

Institute for New Economic Thinking  
2015 annual conference, Paris, 8-11 April 2015

## **Labour in Europe's crisis. Jobs, skills and the need for policies**

**Mario Pianta**

*University of Urbino, [mario.pianta@uniurb.it](mailto:mario.pianta@uniurb.it)*

### **Abstract**

A structural transformation is investing labour in Europe, accelerated by the crisis started in 2008. Job destruction is dominating employment trends in most EU countries and deep changes are taking place in labour relations, labour market institutions and wage regimes. The focus of this paper is on three issues. First, an overview is offered of the change taking place across EU countries at the level of industries in manufacturing and services. Second, the changes taking place in the structure of employment by professional groups are investigated, showing the factors that account for the evolution of skills. Third, the need for policies is argued, that are not limited to labour market conditions, but address production structures, especially in the countries hardest hit by the crisis.

*JEL classification:* J31; O30

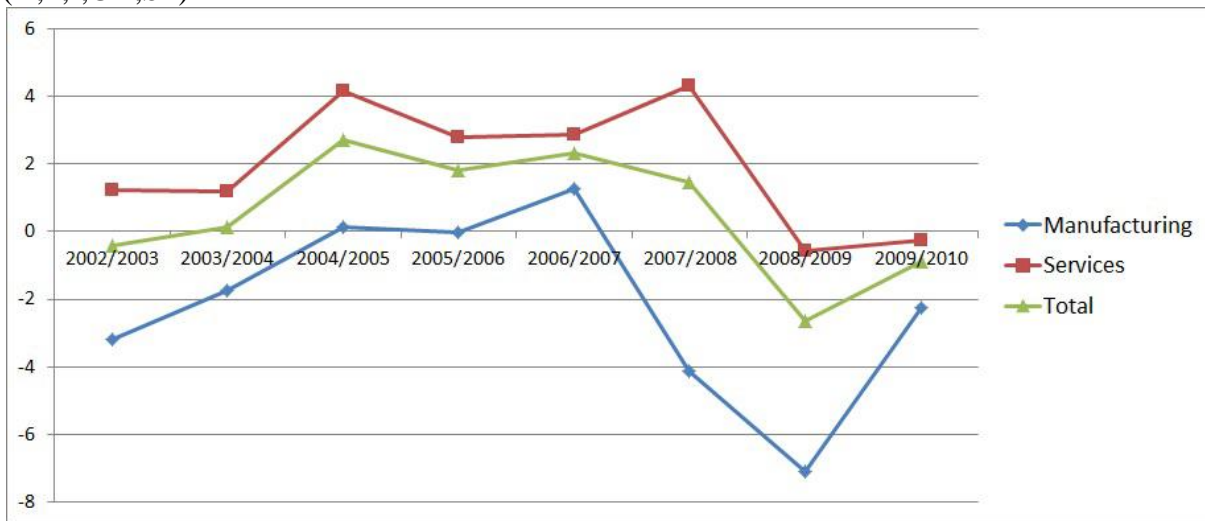
*Keywords:* Employment, Skills; Labor markets; Industrial policy

## 1. Introduction

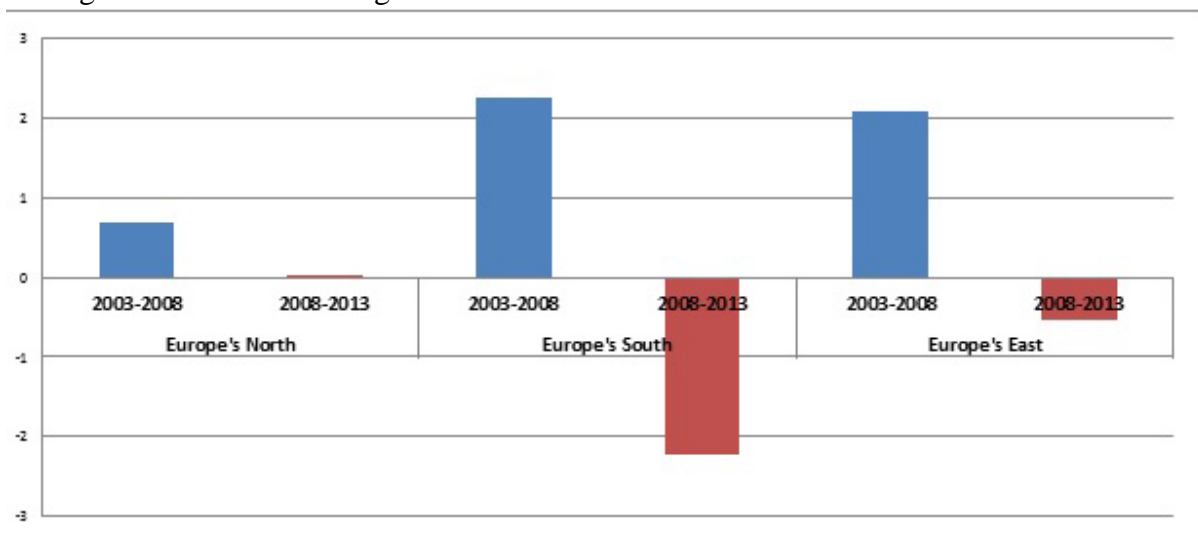
The crisis of 2008 has lasting consequences on Europe's economy. Six years after its start, a very modest recovery is emerging in Europe's core countries – around Germany – and in the UK, while Southern Europe is still marked by a long stagnation. In Europe a major job destruction has taken place with the crisis, that however hides deeper changes in the structure and distribution of jobs.

