ROSA LUXEMBURG STIFTUNG
BRUSSELS OFFICE

PROGRESSIVE INDUSTRIAL POLICY FOR THE EU?

OUTMANOEUVRING NEOLIBERALISM

FOREWORD

WHY THE EUROPEAN UNION NEEDS A GENUINELY PROGRESSIVE INDUSTRIAL POLICY

The warmest decade on record in Europe fell between the years of 2002 and 2011. Statistics show that heatwaves and floods are on the rise. Southern Europe in particular is suffering from low river levels, and the agricultural sector is plagued by heat and water shortages. Crop yields are expected to fall in southern Europe, a region that has suffered from a massive wave of de-industrialisation since the global financial crisis hit in 2007.

Those are just a few examples of drastic climate change, each of which shows how the climate crisis is slowly but surely making itself felt in the EU. A major reduction in CO_2 emissions is vital. Europe needs to decrease consumption of fossil fuels, i.e. coal and gas.

The debate about the de-carbonisation of our energy system is far from being a technical discussion. Neither a top-down solution in the form of prohibitions or blind faith in the market will help here. "[…] we're going to put a lot of coal miners and coal companies out of business, right?" That quote from Hillary Clinton, which Donald Trump ripped out of context and used to attack his opponent during the election campaign in the large coalfield regions of the USA's Eastern Seaboard, highlights something that is rarely part of the public debate: the connection between a just transition and democracy. Example? McDowell County, West Virginia, the former centre of the USA's proud coal mining industry, is a prime example of the problem. Today, it is the poorest county in one of the poorest states in the USA. Life expectancy there is lower than in 1980. In the primaries, Donald Trump proved more popular in McDowell County than anywhere else in the USA, winning a massive 91.5% of the vote.

The second major crisis of 2016 is the crisis of the western democracies. The nations of the West arrived in the post-democratic era long ago. An even worse situation looms if they fail to find non-authoritarian solutions to the major challenges of our age. In such an era, the question of good and sustainable work, i.e. dignified jobs with gender-equal pay, is more important than ever. The alternative to a just transition would be to continue on the path towards a climate catastrophe.

The progressive forces in the European Union need to implement a genuinely vertical industrial policy that provides for good jobs and good pay in all (!) the regions of the EU for the benefit of the other 99%, and which helps all residents of the EU to live in dignity. Parties, trade unions and social movements need to work together and make every effort to ensure that our economies transition to a sustainable economic system with the aid of an active industrial policy. If that policy comes up against the limits of the EU's legal framework, we need to do everything in our power to change that framework. Drastic times call for us to take firm action together. It is only in this way that we can establish a human rights-based social democracy in the EU, as well as an economic system that protects the environment, while also providing everyone with a decent standard of living.

We invite you to read our first extensive publication on the topic of progressive industrial and economic EU policy and to engage in dialogue with us.

Have a good read,

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WHY EUROPE NEEDS A PROGRESSIVE INDUSTRIAL POLICY

The crisis started in 2008. The austerity policies imposed by EU institutions and the long stagnation of European economies have led to a serious divergence in terms of economic activities, investment, productivity, employment and incomes. A clear risk of fragmentation of the EU exists and must be countered not just with macroeconomic policy changes – moving beyond austerity – but also with a reconstruction of production capacity in the weaker areas of Europe. Industrial policy is the tool that is required in order to organise and implement such a reconstruction. A new set of principles, economic arguments, policy justifications with clearly defined objectives and instruments for policy are needed in order to develop a credible and viable agenda for Europe's industrial policy.

A DECALOGUE FOR INDUSTRIAL POLICY

In the current European context, the rationale for industrial policy is that it can steer the evolution of the economy towards activities that are desirable in economic terms (improving effciency), in social terms (addressing needs and reducing inequality), in environmental terms (assuring sustainability and preventing climate change) and in political terms (protecting key national and European interests). The economic rationale includes the search for improvements in static and dynamic efficiency (especially in cases of market failure), in coordination of decisions, in the framework conditions of economic activities. Gains in dynamic efficiency are the most important argument for industrial policy. Public policy can expand available resources, favouring the growth of firms and industries that are characterised by strong learning processes, technological change, productivity increases, scale economies, internationalisation, and rapid demand growth. The resulting benefits include faster growth of production, incomes, employment and competitiveness (Pianta, 2014, Intereconomics, 2015).

Industrial policy has traditionally been based on specific economic principles, associated to the search for greater efficiency. We argue that the two traditional economic principles justifying industrial policy should be expanded to a decalogue of principles that can guide the emergence of a progressive industrial policy in Europe.

Achieving static efficiency

A key concern of economic policy is that, in a short-term perspective, given available resources are efficiently used. This means that capital and labour should not be left unemployed and should be directed towards activities that are more productive; that domestic production capacity and potential demand are brought closer together. In the cases of *market failures* – where market mechanisms are inadequate and private profit-making firms cannot operate efficiently, as in the case of natural monopolies, the principle of efficiency requires that public policy makes sure (through a variety of possible forms of public intervention, including direct provision) that the goods and services needed by society are effectively produced.

Achieving dynamic efficiency

When a longer-term perspective is considered, resources are not 'given' anymore and the key economic question for industrial policy is how they could be expanded through research, innovation, investment, education and acquisition of new competences and skills. Public action can support dynamic efficiency through the growth of national industries with strong learning and productivity growth, able to sustain international competitiveness and high-wage permanent employment. As a result of these principles, industrial policy has to select economic activities where such potential for efficiency improvement and desirable growth exist. By its very nature, therefore, industrial policy has to *target* the economic activities that are encouraged to emerge and expand. Targeted policy actions have to replace the 'horizontal' approach of past decades that left the power to decide on the evolution of European economic activities to the market (that is to say, to the strongest firms). When we talk about a *progressive* industrial policy, we need to make clear what the principles that may qualify such policy are, in addition to the two economic criteria summarised above. Eight further criteria emerge as fundamental. They generally share the idea that new economic activities that are encouraged have be characterised by a high 'social quality' in terms of the democratic political process that is set in motion, of the technologies developed and used, of their impact on production, jobs, the environment and the distribution of gains.

Practicing democracy and diffusing power

Market processes lead to greater industrial concentration and to the extension of opaque connections between economic and political power, thus reducing democratic spaces. A key principle of a progressive industrial policy is therefore the use of public action for opening up new spaces for democratic practices in the deliberation of common priorities, decision-making processes and in action aimed at reshaping economic activities. The institutions of the new industrial policy, their forms of governance and the procedures they adopt, including the involvement of social forces, will have to be informed by the principles of democratic participation, representation and power diffusion.

Designing appropriate technologies

The direction taken by technological change is the result of private and public R&D programmes, of firms' innovation and organisational change in the context of broader social behaviour that includes the role of of workers, consumers and citizens. Socially unacceptable results of technological change have to be rejected and industrial policy should encourage technological change that is coherent with all other principles listed here. In particular, it should be ecologically sustainable and employment-friendly, avoiding systematic labour replacement by machines and the model of extreme robotisation associated to the Industry 4.0 project. Industrial and innovation policy should direct technological change towards market and non-market activities of greater public interest, including the areas identified below as key targets for industrial policy. In the context of the opportunities offered by Information and Communication Technologies, technological change should increasingly take the form of a social, cooperative and open process, expanding the sharing of knowledge in non-market forms – building on the experiences of Wikipedia, open-source software, peer-to-peer exchange, etc.

Reducing the role of finance

Industrial change in recent decades has been dramatically affected by the power of finance to shape business priorities, in particular through the 'shareholder value' principle. The pursuit of short-term financial gains has encouraged mergers and the break-up of firms, plant closures and stock buy-backs, and has reduced the resources available in firms for R&D, innovation and investment, accelerating industrial decline in most European countries. The extreme pay of top managers (Mishel and Davis, 2014) has also become a serious problem in Europe. A new industrial policy in Europe should be part of broader regulations that limit financial activities and reorient business practices, favouring productive investment rather than financial speculation, and clearly discourage the extreme compensation of top managers and a highly unequal distribution of rewards (Lazonick and Mazzucato, 2015; Lazonick, 2015).

Disarming the economy

Differently from the United States, European countries have a lower orientation towards military technology, industry and exports. The dangers of a militarisation of the economy – especially in times of stagnation and depression – are well-known in Europe's history. Military priorities distort technological change, reduce the resources available for socially useful activities, fuel arms races and international instability, and endanger peace, which has to be secured mainly by political, not military means (Melman, 1999). It is crucial that public action assumes the explicit objective of reducing the dependency of European economies on military production. Conversion of current arms production to civilian activities should be a key part of Europe's industrial policy programmes.

Supporting employment

Industrial policy has to be designed so that its outcomes are employment-friendly. The new economic activities that are developed have to be characterised by a high intensity of skilled labour, high knowledge and learning processes, and the possibility of paying high wages (Vivarelli and Pianta, 2000). As Europe's industrial structures evolve from 'old' activities with stagnating demand, low productivity, high international competition and stagnating wages to 'new' dynamic activities, industrial policy should accompany and orient this process of structural change with particular attention to the protection of workers, avoiding excessive job losses, reallocating and retraining workers hit by such a transition, and assuring adequate income and social protection to those losing jobs.

Improving ecological sustainability

The seriousness of the ecological crisis and of climate change mean that all policies (most notably, the policy aiming to reshape Europe's production structures) must give top priority to the improvement of the ecological sustainability of the activities that are developed. Sustainability requires that changes take place in parallel in supply structures as well as in consumption, with a move towards a consumption pattern that is more sober, responsible, sustainable, and locally sourced. This challenge goes far beyond Europe 2020 goals on the environment and requires a more radical departure in the reshaping of economic activities.

Assuring a fair distribution of benefits

The distribution of the benefits from industrial policy should be the subject of an open, democratic debate. Experience shows that, in the new 'Schumpeterian' activities characterised by new technologies, organisations and markets, most benefits go to new firms in the forms of high profits (often associated with a temporary monopoly), while old firms disappear. Workers of the former tend to obtain a smaller share of the functional income distribution, which nonetheless allows a faster than average wage growth. Workers at the disappearing firms are the losers in this process, as they lose jobs, income and security. The benefits of industrial policy also include the possibility of lower prices for the resulting goods and services to citizens, consumers and to other firms buying intermediate inputs for their production. Plans for industrial policy should also include consideration of these dimensions.

Supporting an even development of European countries and regions

Finally, all the issues discussed above take place in space: in specific countries, regions, cities and localities. Market processes lead to an increasing polarisation between 'centre' and 'periphery', between areas concentrating economic strength and areas hit by marginality and decline. A more even geographical distribution of economic activities is required by basic principles of social justice and solidarity, by the need to grant equal opportunities for employment and progress and, by definition, by the principle of environmental sustainability. The industrial actions designed on the basis of the principles listed above should aim to a more even development of European countries and regions, assuring convergence of economic, social and environmental conditions within the EU.

These principles of a progressive industrial policy could be the object of a wide debate among public opinion, trade unions, civil society and political forces, leading – after a wide consultation – to the definition of a new set of policy goals that could integrate and improve the objectives of Europe2020.

THE POLICY RATIONALE

Moving from general principles to the specific policy rationale for developing a progressive industrial policy in today's Europe, we can point out five major reasons why a new progressive industrial policy is needed.

Macroeconomics

The first reason is rooted in macroeconomics. Exiting the current stagnation requires a substantial increase in demand, that could come from a Europe-wide investment plan driven by public policies.

Structural change

The second reason is associated with the changes in Europe's economic structure resulting from the crisis; major losses are taking place in troubled industries, a downsizing is needed of the inflated financial sector and no new large economic activities that could offer new useful products and services and provide new employment are emerging. Employment problems are worsening, with record unemployment rates in Southern Europe, extremely high youth joblessness, a rapid spread of 'non standard' jobs often associated with precarisation and insecurity (especially for women and youth), and low wages that leave many workers in poverty. A EU-wide industrial policy could drive the rise of new environmentally sustainable, knowledge- and labour-intensive activities with high skills and high wages. Specific activities that could be targeted include: the protection of the environment, sustainable transportation, energy efficiency and renewable energy sources; the production and dissemination of knowledge, applications of ICTs and web-based activities and health, welfare and caring activities.

The ecological transition

Third, a new EU-wide industrial policy could become a major tool for addressing the urgent need for an ecological transformation of Europe. Turning Europe into a sustainable economy and society – reducing the use of non-renewable resources, developing renewable energy sources and energy efficiency, protecting ecological systems and landscapes, lowering CO_2 and other greenhouse gas emissions and reducing waste and generalising recycling – goes well beyond the emergence of specific environmentally friendly new activities; it is a transformation that concerns the whole economy and society. A combination is needed of direct public action with provision of environmental services, and appropriate regulations for private activities, including environmental taxation, incentives, public procurement and organisation of new markets. A new EU-wide industrial policy could provide the framework for integrating the different policy tools needed for making Europe sustainable. With a pioneering role along the road to ecological transformation, Europe could also substantially increase its role at the global level.

Public-private balance

Fourth, a new EU-wide industrial policy is needed in order to reverse the massive privatisation of past decades. An economy based on private, market-based activities, with decisions left to the short-term interests of firms (where finance is playing a dominant role) has failed to sustain investment, employment and environment-friendly growth. The new activities outlined above require a substantial action by the public sector at the EU, national and local levels in setting priorities, investing and creating employment. Public action could provide direction and support to private activities, including the development of competences and entrepreneurship, access to capital, the organisation of new markets, etc. and could directly produce public goods, such as knowledge, environmental quality, well-being, social integration and territorial cohesion.

European cohesion

The need for greater cohesion and reduced imbalances within the EU and individual countries is the fifth reason for a new EU-wide industrial policy. Current changes in Europe's industrial structure open up a growing divide between a relatively strong 'centre' and a 'periphery' where a large share of industrial capacity is being lost. This leads to deepening imbalances within the EU – and within individual countries – in terms of knowledge base, investment, trade, employment and incomes. A EU-wide industrial policy could have a specific aim of reducing such imbalances, concentrating action in the countries of the 'periphery' and on the less favoured regions of the 'centre'.

Industrial policy can be an important and flexible tool for addressing all these priorities. In order to implement it effectively, there is a need for new institutional arrangements and funding sources, new mechanisms of accountable governance, efficient and effective operation, systematic links between the EU, national and local levels, and forms of democratic control with participatory practices.

OPTIONS FOR A PROGRESSIVE INDUSTRIAL POLICY IN EUROPE – HOW INDUSTRIAL POLICY COULD BE INTRODUCED

We propose a 'preferable' model of progressive industrial policy that takes into account the constraints for short-term action and the obstacles to political change. In addition, a longer-term course of action, and a variety of policy options that could be pursued in particular contexts are also proposed.

A EUROPEAN POLICY, NOT JUST NATIONAL ONES

The new industrial policy has to be firmly set within the European Union and – if required within the institutions of the Eurozone. This is needed in order to coordinate industrial policy with macroeconomic, monetary, fiscal, trade, competition, regulatory and other EU-wide policies, providing full legitimation to public action at the European level for influencing what is being produced (and how). Changes in some rules and interpretations are required in current EU regulations, in particular those on competition, State aid and trade that prevent public action from 'distorting' the operation of markets.

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 policy mobilising 2% of Europe's GDP

This policy has to be significant in terms of the size of new resources that are mobilised, that should be about 2% of Europe's GDP for 10 years, about € 260 billion per year. As a term of reference, we can note that EFSI envisages an investment plan of € 315 billion over several years; 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; and lending by the European Investment Bank was € 72 billion in 2013. 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.

Greater national policy space and a 'golden rule' for public investment

At the same time, national governments should be provided with a much greater policy space, relaxing the constraints on public investment through some form of 'golden rule' (Truger, 2014). Such a policy change could spur countries to invest annually the equivalent of at least 1% of Europe's GDP for the next ten years, taking advantage also of the current extremely low interest rates.

Reducing the divergence between Europe's centre and periphery

Industrial policy will have to focus on the reconstruction of production capacities in the regions and countries that have been most affected by the current crisis. A practical way of assuring this is to pre-determine a criteria for regional and national distribution of resources. For instance, 75% of industrial policy funds could go to activities located in 'periphery' countries (Eastern and Southern Europe, plus Ireland); at least 50% of them should be devoted to the poorer regions of such countries; 25% could go to the poorer regions of the countries of the 'centre'.

Public investment, public enterprises, support of private firms and other policy tools

An investment programme is at the core of the proposed European industrial policy, but other policy tools should be used with an integrated approach. In particular, the policy tools to be adopted by European industrial policy should include the following:

- a public investment programme providing public infrastructure and public goods;
- support for existing public enterprises and creation of new ones for the provision of public services and public interest activities;
- participation with capital shares to the creation of new private firms in key areas;
- new public-private partnerships;
- public procurement programmes for the goals of industrial policy; and
- 'mission oriented' innovation programmes guiding R&D and technological change.

Within the available resources assigned to each country, national governments should be able to decide the most appropriate combination of these policy actions.

A policy targeted to sustainability, ICTs, public services

The activities that are developed by European industrial policy should be highly targeted to a selected number of activities that are located in a variety of manufacturing and service industries. They include the following:

- *Environmental sustainability*. Industrial policy should favour the emergence of a 'green' technological paradigm based on 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.
- *Knowledge and ICTs:* The diffusion throughout the economy of Information and Communication Tecnologies (ICTs) has a potential for wider applications, higher productivity and lower prices. ICTs and web-based activities are reshaping the boundaries between the economic and social spheres with positive developments such as open-source software, copyleft, Wikipedia and peer-to-peer. Policies should encourage the practice of innovation as a social, cooperative and open process, easing rules on access to and sharing of knowledge, rather than rigidly enforcing intellectual property rules.
- *Health and welfare*. Europe is an aging continent with the best health systems in the world, rooted in their nature as 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. Social innovation may spread in welfare services with a greater role for 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.

An investment programme for sustainable, innovative, socially inclusive economic activities

The nature of the investments carried out and of the economic activities set in motion by the new European industrial policy should be characterised by a high environmental sustainability and 'social quality', combined with innovativeness and economic efficiency. The quality of labour involved, and the wages paid and the working conditions offered are all crucial aspects in shaping the proposed industrial policy.

The EIB first, a Public Investment Bank second

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 proposed here. 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 – possibly a European Public Investment Bank – coherent with the mandate of reshaping economic activities in Europe.

European policy, national and regional implementation

A system could be envisaged where the EU Council and the European Parliament agree on the objectives, tools, 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, possibly a National Public Investment Bank – 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 flexible institutional arrangements but with 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. The institutions at the national and local level would take responsibility for the selection of the new public activities that are required, of the appropriate policy tools, of spending decisions and projects to be developed. They would be subject to the strict monitoring described below. National initiatives would be able to use the assigned resources from European industrial policy and will be encouraged to combine them with additional national public funds and with private capital that could be attracted to invest in the key areas identified by industrial policy.

Democratic processes, not just technocracy

Europe's industrial policy cannot be reduced to financially-based investment decisions as currently done by the EIB. It has to be rooted and legitimised by a broad democratic process centred in the European Parliament, where key decisions on objectives, tools, guidelines and funding of industrial policy will have to be made. Rebuilding and reorienting Europe's economies requires technical competences, but is not a job that can be left to technocrats. The political process and democratic participation have to take centre stage in the shaping of Europe's industrial policy. The European institutions of industrial policy should be accountable to the European Parliament, who appoints its board where representatives from business, research organisations, trade unions, environmental groups and civil society organisations should be included. No 'revolving door' between industrial policy institutions and private firms and banks would be allowed. European institutions should engage in consultation with EU political, economic and social actors for developing the proposed industrial policy.

European public funds, no national funds

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. For the group of Eurozone countries, financing through EMU mechanisms could be considered. Eurobonds could be created to fund industrial policy; the EIB or 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.

An alternative may come from a deeper European fiscal reform, introducing an EU-wide tax on corporations, thus effectively eliminating fiscal competition between EU countries. A share of proceedings – perhaps 15% – 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. Other sources of EU funds could include an extended Financial Transaction Tax or a Europe-wide wealth tax such as the one proposed by Thomas Piketty (2013).

Long term, high risk public capital first, private capital second

The economic activities targeted by industrial policy tend to be characterised by high uncertainty, high risk, low short-term private returns and potentially high long-term public benefits. Some investment, however, may involve also private capital. In fact, funding arrangements could be different according the relevance of the 'public' dimension:

> The priority of public funds should go to public investment in non-market activities – such as public goods provision, infrastructures, knowledge, education and health.

> Public funds and long-term private investment should be combined in funding new 'strategic' market activities, such as the provision of capital for new firms in emerging sectors.

> Public support could stimulate financial markets and private actors to invest in firms and nonprofit organisations developing 'desirable' market activities that could more easily repay the investment.

In all cases, the rationale for financing industrial policy cannot be reduced to the financial logic of the 'return on investment'. The benefits in terms of environmental quality, social welfare, greater territorial cohesion and more diffused growth at the European level have to be considered, and the costs have to be shared accordingly.

