-marginal shocks can interact multiplicatively to produce significantly sized impacts.
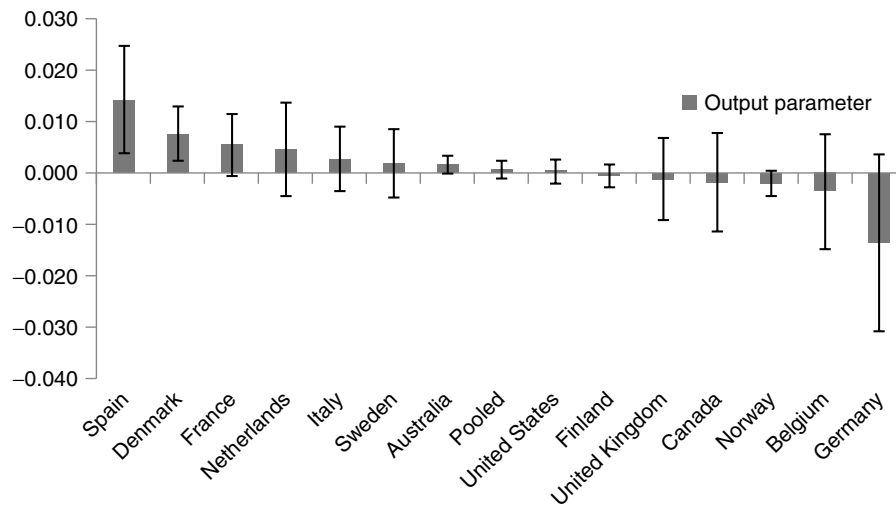
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Figure 5.16. GDP Changes & Equality Index Changes.

Since per capita consumption is an annual flow measure, it is reasonable to expect it to respond to year to year changes, and Figures 5.17 and 5.18 indicate that this is normally the case, usually at statistically significant levels.[9] Nevertheless, it is still striking how much countries vary. As Figure 5.18 indicates volatility of GDP movement is far more immediately translated into movement in per capita consumption in the United States, the United Kingdom, and Australia than in Finland, Germany, and Norway—indeed Norway is in the unique position that it seems able to separate GDP movements from aggregate consumption changes nearly completely. One possible explanation for the Norwegian results is that oil price movements will affect Norwegian GDP, but, because oil revenues are deposited in a sovereign wealth fund, consumption implications will be averaged over the price cycle.

The most cyclically sensitive component of the IEWB is the economic security index, as Figures 5.19 and 5.20 illustrate.[10] Unemployment is negatively related to economic security and GDP growth is positively related—no surprise there.

However, if one of the objectives of the welfare state is to improve citizens' sense of economic security by decreasing their exposure to the volatility of GDP movements, then it is interesting that some countries do much better than others. When we estimate the equation:

