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THE BENEFITS OF STABILIZATION POLICIES REVISITED

Fabio D'Orlando and Francesco Ferrante*

Abstract

Traditional theoretical literature which neglects the benefits of stabilization policies (e.g., Lucas 1987 and 2003) ultimately relies on the small impact that macroeconomic volatility has on aggregate income and consumption. In this article, we argue that such an approach is both theoretically and empirically weak. From the theoretical viewpoint, the cost of volatility should be measured including not only monetary magnitudes, but also those psychological costs whose relevance has been stressed by behavioural economics and which are correlated with the number of unemployment episodes. We refer here to the implications for experienced utility of loss aversion, the endowment effect and hedonic adaptation. This theoretical problem is coupled with the empirical finding that the effects of downturns are not randomly distributed and serially uncorrelated, i.e., they affect more frequently those who have less (in terms of skills, income and wealth) and who suffer greater wellbeing losses from each shock. It follows that the traditional (and Lucas) analysis disregards the main causes of wellbeing losses determined by downturns. Hence, it cannot be considered as a theoretically sound basis for denying the usefulness of policies aimed at preventing downturns and/or of micro regulation policies aimed at preventing the impact of downturns and labour force reallocation on the labour market.

Keywords: Behavioural economics, employment protection legislation, *endowment effect*, *hedonic adaptation*, *loss aversion*, recessions, redistribution, unemployment

JEL Classification: D81, E24, D7, D31, J58

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Introduction

In the last 30 years or so, in most OECD countries, policy makers' propensity to regulate the economy and/or to implement measures against unemployment has become less frequent and incisive (D'Orlando and Ferrante 2009, D'Orlando, Ferrante and Ruiu 2011). In general terms, such a result appears coherent with the diffusion of *DSGE* and New Classical Macroeconomic models, which have somewhat allowed the resurgence of pre-Keynesian economic principles. In more specific terms, the argument has been that macroeconomic volatility caused by the reduction in public intervention has a low impact on consumers' wellbeing, such that people would give up only a small fraction of their consumption to avoid instability. This conclusion has been crucially influenced by two important contributions by Nobel laureate Robert Lucas (Lucas 1987 and 2003). A role has also been played by the idea that less activist public stabilization policies would allow a higher economic growth rate, hence more than compensating, at least in the longer run, the loss of wellbeing suffered by those subjects who pay the cost of macroeconomic volatility with higher unemployment and/or lower wages.

A counterpart of the argument that it is rational to give up the benefits of stabilization policy, due to its long-term costs, is the idea that lack of redistribution, in very unequal societies, is rationally accepted by the median voter, who would gain from redistribution because he/she expects to enjoy the higher probability of upward social mobility stemming from a lack of redistributive policies. This represents the POUM hypothesis (Benabou and Ok2001).[1]

Lucas's 1987 and 2003 contributions deal with situations in which actual magnitudes deviate randomly from their long-period trend and realize it on average. In other words, they are concerned with a post-World War II world in which recessions have been defeated. Yet (at least implicitly), the same philosophy has been used to cope with the Great Recessions of 2007 and later, a situation clearly different from one of random deviations of actual magnitudes from the trend. In such a world, the main driver of the variations in wellbeing is assumed to be consumption volatility.

In this article, we argue that the above-described approach is weak, both in theoretical and empirical terms, and with reference to temporary deviations from the trend as well as reference to recessions. Most importantly, it neglects the main driver of people's subjective wellbeing - their occupational status - and, by doing so, it understates the actual impact on individual wellbeing, and on specific social groups, of unemployment shocks and changes in income distribution generated not only by Great Recessions, but also by simple macroeconomic instability.

Our conclusions are based on a number of economic psychology and behavioural economics contributions on *loss aversion*, *hedonic adaptation* and the *endowment effect*

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[1] "This paper examines the often stated idea that the poor do not support high levels of redistribution because of the hope that they, or their offspring, may make it up the income ladder. This 'prospect of upward mobility' (POUM) hypothesis is shown to be fully compatible with rational expectations, and fundamentally linked to concavity in the mobility process. A steady-state majority could even be simultaneously poorer than average in terms of current income, and richer than average in terms of expected future incomes. A first empirical assessment suggests, on the other hand, that in recent U.S. data the POUM effect is probably dominated by the demand for social insurance." (Benabou and Ok 2001, p. 447)

(see, e.g., Knetsch and Sinden1984, Samuelson and Zeckhauser1988, Knetsch 1989, Kahneman, Knetsch and Thaler 1990 and 1991, Tversky and Kahneman1991, Clark and Oswald 1994, Clark et al. 2001, Frey and Stutzer 2002, Lucas et al. 2004, Clark et al.2004, Diener et al. 2006, Clark et al. 2008, Armenta et al. 2014), which are theoretically and empirically robust, but nonetheless have been almost ignored in the debate on the theme. These contributions suggest that the wellbeing loss caused by unemployment shocks is greater not only than what is believed by the majority of traditional theoretical literature, but also than what is believed by the critics of that traditional literature. This is the case since involuntary unemployment episodes have psychological consequences, almost always ignored by literature, which determine a large negative impact on subjects' wellbeing, in particular that of the weakest individuals. A theoretically sound analysis cannot disregard these large wellbeing losses. Since almost all the literature based on Lucas's contributions actually ignores these costs, the conclusion that the benefits of non-regulated markets would be greater than the costs of non-governed economic fluctuations is untenable. Stabilization policies, and micro regulation policies aimed at contrasting economic downturns and unemployment episodes, cannot be disregarded on these weak theoretical bases.

The traditional approach also appears weak from an empirical viewpoint. According to Lucas, "[o]nce one starts to think about…[economic growth] it is hard to think about anything else" (Lucas 1988, p. 5). Indeed, the tiny proportion of Americans who have enjoyed most of the fruits of deregulation and economic growth in the last 30 years or so would agree with this statement. Unfortunately, "anything else" includes the many less-fortunate, who paid the costs of economic fluctuations and are still paying those of the Great Recession II, who have hence enjoyed a very small slice of the cake of economic growth. Downturns and recessions have increased inequality, having a greater effect on those who have less (in terms of skills, income and wealth), i.e., those for whom *loss aversion* is more severe. Therefore, even in the case in which monetary gains and losses from the business cycle cancel each other out on average, the representative agent hypothesis used by Lucas does not meet reality and the sum of aggregate wellbeing gains and losses is not nil, but negative in sign and huge in absolute value. This is so for three reasons: i) theoretical and empirical literature on *loss aversion* shows that losses impact (negatively) on wellbeing more than gains; ii) recessions and downturns are not randomly distributed within the working population, since they affect more individuals holding specific characteristics than others and the probability of being hit at time t is positively correlated with the probability at time $t-1$ (Heckman and Borjas1980);hence for these subjects *loss aversion* is more severe and iii) as a result, recessions and downturns mainly tend to affect people for whom *loss aversion* and hence wellbeing losses are more severe.

