Smart Unions for New Industry

National Report

ITALY

Case Study on FIM-CISL

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SUNI (*Smart Unions for New Industry*) is a project co-funded by the European Commission, DG Employment, Social Affairs and Inclusion, budget heading VP/2017/002 (Grant Agreement VP/2017/0426), Information and training measures for workers' representatives

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This document was produced with the financial support of the European Union. The viewpoints expressed herein reflect the opinion of the authors and, therefore, do not represent, under no circumstance, the official position of the European Commission, which is not responsible for any use that may be made of the information this document contains

Index

Executive summary

Introduction

- Following the increasing attention directed by the entrepreneurial world to the effects of latest digital innovations on manufacturing processes, goods and services, Industry 4.0 has progressively entered the public debate also in Italy, though later than in other OECD countries.
- Institutionally, the first contribution to Industry 4.0 and its understanding came from the parliamentary survey published in June 2016 by the Commission on Production, Trade and Tourism set up by Italy's Lower Chamber. This survey was followed by the *National Industry 4.0 plan* presented in Milan by the then Minister of Economic Development, Carlo Calenda, and the then Prime Minister, Matteo Renzi, on September 21, 2016.
- From the research point of view, since 2015 a growing number of studies have tried to provide more in-depth knowledge of the characteristics of future factories and workers, by also conducting empirical analyses on innovative Italian companies. By contrast, a smaller amount of works has concentrated on the role of industrial relations in shaping the fourth industrial revolution and even less attention has been paid so far to deepening Italian social partners' own perspectives of Industry 4.0 and the initiatives, already carried out, to deal with the phenomenon.
- Stemming from this background, this report attempts to close this gap in Italian literature by shedding light on the role that a metalworkers' organisation, namely FIM-CISL, is currently playing in shaping the transition towards Industry 4.0, as well as on the institutional, organisational and ideological variables underlying union strategies and behaviour. The report focuses on the metalworking industry (encompassing steel industry, automotive, shipbuilding and overall construction of means of transport, machine tool construction, mechanical engineering, etc.), as one of the sectors most potentially impacted by Industry 4.0.

Policy context

- Some data released after one year from the launch of the National Industry 4.0 plan show an uplifting scenario: a recent increase in domestic sales

volume for new machinery and electric and electronic equipment (thanks to the super-depreciation and "New Sabatini"), a growing number of companies investing in research, development and innovation, an increase in the so-called "development contracts" (a public measure intended to finance companies' development plans). Among manufacturing activities, the metalworking industry emerges as a sector particularly affected by new governmental measures on Industry 4.0, with planned investments via "development contracts" accounting for 32% (planned investments in mechanical engineering and automotive stand respectively for 15% and 17%) of the total, and a significant amount of companies declaring to be positively influenced in their investment decisions by super-amortisation, hyper-amortisation and tax credit for R&D.

- Coherently, both trade unions and employers' associations are increasingly interested in Industry 4.0. Despite a quite homogeneous, proactive approach of the three main union confederations to Industry 4.0 (essentially aimed at participating with management in decision-making processes at company level over the introduction of new technologies), some internal discrepancies are still detectable, with FIOM-CGIL more prone to emphasise some negative drawbacks of technological advancement (e.g. the perspective of a digital Taylorism, the risk that algorithms take the lead of firms and their management, the employment repercussions of automation, etc.), FIM-CISL more likely to exhibit an optimistic view (referring to Industry 4.0 as a chance for people to emancipate themselves in the experience of work) and UILM-UIL more willing to stress the need of a new all-encompassing public policy on Industry 4.0. With regard to employers' associations, Industry 4.0 is generally conceived as a huge opportunity to boost competitiveness; employers' representatives also in the metalworking sector thus intend to participate in the process, by adequately assisting their affiliated companies.

Key findings

- The report highlights the vitality of Italian social actors, and notably of an Italian trade union (FIM-CISL), operating in the metalworking sector, with reference to Industry 4.0: this vitality takes the form of FIM-CISL's current engagement in several initiatives (encompassing the field of research, communication, training, lobbying and collective bargaining) focused on the issue.
- First initiatives carried out by the union on this issue date back to 2015, even before the launch of the National Industry 4.0 plan by the Ministry of Economic Development, thus suggesting that the interest of the union in Industry 4.0 was not driven by the content of specific governmental

measures; conversely, it was more probably influenced by the attention paid to the issue, since the first half of the 2010s, by entrepreneurs and researchers, with whom FIM-CISL has relationships.

- As for the approach adopted by FIM-CISL in relation to Industry 4.0, it has been unambiguously described by the General Secretary as the willingness to anticipate change so as to make it sustainable for all. This approach is in line with that expressed by CISL (the union confederation FIM-CISL adheres to) since 2016 and can be partly explained by the union's traditional non-aversion and positive attitude towards innovation.
- The conceptualisation of Industry 4.0 as a phenomenon that can still be shaped while potentially bringing benefits to companies and workers in terms of flattening of hierarchies, disappearing of repetitive and routine work and increased cognitive skills, ends up emphasising the relevance of some aspects that are traditionally of prime concern to FIM-CISL (i.e. employee participation in decision-making processes; decentralised collective bargaining, conceived as closer to companies and territories, thus potentially more capable to address companies' and workers' specific problems; worker skills' development). Industry 4.0 hence comes to be perceived by FIM-CISL officials as an enabler not only of Italian firms' and territorial competitiveness but also of FIM-CISL's own desire for a human-centred society and people's self-fulfillment within the experience of work, thanks to a special focus on workers' participation and knowledge.
- A crucial challenge for FIM-CISL appears to be that of bridging the gap between the union's ideal perspectives of the future of work and workers' actual needs and interests: an effort though already initiated in the latest round of contractual renewals (where important provisions in the field of workers' training, employee participation and job classification scheme, were agreed) and in some interesting agreements at the enterprise level (dealing with smart working, welfare provisions, performance-based pay schemes, direct employee participation, etc.).
- The report sheds light on the importance of both the General Secretary's personal interest in Industry 4.0 (which is reflected in his direct involvement in many activities, his social media presence and his several appearances on radio and TV) and the relationships between FIM-CISL and a quite narrow circle of "trust-worthy" researchers and experts, that have consented the realisation of concrete and coherent outputs, especially in the field of research, communication, lobbying and training.
- However, FIM-CISL initiatives still scantly benefit from the collaboration with employers and their associations and even less from the collaboration with other trade unions. This clearly happens to the detriment of the high road

to workplace innovation and territorial development, as well as of the potential of trade unions to become knowledgeable participants in innovation processes and before that, to turn into more open and learning organisations. The effects of these issues are particularly strong at local and company levels, where a polarisation between best and worst practices of collective bargaining persists and industrial relations still considerably rely on power and shows of strength. The lack of vertical coordination of collective bargaining and the proliferation of autonomous unions evidently exacerbate these problems, by nullifying the efforts made by representative social partners at the national level to establish common rules and achieve sustainable compromises applicable to all.

- Moreover, whereas over the past few years FIM-CISL has invested time and resources to present itself as a competent stakeholder of Industry 4.0 in the eyes of government, serious concerns are emerging among FIM-CISL's leaders following the electoral results of March 4, 2018 and the undeniable success of Five Star Movement and Northern League, both suspected to be less interested than the previous government in a dialogue and cooperative relationships with trade unions.
- Overall, despite its evident involvement in Industry 4.0 and the many activities already performed in this field, FIM-CISL still seems far from being an actually solid partner of both companies and public authorities in anticipating change and devising joint and socially sustainable paths towards Industry 4.0.

Introduction

Besides the many definitions that have been provided globally by academics, public authorities and consultancy firms (among others: Baur, Wee, 2015; Various Authors, 2015a; European Parliament, 2015; Hermann, Pentek, Otto, 2015; Kagermann, 2013; Pfohl, Yashi, Kurnaz, 2015); Roblek, Mesko, Krapez, 2016; Roland Berger, 2014), Industry 4.0 is commonly conceived by experts and practitioners as characterising the manufacturing of the future and having the potential to spur productivity and growth, although the effects on work and workers are still debated (among others: Various Authors, 2015a; European Parliament, 2015; Kagermann, 2013; with particular regard to the impact on work, see: Arntz, Gregory, Zierahn, 2016; Brynjolfsson, McAfee, 2014; Frey, Osborne, 2013). Following the increasing attention directed by the entrepreneurial world to the effects of latest digital innovations on manufacturing processes, goods and services (Assolombarda, Confindustria Lombardia, 2016; Federmeccanica, 2016; Various Authors, 2016), Industry 4.0 has progressively entered the public debate also in Italy, though later than in other OECD countries (Seghezzi, Tiraboschi, 2018). Institutionally, the first contribution to Industry 4.0 and its understanding came from the parliamentary survey published in June 2016 by the Commission on Production, Trade and Tourism set up by Italy's Lower Chamber[1]. In the survey, Industry 4.0 is described as an emerging industrial paradigm, which is going to determine an industrial revolution similar to those occurred over the last three centuries. However, unlike previous revolutions, Industry 4.0 is depicted as made possible not by one specific technology but by a variety of enabling technologies, systemically linked to each other thanks to the Internet. This survey was followed by the *National Industry 4.0 plan* presented in Milan by the then Minister of Economic Development, Carlo Calenda, and the then Prime Minister, Matteo Renzi, on September 21, 2016. As for the academic world, a pioneering work in the Italian landscape was Francesco Seghezzi's article, *Come cambia il lavoro nell'Industry 4.0?*, published in 2015 (Seghezzi, 2015), and his following contribution *Lavoro e relazioni industriali in Industry 4.0* (Seghezzi, 2016). Importantly, these works had the merit of drawing attention to the delicate

[1] See the substantial piece of research produced by the X Commission of Italy's Lower Chamber, 2016.

interplay between Industry 4.0 and work and subsequently, between Industry 4.0 and industrial relations. Since then, more and more studies coming from the industrial, academic or consultancy world have tried to provide more in-depth knowledge of the characteristics of future factories and workers and by conducting empirical analyses on innovative Italian companies, have also attempted to overcome current polarised views of work at the times of Industry 4.0 (either the automation or the specialisation scenario; for further details on these scenarios, see: Buhr, 2017) (Gramolati, Cipriani, Mari (eds.), 2018; Magone, Mazali, 2016). However, a smaller number of studies have concentrated on the role of industrial relations in shaping the fourth industrial revolution. In addition to encouraging the involvement of social partners in defining and implementing national strategies for the development of Industry 4.0 (Seghezzi, Tiraboschi, 2018), these texts have payed attention to the evolution of collective bargaining arrangements, not only in the light of overcoming of old Fordist production systems but also of the new geography of work. In particular, focusing on the first aspect, the negotiating location best suited to meeting the need for company flexibility and a highly skilled workforce requiring the constant updating of its skills has been considered to be the company, and in some cases, individual level (Iacovone, Radoccia, Faioli (eds.), 2017). On the other hand, underlining the role of technological hubs in the economic development of a country, the centrality of territorial bargaining has also been marked (Seghezzi, Tiraboschi, 2018). Overall, the national level appears to be destined for notable downsizing in favor of a collective bargaining closer to agglomeration dynamics between businesses, where productivity, knowledge and value are generated. The content of the new industrial relations has been described as allowing businesses to take up the challenge of the fourth industrial revolution, for instance, by negotiating variable wages in line with increases in productivity, regulating forms of flexible working hours in response to greater production dynamism and the unforeseeable nature of orders, defining continuous training programmes for workers thus valorising their skills, and designing new "advanced lean" models of work organisation enhancing direct employee participation (Laboratorio Cisl Industria 4.0, 2017; Tiraboschi, Seghezzi, Armaroli, 2017; Various Authors, 2016). Lastly, these studies have stressed the need to revise the bargaining approach in order to allow businesses and workers to move towards Industry 4.0. Notably, it has been stated that it would be desirable to pass from a predominantly conflictual logic to a more collaborative dimension and to win-win solutions made possible by acknowledging company productivity as a goal for both parties.

