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education, training and R&D in the
regulation of the labour market

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Abstract

Sustainable development has been considered in various discourses as the answer to the economic, social and ecological crisis. However, its principles are far from being implemented. The dominant model of society giving priority to financial capital and short term profitability in the context of globalization and market deregulation involves social disinvestment, increasing inequalities and exclusion, that is to say non sustainable development. We argue that sustainable development requires an orientation towards human needs, social and ecological sustainability and consequently a break with the prevailing model of society and learning and knowledge sharing within modern societies.

In the first section we confront the “market driven work society”, which is embedded in the neo-liberal paradigm with the alternative model of the “humanized work society”, which aims to dignify work, enhance quality of working life and skills development.

The next sections focus on long trend and new forms of labour market regulation and the role successively played by Education, Vocational Training and – desirably – Innovation in that regulation process. We stress that sustainable development imply an effective upgrading of work and skills, requiring adequate structural education, training and R&D policies.

**“Employment and sustainable development: education, training
and R&D in the regulation of the labour market”¹**

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Introduction

The economic crisis and current recession are manifestations of failure in pursuing the objectives set in 2000 by the United Nations (Millennium Goals) with respect to eradicating extreme poverty and hunger and achieving environmental sustainability. There is also a failure with respect to accomplishing the objectives set in 2000 by the Lisbon Strategy (Kovács, Casaca, 2007). While the financial sector can extract high profits from the real economy, several EU countries face increasing difficulties, including fiscal deficit, rising socio-economic inequalities, unemployment and poverty, and growing indebtedness of the countries and families. The source of the serious environmental and social problems is the profit-oriented economic system which is governed according to neo-liberal principles and ignores the human and social needs. The piecemeal measures taken to address the economic, social and environmental crisis still take this direction. In fact, this orientation is the reason for the fact that there is no progress towards solving these grave problems. Sustainable development has been considered in various discourses as the answer to the crisis. However, its principles are far from being implemented. On the contrary, market principles prevail, and the search for short-term profit has led not to the solution but the aggravation of social and environmental problems. The smallest signs of animation of stock value are declared as signs of recovery and a return to normal functioning of the economy, which is subordinated to the neo-liberal imperatives of free global competition and high profit. Solving economic, ecological and social problems requires a break with the neo-liberal policy framework, and the development of another kind of economy and society. The objectives of sustainable development - such as ecological equilibrium, reducing inequalities globally and nationally, and the promotion of gender equality - are not compatible with the market principles driven society; they require an orientation towards human needs, social and ecological sustainability.

1. Employment and antagonistic social models

The “market driven work centered society” embedded in the neo-liberal paradigm, with its pursuit of high profitability, increased liberalisation and growing deregulation, is presented by its advocates as the only trend of evolution. The liberalisation of markets and the intensification of competition are understood to be powerful mechanisms of the general competitive capacity of economies which lead to economic growth. We consider that the characteristics of this model produce environmental and social problems, which could only be resolved by the alternative model of a “humanised work centered society” driven by human and social needs.

The model of the market driven work centered society

This model is based on the primacy given to the economy, free market principles and profit, competition, and individualism. The Information and Communication Technologies (ICT) are considered as the driving forces in the free market economy context, leading to a new era of growth, competitiveness and innovation, (Sahlman, 1999). Globalisation as the universalisation of the market is presented as an inevitable process that will bring greater well being to the whole of humanity. In that light, the mission of governments is to promote the adaptation of the national economies to the demands of the global market and to leave the task of guiding societies entirely to the market and the private sector. Social rights, the protection of workers, social regulation and trade unions are seen as archaic obstacles to competitiveness and the new order. Social rights are changed into profitable commodities. The business model of work substitutes the wage-earning model of employment. In other words, workers are compelled to cease being wage-earners; they become self-employed entrepreneurs, creating their own employment, developing their own skills and competencies and managing their own career (Bridges, 1994; Gruber and Brouiller, 1998; Handy, 1984).

Reforms and measures are promoted the world over in order to open the markets, deregulate the economy, privatise the strategic sectors and public services, liberalise the labour market, reduce social protection, and hold individuals responsible for their own labour market situation and security. These reforms and measures are considered indispensable conditions to make more dynamic economic activities and to enable them to more effectively integrate into the world economy. Therefore, good

public management has to remove all regulations that may hamper the free market game².

Hegemony and liberalisation of the financial markets, the increase of speculative behaviour, financial investor pressure, and the shareholder value orientation are the principal factors leading to the replacement of a long-term orientation by short-term profitability. The maximum profitability rates required to fulfil investor interests in rapid and high returns calls for the minimisation of labour costs and the maximisation of productive efficiency in companies.

This is the reason for centring on the greatest value-generating key activities (*core business*) and the externalisation, subcontracting and increasing delocalisation of other activities to low wage zones. Brand companies, for example, restrict their scope to the field of design, coordination of companies that are subcontracted to low-labour-cost regions, and the marketing and retail of their products. It is increasingly difficult to ascertain where something is produced and what, in fact, is produced (Castillo, 2003; Kovács, 2002). This is also the reason for the simplification and decentralisation of business structures. The restructuring strategies to make business more competitive or realise shareholder value are broadly inspired by the concepts of flexible rationalisation, such a *lean production* and reengineering, which aim to produce more, better and faster with less. Company restructuring enabled by ICT and driven by global competition results in the spread of a new form of organisation of production based on decentralisation, fragmentation and geographic dispersion of productive activities that are integrated into networks by ICT (Castells, 1998). The increasingly decentralised and dispersed production implies the concentration of power in key economic actors, consequently “concentration without centralization” (Harrison, 1994: 9).

Given that excessive profitability requires companies to reduce costs, they tend to relocate activities to areas with low labour costs. The constant search for more profitable places leads to underinvestment by preventing the creation of jobs. The growth of an underpaid workforce encourages low road competition through a reduction of labour costs; it does not encourage high road competition by way of technological and organizational innovation.

² This does not preclude claims for occasional State intervention, as recently happened to save banks.