On these grounds, one can argue that labour market flexibility does not depend solely on the norms regulating the market itself, but also on behavioural factors that determine workers' *capability* – in Sen's perspective – to adapt to changes in their occupational status and the costs of doing so. The main factors supporting people's capability to adjust to adverse life events are education and wealth. Therefore, the impact of non-pecuniary costs of unemployment episodes is negatively related to the income and education levels of the individuals concerned. It follows that, in some circumstances and in some countries, *loss aversion* is more severe, therefore the cost of the absence of regulatory policies is particularly high and regressive.

The above considerations undermine, on the one hand, the relevance of the traditional arguments used for neglecting the usefulness of policies aimed at contrasting downturns and, in any case, at reducing the impact of economic fluctuations on the labour market; on the other hand, they also undermine the relevance of the arguments used to progressively dismiss labour market institutions based on the so-called *on the job* protection, which reduces the impact of labour market instability on workers' wellbeing. On the same bases, one can also argue that *limiting* unemployment episodes - by stabilizing the business cycle through macro and micro regulation policies and/or avoiding the impact of economic shocks on the labour market- can generate better aggregate outcomes with respect to *curing* unemployment *after* it has appeared, by using subsidies or even by hiring the unemployed after they have become unemployed.

This paper is organized as follows:

Section 1 proposes a review of the literature, originating from Lucas's 1987 book, which discusses the idea that the benefits of flexibility, i.e., the absence of regulation of the business cycle, are greater than its costs. Section 2 focuses on the social costs of flexibility, showing that, if one includes psychological costs, they are far greater than traditional economic approaches assume and, in particular, than is assumed by those approaches described in Section 1. Section 3 argues that downturns have a greater negative effect on those who have less wealth and education and, since those who have less suffer more from *loss aversion*, this reduces their wellbeing further and strengthens our conclusions. Section 4 draws the main implication of the analysis, describing the policies that should be dismissed if Lucas's analysis were sound and that, in our view, are again relevant once Lucas's analysis proves unsound (in particular those policies necessary to reduce the cost of flexibility, as well as macro and microeconomic regulation aimed at preventing recessions). Section 5 sums up our results and concludes.

1. Are stabilization policies unnecessary?

Lucas's book *Models of Business Cycles* (Lucas 1987) gave rise to an important debate on the role of stabilization policies, a debate to which Lucas himself later contributed (Lucas 2003).

In line with neoclassical macroeconomic principles, for the general case Lucas considers stabilization policies unnecessary, useless and even dangerous. For the particular context here considered, he investigates the usefulness of public policies aimed at reducing the macroeconomic volatility that the economy has actually experienced over the past few decades. To put it another way, he discusses the utility of *more aggressive* stabilization policies with respect to "the general stabilization of spending that characterizes the last 50 years" (Lucas 2003, p. 11). He concludes that "there is little benefit from *further* stabilization" (Barlevy 2005, p. 32) since "[t]he potential gains from improved stabilization policies are on the order of hundredths of a percent of consumption, perhaps two orders of magnitude smaller than the potential benefits of available 'supply-side' fiscal reforms" (Lucas 2003, p. 11).

From what precedes, it is clear that Lucas's contribution is not about recessions. According to him, macroeconomics and related stabilization policies have succeeded, since the "central problem of depression prevention has been solved" (Lucas 2003, p.1). The problem is hence simply macroeconomic volatility, i.e., excess deviations of the

economy from its long-run trend. According to Lucas, people suffer from the uncertainty stemming from an unpredictable variability of their consumption path during the business cycle, which, on the contrary, would be smoothed by further countercyclical public economic policies.[2] However - and this is the central point - the dimension of this wellbeing loss would be very small, so small that the burden of the costs of further stabilization policies certainly exceeds their benefits.

To reach such a result, in a context in which consumption grows at a constant rate, Lucas calculates the utility loss deriving from the business cycle. He considers the following intertemporal utility function, in which utility depends upon a sequence through time of actual consumption expenditure, C_t, with t indicating the year:

$$U = f(C_t, C_{t+1}, \dots)$$

with

$$C_t = (1 + \varepsilon)C_t^*$$

In these relations, C_t^* is the trend in consumption and ε is a random deviation of actual consumption from the trend. Aggregate consumption on average corresponds to the trend, but in a specific year can be above or below it. As we have said, recessions affecting the trend are out of the question.

The loss in wellbeing that subjects suffer due to macroeconomic volatility can be measured by the difference between the utility of a path of consumption strictly corresponding with the consumption trend, $U=f(C_t^*, C_{t+1}^*, \dots)$, and the utility of a path of actual consumption deviating from the trend, $U = f(C_t, C_{t+1}, \dots)$. Lucas defines this loss as the amount of consumption that should be added to actual consumption to obtain the same utility a consumer would have in a world in which consumption does not deviate from the trend (Lucas 2003, p.1).

Formally, one obtains this result by singling out the value of the cost of volatility μ that realizes the following condition:

$$U\big((1 + \mu)C_t, (1 + \mu)C_{t+1}, \dots\big) = U(C_t^*, C_{t+1}^*, \dots)$$

According to Lucas, μ will increase with an increase in volatility in consumption and with an increase in the aversion of individuals to volatility. Hence, it depends upon both the *objective* loss of consumption during the business cycle and the *subjective* aversion to risk of individuals. Since i) until 2007, consumption was not particularly volatile and ii) Lucas assumes a relatively small risk aversion parameter, equal to one, he concludes that individuals would accept paying less than 0.1% of their lifetime consumption to avoid volatility. It follows that policies aimed at avoiding further deviation of consumption from this trend are almost useless.

Lucas's contribution has been the object of a number of critiques, most of which have mainly attempted to find different/greater values for the wellbeing loss.

Some scholars (see, e.g., Guillén et al. 2014) criticize Lucas's 1987 paper for considering a post-World War II world in which stabilization policies operate and not a

[2] "I ask what the effect on welfare would be if all consumption variability could be eliminated" (Lucas 2003, p. 3).

pre-World War II world in which stabilization policies were almost absent. The point raised by Lucas would therefore refer to *more active* stabilization policies and not to stabilization policies in general, which proved to prevent greater welfare losses in a pre-World War II world. Similar critiques refer to the fact that Lucas excludes from his analysis not only a world in which macroeconomic instability is huge due to the absence of stabilization policies, but also the cases of Great Recessions, in which the problem is not simply that of random deviations from the trend. In the case of a "crash state in consumption" (see, e.g., Salyer 2007), with double digit reduction in consumption, the welfare loss deriving from the absence of stabilization policies is far greater than in Lucas's vision.

The above-mentioned studies are the only ones capable of obtaining numeric results for the welfare loss that are considerably greater than those obtained by Lucas. The majority of the remaining contributions on the theme do not deviate much from Lucas's quantitative results, even when they propose theoretically relevant (but numerically less relevant) modifications in the logic of the argument. This is particularly the case for those authors who argue that Lucas understates the cost of the business cycle, due to his misanalysis of the relevance of risk aversion (see, e.g., Epstein and Zin 1991, Obstfeld 1994, Pemberton 1996, Dolmas 1998, Tallarini 2000).