Figure 1 – focusing on the five major EU countries - shows that the impact of the crisis has deeply affected manufacturing as well as service industries; even the continuing structural change towards services has been unable to assure job growth in such activities. Figure 2 shows how uneven the employment impact of the crisis has been in the EU, with no net job loss even in the worst years of the crisis in Northern EU countries, limited losses in Eastern economies and the heaviest impact in the countries of Southern Europe, where a significant job growth had taken place in pre-crisis years.

**Figure 1. Annual rates of change of total employment in five major EU countries (D,F,I,UK,SP)**



**Figure 2. The impact of the employment crisis within the EU**  
Average annual rates of change



As shown in Table 1, comparing 2013 to 2008, only Germany, Austria and the Netherlands have returned to pre-crisis levels and suffered limited slumps. Poland alone has shown substantial growth. The UK is 11% below its 2008 data. A similar, permanent loss of industrial production is found in most countries in Central and Northern Europe - including France, Sweden, Denmark and Finland. Ireland has returned to its previous levels after dramatic losses in the midst of the crisis. Southern Europe has lost a major part of its industrial capacity: one seventh in Portugal, about one quarter in Italy and Spain and Greece.<sup>1</sup> The crisis has led to a major destruction of economic activities, even more serious job losses and a changed hierarchy of industrial production.

**Table 1**  
Industrial production and Youth unemployment in Europe

<b>Countries</b>	<b>Industrial Production</b> 2013 values in real terms Pre-crisis data for 2008 = 1	<b>Youth Unemployment</b> Change in the % 2013-2008	<b>Youth Unemployment</b> (15-29 years) Percentage in 2013
Germany	98	-2.3	7.3
Austria	101	1.4	8.0
Netherlands	99	5.4	9.5
Poland	118	6.9	18.9
Ireland	99	10.9	20.5
Denmark	89	5.6	11.9
Finland	83	3.1	15.1
Sweden	89	2.8	17.2
France	89	4.8	18.4
United Kingdom	89	3.7	14.8
Italy	79	14.3	29.6
Portugal	88	15.3	28.5
Spain	76	24.2	42.4
Greece	73	32.5	48.7

Industrial production is defined as Real output in mining, manufacturing, public utilities. Construction is excluded. Source: Eurostat, Unece.

We are not facing a shift from ‘old’ industries to ‘new’ services in a landscape of growth, as happened in the past.<sup>2</sup> In Europe we face a structural loss in industries that have been the

<sup>1</sup> Data are from Eurostat, World Bank (2013), UNIDO (2014).

<sup>2</sup> Deindustrialisation has been the object of intense debate already in the late 1970s, especially in the UK; see Singh (1977), Blackaby (1979).

engine of past growth, with no other fast growing economic activity that could play a similar role in the future – finance is overblown and highly unstable; consumer services suffer the slump in consumption; the public sector is downsized everywhere.

This combination of stagnation and industrial decline has wide ranging consequences. As industry loses its role as a major source of employment – especially for mid-level skills – unemployment becomes more intractable, wages fall, inequality and poverty rise. External imbalances are likely to become more serious; when a recovery arrives, the loss of domestic production capacity is likely to result in mounting trade deficits – with the exception of surplus countries such as Germany. Such imbalances will have to be compensated by greater capital inflows, further expanding private and public debt and the risk of financial instability. International production systems are showing a more hierarchical structure; leading firms increase their oligopolistic market power and control a wider network of outsourcing and offshoring activities, distributed in a larger number of advanced and emerging countries. At the same time, in their home countries, especially in Europe, large firms have downsized production capacity, closed plants, slashed employment; R&D and investment have often been reduced. Industrial employment has been hit hardest; even in countries with growing output, productivity increases mean that there is no net job creation.<sup>3</sup>

Private investment continues to be negatively affected by expectations of low demand by firms; world export growth has not returned to pre-crisis levels and remains important for surplus countries only. Austerity policies have prevented an expansion of public investment and services, with the result of prolonging the stagnation in Europe.