Reinventing the governance of public-interest economic activities

A major challenge for the effective functioning and legitimation of a European industrial policy is the development of a new governance system that overcomes the problems of lack of efficiency, collusion between political and economic power and corruption that have emerged in the past. A practical arrangement could be that monitoring and evaluation procedures similar to those required by EU Structural Funds would be introduced in the case of industrial policy activities. More generally, the public interest activities that will be supported in various ways by industrial policy will have to be managed in a way that assures inclusive and participatory decision making, takes into account the diversity of social interests involved, is accountable to democratic processes, assures transparency in all steps, using also the tools now made available by open data systems.

Bottom-up competences and projects first

The targeting of selected areas for European industrial policy has to be implemented as much as possible with a bottom-up approach that is able to allow the potential for new production capacities to emerge at the local level. The approach developed by the EU 'smart specialisations' strategy could be extended in this context in order to identify effective initiatives with a critical mass and a significant local impact

Suspending European competition and State aid rules for these activities

The specific objectives and targeted activities of Europe's industrial policy should be temporarily exempted from the norms on competition, restrictions on State aid and EU single market rules for a period of five years. The very objective of industrial policy, in fact, is to develop activities that markets are unable to carry out and expand. This includes the possibility that targeted firms – with either private or public ownership – could be supported in various ways, including public procurement, in order to restructure economic activities and reshape market competition. The emergence of new forms of organisations for the new activities could also be supported.

Favouring coordination and pervasive effects in the economy

The transformation envisaged by Europe's industrial policy requires the coordination – at the European, national and regional level – among different aspects of of economic and social activities. For example, the moves toward a sustainable economy have to coordinate changes in production and in consumption patterns, favouring more sober and responsible lifestyles. Institutions will have to evolve alongside economic activities. Education, welfare, distribution and many other policies will have to interact with the changes emerging in production systems. The activities targeted by industrial policy tend to have pervasive effects throughout the economy and society; this process has to be favoured in order to obtain all the potential benefits from industrial policy.

A political and social consensus on rebuilding European economies

Finally, a new major European policy requires a large consensus from European citizens, social forces and political parties. The concrete benefits of ending Europe's stagnations, providing jobs and wages, improving environmental sustainability and social justice, could make easier the challenge to mobilise large support around the proposal of a European industrial policy.

NO ALTERNATIVE POLITICS OF EUROPEAN INTEGRATION WITHOUT A PROGRESSIVE EUROPEAN INDUSTRIAL POLICY

MAXIME BENATOUIL (transform!)

EUROPE AT A CROSSROADS

Is the European Union on the verge of collapse? We have witnessed a set of events over the past year that would tend to suggest so; from the moment that the SYRIZA-led Greek government was cornered into signing the most socially brutal and economically destructive of all Memoranda of Understanding, imposed upon the country on the 13th of July 2015, to the date on which a clear majority of British voters decided that their country would be better off outside the EU, opening up an unprecedented political void. And on top of all that, the conclusion of the EU-Turkey Agreement, aiming at deporting every single refugee setting foot on European soil to Turkey – therefore dramatically increasing the death toll in the Mediterranean, with 4,000 victims in the first semester of 2016 alone – represents a clear violation of the Geneva Convention, as well as a moral failure for Europe.

Even before he was elected Prime Minister in January 2015, Alexis Tsipras made very clear that the fate of Greece was bound with that of the EU. The so-called Thessaloniki Programme was not only about ending austerity policies and promoting sustainable development at home, but rather about proposing a change of course for the EU as a whole. Neoliberalism, gradually constitutionalised through the European Treaties, had never before been so frontally challenged in Europe. And that is the very reason why the Greek negotiation team was systematically greeted with open hostility, if not brutality. The lesson to be drawn from this is that the struggle for another EU cannot be single-handedly managed. One needs partners in crime (especially when one is a state whose GDP barely exceeds 2% of the EU economy), well-anchored social movements, reinvigorated trade unions and massive transnational solidarity. Social-democratic 'European partners' gave up on Greece, and the European solidarity movement was too weak to exert pressure on national governments.

However, this defeat should not send us off down the wrong path. Genuine cooperation is more needed than ever in light of all the challenges we are confronted with. To name but a few: opposing casualization of precarious forms of employment, growing social insecurity and social dumping between and within EU countries; tackling climate change and making sure that the inevitable energy transition will be just towards workers; saving the lives of those running from war-torn areas and shaping together tomorrow's European societies; and not heeding the right-wing populist siren's call the way so many of our leaders do when they sacrifice civil liberties and coexistence at the altar of an elusive fight against terror. A sluggish economy barely offering any perspective, a fear of losing grip over one's country (skilfully staged by far-right parties outside of all logics of class), and the threat – a quite real one – of downward social mobility for oneself or one's offspring are some of the factors that explain why so many Europeans throw themselves into the arms of social-chauvinist and/or openly xenophobic political forces.

The Brexit vote is to be understood as the latest example of this trend. A quick look at the results might show a clear divide between the winners and the losers of globalisation, but the reality is more complex. Working class voters massively supporting the leave-vote also used the referendum for expressing their indignation toward the entire political class while simultaneously rejecting the membership of an EU that they perceived as a major cause of their problems. Right-wing populist politicians added fuel on fire by blaming immigrants for the collapse of the social welfare system, carefully concealing the role of decades of neoliberal policies in the dismantling of labour and social rights. Regardless, the Brexit vote can be seen as a further indication of the deep-rooted disbelief over the very possibility of a European project capable of addressing citizens' needs. The many statements calling for Europe's reconstruction[1] popping up ever since should not distract us from the bigger picture. What is now on the table is basically *more of the same*: further 'securitisation' of EU borders on the one hand, and completion of the Economic and Monetary Union (EMU) on the other. The presidents of the European Commission, the European Council, the European Parliament, the Eurogroup and the European Central Bank have been advocating further labour market deregulation, the decentralisation of collective bargaining to allow for the maximum wage flexibility and the continuation of austerity for over a year. In other words, they advocate the very same policy mix implemented since the onset of the crisis, which proved to be ineffective and fuelled popular resentment, thus jeopardising the politics of European integration. The main thrust of the so-called Five-Presidents Report is best encapsulated by the following quote: "for the EMU to succeed, labour markets and welfare systems need to *function well"*[2]. But for whom? Probably not for workers. The European Commission strongly backed the French government in the midst of the massive mobilisation against a comprehensive package of labour market structural reforms, also known as Labour Law. As the Commissioner for the Euro and Social Dialogue stated, "this will address the rigidities of the labour market and should boost employment."[3]

To be fair, Angela Merkel, François Hollande and Matteo Renzi also stressed the need to boost growth, while meeting in Berlin shortly after the Brexit vote. No details have been communicated so far, but chances are slim that they will go beyond lip service and break with the way the EU sees investment. If it fails to draw from the failures of the Growth Compact approved by the European Council in June 2012 – that is, the lack of fresh money injected in the economy coupled with the extension of "growth-friendly fiscal consolidation[4]", which proved unable to create a virtuous circle boosting EU growth

1 http://www.theguardian.com/politics/2016/jun/29/brexit-reshaping-domestic-politics-eu-member-states-merkel [accessed 27/10/2016]

2 European Commission Press Release, 22 June 2015: http://europa.eu/rapid/press-release_IP-15-5240_en.htm [accessed 27/10/2016]

3 https://www.euractiv.com/section/social-europe-jobs/news/commission-backs-french-labour-law-reforms/ [accessed 27/10/2016]

4 Expression favoured by the European Council instead of austerity

and employment – the 'Investment Plan for Europe' is doomed to fail. Announced with great fanfare in November 2014[5], the so-called Juncker plan was officially approved in June 2015 and the European Fund for Strategic Investments launched immediately afterwards in order to tackle the investment deficit affecting Europe since the beginning of the crisis. Its main feature is to use a small fraction of the EU budget as a guarantee for the European Investment Bank's projects that would be riskier and more innovative than usual. These projects were to generate a total of € 315 billion of investment over the next three years through leverage and co-financing.[6] Since the plan got underway, only € 11.2 billion worth of projects have been approved. The Juncker Plan's take-off has been slow, considering that the plan foresees the EIB disbursing € 60 billion in three years, i.e. € 20bn/year[7], which falls short of initial expectations, to say the least.

It is no secret that the Eurozone's economy did not escape from stagnation. According to the latest Eurostat figures, the 19-member Eurozone grew by 0.3 per cent in the third quarter of 2015, while the average unemployment rate remains above 10%[8], with striking inequalities between countries. The crisis is still shaping European economies and societies: inequalities have steadily increased since its outbreak, hitting first and foremost low-skilled workers, women and youth. A certain idea of competitiveness – understood as a downward spiral towards ever lower wages, social protections and social dialogue – remains the cornerstone of EU-promoted policies despite their patent failures. Neither conservative nor social-democratic governments broke out of the iron cage of neoliberalism. Europe deserves better. If not, what would prevent right-wing nationalists from taking over the continent, ultimately leading to reinforced competition between countries and their residents?

We need to find global solutions for a better, fairer Europe. And to do so, an EU-wide industrial policy – or in other words, a strategy for Europe's productive transformation – matters. The very concept of productive transformation does not merely imply the reconstruction of European productive capacities, but also the establishment of a new model of development that meets social needs and ecological imperatives, with economic democracy as a compass. We believe that without strong industry, deeply transformed in its ends and means, Europe will be unable to escape from the present crisis and will not initiate the economic, social, environmental, and ultimately the political evolution that is urgently needed.

5 http://europa.eu/rapid/press-release_IP-14-2128_en.htm [accessed 27/10/2016]

6 See the discussion on the Juncker Plan in transform! Discussion Paper #1/2015, Towards Europe's Productive Transformation – An Emergency, 2015, pp 3-4, http://www.transform-network.net/uploads/tx_news/paper__5_PRINT.pdf. [accessed 27/10/2016]

7 http://ec.europa.eu/priorities/sites/beta-political/files/1_en_act_part1_v11.pdf [accessed 27/10/2016]

8 Eurostat figures, July 2016: http://ec.europa.eu/eurostat/statistics-explained/index.php/Main_Page [accessed 27/10/2016]

THE UNDERLYING OBJECTIVES OF EUROPE'S PRODUCTIVE TRANSFORMATION

Labour should be at the heart of our plan, leading to a new model of development for Europe. The orthodox discourse on competitiveness continues to consider it a cost, and never what it really is: the source of real wealth creation. Above all, it is the contribution of workers – together with their skills and experiences – at every stage of the production process that must impulse the very foundation of a progressive industrial policy. The critical shift away from this false vision of labour will allow for tackling unemployment and absorbing unutilised labour. Equally importantly, it will help us move beyond our blindness to the significance of women's unpaid reproductive work in the process of capitalist accumulation. Efforts towards a new model of development would be seriously hampered by a lack of any Marxist-feminist perspective. It is the entire system of waged labour, together with its gender-based set of inequalities, which should be revised. Besides, specific focus must be given to the young, who have been suffering for too long from the crisis. The brain drain of thousands from Southern EU countries with very high levels of education and skills must come to an end if we are to tackle the problems of growth potential at the source.

The democratisation of the economy must be a core element of any transformative industrial policy. The restoration of the public capacity to act needs a strengthened cooperation between different administrative levels, but also direct participation of citizens and workers. The institutions in charge setting the EU-wide industrial policy in motion must be transparent, democratic and accountable for their choices in order to ensure social participation. Strategic decisions must be carefully chosen on the basis of democratic consulting, taking into consideration other social interests – such as the voices of workers, trade unions, and local authorities. It is even more crucial when it comes to the selection of productive activities that could be granted public funding. Democratic decision-making will be especially needed for the re-localisation of productive activities and the development of short supply chains, as well as for defining what it will mean for concerned territories. The decision regarding the nature of investments must be a collective one. If the state must again become a key player, it is worth remembering that nationalisations do not necessarily challenge neoliberal capitalism or adequately address social needs. Public ownership must be rethought in a way that would make it a step towards social ownership of common goods and the achievement of economic democracy.

"System Change, not Climate Change" is one of the most powerful watchwords of the climate-justice movement. It implies that cosmetic changes will not be sufficient to take up the challenge, and that a systemic revolution of our productive structures is needed. We must tackle the ecological emergency with – not against – industry and its workers. Industry can count on human and technological capacities, as well as on research, to produce goods and services while preserving the environment. In this regard, delivering on energy efficiency is key. There seems to be a basic agreement among trade unions on the way to proceed, as shown by ETUC's "A New Path for Europe",[9] which recommends an investment of 2% of EU GDP per year over a ten-year period in energy efficiency, alongside a decrease in greenhouse gas emissions and energy consumption to lower energy dependency, investment in sustainable industries through massive support from research and development, and in public services – whose role must not be forgotten in the completion of the ecological transition, and whose quality must be improved.

Sustainable development should not rest upon cyclical factors, but should emerge from structural factors decided upon within societies. That is, it will have long-term characteristics and will not depend on international economic fluctuations to a large extent. However, the sustainability of development is directly related to its relationship with the natural environment and natural resources. Environmental costs cannot be seen as just another component of total costs, but as nothing less than a key limitation for any productive activity. Even in times of crisis, we are in no position to sacrifice environmental protection at the altar of (reckless) development. The climate emergency requires an in-depth transformation of both the production and the consumption models. The shift towards a new model of development will not occur without an improvement of civic-minded attitudes and collective skills shaping the even more necessary strong political will.

Re-localising productive activities is crucial for a progressive European industrial policy. Let us be clear: it is not about reducing social and fiscal charges, lowering the cost of fuel or benefiting from infrastructures sponsored by local authorities. It is about exiting the rationale that sets workers and territories into a framework of generalised competition. This firms/territories relationship is not sustainable. It prevents the implementation of a new model of development by applying the same logic as that of the markets and of finance. As a result, outsourcing and subcontracting have skyrocketed over the past three decades. No company has all the needed skills for its development and each company is dependent on the system it has created around it – its network. This network of interdependencies, though based on market competition, can lay the basis for another type of cooperation, binding together the different levels where companies operate, from the local to the European.

9 https://www.etuc.org/sites/www.etuc.org/files/EN-A-new-path-for-europe_3.pdf [accessed 27/10/2016]

Finance needs to be re-regulated, so that its grip over the real economy is loosened. Decades of triumphant neoliberalism have allowed shareholders to gain considerable influence, to the detriment of wages and productive investments. The extreme volatility of capital flows makes the return on such investments much less profitable, hence paving the way for the destruction of numerous industrial sectors and a concentration of highly competitive industrial fabrics in core EU countries' most dynamic regions. It is therefore of utmost importance to set up a coherent body of efficient mechanisms for slowing finance down, which would include a tax on financial transactions, a ban on high frequency rates-trading and the strict separation of deposit banking from merchant banking activities.

A plan for Europe's productive transformation cannot be progressive if it is not about reducing core-periphery asymmetries. As it stands, the Economic and Monetary Union has fuelled imbalances in trade and current accounts, and sharpened divides in terms of national industrial fabrics. Since 2008, industrial output has massively but unevenly declined in most EU countries, therefore leading to further polarisation. Apart from Poland, whose industrial production rate grew by 18% from 2008 to 2013, core EU countries managed – at best – to catch up with their pre-crisis level. They benefited from a specific (and Germany-led) industrial-relations system, relying on property and profits centralisation through outsourcing of production. However, the huge majority of EU member states did not succeed in reversing the profound de-industrialisation trend. Regional and structural funds failed at fulfilling their initial purpose: that of bringing living standards closer together and of helping economically challenged countries to develop sustainable economic structures. After eight years of crisis, the EU is more polarised and fractured than ever. Economic activities and political power tend to be more and more concentrated in a centre that limits the damage to its industrial fabric while the periphery has been disempowered by the Troika – politically, economically and socially.

A recovery plan for Europe cannot ignore these growing asymmetries. The on-going 'exporter centre/importer periphery' dichotomy must be overcome. EU periphery countries need a major investment package in their industrial and productive fabric, while the core must actively foster its internal demand. The reconstruction of value chains requires differentiated regulations regarding exchanges with the rest of the world and within the Eurozone in order to mitigate the pressure exerted on the weakest. However, such a radical change of rationale will never see the light of day if free and fair competition is not replaced with cooperation.

Will Brexit or the further gains of far-right parties with a nationalist, anti-European agenda be the electric shock leading to policies other than those being implemented since the beginning of the crisis? Looking at what the EU has to offer in order to counter popular resentment (further labour market deregulation and more sophisticated policing of EU borders), one cannot be all too optimistic. Business as usual will do nothing but feed the far-right, which has already proved to be – with too few exceptions – the main beneficiary of the crisis. The politics of European integration is at stake. And it might very well collapse if progressive political and social forces do not come closer together to promote a progressive EU-wide industrial policy. Given the current state of the balance of power in Europe, we cannot afford the luxury not to.

PROGRESSIVE INDUSTRIAL POLICY AND THE CHALLENGE OF SOCIO-ECOLOGICAL TRANSFORMATION

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ABSTRACT

This article argues for a comprehensive understanding of industrial policy as one important cornerstone of an overall socio-ecological transformation of our economies and societies. It intends to enrich and realign the current public debate about European industrial policy by focusing on its potential for redefining the European Union as a socio-ecological project, where labour-intensive sectors will benefit more than resource-intensive sectors. It outlines that transitions towards sustainability can be economically and socially beneficial and unlock new opportunities for prosperity. Before this background, the article examines the role of manufacturing companies based locally and regionally – in many cases, small and medium enterprises – and the perspectives and threats of current trends, such as Industry 4.0.

The article discusses industrial policy instruments and institutions in charge of their implementation. Based on the suggested narrative and on a thorough understanding of the current relevant governance structure, it outlines the key elements of a new industrial policy at the European level, which should comprise, first, a clear target-setting in economic, social and environmental terms and, second, new forms of economic organization at the enterprise level and between producers and consumers. The article concludes with recommendations for future decision-making based on a reorientated progressive social and ecological industrial policy within the EU and its member states.

A PLEDGE FOR A RENEWED PROGRESSIVE INDUSTRIAL POLICY

Despite the trend of de-industrialization in most EU member states, in terms of employment and value added, the manufacturing sector still holds the largest share of the EU-wide non-financial business economy. In 2012, approximately 2.1 million manufacturing enterprises with about 30 million employees created a value of € 1.620 billion (Eurostat, 2016). In general, the employment rate is much lower than the share of value added in this sector. Furthermore, 80% of EU exports can be assigned to the industrial sector.[1]

Industry, and thus industrial policy, represents an important part of economic and employment policy and – being of a cross-cutting nature – is linked to several other policy areas, such as environmental, energy or resource policy. Historically in the Western hemisphere, industry policy focused primarily on the promotion of industrial growth and efficiency. The applied policy instruments ranged from direct or indirect interventions in specific industries up to steering industrial development by nationalized or state-owned companies.

1 The term industry is defined in different ways. The abovementioned figures are based on section C of the European classification system of economic activities NACE (*Nomenclature statistique des activités économiques dans la Communauté européenne*), which is orientated on the International Standard Industrial Classification of All Economic Activities (ISIC). Sector C comprises 24 manufacturing activities, which do not include the mining and construction sectors (NACE sectors B and F). National statistical offices often do include the mining sector in their notion of industry. The term 'secondary sector' is even broader and additionally comprises the sectors energy as well as water, wastewater and waste treatment (NACE sectors D and E).

Starting in the 1980s, most European countries have faced a deindustrialization process, mostly due to the relocation of industrial production to other parts or the world, but also as a result of strategic orientation, for example within the Eastern Partnership (EP)[2]. This development particularly affected the countries at the European periphery and led towards increasing structural inequalities and significant social and environmental costs.

Industrial policy was largely replaced by competition policy during this period. Many governments started to pursue liberalization, opening their economies up to enhanced trade and investments. The beginning of not just economic and financial, but in a broader sense multiple, crises at the end of the past decade was the starting point of a kind of revival of industrial policy in the European Union. The call for a reindustrialization has emerged, going beyond the mere notion of industrial policy as an "engine of growth and competitiveness" as the EC stated ten years ago (European Commission, 2005). Recently published proposals for a renewed industrial policy aim at promoting a 'high-road' strategy for competitiveness, "by connecting it with innovation and climate policy and thus generating a so-called 'systemic industrial policy'" (Aiginger, 2014). Nevertheless, the comparative economic advantages of industrialized countries usually still remain in the centre of most policy proposals and related research activities, leaving behind, or at least putting less emphasis on, social and ecological objectives, such as ownership structures, social and environmental justice, distribution of wealth, decent work and access to (and the long-term sustainable use of) natural resources.

This goes along with the particular view of the actual crisis as a cyclical and not a structural one, neglecting that it was the globalized capitalistic economy which has led to the deep crisis in most parts of the world. The widening gap between the rich and the poor, also in the rich industrialized countries, represents an enormous risk. Maintaining the status quo hence implies declining standards of living, prosperity and quality of life for many people in European societies. Following the old pathways would further lead to accelerated environmental degradation and a deepening of the distributional divide within European societies; between the European centre and periphery as well as between the Global North and the Global South.