Other contributions (Krusell and Smith 1998, Mukoyama and Sahin 2006, Krebs 2007, Krusell et al. 2009) criticize the representative agent hypothesis adopted by Lucas. According to them, by using this hypothesis Lucas greatly understates the huge impact of the business cycle on subgroups of subjects. In particular, in models with heterogeneous agents the impact of the business cycle on particularly weak subgroups, such as the poorest or the unemployed, would be particularly relevant.

The present paper also aims to show the theoretical weaknesses of Lucas's procedure, together with the far greater dimension of the impact the business cycle has on wellbeing in the absence of stabilization policies. However, in doing so, we do not focus on "crash states" in consumption, on pre- and post-World War II data, on Great Recessions, or on an incorrect estimate of *risk aversion*. We base our argument on a number of robust theoretical and empirical recent results from contributions in economics and psychology. In particular, our conclusions are based on the concepts and models of *loss aversion*, *status quo bias* and *hedonic adaptation*. To the best of our knowledge, these models and principles have never been applied to Lucas's analysis, even if intuitions in this direction may be found in De Neve et al., 2015 (e.g., p. 19). On these bases, we find relevant wellbeing costs for downturns (and in particular for unemployment caused by downturns) and robust motivations for implementing stabilization policies. These results follow on from the acknowledgement of "the non pecuniary costs of unemployment (Clark and Oswald 1994, Winkelmann and Winkelmann 1998, Wolfers 2003, Kassenboehmer and Haisken-DeNew 2009), which typically increase during recessions" (De Neve et al. 2015, p. 19).

2. The true costs of unemployment

The unemployment costs accruing from the absence of macro and micro regulatory policies capable of avoiding severe economic downturns - and/or to prevent workers from being fired during downturns - can be defined as the *costs of flexibility* (of the labour market). These costs can be divided into pecuniary and non-pecuniary.

Pecuniary costs can be computed in monetary terms and are the income and/or consumption losses deriving from unemployment, the costs of searching for a new job, the costs of geographical mobility, the possibility of finding a new job with a lower wage, etc. Non-pecuniary costs, on the contrary, are not linked with a loss of income and/or consumption, but include the psychological costs that subjects suffer from changing status, habits and lifestyles, from social stigma, from losing esteem and social networks, etc. These costs have to be measured in terms of wellbeing rather than consumption (and/or income) losses and their relevance is confirmed by both empirical evidence and theoretical studies.

A number of behavioural economics and economic psychology principles and models can be used to study the overall cost of the business cycle and of unemployment. In particular, *loss-aversion* (Tversky and Kahneman 1991, Kahneman, Knetsch and Thaler 1991, D'Orlando and Ferrante 2009, D'Orlando, Ferrante and Ruiu 2011), the *endowment effect* (Knetsch and Sinden 1984, Knetsch 1989, Kahneman, Knetsch and Thaler 1990, Kahneman, Knetsch and Thaler 1991), the *status quo bias* (Samuelson and Zeckhauser 1988, Kahneman, Knetsch and Thaler 1991) and *hedonic adaptation* (Brickman et al. 1978, Clark and Oswald 1994, Clark 1999, Diener et al. 1999, Frederick and Loewenstein 1999, Frey and Stutzer 2002, Di Tella et al. 2003, Clark et al. 2004, Stutzer 2004, Layard 2005, Diener et al. 2006, Oswald and Powdthavee 2006, D'Orlando and Ferrante 2008 and 2009, Lyubomirsky 2011, D'Orlando, Ferrante and Ruiu 2011, Amenta et al. 2014).

Let us start with *loss aversion*. According to Kahneman, Knetsch and Thaler (1991, p. 199): "[a] central conclusion of the study of risky choice has been that [...] changes that make things worse (losses) loom larger than improvement or gains". This conclusion bears important implications for the calculation of the costs of downturns in general, and of unemployment in particular, since unemployment episodes are events that imply a very high psychological cost which is compensable only at a very high monetary cost.

The concept that bad events carry more weight than good ones is confirmed by both the *status quo bias* and the *endowment effect*. The two concepts are strictly linked, and are also linked with the idea that people are more responsive to losses than to gains of equal size.

The *status quo bias* was originally described by Samuelson and Zeckhauser (1988), who found a strong preference of individuals for the *status quo* (or for what they believe is the *status quo*) "because the disadvantages of leaving it loom larger than advantages" (Kahneman, Knetsch and Thaler 1991, pp. 197-198). A similar behavioural principle is the *endowment effect*, which has been verified empirically, mainly by repeated experiments (see, e.g., Knetsch and Sinden 1984, Knetsch 1989, Kahneman, Knetsch and Thaler 1990). We can describe the *endowment effect* as "the fact that people often demand much more to give up an object than they would be willing to pay to acquire it" (Kahneman, Knetsch and Thaler 1991, p. 194). When an object becomes part of the subject's endowment (and here is the link with the *status quo bias*), the subject tends to overvalue it.

The cumulative result of considering together *loss aversion*, the *status quo bias* and the *endowment effect* is that unemployment episodes reduce wellbeing more than hiring episodes increase it, and the fact that, on average, income and consumption do not change during the business cycle nonetheless implies aggregate wellbeing losses.

The above principles and considerations are crucial for a full understanding of the importance of *hedonic adaptation* for the study of the psychological costs of business cycles. The key finding of the *hedonic adaptation* approach is that people adapt to life events: "[l]ife events such as marriage, loss of a job, and serious injury may deflect a person above or below [his/her] setpoint, but in time *hedonic adaptation* will return an individual to the initial setpoint" (Easterlin 2003, p. 1). Such a process is sometimes called "habituation". After the seminal paper by Brickman et al. (1978), empirical evidence on *hedonic adaptation* has been thoroughly discussed in psychological journals (see, e.g., Diener et al. 1999, Frederick and Loewenstein 1999, Clark et al. 2004, Lucas et al. 2004, Oswald and Powdthavee 2006, Diener et al. 2006, Lyubomirsky 2011). However, it is still disputed whether adaptation is complete or incomplete, i.e., whether life shocks have a permanent effect on the long-period level of agents' wellbeing,[3] since in some cases "people do not completely adapt to conditions" (Diener et al. 2006, p. 309). In particular, there seems to exist a rather asymmetric reaction to bad and good events in life:[4] people adapt with more difficulty, less completely and in more time to negative rather than to positive events and this adaptation is often incomplete (Armenta et al. 2014, p. 64, Lyubomirsky 2011, p. 204).[5] Attempts have also been made to measure such an asymmetry and "[a]lthough it is premature to conclude that negative experiences are three times as bad as positive experiences, these findings at a minimum suggest that the 'punch' of one bad emotion, utterance, or event can match or outdo that of three or more good ones" (Lyubomirsky 2011, p. 204). Furthermore, it is a generally shared conclusion in literature (see, e.g., Lucas et al. 2004, Diener et al. 2006, Armenta et al. 2014) that reaction to unemployment episodes constitutes a rather particular case of (absence of) hedonic adaptation. After the negative event represented by an unemployment episode, the habituation process starts as usual and people tend towards their baseline level of wellbeing, but the process is very slow and incomplete. As a result, people do not fully adapt to the unemployment episode and they never regain their baseline level of wellbeing. Some authors (see, e.g., Clark et al. 2008) maintain that unemployment is the only negative event that does not allow for complete adaptation in the long run. Furthermore, people would not regain their baseline level of wellbeing *even if they are re-employed* (Lucas et al. 2004). To put it another way, unemployment episodes leave an irreversible trace in life, reducing permanently people's long-run level of wellbeing. The circumstance, already discussed with reference to *loss aversion*, that bad events carry greater weight than good ones, is hence also confirmed within the *hedonic adaptation* framework.