The result is the emergence of a more polarised industrial structure; “leaders” are becoming stronger; “weak” countries, regions, industries and firms are becoming weaker. Inadequate demand is affecting all countries, and all risk to reduce their ability to develop new technologies and economic activities. European countries risk be stuck in their past economic trajectory – with sluggish markets, a heavy environmental burden, cosmetic attention to climate change, and growing inequality - while China and few other emerging countries may move faster towards new knowledge, new products and processes, new sources of employment, supported by faster demand dynamics.

## **2. The evolution of skills in Europe**

In these transformations of employment in Europe a major element has been the change in the quantity and quality of jobs. Employment dynamics have been investigated under different approaches focusing on the absolute change of jobs or on their composition in terms of skills. Among the main drivers of job changes, technology plays a major role contributing to reshape the quantity and quality of jobs.

In terms of absolute change of jobs, the relationship between innovation and employment has been analyzed both at firm, sectoral and country level. As shown by several studies – see the review and evidence in Bogliacino and Pianta (2010) - generally a positive impact of product innovation on employment is found, while process innovation are usually associated to restructuring strategies reducing jobs. With respect to the quality of jobs available different streams of research have looked at the ways innovation contributes to shape skills dynamics.

On the one hand, *Skill Biased Technological Change* (SBTC) has analyzed the relationship between innovation and employment focusing on the complementarity between technologies and skills, predicting an increasing share of skilled workers (Berman, Bound and Griliches, 1994; Autor, Katz and Krueger, 1998; Chennels and Van Reenen, 1999; Acemoglu, 2002).

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<sup>3</sup> The evolution of European industries in the recession is examined by WIIW 2013; Simonazzi, Ginzburg and Nocella, 2013; Reinstaller et al. 2013; Aiginger, 2014.

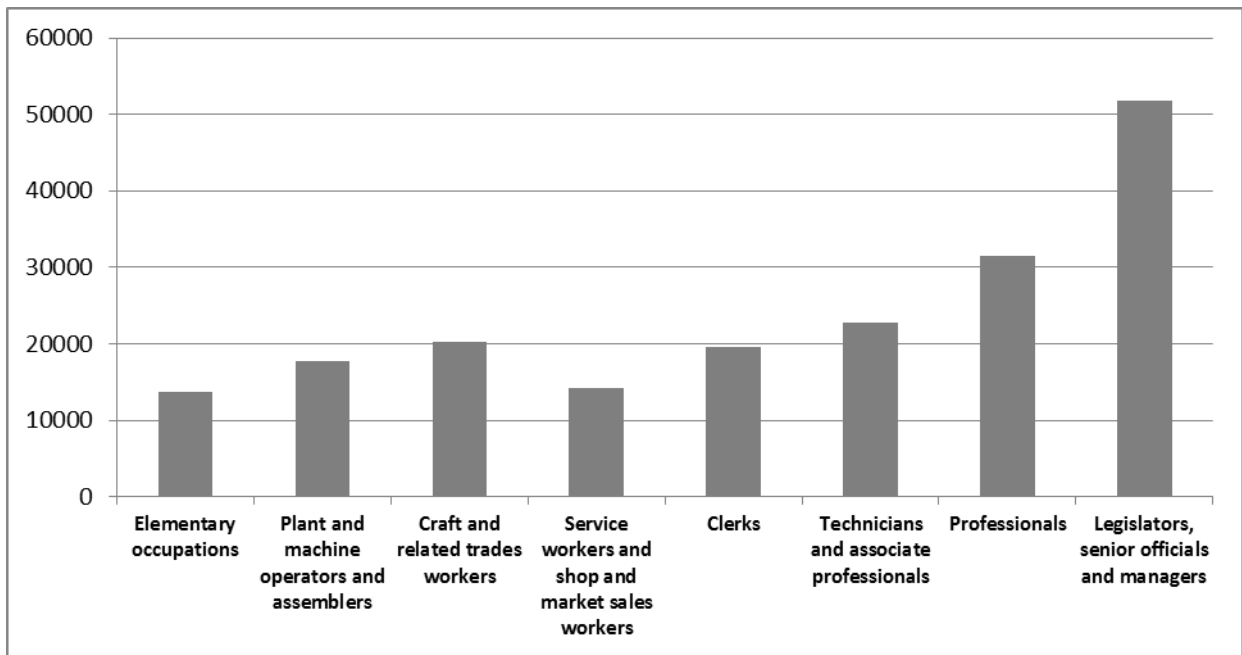
More recently, the *Routine Biased Technological Change* (RBTC) approach provides a novel technology-based explanation of employment changes focusing on tasks in terms of *routinization* of jobs (Autor, Levy and Murnane, 2003; Autor and Dorn, 2010; Goos and Manning, 2007; Goos, Manning and Salomons, 2009; 2010; 2014). The analysis of skills and tasks allows to explain patterns of job polarisation relying on consumption spillovers ageing of population and international trade – a detailed review is in Cirillo, Pianta, Nascia, (2014). On the other hand, neo-Schumpeterian, Evolutionary and Structural economists have focused on the disequilibrium nature of technological change stressing the specific content of technological innovations. Firms’ strategies can either pursue a *technological competitiveness* strategy based on the search for new products – resulting in more or better jobs - or they may focus on a *cost competitiveness* strategy based on new processes that reduce the quantity and quality of jobs (Pianta, 2004).