Therefore, two aspects can be considered crucial for a comprehensive industrial policy. First, the question of economic and social value creation will have to move to the centre of any progressive policy proposal. Distribution strategies and policies must be compatible with the ecological limits of our planet, and not based on selective strategies. Here, the manufacturing industry deserves further attention. Any progressive industrial policy must aim at reducing immediate negative effects, due to the economic downturn since the beginning of the past decade and the subsequently accorded political interventions, for large parts of the European population. Present austerity and low-income policies have led to the further weakening and demolition of social protection systems – to a

2 The Eastern Partnership was initiated in 2009 as a joint initiative of the EU, its Member States and the six Eastern European partner countries Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova and Ukraine.

varying extent within most European countries. The predominance of neoliberalism was also mentioned amongst the manifold reasons for the British population voting in favour of leaving the EU in June 2016, which on the EU side in the best case creates a new momentum for progressive and transitional policies.[3] And second, it must contribute to a long-term and overall socio-ecological transition of our societies. Industrial policy provides an important lever for contributing to a re-orientation of EU politics by placing employment and decent work, along with the ownership of production means, at the centre of economic and social policies on one hand, and maintaining a solid and environmentally sustainable economic basis for all member states of the European Union, putting special emphasis on the peripheral EU member states, on the other hand – without creating benefits at the expense of those living in non-European countries.

Similar to the unequal distribution of environmental risks and vulnerabilities across the planet is the responsibility for the dynamic rise of the global resource overconsumption. The mainstream debate generally confines itself to shared responsibility for environmental problems on the one hand, and in some cases on techno-scientific solutions within the framework of green economy and green industrial policy solutions, avoiding a political analysis of underlying power relations and their impacts, such as the privatization of natural resources and their global treatment as commodities, unequal access to policy-making processes and spaces, as well as hegemonic narratives like the supposed dichotomy of environmental problems and social justice.

Industrial policy is therefore at a critical stage in its development. The main challenge consists of linking the issue of industrial policy to a far greater extent to the topic of a required socio-ecological transition, taking into consideration resource use overshoot and its negative impacts at the global level. Social and ecological issues must be linked and provide the basic rationale for progressive politics, committed to the principles of a solidarity-based economy, taking into consideration that, until now, private and state-owned manufacturing industries have only reluctantly engaged with socio-ecological issues. A wider and coherent notion of industrial policy covering a wide range of related issues will be necessary. The concept of a socio-ecological transformation of the economy and society refers to the basic structures and modes of production, addressing, among other things, the issue of re-communalising natural goods. Here, industrial policy represents an important cornerstone. One major challenge for policy makers is to create an environment and provide support for manufacturers. Besides an appropriate regulatory framework – being the core of a progressive industrial policy – and ambitious public investment programs, this will require broad participation and cooperation among multiple stakeholders.

3 A few weeks after the Brexit referendum, there is no economic and political design for a Great Britain outside the EU and it is still difficult to predict consequences. Finance capital might go offshore and parts of the investments in British industry are likely to flow back to EU member states, while cuts in social welfare have already been announced.

OVERCOMING THE APPARENT CONTRADICTION BETWEEN SOCIAL JUSTICE AND SOUND ECO-SYSTEMS: THE ROLE OF THE INDUSTRIAL SECTOR

While analysing the present conditions and potentials for a reorientated progressive industrial policy, beginning at the EU level, two aspects stand out as crucial: the unsustainable use of natural resources on our planet and the growing unequal distribution of income and wealth. First, the extraction and use of natural resources on our planet in the capitalist economy ranges at a level that is far from being sustainable and is leading to well-known impacts, such as climate change, air pollution, water scarcity, desertification, biodiversity loss and steadily growing amounts of waste. Many of these effects are scientifically well-examined and documented, e.g. by the reports of the Intergovernmental Panel on Climate Change (IPCC), the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD, 2009) or the Millennium Ecosystem Assessment (The Millennium Ecosystem Assessment, 2005).

The origins of these unsustainable production and consumption patterns can be traced back to the beginnings of industrialization. Since then, the extraction of natural resources, encompassing water, biomass and abiotic materials, has experienced a steady increase as the physical basis of a steadily growing economy. Within the past 30 years, global resource extraction[4] doubled up to more than 70 billion tonnes per year. The largest part includes – with increasing tendency – non-renewable resources, such as fossil fuels, metals and minerals (SERI & WU, 2016).

Anyway, these figures still exclude the so-called non-used extraction, encompassing waste materials in the mining sector or soil losses due to erosion (among others). An estimated two to three times more materials are extracted than finally used. In the year 2000 for example, an estimated volume of between 40 and 50 billion tons of soil and earth were excavated just for the construction of infrastructure around the world (Bringezu, 2014). These amounts already exceed the regenerative capacity of the earth and significantly endanger the survival of future generations. Following the pathway of the economic development of the past years, resource extraction rates are likely to rise up to around 180 billion tons of material by 2050. The urgent need for developing new strategies for a global resource use within the ecological limits of our planet is closely linked to the question of the future structure of our economic system and the future modes of industrial production – overcoming path dependencies and going beyond the current discourses on green economy (Brand & Wissen, 2013), which aim at discovering new economic opportunities based on present or future scarcities. It has to be borne in mind further, that in the short run it is less likely to face an absolute exhaustion of specific natural resources, but a clear decline in quality, which can be foreseen to have direct impacts on the manufacturing sector.

4 In terms of the indicator Domestic Material Consumption (DMC).

A slight decrease of absolute shares of resource consumption at the regional level of Europe and Northern America in the past 15 years can mostly be attributed to relocation of production processes to other regions, particularly to Asia, where resource consumption rates experienced a corresponding upturn (SERI & WU, 2016). In accordance with the outsourcing of resource extraction and processing, many of the current crises' elements are not (yet) as manifest in the highly industrialized countries as in other places. In some regions, for example, fresh water has already become a scarce resource due to various factors such as irrigation or household consumption, but also due to its use in industrial production processes. More productive or efficient use of water in manufacturing may be encouraged by regulatory measures towards appropriate pricing for industrial water use and in order to prevent water pollution.

Second, the abovementioned environmental implications of the economic development of the past century, together with the reality of declining growth rates and neoliberal crisis management, led to stagnant incomes and a continually widening income gap between rich and poor. It is crucial to outline that transitions towards sustainability can be economically and socially beneficial and unlock new opportunities for prosperity. Demands for social justice and an intact environment are not mutually exclusive, they are mutually dependent.

DEVELOPING AND IMPLEMENTING A SOUND INDUSTRIAL POLICY – WITHOUT GROWTH?

In many highly industrialized countries, there is a clear, recognizable trend towards linear or even declining growth. Most recently, the big emerging economies also experienced an economic slowdown, for varied reasons. Several authors underlined the fact that the exorbitant economic growth rates of the past century have been an historical exception. Nevertheless, the growth imperative remains at the top of the political agenda, arguing that the slower our 'prosperity' grows, the more difficult will be its distribution. However, from 1950 onwards, the worldwide economy has expanded by an average of 3.65% each year. If it continues to expand that way, in the year 2100 it would be more than 200 times bigger than it was in the middle of the past century (Jackson & Webster, 2016).

Facing the above outlined impacts of the past century´s economic development, it becomes clear that in the context of the current multiple crisis and under the conditions of a globalized financial market capitalism, growth itself has turned problematic. Rising production of non-durable goods contributes to further instabilities, and not just in resource exporting countries (Brand, 2015). Apart from the physical limits or boundaries of our planet, evidence shows that growth is also socially limited, basically due to three reasons: First of all, the competitive mode of our economy in general contributes to raising pressure and competition at the expense of employment conditions and even rights. Second, after having reached a certain level in living standard, in general, additional material 'input' does not lead to any more growing personal satisfaction and happiness. And third, the devastating ecological impacts of economic growth are increasingly threatening the basis, and hence the quality, of our lives.

Instead of waiting for a return to economic growth or relying on technical solutions, several authors and social activists argue for a de-growth perspective in order to overcome the crisis (Brand, 2015). An economy with low or no growth rates may contribute to keeping resource use and its consequences at tolerable levels. There are no economic models and scenarios for the period 'after growth', examining the systemic consequences of prolonged weak, no- or de-growth. Neither distributional issues nor transformation scenarios have been studied systematically. Therefore, there is still a lack of knowledge of the effects on the industrial sector, future job creation, poverty elimination and welfare (re)distribution, or investments in education, health and care services.

At the same time, there is a clear lack of evidence that growth is an indispensable pre-requisite of high employment rates (Hinterberger, Pirgmaier, Stocker, & Ax, 2012). Identifying room for manoeuvre for the manufacturing industry within the existing limits and towards a positive vision for the future will imply a reorientation in various aspects. Facing multiple crisis effects (environmental, economic and social costs), a progressive industrial policy will require strong coordination with other policy fields leading to substantial shifts in different realms, from low-income policy towards a progressive working-time policy and working-time reduction, from labour to resource productivity, from environmental cost internalization towards an eco-social tax, venue reform and new forms of enterprise models and ownership. In the following section, some of the most relevant trends in the development of the manufacturing sector are discussed in more detail.

TRENDS AND KEY ISSUES FOR THE MANUFACTURING SECTOR IN EUROPE

Industry 4.0

In general, the notion of Industry 4.0 refers to networks of virtual-digital spaces and the physical world as well as information and communication systems and machine learning in production processes in different sectors. Forecasts project an increase in the degree of digitization within the manufacturing sector from 20% to 40% by 2025. Regarding its impacts on labour conditions and job creation, the predicted technological change under the umbrella of Industry 4.0 is likely to lead to a shift in employment from low towards high-qualification jobs and from the manufacturing sector towards services. Although probably not leading to an overall reduction in employment, the demand for low-skilled labour in industrial professions is especially likely to go down. This is seen to go hand in hand with an increase in labour productivity (Wolter, Mönning, Hummel, & Schneemann, 2015).

There is still no data on predicted environmental impacts following the technological changes in the manufacturing sector. As most available studies on Industry 4.0 are based on economic growth scenarios, this also 'frames' the predicted consequences for the economy and labour markets. Since an overcoming of the above outlined limiting factors to growth is not in sight, its further development remains open. However, there is an urgent need to integrate the topic of technological change and its impacts in a more detailed way in political and socio-economic analysis. Economic development is human-made and has always been subject to change. This also applies for direction of the future

Industry 4.0 pathway. Industry 4.0 does not just take place. It remains a political decision within our societies to define and create the suitable framework for Industry 4.0 in order avoid it moving in a politically undesirable direction and guarantee a favourable socio-economic benefit for our society.

Promoting resource versus labour productivity

A renewed focus on industrial development and job creation (and not just in Europe), is likely to further boost the demand for raw materials. However, at the latest since the publication of the study "The limits to Growth" by the Club of Rome in 1972, it has become clear that consuming more, and at the same time preserving the environment, will not be possible. For a long time, productivity referred to labour, leading to a (more or less) constant growth of industrial production. Therefore, a shift from labour to resource productivity is required.

Resource productivity should be a core element of industrial policy. A resource-based approach has the advantage of bringing together climate, energy and waste policy aspects and links job creation with cost reduction and social and technological innovation. Additionally, a resource-productivity focus is oriented at product lifecycles and includes an international perspective, so that the risk of problem-shifting (i.e. an externalization of environmental costs to foreign countries or regions) can be significantly reduced. Innovation and the implementation of new business models both take place at all scales and require adequate political support. At the EU level, the revised Circular Economy Package can be seen as a first step to preparing the ground for an economic transition towards an environmentally responsible and efficient economy. Anyway, as the circular economy has broadly been understood as a new economic paradigm, any political strategy should be based on a holistic view of global economic processes and therefore go beyond the definition of recycling rates and targets for certain types of products. A circular economy – following the three 'Rs' principle of Reduce, Reuse and Recycle – is widely recognized to provide a promising pathway towards resource savings, as the potential of linear economy models becomes more and more limited. A shift to innovation in reuse, remanufacturing and recycling could mobilize increased social participation and lead to future business and job creation – for example in the recycling industry – at the European level. Europe could take advantage of the opportunity to lead by example by linking circular economics with climate and energy targets.

In this process, there will be winners and losers. In any case, it will directly affect basic and extractive industries. However, one should be careful not to look at the resource-intensive industries of today as future losers. Sectors such as construction, food processing, metals, energy supply and motor vehicles have high innovation potential. So it is not about a structural shift towards services in general, but to initiate and politically support a timely change within these industrial areas. This might lead to the creation of companies with integrated material flow management providing the foundation for future material production and high-quality recycling.

Working time reduction in the industrial sector

In the 1980s, due to economic crises and rising unemployment rates since the 1970s, some European countries opted for the implementation of working time reduction measures in selected economic sectors. In Germany, where the unions advocated for working time reductions at the industry level, the metal and printing industries were among the first industrial sectors that reduced weekly working time gradually from 40 to 36 hours between 1984 and 1994. In some other industries, a lower reduction of working hours started in 1989. In return, employers were granted more flexibility in their working time.

Effects on job creation depend on many factors, such as labour organization at the enterprise level or the handling of overtime. In order to obtain broader political support for a working time reduction with no loss of pay, it may be implemented gradually, corresponding to productivity gains (Gerold, 2015).

Strengthening regional and local manufacturing and shifting its focus

Local and regional production systems, combined with shorter production chains and active support of small and medium enterprises, will contribute to raising knowledge and confidence. Furthermore, it will increase opportunities for firms in getting access to local capital for investments and therefore strengthen the local or regional economy. Although having experienced a slight decrease in numbers during the past years, the EU manufacturing sector is still characterized by a high percentage of SMEs.[5] SMEs are generally more labour-intensive and represent the largest proportion of employment (EU average 60%) across the European Union. In addition to strengthening local and regional production cycles, a shift in the focus of manufacturing from non-durable to durable products, from the delivering of products to the delivering of functions fulfilled by these products, and towards enhanced reparability may provide new opportunities for more labour- and less resource-intensive economic activities. Such a systemic shift may have far-reaching implications for industrial structures, but could clearly support social and environmental welfare at the local level.

LESSONS LEARNED AND RECOMMENDATIONS FOR A RENEWED PROGRESSIVE INDUSTRIAL POLICY

A reorientated progressive social and ecological industrial policy to support concrete production processes and systems is to be seen as one part of a broader process of change towards an overall socio-ecological transformation. This will necessarily have impacts at all scales and affect societies, institutions, our modes of production and reproduction, and our approaches to and handling of technologies. In order to initiate and accelerate this process at the European level and to define the appropriate types of policies within the EU and its member states, it is imperative to address the EU policy framework, as it has the capacity to set targets and regulations that have to be implemented at the national levels and therefore a direct influence on national policy making processes.

5 With between 10 and 250 employees

European industrial policy should focus on its potential for redefining the European Union as a socio-ecological project, where labour-intensive sectors will benefit more than resource-intensive sectors. Several policy mixes have proven their effectiveness in supporting environmental cost internalization, reduced resource extraction and use, as well as reduced labour taxes. Resource-based taxation instruments (such as construction mineral taxes) are already mentioned in the EU Roadmap to a Resource Efficient Europe (European Commission, 2011) and implemented in some EU member states, such as Bulgaria, Denmark, Lithuania and Sweden, amongst others. While designed and handled differently, it may be worth building on existing experiences at the national level and working toward a European Directive on Construction Materials Taxation.

Public procurement is an area where targeted activities could be broadly encouraged by proactive procurement policies at the national and local levels. As a consumer, the public sector can influence producing sectors by defining and applying enhanced socio-economic standards and thereby supporting selected industries, local manufacturing and small businesses. The promotion of circular economy systems can be actively supported by policy instruments like product design standards fostering reuse and reparability, or ambitious waste and recycling targets, which are partly included in the abovementioned EU Circular Economy Package or in the Ecodesign Directive. In this case, policies should be reinforced at the EU level, as different national approaches might easily counteract their effectiveness (Wilts, et al., 2014).

Generally, the current focus on technology and innovation within this debate should be expanded by including social innovations as well. Regardless, mobilizing social support will be crucial, as any socio-ecological transformation cannot proceed as a top-down process. The introduction of new technologies has to be broadly discussed in society, including their social and environmental consequences and possible opposite effects. Brand underlines the tensions between concrete projects and an overall societal process and the disregard of power structures and relations as two of the mayor ambivalences in this process (Brand, 2015). Involving the different actors and stakeholders and dealing with their often diverse interests and values will be one of the mayor challenges from the beginning. This applies for the development of a comprehensive perspective for European societies as well as for the orientation of industrial policy, the selection of industrial policy instruments and the involvement of the institutions in charge of its implementation. Nevertheless, the re-politicizing of our modes of production and, last but not least, in times of institutional weakness and raising euro-scepticism, it could lead to increasing momentum for coordination and cooperation in a European Union that is not just associated with widening income gaps, rising unemployment rates, social insecurity and decreasing living standards.

Recognition of the physical limits of growth requires a structural change towards an economy that is based on a vision of long-term environmental and social benefits and a satisfactory quality of life for all. This kind of structural change aims at a shift in the use of production factors and a redefinition of value added; away from economic indicators towards social benefit. Sustainable changes in behaviour cannot be and will not be

achieved by households and businesses alone, but require appropriate political conditions for strong participation and a mix of information, economic incentives, appropriate regulations, accompanying measures and public authorities as 'forerunners'.

The key issues for defining short-, medium- and long-term objectives and reframing the political debate include the following:

- Industrial policy has to be defined as one important part of an overall socio-ecological transformation in the context of a degrowth perspective and a holistic political strategy, encompassing (among other items) sustainable social, labour, environmental, fiscal and economic policies. Linking social and ecological issues deserves special emphasis.
- A sound combination of fiscal instruments, such an eco-social tax reform that leads to reduced taxes on less resource- or energy-intensive products or corporations, regulative measures for supporting local and regional manufacturing companies, and employment policy instruments aiming at a fair distribution of productive as well as reproductive work, will contribute to relocating production processes, supporting regional welfare and overcoming the centre-periphery dichotomy within the European Union.
- One crucial aspect is the need for encouraging stakeholder engagement, creating legal conditions and political support for new forms of ownership and new enterprise models, e.g. employee-owned companies. The question of how to include the private sector in an industrial transformation process is one of the main challenges.
- New indicators need to be developed and applied, supporting the shift from measuring industrial outcome in terms of manufactured value added towards employment rates, social wealth and wellbeing. These new metrics are necessary in order to assess and show the success of the applied policy instruments and the re-orientated public and private investments in resource-productive and socially beneficial manufacturing.

In a recently published article on the current state of the limits to growth debate, Tim Jackson and Robin Webster underline that it was not just physical processes which promoted the economy and social progress in some parts of the world, but also human creativity (Jackson & Webster, 2016). Recognizing this at least opens up a broader spectrum for policy responses orientated towards a long-term perspective for the wellbeing of future generations.

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LEFT INDUSTRIAL POLICY AND *INDUSTRY 4.0*

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DEFINITION OF INDUSTRY 4.0

The term *Industry 4.0* may appear to be excessively generic, as a label indicating a set of extremely heterogeneous phenomena.

As it regards our research, at least in this very first stage, we refer to Industry 4.0 with a special focus on its application to manufacturing productive processes in order to precisely delimit the scope of our investigation. In this context, Industry 4.0 can be defined as the organization of productive processes based on technology – especially internet – and on the use of devices such as sensors and chips, which autonomously communicate with one another along the whole value chain. These devices, thanks to connectivity, are incorporated both in the production process itself (i.e. in machines, robots, conveyor belts, and in the logistics chain between different establishments) and in final products.

The *smart factory* model is characterized by computer-driven systems monitoring physical processes, creating copies in the physical world and making decentralized decisions based on self-organisation Mechanism (European Parliament, 2016).

Industry 4.0 requires a comprehensive digitisation of the value chain and final products; this transformation may result in three different models of integration.

The first is *vertical integration*. At the company level, this kind of integration involves all functions: sales; product development (R&D, or Research and Development); planning; purchasing, manufacturing and logistics services; IT or shared services; and finance, tax and legal services. Business and manufacturing activities are vertically networked within companies and plants. The entire *vertical organization* is digitalized, end-to-end.

According to the Deloitte (2015, p. 6), "This vertical networking uses cyber-physical production systems (CPPSs) to enable plants to react rapidly to changes in demand or stock levels and to faults. (...) This requires data to be extensively integrated. Smart sensor technology is also needed to help with monitoring and autonomous organization. (...) Resources and products are networked, and materials and parts can be located anywhere and at any time. All processing stages in the production process are logged, with discrepancy registered automatically".

The second model is *horizontal integration*, which links together geographically dispersed value chains.

According to PWC (2014, p. 16), "The digitization of the horizontal value chain integrates and optimises the flows of information and goods from the customer through their own company to the suppliers and back. This process involves the integration and proactive controlling of all company internal departments (...). It also includes all the external value chain partners". Horizontal integration involves: suppliers (the network of suppliers, cooperation partners); the company (at all levels: planning, purchasing, manufacturing, logistics); and customers. These three parts and the interconnections within each of them can be managed in real time and in a synchronized manner via end-to-end digitization of the entire value chain.

Figure 1:
Le Blog ERP/GPAO (2015)

According to Deloitte (2015, p. 7), "similar to networked production systems, these (local and global) networks provide networking via CPPSs, from inbound logistics through warehousing, production, marketing and sales to out-bound logistics and downstream service. The history of any part or product is logged and can be accessed any time, ensuring constant traceability".