Within this increasingly vital debate, scant attention has though been paid to deepening Italian social partners' own perspectives of Industry 4.0 and the initiatives, already carried out, to deal with the phenomenon. Stemming from this

background, this report is intended to close this gap in Italian literature by shedding light on the role that unions are currently playing in shaping the transition towards Industry 4.0, as well as on the institutional, organisational and ideological variables underlying union strategies and behaviour. This report focuses on the metalworking industry (encompassing steel industry, automotive, shipbuilding and overall construction of means of transport, machine tool construction, mechanical engineering, etc.), as one of the sectors most potentially impacted by Industry 4.0[2]. To achieve its main goals, this report relies on qualitative research methods, encompassing content analysis of primary sources (i.e. official documents, press releases, collective agreements, laws, etc.), desk research on existing academic papers and a case-study analysis on one metalworkers' organisation in Italy, namely FIM-CISL (Federation of Italian Metalworkers adhering to the Italian Confederation of Workers' Unions). This analysis is conducted also via interviews with union officials.

The report is structured as follows. Section 1 describes Italian governmental measures in relation to Industry 4.0. The state of the economy underlying the introduction of these measures is also emphasised. Section 2 gives an overview of the main features of industrial relations in the Italy and particularly, in the metalworking sector. Section 3 examines the Italian social partners' perspectives of Industry 4.0, with particular reference to trade union federations and employers' associations in the metalworking sector. Section 4 concentrates on FIM-CISL's organisational structure and identity, as well as FIM-CISL's discourse and actions in relation to Industry 4.0. FIM-CISL's own evaluation of Industry 4.0 and its role in it, is provided by a SWOT analysis. Section 5 concludes the report, by summarising the main findings and describing their significance in the light of the above-mentioned research purposes.

[2] For a classification of industrial sectors according to the degree of the impact of Industry 4.0, see: IndustriALL Global Union, 2017.

Section 1.
Governmental plans for Industry 4.0

With considerable delay compared to what happened in Germany, the United Kingdom, Spain, France and the Netherlands[1], on September 21, 2016, in Milan, the Italian National Industry 4.0 plan (so-called *Piano Calenda*) was presented in the presence of the then Prime Minister, Matteo Renzi, and the then Minister of Economic Development, Carlo Calenda. The presentation was preceded by an official announcement made by Stefano Firpo, the then General Director for Industrial Policy, Competitiveness and SMEs at the Ministry of Economic Development, in July 2015, an *ad hoc* parliamentary survey (promoted by X Standing Commission)[2] and a series of meetings of the so-called "Cabina di Regia" (*control room*), a consultative-coordinating body which includes national and local institutions, trade associations, trade unions and the academic world[3].
Importantly, the parliamentary survey shed light on the delicate state of the Italian economy, experiencing, over the last two decades, growth rates considerably lower than those registered on average in the Euro area, mainly because of the sharp crises that hit the country in 2009 and from 2012 and 2014. Labour productivity in Italy grew by 0.3% between 1995 and 2015; the increase concentrated on the second half of the Nineties, while productivity rates stagnated from 2000. However, the survey also emphasised a slight increase in the total factor productivity between 2009 and 2015, mainly driven by firms' investments in ICT capital (i.e. hardware, software, communication devices) and in non-ICT immaterial capital (i.e. research and development). By contrast, the rate of investments in non-ICT material capital was negative. As for employment, from 2008 to 2014 Italy experienced a decline which was in line with that registered in other European countries. Nevertheless, it must be pointed out that in the manufacturing sectors the fall in employment continued until 2015, thus

[1] For details on national initiatives for digitizing industry, see: European Commission, 2018.
[2] See the substantial piece of research produced by the X Commission of Italy's Lower Chamber, 2016.
[3] Among the universities, the Polytechnics of Milan, Turin, Bari, and the St. Anne's High School of Pisa can be mentioned; among most representative unions, CGIL, CISL, UIL and UGL must be mentioned; among employers' associations, Confindustria, the biggest industrial association of the country, has been consulted.

highlighting a trend more negative than that registered in the Euro area. These considerations provided the premise for the Italian government's increasing interest in Industry 4.0 and the subsequent development of a targeted plan.

Unlike the afore-mentioned European countries, in Italy, the plan has not resulted – at least in the current state – in any programmatic documents from the government. The Minister of Economic Development has only made available the slides of the presentation of the plan and a kind of "leaflet" or "toolbox" targeted to entrepreneurs and operators (Ministry of Economic Development, 2016; Ministry of Economic Development, 2017a). Regardless of the document form used by the government, the plan includes a set of systemic measures aimed at stimulating investments for innovation and competitiveness: some of the most qualifying points of the plan have been promptly merged into the Budget Law for 2017 and 2018. In substance, the plan includes concrete measures based on three inspiring principles, namely: to operate with a logic of technological neutrality; to intervene with horizontal and not vertical or sectorial actions; to influence enabling factors. At the same time, there are four strategic plans of action, two of which are called "key lines" and the other two are called "accompanying lines".

With reference to the "key lines", the plan contemplates: (i) *Innovative investments*, aimed at stimulating private investment in the adoption of Industry 4.0 enabling technologies and at increasing spending in research, development and innovation[4], through hyper-amortisation and super-amortisation of Industry 4.0 capital goods; tax credits for innovation and research (so-called *New Sabatini*); tax deductions and tax free of capital gains on medium to long-term investments; a guaranteed fund in favor of companies or specialists with financial difficulties, who are unable to receive bank credit[5]; (ii) *Skills and Research*, aimed at creating skills and stimulating research through *ad hoc* training programs, involving the implementation of the national plan of school digitalisation; the improvement of school-to-work transition, coherently with the new processes Industry 4.0; the strengthening of Industry 4.0 training offered in higher technical institutes[6]; the increase of industrial 4.0 PhDs; the implementation of both lifelong learning via inter-professional funds and Technological Clusters[7].

[4] Among the technologies, most relevant are identified as follows: Advanced Manufacturing, Additive Production, Augmented Reality, Simulation, Horizontal/Vertical Integration, Industrial Internet, Cloud, Cybersecurity, Big Data and Analytics.

[5] The budget's prevision for this key line is 10 billion euros (in respect to private commitment), and 13 billion euros in respect to public spending, including the spending on research and development, support finance, Venture Capital and start-up (2,3 billion euros) during 2018-2024.

[6] To allow the system of higher technical institutes to increase the training offer and the number of subjects in possession of skills enabling the use of advanced technological and organizational innovation tools related to the Industry 4.0 process, the Education and training fund for higher

Interestingly, with regard to skills and competences, the plan refers to Digital Innovation Hubs and (national) Competence Centers: the first, designed for the purpose of creating a "local bridge" between government and public institutions, companies, research centers, universities, think tanks, credit systems, start-ups, trade unions, investors and industrial players; the second, aimed to guarantee a dynamic and flexible training with respect to specific new technologies and new annexed processes, both to the side of dissemination of innovative projects in local communities and support of experimentation and manufacturing of 4.0 technologies. Importantly, on January 29, 2018, the government launched a call for contributions to co-finance the establishment of Competence centers. Accordingly, they should take the form of a public-private partnership made by at least one research body and one or more enterprises, aimed at supporting companies in the implementation of new technologies and launching innovation projects.

Finally, as far as skills and competences are concerned, it is important to mention that the 2018 Budget Law has allowed a tax credit of maximum 300,000 euros per year, corresponding to 40% of the costs of the personnel involved in training activities to gain or improve knowledge on Industry 4.0-related technologies. The tax credit is granted only in relation to those training activities established via company-level or territorial collective agreements.

In respect to the "accompanying lines", the plan contemplates: (i) *Enabling infrastructures*, aimed at ensuring adequate network infrastructures, data security and protection, as well as at collaborating in the definition of international interoperability standards[8]; (ii) *Public support tools*, essentially aimed at supporting private investments, strengthening firms' competitiveness in international markets and favouring the wage-productivity exchange via decentralized collective bargaining. Among the measures included in this line, the plan mentions a reform and refinancing of the SME Guarantee fund, new "development contracts" (a public measure intended to finance companies'

technology has been increased by 10 million euro in 2018, 20 million euro in 2019 and 35 million euro starting from the year 2020.

[7] In the private sector, the forecast spending is calculated to be 11,3 billion euros.

[8] One of the goals of this action concerns the implementation of "ultra-broadband connection," which is considered indispensable for the dissemination and management of the processes of Industry 4.0. On March 3, 2015, the Italian government approved, in line with the European Agenda 2020, the Italian strategy for ultra-broadband with which it intends to cover 85% of the population by 2020 with infrastructures capable of carrying services at speeds of 100Mbps and at the same time to guarantee 100% of citizens access to the Internet at least 30Mbps. As part of this strategy, the government promotes the development of ultra-broadband through the simplification of the regulatory framework, the creation of new drivers for development, the use of tax incentives, and the reduction of installation costs.

development plans) and the *Made in Italy Plan* referring to strong investments in digital sales chains.

Besides the above-mentioned accompanying lines, a further line is indicated in the website of the Ministry of Economic Development. The reference is to "Awareness and Governance", aimed at spreading knowledge, potential and applications of Industry 4.0 technologies, and at guaranteeing public-private governance for the achievement of pre-established objectives. With regard to this specific accompanying line there are three sub-actions, diversifying by the type of companies and managerial target, involving: (i) demos and presentations on recent manufacturing and digital technologies, in the context of training activities of competence centers (e.g. the way they use these technologies, benefits in terms of innovation, productivity, company competitiveness etc.); (ii) training seminars in local communities, with the help of documents, videos, direct testimonials and pilot cases, direct to small and medium-sized businesses and its managers (so-called *Roadshow I 4.0*); (iii) individual assistance to high-potential SMEs to support the definition and implementation of a 4.0 business transformation plan (directly to top management); (iv) a national communication plan via general press, web and social media, to raise awareness of the industrial sector on industry 4.0 issues and on digital innovation issues.

Some data released after one year from the launch of the National Industry 4.0 plan show an uplifting scenario (Ministry of Economic Development, 2017b): a recent increase in domestic sales volume for new machinery and electric and electronic equipment (thanks to the super-depreciation and "New Sabatini"), a growing number of companies investing in research, development and innovation, an increase in the so-called "development contracts" (a public measure intended to finance companies' development plans). Among manufacturing activities, the metalworking industry emerges as a sector particularly affected by new governmental measures on Industry 4.0, with planned investments via "development contracts" accounting for 32% (planned investments in mechanical engineering and automotive stand respectively for 15% and 17%) of the total, and a significant amount of companies declaring to be positively influenced in their investment decisions by super-amortisation, hyper-amortisation and tax credit for R&D. These results seem coherent with the scenario outlined by the Italian Institute of Statistics in a recent report (ISTAT, 2018): in 2017, the index of industrial turnover grew by 4.6% compared to 2016, thanks to a stable foreign demand (+ 5.5%) and a renewed vitality of domestic demand (+ 4.1%); 67% of companies declared to have made new investments in 2017, particularly thanks to the measures included in the National Industry 4.0 plan. Despite these uplifting indicators, some structural problems persist: 63% of businesses (mostly small enterprises operating in traditional sectors and constructions and located in

Centre-Southern regions) are still characterised by a low degree of digitalisation; 32% of companies are regarded as averagely digitised; only 5% of companies (especially medium-large companies involved in activities related to electronics, drinks, TLC, accommodation, computer technology) are depicted as characterised by a high level of digital innovation.

Section 2.
Main features of industrial relations in the metalworking sector

By and large, industrial relations in Italy are characterised by two features: low degree of legal institutionalisation (in the sense that legislation and the state play a limited role in the regulation of collective bargaining) and high degree of voluntarism (in the sense that trade unions and employers' associations are voluntary organisations regulated by private law, and that industrial relations are largely dependent on power, rather than determined by external recognition of their role) (see, among others, Cella, 1989; Cella, Treu (eds.), 1998; Cella, Treu (eds.), 2009; Colombo, Regalia, 2016), at least in the private sector. These conditions have made larger organisations subject to the pressures and opposition from their constituents, which tend to compromise the development of cooperative industrial relations and pave the way to the growth of independent autonomous unions (Colombo, Regalia, 2016).