A necessary step for understanding what is really happening in the structure of employment is the type of skill breakdown that is used. Most studies have relied on the level of education, which is largely inadequate to capture the effective quality of the jobs performed by workers. More solid evidence may come from data based on the International Standard Classification of Occupations (ISCO) which allows to focus on professional groups and to overcome the simplistic dichotomy between high skill and low skill workers. ISCO classification has been previously adopted in the empirical literature to study employment dynamics by skill (among others Hollanders and Bas ter Weel, 2002; Felstead, Gallie, Green and Zhou, 2007; Oesch and Rodriguez Menés, 2010). We aggregate ISCO classes in four main groups: managers, clerks, craft and manual workers which are able to reflect a rank both in terms of education attainments and wages. Table 2 summarises the classification used. Figure 3 shows how average wages reflect the rank of the employment ‘quality’ of the ISCO groups that we consider. Figure 4 provides an overview – for the five largest EU economies - of the patterns of change of the four professional groups in the years before and after the crisis.

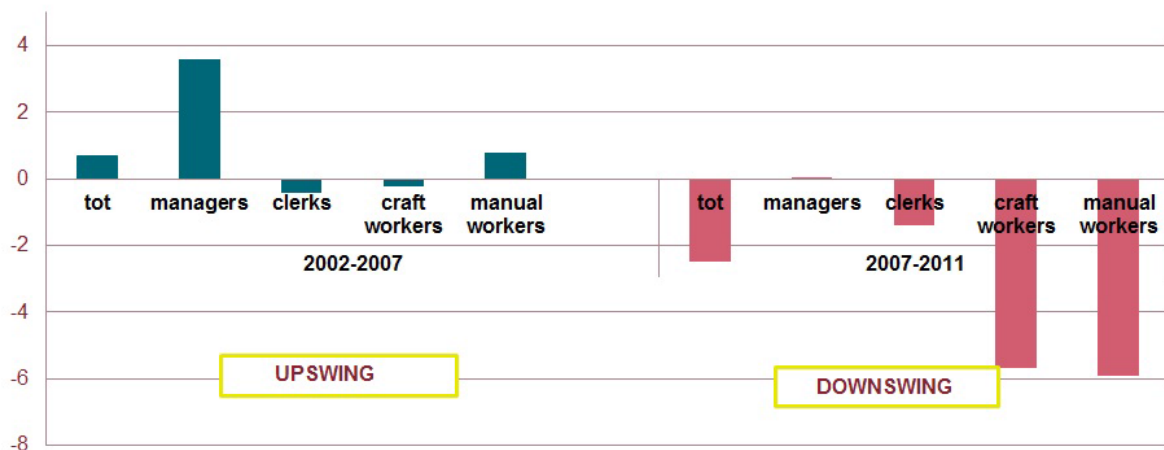
**Table 2. Employment by professional groups and skill level**

<b>Professional groups</b>	<b>ISCO 1 digit</b>	<b>Skill level (ISCED)</b>
Managers	Managers, senior officials and legislators	3+4
	Professionals	4
	Technicians and associate professionals	3
Clerks	Clerks	2
	Service and sales workers	2
Craft workers	Skilled agricultural and fishery workers	2
	Craft and related trade workers	2
Manual workers	Plant and machine operators and assemblers	2
	Elementary occupations	1