The third model of integration concerns the product: the *hybrid product*. According to Bryson (2008a, b), the three principles of hybrid production and hybrid product are:

1. The blending of manufacturing and services functions within production process and within product to produce hybrid production systems and hybrid product;
2. The fact that many services are increasingly the product of a complex manufacturing process; and
3. The increasing complexity of the production process means that must identify and conceptualise the interrelationships that occur between different elements that come together to create value.

The digital integration of the entire value chain can be fundamental for new forms of production, organized in the value chain as a whole. As an example, Figure 2 represents the automobile value chain: each car is the result of the assembly of many parts and components; the latter are realized by different firms, often located in different countries.

Figure 2 is also an example of how Industry 4.0 ensures end-to-end digital engineering of the value chain *as a whole*: huge investments have been made in order to integrate tools that support the entire lifecycle of the final product. CAD (Computer-Aided Design) tools are used for product design and simulation; CAPE (Computer-Aided Production Engineering) tools support the design and simulation of manufacturing systems; MES (Manufacturing Execution System) tools help to ensure the integration of product data all along product lifecycle while also supporting resource scheduling, order execution and dispatch, material tracking, and production analysis. 3D modelling allows linking of the virtual and physical worlds. In the latter, the application of the IoT (Internet of Things) enables the use of next-generation robots, intelligent power tools and 3D printing. These tools communicate with each other within the CPS (Cyber Physical System). Before the manufacturing stage, CPPS (Cyber Physical Production Systems) enable the de-coupling of production modules to support more flexible production.

In turn, the final product, being connected even after delivery to the final consumer, re-enters the value chain. First of all, after-market services realise predictive maintenance by remote monitoring of the final product itself. Moreover, the final good – a car, in this specific case – produces and communicates data (on the way in which it is used, on driving, etc.) which are then collected, delivered to producers, and hence used to develop new products to be designed, virtualized, put into production, etc.

FACTORY OF THE FUTURE, INDUSTRY 4.0, AND THE IOT

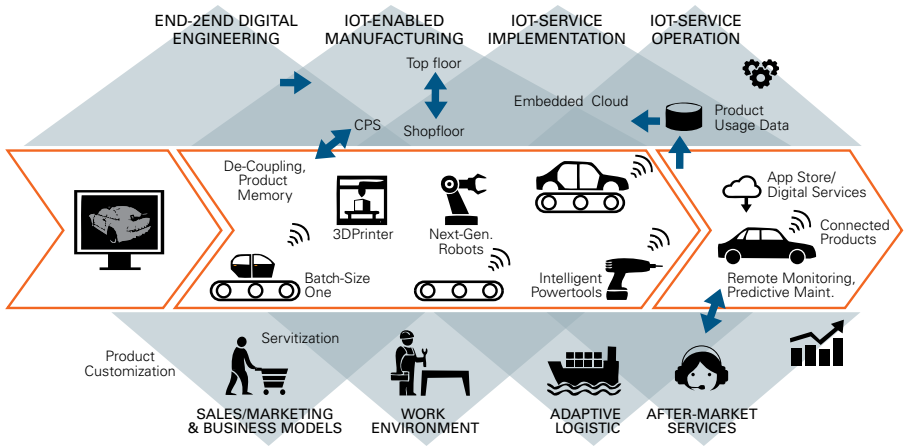

Figure 2:
Slama D., Puhlmann F., Morrish J., Bhatnagar, R. M. (2015)

Figure 3 shows the textile production chain as it would be under Industry 4.0. In high-wage countries such as Germany, textile chains are composed of many companies integrated along the chain itself. While high-tech sectors, such as automotive production chains, already incorporate some of the elements of Industry 4.0, the textiles production process is still quite traditional; implementation of Industry 4.0 would require information flows among all levels of any single enterprise to be shared to all the other links of the production chain itself. This would enable flexible and fast production, dealing in real time with orders of huge size. The use of digital technologies and CPS for internal company logistics can potentially lead to improved efficiency in production, too. Machines would communicate with each other and operators, providing information about their status and facing a set of maintenance issues. Textile machines with open interfaces would be highly flexible and able to independently adapt status based on an overall information platform. "Can, core and warp beam and fabric will become carriers of information. The implementation of this technology will lead to *autonomic* textile process chains." (Gloy et al., 2015, emphasis added).

TEXTILE PROCESS CHAIN

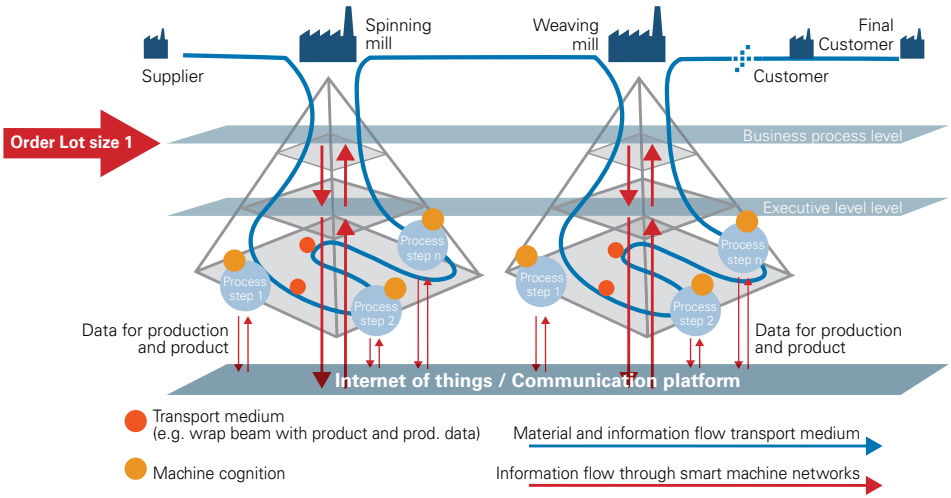

Figure 3:
Gloy, Y.S., Schwarz, A. and Grie, T. (2015)

To summarise, Industry 4.0 can be seen as the application of IoT to manufacture and services – it is no coincidence that General Electric refers to *industrial internet*. IoS and CPS aims at creating smart factories and products. This *Disruptive Innovation* allows linking together stages of the production chains which were formerly isolated thanks to RFID, chips and mini-transponders.

A fundamental role in technological change is played by CPS (Figure 4), i.e. online networks of machines organised in the same way as in a social network. Mechanic and electronic components are connected and can therefore communicate with each other.

INDUSTRY 4.0 FROM THE FIRM'S VIEWPOINT

Researches on Industry 4.0 by consultancy firms, stressing potential advantages for single firms, are by now widespread. The potentially advantages envisaged by such studies normally include the possibility of just-in-time maintenance, which saves time; localised and customised production (3D); employment of self-optimising and self-correcting machines; industrial virtualisation; increased efficiency; and, as already stated above, digital integration of the whole production chain via vertically integrated and horizontally networked systems.

It is worth listing the main developments brought about by Industry 4.0 by grouping them in the three broad areas of industrial, mathematical, and software developments.[1] It is a mere list which, however, can be useful for identifying and classifying the phenomena which we are going to investigate.

Industrial Developments Include:

1. physical facts detectors;
2. tools to convert analogical into digital signals;
3. digitally guided high-precision actuators;
4. radio communication;
5. increase of the processing power of microprocessors (Moore's Law);
6. flat screens (LCD);
7. rugged electronics;
8. low-power electronics;
9. electricity storage systems; and
10. large-scale optical fibres.

1 See IndustriAll (2015) for details.

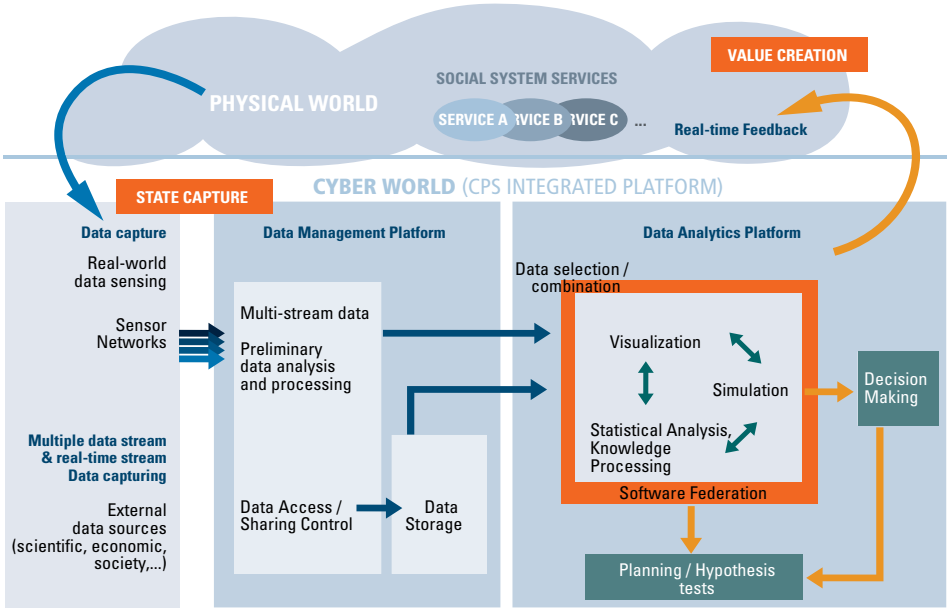

Figure 4:
Source: http://www.higashi.ist.osaka-u.ac.jp/~higashino/eng/research/CPS.html

Mathematical Developments Include:

1. digital signal processors;
2. management of large databases;
3. simulation algorithms;
4. 3D modelling;
5. simulation and predictive statistical algorithms;
6. security of sensitive information; and
7. 3D image synthesis.

Software Developments Include:

1. Internet Protocol (IP);
2. mobile phones protocols; and
3. Machine to Machine.

Eventual practical applications of these developments include:

- Internet: long-distance data transmission;
- RFID: Radio-Frequency Identification;
- Robot: programmable and flexible machines;
- Customisation of production;
- Cloud: long-distance information processing;
- Remote payments;
- Teleworking;
- Cooperation on shared documents;
- Mobile communication;
- Big Data processing;
- Satellite geolocation;
- Augmented reality.

ITALIAN GOVERNMENT

The Italian Government gave its opinion, in the person of the Minister of Economic Development, Carlo Calenda, during a parliamentary hearing at the Chamber of Deputies. According to the Minister, digitalisation will improve the competitiveness of the Italian manufacturing sector, starting from those production chains mainly based on SMEs. The first industrial sectors to be affected by Industry 4.0 will be machinery, industrial automation, components (especially automotive), aeronautics, shipbuilding, electronics, electrical machinery and logistics; however, in the future more traditional sectors – such as health, agriculture, transports, etc. – will be touched upon as well.

The Minister stressed some peculiar aspects of the Italian industrial structure which make it particularly subject to being affected by Industry 4.0. Especially in the sectors producing machines for industrial automation and components (mechanics and *mechatronics*), SMEs are clustered in industrial districts which would become more and more integrated with a reduction of the distance, within the value chains, between suppliers and subcontractors.

The Minister ruled out the possibility that Italian industrial policies will foster the development of vertical chains, instead giving priority to a horizontal approach based on innovation, internationalisation and recourse to the capital market.

The Government's plan includes five intervention areas. The first one is intended to provide for investment in innovation and legal incentives (laws for machinery modernisation, patent box, tax credits on R&D, etc.) to close the gap € 8 billion. The second concerns investments in technologies (connectivity infrastructure, reduction of SMEs' digital divide, improvement of STEM skills). The third area concerns interoperability and communication standards in order to foster production processes and business models based on IoT. The fourth aims at developing corporate finance in order to support companies' investments for Industry 4.0.

Finally, from the point of view of labour organisation, the Minister endorsed the need for making industrial relations more flexible by decentralising bargaining activities to the level of the single firms and closely linking salary adjustments and corporate productivity according to a model which, in recent years, has been strongly supported by the latest governments and CONFINDUSTRIA (the General Confederation of Italian Industry).

This March, the Italian Government introduced a draft bill where *smart working* is defined as meeting three characteristics: a) the working activity takes place both inside and outside the firm's premises, within the bounds of daily and weekly working hours; b) the worker might make use of technological tools; and c) tasks performed outside the premises do not take place in a specific work station. The most worrying aspect of this draft bill concerns the lack of reference to the kind of national collective working agreement to be applied to these workers; reference is only made to generic, almost ambiguous statements that the *smart worker* is entitled to emoluments that are *overall* equivalent to those granted to 'standard' workers. However, the meaning of the term 'overall' is not at all clear.

The Government's plan:
The entirety of the Plan concerns firm-level objectives: greater flexibility; shortening the time necessary for prototypes to be switched over to series production; decreasing set-up time, mistakes and machines stops; introducing sensors monitoring production in real time. The measures included in the Plan entail a commitment of € 13 billion in public resources to enterprises to leverage € 24 billion of private investment in innovation. However, it is not clear whether such investments would generate production and employment in Italy or abroad.

The infrastructure provision plan is already showing the first criticality: the realisation of ultra-broadband is extremely behind schedule. Moreover, the Plan hardly mentions a chronic weakness of the Italian industrial system: the predominance of small enterprises, usually part of more complex production chains whose head is located abroad, often in Germany. Finally the Plan adopts a horizontal approach to industrial policies, with the explicitly stated aim of avoiding the vertical approach.

The Plan lacks any reference to labour, except in terms of training and skills development. It provides no estimate of the balance between jobs creation and destruction, nor any analysis of the way in which Industry 4.0 will change workers' status and working conditions.

CONSEQUENCES ON LABOUR

In identifying the starting points of our field study, we followed the guidelines provided by Roland Berger (2016), according to which Industry 4.0 will unfold in three waves which will involve: 1) automotive and logistics; 2) machinery, energy systems, mechanical and electrical engineering; and 3) aerospace and chemicals.

Therefore, the companies involved in our research operate in transport equipment (Magneti Marelli, Bosch, Lamborghini, Alstom); machinery (IMA); production of plants and tools for the energy sector (ABB, Schneider Electric, General Electric); aerospace (Microtecnica); and domestic appliances (Karcher, Electrolux). Moreover, taking into account that the presence of well-established industrial districts specialised in specific production is an important peculiarity of the Italian manufacturing system, one possible development of this research could be the involvement of some of them.

Our approach to the possibility that Industry 4.0 and the developments brought about by it might destroy jobs is very cautious.

According to a recent study by Frey and Osborne (2013, p. 1), "about 47 percent of total US employment is at risk" due to computerisation and task automation. On the basis of the same methodology as Frey and Osborne (2013), the Bruegel Institute (2016) concluded that "the proportion of the EU work force predicted to be impacted significantly by advances in technology over the coming decades ranges from the mid-40% to well over 60%." However, studies based on other methodologies predict a different outcome. According to the Institute for Employment Research (2016, p. 4), between 2015 and 2025 in German industry, "490,000 jobs will be lost while in other areas 430,000 jobs will be newly created."

Different results depend on differing macro-simulation methodologies and baseline scenarios. There is no way of assessing which methodology is to be considered superior, or whether such predictions are reliable. Therefore, we chose to focus our study on detailed analyses of specific firms rather than macro scenarios. More specifically, rather than the issue of labour market, in terms of the balance between jobs destroyed and created as a consequence of Industry 4.0, we are going to investigate the way in which these innovations are changing labour status – new and more flexible forms of employment; the dichotomy between employment and self-employment – and labour conditions. Will it still be possible to realise social regulations such as working time restrictions, health and safety protection in workplaces, collective defence of the interests of workers, etc.?

Undoubtedly, new threats are appearing connected to Industry 4.0. Routine tasks (both in manufacture and in administrative services) are likely to be automatised and the corresponding jobs will disappear. As a consequence, medium-skill jobs are likely going to be strongly reduced, which would produce a polarisation of the labour force – between highly-skilled (and paid) and low-skilled jobs.

The consequences for labour conditions are going to be manifold. The skills polarisation mentioned above might result in a corresponding geographic polarisation, which could deepen centre-periphery asymmetries in Europe. A wide range of expertise might be required even for simple tasks. Working contents, processes and environment are going to radically change. Working time is going to become much more flexible, and traditional division of labour will disappear. Job performance is becoming denser and more subject to monitoring.

Our field studies are based on a framework aiming at: a) briefly describing company structure and ownership; b) analysing the business plan, with special attention to investments in new technologies (new processes, products, business models); c) assessing the awareness of Industry 4.0 among company staff; d) tracking the production cycle, including suppliers; e) assessing labour conditions in terms of employment levels, performance controls, working time and rate, tasks and skills.

Finally, the information collected is going to be employed to assess how Industry 4.0 and the innovations it is going to bring about is triggering a change in Trade Unions bargaining strategy.

A CASE STUDY: ABB ITALIA

ABB is the product of the 1988 merging of ASEA of Sweden and Switzerland's Brown Boveri. Its activity is organised in four divisions: Electrification Products; Discrete Automation and Motion; Process Automation; Power Grids for utilities, manufacturing, transports and infrastructures. Its presence in Italy is due to the acquisition of companies operating in the sector of plants and machinery for energy production, such as Sace, Tecnomasio, Elettrocondutture, Officine Adda, etc.

ABB is devoting particular attention to Industry 4.0. In its plans, automation must be integrated with data measurement; smart products and devices must become the centre of industrial processes; data generated by smart devices must be collected either directly or through automation systems.

ABB's products are themselves smart devices, machines and plants for digitalised substations; (remote) monitoring of machine function; management of energy-saving projects; smart management of mines; optimisation of transport routes and paths for efficiency and safety; and centralised fleet control. As a consequence, ABB also developed the main elements of Industry 4.0 in services as well, such as remote support for data collection and transmission to the cloud; management of energy consumption; remote control of robots; smart monitoring of frequency converters; and safe cooperation between robots and humans.

Moreover, in ABB plants, production processes are organised according to the basic principles of Industry 4.0. RFID gates register every inbound and outbound shipment. The transportation of components from arrival to storage is done by automatic conveyors and automated guided vehicles (AGVs). Customers' orders can be dealt with even at night, with an automated ordering system that guides customer orders to an automatic assembly line in real time. The automatic production lines also integrate traceability, and each piece produced is uniquely marked. Thanks to automated logistics, ABB implements automated storage, which controls the assembly lines. New orders are generated as stock runs low or a big order is received. The aim is that of reducing the risk of delivery errors to a minimum. A further priority objective is rapid response through remote monitoring, e.g. of energy production. Production processes are themselves controlled by a monitoring system, which works in real time and indicates equipment malfunctions, reports tests showing causes for rejected pieces, shows inventory levels and generates statistics from production data.

The white collars productivity project

The *White Collars Productivity* (WCP) project is part of ABB's general plan for the reorganisation of the whole group in order to save one billion dollars. At the time being, about 80% of white collars employed by ABB are based in western countries, and only 20% in 'low cost' countries; the explicit task is that of reversing this proportion. This operation concerns the reorganisation of ABB's service centres all over the world: Western Europe, USA, China, India, Mexico, Poland and Estonia. Production plants are also located worldwide: Italy, Sweden, Germany, Switzerland, Finland, UK, Spain, France, Norway, Benelux, Poland, Romania, Bulgaria, Czech Republic, Austria, and Estonia just to mention European countries.

The WCP project goes together with the many delocalisations concerning industrial production – which reduced direct costs – and will affect about 2,500 workers. The aim is that of reducing indirect costs such as administrative, planning and legal services. The technological revolution is running over office work, making it possible to reorganise offices which used to operate on a local basis. IT now allows the creation of common systems for the management of all data via global service centres. The new headquarters for Italian corporate services will be Cracovia. These new global service centres will manage IT, accounting, account management, tenders and HR. This is the last stage of corporate services centralisation. Formerly performed in every single plant, they were centralised at the national level (in Dalmine and Sesto San Giovanni, in the case of Italy). After completion of the WCP project, the Italian national headquarters will only compile annual consolidated financial statements and manage some specific customers.

Abb's bergamo (dalmine) plant

ABB production in the energy sector consists of four divisions: medium-voltage (MV) panels, switches, low-voltage (LV) components, and service. The four divisions are characterised by various degrees of automation and computerisation, where the less automatised one is the latter.

In the last three years, the MV panels division has been the subject of investments which generated significant changes in terms of safety, workers' skills, and working conditions. The most recent trials concerned logistics and material handling.

In the same years, a new management software system (*Manufacturing Execution System – MES*) and three conspicuous investments in machinery have been implemented. MES is software able to trace all the components of a panel. Therefore, a work station equipped with a computer can record all the tasks to be implemented and the components to be fitted on a panel. In this way, it is possible to avoid losing information on the components already mounted on the panel itself.

At the same time, ABB made investments in automation, like panels automatic payload: an automated forklift takes the MV panel from the production line and brings it to the required working area, e.g. for trimming or packaging, where another machine (introduced about

one year ago) reads via MES the technical characteristics of the panel and, on the basis of the results, decides upon the kind of packaging which is required and the destination.

The automated system allows mounting on the MV panels all the components which are necessary for its functioning: transformers, switches, protection, etc. The panels are purchased by utilities operating in the energy sector or by private companies, and used for power stations, ships, shopping malls, etc. An important part of the organisation of labour and production is the ability of the system to read the data sheets of the different materials in order to know which component is to be picked up for each specific stage of the production of the panels – which consist of heterogeneous materials.