Neo-liberalism exalts the subjectivity and autonomy of the individual, which are considered the driving principles for placing human resources at the service of companies. Management practices are increasingly resorting to individual responsibility at work, the individualisation of pay, career, training, information / communication, and assessment of personal potential. But these practices, rather than providing greater liberty, autonomy and the capacity for action, undermine the individual by isolating him/her, submitting him/her to insecurity and disaffiliation, and weakening his/her social ties (Fitoussi and Rosenvallon, 1997; Linhart, 2002). Individuals change jobs, posts and places of activity, which makes it hard to lead a coherent, meaningful existence. Experience and skills decline in value in favour of the ability to sell oneself and adapt to changes. This character corrosion³ is caused by flexible capitalism.

Within the context of high differentiation, the defence of interests related to work is increasingly left to individual level negotiations. Trade unions are being undermined and the defence of worker interests at the transnational level is poor or non-existent. Consequently, trade unions find it difficult to integrate increasingly segmented and individualised workers as non-standard or flexible labour arrangements spread.

The neo-liberal objective is to transform the employment contract from one that is based on the status of the employee (collective identity) and grants a series of social rights into market contracts in favour of individual negotiations. In these negotiations, the upper hand tends to belong to the employer, who defines the terms of negotiation and justifies changes as inevitable due to impositions of technology and market conditions. Within the context of globalisation and ICT, companies have gained greater room to manoeuvre in their deployment of labour and at the same time, there is a competition between countries and regions to attract foreign direct investment. This context leads to a deterioration of salaries and employment and living conditions. Work ceases to be a right; it becomes a resource designed to ensure high capital profitability levels while the worker, no longer a person with rights, becomes a cost.

The increase in unemployment and precarious employment is not merely a consequence of economic failure and loss of market share by companies. Companies with good results may end up closed when the return on financial investment is less than that generated by other companies. Lower profitability than competitors' means

³ Character is expressed in terms of loyalty, mutual commitment and the setting up of long-term objectives.

difficulties in obtaining finance and disappearing in a fusion imposed by the competitor. Territories compete with each other to attract investment with lower taxes. There is a separation between the real economy and the financial economy. The real economy where wealth is created by labour is in contradiction with the short-term profit oriented financial economy. Efforts designed to increase productivity and quality levels are overwhelmed by financial speculation, undermining long-term investment in companies and, consequently job creation (Petrella, 1999; Peyrelevade, 2008). The economy becomes a prisoner of the "impatient capital" (Harrison 1994; Sennett, 2005) and it becomes uneconomic. We face a new form of income economy, a set of financial capitalism set only on reducing production costs and forgetting to invest. This hypertrophied financial head dominates an anaemic body, undermining its healthy growth (Peyrelevade, 2008).

There is a trend to rising social inequalities between those who have relatively strong positions in the labour market and those who find themselves in situations of unemployment and precarious employment. Instead of general well being, we are evolving towards a dual society characterised by increasing polarisation between a small but influential elite composed of the winners of the globalisation process (the holders of the active capital at a global level, top managers and the knowledge class) and the growing mass of lowly-paid available workers that may be easily hired, fired and replaced by workers from other regions in accordance with the need to adapt to market fluctuations. The new organisation of production in the context of the global competition condemns growing segments of the population to unemployment, unstable employment, precariousness, and poverty, with the risk of their being subjected to a spiral of ever greater fragility and instability (Beck, 2000; Boltanski and Chiapello, 1999; Castel 1995; Castells 1998; Castillo 1994, 2003; Grupo de Lisboa, 1994; Harrison, 1994; Kovács and Chagas Lopes, 2009).

However, the spread of flexible labour practices results not only in a simple duality between well-paid core workers and peripheral staff with uncertain and poorly paid jobs but also in the workforce segmentation by companies (Kalleberg, 2003; Paugam, 2000). In fact, there are great differences between workers in stable employment and workers in flexible employment with regard to professional paths, wages, working conditions, autonomy etc. Notwithstanding, workers in a flexible employment situation do not constitute a homogeneous group; there are different

trajectories of flexibility and flexible jobs (qualifying flexibility, transitory precariousness and continuous precariousness inducing flexibility) (Kovács, 2005). This aspect is driven both by the growing diffusion of flexible forms of employment and by the destabilisation of stable positions. There is a brake on upwards-social mobility. For a substantial proportion of employees, i.e. those finding themselves in a disadvantaged labour market position, it seems extremely difficult to set about improving their employability. These are, in the main, females, in younger and older age groups with low levels of schooling. Their mobility (lateral) tends to be limited to poorly qualified positions within the same company, or when swapping one company for another, to positions that display characteristics that perpetuate their labour market fragility, specifically the lack of opportunity for training and promotion.

The entry of young people with high levels of schooling in the labour market via peripheral or precarious jobs begins to be the rule, especially in the countries of Southern Europe, particularly in Portugal. Apart from the underutilization of skills and wasteful investment in education/training, the precariousness of the first job - especially if the employment experience continues in a like manner - can have serious consequences: a lack of professional socialisation, unlearning, loss of confidence in the future, disinterest and a lack of capacity to build on their qualifications. In such cases, the advantages of higher education eventually weaken or are even lost when precariousness becomes a way of life (Kovács, 1998).

The subordination of society to market laws and competitive globalisation implies reducing the company to a profit-making machine. Instead of greater efficiency, this subordination is leading to an increase in unemployment, the spread of precarious employment, and a deterioration of the quality of work and consequently the decline in the potential of work for social integration. The prevailing forms of employment and working conditions to be found in third world countries are also tending to spread in industrially more advanced countries; there is a trend towards the “Balkanization” (Kerr, 1954), the “Brazilianisation” (Beck, 2000), “informalisation” and “de-institutionalisation” of employment (Galini, 2002). Unemployment and underemployment coexist with an increase in working time and intensity of work (Castillo, 1998; Gorz, 1997; Schor, 1991).

In conclusion, we can say that this model, based on the maximum release of market mechanisms of social regulation, subordinates society to the market laws, which

aim for economic dynamism. This model involves the diffusion of multiple unstable forms of employment, job insecurity, and deterioration of job quality, and consequently the failure of social integration through work. It also involves the destruction of social regulation built to conceal the market economy and social cohesion. Unemployment, instability and insecurity are permanent risks.

The model of renewed and humanised work centred society

An alternative model - the “humanised work centered society” - aims to dignify work, and enhance the quality of working life and skills development. This model is based on democratic and socially responsible governance by means of systematic dialogue, participation and negotiation in order to reconcile social and economic goals. From our point of view this is the only model able to encompass sustainability. We argue that the major social problems - such as rising unemployment, increasing precariousness, skills under-utilization, and therefore social exclusion - can only be overcome by breaking away from the neo-liberal orientation and putting into practice sustainable development principles.