**Figure 3. Average gross earnings by professional groups ISCO 1 digit (2004, DE, SP, UK)**

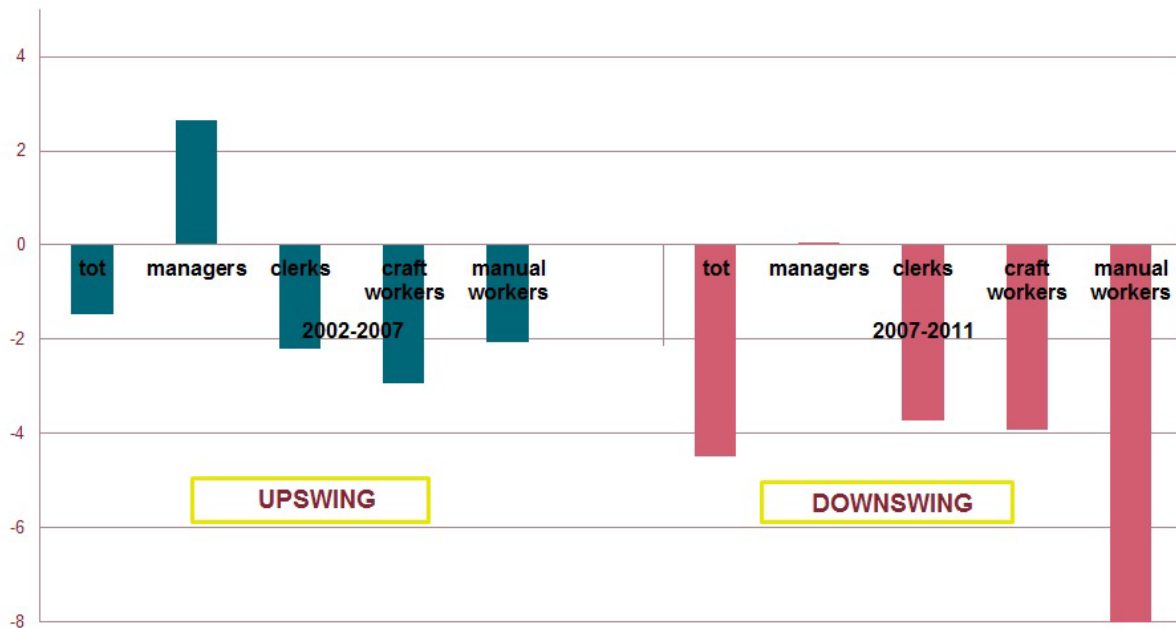


**Figure 4. Employment by professional groups**  
Average annual growth rate. Percentage change (DE, FR, IT, ES, UK)

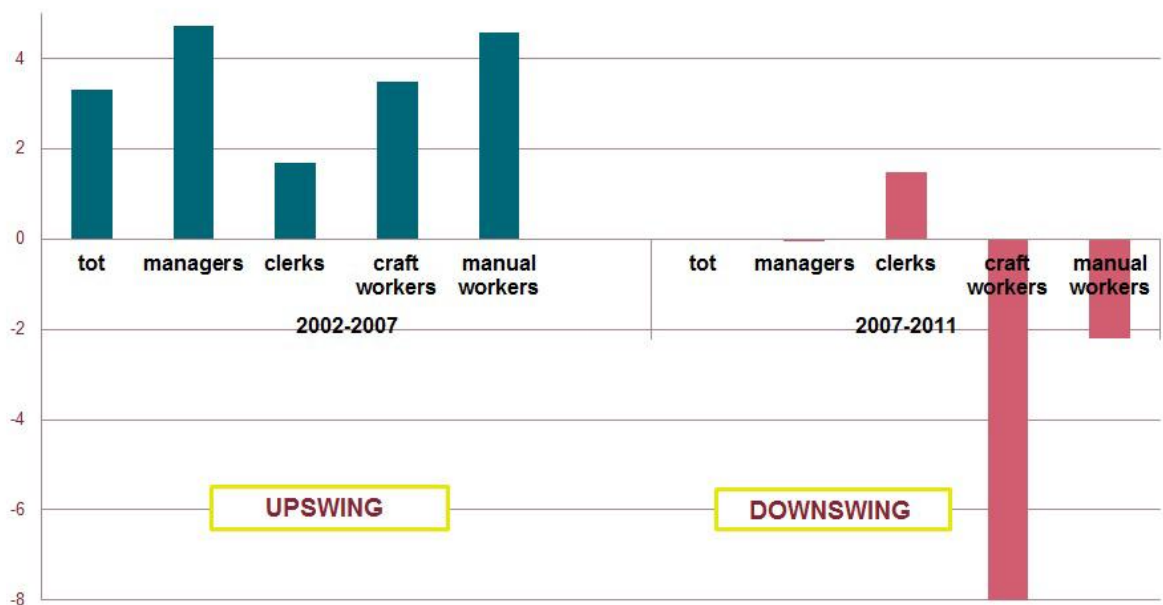


During the upswing from 2002 to 2007 employment growth has not reflected a general upskilling of jobs – as predicted by the SBTC view – but rather a polarising pattern has emerged, with the lowest skilled manual workers expanding, while mid-level skills for both white collars (clerks) and blue collars (craft workers) declined. The picture is entirely different after the start of the crisis. A major destruction of blue collar jobs has taken place, with managers only maintaining a net job creation. Figures 5 and 6 provide further details on the cases of manufacturing and service industries. In the latter the polarising nature of employment change in upswings is particularly evident.

**Figure 5. Manufacturing industries**



**Figure 6. Service industries**



Summing up, the skill composition of employment in the largest EU economies has changed over the long period leading to *upskilling* in manufacturing with an increased share of managers in total employment and *polarisation* of skills in services with an higher share of both managers and manual workers. Services register the highest concentration of high skilled jobs (managers and clerks) compared to manufacturing where the share of low skill jobs prevails (craft and manual workers).