2.1. Trade unions and employers' associations

Union pluralism is a further important element of industrial relations in Italy. There are three main trade union confederations: the General Confederation of Italian Workers (*Confederazione Generale Italiana del Lavoro*, CGIL), established in 1906 and historically linked to the left-wing and communist party; the Italian Confederation of Workers' Trade Unions (*Confederazione Italiana Sindacati Lavoratori*, CISL), established in 1948 and traditionally close to Catholic Christian values; the Union of Italian Workers (*Unione Italiana del Lavoro*, UIL), established in 1950 and historically close to the socialist and Republican political positions. With specific regard to the metalworking sector, three main trade union federations (representing both blue-collar and white-collar workers) adhere respectively to the aforementioned confederations: the Federation of Employees and Metalworkers (*Federazione Impiegati Operai Metallurgici*, FIOM-CGIL), the Italian Metalworkers' Federation (*Federazione Italiana Metalmeccanici*, FIM-CISL) and the Union of Italian Metalworkers (*Unione Italiana Lavoratori Metalmeccanici*, UILM-UIL). It is not only political sympathy

that explains union pluralism, but also variations in the logics of collective action play a role in this regard. More specifically, whereas CGIL has adopted a *logic of class*, by making little distinction between members and non-members and acting as representative of the whole working class, CISL (and to a certain extent also UIL) has preferred a *logic of association*, pursuant to which only members are endowed with the right to influence and determine union orientations and actions. Although some original views are currently more nuanced, a pluralism of identities has persisted and led to some cases of separate agreements (those collective agreements that have not been signed by all the three main workers' organisations)[1], thus weakening the union fortress and paving the way, in the absence of legal rules of representation and bargaining, to a quasi-anomic situation in industrial relations[2].

Smaller organisations and independent autonomous unions operating in the sector are: the Italian Federation of Metalworking and Connected Sectors' Unions (*Federazione italiana sindacati metalmeccanici e industrie collegate*, FISMIC), the Intersectoral Union of Self-Organised Workers (*Sindacato lavoratori autorganizzati intercategoriale*, SLAI-COBAS), the metalworkers' federation adhering to the General Union of Workers (*i metalmeccanici dell'Unione Generale del Lavoro*, UGL metalmeccanici) and the Italian Autonomous Federation of Metalworkers and Service workers (*Federazione Autonoma Italiana Metalmeccanici Servizi*, FAILMS-CISAL).

According to Leonardi et al., union density in the Italian metalworking sector is 32.8% (Leonardi, Ambra, Ciarini, 2017). This data has been declining over the past ten years (Federmeccanica, 2017). Employer density is estimated at around 50% with several employers' associations: the largest and most influential one is Federmeccanica (affiliated to the main employers' confederation, Confindustria); the second is Unionmeccanica (affiliated to the confederation Confapi), representing small and medium enterprises. In 2013, a new employers' confederation, Confimi Industria, was founded by local and sectoral employers' associations from Confapi and Confindustria. Plus, cooperatives and craft industry have their own sectoral federations.

Finally, it should be noted that to date in Italy, in the private sector, there is no law which establishes the criteria to follow when determining trade union representativeness. An intersectoral agreement on representativeness was reached

[1] As far as the metalworking sector is concerned, it must be noted that the renewals of the national industry-wide collective agreements in 2009 and 2011 were signed without FIOM-CGIL. Plus, also the FCA collective agreements of 2009 and 2010, after the company decided to leave the national employers' association, were not signed by FIOM-CGIL.

[2] *Industrial relations in Italy: background summary*, ETUI Reforms Watch, http://www.etui.org/ReformsWatch/Italy/Industrial-relations-in-Italy-background-summary.

on June 28, 2011 by Confindustria, CGIL, CISL and UIL, which set criteria for industry-wide as well as company-level bargaining. These criteria were confirmed in the cross-industry collective agreement signed on January 10, 2014. Nevertheless, the system agreed in these documents has not been fully implemented yet. Indeed, on February 28, 2018, Confindustria, CGIL, CISL and UIL signed another agreement where stressing the relevance to make effective the criteria for the measurement of trade union and employers' association representativeness, also in a view of contrasting pay and social dumping via collective agreements signed by non-representative workers' and employers' organisations. To achieve this purpose, social partners agreed on strengthening powers and responsibilities of the tripartite body CNEL (the National Economic and Labour Council) in this field.

2.2. Collective bargaining

The majority of metalworking companies, excluding those belonging to the FCA group and some of its associated companies, apply the national collective agreement of the metalworking industry, signed by Federmeccanica and Assistal (the National Association of Plants' Manufacturers) on the one hand, and FIOM-CGIL, FIM-CISL and UILM-UIL on the other hand. Nevertheless, as observed by Tomassetti, industrial relations in the metalworking industry have begun to disintegrate and this has led to the rapid multiplication of collective bargaining systems which are in serious competition with one another (Tomassetti, 2017b). Together with FCA's exit from Federmeccanica and the respective national collective agreement, not only was Confimi Industria created as the fourth competing party for the representation of small and medium-sized enterprises in the manufacturing sector, but also the trade union front split in late 2000s. Consequently, a single commodity-related sector is now being regulated by five different collective agreements in addition to that of Federmeccanica, whose latest renewal was in 2016: NCLA Confimi Impresa Meccanica, FIM-CISL, UILM-UIL (latest renewal in 2016); NCLA Unionmeccanica, FIM-CISL, FIOM-CGIL, UILM-UIL (latest renewal in 2017); NCLA metalworking cooperatives (ANCPL Legacoop, Federlavoro e Servizi, Confcooperative, AGCI Produzione e Servizi), FIM-CISL, FIOM-CGIL, UILM-UIL (latest renewal in 2017); NCLA craft industry, FIM-CISL, FIOM-CGIL, UILM-UIL (latest renewal in 2012); FCA collective agreement, FIM-CISL, UILM-UIL, UGL Metalmeccanici, FISMIC, Quadri e Capi Fiat (latest renewal in 2015, though a welfare plan was agreed in 2017).

As regards collective bargaining structure, national industry-wide collective bargaining is the core of the system. However, «over time, alongside the highly

centralized arena for cross-sectoral (or interconfederal) negotiations on very general topics between the union and employers' confederations, the bargaining system evolved a two-tier structure: the national industry (or sectoral) level, which periodically redefined industry-wide pay and conditions and the company (or sometimes also territorial) level, devoted to negotiation on workplace-related issues, usually subject to a favourability principle» (Colombo, Regalia, 2016, p. 296). This structure was clearly set forth in the so-called "Giugni Protocol", signed by government, Confindustria and trade union confederations in July 1993, and in the following tripartite agreement of December 1993. The Protocol provided for two separate, non-overlapping tiers of collective bargaining. According to this structure, decentralised bargaining (at either company or territorial level) should deal with issues that are either not regulated by the national industry level (the principle of "ne bis in idem") or precisely devolved by the national industry level to decentralised bargaining parties (the principle of "delegation"). As regards wage bargaining, the Protocol established that the goal of the national, industry-wide collective bargaining, was to preserve workers' purchasing power, by setting wages in line with the inflation rate, while decentralised bargaining should regulate the growth of wages according to productivity levels at either company or local level (Tronti, 2010). Moreover, "opening clauses" in decentralised bargaining were firstly introduced on January 22, 2009 in the *Tripartite Agreement for the Reform of Collective Bargaining*, which allowed second level bargaining to freely deviate from national agreements (a decentralisation model that can be defined as weakly organised). Probably due to this provision, this agreement was not signed by the largest trade union confederation, CGIL. Later, as already mentioned, on June 28, 2011, Confindustria and the three main union confederations (CGIL included) signed an inter-confederation agreement, which in addition to defining criteria for measuring union representativeness and the binding validity of company-level agreements, consented second level collective agreements to modify (also *in peius*) the regulations contained in the national collective agreements, but «within the limits and in line with the procedure that the national company agreements themselves permit». The provisions stated in the 2011 inter-confederal agreement concerning the coordination between contractual levels, were confirmed on January 10, 2014 in an agreement on representativeness, signed by Confindustria, CGIL, CISL and UIL[3].

[3] It may be important to add that in September 2011, Italian government took action on collective bargaining, by introducing the Legislative Decree No 138/2011, converted into Law No 148/2011, whose Article 8 consents decentralised bargaining (either at company or territorial level), performed by comparatively most representative trade union associations at the national level, not only to agree worse terms than those established in industry-level collective agreements, but also

With specific reference to the metalworking sector, and notably to the main national collective agreement signed by Federmeccanica and Assistal, and covering more than 1.6 million workers (FIM-CISL, 2016), it is important to specify that the NCLA expressly requires company collective bargaining to deal with «matters delegated, in whole or in part, by the national collective agreement or by the law» in line with the criteria and modalities indicated therein. The sectors' social partners therefore outline a model of organized decentralization, recognizing, however, considerable room for autonomy in the company-level collective bargaining. Article 5, Section III of the metalworking NCLA, entitled *Agreed modifications to the NCLA*, states that «in order to promote economic and employment development by creating useful conditions and new investments or to launch new initiatives, or better, in order to contain the economic and employment effects arising from situations of company crisis, specific modifications, even experimentally or temporarily, can be made to one or more elements governed by the NCLA and the agreements referred to therein». Such agreements, in order to be valid and effective, must comply with the following procedures: (A) they must be defined at the company level with the assistance of employers' associations and the local representatives of the relevant trade unions; (B) they must indicate the goals to be accomplished, the duration (in the case of an experimental or temporary measure), the exact references to the articles of the NCLA being amended, the arrangements made to guarantee the eligibility of the agreement with measures to be fulfilled by both parties; (C) they cannot relate to wage-tariff minimums, seniority pay and the economic element of guarantee, as well as individual rights deriving from legally binding regulations; (D) where promoted by multi-localised companies, the employers' associations and local trade-union representatives must arrange appropriate means of coordination wherever necessary; (E) in order to be valid, they must be communicated to the NCLA parties and, in the absence of a decision, after 20 calendar days from receiving them, will enter into effect and modify the relevant NCLA clauses for the matters and duration defined (Tomassetti, 2017b).

Importantly, it should be noticed that a problem of vertical coordination of collective bargaining (referring to the lack of conformity between parameters agreed at the central level and what is actually negotiated at subordinate levels. Marginson, Sisson, 2002) persists in Italy, as local trade union representatives and employers' associations tend to negotiate, and sign decentralized collective agreements that are not always coherent with coordination rules established at the central level (see, among others: Regalia, Regini, 1998; Tomassetti, 2017a). This

to derogate from minimum terms set in national legislation on a range of topics, such as working time, flexible employment contracts, recruitment procedures, work organisation and job classification and the introduction of new technology.

problem has been described in international literature as taking the form of concession bargaining, the increasing adoption of derogation clauses and the subsequent reconfiguration of the favourability principle (see, among others: Cappelli, 1985; Haipeter, 2011; Keune, 2011; Marginson, 2015; McKersie, Cappelli, 1982). Nevertheless, a more recent study on the Italian context has concentrated on violations of coordination rules that comply with the principle of favour (Tomassetti, 2017a). Interestingly, with specific reference to wage bargaining, the study points out that the non-compliance with the demarcation of competence of the sector and company levels, is also reflected in a number of decentralised collective agreements, signed in Italy between 2012 and 2015, and introducing fixed-rate economic elements (i.e. collective extra pay or fixed-rate bonuses) with no connection to objective performance parameters. Moreover, the metalworking industry emerges from that research as the sector with the least effective wage coordination system. In addition, the problem of vertical coordination between bargaining levels in Italy needs to be analysed by taking also into account the issue of low collective bargaining governability (Traxler, Kittel, 2000), deriving from the absence of legal enforceability of collective agreements and the scant diffusion of peace obligations during the validity of collective agreements. The combination of these two factors evidently puts in jeopardy the role of a two-tier collective bargaining system in achieving one of the goals of Italian employers and their associations, namely safeguarding *managerial control*, thus ensuring certainty and governability of labour standards[4]. The 2011 FCA's exit from Federmeccanica and the respective national collective agreement can be partly interpreted as a result of these deficiencies in the Italian collective bargaining system (Tomassetti, 2017a), especially at a time when industrial relations at the factory floor were deteriorating following the introduction of more severe managerial practices intended to align the Italian plants with the World Class Manufacturing and Ergo-UAS standards. The change at the shop floor encountered opposition from workers and their representatives even in the form of work stoppages, making management perceive a sense of instability and a deterioration of the *managerial control* that multi-employer bargaining is expected to guarantee[5].