This alternative is based on the idea that work will continue to structure and provide coherence in the life of the individual. There is no evidence that paid work or employment is losing any of its centrality. Furthermore, various studies have concluded that there has been an effective increase in working time as well as in the intensification of work (Reich, 2000; Schor, 1991). Social prestige is thus henceforth defined as: the greater the time and effort put into the mercantile sphere, the greater the investment in one’s professional life and the higher the social profile (Grozelier, 1998).

The main problem is not the end of work (Gorz, 1998; Méda, 1995; Rifkin, 1995), but the wealth of work that is devoid of quality and, in so being, fails to live up to the expectations of people or gives little or no guarantee of stability of income and/or working conditions to enable them to enjoy lasting integration in a reference community. Despite recognising the importance and relevance of the many criticisms directed at the work centred society by the defendants of the end of work thesis, we disagree with the idea that work no longer plays a central role for individuals as well as in the structuring of social life. We consider that work remains central in our time and is a strategic space to build a better future. Work remains a dominant reference, not only

in economic aspects, but also in the psychological and cultural, symbolic. The vast majority of people are employed, and working time remains long. There are not fewer employees, but workers more exposed to insecurity and unemployment. Work does not disappear, but becomes increasingly invisible⁴, since the present ways of producing hide the place where it is produced (Castillo, 2003). Contrary to the ideas proposed by those proclaiming the end of work, employment remains a central feature of our societies; it is the source of individual and collective identities, social cohesion and integration (Schnapper, 1998).

The humanised work centred society is able to provide sustainable development (equality, social cohesion and ecological equilibrium). The characteristics of this model contrast with the features of the market driven work centred society, as shown in the following table:

⁴ On this theme see number 45, *Revista Sociología del Trabajo* de 2002, entitled “El Trabajo invisible”.

Market regulated work centred society	Renewed and humanised work centred society
Society subordinated to economy and market regulation driven by interests linked to financial capital	Social regulation of market economy by socially responsible and democratic government aiming for sustainable development
Deregulated labour market aiming for flexibility (free use of work as source of competitiveness) and business model of work	Regulated labour market with institutional protection of work and full employment orientation
Corporate government aiming for shareholder value orientation by flexible rationalisation	Democratic and socially responsible corporate government articulating economic and social objectives and human centred technical-organisational options (humanised flexibility)
Short-term orientation	Long term orientation
Work: cost to be reduced	Work: activity to be transformed into meaningful activity providing autonomy, satisfaction and professional development
Individualistic values, individual responsibility for employability and security	Articulation between emancipator individualisation and social values
Long working hours and intensification of work	Reduction of working time

A "high road" to economic development that is based on improving efficiency and innovation is understood; i.e., through economic gains there are also wage gains, improvements in the quality of working life and the social conditions safeguarding workers' rights and promoting adequate social protection standards. In other words, there is an institutional protection of work⁵. According to the human and social oriented economic system, a long-term orientation prevails.

The renovation and humanisation of a work centred society involves the redistribution of socially useful work, the reduction in working timetables, flexibility

⁵ The conclusions of the informal Council of Labor Ministers in Berlin on January 2007 place the emphasis on the quality of work and rights along the same line: "Good work means employee rights and participation, fair wages, security, protection of health in the workplace, as well as family-friendly work organization. Good and fair working conditions as well as adequate social protection, are indispensable for acceptance of the European Union by its citizens". (Informal Council of Labor Ministers)

achieved without precariousness. Socially responsible and democratic government through dialogue, negotiation and participation at all levels allow the conciliation of economic and social objectives. Work retains its centrality but the reduction in working time opens up the space for other activities (cultural, civic, etc.). The shorter working week can help to respond to a range of “interlinked problems, such as over-consumption, high carbon emissions, entrenched inequalities and ill-being associated with long working hours work, unemployment and the lack of time to live sustainably, to be active citizens, to care for each other, and simply enjoy life” (Cote, Franklin, Simms, 2010).

The promotion of working life quality requires transformation of work into an interesting and meaningful activity, capable of providing autonomy, satisfaction and social integration. ICT are able to bring about simultaneous improvements to productivity, employment and quality of life whenever a human-centred or humanised flexibility perspective prevails in the technological and organisational options taken (Kovács, 1998; 2002; Oeij and Wiezer, 2002). Flexible forms of employment associated with social and individual objectives can enable greater individual control over time, better conciliating work and family life, and other activities.

The following table compares the two models of society in regard to its implications on employment, quality of work life and social rights:

Market regulated work centred society	Renewed and humanised work centred society
Increasing inequality, insecurity and risk of social exclusion	Promotion of equality and social inclusion by humanised work
Flexibility with precariousness	Flexibility without precariousness
Weakness of social ties and vulnerability of individuals	Strong social ties, conciliation of individual and collective interests
Strong employer position and debility of trade-unions	Dialogue, multiple forms of participation, negotiation
Spiral downturn in wages and working conditions	Improved quality of working life and of life in general
Commoditisation of social rights	Social rights associated with renewed/humanised work
Weakening of social cohesion by unemployment, precariousness and poverty	Identity and integration by humanised work
Deepening of ecological crises	Environmental sustainability

This renewal of work needs to create new regulatory forms and functions that extend beyond national level regulation. There have to be effective mechanisms for the implementation of decent work principles or core labour standards (ILO)⁶ in the defence of worker interests on a truly global scale (Santos, 1998) within a different type of globalisation that focuses on the reduction of inequality and economic, social and ecological imbalances.

⁶ Decent work means productive work in which rights are protected, which generates an adequate income, with adequate social protection. It also means sufficient work, in the sense that all should have full access to income-earning opportunities. It marks the high road to economic and social development, a road in which employment, income and social protection can be achieved without compromising workers' rights and social standards. Tripartism and social dialogue are both objectives in their own right, guaranteeing participation and democratic process, and they are a means of achieving all the other strategic objectives of the ILO. The evolving global economy offers opportunities from which all can gain, but these have to be grounded in participatory social institutions if they are to confer legitimacy and sustainability on economic and social policies. ILO,site:<http://www.ilo.org/public/english/standards/relm/ilc/ilc87/repi.htm#1.%20The%20primary%20goal>

Therefore, the renewed and humanised work centered society implies **the need for labour market regulation** in order to enhance work institutional protection, to promote the articulation between economic and social objectives, to contribute to humanised technological innovation, and mainly to create the conditions for sustainable knowledge and professional/occupational development.