### **3. The determinants of employment and skills**

In Cirillo, Pianta and Nascia (2014) an econometric investigation has been carried out exploring the determinants of the rates of change of jobs in each of the four professional groups. Change in demand, growth of wages, educational levels, relevance of product innovation and diffusion of process technologies are considered as the main drivers of employment change. The model is estimated at industry level – for 38 manufacturing and service sectors - for five European countries.

The findings obtained identify both general relationships and show that each professional group is affected in a different way by the determinants considered. In particular, the expected negative relationship between wages and employment is confirmed for all professional groups, but low skill jobs are more reactive to wage growth compared to high skill jobs. At aggregate level, we detect a positive impact of education on employment dynamics which is partly lost when we study employment dynamics by skill. The analysis of long term relationships between employment and technologies shows a general positive impact of technological competitiveness on employment and a negative effect of cost competitiveness efforts. The job creation potential of demand is confirmed; those sectors characterized by higher value added growth are also experiencing employment expansion.

The diversities in the relationships across skill groups are substantial. In the long run, managers are less affected by changes in wages than manual workers; the job creation potential of demand is more evident for manuals than for managers. In terms of innovations, technological strategies related to the introduction of new products positively impact on high skills, while the negative effects of cost competitiveness innovations are more relevant for low skill jobs. Product innovation creates employment for all professional categories and particularly for “managers” and “manuals”. Process innovation leads to job destruction mainly for “manual workers” being substituted by machines. These relationships are more evident in manufacturing than services. When we analyze the impact of technologies on jobs without distinguishing between manufacturing and services, the job creation potential of product innovations is detected only for “managers”. Conversely, the job destruction effect of process technologies concerns craft and manual workers (Cirillo, Pianta and Nascia, 2014).

Studies with such an approach are able to overcome the simplistic dichotomy between high skill and low skill workers and to avoid a simplistic view of technology, introducing a distinction between the dominance of product-oriented efforts to improve technological competitiveness, and a strategy – typical of more traditional sectors – relying on labor-saving technologies.

### **4. The need for policies on production capacity and employment creation**

The evidence from the studies summarised above shows that European employment is experiencing a structural transformation in the quantity and quality of jobs available, and in the distribution among EU countries. After the crisis, a jobless recovery can be expected, with a more polarised skill structure and a much more uneven dynamics across countries – with job losses concentrated in Southern Europe.

In this context it is evident that current policies – fiscal austerity, reforms for labour market flexibility, precarisation of labour contracts, etc. – do not address any of the structural factors affecting employment. In fact, they tend to strengthen current trends towards polarisation.

A different policy perspective is needed, addressing the joint needs to end the depression and rebuild sustainable economic activities. Decisions on the future of the industrial structure have to be brought back into the public domain. A new generation of policies that focus on the reconstruction of productive capacity and provision of high quality jobs is needed. They



need to play the same role that industrial policies had in the rise of Europe's economies (see Pianta 2015).

Obviously, the new industrial policies will have to overcome the limitations and failures of past experiences - such as collusive practices between political and economic power, heavy bureaucracy, and lack of accountability and entrepreneurship. They should be creative and selective, with mechanisms of decision making based on the priorities for using public resources that are more democratic, inclusive of different social interests, and open to civil society and trade union voices. They have to introduce new institutions and economic agents, and new rules and business practices that may ensure an effective and efficient implementation of such policies.

The general principles of industrial policy are simple enough. It should favour the evolution of knowledge, technologies and economic activities towards directions that improve economic performances, social conditions and environmental sustainability. It should favour activities and industries characterised by learning processes – by individuals and in organisations -, rapid technological change, scale and scope economies, and a strong growth of demand and productivity. An obvious list would include activities centred on the environment and energy; knowledge and information and communication technologies (ICTs); health and welfare.

*Environment and energy:* The current industrial model has to be deeply transformed in the direction of environmental sustainability. The technological paradigm of the future could be based on "green" products, processes and social organisations, that use much less energy, resources and land, have a much lighter effect on climate and eco-systems, move to renewable energy sources, organise transport systems beyond the dominance of cars with integrated mobility systems, rely on the repair and maintenance of existing goods and infrastructures, and protect nature and the Earth. Such a perspective raises enormous opportunities for research, innovation and new economic and social activities; a new set of coherent policies should address these complex, long-term challenges.