Whereas collective bargaining coverage was never esteemed by international and national sources below 80-85% (particularly thanks to voluntary extension

[4] Managerial control refers to the employers' need to secure union assistance «in making and upholding rules to regulate work and wages for the sake of gaining employee consent and co-operation and avoiding costly strikes». See: Flanders, 1974, p. 356; Sisson, 1987, p. 5.

[5] Other determinants though contributed to the singularity of the FCA's case (i.e. an effective whipsawing strategy by management, the company's uniquely strong position in the Italian labour market). For a more in-depth analysis of these elements, see: Tomassetti, 2013.

mechanisms in individual employment contract and case law, in a context characterised by the lack of a legal extension mechanism), it should be noted that as regards second-level collective bargaining, only 35% of employees in the private sector are covered by company or territorial collective agreements. In smaller companies, most employees are not covered by any workplace representation and subsequently, by any company-level collective agreement. However, it has been reported that due to the higher number of companies in the metal sector with more than 250 employees, second-level bargaining has a higher incidence there than in the rest of the economy (Leonardi, Ambra, Ciarini, 2017).

2.3. Workplace representation

As previously mentioned, a peculiarity of the industrial relations system in Italy is the high degree of voluntarism and the abstention of the law. Within this framework, the only broad-ranging law that provides principles and rules in the area of employees' rights is the Workers' Statute, passed in 1970. It establishes the employees' right to elect workplace representatives and freely exercise union rights in companies with more than 15 workers (Leonardi, 2017, p. 91). Below that threshold, there is no right or obligation to elect union representatives. Notably, according to the Workers' Statute, it is the unions who are signatories to the collective agreement applied in the company that have the right to appoint the members of the RSA, the original form of trade union representation at company level. Even though the RSA continues to exist in some sectors (e.g. banking and insurance), since 1993 social partners have agreed to set up the new structure, RSU, which represents a unified committee for all the unions in the workplace with members elected by the whole workforce. It is important to state that «whether workers are represented through RSUs or RSAs, it is the trade unions that play the central role. Although RSUs are elected by the whole workforce, they remain primarily union committees»[6]. Once set up, the RSU has both participatory and bargaining rights. Given this common framework, details can be negotiated by social partners in different sectors. Indeed, as far as the metalworking sector is concerned, specific rules on the election of the RSU were agreed by the three most representative trade union federation, FIM-CISL, FIOM-CGIL and UILM-UIL on November 24, 2016, and then, on July 19, 2017 they were included in the renewal of the national collective agreement. Accordingly, an electoral commission (composed of one representative per each trade union who has signed the NCLA) is constituted and charged with handling the voting

[6] *Industrial relations in Italy: key facts and institutions*, ETUI Reforms Watch, http://www.worker-participation.eu/National-Industrial-Relations/Countries/Italy.

process from the receipt of the electoral lists (presented by the unions) to the announcement of the members of the RSU. A national safeguards committee (composed of representatives from FIM-CISL, FIOM-CGIL and UILM-UIL) deals with appeals against the results of the voting process and the decisions made by the electoral commission. This committee shall unanimously decide. However, whether it fails to make a unanimous decision, a local safeguards committee is in charge of solving the issue. On November 24, 2016, a further agreement was reached by FIM-CISL, FIOM-CGIL and UILM-UIL regarding the functioning of the RSUs and democracy at workplaces. Besides confirming the rules established by the confederations, the agreement for the metalworking sector establishes that: bargaining rights at company level are acknowledged to both RSUs and local trade union federations; the referendum represents the tool for the approval of union platforms and the delegation of bargaining powers to the RSU; the RSU decisions are made by majority; it is possible to elect RSAs (with a one-year mandate) only in specific cases (e.g. in newly unionised companies) before setting up the RSU. Health and safety representatives (RLS) and their rights are set forth by law, after the transposition of the EU directives. Accordingly, the RLS have the legal right to access workplaces, receive all documentation concerning risk assessment and prevention measures, and call in the authorities if the prevention/protection measures are not adequate. Alongside the RLS and the RSU, other interesting bodies are represented by joint committees, which may be established via collective bargaining and aimed at promoting non-confrontational relations and dealing with single issues.

2.4. Participation rights

With specific regard to employee participation, it is essential to mention that although Article 46 of the Constitution is dedicated to workers' right to collaborate in the management of enterprises, in the ways and within the limits established by law, it never materialized. The reasons behind this condition have been regarded as both semantic and political. On the one hand, the deployment of the expressions "to collaborate" and "in harmony with the needs of production" were interpreted as too close to the Fascist corporatist ideology of idyllic labour-capital relations. On the other hand, the public registration of trade unions as a precondition for signing *erga omnes* collective agreements was also perceived as a legacy of the former regime. However, in the 1980s Italian scholars and unionists began looking with growing interest at neo-corporatism; "From conflict to participation" became the new mantra and the framework agreement of July 23, 1993 endorsed the value of employee participation as a key element of company-level collective bargaining. As a consequence, some attempts to establish systems

of employee participation and particularly, of information and consultation were made especially in public companies (i.e. IRI and ENI). Plus, in some private sectors (i.e. energy and chemical sectors), social partners started to engage in cooperative industrial relations leading sometimes to employee participation clauses in company-level collective agreements. Nevertheless, any attempt to build any formal system of employee participation in Italy has always failed, probably due to the variety of cultures and objectives (e.g. CISL's scepticism towards the intervention of the law in industrial relations, CGIL's original reluctance for board-level employee representation, the hostile attitude of employers' organisations)[7].

Within this context, it is though worth stressing the role played by the EU in legal changes concerning employees' information and participation: a first generation of EU-driven laws in Italy concerned collective dismissals, transfer of undertakings, and health and safety, whereas a second generation of EU-driven laws, often anticipated by a peak-level joint statement by social partners, referred to the transposition of the Directives on European Works Councils, the European Company Statute and information and consultation. Moreover, thanks to recent governmental measures, new opportunities of employees' and their representatives' participation are apparently opening in the area the quality of work organisation and conditions at shop-floor level. Indeed, by acknowledging the positive link between direct employee participation and firms' economic performance as well as the beneficial impact on this relationship potentially played by trade union representation[8], the 2016 Budget Law (then confirmed for 2017 and 2018) introduced not only a tax reduction for those variable pay schemes, established via collective agreements at company or territorial level and linked to increases in productivity, profitability, quality, efficiency and innovativeness, but also an increase in the maximum amount of these bonuses subject to decreased taxation if accompanied by ways and instruments of employee involvement in work organisation (e.g. via work groups where managers and employees operate on the same footing for the improvement of performance levels and via bilateral permanent structures for the monitoring of the results achieved). The fiscal intervention on employee involvement has been recently replaced by contributory incentives for employers who establish and implement ways and instruments of employee involvement in work organisation, in agreement with trade unions. These incentives, in the form of reductions in social security contributions, are applied to variable bonuses up to 800 euros. This legislative measure is bringing about an increase in the number of decentralised

[7] For more in-depth knowledge on employee participation in Italy, see: Leonardi, 2015.

[8] Some evidence on these links are also provided by the following academic works: Bryson, Forth, Kirby, 2005; Frost, 2001; Geary, 1993; Kochan, Katz, McKersie, 1986.

collective agreements introducing forms and practices of direct employee participation also in the metalworking sector (ADAPT, 2018). Finally, even though employee share ownership plans are also encouraged by tax incentives inserted in recent budget packages, their frequency in collective agreements seems to be still low.

Section 3.
Overview of the perspectives of trade unions and employers' associations in the metalworking sector on Industry 4.0

Industry 4.0 constitutes a matter of pressing interest and concern of trade unions and employers' associations in Italy. It is important to know that despite the ideological differences still existing between the main trade union organisations, their approaches towards Industry 4.0 (at least if we consider the viewpoints expressed at the confederal level) appear to be quite coherent, in the sense that they are underpinned by a proactive union behaviour in this field. Indeed, as stated in the page of CGIL's website related to the project "Work 4.0" as well as in the annual report of the same project presented at the Programmatic Conference on January 30 and 31, 2018, the main idea is that in order to effectively tackle the challenge of Industry 4.0, unions should not infringe their main roles and responsibilities, yet to keep on relying on collective bargaining as the most important union instrument and task. However, within an Industry 4.0 scenario, unions should be able to anticipate the times when negotiating with managers and engage in what has been called as "contrattazione d'anticipo", which means for unions to stay one step ahead and bargain with management not only over the effects of technological innovations but also before the introduction of those new technologies in workplaces. This discourse appears to be consistent with that expressed in many occasions by CISL's leaders. Notably, in a letter published on February 5, 2018, the General Secretary of CISL declared that the main instrument to be deployed to deal with the challenge of digitalisation and Industry 4.0 is employees' and their representatives' participation, conceived as a vehicle to discuss and share with management not only the economic gains from production but also strategic objectives and decisions (Furlan, 2018). Both CGIL and CISL have acknowledged that to reach their goals it is firstly important to deepen their knowledge on Industry 4.0. However, they chose quite different methods. On the one hand, CGIL launched in spring 2017 the project "Work 4.0" with the aim of imaging and interpreting the future of work as well as shaping the role of the union in this new context. The project "Work 4.0" relies on two main tools: the online cooperative platform "Idea Diffusa", gathering more than 200

experts (among those, there are unionists, managers, researchers, lecturers, etc.) to exchange views and relevant materials, thus enhancing inflows and outflows of knowledge and processes of mutual learning; an industrial committee, which is a community of about 99 experts in industrial policy, who are available to give advice and suggestions to CGIL in the field of Industry 4.0. Within the framework of this project, CGIL has already organised several meetings and conferences, such as the event entitled *Co-determination 4.0* held in Rome on March 22, 2018. On the other hand, CISL launched in 2017 the so-called "Laboratorio Industria 4.0", primarily aimed at investigating the effects on workers and their conditions of the introduction of Industry 4.0-related technologies in some innovative workplaces, then deriving some suggestions and guidelines about future collective bargaining. The "Laboratorio Industria 4.0" is coordinated by some CISL's leaders with the scientific support of professors and experts from the Polytechnic of Milan. Apparently, so far CISL's focus has been more workplace oriented, whereas CGIL's attention has been more directed at society. This divergence seems to mirror the above-mentioned differences in the traditional identities of the two unions. Importantly, on March 13, 2017, all the three main union confederations, CGIL, CISL and UIL, drafted and published a document entitled *An Italian way to Industry 4.0 that takes inspiration from the most virtuous European models*, where in addition to providing details on the initiatives performed by some European countries in this filed, welcomed the National Plan on Industry 4.0, released by the Ministry of Economic Development, and stressed the importance of an effective governance of companies' investments in Industry 4.0, via the so-called "Cabina di Regia" (*control room*) at the national level, composed of members from the government, professors and researchers from the academia, representatives from employers' associations and trade union confederations. Pursuant to CGIL, CISL and UIL, this steering committee, also thanks to the collaboration of regional and territorial observatories, should organise initiatives at the territorial level to raise workers' and companies' awareness of the challenge of Industry 4.0 and the National Plan, constantly monitor the trend of firms' investments in new technologies and their impact on workers and employment levels, and analyse and assess the results. Moreover, the three union confederations emphasised the relevance of industrial policy initiatives aimed at supporting the creation of new, integrated supply chains and networks of enterprises so as to spur firms' innovative potential also in Southern regions. Finally, CGIL, CISL and UIL expressed the urgency to adequately manage employment dynamics in relation to technological transformations, re-skill and up-skill workers so as to allow them to keep the pace with these innovations, design and spread flexible working time solutions and measures for a better work-life balance, develop company-level collective bargaining to boost

productivity and further stimulate employee participation not only at the organisational but also strategic level.