Nevertheless, labour market regulation has not followed a straightforward pattern over time, and neither does it encompass a unique one model fits all. In the following sections we deal with the leading developments in labour market regulation and set the main challenges imposed by globalisation today.

The long trend in Labour Market Regulation

The current debate on labour market regulation oscillates between two poles – the neo-classical reappraisal and the pro-Keynesian temptation – in spite of a policy mix which increasingly characterises public action, *vide* flexicurity.

Despite the resilience revealed by labour market auto-regulation as a prototype, as a matter of fact the conceptions underlying the regulation of the labour market have gone through several critical phases, since the classical economists and their faith in *laissez-faire*.

Departing from the uselessness of any regulation at all, *mainstream Economics* came to consider the ability of the labour market for auto-regulation when the first capitalist crises developed. Then, freely acting price mechanisms were supposed to bring markets back to equilibrium (Gorz, 1998; Méda, 1995; Rifkin, 1995), and it was argued that the same should happen with the labour market: accepting a wage as low as required for the market to clear should be the unique condition for getting a job.

The thirty glorious years of the capitalistic development after the Second World War imposed an important turning point on the above conceptions. With the strong improvement in education and training required for the economic development, it became difficult to continue to consider the labour force in the same way as any other production factor, i.e. in strictly physical terms. After Gary Becker's and Jacob Mincer's seminal contributions, workers' qualifications and more generally "human

capital” started to play an important role in the new conceptions of the labour market⁷. Moreover, the economics of development and notably Robert Solow began taking into consideration the important contribution played by labour qualification through education and work experience.

The first oil crisis and its impact upon the prevailing economic order made it difficult to go on accepting hypotheses like the sovereignty of the offer of qualified labour upon labour market opportunities and perfect job matching. Along with the employment crisis and criticism towards previous approaches towards labour market equilibrium, the economics of education was developing an important epistemological debate. In this latter field several critical lines then developed: one of which was related to credentialism and another to the functionalist approach. While the former critically revised the “production of diplomas” as the real target in education, the latter strongly criticized the conception under which education outputs should mostly (sometimes almost exclusively) serve labour market purposes. In fact, the running crises proved that *laissez faire* in education had also failed from the point of view of insertion in the labour market. Nonetheless, other more demanding approaches were developing for which education processes should not neglect citizenship and human development as a whole (Ambrósio, 2001; Cortesão *et al* 1995; Crick, 2008; Gandin, 2007).

With the labour market crises and the end of “employment for life”, it became clear that new forms of regulation of the labour market were needed as it had proved unable to return to equilibrium by itself. Employment precariousness and the recurrence of unemployment spells even among some of the most qualified workers made education and training part of the new regulation tools. As a matter of fact, the need to take into consideration the “demand side” of the labour market appeared as inevitable: given that being qualified would no longer guarantee access to and maintenance of a job, greater attention began to be paid to innovation’s and technology’s shorter cycles, to the specificities of the skills demanded by the organizations and most of all to the ability of workers to be flexible in order to be employable.

That is why lifelong learning, in addition to *life wide learning*, has been increasingly called upon to perform the role of a labour market regulator or, at least, to reinforce the action of other regulation mechanisms, such as labour law. At the same

⁷ See Gary Becker (1964) and Jacob Mincer (1972).

time, there has been increasing pressure for schools to share their previous role as the unique source of knowledge with other learning institutions, notably firms and other organizations. In that light, for most of the reference authors during the eighties, the dynamics of individual learning processes could be depicted through models like the following (Willis 1986; 1987):

$$dK / dt = K_0 h \sum_{i=1}^n K_{t,i} - \delta \sum_{j=1}^m K_{t,j}$$

In other words, the accumulation of knowledge should be positively affected both by the initial school level (K_0) and by work experience ($K_{t,i}$) acquired during the successively performed jobs ($i=1, \dots, n$)⁸; but separation spells ($K_{t,j}$) would inevitably lead to obsolescence, or human capital depreciation, the longer the separation spell, the higher the depreciation rate (δ), unless some form of adequate training is undertaken during those unemployment or inactivity periods.

Vocational training, as well as education, therefore acquires a prominent role in promoting (re)employability. And, as has always happened in face of the failure of market mechanisms, governments and public funding⁹ were called to support this new strategy. Labour market policies were then applied to the utmost, either under the form of active labour market policies (ALMP) or as unemployment subsidies and other public transfers (Heijke & Muysken 2000).

Education and vocational training are undoubtedly public (or semi-public) goods, but it is only when the market fails and ideological suspicion towards public intervention lessens that they acquire prominence, in this case as remediation strategies. The functionalist approach towards education and training was emerging again... Actually, by not intervening to promote (re)employability and new skills throughout vocational training, governments would face an even larger pressure on the public

⁸ Allowing h ($0 \leq h \leq 1$) to take different values for different i periods the enlarged form of the equation displays differently valued job experiences ...

⁹ As well as E.C. funding programmes, especially European Social Fund.

budget in the form of passive labour market policies and among all unemployment subsidies.

Left to the uncertainties of the market and following no strategic alignment for long periods, training has been increasingly marked by severe vicious circles and strong bottlenecks: training markets are generally tailored for high dimension businesses, training programmes are mostly attended by the already qualified and most mobile workers and the outcomes of training frequently fail to meet the organization's needs, especially with regard to improvements in competitiveness and work conditions (Chagas Lopes 2004; Chagas Lopes 2006; INE 2009). That is why great emphasis has been placed on other forms of ALMP since the nineties in most international *fora*, like the OECD, and the European Union's essay of integrated regulation has increasingly insisted on the need for "activation". This is especially so since the Lisbon Summit and the Second Phase of the European Employment Strategy (Heintz, 2006).

At the same time, the reinforcement of the economic and social crises in the transition to the new millennium placed new pressure on public budgets with important restrictions to the funding of labour market policies. Education and training certainly retained their role as regulators of labour markets, but they proved to be increasingly inefficient even under the form of lifelong learning strategies. Once again the labour market had to seek new forms of hetero-regulation. Of these, flexicurity was among the most prominent, together with important alterations to labour market legislation, which led towards greater flexibility¹⁰.