$$\Delta \text{Economic Security} = k + c_2^*(\%\Delta \text{ Output}) \qquad (5.3)$$
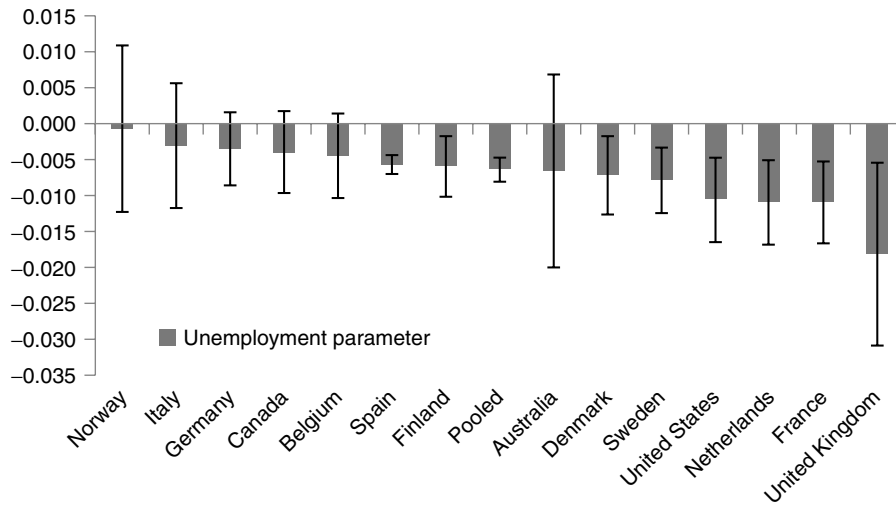
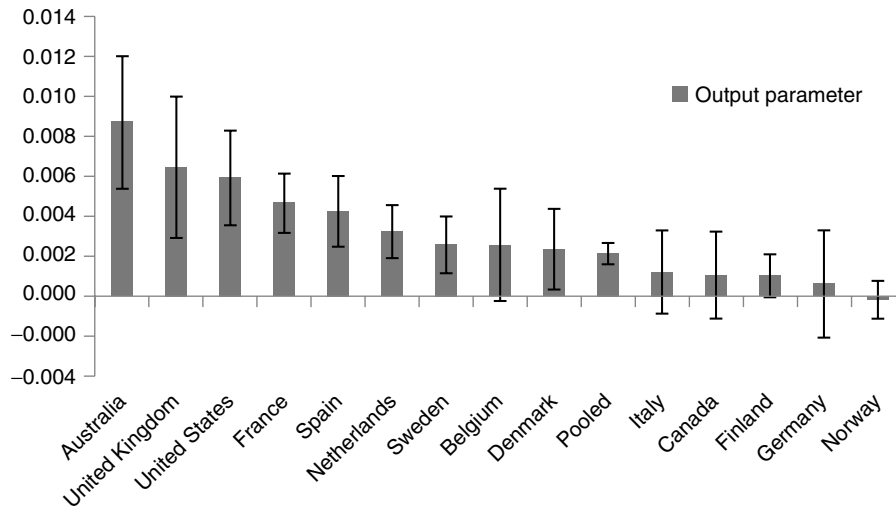**Figure 5.17.** Unemployment Changes & Consumption Index Changes.

Figure 5.18. GDP Changes & Consumption Index Changes.

our estimate of c_2 is statistically significant (at 95%)—but at very different levels—in almost all countries. France (0.006), Canada (0.005), Netherlands (0.005), Denmark (0.005), and Spain (0.004) are the countries where economic security fluctuates most with variations in GDP growth while economic security in Finland (0.002) and Norway (0.001) is much less

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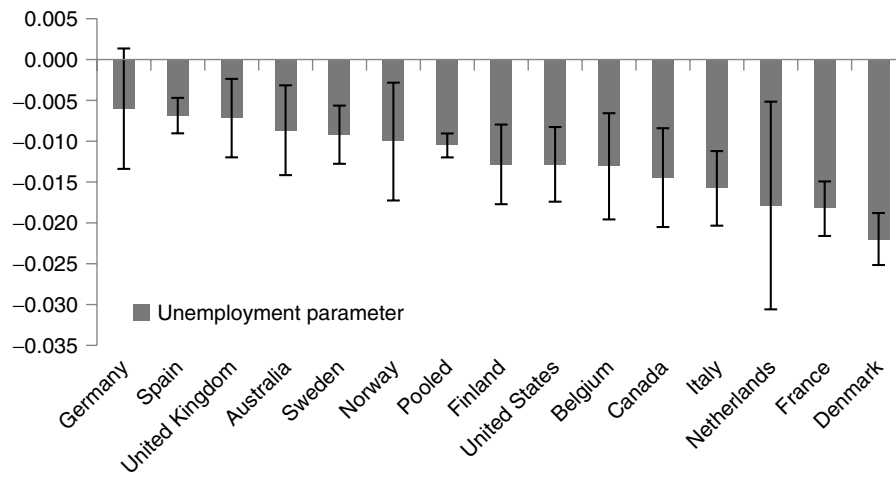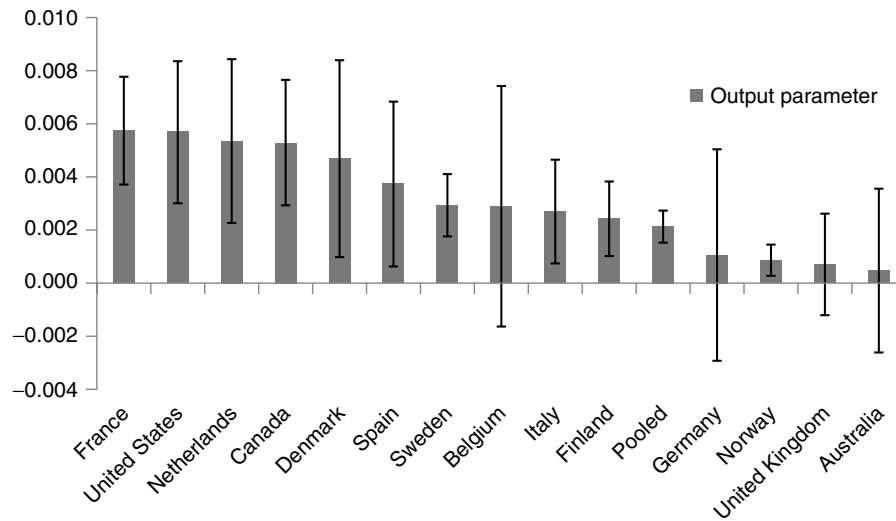**Figure 5.19.** Unemployment Changes & Economic Security Index Changes.