This quite homogeneous, proactive approach of union confederations to Industry 4.0, however, does not avoid some internal discrepancies and notably, the presence of more negative and pessimistic views on these technological transformations in some national or territorial union federations, which imply a more cautious and critical approach to the issue. To take an arbitrary example, in FIOM-CGIL's website, some articles direct the attention to the potential negative consequences of Industry 4.0: the increasing precariousness of employment contracts, the spread of an economy of gigs and the perspective of a digital Taylorism, the blurring of boundaries between work and life and subsequent pressures on workers, the lowering of salaries and working conditions, the risk that algorithms and technological devices take the lead of firms and their management, the employment repercussions of automation and robotisation, the exploitation of natural resources to produce Industry 4.0-related devices, etc.[1]. Conversely, these possible negative drawbacks of Industry 4.0 are not detectable in the page of FIM-CISL's website dedicated to Industry 4.0, where instead dominates a more positive view of technological development as a chance for the union to renovate itself and play a crucial role in shaping the future of work. A vision that has also been depicted in the booklet *#SindacatoFuturo in Industry 4.0*, published in 2015 (Various Authors, 2015c). Finally, UILM-UIL seems to consider Industry 4.0 as an opportunity to counter the decline of industrial sectors. However, more than the other unions and especially FIM-CISL, UILM-UIL stresses the need of a new industrial policy project on Industry 4.0 that doesn't leave workers behind, and advocates overcoming austerity policies (UILM-UIL, 2017a). Within this context, according to the General Secretary of UILM-UIL, industrial relations should ensure skills development and a valorization of workers' professionalism (UILM-UIL, 2017b). Nevertheless, it should be pointed out that, by and large, the commitment of UILM-UIL in Industry 4.0 seems to be less relevant than that of the other metalworkers' federations.

With regard to employers' associations, Industry 4.0 is conceived as a huge opportunity to boost competitiveness in different sectors, ranging from manufacturing and services (HORECA, tourism, etc.) to agriculture and craft industry. As far as craft and industrial sectors are concerned, both Confindustria and Confartigianato (representing craft enterprises) highlight that Industry 4.0 is not merely a technological innovation, yet it requires a deep cultural change: employers need to change their way of thinking of and making business, thus relying on digital solutions to better satisfy customers' needs, and further develop

[1] See, for instance, the article published on October 16, 2017 in FIOM-CGIL's website: Mahnkopf, 2017.

workers' knowledge and competences to the benefit of new products and markets. These concepts are stressed in both Confindustria's webpage dedicated to the project "Preparati al futuro" (*Prepared to the future*), and in Confartigianato's *Manifesto for a digital culture* released in 2017 (Confartigianato Imprese, 2018). Moreover, Confartigianato commit itself to guide craft enterprises in Industry 4.0 by participating in institutional tables on this issue and making sure that craft industry's voice is heard, as well as by enriching the offer of services to companies in order to better help them deal with the digital transformation. The difficulties faced by small and medium-sized enterprises when attempting to keep the pace with these technological innovations, have been emphasized by Confapi (the confederation which Unionmeccanica takes part in), whose President has reminded that Industry 4.0 is not a panacea and that structural plans and strategic choices by government are demanded to allow also SMEs to embrace the digital transformation (for details, see: Confapi, 2018). Overall, the main involvement of employers' confederations in Industry 4.0 materialises in the so-called Digital Innovation Hubs, envisaged by the National Industry 4.0 Plan to be established in regions and territories and made up of many stakeholders (e.g. Universities, research centres, start-ups, ICT clusters, employers' associations, etc.) with the aim of raising companies awareness of Industry 4.0 and helping them make investments in this field. Confindustria, Confartigianato, CNA (another association representing craft companies), Confapi and Confimi have all contributed to the establishment of some innovation hubs in different territories. With specific regard to the metalworking sector, Federmeccanica emerges as one of the Italian employers' associations more active in the field of Industry 4.0, since it has been capable to organise different initiatives and projects connected to this issue. Federmeccanica interprets Industry 4.0 as a phenomenon likely to bring huge benefits to enterprises. In order to deepen its knowledge on the topic, in 2015 Federmeccanica established the Task Force "Liberare l'ingegno" (*Free the intelligence*), composed of managers, professors, and employers' representatives, and intended to accompany manufacturing companies in the path towards the full digitalisation. Within the framework of this project, in 2016, Federmeccanica conducted a survey on a sample of 527 metalworking companies with the aim of investigating the degree of employers' awareness of Industry 4.0 and the level of introduction of new technologies in workplaces. The results of this research were presented in a conference held on September 21, 2016. Overall, thanks to this empirical research, Federmeccanica acknowledged the need to raise companies' awareness of three main dimensions that need to be developed and connected to each other in an Industry 4.0 scenario: technologies, workers' skills and work organisation. These findings appear to be in line with the literature on socio-technical systems (Davies, Coole, Smith, 2017, p. 1292). As a result,

Federmeccanica, with the support of the Task Force, has recently launched other two initiatives. Firstly, a website (https://ricomincioda4.fondirigenti.it/) has been created to gather articles, documents and information material on Industry 4.0, uploaded every 40 days and mainly targeted to employers and managers. Secondly, short videos, named "Industry 4.0 webcast", are regularly uploaded to Federmeccanica's website so as to make employers familiar with Industry 4.0 by looking at images and listening to the testimonies of some other employers and managers. Interestingly, Federmeccanica was the leading applicant of an EC co-funded project entitled *INDUSTRY4EU – Industry 4.0 for the future of manufacturing in Europe* (VS/2015/0327) and aimed at boosting social dialogue among European employers' associations on the issue[2]. Overall, Italian employers' associations share a positive and optimistic view of Industry 4.0 and their main goal seems to be to participate in it, by adequately assisting their affiliated companies.

[2] Further information are available here: https://www.federmeccanica.it/education/progetti/industry-4eu-industry-4-0-for-the-future-of-manufacturing-in-the-eu.html (accessed April 11, 2018).

Section 4.
The role of trade unions in Industry 4.0: the case of FIM-CISL

4.1. Brief overview of FIM-CISL

FIM-CISL was founded on March 30, 1950, in order to gather all the metalworkers «who are willing to defend their common interests and fight for the promotion of a democratic society made up of free and responsible people, while respecting their own personal, philosophical, moral, religious and political opinions»[1]. Since its foundation, FIM-CISL adheres to the Italian Confederation of Workers' Trade Unions (CISL), founded in 1950 after the split of the former General Italian Confederation of Labour (*Confederazione Generale Italiana del Lavoro*, CGIL) into the current three most representative workers' confederations (namely CGIL, CISL and UIL). As stated in its website, FIM-CISL operates in different sectors ranging from aerospace and defence, motor vehicles and car parts industry, shipbuilding, household appliances, train units, to ICT, electronics, semi-conductor products, machine tools, mechatronics, steel industry, etc.
According to FIM-CISL data, as available also in FIM-CISL website, in 2015, workers affiliated to the union were about 225,422. This number has experienced a decrease over the past few years: in 2017, only 210,798 metalworkers were affiliated to FIM-CISL[2]. If we compare the 2015 data with that of the overall workforce in the sector in the same year (corresponding to 1,569,537) (Federmeccanica, 2017), we can calculate a FIM-CISL membership rate of about 14.36% (compared to a union membership in the sector accounting for around 32.8%) (Leonardi, Ambra, Ciarini, 2017). However, we must point out that this is just an approximate calculation of trade union density, since so far this data has not been made available by social partners, despite the fact that since 2011 peak-level associations of both workers and employers in private sectors agreed on common criteria to calculate the degree of "representativeness" of trade unions.

[1] «La Fim riunisce tutti i lavoratori metalmeccanici decisi – nel reciproco rispetto delle proprie opinioni personali, filosofiche, morali, religiose e politiche – a difendere i loro comuni interessi e a lottare per rafforzare una società democratica di persone libere e responsabili», Article 3 "General Principles", Statute of FIM-CISL, www.fim-cisl.it/statuto.
[2] This data has been provided by the national secretarial body of FIM-CISL.

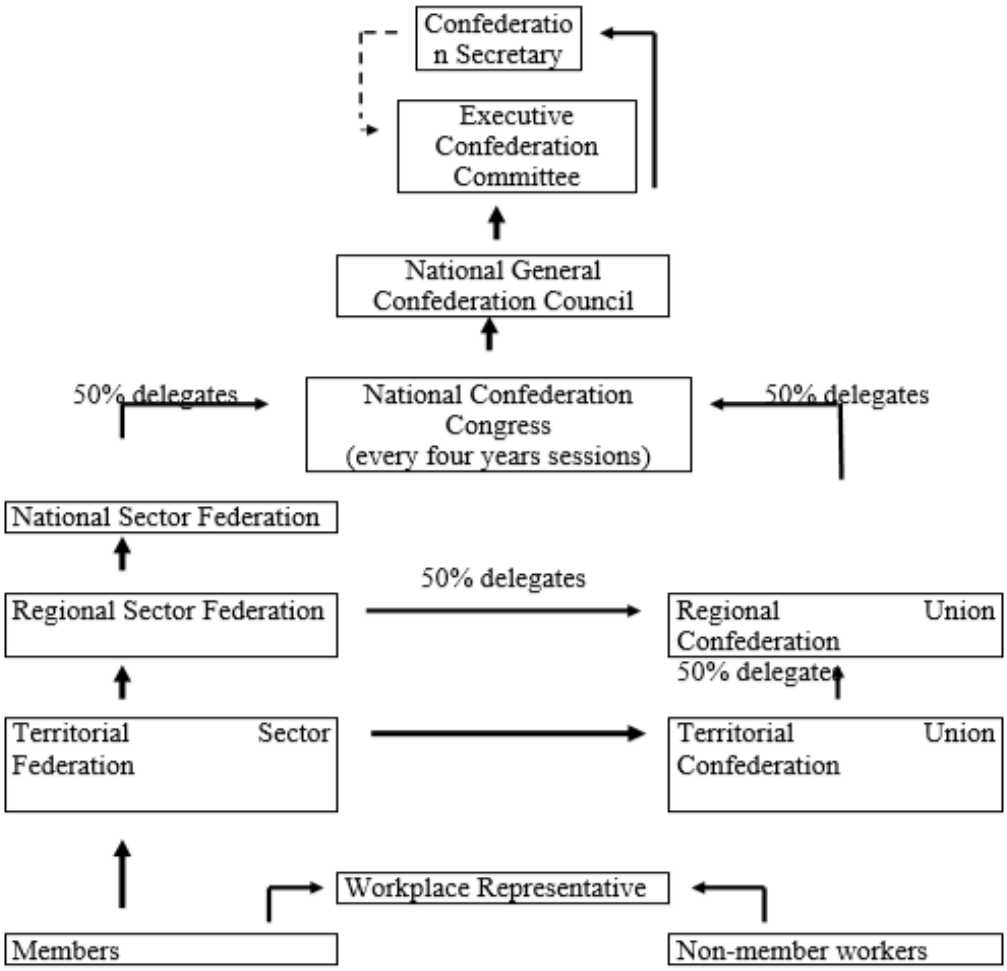
More specifically, in the cross-sectoral collective agreement of January 10, 2014, Confindustria, CGIL, CISL and UIL established that to be admitted to national collective bargaining rounds, trade unions needed to pass a threshold of 5% consensus, calculated as an average between the votes obtained at the elections of the unitary workplace union structure, RSU, and the union members in the sector. With reference to the former indicator, it is important to mention that in 2015, 6,140 members of the RSU in Italian companies were affiliated to FIM-CISL[3]. The above-mentioned criteria have been more recently confirmed also in the cross-sectoral collective agreement of February 28, 2018, where Confindustria, CGIL, CISL and UIL agreed also on designing a shared method to certify the "representativeness" of employers' associations, with the support of the tripartite body CNEL, which is entitled to evaluate the actual scopes of different sectoral collective agreements also in the light of current transformations in the world of work, as well as to ascertain the "representativeness" of the respective negotiating parties. Several commentators hope that this new agreement could provide a further leverage for an efficient calculation of social partners' "representativeness", thus also contrasting pay and social dumping via collective bargaining.