Hedonic adaptation is particularly suitable for developing a comprehensive approach capable of studying the true costs of unemployment episodes and, in particular, the non-pecuniary costs. In Figure 1, the evolution of a worker's wellbeing in the presence of *hedonic adaptation* is described. With the first unemployment episode,

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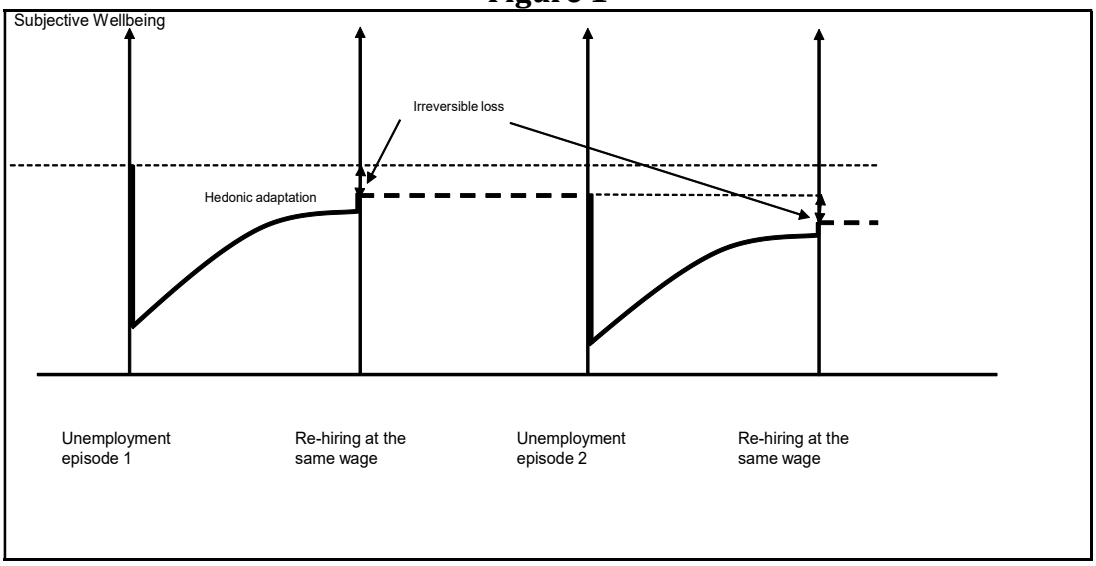
[3] For a discussion on the theme of complete or incomplete adaptation and the setpoint hypothesis, see Easterlin 2003 and Lucas et al. 2004.

[4] "Numerous investigations offer evidence for an asymmetry in positive and negative emotions" (Lyubomirsky 2010, p. 203).

[5] "Whether individuals have experienced disability, unemployment, widowhood, or divorce (all extremely negative experiences in the domains of health, work, and interpersonal relationship), their levels of wellbeing took a 'hit' from the event and, on average, never fully recover" (Lyubomirsky 2010, p. 202).

subjective wellbeing dramatically falls. Thereafter, thanks to *hedonic adaptation*, wellbeing increases again, but it never reaches the previous level even if the unemployed person gets a new job at the same wage as the old one. We can suppose that this is a consequence of the loss of esteem, changing status, social stigma, etc. Only a wage higher than the old one could compensate for and eliminate the irreversible loss deriving from unemployment episodes. Furthermore, irreversible losses tend to pile up unemployment episode after unemployment episode.

Figure 1



In a *hedonic adaptation* framework, the negative impact on wellbeing of numerous unemployment episodes is hence greater (worse) than the impact on wellbeing of fewer, even if longer, unemployment episodes. In addition, both downturns and recessions generate an increase in the number of unemployment episodes. Furthermore, the cost necessary to fully compensate individuals for the loss of their wellbeing caused by unemployment episodes would be extremely high, since an adequate unemployment benefit should be greater than the wage the fired workers lost. Even obtaining a new job after an unemployment episode could compensate the worker for the unemployment experience only if the new wage is higher than the old one. Therefore, again, even if during the business cycle income and consumption go up and down, remaining unchanged on average, the negative impact on wellbeing of unemployment episodes is greater than the positive impact of re-employment episodes. Even if income and consumption remain unchanged on average, wellbeing reduces. And this is not because of the subjects' aversion to volatility. It is exactly the same conclusion we have reached with reference to *status quo bias*, the *endowment effect* and *loss aversion*. Similar results have also been obtained by Wolfers (2003), according to whom unemployment volatility undermines wellbeing.

All the above seems to fully justify a role for countercyclical policies as a way of reducing the number of unemployment episodes and hence wellbeing losses.

Another key characteristic of the framework we have depicted is that the perception of the loss caused by unemployment episodes is presumably affected by the fear that those who experienced unemployment in the past will find it harder to get

another job (Heckman and Borjas 1980). Furthermore, one's re-entry job quality will, in any case, be worse. Both the ability to adapt to changing conditions and the quality of the re-entry job tend, therefore, to be less for lower-skilled workers, so the expected cost of unemployment due to *loss aversion* is, on the whole, greater for a worker with less human capital.

Finally, in addition to the costs borne by previously employed workers who become unemployed during severe economic downturns, one should consider those borne by the young workers who are entering the labour market for the first time. These costs can be very high even when they find a job. In the presence of bad labour market conditions, the skills match will be less efficient and this initial poor quality marriage between young workers and employers will produce long-lasting adverse effects on wages and career prospects. Some estimates for university graduates in the USA suggest that these effects may last up to 20 years and that they may imply a 20% total wage penalty compared with the luckier colleagues who entered in good times (Liu, Salvanes and Sorensen 2012, Oreopolous, Watcher and Heisz 2012). This loss is regressive, in that it has a greater effect on those young workers coming from disadvantaged social backgrounds, who cannot wait long for the right job and who cannot postpone labour market entry by investing in more education.