The transformers are produced in ABB plants in Poland, Czech Republic, and Finland. MES can monitor the whole process, from the shipment of a component to its installation and future operation. By way of example, a transformer shipped from Poland to Bergamo is associated with an acceptance certificate. As the component is unloaded in Bergamo, MES reads the matriculation number, goes back to production plant, connects to the corresponding information system, tracks the acceptance certificate and imports it to the plant's information system. Formerly, this procedure performed was by hand by two employees who have now been relocated to other tasks – one of them now deals with maintenance. For the time being, this system is implemented in Bergamo only, but could be extended to the whole group, saving time and, most of all, staff.

New investments also allow internalising production stages which were formerly performed by suppliers. Until recently, carpentry was purchased from an external supplier. Now a machine (*Prima Power*[2]) has been installed that produces carpentry inside ABB. Prima Power is a 50-meter machine which develops carpentry with the aid of ABB robots that transport the sheet metals. All these machines communicate with each other thanks to software which was developed by Prima Power but is further programmed by ABB staff. In this way, ABB can produce metal sheets not just for its own use – while it used to purchase 80% – but it can also become a supplier for other firms.

Different production lines are now connected by a rolling stock system, which transports materials and components and is guided by MES. The system knows which components are necessary for each panel being assembled, and gives instructions on the location of components and their destination within the plant. For the time being, this system is not 100% automated: it still requires that an employee follows it and monitors its functioning. However, the implementation of this system strongly reduced manual handling of parts and components, which was entrusted to an external supplier.

2 Prima Power is a leading specialist in machines and systems for sheet metal working. Its offering covers all applications: laser processing, punching, shearing, bending, automation. Manufacturing facilities are located in Italy, Finland, USA and China.

Logistics also underwent relevant modifications in the latest years. The warehouse was physically moved 300 meters outside the plant. Here, components are received and stored in the corresponding shelves, from whence they are taken by the rolling stock system and directed to the production lines.

The enterprise resource planning system is SAP ERP, which manages all company transactions such as purchases, shipments, etc. SAP ERP and MES must communicate with each other, and therefore the two systems have been integrated. It is important to stress that we are not confronted by centralised management of production, but rather of an integrated system for managing the *organisation* of labour and production.

Safety was also affected by the introduction of new technologies. In particular, ABB developed a mobile app for smartphones called *Safety-APP*, which allows reporting of potentially dangerous situations. After access via company email, any worker can photograph and report dangerous situations. The description of the event is then forwarded to dedicated staffs, who evaluate the risk and set up the appropriate response.

Two additional characteristic elements of Industry 4.0 which can be found in ABB plant in Bergamo are virtualisation and the use of sensors. The latter are incorporated in robots, which perform two kind of functions: final check (two robots) and testing. In its turn, virtualisation is implemented in the R&D department, where specific 3D software allows simulation and test components to be produced. This software takes advantage of all data collected during all stages of production processes, and hence simulates the assembly of MV panels, their dimensions, and their functioning.

In the *Smart-Lab*, it is possible to simulate the whole energy production chain, from energy production to utilisation. Simulations are an integral part of the smart-city project, and specifically aim at monitoring energy loads and precisely locating potential breakdowns in power lines and stations. This latter function is being tested by ACEA, a utility based in Lazio.

Maintenance follows scheduled maintenance agreements, while non-scheduled maintenance can be required by calling a dedicated line. Moreover, a system called *My remote Care* provides components with a device that is programmed to compute the residual life of the component itself. The system then remotely alerts the customer when maintenance is due – an example of this application is that of energy stations in deserts: panels incorporate a computer that remotely communicates with ABB service facilities.

These systems increased the possibilities for control over workers, since all operations are traceable. Every work station equipped with a PC with MES records everything, from breaks to operation times. The latter are established by the company and communicated to Trade Unions, but they are not subject to bargaining.

Skills acquired depend on the company's decisions. For example, for the operation of the Prima Power machine, ABB decided to train four workers, of which two were newly hired temporary workers with the possibility of stabilisation. In other cases, as for the automated forklift taking MV panels, technology took over human labour: currently, only 5% of panels are handled manually. Moreover, the forklift knows in advance what it has to do, being part of an overall planning programme. On the contrary, human workers before the introduction of this centralised system had to ask what to do before each operation.

The impact on employment is hard to estimate. In fact, along with the introduction of these innovations, ABB industrial output expanded and changed its structure, and therefore employment levels before and after cannot be compared. The plant still employs 320 blue collar workers, as it did ten years ago.

CONCLUSIONS

The article briefly listed and described the main aspects of Industry 4.0 in order to assess whether or not they are already implemented in the case studies, which are the subject of our research.

The first case study we presented is that of ABB Italy, which shows the presence of a wide variety of Industry 4.0-peculiar elements capable of affecting labour. In particular, consequences may concern employment levels and distribution, the emergence of new skills and tasks, controls over the labour force, safety and remote communication.

Further investigation is needed in order to draw detailed conclusions. First of all, the study should be enlarged to include the whole value chain, i.e. suppliers of parts and components on the one side, and energy utilities which purchase ABB products and services on the other side. The aim is that of defining a bargaining strategy for Trade Unions which is up to date with these innovations.

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POLAND'S ENERGY POLICY

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Poland's most important raw material is coal: lignite and anthracite. Coal remains the basis for 80% of energy production, with anthracite accounting for 50% and lignite 30%. This high percentage has historical roots, deriving firstly from the coal deposits themselves and secondly from the fact that an advanced heavy industry sector requires a secure and stable supply of energy. The importance of this domestic raw material increased recently in connection with the Ukraine crisis: the question of the composition of the energy mix has again taken second place to the question of Poland's energy independence.

It should be noted that in the first years after the transformation which began in 1989, carbon dioxide emissions dropped dramatically since industry in particular had to undergo radical structural reforms. Experts estimate that the volume of pollutants fell by 100 million metric tons in 1989/90 alone.

However, this was at tremendous social cost. The decisions taken at the time were largely not based on a conscious industrial policy, but resulted from the uncontrolled failures of an enormous number of industrial plants, with a corresponding number of jobs being lost. Therefore we cannot speak of a structured, targeted process to reduce carbon dioxide emissions; and there are scarcely any well thought-out plans or ideas on how the high percentage of coal in energy production could be replaced structurally.

Political discussions, and even discussions across society, about the significance of coal production are stimulated whenever prices plummet dramatically on world markets, with every government over the past few decades trying not to open this Pandora's box since it is almost impossible to estimate the consequences. Currently, the world market for anthracite is going through a phase where prices are nosediving. The cost of one metric ton of mined anthracite was around € 77 in 2014, whereas the market price was around only € 70 on average. The industry will write losses of over € 570,000 this year. The state industry development agency has quoted a loss for 2016 of somewhat over € 7 per metric ton of anthracite sold.

The price of anthracite from Poland is mainly determined by mining conditions which, for a variety of reasons, are considered to be comparatively difficult and therefore cost-intensive. For several decades now, mining operations in many mines in the Katowice coal basin are being carried out at a depth of 800 to 900 metres, which has a noticeable impact on production costs. The coal faces, which are more difficult to access, require ever more expensive excavation technologies, with the traditional method of shaft mining - the usual method in Katowice - being much more expensive than modern mining systems, where the mined coal is transported to the surface on conveyor belts.

The structural losses of mining companies are most apparent in their difficulties in meeting obligations to their employees. Rumours that the mine is threatened with closure quickly make the rounds. The fate of the anthracite mining Kompania Węglowa is a recent example; the company no longer exists, even though until recently it was the largest anthracite mining company in the European Union. In 2014, the company made a loss of around € 500 million; in the first six months of 2015, another € 170 million of losses were added. 5.9 million metric tons of coal piled up, waiting for a buyer.

In 2016, the Polska Grupa Górnicza (PGG; Polish Mining Group) was founded in order to protect the position of Polish anthracite. The group comprised 11 mines and four mining companies that previously belonged to Kompania Węglowa. The new company intends to amalgamate coal production with energy production, although the prospects for this solution cannot be estimated with any certainty as of yet.

The main customers for anthracite in Poland are the large power plants, which are designed around this raw material. And this is also one of the main reasons for arguing to combine future production and consumption in one company. The main investors in PGG are Polska Grupa Energetyczna (PGE; Polish Energy Group), Energa and the Polish Oil and Gas Company (PGNiG), who are investing € 375 million. However, the decision to invest will increase pressure in the foreseeable future to shut down the older-type power plants, which are the real polluters, and replace them with modern installations.

Plants with a total output of 9,000 MW have to be shut down by 2022. They are supposed to be replaced by installations that are more productive and fitted with the latest emission protection systems. This type of coal-based power plant is currently being constructed in Opole, Jaworzyna and Kozienice; together these plants will have an output of 4,000 MW.

However, the decision to merge production and consumption in one corporate structure entails another orientation with certain consequences because anthracite will remain the strategic raw material for energy production. Hence, no alternatives will be explored. This means that the energy sector in Poland will now be even more closely linked to coal mining and will therefore make considerable investments in coal technology. A fatal cycle, which will be even more difficult to break out of in the future. So it should not surprise us to learn that the current Polish government considers the zero carbon emissions target of 2050 to be unachievable. In fact, the ambitious aim is now to switch around half of current energy production based on coal to other energy sources.

Energy producers are already anticipating a possible rise in energy prices for 2017. Experts estimate that each household will be faced with higher energy costs of between 20 to 50 euros per annum. The planned price rise could also be seen as hidden costs of recovery for coal-based energy production. According to a report of the economic think-tank WiseEuropa, published in May 2016, 40% of today's production would have to be shut down and 50% of employees dismissed in order to maintain investment options for the energy sector. Otherwise, investment capability would fall dramatically; this would immediately have to be compensated for by importing energy from abroad.

In the summer heatwave of 2015, a temporary limit to the amount of energy supplied was imposed on large customers, with the deficit being compensated with energy supplied from Sweden and Ukraine. At the time, a broader public debate was instigated on the question of alternative energies in Poland. However, the overall conclusion was that this type of energy still remains underdeveloped in Poland in comparison with other EU countries.

The idea of importing energy has traditionally not proved very popular in Poland. This is partly due to predominantly political problems regarding the supply of gas from Russia and the relatively unfavourable prices which Poland has been able to negotiate with Russian gas suppliers. Nevertheless, the experience of the hot summer of 2015 has encouraged the idea of promoting regional integrated energy networks, also across national borders. Poland's close cooperation with Lithuania comes to mind, with the commissioning of a 1,000 MW electricity link between the two countries at the end of 2015, which connects Lithuania to the network in Western Europe.

In times of falling coal prices, it is natural for mining trade unions to speak out against coal imports, even though, as it has been shown, imports are not the main competitor with coal production supplied to power plants in Poland, since the latter is necessarily relatively high-grade, while imported coal tends to be more interesting for private consumers because of the price. Coal as domestic fuel is still common in many areas of Poland and is one of the most important causes of high levels of air pollution, especially combined with unfavourable meteorological conditions. In cities such as Krakow, which are also located in a valley, bans were and still are imposed with the aim of rapidly changing the traditional source of domestic fuel.

The prosumer energy base in Poland is very underdeveloped, even though it would be a real alternative to domestic fuel. Altogether in the energy mix, renewable energies make up only 12% of total production. In relation to the installed capacity (figures from June 2015), biogas plants account for 191.4 MW, biomass plants 1,008.2 MW, solar power plants 35.6 MW, hydroelectric plants 980.3 MW and wind power plants 4,117.4 MW.

A major breakthrough, with a noticeable growth in the percentage of renewable energies, is not expected in the next few years. The regulations adopted recently, such as the distance between wind power plants and residential areas, will not necessarily have a positive impact on people's readiness to focus on renewable energy. There are few tax incentives for private households to look for alternative energy sources. People are often discouraged by the relatively high investment costs; therefore the next few years will not see any greater pressure placed on large energy producers from this quarter.

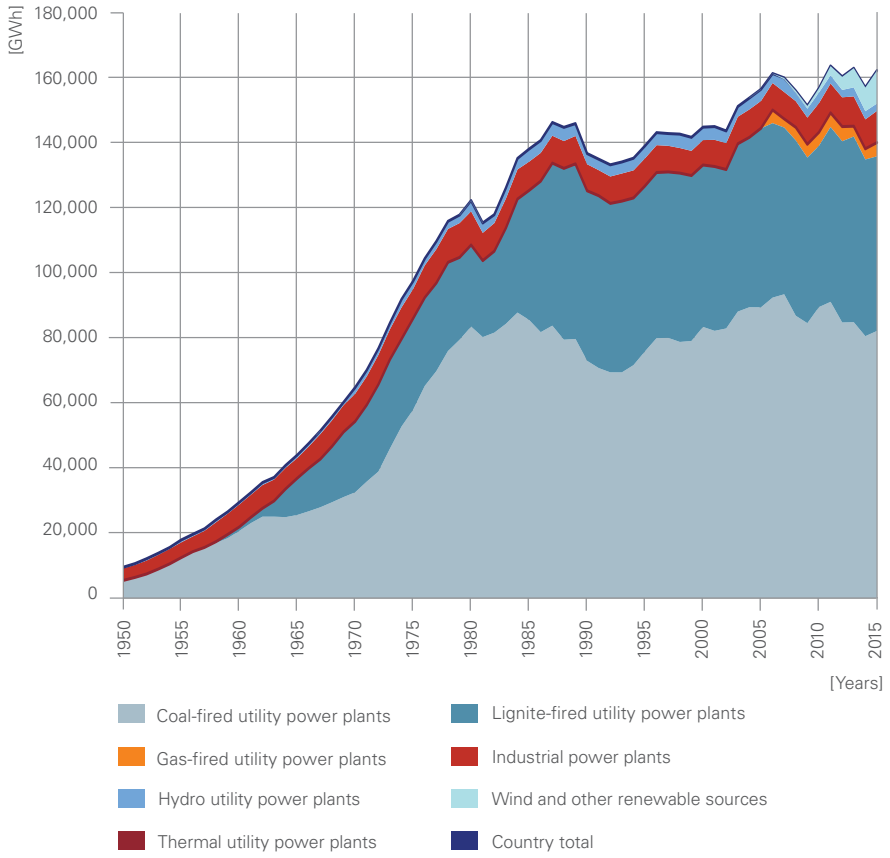
Society still does not sufficiently see renewable energy sources as a genuine alternative to the coal-based power generation favoured by the energy industry, with arguments bandied about that have long been debunked in other countries. For example, one argument that is frequently quoted is that of fluctuations in renewable energy sources.

In recent years, nuclear power has come to the fore again as Poland's only way out of this climate and energy dilemma, even though Poland has no nuclear power stations. Nevertheless, plans are still in circulation to build the first nuclear power plant in order to replace older coal-fired power plants. However, potential operators shy away from the high investment costs; nor has a financially strong foreign investor been found.

Just a few years ago, hopes ran high in Poland of being able to extract large quantities of shale gas through fracking, thus covering domestic demand for gas and exporting surpluses. However, the largest investors from the USA and Canada, such as Exxon Mobil, Marathon Oil, Talisman Energy, Chevron and ConocoPhillips, have all withdrawn from the Polish market after the test drilling phase because conditions for extracting the gas are comparatively difficult and hence expensive. Falling energy prices in world markets have also contributed to this decision. However, should conditions change, the possibility cannot be excluded that investors will again attempt to use this method to extract large volumes of gas from Poland's soil. According to estimates by the national Geological Institute, between 346 and 768 billion cubic metres of extractable shale gas are trapped in Poland's rock bed.

Miners' unions in Poland view the formation of the Polish Mining Group (PGG) with considerable scepticism, even though an undertaking has been given to initially protect existing jobs in a transitional phase until 2017. The over 5 million inhabitants of the Katowice mining area vividly remember what happened in the first years following the fall of Communism. A large percentage of the former mining workforce of over 400,000 was laid off in mass redundancies, a result of large-scale closures of numerous mines. The Polish coal mining industry now employs around 100,000 people, more than in all other EU countries together. Most of those involved know that jobs will be lost and the number of employees cut significantly (and that this cannot be prevented). A bridging company created specifically for this purpose with EU funding will be able to alleviate some of the consequences of mines being shut through 2018. However, there are no clear plans for the years to come.

ELECTRICITY PRODUCTION IN 1950–2015



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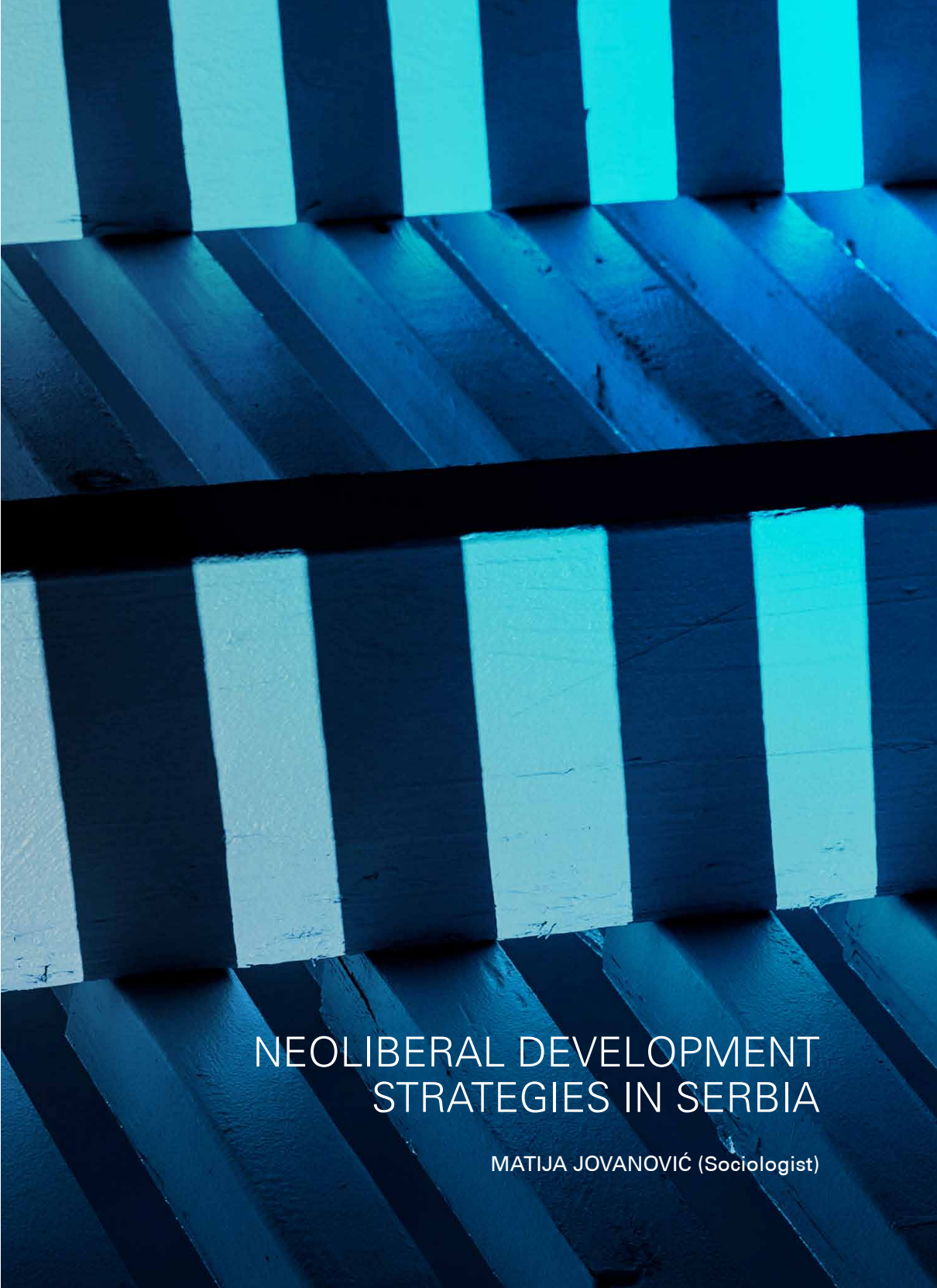

NEOLIBERAL DEVELOPMENT STRATEGIES IN SERBIA

MATIJA JOVANOVIĆ (Sociologist)

This paper discusses the industrial policy of Serbia – its goals, means of achieving those defined goals and broader implications of the policy overall. The first part of the paper will give a bit of social and historical context for the reader. The second part of the paper will analyse the document "Strategy and policy of industrial development of Serbia from 2011 to 2020".

Although different political parties were in power at the time of the release of the document, the current government follows the same matrix of ideas and political-economic practices that have been defined in the document. A new industrial policy was also announced during 2015 by the Serbian Chamber of Economy, but since it is not finished yet, it will not be analysed.

However, it was stressed that the new policy will be based on the document analysed in this paper, so it is safe to assume that the core ideas will be unchanged. The third part of the paper will single out the strategic goals defined in the document.

The conclusion of the paper will show the negative effects of the reforms proposed in the document that have been implemented in the meantime. Also, here we will argue that the continuation of such strategies and policies will have negative social consequences, and that there is a need for a radical turn in governance.