In order to understand the organisational structure of FIM-CISL, it is important to shed light on the overall organisation of CISL. As stated by Lama, a CISL unionist, «the CISL organisational model combines industrial unions, according to the relevance of workplace activities, with horizontal unionism. It is a national confederation which coordinates the action of sector federations, bargaining with government about general issues on behalf of its members and workers' common interests as a workforce» (Lama, 2008, p. 27). This model was considered as suitable to the development of modern businesses and society in the Fifties and coherent with practices of collective bargaining at many levels. Figure 1 illustrates CISL organisational and operational structure. Every three years, union members and non-member workers vote to elect the unitary workplace union structure (RSU) on lists presented by different trade unions. Every four years, the entire CISL convenes a congress aimed at electing the new leading group. The process is quite complex and usually lasts some months. It starts at the lower levels with meetings of members in workplaces or in geographical areas in the case of small companies and few members. After discussing the congress main document and advancing proposals, members elect their delegates to the territorial federation congress. Here, delegates elect the territorial federation general council members, the secretarial group and the general secretary, delegates to the regional federation congress, representing the following structure in the vertical organisation's line,

[3] Data available here: http://www.fim-cisl.it/mission/.

and to the territorial confederation union congress, which constitutes the horizontal structure gathering all local sector federations. Therefore, the process follows parallel paths, by involving sector federations on the one hand, and territorial confederations on the other hand. The process concludes in the national confederation congress, which is attended by delegates elected both at national federation and regional confederation congresses, who elect the national general confederation council and the national secretary. At each congress, the number of delegates is proportional to the number of members. This is a leadership selection process going from bottom to top. The economic resources of CISL come from membership fees in the same bottom-top direction. However, there are small differences among sector federations, which are allowed to decide the proportion of money that will be provided to their different organisational structures. As regards the metalworking sector, 79.5% of the members' fees are distributed at the federation structures at all levels (65% to territorial, 6% to regional and 8.5% to national). The remaining 20.5% is distributed among the confederation structures at all levels (11.65% to territorial, 3.9% to regional and 4.95% to national) (Lama, 2008).

Figure 1. CISL organisational and operational structure



Source: Lama, 2008, p. 22

There is a sentence contained in FIM-CISL's Statute (approved in its latest version in 2017) that clearly summarises the articulation of FIM-CISL and its relationships with CISL: notably, Article 1 specifies that FIM-CISL is articulated in regional and territorial federations[4], which must orient their actions towards regional and territorial confederations in a spirit of collaboration, though maintaining their political, organisational and administrative autonomy. Article 8 lists the bodies inherent to FIM-CISL: the National Congress (the main decision-making body), the General Council (the decision-making body in the period between one National Congress and the other), the Executive Committee (entitled

[4] The scope of action of territorial federations does not always correspond to the administrative division of municipalities.

to implement the decisions made by the General Council), the National Secretarial Body (in charge of ensuring the normal functioning of the federation), the Statutory auditors' board (ensuring the administrative control of FIM-CISL), and the board of probiviri (ensuring the respect of the Statute).

As adhering to CISL, FIM-CISL inevitably embodies all the three main pillars of CISL's identity: autonomy (intended as the choice to be free and independent from all external powers, whether they be economic, political or cultural), associationism (founded on the belief that the trade union is made through the will of workers and composed only of those workers who join the organisation as members, thus directly contributing to the definition of the trade union directives) and collective bargaining (meant as the main method of action which provides the parties with the maximum level of autonomy from law and the highest level of accountability) (Lama, 2008). More specifically, as stated in Article 3 of its Statute, FIM-CISL promotes equal dignity and opportunities in the workplace and society. FIM-CISL contributes to the development of the human personality, via the satisfaction of its material, intellectual and moral needs. To do so, FIM-CISL engages itself in the following activities: i) settling on fundamental directives concerning union, economic and organisational policies; ii) promoting workers' participation in decision-making and accumulation processes at company level; iii) promoting workers' participation in decision-making processes concerning economic and social matters at the national level; iv) reaffirming the autonomy and democratic freedoms of the associations, including trade unions; v) strengthening organisational structures in the workplaces and beyond, and enhancing training directed to its members and leaders, so as to guarantee a democratic process in deciding on and performing union activities; vi) producing and disseminating magazines, documents, newspapers, etc. with the aim of informing its members and all citizens on the initiatives carried out by FIM-CISL, even in cooperation with other actors; vii) signing collective agreements and protocols at different levels. In addition, FIM-CISL confirms its autonomy from any political organisation. Its organisational structures, both centralised and decentralised, must not be the same as those of political parties and movements. Its financial and material resources must not be deployed to the benefit of both political parties and their activists or leaders[5]. Finally, an important contribution to the development of FIM-CISL identity over the past three years has been given by the General Secretary, Marco Bentivogli. Importantly, in his book *Abbiamo rovinato l'Italia?*, he stresses some essential features of workers' representation from the perspective of FIM-CISL: the ethical dimension of trade unionism, as an organisation which promotes social, moral and democratic values in society; the

[5] Statute of FIM-CISL.

human-centred perspective of collective action, intended to promote human wellbeing and development; the principles of solidarity and cooperation against the affirmation of an individualistic society; the concept of sustainability in industrial relations against a short-term approach aimed at avoiding contingent problems; workers' participation as a way to boost firms' productivity, a more equal income redistribution, workers' skills and employability; the transition from a work-salary exchange to a work-wellbeing exchange via the promotion of welfare initiatives in the workplaces; an enhancement of industrial federations adhering to CISL due to the emergence of global supply chains that undermine local production systems (Bentivogli, 2016).

4.2. Trade union discourse

When framed around Industry 4.0, FIM-CISL's identity is reflected in «the goal to anticipate change so as to be protagonist in designing the new digital ecosystem in a way that places the worker at the heart of this transformation», as revealed by FIM-CISL's General Secretary when interviewed for this report[6]. This goal underlies a positive and proactive approach to innovation that pits itself against the dominant fears of technological transformations and the risk of paralysis. To achieve its aim, FIM-CISL stresses the relevance of three important activities to be performed: i) studying and training the new leadership; ii) communicating its message internally to the workforce and externally to other stakeholders via new means, made available by technological innovation; iii) acting as a social educator, thus playing a role that goes beyond workplaces and impacts on communities and societies. FIM-CISL exhibits some characteristics that according to its General Secretary, constitute strengths: i) fruitful relationships with some research centres and experts in the field of work and workplace innovations (e.g. ADAPT[7], Polytechnic of Milan and Turin, etc.); ii) a remarkable social media presence, notably on Facebook, Twitter, Instagram and YouTube; iii) a training school targeted to union leaders, which operates since 1980; iv) collaborations with civil society actors, such as NCO (a consortium of social enterprises using confiscated properties for public interest and social purposes) and NextEconomia (a network of consumers, enterprises and third sector entities involved in the promotion of a sustainable economy). In addition, a good knowledge of Industry 4.0 and an idea on how to tackle it, can be considered as further internal strengths of FIM-CISL. Nevertheless, there are some internal weaknesses compromising

[6] The interview was conducted on March 21, 2018.

[7] ADAPT is the Italian research centre, performing studies on labour market and industrial relations, which is partner of SUNI project and responsible for the drafting of this national report.

the opportunity to make "Radical, Re-founding and Re-generative choices (3R)" which are necessary to make also digital transition sustainable to all. The reference is to the belief, popular with union leaders, that the union is a sort of public institution, which survives irrespective of its representative and organising power. «This is untrue, and we will meet the challenge of modernization only if we succeed in becoming a place where youngsters' dreams can come true», FIM-CISL's General Secretary declares. This statement is particularly relevant in the light of the difficulty in maintaining steady membership rates, and in organising and representing young people. With reference to external conditions potentially favouring the achievement of FIM-CISL's objectives in relation to Industry 4.0, the General Secretary stresses the relevance of public policy choices oriented to boost workers' training, active labour market policies and firms' investments, as well as to improve material and immaterial infrastructures and the efficiency of public administration. The National Industry 4.0 plan and the 2015 reform of the national education and training system (called "La buona scuola") reinforcing school-work relationships, are both interpreted as important steps in the right direction. Plus, FIM-CISL would welcome a legislative intervention directed to counter social and pay dumping via collective bargaining, thus certifying the representativeness of social partners and combating the proliferation of collective labour agreements. After all, «this is the path taken by CGIL, CISL, UIL and Confindustria through the signature of the so-called "Pact for the Factory" (the interconfederal collective agreement reached on February 28, 2018)», FIM-CISL's General Secretary affirms. However, current multiplication of trade unions and employers' associations is perceived as an obstacle to more participatory industrial relations, which instead are interpreted as a key variable for meeting the challenge of Industry 4.0. Indeed, this proliferation of industrial relations' actors tends to increase conflict and the reliance of unions and employers' associations on power and confrontational approaches to affirm themselves. Conversely, a cultural change towards more participation is pivotal to move from protecting workplaces to successfully promote workers in a highly volatile labour market. Plus, to engage in this change, it appears to be useful to deepen the experiences of other countries and improve the relationships with foreign trade unions: an aspect which is perceived as relevant also in a view of representing workers in an increasingly interconnected global world. FIM-CISL thus emphasises the international dimension of unionism.
The SWOT analysis is shown by the following table.

	HELPFUL to allow FIM-CISL to shape the future and make it sustainable	**HARMFUL** to allow FIM-CISL to shape the future and make it sustainable

INTERNAL ORIGIN	Fruitful relationships with research centres and experts; a good social media presence; a training school for union leaders; collaborations with civil society actors; a good knowledge of Industry 4.0 and an idea on how to tackle it	Widespread belief among unionists in the union's survival irrespective of its representative and organising potential; difficulty in maintaining steady membership rates and in organising young workers
EXTERNAL ORIGIN	The National Industry 4.0 plan (boosting firms' investments, workers' training, etc.); the Pact for the Factory oriented to counter the proliferation of collective agreements; the 2015 reform of education reinforcing school-work relationships; a better knowledge of other countries' experiences on Industry 4.0	Lack of a participatory approach to industrial relations; lack of a legislative intervention aimed at certifying the representativeness of social partners; lack of sufficient investments in active labour market policies, material and immaterial infrastructure, and public administration's efficiency

4.3. Trade union action

The following paragraphs summarise main activities carried out by FIM-CISL to meet the challenge of Industry 4.0. They are articulated in five sections: research, communication and dissemination targeted to workers and public opinion, lobbying towards public institutions, training activities targeted to workers' representatives, collective bargaining.

4.3.1. Research

With reference to research activities, it is worth mentioning that FIM-CISL commissioned an empirical (action-)research on the impact of the methods of World Class Manufacturing (combining lean manufacturing and Total Quality Management), applied in 30 establishments of the group FCA (Fiat Chrysler Automobiles) and CNHI (Case New Holland Industrial) since 2006, on work and workers' conditions (Various Authors, 2015b). The research was conducted from 2013 to 2015 by a team of lecturers and experts from the Polytechnic of Milan and Turin and implied both qualitative and quantitative methods: interviews with

managers and workers' representatives, the submission of questionnaires to about 5,000 employees, and the organisation of focus groups. Though not focused on new technologies, this research shed light on employees' views and perceptions of organisational changes at workplace level that are likely to accelerate in an Industry 4.0 scenario. Indeed, as argued by Davies et al., not only a lean environment is an enabler to implementing Industry 4.0 as it leverages a step change in operational performance within a company, but also «Industry 4.0 provides the infrastructure to potentially enhance the lean/six sigma capability of an organisation» (Davies, Coole, Smith, 2017, p. 1292). This research emphasised both positive and negative impacts of WCM on workers. On the one hand, the majority of workers regarded FCA-CNHI as a good place to work: they appreciated the improved products' quality and the reduction of waste as well as the new work environment characterised by less noise, more cleanliness, lighting and safety. On the other hand, most workers were less satisfied about the new work organisation (i.e. the degree of cooperation between the members of each team, the contents of the training activities received to get prepared to WCM, the role of the team leader, the articulation of breaks during a work shift, the time available to each team to come up with solutions for problems, etc.) and its effects: economic bonuses associated to workers' suggestions were regarded as not adequate, the pace of work was depicted as more demanding, workers did not perceive themselves as playing a more crucial role within the organisation, etc. This research had a huge impact on FIM-CISL, as it particularly motivated FIM-CISL's leaders to deal with work organisation dynamics.