3. The impact on wellbeing of hitting more those who have less

By definition, during the business cycle we have periods in which aggregate income and consumption stay above the trend and periods in which they stay below the trend, even if on average actual magnitudes coincide with the trend. However, apart from the fact that Great Recessions meet these requisites with difficulty, even if we assume that *in the aggregate* the negative and positive effects cancel each other out, this does not happen for single individuals. In fact, according to what we have experienced in the last 40 years or so, there exist categories of subjects who in downturns always improve their economic position, at least in relative terms, and categories of subjects who always worsen their economic position, both in absolute and relative terms. After an entire business cycle, some categories will have more than they had before the cycle and some less. According to Cingano (2014, p. 6) "In most OECD countries, the gap between rich and poor is at its highest level since 30 years. Today, the richest 10 per cent of the population in the OECD area earn 9.5 times the income of the poorest 10 per cent; in the 1980s this ratio stood at 7:1 and has been rising continuously ever since. However, the rise in overall income inequality is not (only) about surging top income shares: often, incomes at the bottom grew much slower during the prosperous years and fell during downturns, putting relative (…) income poverty on the radar of policy concerns". Rising inequality is then also due to the fact that random shocks do not affect people in the same way: downturns have a greater effect on those who have less, in terms of skills, education and wealth. Also, after the business cycle these subjects may not regain the level of income and consumption they had before the cycle, so that even if the average effect is nil, some categories have met irreversible losses not only in psychological terms, but also in monetary terms (i.e., suffering income and consumption losses). The intuition behind the *Great Gatsby* curve and the scarce upward social mobility that, according to many scholars (Bukodi et al. 2015, Corak 2013), characterizes the last few decades contributes to the circumstance that shocks always affect the same (poor) people. Moreover, in the context of increasing downward social mobility, *loss aversion* implies that the welfare gains of those individuals enjoying

upward social mobility are not sufficient to compensatethe welfare loss of those individuals experiencing downward social mobility, unless the probability of the former is much larger – at least twice as large – as the probability of the last.[6]For instance, a study of the UK showed that, over the last 50 years or so,upward social mobility went down and downward social mobility went up and, as a result, the two probabilities converged for men to the same value of 35.8%; there was a similar trend for women (Bukodi et al. 2015).

We have mentioned in Section 1 that a number of contributions (e.g., Krusell and Smith 1998, Mukoyama and Sahin 2006, Krebs 2007, Krusell et al. 2009) argue that, upon removing the representative agent hypothesis, economic shocks show stronger negative wellbeing effects for subcategories of subjects. In particular, according to these models, the poorest and the unemployed are those subjects who suffer more from the business cycle, whereas the poorest, the unemployed and the very richest are those subjects who gain more from stabilization policies.[7] This is so since "the gains from eliminating the business cycles exhibit a 'U'-shaped pattern. Borrowing constrained agents have a larger gain, reflecting the fact that they cannot self-insure their risk by their own assets. (…) The 'middle class' tends to have small or negative gains. (…) Very rich agents realize welfare gains since their income is largely coming from capital income" (Mukoyama and Sahin 2003, p. 18). We believe that the effect of the business cycle on wellbeing is more relevant than is suggested by this body of literature (and hence far more relevant than is suggested by Lucas). If downturns have a greater effect on those who have less (in terms of skills and education), and the analysis we have proposed in the previous section is correct, one has to consider that those who have less are also those who mainly suffer from *loss aversion*. In addition, having a high level of *loss aversion* implies suffering a greater negative impact of unemployment shocks and status shocks on wellbeing. In other words, economic downturns and recessions generate larger shocks for people for whom shocks reduce wellbeing more; and since losses carry a greater weight than gains, the resulting aggregate wellbeing variations may be large and negative. Furthermore, these subjects are not compensated by future adequate income increase, since they exit downturns worse off than they enter. As a result, there is a further reduction in aggregate (and average) wellbeing.

The problem is particularly relevant for unskilled workers, who face a greater probability of being fired. According to Mukoyama and Sahin (2003, pp. 19-20), "[u]nskilled agents face more cyclical unemployment risk and they have less opportunity to self-insure. As a result, the cost of business cycles is much larger for a typical unskilled agent compared to a typical skilled agent. (…) It is likely that the majority of unskilled agents favor a stabilization policy (if it comes with a small cost), while many

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[6] "We find that relative income mobility is a significant predictor of life satisfaction and mental health. We also find that its effects are consistent with the loss aversion hypothesis – going down matters more. This is reflected in the fact that the coefficients attached to downward mobility are always larger than those for upward mobility" (Dolan and Lordan 2013, p. 16). For instance, according to Dolan and Lordan's estimates, the negative impact on life satisfaction of downward social mobility is 1.98 times the positive impact of upward social mobility.

[7] According to Krusell et al. (2009, p. 394, 404 and passim), in the presence of stabilization policies, precautionary saving in the economy falls, so that the interest rate raises, and the very richest, who own a great amount of wealth, gain.

skilled agents may vote against such a policy, if the burden falls evenly on different groups".[8]

Our conclusion, that the traditional arguments used for claiming the uselessness of countercyclical policies are theoretically weak, is hence strengthened by empirical considerations on how the absence of further business cycle stabilization actually impacts on distributive magnitudes and wellbeing.

4. Why micro regulation and stabilization policies cannot be considered as unnecessary

Both pecuniary and non-pecuniary costs of unemployment and downturns have a different impact on workers' wellbeing, whether the labour market institutions are based on protection *on the market* or protection *on the job*. In the first case, firing costs for firms are low, so that firms can easily vary the composition of their workforce, but the unemployed get a generous unemployment compensation. On the contrary, in the case of protection *on the job,* firing costs are high (and can be so high as to prevent firms from firing workers), whereas the unemployed do not receive compensation benefits, or they are extremely low.

Empirical evidence (Bertola 1990, Bertola and Rogerson 1997) shows that, in the two different contexts, flows entering in and exiting from unemployment, and the lengths of the unemployment periods, are different. In the case of protection *on the market,* small firing costs result not only in easier firing, but also in easier hiring of workers, since firms know that they will be able to fire workers when they become unnecessary, with relatively low cost. Hence, flows entering in and exiting from unemployment are high and workers can expect many unemployment episodes during their working life, but these episodes will be of short length. Moreover, young people entering the labour market for the first time find it easy to be hired. On the contrary, in the case of protection *on the job,* high firing costs force firms to be extremely cautious in hiring workers, since they know they will not be able to easily fire them. Flows entering in and exiting from unemployment are low and workers can expect few unemployment episodes during their working life, but these episodes will be long-lasting. In this case, young people entering the labour market for the first time meet greater difficulties in being hired, so they have to expect a longer unemployment period.

All the above implies that the choice between the type of employment protection legislation to be implemented is not neutral with respect to workers' interests. Indeed *on the job* protection reduces the probability of being fired for less skilled workers, but increases unemployment length for all workers, in particular the most skilled ones, who face a lower probability of losing their jobs, as well as people entering the labour market for the first time. On the contrary, *on the market* protection increases the probability of being fired for less skilled workers, but reduces unemployment length for all workers, in

[8] According to the data reported by Mukoyama and Sahin (2003, pp. 4-5), unskilled workers ("high school diploma or lower") have historically met an unemployment rate on average more than double that of skilled workers ("some college or above"). Furthermore, unskilled workers meet a higher risk of becoming unemployed during recessions and their unemployment rate is also more volatile (Mukoyama and Sahin 2003, p. 5 and note 1).

particular the most qualified ones, and makes it easier for people entering the labour market for the first time to find a job. Hence, *on the job* protection improves the relative position of less qualified workers and worsens the relative position of young and more qualified workers; *on the market* protection creates the opposite effect.