SPECIFICS OF TRANSITION IN SERBIA

Even though conventional wisdom suggests that the transition to capitalism started after the fall of Milosevic in the year 2000, the fact is that it had started much sooner and had a very specific path. It was actually the 1980's when the first arrangements with IMF and first steps towards capitalism were made.[1] What makes the transition to capitalism in Serbia specific is the period of so-called blocked transformation[2] during the nineties, a devastating decade for the Serbian economy and society in general. The fall of Milosevic in 2000 brought a new transitional period, called deblocked transformation i.e. the transition to capitalism was accelerating. New pro-capitalist government(s) started massive privatization processed, trade liberalization, deregulation of the economy and the cutting down of social security. Even though the conventional wisdom was that the purpose of privatization is economic growth, data showed that no significant progress was made.

From the beginning of the transition to capitalism through today, poverty, inequality, and unemployment have surged, and social mobility has decreased dramatically. The destruction during the wars of the nineties can also be considered a means for transition to capitalism, since the mobilization of the people was done though nationalism, a direct opposite of the ideology of brotherhood and unity in socialism. War was also one of the means for primitive capital accumulation. Since one of the effects of the wars and transition to capitalism had been deindustrialization, a reindustrialization strategy was introduced in 2011 by the government. The next part of this paper will analyse the proposed strategy.

1 The most important effects of the arrangements with the IMF were effective liberalization, deregulation and the start of privatization – legally all forms of property were now considered equal. For more on the topic, see: Balunović, Filip, 2015, O fenomenima procesa privatizacije u Srbiji, u: Vesiić, Darko et. al. (ur.), Bilans stanja: Doprinos analizi restauracije kapitalizma u Srbiji, Beograd, Centar za politike emancipacije

2 During this period, the old socialist elite – led by Slobodan Milosevic – was governing the process of transition to capitalism while converting their political capital (political power) to economic power. The transition wasn't fully stopped, but was slowed down as much as possible so the conversion would be successful. For more on the topic, see the same reference as in the former footnote.

CURRENT POLICY OF INDUSTRIAL DEVELOPMENT

The government document, "Strategy and policy of industrial development of Serbia from 2011 to 2020", defines the goals of the industrial/development policy of Serbia and the means for achieving those goals (from now on, it will be referred to as the Document). The strategy was – and still is – conditioned by international agreements and contracts. Even though the political parties that have led the government since 2012 are different from those that created the strategy, the core ideas and goals are still the same, which will be shown in the section dealing with the implications and effects of the aforementioned strategy.

One of the reasons this document is important is that it marks the near ending of the so-called *first generation of reforms* (privatization, macroeconomic stabilization, foreign trade and price liberalization) and the beginning of the *second generation of reforms* – creating a stimulative environment for investors, ensuring political stability and rule of law in terms of sanctity of private ownership and contract bindingness, an efficient legal system, a contemporary fiscal system in tune with the monetary system, a reformed public sector, an efficient banking sector, development of financial markets and private-public partnerships, a regulated labour market and employer-worker relations, and fighting corruption and the grey economy. Of course, these two generations of reforms are not successional, but in fact overlap. The second generation of reforms began when the new government was formed in 2012.

The general defined goal of the strategy for the year 2020 is a competitive economy integrated in the European market with low regulations and obstacles for capital, with minimal state interventionism. Serbia in 2020 is envisioned as an economy with growing industrial output, mainly in the area of high-tech industries (based on knowledge, innovation, research and development), that can find its place in a highly competitive market, and is of high added value.

In order to get there, the structure[3] of the economy has to be changed, alongside changes in the political and legal systems, the public sector, etc. Now, in order to change the structure of the economy towards such industrial output, Serbia needs things she doesn't have – investments and technology – so the new industrial policy needs to create an environment that will attract both.

3 The Document shows the structure of the GDP in 2009. As much as 63.5% of the GDP comes from the service sector.

Three key variables of the policy are defined as

- dynamic growth of investments;
- export-oriented manufacturing/processing industry;
- growth of employment in the industrial sector.

The Document defines strategic goals for the new industrial policy. These goals also address other policies that need to be in tune with the industrial policy, i.e. it shows how the industrial policy changes other policies. Some of the reforms are on their way, but some have already been made by the government in office from 2012 to 2016, led by Aleksandar Vučić, who also won the 2016 elections and is expected to form the next government.

STRATEGIC GOALS

Dynamic and sustainable industrial growth and development

The new policy views industrial growth as a key component in the recovery of the economy, lowering unemployment and increasing the living standard of the Serbian population. It also views industrial growth as the best way of decreasing the gap between the development level of Serbia and the EU countries.

Proactive role of the state

The Document states that in undeveloped and transitional countries, the state and its institutions have a pivotal role in finding optimal solutions for the development of technology and industry in accordance with international agreements. Still, the market is viewed as a crucial mechanism of resource allocation.

Improvement of the environment for the investments

In order to attract big investments, the economy has to be open, with a developed market and low bureaucratic and administrative setbacks regarding registration, employment, export etc. This has to be secured by the state.

Strengthening the competitive capabilities of the Serbian industry

This goal requires carrying out all transitional and reformative processes in order to employ all available human, material and natural resources for the purpose of development.

Inciting faster development of entrepreneurship

The state needs to promote and support the growth of small and medium private enterprises.

Increasing and restructuring of export

Export is viewed as a key factor in industrial growth, but since the main exports of Serbia are raw materials, the structure of the export needs to change. This will also have positive feedback in terms of lower foreign debt and the development of technology. Since the most of the export goes to EU countries, the industrial policy has to make the Serbian economy more competitive so it can compete on European market.

Reforming education in compliance with the needs of the economy

Education reform has to be directed towards the needs of the market and the economy. In order to be able to do that, there has to be a strong connection between employers, the educational system, institutes and scientific institutions. The educational system has to be reformed in such a manner that it can meet the demands of employers.

Active and dynamic cooperation of science and industry

Currently, both supply and demand for innovations are low for a number of reasons. The state has to ensure the rise of both through connecting R&D organizations and universities with the business community. Activities of the state are to be directed towards creating a favourable environment for R&D projects, working on new technologies and industrial innovation though allocating resources towards them.

Inciting innovation, research and development

Since corporate and entrepreneurial investment in innovation (in a number of joint publications from the public and private sector) and foreign income from licences and patents – are below the EU average, the role of the state is to create an environment for a rise in all three aspects.

New investments in new products

Industrial policy has to be directed towards favouring capital-intensive industry and the production of commodities of high added value. The stimulus for those industries is planned to be subsidized by the state.

Reform of the labour market and employment policy

The goal of this reform is lowering the fiscal burden on labour and employment, introducing flexicurity as a guiding principle of the labour market, having a responsible minimum wage policy, and increasing funds for subsidies to new jobs and on-the-job training.

Balanced role of the state (stabilizing, developmental and social)

Since ending the privatization and restructuring of the economy will have significant negative effects on society, in terms of inequality, high unemployment and low living standard, which in turn will have negative impacts on the economy, in terms of lowering demand and rising instability, the state has to find a way to balance out stability, development and social peace.

Development of regional industrial centres and regional business infrastructure

Serbia has great regional discrepancies in terms of development. The role of the state is to make sure that the development of industry is polycentric. Special programs and systemic measures are to be enacted for underdeveloped and devastated regions.

Improvement of energy efficiency

Since energy efficiency has a big effect on the competitiveness of the economy, it has to be one of the primary concerns of the state. Of special concern should be final consumption, the industrial sector and the construction industry.

Protection of the environment

This goal is to be obtained through promoting cleaner technologies, lowering pollution and building infrastructure that will support the development of industry.

Conclusion - Implications and effects of the strategy

Since the Serbian economy is envisioned as part of the EU, and all reforms are being conducted in that direction, the development strategy will necessarily lead to peripheralization of Serbia inside the EU. The experience of the other post-socialist countries, especially Balkan countries that were carrying out similar policies and strategies, shows that the only available seats in the EU are peripheral.

The idea that Serbia has to restructure its economy makes sense on an abstract level, but when it comes to concrete ways of doing it, problems arise. Serbia doesn't have enough capital for big projects such as reindustrialization, capital owned by Serbia's new capitalist class fled to tax havens, and state policy is not to intervene in the economy (at least not as an investor, producer, employer or the protector of the working class), nor does it have the technologies needed. That leaves two options – creating an attractive environment for foreign direct investment (FDI) or the rise of private foreign debt (private businesses buying new technologies on credit).

All state actions were and are directed toward attracting FDI. The problem is that other countries are doing the exact same thing. This phenomenon was described as a race to the bottom – underdeveloped and transitioning countries competing with each other for investments. The results of that are lowering incomes and lessened regulations, workers' rights and tax rates. This has numerous negative effects, from a decrease in state budget incomes to increased poverty, inequality and social mobility. A downward spiral is created, since decrease in budget incomes leads to more austerity, which in turn lowers living standards and demand, and has negative effects on the working class, pushing it into more severe poverty.

Some reforms have already been made in Serbia. First, the new labour law[4] was adopted, which lowered workers' rights, incomes and bargaining power and increased insecurity. So-called free zones were introduced all over Serbia, 14 of them to be exact, which have complete public infrastructure for capital to use, and a number of other advantages. Some of these are: no taxes whatsoever; a completely free flow of capital with no restrictions, from which the profits can be sent anywhere in the world with no strings attached; subsidies from local budgets; and lower prices for state provided services, etc. Here, we can see how private capital keeps profits, while the expenses of the infrastructure are social.

Also, for the needs of the shady investor from the United Arab Emirates, *lex specialis*, which effectively by-passes the entire legal system and constitution, was adopted. The investor was practically given, at no charge, the most valuable piece of land in Belgrade, and also enabled many activities that would otherwise be illegal.[5] The rule of law, hailed by the so-called reformers, was basically cancelled for the time being. New reforms in the educational system were again introduced, and the preliminary sketch coincides with ideas given in the Document.

The first generation of reforms had been proclaimed as a way of getting the economy going, and a way to increase the living standard and employment rate. The base was set with the first generation of reforms. The superstructure that is to be built with the second generation is necessarily predetermined by the base. Judging by the effects of the first generation of reforms, the second generation will have dire consequences on society, especially on the working class.

Former Prime Minister Aleksandar Vucic is now forming a new government. His program for the new government is focused on the economy. Judging by the 10-point program that has leaked, the direction remains the same.[6]

4 http://pe.org.rs/osvrti/matija-jovanovic-i-milan-skobic-izmene-radnog-zakonodavstva-kao-deo-neoliberalnog-kontinuuma/ (accessed 25/10/2016)

5 http://www.failedarchitecture.com/belgrade-waterfront/ (accessed 25/10/2016)

6 http://www.blic.rs/vesti/politika/blic-otkriva-program-nove-vlade-srbije-ovo-je-vucicevih-10-tacaka/1xwbj8r (accessed 25/10/2016)

CAN EUROPEAN SMES GROW UNDER CREDIT CONSTRAINTS?

PANAYOTIS G. MICHAELIDES (National Technical University of Athens)

INTRODUCTION

As a result of a variety of factors, the recent financial crisis has been the most severe in decades for most European Union (EU) countries, whose debt has risen dramatically at a time when the proportion of the population living under the poverty threshold has increased significantly. For example, in 2009, Gross Domestic Product (GDP) in the Euro Area (EA) declined by about 4.5%, and unemployment was equal to 9.4%, according to the OECD (2014). In fact, the recent economic, financial and social crisis in Europe reached points that are comparable to the Great Recession, especially for the countries of the so-called 'periphery'. In this context, just a few years ago, Greece had a developed economy with the 22nd highest standard of living in the world (Economist, 2005). According to Eurostat (2009), GDP per inhabitant in the country stood at approximately 95% of the EU average (see also Konstantakis et al. 2016). This performance was primarily due to credit growth, Economic and Monetary Union (EMU) membership, strong exports and the 2004 Olympic Games (Belegri-Roboli and Michaelides, 2007; OECD, 2007).

However, in 2010, the Greek economy faced a severe economic crisis. Since then, a number of austerity measures have been implemented by the so-called 'Troika'. In total, Greece faced an approximate 25% contraction of GDP in the 2008-2013 period and a very high unemployment rate, 27%, with youth unemployment at 60%, approximately. The country's debt rose from 105% of GDP (2007) to 170% (2011). In 2013, the proportion of the population in Greece living under the poverty threshold was equal to 23.1%, which is a record value since the 1990s and significantly above the EU-27 average of 16.6% (ILO, 2014). The situation has been similar for several other EU countries of the so-called 'periphery'.

One of the most serious consequences of the crisis is limited access to finance for EU companies, which hampers their capacity to invest and innovate. The recession has led to a reduction of funding capabilities, especially for small and medium-sized enterprises (SMEs). Actually, the unfavourable economic environment, including the conditions of credit asphyxiation for firms in countries like Greece (IMF 2013), hampers the economic performance of firms in terms of entry, growth and survival (Dimelis et al. 2015). In this context, tight financial conditions in the European Economic Area (EEA) pose a very crucial obstacle to the growth potential of SMEs, exactly because they are heavily dependent on bank credit (ECB 2013). As it was put by Jonathan Hill (2015), European Commissioner for Financial Stability, "European SMEs receive 75% of their funding from banks; European companies are four times more reliant on banks than American ones. So a drying up of bank lending […] had a devastating impact."

To deal with this critical situation, one has to answer the following question: "Given the limited access to credit for EU companies, especially for SMEs, which hampers their capacity to invest and innovate, what alternative forms of funding are there available in economies under credit constraints, such as Greece?" In order to be able to deal with the aforementioned research question, we will break down the current *problematique* into meaningful and relevant actions that could be taken.

BACKGROUND STUDIES

Financial and economic development can seriously affect firms' performance (King and Levine 1993; Rajan and Zingales 1998) and it cannot be denied that severe recessions are highly related to credit crunches (Claessens et al. 2009). For a review of the literature, see Dimelis et al. (2016).

So far, firm growth has attracted relatively limited attention in the relevant literature, with only a small number of studies focusing on periods of crises (Laeven and Valencia 2013; ECB 2012). However, the issue of firm growth, especially SMEs, has attracted increasing attention lately (see, among others, Coad et al. 2014), because it is the driving force behind new job and output creation, especially for young SMEs (Daunfeldt et al. 2014). In this vein, the work by Beck and Demirgüç-Kunt (2006) pointed to the role of access to finance as a growth driving mechanism for SMEs. Rajan and Zingales (1998) argued that higher financial development implies lower financing constraints for firms (Levine 2005), encouraging, in this way, firm growth (Bena and Jurajda 2011). See also Ongena et al. (2013) and Chava and Purnanandam (2011) for the case of US firms.

In this framework, it is widely accepted that banking credit is of outmost importance in the financial system and, of course, influences and is influenced by the macroeconomic environment of a given country (see, e.g., Cihák et al. 2012). Meanwhile, credit-related risk is associated with the functioning of monetary policy hindering growth as well (Illes and Lombardi 2013; Mayordomo et al. 2015). In two seminal contributions, Kaminsky and Reinhart (1999), and Demirgüç-Kunt et al. (2006), showed that, during deep and extensive financial crises, banks reduce the supply of credit, thus potentially affecting negatively the growth dynamics of the economic system. However, these reductions in bank credit do not always drive the economic system to stagnation (Abiad et al. 2014; Bijsterbosch and Dahlhaus 2015). For instance, Takats and Upper (2013) show no correlation between economic growth and the extent of bank credit growth in the first two years of recovery.

In fact, the ongoing 'recovery' in the euro area could be analysed in terms of a so-called 'credit-less recovery'. For instance, Calvo et al. (2006) analysed the so-called 'Phoenix miracles', i.e. 'credit-less recoveries', and the conditions under which output could regain its pre-crisis level without resorting to bank credit. Of course, firms that are heavily dependent on bank credit do not recover so well, as Kannan (2012) has shown. Similarly, Abiad et al. (2014) found that industries more reliant on external finance experience lower growth in credit-less events. Iyer et al. (2014) demonstrated that the shock from a reduction in credit supply is stronger for smaller firms with limited bank relationships, because they have practically no access to alternative forms of credit (Chava and Purnanandam 2011). But it should be noted that struggling firms will not be able to take advantage of this process, because only 'creditworthy' firms can receive credit and finance their activities, even in relatively 'bad times' (Bernanke et al. 1996).

SME'S GROWTH WITH LIMITED CREDIT?

According to Harriett Baldwin (2015), Economic Secretary to the Treasury: "European businesses, particularly our small and medium sized firms, are too dependent on the banking sector for accessing finance, especially at a time when bank lending is constrained. It's essential that we find more and better ways to give them the funding they need to grow and succeed."

EU financing

Of course, there are some relevant mechanisms that could help overcome the financial tightening, even in difficult situations (Beck et al. 2006; Aghion et al. 2007). First, from a European perspective, there are several interesting initiatives that could act as instruments that might potentially provide opportunities for credit issuing. These include, among others, the plan to mobilize several billion euros in an effort to kick-start the European economy (Juncker Plan, European Investment Bank EIB), or the European Investment Fund (EIF), whose stated mission is to support Europe's SMEs by helping them 'access finance'. Also, there are the Smart Specialization, Horizon 2020 and Structural Funds projects and, of course, the so-called flagship initiative ("An integrated industrial policy for the globalisation era") as part of Europe 2020.

However, attention should be paid to the fact that considerable regulatory reforms might be needed in this direction, because as regulations stand now, only elite players can have access to the generated funds.[1] Hence, a serious regulatory effort needs to be undertaken to examine how these funds can be managed and whether some of the prerequisites should be reconsidered or even dropped. Otherwise, such programs might easily result in negligible effects (if at all) or – even worse – in widening already existing inequalities.

Microfinance/Microcredit

Second, development of non-bank financial institutions which can provide alternative forms of funding is necessary, in particular by facilitating the development of new start-ups, through the improvement of the EU regulatory framework, ensuring stronger support for the development of microfinance and Microfinance Institutions (MFIs).

Microfinance is one of the most effective alternative ways of issuing credit. In this context, MFIs will play an important role in linking the functioning of formal financial institutions with less powerful members of the economy and society. Typical MFI costumers can have no formal access to bank credit and other formal financial institutions. MFIs traditionally focus on borrowers who do not have access to 'formal' financial markets (von Pischke 2002).[2]

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1 For instance, Greece was granted several billion euros by the National Strategic Reference Framework (NSRF) for the time period 2014-2020, but the country's struggling economy cannot make full use of the grant, because the rules governing the NSRF stated that only profitable businesses over the last three years are eligible. This is a very good example of the fact that these programs usually refer to very few businesses and not all SMEs.

2 A typical example refers to micro-entrepreneurs who run small stores, or street stalls, or even small-scale farmers and those who process or trade crops and goods. In other words, most MFIs focus their lending activities on micro-entrepreneurs whose income falls well below the poverty line, or SMEs that do not have access to mainstream sources of credit (Servon 1997).

In this context, MFIs will develop products and methodologies to satisfy various financial needs of low-income members of the economy. In practical terms, they will access financial resources from various institutions and provide individual microcredit loans directly to individuals and economic units in need, such as micro-entrepreneurs, villagers, and poor families.

The state could play a crucial role in supporting financial inclusion. In fact, governments or EU institutions should support MFIs, first by regulating the environment for financial inclusion and, second, by taking measures to support the poorest members of society. Third, governments could support this situation by making relevant 'government-to-people' payments easier and more accessible to vulnerable groups (e.g. social payments, wages, or pension payments). Of course, microcredit could be issued by various types of institutions such as credit unions, Non-governmental Organizations (NGOs), sectors of banks or even coalitions (co-operatives).

At present in the United States (US), where the outburst of the recent financial crisis has caused severe damage, there are several hundred organizations that provide support to microbusinesses, which are currently in the status of non-profit organizations (Servon 1997), and the majority of them have been operating for less than 10 years now (Pollinger et al. 2007).[3] Of course, international MFIs operating in developing countries have experienced much greater scale of demand for lending services and have facilitated the flow of capital to several million microbusiness owners (von Pischke, 2002; Pollinger et al. 2007).

Coalitions (Co-operatives)

Third, the development of Coalitions (Co-operatives) might be relevant for economies suffering from limited access to credit. A coalition (co-operative) could be viewed as an association, which is formed and democratically directed by people who come together to meet common economic and social needs, and are governed by their members, focusing on community interaction, mutual support and solidarity. In general, this type of organizations is based on open membership, democratic elections and independence.

The set-up of a coalition implies acquiring access to credit or becoming an entrepreneur with others who share the same goals, and operating according to democratic rules. The enterprise is not operated in order to maximize profits, but retains the right to share in any potential surpluses in the form of returns in proportion to the initial capital, salary or hours of work.[4]

These coalitions will, practically, consist of a group of trade and professional associations and individuals, along with SME's that collectively represent numerous workers

3 According to Pollinger et al. (2007), three processes have fueled the US growth in MFIs: (i) Changes in social welfare policies, (ii) a focus on improving the lives of the poorer (Servon 1999; Gonzalez-Vega 1998), and (iii) increases in the proportion of microenterprises by Latin American and Asian immigrants.

4 Although the primary goal of a coalition is not to maximize profits to finance the start-up or expansion of the business, any surpluses created are, in the general case, returned to members. In some cases, and in accordance with country-specific legislation, a coalition (co-operative) might not distribute its surplus and therefore might meet the definition of a non-profit organization.

throughout major sectors of the economy. One of the main objectives of such a coalition will be strong, permanent credit issuing for SME's and micro-entrepreneurs. Such organizations could also act as credit providers for alternative loan programs, while offering feedback at a local level in various sectors of economic activity. In this context, the coalition will be able to assemble a team of organizations and individuals, nationwide, who could provide individuals and SME's with affordable credit.