More recently, FIM-CISL has been involved in a research commissioned by CISL to researchers from Polytechnic of Milan and aimed at investigating the effects on work and workers' conditions of the implementation of Industry 4.0-related technologies in 24 Italian companies. This research is being conducted within the framework of the above-mentioned "Laboratorio Industria 4.0". The role of FIM-CISL mainly regards the selection of metalworking companies as case studies, the distribution and collection of questionnaires targeted to RSU's members and the support to them in answering to the questions. After the first year of research, a short book was published summarising the main findings which concern the types of technologies already implemented in the analysed companies, the degree of their integration, and their impact on work organisation (Laboratorio CISL Industria 4.0, 2017).

Finally, in January 2018 FIM-CISL gathered some local trade union leaders in a working group on Industry 4.0, which is essentially aimed at fostering the exchange views, practices and knowledge on Industry 4.0 among some territorial union leaders, thus spurring innovation within the organisation. Besides periodic

face-to-face meetings, the group shares useful materials and documents via the FIM-CISL's intranet.

4.3.2. Communication and dissemination directed to workers and public opinion

FIM-CISL is particularly involved in performing communication and dissemination activities mainly aimed at raising workers' awareness of Industry 4.0, while offering FIM-CISL own perspective of the phenomenon. On July 14, 2015, FIM-CISL organised a seminar in "Expo Milano 2015", where some professors, an entrepreneur, a journalist and the General Secretary of FIM-CISL exchanged their views on Industry 4.0 and the future of trade unionism. The perspectives and opinions arisen from this seminar were gathered in a booklet published in 2015 by ADAPT University Press, the publishing company of ADAPT. The booklet is entitled *#SindacatoFuturo in Industry 4.0* (*#FutureUnion in Industry 4.0*) and is available both as an open-access online resources and in hard copy (Various Authors, 2015c). FIM-CISL's leaders and notably the General Secretary, Marco Bentivogli, frequently give interviews for the press, on the radio and TV. A short list, though not updated, of Bentivogli's opinions on Industry 4.0-related issues, as reported by the press, is available on the FIM-CISL's website[8]. Some Bentivogli's appearances on TV are gathered in a specific section of the FIM-CISL's website[9]. Interestingly, on January 12, 2018, Bentivogli wrote with the then Italian Minister of Economic Development, Carlo Calenda, a long article outlining the main pillars (work, skills and enterprise) of a new industrial plan for Italy (Bentivogli, Calenda, 2018). The article was published by *IlSole24Ore*, a popular business newspaper, and engendered an interesting debate among politicians and experts (more information are available here Bentivogli, Calenda, 2018). Plus, Bentivogli and colleagues participate in different events and roundtables on Industry 4.0, organised not only by local union structures but also by employers' associations, research centres, municipalities, etc. in different Italian cities.

Whereas these activities are evidently targeted to both internal and external audiences, also with the aim of promoting a new image of the trade union as an actor which is up with the present and cleared on current transformations in the world of work, some other communication initiatives are specifically addressed to FIM-CISL's members. Notably, several local structures of FIM-CISL have started to organise official union internal meetings (i.e. General Council's meetings,

[8] For details, see: http://www.fim-cisl.it/ricerca-studi/sindacatofuturo-industry4-0-fim-cisl/.

[9] For details, see: http://www.fim-cisl.it/ricerca-studi/sindacatofuturo-industry4-0-fim-cisl/media/.

Congresses) in the form of conferences, workshops and seminars where both trade unionists and local stakeholders (e.g. entrepreneurs, representatives of employers' associations, researchers, etc.) are invited to discuss Industry 4.0-related aspects and their impact on territories and companies. The main goal of these activities is to raise workers' awareness of the issue, while contrasting a quite dominant fear of technological unemployment.
It is important to mention that these activities are organised voluntarily by local structures of FIM-CISL and though obviously influenced by the debate on Industry 4.0 taking place within the organisation, they do not comply with strict guidelines set by the national secretarial body.

4.3.3. Lobbying towards public institutions

Lobbying constitutes an important part of the activities carried out by FIM-CISL with respect to Industry 4.0. More specifically, the trade union, along with ADAPT, drafted a "Green Paper on the role and functions of Competence Centers" and a "White Paper on work and competences in Industry 4.0" respectively in 2016 and 2017. The first document analyses the governmental plan on Industry 4.0, by identifying both strengths and weaknesses, outlines a conceptualisation of Industry 4.0 and then provides hints and suggestions to design the so-called "Competence Centers", which the national Industry 4.0 plan and the Budget Law 2017 referred to as a form of a public-private partnership made by at least one research body and one or more enterprises, intended to support companies in the implementation of new technologies and launch innovative projects. One year later, after some visits to Italian innovative companies and some conferences and seminars on Industry 4.0, FIM-CISL and ADAPT drafted and published a White Paper, which is aimed at providing analytical tools to interpret the degree of application of new technologies in Italian companies and concrete suggestions to make the transition towards Industry 4.0 a realistic and sustainable process. Notably, the White Paper concentrates on some crucial issues regarded as vehicles for Industry 4.0: the structure and scope of Competence Centers; territorial innovation labs to gather stakeholders and spur dialogue on digital transformation; programmes of skills development and workers' training oriented to the specific needs of Italian companies; the potential of bilateral funds in both designing and financing workers' continuous training; the development of apprenticeship contracts, industrial Ph.D. programmes and overall dual learning programmes; the construction of enterprise networks; new model of work organisation enhancing direct employee participation; the role of researchers in private companies; the issue of intergenerational solidarity. Besides these important initiatives, the General Secretary of FIM-CISL took part in

parliamentary hearings on Industry 4.0, by offering the viewpoint of the union on the topic[10]. Finally, as previously mentioned, Bentivogli has recently engaged in a fruitful dialogue with Carlo Calenda, Minister of the Economic Development from May 2016 to March 2018. On January 12, 2018, during the electoral campaign before the vote of March 4, 2018, Bentivogli and Calenda wrote a long article aimed at drawing people's attention to the need of a new industrial plan which fosters skills development and firms' investments. They stressed the relevance to improve physical and virtual infrastructures (e.g. ultra-broadband connection), energy efficiency and the development of digital skills, as well as to promote collective bargaining decentralisation as a way to better ensure, with a logic of proximity, new social rights for workers (e.g. training, welfare, etc.). This article engendered a debate among experts and politicians in the weeks before the elections.

4.3.4. Training activities targeted to workers' representatives

With reference to training, it is important to mention that since 2009, FIM-CISL has been working on the project "REWIND", aimed at providing unionists with the necessary skills to promote the culture of lifelong learning among the workforce and to outline and manage training plans for workers at company level. As reported by FIM-CISL, within the framework of this project, from 2009 to 2017 around 3,000 union delegates (i.e. members of the RSU in companies) and 200 unionists were informed and trained, about 200 seminars/conferences/training courses/meetings were organised, and 12 supporting tools (among these, a vademecum for union delegates dealing with lifelong learning) were created to promote and monitor these activities. Even though the main focus of the project is not on Industry 4.0, its activities devoted to lifelong learning acquire a huge relevance in the light of Industry 4.0, given the need to develop workers' skills so that they are not left behind by current technological transformations. The project is financed through resources of a bilateral fund (*Fondimpresa*), established and managed by Confindustria and CGIL, CISL and UIL to support training activities in workplaces.

Moreover, with specific regard to Industry 4.0, it is worth mentioning that different local structures of FIM-CISL have recently organised training activities aimed at providing unionists with the necessary skills to represent workers and bargain over different issues (i.e. welfare provisions, performance-related pay, training, work organisation, working times, job classification schemes, etc.)

[10] It is possible to watch the speech given by Bentivogli on March 1, 2016 during a parliamentary hearing, at the following link: https://youtu.be/KdMoUI6RXbA (accessed April 11, 2018).

within an Industry 4.0 scenario. Sometimes, these activities are held with the support of external experts; they are financed either directly by the union or via regional and European funds. Plus, also training initiatives which are traditionally provided by the national structure of FIM-CISL to newly-hired unionists, have started to be integrated with Industry 4.0-related themes and perspectives. Finally, as far as training activities are concerned, it must be underlined that FIM-CISL is the leading applicant of the EC co-funded project *SUNI – Smart Unions for New Industry* (VS/2017/0426), which is aimed at shedding light on union strategies in response to Industry 4.0 as well as at providing metalworkers' organisations, operating in different European countries, with the necessary skills to deal with Industry 4.0. Within the framework of this project, also this report is drafted.

4.3.5. Collective bargaining

With reference to collective bargaining, it is important to state that in 2016, FIM-CISL, FIOM-CGIL and UILM-UIL on the one hand, and Federmeccanica and Assistal on the other hand, signed a national collective labour agreement which introduced the so-called "individual right to training" for all employees, strengthened employee participation rights in large companies and took a step further towards the revision of the job classification system. More specifically, the "individual right to training" materializes in 24 hours in three years devoted to training, due to each metalworker employed in the companies applying the above-mentioned collective agreement. Conversely, employee participation rights are ensured in companies with more than 1,500 workers and with at least two establishments with more than 300 workers or one establishment with more than 500 workers, via the creation of a consultative committee composed of 3/6 managers and 3/6 workers' representatives; this committee is convened once a year or at the justified request of one party to examine market conditions and trends, industrial strategies entailing changes at the organisational level, employment trends and labour contractual arrangements; plus, the enterprise is demanded to convene the committee whenever a strategic decision impacting also on employment perspectives is about to be made, with the aim of allowing workers' representatives to voice an opinion; training initiatives are envisaged and addressed to both managers and workers' representatives taking part in this committee. Finally, in the latest renewal of the NCLA Federmeccanica, the parties acknowledged the need to review and update the existing job classification scheme, firstly designed in 1973, so as to make it coherent with current transformations in the world of work, such as the perspective of Industry 4.0. To this end, the parties agreed on allowing a bilateral commission to redefine job classifications and initiate a testing phase in some companies. After monitoring

and analysing the results of this phase lasting until December 31, 2018, the parties foresee to reach a new job classification scheme for metalworkers. Some of these achievements and notably the "individual right to training" were extended also to other national collective agreements, such as the NCLA Unionmeccanica and the NCLA metalworking cooperatives.

It must be pointed out that the "innovative" turn undertaken by national-level trade unions and employers' associations in the latest renewal of the NCLA in the metalworking sector is exemplified not only by the above-mentioned provisions in the field of workers' training, participation and job classification system but also by some wage-related clauses. Firstly, a new way to calculate increases in the minimum wage (made consistent no more with a forecast of inflation rates but with actual inflationary dynamics, measured *ex post*) was agreed. Secondly, it was specified that national-level increases in the minimum wage should absorb individual increases (unless there are specific non-absorption clauses) and fixed elements of salary (with the exception of those amounts strictly related to work performance such as compensation or supplements for over-time, night or holiday work), which may be agreed in company-level collective bargaining after January 1, 2017. Plus, in order to give further impetus to company-level collective bargaining in determining wages consistent with firms' economic performance, the NCLA Federmeccanica stated that the amounts of performance-related bonuses cannot be determined a priori and must be wholly variable depending on the goals achieved by the company (Tomassetti, 2017b). All these important new rules in the metalworking sector have been probably partly triggered by the FCA case and the subsequent fear that some other big players in the sector could exit from Federmeccanica and its system of multi-employer collective bargaining. Indeed, the FCA choice, whose determinants are though very complex (Tomassetti, 2013), was explained by the need «to reorganise and harmonise collective contractual provisions at company and territorial levels which have been introduced at different times, and in order to make them consistent and compatible with conditions of competitiveness and efficiency»[11]. It thus appeared urgent to both trade unions and employers' associations to make national-level collective bargaining more responsive to companies' needs for flexibility and productivity. If social partners had failed to do so, the survival of multi-employer collective bargaining in the sector could have been seriously threatened, especially at times of companies' strong willingness to embrace Industry 4.0.