On the job and *on the market* protection differ not only in the frequency and duration of unemployment episodes and hence the categories of workers who improve or worsen their relative position. They differ also in the kind of unemployment costs that they succeed in compensating for. Unemployment benefits used in *on the market* protection compensate (at least partially) for monetary losses deriving from unemployment, but are not projected as instruments for compensating non-pecuniary costs and, in particular, psychological costs. On the contrary, both *on the job* protection (which protects workers from being fired during the business cycle) and countercyclical macro stabilization policies (which resist recessive shocks and hence reduce their impact on the labour market) can be used as instruments for minimizing non-pecuniary costs, by reducing the number of unemployment episodes in workers' lifetimes. In the particular context depicted in Sections 2 and 3, with huge negative effects of the business cycle on aggregate wellbeing due to the high psychological costs it generates, no sound theoretical or empirical argument can be used to maintain that the costs of these policies exceed their benefits.

However, the situation might be different in different countries and Lucas's conclusions might be further or closer to reality depending on the country concerned. This is so since *loss aversion*, the *endowment effect* and *hedonic adaptation* are sound and important concepts, but they depend upon elements such as workers' skills, education, culture, religion, etc., so their actual relevance varies from country to country. It follows that workers from different countries will suffer a greater or lesser degree of psychological distress due to the business cycle and hence they will require more or less incisive stabilization policies and different employment protection rules. In addition, a crucial role in determining the policies required by individuals, given the other conditions, is played by the level of training and education. More educated and/or better trained workers will need, and hence will demand, less protection against the business cycle and/or less *on the job* protection than less educated and/or less well trained workers. It is hence not surprising that countries with a less educated and less well trained workforce, typically those of the global South, face more problems in their attempt to reduce labour market protection and countercyclical policies than countries in which the labour force is better trained and better educated, typically those of the global North.

The different institutional and educational frameworks of the different countries contribute towards an explanation of why the strength of opposition to labour market flexibility has been so geographically differentiated. These differences have emerged both when countercyclical policies have been invoked for further stabilization of the business cycle *and* when they have been invoked for coping with the 2007 Great Recession. The first case lies within the Lucas framework, in which over time the aggregate average income and consumption coincide with the trend. The second case lies outside the Lucas framework, since the question is whether flexibility allows the system to come back quickly to full employment. In both cases, our approach shows that the costs of instability and/or recessions are higher than that assumed by the traditional approach, and that stabilization policies and/or on the job protection preventing

downturns and/or recessions from affecting the labour market can be justified on sound theoretical bases.

Nonetheless, the history of economic policies has followed a different path. Building on the traditional approach, countercyclical policies have progressively and indiscriminately been implemented with less frequency and intensity and some countries (and groups of countries) have reduced public expenditure on social welfare and *on the job* labour market protection (D'Orlando and Ferrante 2009). This is what has happened, for example, in the European Union. These policies have been implemented ignoring the circumstance that the losses from flexibility are, for some countries and/or individuals, higher than the gains. With the consequence of generating, in this way, strong social and political opposition to these (absences of) policies. An opposition that cannot be justified on the basis of the traditional approach, but can on the basis of the approach here proposed. This confirms that both *on the job* protection and countercyclical policies are necessary in some countries, in which low-skilled and educated workers are a large percentage of the workforce.[9] It is also necessary to give preference, when possible, to countercyclical measures over on the job protection schemes, since the latter may impose larger costs on society by blocking beneficial workers' reallocation across sectors. For the same reasons, microeconomic regulation policies, e.g., industrial policies, may also have a role in governing the process of *creative destruction,* such that its impact on displaced workers is minimized -even if, in the long run, the most effective way of reducing the costs of workers' reallocation across sectors and territories is to increase their behavioural flexibility through appropriate education and life-long training policies (Ferrante 2004).

With reference to the European Union, in which countercyclical policies are now particularly unpopular among many influential governments, our approach implies that fiscal policies and a different statute for the European Central Bank can be theoretically justified. In particular, fiscal policy should be targeted, as in the USA, to public investment, whereas monetary policy should cope with not only inflation, but also unemployment, with the aim of reducing the frequency of unemployment episodes.

5. Conclusions

The waves of deregulation experienced by the world economy over the past 30 years or so, accompanied by a less activist approach to micro and macroeconomic regulation policies, have been inspired by the view that markets work well and that labour market flexibility is just a matter of setting the *right norms*. According to this view, the long-run benefits of soft regulation and flexibility overcome their short-term costs. The underlying idea is that labour market flexibility depends solely on the norms regulating it and not also on behavioural factors that determine people's capability to adapt to changing life circumstances. Lucas's 1987 and 2003 contributions are fully

[9] We do not want to state that rigidity in employment contracts is a good thing *per se*. An excess of protection can generate opportunistic behaviours and the moving of workers from shrinking traditional sectors to expanding innovative ones is a physiological and positive phenomenon. However, it is necessary to build mechanisms capable of governing these processes, by minimizing the wellbeing loss stemming from them, in particular for the weakest individuals and categories of workers who obtain fewer advantages from flexibility.

coherent with this view, suggesting that the welfare costs deriving from market volatility are almost nil and hence further stabilization policies are unnecessary. Sound theoretical contributions and robust empirical and experimental evidence suggest that this is not the case and that the psychological costs of adaptation to unemployment episodes can be very high, in particular for less educated/skilled workers, as well as during recessions.

However, we do not simply criticize the traditional approach and propose alternative criteria for measuring the aggregate true costs of the business cycle and unemployment. Building further on the literature regarding the disproportionate impact of downturns on subgroups of agents (Krusell and Smith 1998, Mukoyama and Sahin 2006, Krebs 2007, Krusell et al. 2009), our argument is that the traditional approach, and in particular Lucas's analysis, also understates the fact that these costs are disproportionally borne by the less educated/skilled workers. Hence, for a given level of income/consumption loss, i.e., a given deviation of income/consumption from its trend, the impact of business cycle volatility on wellbeing greatly varies i) with the number of unemployment episodes (and hence in the presence of different countercyclical policies and different labour market institutions) and ii) with workers' educational and skills endowment. This is confirmed by contemporary economic theory, according to which wellbeing is a function of the number of unemployment episodes, on which countercyclical policies and labour market institutions crucially impact, and of workers' capabilities endowment. As a result, not only should these variables somehow be included in the utility function, greatly increasing the cost of volatility, but, furthermore, we cannot even measure the cost of the absence of stabilization policies if we do not consider the different institutional frameworks of the labour market. In particular, the same business cycle can produce worse effects on wellbeing in the presence of *on the market* employment protection legislation and fewer problems in the presence of *on the job* protection, which mitigates the impact of business cycle volatility in the labour market. Both these institutional frameworks can produce different aggregate welfare effects, depending on workers' skills/educational endowment.

Furthermore, since *hedonic adaptation* confirms that wellbeing losses deriving from unemployment episodes can be compensated only by a new wage higher than the preceding wage, or by an unemployment benefit higher than the old wage, it follows that *preventing* unemployment episodes *before* they happen is more efficient than curing them *after* they have happened.

We can hence conclude that for some groups of workers and for some countries, the traditional view according to which countercyclical policies and/or *on the job* protection may generate worse aggregate results than flexibility and/or *on the market* protection is wrong. This result applies in particular to countries with a low-skilled and relatively low-educated workforce.