Parallel Currency

Fourth, there is no doubt that the European Community (EC) came one step closer to its goal with the introduction of the euro currency. Since the introduction of the euro, parallel, non-state currencies and currency alternatives have emerged, including customer reward systems, such as loyalty points, frequent flyer miles, barter and compensation platforms in private firms, and so on.

However, parallel currencies at the state level have not attracted the increasing attention of economists and policy makers, at least until recently, i.e. after the outbreak of the global financial crisis and the Euro crisis. Now, according to some voices in the economic community, parallel currencies, at the local or even state level, might also be taken into consideration as a more radical option for SME financing in a state of limited credit, after the outbreak of the financial crisis.[5] In fact, the so-called 'parallel currency' is often regarded as a mechanism that could facilitate economic recovery in crisis-struck countries like Greece.

Up to now, Greece – and some other over-indebted EU countries – has been strangled by the very demanding rules of the austerity programs dictated by the Troika. As a result, it is often believed that relying solely on the 'hard' Euro is not enough for such a weak national economy, because products and services are too expensive, making it impossible for the people and the SMEs in this country to recover from recession and sinking revenues.

As a result, an alternative based on a parallel currency is said to exist. The basic schema is as follows: The governments should introduce, in parallel to the existing euro currency, money that employs a so-called 'spending incentive'. The spending incentive will motivate all parties (firms, organizations, and government agencies) to spend cash. In this way, the circulation of money increases. And if the circulation of money increases, demand for goods and services rises accordingly. In total, a doubled circulation rate for money doubles the GDP if sufficient unused capacity exists (e.g. under- or unemployed labour). Now, regarding the severely hurt SMEs, more sales would lead to increased job creation, lower deficits and social costs, and greater tax revenues for the state.[6]

5 See, among others, Schuster (2013) and Gelleri and Mayer (2012), on which we are partly based.

6 In this context, the Geuro, a temporary, parallel – to the euro – currency, was officially proposed by the former Chief Economist of the Deutsche Bank, Thomas Mayer (2012), and has again received increasing attention lately. The author considers the parallel currency proposal to be a mechanism that will facilitate economic recovery in Greece, boosting domestic economic activity, reducing dependence on imports and, in return, increasing export performance and competitiveness.

SUMMARY & CONCLUSION

The current economic, financial and social crisis in the European Union (EU) has reached points that are directly comparable to the Great Recession, especially for some countries of the so-called 'periphery', such as Greece. One of the most serious consequences of the crisis is the limited access to finance for EU companies, especially for European SMEs.

First, from a European perspective, there are several interesting initiatives that could act as instruments that might potentially provide opportunities for credit issuing, such as the Juncker plan, or the European Investment Fund (EIF), and so on. Second, development of non-bank financial institutions which can provide alternative forms of funding is necessary, in particular by facilitating the development of new start-ups, through the improvement of EU regulatory framework, ensuring a stronger support to the development of microfinance institutions (MFIs), at the EU and the national levels. Third, the development of coalitions (co-operatives) might be relevant for economies suffering from limited access to credit. Fourth, according to a strand in the literature, parallel currencies at the local or country levels might also be taken into consideration as a more radical option for SME financing when it is in a state of limited credit after the outbreak of financial crisis.

Of course, further and more extended research on the subject would be of great interest. For instance, a very good example for future investigation is to empirically assess the aforementioned relationship, namely the impact of limited access to credit on firm growth, especially SME growth. We could also explore the impact of changes in credit on firm growth, taking into account sector-specific and country-specific characteristics, as well as the structural characteristics of domestic banking sectors. Clearly, further research would be of great interest.

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INDUSTRIAL POLICY FOR EUROPE – A TOPIC FOR THE POLITICAL LEFT?

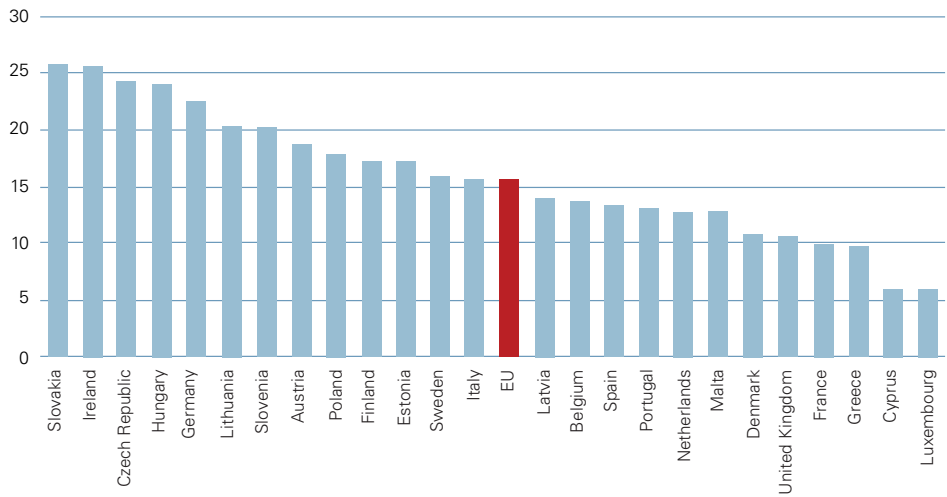
AXEL TROOST (Member of the German Bundestag, Die Linke)

From the 1970s until the mid-1990s, the industrial value added of the core capitalist countries was on a downward trajectory. The manufacturing sector's share of gross value added (GVA) and employment has decreased. Industry has enjoyed a renaissance for around 15 years now. Its contribution to value added in Germany has been stable, with the exception of the crisis years 2008 and 2009. Industrial production as a percentage of gross value added, however, has fallen in almost all countries of Western Europe since 2000.

The European Commission has recognised the problem, and in autumn 2012 outlined a policy to restore the industrial sector's share of GDP in Europe from 16% at present to 20% by 2020. That move came in response to the relative decline in importance of the industrial sector in the EU in the last decade.

The EU average hides considerable differences between the Member States. Industrial production as a percentage of GDP ranges from slightly more than 5% to just over 25% in Slovakia (see the chart below).

INDUSTRIAL PRODUCTION AS A PERCENTAGE OF GDP



As a percentage of GDP at factor cost, 2011

Trends in the five largest economies – in three of which the industrial sector's share of GDP is below 15%, namely France, the UK and Spain – are particularly problematic with respect to the marked decline of industrial production's share of GDP in the EU in international comparison. The Member States whose industrial sector's share of GDP exceeds 20% include Germany and Ireland, two countries that are in the vanguard with their high-tech companies, as well as countries whose industrial development still has considerable weaknesses, such as Slovakia, the Czech Republic, Hungary and Lithuania.

To put a stop to the chronic decline in European industry, the European Commission – partly in response to neoliberal austerity policy and regulatory policy – launched an investment plan in winter 2014/2015. At its core is the European Fund for Strategic Investments (EFSI). It is managed by the European Investment Bank (EIB) – the EU's public development bank – and is provided with capital and guarantees of € 21 billion by the EIB and the EU. It provides a first loss guarantee, enabling the EU to invest in a greater number of projects and more risky projects. It raises the necessary funds on the capital market. The money serves to finance projects in fields such as transport, energy, broadband and SMEs in the form of loans, guarantees and shareholdings. The aim is to attract additional private and public investments to the projects and generate a total of € 315 billion in investments over the three-year period that runs until mid-2018.

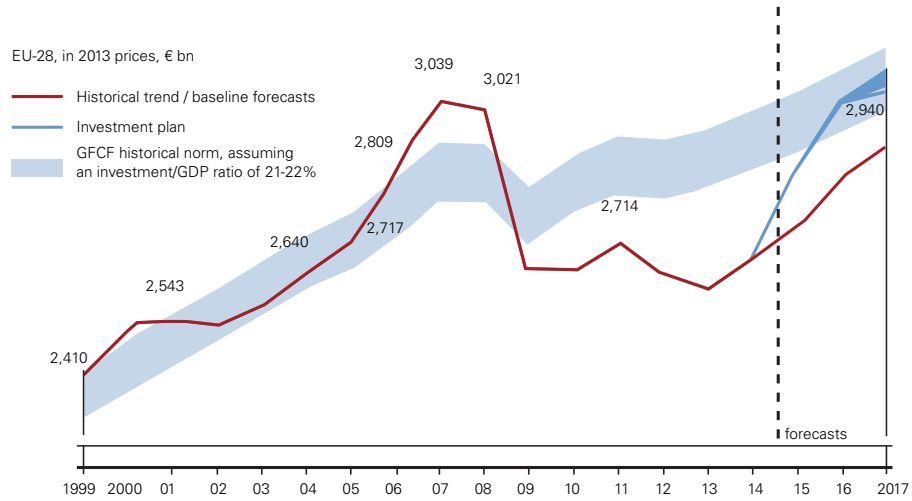
To increase the industrial sector's share of GDP in Europe, the Commission has identified four priority areas for action:

> Investments in new technologies: The Commission aims to ensure that norms for new products are drawn up and recognised at the international level more quickly in future, and to promote public private partnerships.
> Improved internal market for goods: In addition to simplifying the legal framework, the Commission wants to improve the integration on the internal market of goods for defence and security.
> Better access to financing for SMEs: The lending capacity of the European Investment Bank (EIB) has been boosted for this purpose.
> Increased investments in human resources: The transformation of EURES into a European job placement platform is intended to improve information about jobs abroad and foster increased mobility.

Aside from the Juncker fund, however, the Commission has barely managed to push through any specific measures and only limited funding instruments. The cohesion policy is designed to boost competitiveness during the 2014–2020 financial period. The Juncker plan is intended to reinforce the ability of the European Investment Bank (EIB) to implement relevant projects in the field of SME programmes.

The Commission's aim, however, has come up against fierce political opposition. In addition, support at the national level has been largely lacking, which means that the aims of a considerable rise in investments and an increase in the industrial sector's share of GDP will not be achievable in the foreseeable future.

REAL GROSS FIXED CAPITAL FORMATION –
BASELINE TREND VS. HISTORICAL NORM VS. INVESTMENT PLAN



Sourc: DG ECFIN – AMECO database

Key conditions are not met.

1. A pan-European investment concept needs to be developed to lessen the decline in industrial value added (see figure).
2. The varying development of the industrial sector's gross value added across the EU has its roots in country-specific factors. Public and political regard for the industrial sector has fallen in the UK since the 1980s, when the country's politicians more or less openly promoted the accelerated transformation of the national economy into a service economy. A development concept therefore needs to be shaped that is coordinated among the EU and the key Member States.
3. Last December, Commission President Jean-Claude Juncker announced the 315 billion investment plan for Europe that is also known by his name. The plan sets out to counteract the downward spiral of the European economy and high unemployment in the EU. It has been approved in principle by the heads of state and government in the EU. Recognition of the need for additional investments presents the possibility of opening a chink in the armour of the ubiquitous policy of austerity. However, little more than that can be expected owing to its small scale and the fact that it chiefly consists of re-purposed, rather than 'fresh' funds.

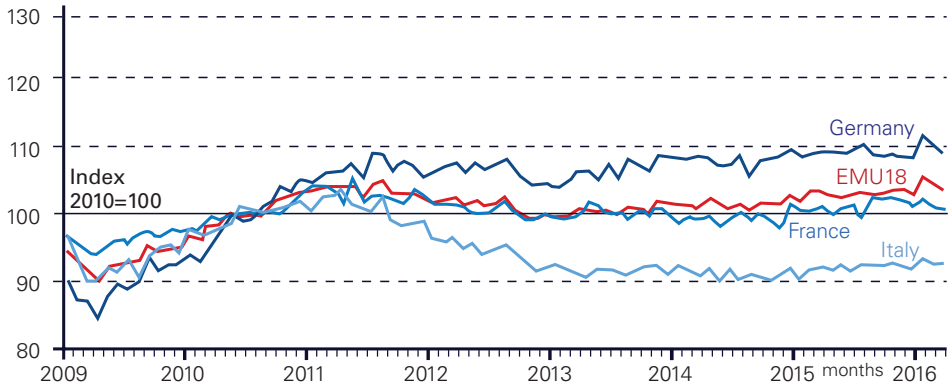
IS THE PLAN DELIVERING?

In June 2016, the Commission took stock of whether the 'Juncker fund' and the EU investment plan are delivering. Commission President Jean-Claude Juncker maintained that, despite all the criticism, the investment plan is working. According to the interim evaluation, since the fund was set up just under a year ago, 64 infrastructure projects and 185 agreements with banks and other financial intermediaries have been approved for SME financing in 26 EU Member States. Based on the results so far, some 142,000 businesses will benefit from the funding. The total investment from the approved projects is expected to reach around € 100 billion.

However, support by the Member States continues to fall short. To date, not a single Member State has announced its own contributions to the € 315 billion package. At present, the fund is backed by just € 16 billion from the EU budget and € 5 billion from the European Investment Bank (EIB). The German federal government has ruled out direct participation in the European Investment Fund. German Finance Minister Wolfgang Schäuble (CDU) has agreed to provide € 8 billion for European investments through the KfW (Reconstruction Credit Institute) bank. However, there are no plans for that € 8 billion to be injected into the EFSI (European Investment Fund for Strategic Investment). Instead, it will at most be dispensed in conjunction with the EFSI. In effect, the EFSI has come into being with funds deriving solely from the EU budget and the EIB.

This political blockade by the Member States is, in my view, scandalous, and threatens to consign the Commission's industrial policy goals to failure. There are plenty of investment projects in Europe that make sense. For years, Europe has lived from its resources; its public capital stock and infrastructure are ailing and the level of private investment has also plummeted. An investment drive is urgently needed to prevent the problem being aggravated by the shift to deflation. Value added in the industrial sector does not show a clear upward trend. Looking at the development of industrial production in the EMU, it can be seen that the production level in the industrial sector has again dipped to a level below its peak in 2011.

INDUSTRIAL PRODUCTION* IN THE EURO AREA AS A WHOLE AND IN THE *CORE COUNTRIES*



* Working-day adjusted and seasonally adjusted volume index (2010 = 100) for mining, quarrying, manufacturing / production of goods and energy supply.

Source: Eurostat

Given the complete failure of neoliberal economic policy, a change of course is overdue. "Instead it is a case for a targeted, proactive, entrepreneurial state, able to take risks, creating a highly networked system of actors harnessing the best of the private sector for the national good over a medium to long-term horizon. It is the state as catalyst, and lead investor, sparking the initial reaction in a network that will then cause knowledge to spread."[1] Current developments run counter to that and there is reason to fear that the Juncker Plan will do little to redress the chronic decline in industrial value added in Europe.

DIE LINKE has long been pushing for a form of European New Deal and a public investment programme in the EU, in the crisis countries in particular, but also extending to Germany. The state should start by taking full advantage of the financial leeway that it has despite the balanced-budget amendment (known as the 'debt brake'). Furthermore, productive investments should be excluded from the debt brake calculation.[2] Only then should private capital be activated, and solely in the scope of a "publicly managed fund for the future".

1 Mariana Mazzucato, "The Entrepreneurial State", p. 19-20 (M.M. advises the European Commission on matters of economic growth) [http://www.demos.co.uk/files/Entrepreneurial_State_-_web.pdf - accessed 10.10.2016]

2 See the whole chapter "Öffentliche Haushalte – wir schaffen das!" [Public budgets – we can do it!), p. 151ff. and in particular the section "Die Goldene Regel der öffentlichen Investitionen" [The golden rule of public investments], p. 161ff. in: Arbeitsgruppe Alternative Wirtschaftspolitik [Alternative economic policy working group], MEMORANDUM 2016: Europäische Union und Flüchtlingsmigration – Solidarität statt Chaos. [MEMORANDUM 2016: the European Union and refugee migration – solidarity instead of chaos]. Cologne 2016

IN FAVOUR OF AN ACTIVE INDUSTRIAL POLICY

The calls of European trade unions for implementation of an active industrial policy should be supported. The trend of de-industrialisation needs to be reversed. Key activities need to be engaged with and investments are required in the future. Growth and employment are closely tied to technological innovations. If the industrial sector is to rise to the new challenges of sustainable development, mobility, health and smart networks (in transport, energy and communication), it needs to promote those fields together with the public sector, i.e. it needs to invest.

Functioning infrastructure is one of the key location factors for companies. Europe is cutting an increasingly poor figure in that respect. Investments in infrastructure threaten to be neglected, not least as a response to public debt. Finally, with respect to infrastructure at both the EU and Member State level, it is worth reiterating that greater emphasis should be placed on using the scarce funds available according to the best possible cost-benefit ratio. The money from the various EU structural funds frequently goes towards projects that chiefly serve regional development and do not necessarily help to remove infrastructural bottlenecks in areas that are economically strong.

An active industrial policy trains employees and assists people who have become unemployed in securing a new job. The structural change in industry calls for forward-looking staff development with greater promotion of training and professional development.

The industrial sector stands to benefit from the great potential presented by the transition to resource efficiency, the use of renewable energy sources and development of new, 'green' markets (environmental technology and investments in climate protection). At the same time, given the challenges of climate change, environmental protection and the finite nature of natural resources, the German social model and the model for industrial production need to be adjusted to ensure they will continue to be up to the task.

Another challenge also presents itself – the potential for the digital connectivity of production, products and services is heralding a new industrial revolution known as 'Industry 4.0'. According to the Commission's strategic deliberations, a European cloud for open science is to be created to promote the development of Industry 4.0. with the aim of supporting digitalisation by means of innovation hubs, the coordination of national initiatives, and subsidies. Common norms are to ensure that smartphones, computers and sensors can communicate with one another smoothly throughout Europe.

The Commission anticipates that the plans will activate a total of over € 50 billion in public and private investments over the course of five years, with some of the funds coming directly from the EU budget and the rest needing to be provided by the Member States and business.

There are clear grounds for criticism here too – the Commission has been far too late off the mark in this field that is vital to the future. The sum of € 50 billion is a drop in the ocean in this key area of investment and innovation. The Commission considers that traditional sectors, such as construction, agriculture, the food industry, the textile industry and the steel industry and SMEs, in particular, still have some catching up to do.

SUMMARY

At present, there is overcapacity in many industries in Europe (such as the steel and automotive industries) and they are still undergoing a consolidation phase. What is more, current economic forecasts do not indicate the likelihood of a dynamic upturn in the EU. Instead, all the signs point to a period of stagnation. In such an environment, many companies can be expected to hold back on investments (within Europe). That is also likely to limit the industrial sector's potential to grow faster than other sectors of the economy.

Climate and energy policy is one of the key factors determining the outlook of the industrial sector at EU and national level. By 2020 the EU aims to cut its CO_2 emissions by 20%, taking 1990 as the base level. Those fields could be expanded. Another area is high-tech development (Industry 4.0).

The available human resources are a major location advantage for European industry. To ensure the continued competitiveness of the medium-tech and high-tech segments in particular, a comprehensive strategy and increased spending on education and research are needed in order to improve national education and training systems, increase the potential labour pool in key professions and contribute to greater flexibility and equal opportunities on the labour market.

A critical point at EU level is that the budget tends to be dominated by expenditure that preserves existing structures – expenditure on agriculture still accounts for 39% of the EU budget in the EU's long-term financial framework for the 2014–2020 period. As a result, funds for higher spending on education and research, for instance, are lacking. Improvement in the general conditions for research in certain young technology fields would also be welcome. The EU concept of increasing industrial value added needs to be integrated with a pan-European growth and structural policy and a more aggressive budget policy.

PROSPECTS FOR A GOOD INDUSTRIAL POLICY FOR EUROPE

WOLFGANG LEMB BOARD MEMBER, **MAXIMILIAN WACLAWCZYK** (IG Metall)

In 2010, European Commissioner for Industry and Entrepreneurship Antonio Tajani announced that "Industry is at the heart of Europe and indispensable for finding solutions to the challenges of our society, today and in the future".[1] It was followed by an Industrial Policy Communication in 2012 in which the European Commission set the target to reach 20% of industry's share in Europe's GDP by 2020.[2] Both were reflections of the new appreciation for the importance of industry and industrial policy in Europe. National economies with a strong industrial base had proved they were robust enough to withstand times of financial and economic crisis. The orientation on expanding financial markets and services, applied since the 1990s – and the prevailing notion that industry was obsolete as an economic sector – came to an abrupt end during the financial crisis.

A stocktake today of the measures and successes in the six years after Tajani's statement delivers a depressing result. Large parts of Europe are still in a phase of deindustrialisation. On average, industry accounts for a shrinking proportion of the EU states' national economies. The current challenges of globalisation, rationalisation through digitalisation, and climate change add urgency to the question of how re-industrialisation might be brought about. And what sorts of industry and industrial policies will be necessary that do not solely benefit capitalists, but serve the people in Europe in the sense of Good Work, qualified jobs, and prospects for the young generation in the countries of Europe, while taking account of the developments in technological foundations for CO_2-neutral production and living? In short, we must define the criteria for a "Good Industrial Policy" that can overcome Europe's crises.