At the enterprise level, some interesting agreements regard smart-working, welfare provisions, performance-related pay schemes and employees' direct participation in work organisation. All these topics can be related to current

[11] Giva, G. (2011), *Letter to Trade Unions Federations' Secretariats*, FIAT Group, November 21.

transformations in the world of work. Indeed, smart-working (referring to the possibility for employees to work from locations other than their traditional workplaces) is made possible by the availability of new technologies and requires an employer-employee relationship based on trust and mutual responsibility, which evidently is at odds with and, in a certain way, overcomes Fordist logics centred on control and subordination in labour relations. Moreover, the proliferation of negotiated welfare provisions (encompassing work permits and leaves for a better work-life balance, complementary health insurance and pension funds, reimbursement of education expenses, vouchers for food and fuel, etc.), though encouraged by fiscal and contributory incentives, has been recently interpreted as one of the results of the current transition towards a new socio-economic paradigm that is expected to completely overcome the Fordist one and its exclusive reliance on the state for the delivery of welfare services (Various Authors, 2018). According to this view, current transformations in the world of work may change the role of enterprises within society so that social value is deemed to be produced thanks to the collaboration of different stakeholders in a community, including public authorities as well as private organisations. Finally, the relevance of knowledge and cognitive skills in today economy is reflected in more and more collective agreements introducing variable pay schemes connected not only to collective objectives (e.g. productivity of the productive unit, EBITDA, etc.) but also to individual goals (referring to the degree of workers' ownership of both soft and hard skills), as well as forms of employees' direct participation in work organisation (i.e. via teamwork, suggestion schemes, continuous improvement groups, etc.), which are also encouraged by recent governmental measures[12]. However, it must be underlined that alongside best practices of company-level collective bargaining (essentially realising a sustainable compromise between high wages and pay structures linked to performance results; between working time flexibility and work-life balance measures; between more participatory rights and more collective bargaining

[12] As previously mentioned, the 2016 Budget Law (then confirmed for 2017 and 2018) introduced not only a tax reduction for those variable pay schemes, established via collective agreements at company or territorial level and linked to increases in productivity, profitability, quality, efficiency and innovativeness, but also an increase in the maximum amount of these bonuses subject to decreased taxation if accompanied by ways and instruments of employee involvement in work organisation (e.g. via work groups where managers and employees operate on the same footing for the improvement of performance levels and via bilateral permanent structures for the monitoring of the results achieved). The fiscal intervention on employee involvement has been recently replaced by contributory incentives for employers who establish and implement ways and instruments of employee involvement in work organisation, in agreement with trade unions. These incentives, in the form of reductions in social security contributions, are applied to variable bonuses up to 800 euros.

governability; etc.), several worst practices (mainly in contexts where confrontational industrial relations prevail and result in fixed and compressed wage structures, less participation of employees and their representatives, pressures to cut labour costs, etc.) have still been detected in empirical analyses focused on some Italian economic sectors, including the metalworking one (Tomassetti, 2017b).

Another important level of negotiation, whose relevance has been particularly stressed in the light of Industry 4.0 (Seghezzi, Tiraboschi, 2018), is the territorial one. In this regard, it is worth mentioning the case of the territorial collective agreement signed on December 18, 2017 by Confimi Apindustria Bergamo (a local structure of Confimi Impresa Meccanica, adhering to Confimi Industria and representing small and medium enterprises in the metalworking sector) and the structures of FIM-CISL and UILM-UIL situated in Bergamo (a city in Northern Italy). The agreement was expressly signed with the aim of boosting SMEs' competitiveness, organisational flexibility and cost optimisation, while contemporarily stimulating workers' participation, training and pay. Among the various provisions, the parties agreed on the creation of an online platform for a better match between demand and supply of labour; the launch of a training programme targeted to both employers and workers with a focus on employee participation; the definition of re-skilling activities for redundant workers in line with the needs of other companies willing to hire them; the deployment of a more flexible and attractive employment contract with the aim of promoting youngsters' entry into the labour market; the introduction of measures for a better work-life balance and a variable pay scheme linked to territorial parameters. A very similar agreement was reached on January 11, 2018 by local trade union federations and the local structure of Confimi Impresa Meccanica in the area of Cremona.

Conclusions

This report shows that Industry 4.0 constitutes a matter of pressing interest and concern for both the government and social partners in Italy. By focusing on the metalworking sector as one of those sectors most potentially impacted by Industry 4.0, this report highlights the vitality of Italian social actors, and notably of an Italian trade union (FIM-CISL), operating in it: this vitality takes the form of FIM-CISL's current engagement in several initiatives focused on Industry 4.0. First initiatives (in the form of events and a thematic booklet) carried out by the union on this issue date back to 2015, even before the launch of the National Industry 4.0 plan by the Ministry of Economic Development. This fact suggests that the interest of the union in Industry 4.0 was not driven by the content of specific governmental measures; conversely, it was more probably influenced by the attention paid to the issue, since the first half of the 2010s, by entrepreneurs and researchers, with whom FIM-CISL has relationships. As for the approach adopted by FIM-CISL in relation to Industry 4.0, it has been unambiguously described by the General Secretary as the willingness to anticipate change so as to make it sustainable for all. This approach, which is in line with that expressed by CISL (the union confederation FIM-CISL adheres to) since 2016, can be explained by both the union's traditional non-aversion and positive attitude towards innovation and the more recent acknowledgement of the fallacy of tech-determinism and the possibility of shaping the future of work: these considerations have been probably favoured by the dialogue between union officials and some Italian experts and researchers as well as by some encouraging data and information coming from the experiences of other countries, such as Germany. Importantly, this conceptualisation of Industry 4.0 as a phenomenon that can still be shaped while potentially bringing benefits to companies and workers in terms of flattening of hierarchies, disappearing of repetitive and routine work and increased cognitive skills, ends up emphasising the relevance of some aspects that are traditionally of prime concern to FIM-CISL. The reference is to: employee participation in decision-making processes; decentralised collective bargaining, conceived as closer to companies and territories, thus potentially more capable to address companies' and workers' specific problems; worker skills' development, and so on. Industry 4.0 hence comes to be perceived by FIM-CISL officials as an enabler not only of Italian firms' and territorial

competitiveness but also of FIM-CISL's own desire for a human-centred society and people's self-fulfillment within the experience of work, thanks to a special focus on workers' participation and knowledge. The expectation that Industry 4.0 could achieve some goals inherent to FIM-CISL's traditional vision and mission, has clearly the merit of making FIM-CISL not fearing technological advancement and instead, actively engaging in it; on the other hand, it though might cloud FIM-CISL's judgement in certain occasions and if not accompanied by a constant, dispassionate analysis of the situation in companies and territories, it might draw FIM-CISL and its ideals away from workers and their concrete experiences[1]. A crucial challenge for FIM-CISL, especially in the light of non-encouraging membership rates, appears to be that of bridging the gap between the union's ideal perspectives of the future of work and workers' actual needs and interests: an effort though already initiated in the latest round of contractual renewals. In other words, it seems urgent for FIM-CISL to keep on converting their ambitious objectives in Industry 4.0, once clearly defined and communicated, into more concrete practices of collective bargaining and workers' representation: union organisational structure and union capacities need to be renovated and made consistent with union purposes in a changed scenario[2], in order not to lose internal legitimacy[3]. After all, the need to abandon the wrong idea about the union's survival irrespective of its representative and organising capacity has been emphasised also by the General Secretary of FIM-CISL in the interview conducted for the purposes of this report.

Given the above-mentioned optimistic vision of Industry 4.0 and the important role that unions are expected to play in it, FIM-CISL has already carried out several initiatives (encompassing the field of research, communication, training, lobbying and collective bargaining) related to the issue. In this regard, the report sheds light on the importance of both the General Secretary's personal interest in Industry 4.0 (which is reflected in his direct involvement in many activities, his

[1] In this regard, it is essential to consider that even though in the metalworking sector, we are witnessing a progressive "white-collarisation" of workforce (Federmeccanica, 2017) and manufacturing activities are those potentially most impacted by digital technologies, between 2015 and 2016 only low-qualified jobs increased in Italian manufacturing companies, where by contrast, the expected increase in high-qualified jobs related to the digital transformation (already occurred in other OECD countries) has not materialized yet. This fact goes hand in hand with around 66% of Italian manufacturing companies still classified as characterised by a low degree of digitalization (ISTAT, 2018).

[2] The reference is to a progressive, general "white-collarisation" of workforce, while differences in the degree of digitalization, productivity and human capital qualification are increasing between and within economic sectors. See: Federmeccanica, 2017; ISTAT, 2018.

[3] For a description of union renewal as a dialectic relation between union organisation, union capacities and union purpose, see: Fairbrother, 2015.

social media presence and his several appearances on radio and TV) and the relationships between FIM-CISL and a quite narrow circle of "trust-worthy" researchers and experts, that have consented the realisation of concrete and coherent outputs (i.e. books, green and white papers, events, projects, etc.), especially in the field of research, communication, lobbying and training. Despite these fruitful relationships with external research bodies and organisations, FIM-CISL initiatives still scantly benefit from the collaboration with employers and their associations and even less from the collaboration with other trade unions, though sharing, at least apparently, similar views of the ways unions should respond to Industry 4.0. It thus seems reasonable to claim that, albeit the perspective of Industry 4.0 and the acknowledgment that internal innovation (within companies as well as trade unions) is no more a closed process yet the result of purposive inflows and outflows of both internal and external ideas (Chesbrough, 2003), times are not ripe enough for a complete overcoming of long-standing rivalries and ideological differences between traditional actors of industrial relations. This clearly happens to the detriment of the high road to workplace innovation and territorial development (Totterdill, Hague, 2017), as well as of the potential of trade unions to become knowledgeable participants in innovation processes (Sø Rocha, 2010; Totterdill, Exton, 2014) and before that, to turn into more open and learning organisations (Safford, Locke, 2001), thanks to the collaboration not only with some researchers and experts, with whom sharing similar views about the future of work, but also with employers, their associations and other trade unions operating in same companies and territories. The effects of these issues are particularly strong at local and company levels, where a polarisation between best and worst practices of collective bargaining persists and industrial relations still considerably rely on power and shows of strength. The lack of vertical coordination of collective bargaining and the proliferation of autonomous unions evidently exacerbate these problems, by nullifying the efforts made by representative social partners at the national level to establish common rules and achieve sustainable compromises applicable to all.

Moreover, whereas over the past few years FIM-CISL has invested time and resources (in the form of constant dialogue with experts, drafting of a Green and White Paper, etc.) to present itself as a competent stakeholder of Industry 4.0 in the eyes of government, thus succeeding in participating in parliamentary hearings and influencing some political decisions on the issue[4], serious concerns are emerging among FIM-CISL's leaders following the electoral results of March 4, 2018 and the undeniable success of Five Star Movement and Northern League, both suspected to be less interested than the previous government in a dialogue

[4] The reference is to the prerequisite of collective bargaining for companies to have access to the tax credit for training activities related to new technologies (Budget Law 2018).

and cooperative relationships with trade unions. Overall, despite its evident involvement in Industry 4.0 and the many activities already performed in this field, having the merit of countering fears of technological advancement and spreading a more positive message among workers and public opinion, FIM-CISL still seems far from being an actually solid partner of both companies and public authorities in anticipating change and devising joint and socially sustainable paths towards Industry 4.0. Its capacity to become a legitimate, authoritative partner at all negotiating levels is though expected to be pivotal to making Italy converge on a sustainable and inclusive pattern of growth.

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