Figure 5.20. GDP Changes & Economic Security Index Changes.

correlated with GDP movements. One way of reading these results is to say that they indicate that these two nations do much better than others in insuring their citizens against the hazards of the business cycle, for any given size of business cycle shock.

Conclusion

The "Great Recession" of 2008 had very different impacts in different countries. Conventional indicators, like unemployment or GDP growth, show that in some countries (e.g., the United States or Spain), it ushered in a prolonged and severe economic downturn, while in other nations (e.g., Australia or Germany) it produced a short negative blip in the data, with few apparent long-term consequences.

This chapter has tried to look at the Great Recession using the lens of the Index of Economic Wellbeing and available data for the period 1995 to 2010 from 14 countries—Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, the United Kingdom and the United States. It has made three main points:

1. Any aggregate index of wellbeing necessarily imposes some weighting of the components of wellbeing. This implies that calculations of trends in aggregate indices can be sensitive to the weighting of components, when trends in those components of wellbeing differ, as was the case across these 14 nations in the 2007–2010 period. In particular, since the 2007–2010 changes in economic security and equality were negative in most of the 14 countries studied while 2007–2010 trends in per capita consumption and aggregate wealth accumulation were more positive, weighting schemes that emphasize security and equality will tend to show more negative impacts of the Great Recession on aggregate wellbeing than weightings which emphasize aggregate consumption or wealth accumulation.

2. Wealth stocks are accumulated over many years and the institutions that determine the distribution of income have great inertia within countries (particularly among that vast majority of the population who retain employment during normal year-to-year fluctuations in output or employment). Hence, in normal times neither of these dimensions of economic wellbeing is very sensitive to year-to-year variations in output or employment within countries. By contrast, annual consumption flows and measures of economic security are much more sensitive. The caveat "in normal times" is necessary because non-marginal shocks and the multiplicative interaction between changes in the poverty rate and the average poverty gap can produce significant cyclical impacts on equality—as the example of Spain 2007–2010 illustrates.

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3. Countries differ a lot in the degree to which economic security and consumption flows vary with year to year fluctuations in output and employment. Some countries' institutions are clearly much more effective than others in insulating economic security and average consumption from cyclical volatility, for any given size of shock.

Addendum

Replacement of Luxembourg Income Study (LIS) Poverty and Income Distribution Estimates by Eurostat and National Estimates in the IEWB Database

The estimates of the IEWB used in this chapter for 14 OECD countries (11 EU countries, Canada, the United States, and Australia) for 1995 to 2010 are based on the updated IEWB estimates for OECD countries for the 1980–2010 period recently prepared by the Centre for the Study of Living Standards (CSLS). A major difference between these estimates and our earlier work is that the poverty and income distribution estimates used are no longer based on Luxembourg Income Study (LIS) data but instead now use Eurostat estimates.