WHAT DOES IG METALL CONSIDER TO BE GOOD INDUSTRIAL POLICY?

Industry is not an end in itself. Given the economic policies in many of today's developing countries that supply cheap products and raw materials to the so-called industrialised nations at the expense of the environment and human beings, it becomes clear that a discussion of industrial policy will not make much sense without a legislative basis.

It is obvious to IG Metall that the value of a strong and economically successful industrial sector will be measured by its benefit to society – first and foremost in the form of Good Work. IG Metall believes that Good Industrial Policy must always be primarily focused on the employees and developed from their perspective. Its success must be measured by the extent to which it can contribute to a secure and fair world of work, wherein the employees have a say in their working conditions. Striving towards greater use of collective agreements and more co-determination, both at the plant level and in corporate policy, and combating the misuse of temporary work and contract work, is therefore an integral part of our industrial policy concept.

1 European Commission (2010): Industry for Europe - Europe for industry. http://europa.eu/rapid/press-release_IP-10-1434_en.htm?locale=en [accessed 27/10/2016]

2 European Commission (2012): A Stronger European Industry for Growth and Economic Recovery. COM(2012) 582 final. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0582:FIN:EN:PDF [accessed 27/10/2016]

However, the concept of "Good Work and a Good Life" includes an occupation which can be pursued in a manner that conserves resources and thus will not damage living conditions for future generations. Therefore, we see Good Industrial Policy characterised by a comprehensive concept of qualitative growth, i.e. as a triad of increasing social prosperity, Good Work and ecological sustainability.

However, this type of concept, one of future-oriented qualitative growth, can only be driven forward successfully if a growth model is established that generates incomes and good jobs while consuming a decreasing amount of resources. But it then quickly becomes clear that the triad of economic, social and ecological sustainability harbours conflicts of interests. Here are two examples:

> The shift to alternative energy pursued in Germany is a huge opportunity on the path to climate-neutral energy production and energy technologies. At the same time, the associated costs place burdens on industrial facilities that are already subject to severe competition pressure, which jeopardises jobs.
> Digitisation offers an enormous investment and innovation potential for the future of industrial companies in Europe. Simultaneously, we run the risk that this will drive rationalisation tendencies in the affected plants and put the employees under even more pressure.

It will be possible to resolve these conflicts of interests only if the resulting transformation costs are shared fairly. Therefore, a Good Industrial Policy needs most of all a new understanding of the role of the state. We need to move away from the neoliberal policy model to the renaissance of an active state that undertakes investments, along with a robust and fair tax policy. A sustainable and future-proof concept of industry therefore needs a "new Keynesian understanding of the state", a state that is free of self-imposed restrictions, such as the cap on debt, and invests in technological progress, infrastructure and education – based on a fair and strong tax system.

EUROPE'S RE-INDUSTRIALISATION UNDER THE 'JUNCKER PLAN'?

The answer to the question, of what a Good Industry policy should look like, is crucial. However, at present there is concern that large parts of Europe will soon no longer have any industrial core at all. Since 2005, industry's share of gross value creation has not risen, but instead fell in the EU-28 – on average from 16.7% to 15.3% in the year 2014. And it is still falling. So, European industry is further away than ever from the 20 per cent target set by the Commission in 2012.

All in all, it is becoming obvious that Europe lacks an overarching concept and a coherent re-industrialisation strategy. At the European level, up to ten Directorates-General in the European Commission[3] have responsibilities for industrial policy, and often enough

3 Including the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (GROWTH), the Directorate-General for Informatics (DIGIT), the Directorate-General for Competition (COMP) and the Directorate-General for Trade (TRADE).

issue uncoordinated decisions and legislative proposals – or sometimes contradict each another. It is doubtful whether major policy corrections will be made during the term of the current Juncker Commission. The Commissioner for Industry, Elżbieta Bieńkowska, has so far produced little if any impetus in this direction, which would suggest that she has recognised the problem at all, let alone that she seriously wishes to tackle it.

On the other hand, Juncker himself and his First Vice-President, Frans Timmermans, have launched a re-industrialisation agenda with the "Investment Plan for Europe" (also known as the 'Juncker-Plan'), involving pioneering measures that reach the public. The analysis on which the Investment Plan is based was and is perfectly correct: European industry needs more investment. In comparison with the record level before the crisis of 2007/2008, investment activity in the EU has fallen by around fifteen per cent.[4] This is true of both public and private investment. A European 'investment offensive' is intended to restore demand, strengthen industry in Europe, and prevent further relocations.

At the heart of the Juncker Plan is the European Fund for Strategic Investments (EFSI). Loans and co-investments made from the fund's € 21 billion (from the European Investment Bank and the current EU budget) are intended to have a multiplier effect, generating 15 times that volume of new investments within three years.

In this way, € 315 billion is meant to flow into infrastructure, innovation projects and SMEs. One year after launching the EFSI, the Commission made a positive interim assessment: to date more than € 100 billion has been invested via the EFSI, which means that the EFSI is on target. Yet it is questionable whether the € 100 billion is really comprised of 'additional' investments.[5] A large proportion of the investment projects would probably have come about even without the EFSI, using funds provided by the European Investment Bank, European funding programmes or national development banks. It is therefore doubtful whether the EFSI can be called a great achievement.

FOUR CENTRAL AREAS OF ACTION FOR A EUROPEAN RE-INDUSTRIALISATION STRATEGY

A genuine investment offensive and an end to austerity policies

The EFSI has shown that hardly any additional investment can be generated without a genuine investment offensive with an appropriately broad financing base. The European federal trade unions, under the umbrella of the ETUC, have already put forward a suitable European investment plan[6] containing a specific proposal for the financing and orientation of such a programme.

4 Special Task Force (Member States, Commission, EIB) on Investment in the EU (2014): Final Task Force Report, p. 5. http://ec.europa.eu/economy_finance/pdf/2015/task_force_report_investment_eu_en.pdf [accessed 27/10/2016]

5 G. Claeys and A. Leandro (2016): Assessing the Juncker Plan after one year. Bruegel Blog Post. http://bruegel.org/2016/05/assessing-the-juncker-plan-after-one-year [accessed 27/10/2016]

6 ETUC (2013): A new path for Europe: ETUC plan for investment, sustainable growth and quality jobs. https://www.etuc.org/sites/www.etuc.org/files/EN-A-new-path-for-europe_3.pdf [accessed 27/10/2016]

Where would the funding for such an investment programme come from? The various proposals for a European investment programme name a range of different financing options. One possibility would be a long overdue financial transaction tax, or raising capital by means of common Eurobonds. Another interesting idea would be to finance an investment programme from the windfall profits which Member States like Germany currently earn because they not only can borrow money interest-free, they actually receive a bonus for doing so.[7] It would be a good mechanism to compensate for existing trade imbalances in the European internal market if these interest benefits were paid into in an investment programme for the whole of Europe.

Alongside sustainable financing, this type of investment programme also requires two other substantive criteria to be guaranteed:

First, we need an investment programme that is targeted in particular on the countries hardest hit by the economic crisis, as a cohesion policy. Here, investments must be directed into rebuilding industry. The EFSI does not contribute to this goal.

Second, we need an investment programme aligned to the global challenges and the corresponding future technologies. Despite announcements to the contrary, the EFSI has a poor track record concerning the use of funds for ecologically and socially sustainable projects. A European investment programme would therefore have to be designed to meet the major social challenges of the future and to supply answers to these questions through innovative industrial projects.

One of the most useful and economically promising areas for investment is 'GreenTech', especially the fields of renewable energy and sustainable mobility. It is not just since the UN's Climate Change Conference in Paris that have we been aware of the necessity of a radical change of course, towards a kind of industrial production that conserves resources and is CO_2-neutral, and its corresponding industrial products. We have huge potential for realising this in Europe in particular – and, thinking further, in a connected energy union. GreenTech will be one of the key areas for future industrial development. Here, European industry is still in a very good starting position due to its vast know-how.

However, no investment programme will develop truly sustainable positive effects unless the core problem of weak demand in Europe is tackled. The lack of sales markets is the main reason that money is not being invested in European industrial locations. Therefore, as a first step, the national debt caps and austerity requirements of "European economic governance" must be recognised as obstacles on the way to re-industrialisation and, as such, removed.

7 Merely by issuing government bonds with negative interest, Germany made a profit of € 1.5 bn in the first half of 2016.

Fair trade policy and areas of industrial protection

The discussion of fair world trade must not be conducted principally to the benefit of the developed industrialised states and the disadvantage of developing countries. It is therefore inacceptable for the European Union to demand that developing countries open their markets fully to European exports as the price for access to the European market. The consequence is that domestic producers are unable to keep up with the superior European competition. This goes against the principles of a sustainable development policy.

However, European trade policy has also increasing responsibility for protecting its own industrial locations. Chinese price dumping in the case of steel exports is currently putting the entirety of European steel production at risk. For these reasons, the European industrial trade unions issued a motion at the most recent industriAll Europe Congress, criticising China's steel dumping.[8] Chinese dumping is not solely a problem in the steel industry; in fact the danger exists that, gradually, other sectors of European industry will also be affected. We have seen that this can jeopardise whole future-oriented sectors, such as the photovoltaic industry in Germany.

One could argue over how far protection should extend and how it should be regulated. In particular, national economies with strong exports, like Germany, depend on free trade zones. Various sectors would be affected in a range of different ways if trade relations deteriorated. But this makes it all the more necessary that we conduct an open debate on areas of industrial protection.

Everyone talks about the principle of 'Local Content' when the aim is to secure European locations by means of corresponding regulations. China has long been sealing off its strategic markets against foreign producers. US Federal authorities are still required to 'buy American' when it comes to state procurement. It is questionable whether a 'buy European' rule should be the response to that. It would be better to remove the local aspect from this concept and to speak not of 'Local Content' but of 'Good Content'.

What does Good Content mean? International competition will only be fair and just when (1) ecological costs are added to the cost equation, and (2) wage and labour protection costs, social welfare contributions and taxes are subtracted. Good Content would then mean not reducing trade to 'cheaper competition' at the expense of employees and the environment. That is a guiding principle on which to orient the substantive content of our European trade agreements and WTO agreements, in order to counteract the destructive price war of globalised world trade. In view of TTIP and CETA, European trade policy at present still appears to be miles away from such an aspiration.

8 IndustriAll Europe (2016): IndustriAll European Trade Union's Motion 2016-2020 as adopted by the 2nd industriAll Europe Congress on 8th June 2016. Our future rests on European steel! http://industriall-europe.eu/database/uload/pdf/Motions_Our_Future_rests_in_Steel_2016_EN.pdf [accessed 27/10/2016]

A new internal market policy in combination with Member States' industrial policies

The core of the European Union is the single internal market. This is where the EU has acquired the greatest competencies for taking action, as a result of both positive and negative integration. The underlying principle of the single internal market is the avoidance of any distortion of competition arising from the policies of individual states. Of course, this principle runs counter to the traditional understanding of vertical industrial policy, because every industrial-policy measure, differentiated by sector or region, has the potential to include certain companies in, or exclude them from, the resulting advantages. The more progress there is in the harmonisation and common standards of the single internal market, the smaller is the room for manoeuvre for national industrial policies. So, in today's Europe, the only option is developing horizontal industrial-policy measures to promote infrastructure, innovations and SMEs. At this time, sectoral or specific industrial-policy measures have lost virtually all their significance at the national and European levels.

Papers and announcements from those responsible within the European institutions pretty quickly give the impression that the internal market is an end in itself and the dogma of internal-market neutrality should not be questioned. That is incorrect on both counts. We need a discussion on how the relationship between the Member States and the European internal market can be designed so that industrial-policy measures are possible 'from the bottom up'.

This is because the numerous styles of industrial relations, and the resulting types of production and innovation, make it essential to have a subsidiary industrial policy that does not lose sight of the regional and sector-specific necessities. Neither a neutral internal market nor a completely centralised European industrial policy can do that. It will require flexibility for the Member States to decide their own fiscal and regulatory industrial policy measures, which are not already blocked in the planning phase by the Commission's threats of infringement proceedings.

Re-collectivisation of industrial relations

Co-determination, collective agreements and trade unions in particular made an important contribution to maintaining the proportion of industrial activity in Germany and to the economic success of German industrial facilities. So the current anti-trade-union policy, reaching its pinnacle of its development in the troika memorandums and the instruments of the so-called "European economic governance", appears all the more incomprehensible. The list of distortions by European 'de-collectivisation policy' is long[9] and shameful for a Europe that owes its greatest social achievements to the European trade unions.

What is more, the EU seems to want to stay on this mistaken path: the plans in the Five Presidents' Report[10] on the creation of "independent Competitiveness Authorities" indicate that EU intervention in the individual states' collective-bargaining policies is more likely to increase in the future.

Europe's industrial history, the simultaneous development of a successful industrial basis and growing trade unions, makes it apparent that there will be no re-industrialisation of Europe without re-collectivisation of industrial relations. This will demand, first and foremost, an end to the intervention in collective-bargaining policy by European economic governance. But it will also have to include progressive elements, such as a new orientation for European regulations governing public procurement. European and Member States' procurement policies could be strengthened with the aim of making collective agreements a criterion for the award of public contracts and European funding.

However, most of all, re-collectivisation must grow out of the local trade unions and out of its own resources.[11] To this end, the European trade union movements (that is, the individual member organisations themselves) have to rebuild their membership figures and bridge the political trenches between the trade unions. Europe needs a strong, united trade union movement with strong support from employees within the public and private sectors, otherwise it will fail.

9 T. Schulten, and T. Müller (2013): A new European interventionism? The impact of the new European economic governance on wages and collective bargaining, in: D. Natali and B. Vanhercke (eds.) Social developments in the European Union 2012, Brussels: ETUI/OSE, 181-213. https://www.etui.org/content/download/12468/107025/file/Schulten%20and%20Müller%20European%20interventionism%20EN.pdf [accessed 27/10/2016]

10 "These Competitiveness Authorities should be independent entities with a mandate to 'assess whether wages are evolving in line with productivity and compare with developments in other euro area countries and in the main comparable trading partners' […].In addition, these bodies could be mandated to assess progress made with economic reforms to enhance competitiveness more generally." European Commission (2015): The Five Presidents' Report: Completing Europe's Economic and Monetary Union, 7 f. https://ec.europa.eu/priorities/sites/beta-political/files/5-presidents-report_en.pdf [accessed 27/10/2016]

11 One of the key stones of IndustriAll Europe's recent action plan: IndustriAll Europe (2016): IndustriAll European Trade Union's Action Plan 2016-2020. http://industriall-europe.eu/bodies/c16/Doco/ActionPlan_2016_2020-EN.pdf [accessed 27/10/2016]

Trade unions' areas for action and political prospects

An incomplete picture of the necessary corrective measures in European industrial policy has been outlined here. A comprehensive view would have to go into detail on the EU's cohesion policy, structural funds and promotional programmes (Horizon2020, Connecting Europe, Cosme, etc.), the funding policy of the European Investment Bank and plans for the Energy Union and Capital Markets Union. Yet the four elements of investment policy, trade policy, the internal market, and collective industrial relations represent the fundamental prerequisites that must form the starting point for a re-industrialisation of Europe in the sense of Good Industrial Policy.

At the European level, IG Metall works with its umbrella organisation, industriALL Europe, and in direct dialogue with its European sister trade unions to create prospects for Good Industrial Policy in Europe. However, the German trade unions are aware that the German Government and its austerity policy requirements share major responsibility for the fact that Europe is in the current de-industrialisation phase. Therefore, the German trade unions are particularly called on to put prospects for European employees high on the agenda for the approaching Bundestag election in 2017.

Whatever the negative consequences that may arise, at least from today's viewpoint, the Brexit referendum has also demonstrated that there must be alternatives to the current course in industrial and economic policy in Europe. Especially in situations of deep political crisis, where a wide-ranging discussion often rages over the distortions of neoliberal economic policy[12], a 'window of opportunity' opens up for discussing a common, progressive re-industrialisation strategy.

To this end, we can build in Europe on a broad consensus among many progressive forces (or a so-called 'mosaic left'[13]), if we do not lose sight of the guiding principle of a Good Industrial Policy – which means economically, socially and ecologically sustainable industry.

We should seize this opportunity!

12 A remarkable example from the International Monetary Fund: J. D. Ostry, P. Loungani, and D. Furceri (2016): "Neoliberalism: Oversold?" IMF Finance & Development June 2016, p. 38-41. http://www.imf.org/external/pubs/ft/fandd/2016/06/pdf/ostry.pdf

13 H-J. Urban (2012): Crisis corporatism and trade union revitalization in Europe, in S. Lehndorff (ed.) A triumph of failed ideas – European models of capitalism in the crisis Brussels: ETUI, 219-241. www.etui.org/content/download/5164/51374/.../12+a+triumph+of+failed+ideas+web.pdf [accessed 27/10/2016]

ON THE SAME TOPIC:

WHAT IS TO BE PRODUCED?
THE MAKING OF A NEW INDUSTRIAL POLICY IN EUROPE

Authors:
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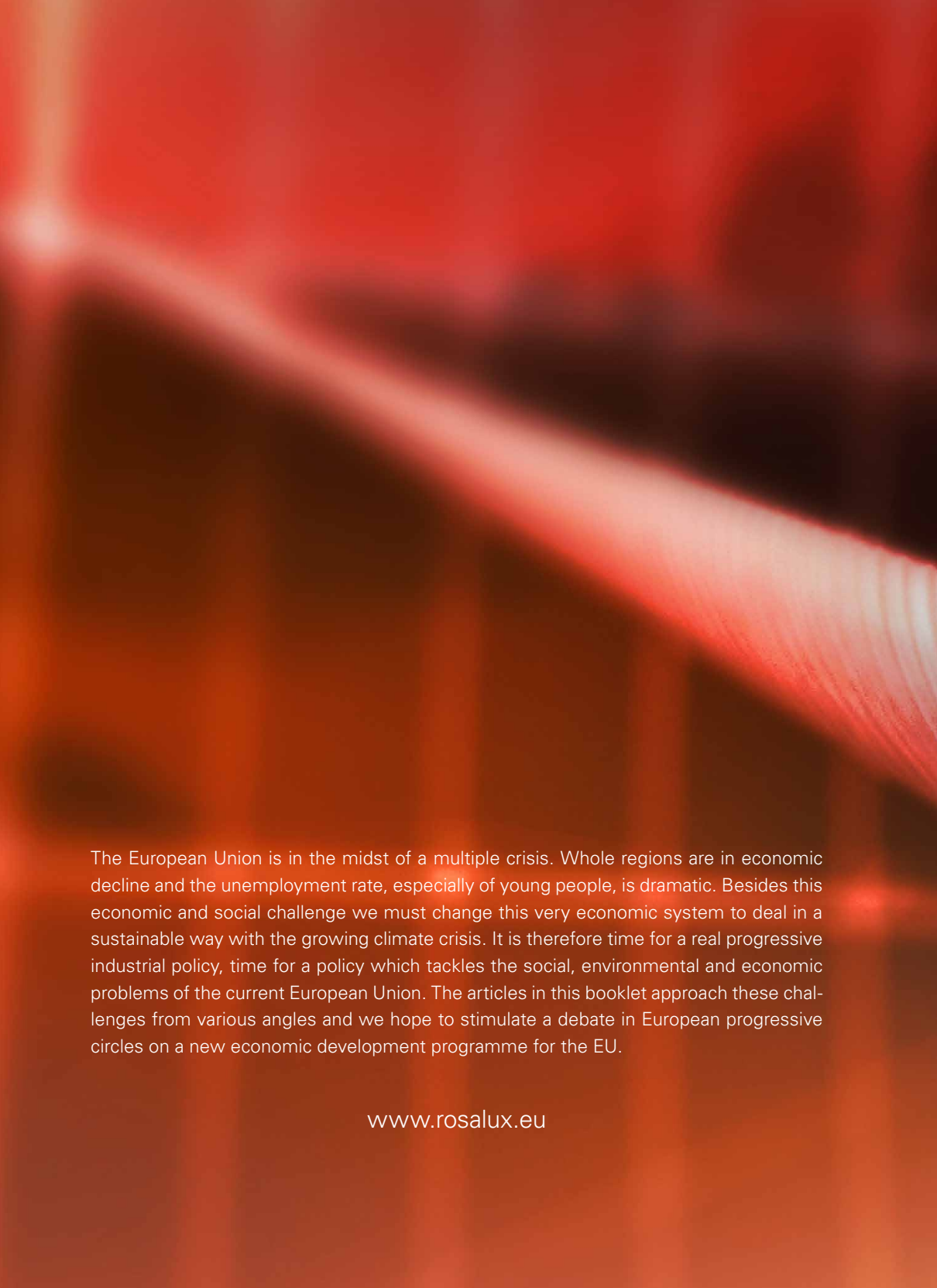

The European Union is in the midst of a multiple crisis. Whole regions are in economic decline and the unemployment rate, especially of young people, is dramatic. Besides this economic and social challenge we must change this very economic system to deal in a sustainable way with the growing climate crisis. It is therefore time for a real progressive industrial policy, time for a policy which tackles the social, environmental and economic problems of the current European Union. The articles in this booklet approach these challenges from various angles and we hope to stimulate a debate in European progressive circles on a new economic development programme for the EU.

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