It is worth noting that our conclusions focus on the impact that unemployment episodes have on wellbeing within a Lucas framework, in a context different from the one that focuses mainly on the role of *loss aversion* in determining the impact of growth reduction on wellbeing, as carried out by De Neve et al. 2015.[10] However, our analysis

[10] According to De Neve et al., 2015, pp. 9-10: "some 2 to 6 percent of economic growth would be required to offset just 1 percent of economic contraction".

can be used to offer more support to the idea that "policy designed to engineer economic 'booms', but that risks even relatively short 'busts' is unlikely to improve societal wellbeing in the long run. Steady positive growth that minimizes the risk of economic contraction seems the most likely route to an improvement in general wellbeing" (De Neve et al. 2015, p. 22). We agree also with the conclusion that "[s]tandard analyses of the income-happiness relationship could arguably be interpreted as 'growth is good'. However, in light of the asymmetric experience of positive and negative growth, an empirically more accurate interpretation of the income-happiness relationship would be that 'recession is bad'." (De Neve et al.2015, p. 23).

The deregulation and liberalization of trade and capital markets have also resulted in an inefficient redistribution of the cost of uncertainty within societies. Unskilled workers are now less protected from unemployment risks, whereas entrepreneurs and top managers can more easily reduce the financial and real risks of economic activity by exploiting diversification opportunities stemming from financial liberalization and the international delocalization of production. The risk of economic activity now carries more weight on less educated and weaker social groups than it did 40 years ago. In such a context, the main problem is not, or is not only, income and consumption, but wellbeing. Furthermore, increasing income inequality is just one side of the coin, since less skilled/educated people bear larger psychological costs because they experience a larger number of episodes of involuntary unemployment. Hence, in the long run, lack of both macro and microeconomic regulation will also bring about an even larger increase in inequality of *experienced utility* (De Neve et al. 2015). In the past, a lot of emphasis has been placed on the importance of upward social mobility to explain the lack of redistributive institutions in the U.S. and, more generally, in the Anglo-Saxon countries. The recorded trend in income inequality and social mobility across the OECD countries (Cingano 2014, Corak 2013, Bukodi et al. 2015) would suggest that the probability of downward social mobility has been underrated by most people, or that democratic institutions have not worked well in transferring preferences for redistribution.[11] Finally, the main link between rising income inequality and rising social immobility is education (Bukodi et al. 2015). People at the bottom of the income distribution are confronted with poorer educational opportunities and lack of incentives to invest in human capital. This outcome brings about a double adverse effect: it spurs future income inequality through the labour market and it maintains high costs of macroeconomic volatility for the less-skilled social groups.

REFERENCES

Armenta, C., Jacobs Bao, K., Lyubomirsky, S., Sheldon, K.M. (2014), "Is Lasting Change Possible? Lessons from the *Hedonic adaptation* Prevention Model", in Sheldon, K. And Lucas, R.E. (eds.), *Stability of Happiness. Theories and Evidence on Whether Happiness Can Change*, Elsevier Academic Press, London, Waltham, San Diego, pp. 57-74.

[11] Or that, perhaps due to the prevailing cultural climate spurred by mainstream economics, the electoral body suffered from cognitive distortions in assessing the true probability of upward social mobility.

Barlevy, G. (2004), "The cost of business cycles and the benefits of stabilization: a survey", NBER Working paper n. 10926.

Barlevy, G. (2005), "The cost of business cycles and the benefits of stabilization", in *Economic Perspectives*, vol. 29, n.2005-1, February, pp. 32-49.

Benabou R. and Ok E. (2001), "Social mobility and the demand for redistribution: the POUM hypothesis", *Quarterly Journal of Economics*, 116, 447-87.

Bertola, G. (1990), "Job Security, Employment, and Wages", European Economic Review, Vol. 54, No. 4, pp. 851-879.

Bertola, G. and Rogerson, R. (1997), "Institutions and Labor Reallocation", *European Economic Review*, Vol. 41, pp. 1147-1171.

Brickman, P., Coates, D., Janoff-Bulman, R. (1978), "Lottery Winners and Accident Victims – is Happiness Relative?", in *Journal of Personality and Social Psychology*, 36(8), pp. 917-927.

Bukodi, E., Goldthorpe, J., Waller, L. and Kuha, J. (2015), "The mobility problem in Britain: new findings from the analysis of birth cohort data", in *The British Journal of Sociology*, 66 (1), pp. 93-117.

Cingano, F. (2014), "Trends in Income Inequality and its Impact on Economic Growth", OECD Social, Employment and Migration Working Papers, No. 163, OECD Publishing.

Clark, A. (1999), "Are Wages habit-forming? Evidence from Micro Data", in *Journal of Economic Behavior and Organization*, 39(2), pp. 179-200.

Clark, A.E. and Oswald, A.J. (1994), "Happiness and Unemployment", *Economic Journal*, 104(424), p. 648-659.

Clark, A.E., Georgellis, Y. and Sanfey, P. (2001), "Scarring: the Psychological Impact of Past Unemployment Experience", *Economica*, 68, 221-241.

Clark, A.E., Georgellis Y., Lucas, R.E.and Diener, E. (2004), "Unemployment Alters the Set-Point for Life Satisfaction", *Psychological Science*, 15(1), pp. 8-13.

Clark, A., Diener, E., Georgellis, Y., Lucas, R.E. (2008), "Adaptation to life events", in www.voxeu.org, 5 February.

Corak, M. (2013), "Income Inequality, Equality of Opportunity, and Intergenerational Mobility", *Journal of Economic Perspectives*, Volume 27, Number 3, August, 79-102.

D'Orlando, F. and Ferrante, F. (2008),"Why do similar countries have different labour market regulations?", in *La Comunità Internazionale*, LXII(1), pp. 61-76.

D'Orlando, F. and Ferrante, F. (2009),"The Demand for Job Protection. Some Clues from Behavioural Economics", in *The Journal of Socio Economics*, 38(1), pp. 104-114.

D'Orlando, F., Ferrante, F., Ruiu, G. (2011), "Culturally-based beliefs and labour market institutions", in *The Journal of Socio Economics*, 40(2), pp. 150-162.

De Neve, J.-E., Ward, G.W., De Keulenaer, F., Van Landeghem, B., Kavetsos, G., Norton, M.I. (2015), "The Asymmetric Experience of Positive and Negative Economic Growth: Global Evidence Using Subjective Wellbeing Data", Centre for Economic Performance (CEP) Discussion Paper n. 1304.

Diener, E., Suh, E.M., Lucas R.E., Smith, H.L. (1999), "Subjective Wellbeing: Three decades of progress", in *Psychological Bulletin*, 125 (2), pp. 276-302.

Diener, E., Lucas, R.E., Scollon, C.N. (2006), "Beyond the Hedonic Treadmill", in *American Psychologist*, vol. 61, n. 4, 305-314.

Di Tella, R., MacCulloch, R. and Oswald, A. (2003), "The Macroeconomics of Happiness", *Review of Economics and Statistics*, 85(4), pp. 809-827.