The LIS represented a major advance in the availability of consistent micro-data sets for the generation of comparable poverty and income distribution estimates across OECD countries. However, LIS data sets are only available for a small number of years and, for most countries, are not available beyond the mid-2000s. This means that time-series data for LIS countries must often be interpolated between data years, and the LIS cannot be used for analysis of the impact of the Great Recession.

Fortunately, Eurostat has calculated annual estimates up to 2010 in a consistent manner for its members using six of the seven poverty and income distribution variables that the IEWB uses—specifically (using a 50% of median income concept of the poverty line) Eurostat publishes the poverty rate and gap for all persons, the poverty rate and gap for older people, the poverty rate for single-parent households. As well, Eurostat publishes estimates of the Gini coefficient of the inequality of money income. The only variable missing for our purposes is the poverty gap for single-parent households. These data represent a major advance in the availability of internationally comparable data for EU countries. The three non-EU members of our dataset are Canada, the United States, and

Australia. Statistics Canada publishes annual estimates for all six variables we need up to 2010 based on the Survey of Labour and Income Dynamics (SLID) and these estimates have been included in the database. No U.S. statistical agency produces relative poverty estimates comparable to Eurostat estimates of "one half median income" poverty. However, the U.S. Bureau of Census makes available the micro-data sets for the March supplement to the Current Population Survey (CPS), and poverty estimates can be generated from these data sets. The CSLS has used these micro datasets to generate poverty and income distribution estimates comparable to the Eurostat estimates for the 1995–2010 period. These estimates are used in this chapter and are available on the CSLS website.

The Australia Bureau of Statistics also does not appear to produce relative poverty estimates consistent with Eurostat definitions. The estimates for Australia in the paper are based on the LIS, which only goes up to the mid-2000s. Estimates for recent years are assumed unchanged from the most recent LIS numbers.

Notes

1. In previous papers, we relied on the Luxembourg Income Study (LIS) for the data underlying our poverty rate and gap calculations and estimated intervening years (i.e., those not available in LIS) by interpolation. Where possible, this chapter substitutes Eurostat estimates, which are available beginning in 1995 for each year for most European nations. See addendum to chapter for discussion.
2. Osberg and Sharpe (2005) discussed, for the seven countries marked here with an asterisk, the differences between using GDP per capita or the IEWB as a component of the Human Development Index, over the period 1980 to 2001
3. It is important to note that the estimates of the IEWB for OECD countries contain fewer variables than IEWB estimates for Canada and the provinces, because there is greater data available for Canada than for OECD countries. For example, the Canadian estimates include data on certain regrettable expenditures, household production, and natural resources.
4. The onset of the recession in late 2008 implies that 2007 is the last full year's pre-recession data.
5. Our "base" weighting assigns equal weight to each component. Osberg and Sharpe (2005) present similar figures for the United States, the United Kingdom, and Norway, 1980–2001.
6. Linear scaling is used—i.e., each of the four components of economic well-being is assigned an indexed value equal to Value-Min / Max-Min, which represents the relative position of that country, in that year, on the range from

maximum (feasible value) to minimum (feasible value), where both maximum and minimum are set at the actual extremes of the values observed in all countries and all years of the present study, plus (or minus) 10% of the actual observed range.

7. Note that the deficiencies of internationally comparable data prevent us from incorporating the decline in unemployment insurance and employment insurance in Canada over this period. See Osberg (2009) for a fuller discussion.

8. For illustrative purposes we also estimated (1) and (2) jointly for all 14 countries and present those results and the plus or minus two standard error confidence interval—which indicate that the hypothesis of equality of coefficients across countries should generally be rejected, and therefore that pooling of country data would be inappropriate.

9. We stress the limited number of years of data (15) that are available.

10. Since unemployment enters the calculation of the labor market security sub-component of Economic Security, this is partly to be expected—but nothing in IEWB methodology would predict the variability across countries in c_1 and c_2 which we observe.

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