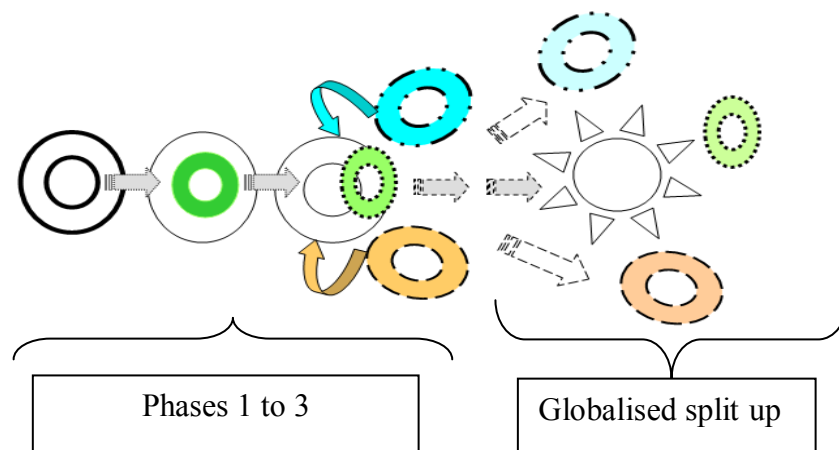
By clearly allowing for unemployment spells, even for the more qualified and trained workers, flexicurity induces an important divide between the employment relationship and the supply of skilled work that is in total opposition with the neo-classical approach. In fact, new theoretical perspectives began to predominate, among which life cycle theories were considered one of the most important critical alternatives.

Nonetheless, this does not mean that flexicurity deliberately proposed a break with the functionalist perspective, only that education and training were no longer powerful enough. Hence, they were to be supplemented by Social Security; the latter should intervene additionally during unemployment spells to ensure a minimum income and to help finance training and/or education to foster (re)employability.

¹⁰ See, for example, Wilthagen (2008).

Despite the specificities of Denmark and other Nordic countries where flexicurity was pioneered and where it proved to work for a while, that is, before the present global crisis, several European countries tried to adopt it as the new regulator strategy. We will not pursue this subject but just emphasise its external nature relative to the labour markets which it was supposed to help regulate. In fact, labour market regulation performed an outward trajectory over time which was driven by theoretical revision and undoubtedly by the main impact of the employment and labour crises.

Figure1. Trends in Labour Market Regulation- from *laissez faire* to globalised split up



In the above Figure, Phases 1 to 3 represent, respectively, the absence of labour market regulation within the orthodox economy, the transition to labour market auto-regulation, and the need to supplement auto-regulation with external tools such as Education/training and Social Security, as in flexicurity strategies. The right hand side corresponds to the present globalised economy and the lack of sufficiently powerful global regulators, inducing the split up of labour market regulation mechanisms.

The present need for (new forms of) Labour Market Regulation

With globalisation, labour markets have met with new forms of disequilibria which originate either within each country's labour market or as an outcome of the global interaction.

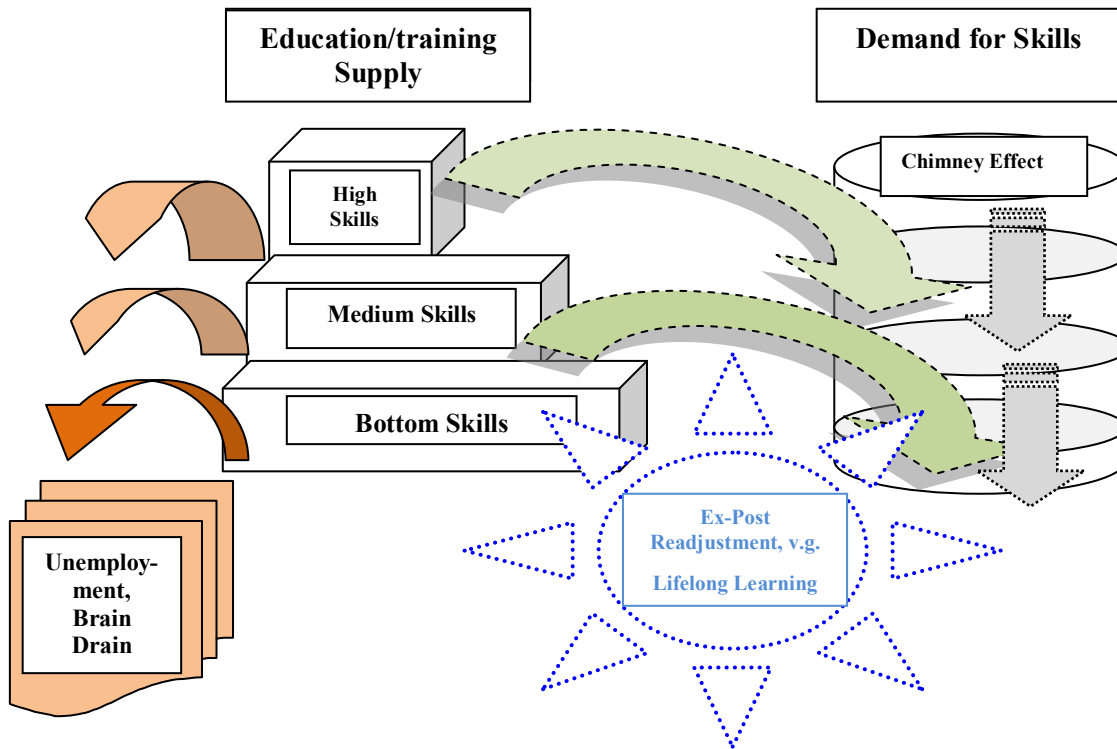
Struggle for competitiveness leads resourceful countries to permanently push the technological innovation frontier onwards. Hence, technology cycles become even shorter and maturity peaks are reached at a faster pace as if in some sort of perpetual movement until a crisis like the present one hits this wealthier part of the world. For technology dependent countries, that circular auto-feeding movement means the reinforcement of dependence in which they got caught by trying to keep a position in the global trade to survive. Actually, besides their increasing losses in competitiveness, they also face severe distortions in the labour markets: the qualification systems remain intrinsically national in terms of the values and skills they promote and they rarely adjust easily to innovation especially when it comes from abroad. Likewise in these countries an increasing divide between the organizations' demand for skills and the supply of qualifications takes place, and the corresponding vicious circles and caveats become difficult to eradicate as time goes by.