Dolan, P. and Loran, G. (2013), "Moving Up and Sliding Down: An Empirical Assessment of the Effect of Social Mobility on Subjective Wellbeing", *Centre for Economic Performance Discussion Paper* n. 1190, February.

Dolmas, J. (1998), "Risk preferences and the welfare cost of the business cycle", in *Review of Economic Dynamics*, July, vol. 1, n. 3, pp. 646-676.

Easterlin, R. (2003), "Building a better theory of Wellbeing", IZA discussion paper n. 742, March, available at: http://ssrn.com/abstract=392042.

Epstein, L., and Zin, S. (1991), "Substitution, risk aversion, and the temporal behaviour of consumption and asset returns: An empirical analysis", in *Journal of Political Economy*, April, vol. 99, n. 2, pp. 263-286.

Frederick, S. and Loewenstein(1999). "*Hedonic adaptation*", in Diener, D., Schwarz, N. and Kahneman (Eds), *Hedonic Psychology: Scientific Approaches to Enjoyment, Suffering, and Wellbeing*. Russell Sage Foundation, New York, pp. 302-329.

Ferrante, F. (2004), "Employment protection legislation and redistribution", Quaderno ISE n.132, LUISS, Roma.

Frey, B. and Stutzer, A. (2002), "What can Economists Learn from Happiness Research?", *Journal of Economic Literature*, vol. XL, June, pp. 402-435.

Guillén, O.T.C., Issler, J.V., Mello Franco-Neto, A.A. (2014), "On the Welfare Costs of Business-Cycle Fluctuations and Economic-Growth Variation in the 20th Century", Working Paper n. 284, The Banco Central do Brasil.

Heckman, J.J. and Borjas, G. J. (1980), Does Unemployment Cause Future Unemployment? Definitions, Questions and Answers from a Continuous Time Model of Heterogeneity and State Dependence,*Economica*, New Series, vol. 47, no. 187, Special Issue on Unemployment (Aug., 1980), pp. 247-283.

Kahneman, D. and Tversky, A. (1979), "Prospect Theory: An Analysis of Decision Under Risk", *Econometrica*, 47, pp. 263-91.

Kahneman, D., Knetsch, J.L. and Thaler, R. (1990), "Experimental Tests of the *Endowment Effect* and the Coase Theorem", *Journal of Political Economy*, 98, pp. 1325-48.

Kahneman, D., Knetsch, J.L. and Thaler, R. (1991), "Anomalies: The *Endowment effect*, *Loss aversion*, and *Status quo bias*", *Journal of Economic Perspectives*, 5(1), pp. 193-206.

Kassenboehmer, S.C., and Haisken-DeNew (2009), "You're fired! The causal negative effect of entry unemployment on life satisfaction", in *Economic Journal*, 119 (536), pp. 448-462.

Knetsch, J. and Sinden, J. (1984), "Willingness to Pay and Compensation Demanded: Experimental Evidence of an Unexpected Disparity in Measures of Value", *Quarterly Journal of Economics*, 99(3), pp. 507-521.

Knetsch, J. (1989), "The *Endowment Effect* and Evidence of Nonreversible Indifference Curves", *American Economic Review*, 79(5), pp. 1277-84.

Krebs, T. (2007), "Job Displacement Risk and the Cost of Business Cycles", in *American Economic Review*, 97 (3), pp. 664-686.

Krusell, P., Mukoyama, T., Sahin, A., and Smith, A. (2009), "Revisiting the Welfare Effects of Eliminating Business Cycles", in *Review of Economic Dynamics*, 12, pp. 393-404.

Krusell, P., Smith, A. (1998), "Income and Wealth Heterogeneity in the Macroeconomy", in *Journal of Political Economy*, 106, 867-896.

Layard, R. (2005),*Happiness: Lessons from a New Science*, Allen Lane, London.

Liu, K. Salvanes, K. G., Sørensen, E. Ø. (2012), "Good Skills in Bad Times: Cyclical Skill Mismatch and the Long-Term Effects of Graduating in a Recession," IZA Discussion Papers 6820, Institute for the Study of Labor (IZA).

Lucas, R.E. (1987), *Models of Business Cycle*, Oxford, Blackwell.

Lucas, R.E. (1988), "On the Mechanism of Economic Development", in *Journal of Monetary Economics*, n. 22, pp. 3-42.

Lucas R.E. (2003), "Macroeconomic Priorities", *American Economic Review*, 93(1), pp. 1-14.

Lucas, R.E., Clark, A.E., Georgellis, Y. and Diener, E. (2004), "Unemployment alters the set point for life satisfaction", in *Psychological Science*, 15(1), pp. 8-13.

Lyubomirsky, S. (2011), "*Hedonic adaptation* to Positive and Negative Experiences", in Folkman, S. (ed.), *The Oxford Handbook of Stress, Health and Coping*, Oxford University Press, New York, pp. 200 - 224.

Mukoyama, T., Sahin, A. (2003), "Heterogeneous costs of Business Cycles with Incomplete Markets", mimeo.

Mukoyama, T., Sahin, A. (2006), "Costs of Business Cycles for Unskilled Workers", in *Journal of Monetary Economics*, 53, pp. 2179-2193.

Obstfeld, M. (1994), "Evaluating risky consumption paths: The role of intertemporal substitutability", in *European Economic Review*, August, vol. 38, n. 7, pp. 1471-1486.

Oreopoulos P., von Wachter T. and Heisz, A. (2012), "The Short- and Long-Term Career Effects of Graduating in a Recession", *American Economic Journal: Applied Economics 2012,* 4(1), 1-29.

Oswald, A. and Powdthavee, N. (2006). "Does Happiness Adapt? A Longitudinal Study of Disability with Implications for Economists and Judges", IZA discussion paper no. 2208, available at http://ssrn.com/abstract=921040.

Pemberton, J. (1996), "Growth trends, cyclical fluctuations, and welfare with non-expected utility preferences", in *Economic Letters*, March, vol. 50, n. 3, pp. 387-392.

Salyer, K.D. (2007), "Macroeconomic Priorities and Crash States", in *Economic Letters*, 94, pp. 64-70.

Samuelson, W. and Zeckhauser, R. (1988), "*Status quo bias* in Decision Making", *Journal of Risk and Uncertainty*, 1(1), pp. 7-59.

Stutzer, A. (2004), "The Role of Income Aspirations in Individual Happiness", in *Journal of Economic Behavior and Organization*, 54(1), pp. 89-109.

Tallarini, T. (2000), "Risk sensitive real business cycles", in *Journal of Monetary Economics*, June, vol. 45, no.3, pp. 507-532.

Tversky, A. and Kahneman, D. (1991), "*Loss aversion* in Riskless Choice: A Reference-Dependent Model", *Quarterly Journal of Economics*, 106(4), pp. 1039-1061.

Winkelmann, L. and Winkelmann, R. (1998), "Why Are Unemployed so Unhappy? Evidence from Panel Data", *Economica*, 65(257), pp. 1-15.

Wolfers, J. (2003), "Is business cycle volatility costly? Evidence from surveys of subjective well-being", in *International Finance*, Spring, vol. 6, n.1, pp. 1-26.