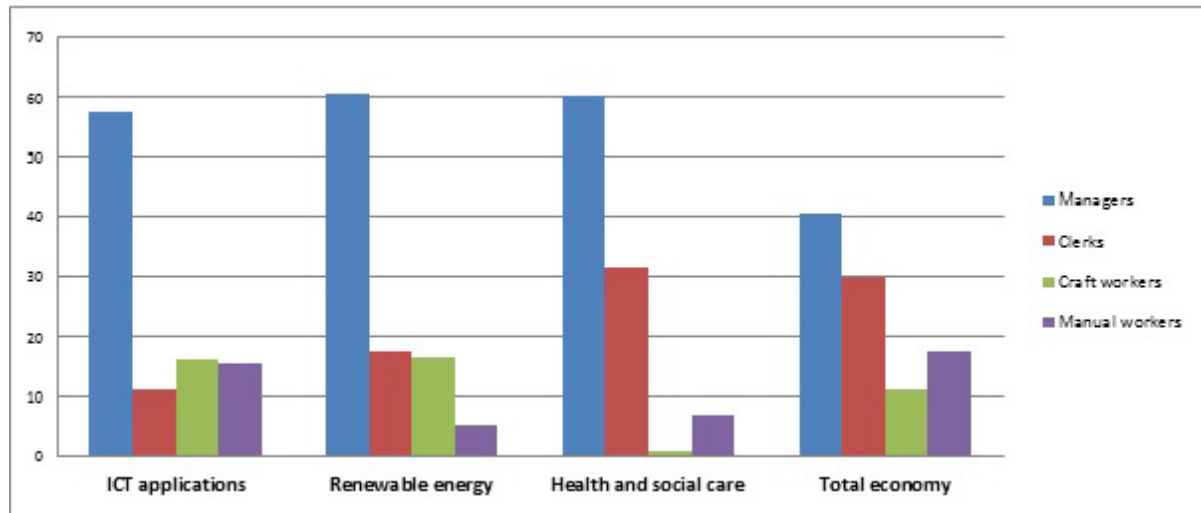
*Knowledge and ICTs:* Current change is dominated by the diffusion throughout the economy of the paradigm based on ICTs. Its potential for wider applications, higher productivity and lower prices, and new goods and social benefits should be supported. However, ICTs and web-based activities are reshaping the boundaries between the economic and social spheres, as the success of open source software, copyleft, Wikipedia and peer-to-peer clearly show. Policies should encourage the practice of innovation as a social, cooperative and open process, easing the rules on the access and sharing of knowledge, rather than enforcing and restricting the intellectual property rules designed for a previous technological era.

*Health and welfare.* Europe is an aging continent with the best health systems in the world, rooted in their nature of a public service outside the market. Advances in care systems, instrumentation, biotechnologies, genetics and drug research have to be supported and regulated considering their ethical and social consequences (as in the cases of GMOs, cloning, access to drugs in developing countries, etc.). Social innovation may spread in welfare services with a greater role of citizens, users and non-profit organisations, renewed public provision and new forms of self-organisation of communities.

All these fields are characterised by labour intensive production processes and by a requirement of medium and high skills, with the potential to provide "good" jobs. As an example, the composition by professional groups in the fields outlined above as targets for

industrial policy is reported in Figure 7, showing the high quality of skills that are required there.

**Figure 7. Skill structure in areas that could be targets of industrial policy (DE, FR, IT, ES, UK)**



But how could individual countries – and Europe as a whole - change their economic activities in such directions?

Industrial policy has long relied on different mechanisms. On the supply side, public funds have supported selected R&D, innovation and investment efforts. Public investment banks and public enterprises – as well as non profit foundations – have supported business start-ups in key fields with credits and venture capital and managed the restructuring of major production activities. Public, community and cooperative enterprises have a role in fields - such as knowledge-based activities, environmental and local services - where public goods and public procurement are prevalent.

On the demand side, far-sighted public procurement, the organisation and regulation of markets with high growth potential, and support and incentives for early users of new technologies have helped “pull” innovation and investment through “mission oriented” policies (see Mazzucato, 2013, for a comprehensive review of recent initiatives). Similar policy tools have in some cases shifted production and consumption towards more sustainable patterns; in Europe the diffusion of wind and solar energy is the result of the use of such instruments. In fewer cases policies have “empowered the users”, letting them define specific applications of existing technologies that may lead to new goods and services with large markets. Finally, policies have aimed at building closer relationships among all actors of national and European systems of innovation - firms, financial institutions, universities and policy makers - helping to coordinate decisions of public and private actors.

The funding for such policies has generally come from national public expenditures, the granting of public capital to state banks and enterprises, and from financial markets through bonds with various degrees of public guarantee. Austerity policies, EU constraints and pressure for fiscal consolidation on national public budgets mean that different types of funding have now to be developed, with a focus on European-level initiatives.

Europe represents a key case where the potential for a new continent-wide industrial policy hold important promises. The need for rebuilding and restructuring economic activities in

Europe has recently led to a series of policy proposals. The German trade union confederation DGB has proposed “A Marshall Plan for Europe” (DGB, 2013), envisaging a public investment plan of the magnitude of 2% of Europe’s GDP per year over 10 years. Along the same lines the European Trade Union Confederation has developed the proposal of “A new path for Europe” (ETUC, 2013). Previous work advancing such arguments include Pianta (2010), Lucchese and Pianta (2013); in the EuroMemorandum 2014 Report (EuroMemo Group, 2013) a version of this proposal is developed.