More developed and less dependent countries also face distortion and disequilibria, albeit of a different kind. For most of them, precariousness stemming from external labour market flexibility has increased along with the struggle for competitiveness and alleviation in the labour laws. As a result they face a rising mismatch between the duration of labour contracts – which tend to follow the shorter productivity patterns – and the need to improve qualifications throughout labour market experience. Lower rates of return for investment in human (occupational) capital and increased free-riding flows then appear as obvious consequences, with further qualification and training efforts proving to be inefficient to overcome those bottlenecks (Chagas Lopes 2006).

Distortions like the latter often become powered by the rigidity of the structure of the demand for labour: despite suffering from very low productivity levels, the economic structure proves unable to absorb the medium and high-level skills it so urgently requires. As we shall see in the next section, lack or misuse of innovation policies is usually the main cause behind this outcome. This paradoxical behaviour has

sometimes been called the ‘chimney effect’ and it induces severe underutilization of skills and competencies, as depicted by the following Figure:

Figure 2: Skills’ Underutilization and the Chimney Effect



Source: adapted from Chagas Lopes 2008.

From the above Figure, three main traits are clear:

- the incapacity of the demand for labour to absorb higher skills, which leads to their unemployment and/or to a brain drain, an important feature which characterises the Portuguese labour market today;
- the occupational downward trend, which results in a meaningful share among the higher skilled being offered only poorly qualified jobs;
- the eviction effect, or pushing the less skilled workers to the very bottom or even to unemployment, thereby reinforcing the probability that the *outsiders* will remain excluded for longer periods.

These sorts of vicious circles tend to be reinforced whenever the economic strategy and education and training policies are kept separate, thus precluding articulation of the corresponding decision making.

In light of the discussion so far, it appears that the need for regulation in the labour markets is consensual nowadays. Nevertheless, we can distinguish among several regulation approaches, in particular the one which the European Union has been trying to adopt, and the OECD's perspective, which we shall briefly review.

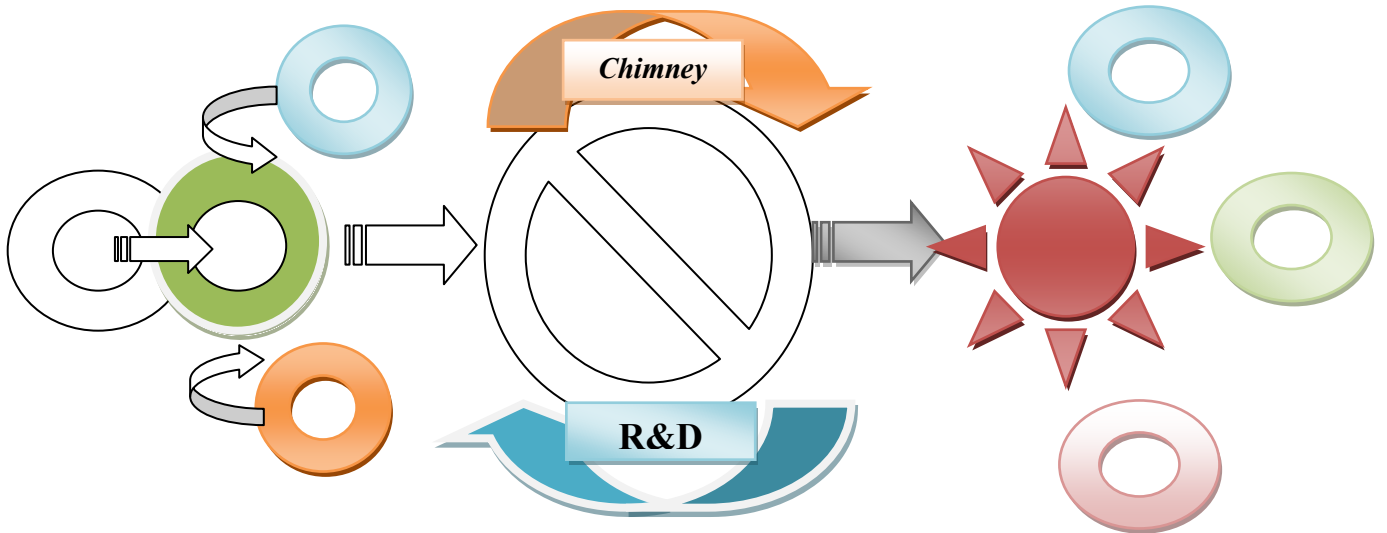
Being aware of the modest ability of the "European model" to raise employment as well as the need to foster competitiveness, the European Commission seems to overlook the kaleidoscopic nature of the European Union most of times. Actually most European official documents stress the need for *a (global and unique...) regulation model*, which should be able to foster "(...) *fair and decent working conditions and labour standards to all workers in EU and protect workers against overexposure to the whims of the market (...)*" (European Parliament 2007). It would seem that at least the neo-classical pro-free market *penchant* has been overcome, although perhaps not for good.

As a matter of fact European labour markets behave quite differently even when the economic conjuncture is stable. These differences have been persistent over time and are deeply rooted in structural reasons, leading us to systematically distinguish the Nordic countries from the Southern-Mediterranean, the central European and the Anglo-Saxon ones in so far as long-run labour market trends are concerned.

Reflecting on the new forms of labour market regulation, the OECD's approach mostly emphasises the role of "(...) *good domestic policies ... supported by well designed employment protection legislation (...)*" (OECD 2007: 3) in order to foster re-employment opportunities. It stresses the crucial role which labour market regulation should play in shifting jobs from declining to expanding occupations, in 'making work pay' namely for the workers at the bottom, and in promoting skill development opportunities for the less educated in order to limit low pay traps (OECD 2007). Unlike EU, OECD does not have to deal with integrated decision making and perhaps for that political reason it does not neglect the role that national (and in fact quite diverse) decision making should play in labour market regulation, an approach which seems to us to be much more reasonable.

Accordingly, we argue that country specific R&D and Innovation policies must play a leading role in today's hetero-regulation of the labour markets. In doing so, they complement education, training and other policies' regulatory capacity. Consequently, the diagram in Figure 1 should now be reviewed:

Figure 3: R&D and Innovation Policies and Labour Market Regulation



Now, despite the inevitable split up due to lack of a global regulation model, in each country's labour market R&D policies should be called to intervene and upgrade the demand for skills so that no underutilization of the qualifications supplied should take place.

Of course we do not uphold isolationist policies for countries belonging to economically integrated areas such as the EU. But EU centrally decided Innovation and R&D policies risk glossing over each country's specificities and as a result they may contribute little to reinforcing the EU's ability to absorb higher qualifications.

In the next section we shall explore the intervention of R&D and Innovation as labour market regulators in more depth. For this purpose we shall consider the Portuguese situation in the context of the European Union.

R&D and Innovation in the Regulation of Labour Markets

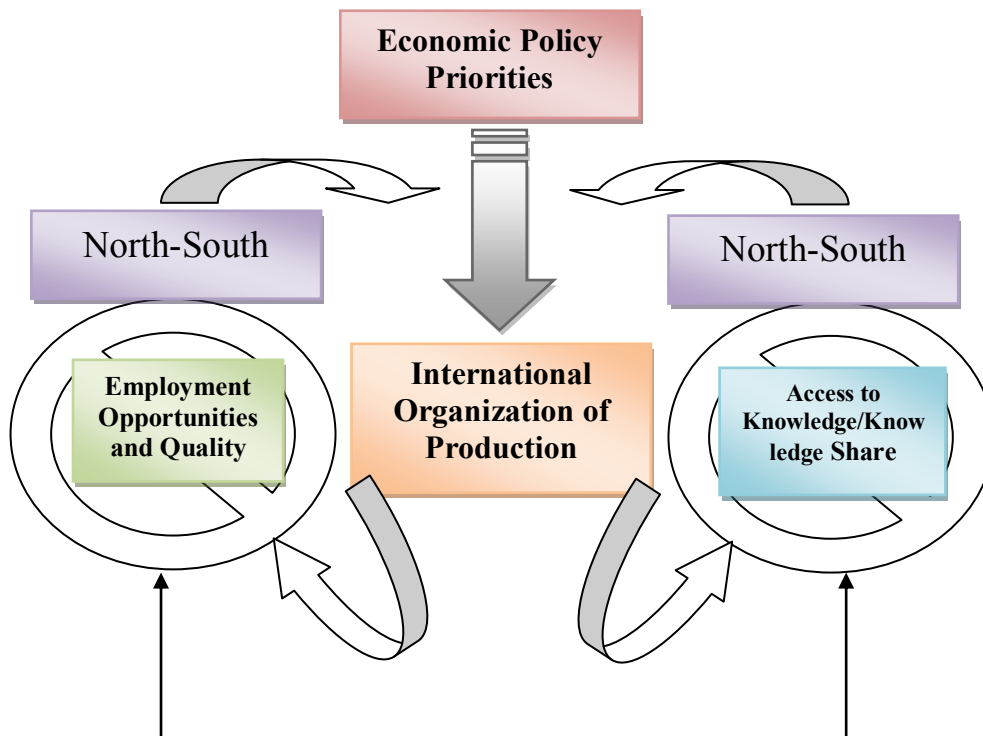
In most analyses there is a trend to illustrate the ability each country has to foster R&D and Innovation by means of education indicators such as the share of individuals in a given cohort having completed higher education or advanced studies (MSc. and PhD). Sometimes these indicators are broken down by scientific domain and consider especially the proportion of graduates and post-graduates in the specific fields of Engineering and Science. Notwithstanding, this kind of information is quite limited as it gives us no sign of the capacity of the economic structure to absorb the high and medium-high qualifications upon which it so much depends to enhance productivity. Furthermore, with such indicators we have no information on the rate of “human capital” underutilization, a feature which is often connected with the bottlenecks and other disequilibria in labour markets like those we considered in the previous section.

Research on learning methodologies has come a long way and contributions like Kolb’s (1984) experiential learning theory mark a fundamental turning point. This author defines learning as “*the process whereby knowledge is created through the transformation of experience*” (Kolb 1984: 23). Therefore we cannot disregard occupational experience – and likewise employment status – when trying to assess the influence that “human capital” exerts upon the broad process of skill and competency development. In this line most authors in human resources management, such as Barry & Beckman (2007), insist on the importance of action-oriented learning for the process of innovation in work and the labour market; the robustness of the initial education, the kind of professional career and the competency requirements of the current jobs and tasks all play a leading role in fostering innovation (Barry & Beckman 2007). It becomes clear that differences in individual learning styles – especially in the unequal distribution of job opportunities – strongly affect the ability to participate in and foster innovation. As the above authors state “(...) *Innovation for sustainability requires taking a systems view (...) [It] involves those who will pay for the output of the innovation process and those who will use it ...*” (Barry & Beckman 2007: 26). They also stress the importance of the context for which innovation is designed, stating that to neglect that context, inner aspirations and decisions will lead to misunderstanding and misrepresentation of the innovation processes.

Therefore, it is clear that in the present globalised world, in national terms, innovation and knowledge are quite unequally distributed and they strongly depend

upon access to labour market opportunities and working conditions. This is illustrated by the next Figure:

Figure 4: Developing and Sharing Knowledge in the Global Economy: a New Divide

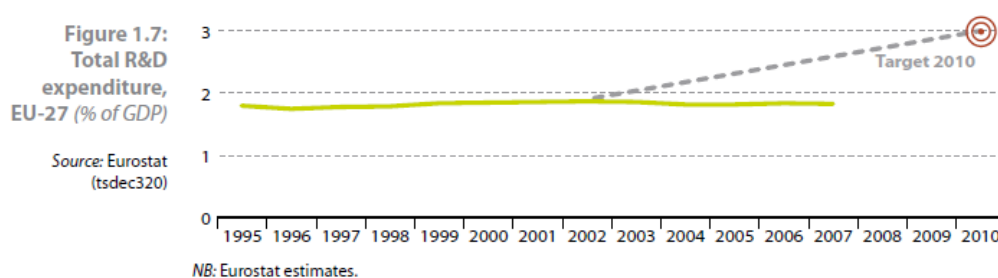


Source: Kovács & Chagas Lopes (2009)

In order to assess how far R&D and innovation are indeed contributing to the regulation of labour markets and to the alleviation of bottlenecks which we have been describing we need other kinds of indicators that are complementary to the ones relative to outputs in higher education and advanced studies. The breakdown of researchers by institutional sector (Business Enterprise Sector, BES, Government, GOV and Higher Education, HE) allows us to go a step further. When we consider EU-27 and Portugal in this light, we observe that for 2006 while in EU-27 some 49.3% of total researchers were absorbed by BES, 35.6% by HE and only 13.9% by GOV, in Portugal HE absorbed more than half (51.9%) of those high skills whilst BES only employed some 19.0% and GOV 15.8% (EU 2009).