Building on such a debate – and on previous experiences in Europe - we can argue that an ambitious but realistic proposal for a new industrial policy in Europe could be developed on the basis of new institutions, governance mechanisms and funding arrangements (the full proposal is in Pianta, 2015).

Individual EU countries are too small to develop an industrial policy that could be effective in the current context of globalisation. The new industrial policy has to be set within the European Union and – if required – within the institutions of the Euro-zone. This is needed in order to coordinate industrial policy with macroeconomic, monetary, fiscal, trade, competition and other EU-wide policies, providing full legitimation to public action at the European level for influencing what is being produced (and how). Major changes are required in current EU regulations, in particular the ones that prevent public action from “distorting” the operation of markets. The expansion of economic activities that markets are unable to develop should become an explicit objective of EU policy. The EU level is crucial also for funding such policy. As this policy is likely to meet opposition by some EU countries, a “variable geometry” EU policy could be envisaged, excluding the countries that do not wish to participate.

A close integration has to be developed between the European dimension - providing policy coherence, overall priorities and funding -, the national dimension – where public agencies have to operate and an implementation strategy has to be defined - and the local dimension – where specific public and private actors have to be involved in the complex tasks associated to the development of new economic activities.

Existing institutions could be renewed and integrated in such a new industrial policy, including – at the EU level – Structural Funds and the European Investment Bank (EIB). However, their mode of operation should be adapted to the different requirements of the role here proposed. While in the short term adapting existing institutions is the most effective way to proceed, in the longer term there is a need for a dedicated institution – either a European Public Investment Bank, or a European Industrial Agency - coherent with the mandate of reshaping economic activities in Europe.

A system could be envisaged where EU governments and the European Parliament agree on the guidelines and funding of industrial policy, calling the EU Commission to implement appropriate policy tools and spending mechanisms. In each country a specific institution – either an existing or a new one, either a National Public Investment Bank, or a National Industrial Agency – could assume the role of coordinating the implementation of industrial policies at the national level, interacting with the existing national innovation system, policy actors, the financial sector, etc. More specific Agencies, Consortia or Enterprises, with a flexible status but a strong public orientation, could be created (or adapted, if already in place) for action at the local and regional level and for initiatives in particular fields.

Funds for a Europe-wide industrial policy should come from Europe-wide resources. It is essential that troubled national public budgets are not burdened with the need to provide additional resources and that national public debt is not increased. The order of magnitude of the funding for an industrial policy programme that could address the challenges identified in

section 2 above is the one suggested by the DGB plan and by the ETUC proposal – 2% of EU GDP over a period of 10 years, that is about €260 billion per year. As terms of reference, we can note that the European Central Bank provided in the period December 2011-March 2012 alone €1,000 billion of special funds to private banks at 1% interest rate, with no success in turning them into real investment; EU Structural Funds in the period 2007-2013 reached €347 billion; annual lending by the European Investment Bank is €65 to 70 billion per year. An investment effort of about 2% of EU GDP appears to be feasible – considering the size and power of European institutions - and would be big enough to compensate – at the macroeconomic level - for the lack of private investment and low exports, effectively ending Europe’s stagnation.

Different funding arrangements could be envisaged. The most feasible one includes bonds issues by the EIB and bought on the secondary market by the ECB – as suggested by Greek economic minister Yanis Varoufakis at the Cernobbio business forum of March 2015. More generally, for the group of Euro-zone countries, financing through EMU mechanisms could be considered. Eurobonds could be created to fund industrial policy; a new European Public Investment Bank could borrow funds directly from the ECB; the ECB could directly provide funds for industrial policy to the spending agencies concerned.

As suggested by the DGB proposal “A Marshall Plan for Europe” (DGB, 2012) - funds could be raised on financial markets by a new European Public Agency; funds could come from the Europe-wide receipts of a once-for-all wealth tax and from the newly introduced Financial Transactions Tax. Such tax income could help cover interest payments for the necessary projects that are not profitable in market terms. This arrangement would not burden domestic public finances and could visibly make the connection between policies for downsizing finance, taxing the rich, reducing inequality, and the industrial policy that could lead to new economic activities and jobs.

An alternative may come from a deeper European fiscal reform, introducing a EU-wide tax on corporations, thus effectively eliminating fiscal competition between EU countries. Perhaps 15% of proceedings could go to fund industrial policy, public investment, knowledge generation and diffusion at the EU level; the rest could be transferred to the countries’ Treasuries.

Opening up a debate on an industrial policy targeted to rebuild Europe’s production capacity and provide employment with high skills is an urgent task. A wide range of ideas and proposals have to be shared and discussed. The political obstacles for such new actions are indeed huge, and major changes would be required in order to implement them. But the results of such efforts could be very important – ending stagnation, creating new high wage jobs where they are most needed, greater social cohesion and public action, progress towards an ecological transformation, and greater democracy in economic decision making.

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