The relative capacity of absorption of high skilled workers is confirmed when we look into employment indicators more deeply. In 2006 the percentage of people working in Science and Technology (S&T) within total employment amounted to 29.6% in EU-27, while in that same year Portugal exhibited the lowest value for the whole Community, 17.9% (EU 2009). Of course those results have to do with the different robustness of the economic structures with regard to technological sophistication and skill requirements. According to the same source, in 2006 Portuguese high and medium-high- technology manufacturing absorbed no more than 3.3% of the global employment, exactly one half of the corresponding EU-27 figure (6.6%). Even knowledge intensive services (KIS) where larger gains in productivity have been obtained in today's economies reveal Portugal's inability to absorb high skilled employment: only 23.1%, in 2006, the third worst result after Bulgaria and Romania, against 32.8% in EU-27. Yet, gross expenditure in R&D relative to GDP would not lead us to expect such a bad result for Portugal. This certainly points to inefficiency in the allocation of R&D resources, but it also seems to indicate that there are important difficulties in transforming R&D into effective innovation. In actual fact, with regard to the share of GDP allocated to R&D, EU-27 is also still far from the targets previously stated:

Figure 5: Total R&D Expenditure in EU-27 (% GDP)



Source: EU (2009).

Some of the caveats we have been referring to have to do with the country's industrial structure, which in Portugal is by and large made up of small and medium enterprises (SME). In addition, organizational models, managers' competencies and

skills, entrepreneurial values and inherited culture exert an influence on the ability to innovate. Actually they severely affect knowledge and technology diffusion and demand as well as organizational innovation. For the EU, two important instruments display information on most of those innovation indicators: the Community Innovation Survey (CIS) and the European Innovation Scoreboard (EIS). From the releases CIS 2004 and EIS 2006 (Parvan, 2007) and considering only SME¹¹ we obtained some indicators that help us characterise the Portuguese situation: more than 40.0% of the Portuguese SME introduced in house (intra mural) product or process innovation in 2004, a very noble result when compared to the corresponding figures for France, Italy, Netherlands or Spain, for instance. Nevertheless, that result is not essentially the outcome of a meaningful cooperative strategy as less than 10.0% of the innovative SME in Portugal cooperate with other enterprises of the kind, an “isolationist” behavior which in eight other European countries (such as Italy and Spain, among others) becomes even more exaggerated¹².

These results alert us to the importance of the context and to the impact that national specificities exert upon innovation processes. But most of all they shed light on the strong articulation existing between the employment structure and labour market opportunities and R&D and innovation efforts. In fact, education and training will no longer be able by themselves to regulate labour market disequilibria. On the contrary they may operate towards the reinforcement of bottlenecks if innovation in the economic structure does not take place. In a sense, striving for competitiveness and valorizing human capital can go hand to hand: it just requires that adequate R&D policies translate into innovation which will lead enterprises to steadily and increasingly absorb the medium and high skilled workers they absolutely need to raise competitiveness. By so doing R&D policies will enhance skilled and sustainable employment, as well as contribute to foster inclusion and citizenship when reforms and measures are taken to develop a renewed and humanised work centred society, breaking with the neo-liberal policy framework.

¹¹ As S-V. Parvan emphasizes, to consider not only SME but all countries' enterprises would lead to severe biases which would strongly affect international comparisons.

¹² From the point of view of organizational innovation, the country does not rank as modestly as might be expected: with regard to SMEs, more than 42.0% introduced that kind of innovation.

CONCLUSIONS

Assuming that employment continues to determine living conditions and life chances and it configures social existence for the majority of people, a policy designed to promote full employment and to avoid degradation and precariousness of jobs emerges as a political imperative. In this perspective the Governing Body of the International Labour Office calls for an “employment oriented” response to the global economic crisis. “It is time to apply the same efforts and policy creativity to create jobs and support enterprises that was deployed in saving banks and rescuing the financial system,” said ILO Director-General Juan Somavia (Davos, 2010).

Greater stability of employment, one of the key dimensions of job quality, is of particular importance from the standpoint of increased productivity and the innovative capacity of companies. Various studies (in the U.S. and several EU countries) indicate that a certain stability of employment is linked to productivity gains by not only greater worker motivation and the possibility of learning at work, but also the largest investment made by companies in training and developing skills required in the new forms of work organization (*high performance work systems*) (Auer, Berg & Coulibaly, 2004; ILO, 2005).

Despite the increasing attention that sustainable growth has been attracting within the mainstream official speech, it remains more a declaration of principles than a practical implementation of the stated objectives. A good example of this situation is the European Strategy for Sustainable Development (ESSD), whose leading objectives - like employment and inclusion enhancement, active citizenship fostering and human capital sustainable development, among others¹³ - can hardly be achieved with the present liberal market policies. Although the ESSD statements allow for some openness, calling for episodic labour market regulation and mostly for State *ex post* reparation, we are still far from being able to talk about a paradigm shift or even a break with the neo-liberal order. Rather, we are facing growing social and economic injustice,

¹³ EC (2009), *Sustainable Development in the European Union – 2009 monitoring report of the EU sustainable development strategy*, Luxembourg: EUROSTAT.

rising unemployment, precariousness and underutilization of the social investment in education and training inherent in neo-liberal practices. As we have stressed, sustainable development implies the opposite: an effective upgrading of work and skills. This outcome should be enhanced by means of human-centred perspective in technical and organizational options, and adequate structural education and training policies. But R&D has to be called to a leading role as well: by fostering social and organizational innovation, not only the technological, R&D will contribute to reinforcing the quality of work and to upgrading the structure of firms' required skills. This would play the role of a complementary instrument towards labour market regulation by maximizing "human capital" embeddedness and fostering citizenship, a desiderata which could hardly be pursued by means of market liberal policies.

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