



TRADE UNIONS IN THE DIGITAL AGE: COUNTRY FICHE ON ITALIAN MANUFACTURING SECTOR

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1.

GOVERNMENTAL POLICIES FOR THE DIGITALISATION OF THE ECONOMY

The *Industry 4.0 National Plan* (2017-2020) was launched in September 2016 by the Italian Ministry of Economic Development with the governmental support.

- It envisaged the creation of a consultative-coordinating body, called “Cabina di regia”, composed of public institutions, trade and employers’ associations, trade unions and the academic world.
- Three inspiring principles:
 - Operating with a logic of technological neutrality.
 - Intervening with horizontal and not vertical or sectoral actions.
 - Influencing enabling factors.
- Four strategic plans, consisting in two key lines and two accompanying lines:
 - Two key lines:
 - **Innovative investments**, incl. hyper-amortisation and super-amortisation of Industry 4.0 capital goods; tax credits for innovation and research; subsidised loans for SMEs investments in new machinery (so-called “New Sabatini”); tax deductions and tax free of capital gains on medium to long-term investments (so-called “Patent Box”) and other financial incentives for innovative SMEs and start-ups; a guaranteed fund in favour of companies or specialists with financial difficulties who are unable to receive bank credit;
 - **Skills and research**, incl. the implementation of the national plan of school digitalisation; the improvement of school-to-work transition coherently with the process of Industry 4.0; the strengthening of Industry 4.0 training offered in higher technical institutes; the increase of industrial 4.0 PhDs; the implementation of both lifelong learning via interprofessional funds and Technological Clusters. Plus, this line is supported by the creation of Digital Innovation Hubs (designed for creating “local bridges” between government and public authorities, companies, research centers, universities, think tanks, start-ups and industrial players) and national Competence Centers (taking the form of public-private partnerships made up of at least one research body and one or more enterprises with the task of supporting companies in the implementation of new

technologies and launch of innovation projects).

- Two accompanying lines:
 - **Enabling infrastructures**, incl. the implementation of “ultra-broadband connection”; contribution to the definition of standards and criteria for IoT interoperability.
 - **Public support tools**, incl. reform and refinancing of the SME Guarantee Fund; new “development contracts” aimed at financing companies’ development plans; strong investments in digital sales chains (so-called “Made in Italy Plan”); tax incentives for performance-related bonuses established in company-level or territorial collective agreements and offered to workers, with the possibility of converting the amount in welfare measures.

In September 2017, after one year from its launch, the Industry 4.0 plan changed its name into **Enterprise 4.0 National Plan** with the objective to expand the target even beyond manufacturing by encompassing other economic sectors incl. services.

- One of the novelties of the plan consists of a tax credit for workers’ training activities to gain or improve knowledge on Industry 4.0-related technologies. The tax credit is granted to companies only in relation to those training activities established via company-level or territorial collective agreements.

The main points of the National Plan have been promptly merged into Budget Laws for 2017, 2018 and 2019. Moreover, super-amortisation, “Nuova Sabatini” and the SME Guarantee Fund have been confirmed though with slight remodulations and changes in the so-called **Decreto crescita** [*Growth Decree*] (Law Decree No. 34/2019). Plus, the Budget Law for 2019 has introduced for both 2019 and 2020 a voucher for SMEs acquiring consultancy services aimed at supporting their technological and digital transition, an EUR 3 million-financing of innovative educational projects in industrial engineering and management and a Fund (equipped with EUR 15 million) for subsidising research and innovation projects to be realised in Italy by private and public players and directed to Artificial Intelligence, Blockchain and Internet of Things.

The **Transition 4.0 Plan** (2020-2022) was launched in December 2019 by the Italian Ministry of Economic Development, with the aim of updating the 4.0 industrial policy and making it more inclusive and sustainable. The Plan allocates EUR 7 billion on the following measures:

- Transformation of super-amortisation into tax credits for Industry 4.0 capital goods.
- New tax credit for research and development, innovation and design with an enhanced focus on expenses for personnel rather than for new machinery.
- Update of the tax credit for workers’ training activities by simplifying access procedures (i.e. Budget Law

for 2020 has eliminated the requirement of the signature of a company-level or territorial collective agreement) and including higher technical institutes among the possible training providers.

In 2020, a public consultation was launched concerning ***2025 A Strategy for technological innovation and digitalisation of the country***, tackling three key challenges: digitalisation, innovation and sustainable and ethical development of society. A consultative-coordinating body is established involving different Ministries and coordination is promoted via dialogue processes with local municipalities, regions, private stakeholders, etc. Task forces will be launched to carry out sectoral specific actions within the strategy.

Main achievements get by the plans and the gaps to be overcome

The penetration of digital technologies in companies. At the beginning of 2018, only 8.4% of industrial enterprises used at least one Industry 4.0-related technology. However, 4.7% of 23,700 interviewed companies declared to invest in digital devices in the following three years (this proportion increases among enterprises that have already initiated a digital transformation path). 56.9% of 4.0 enterprises stated to have benefitted from at least one support measure, made available by the government. Main investments were concentrated in Northern and Central

Italy and were directed to Cyber Security, Horizontal Integration of data and information across all productive processes, and Industrial Internet of Things. Most enterprises (62.4%) invested in only one or two Industry 4.0 technological solutions: however, the number of 4.0 devices deployed by large enterprises was generally higher. 4.0 enterprises were therefore larger than traditional ones, characterised by young and qualified managers and more inclined to hire new workers, invest in employee skills' development, and export in international markets. Greater propensity to innovation was detected among enterprises producing electrical machines and equipment, means of transport and chemical and rubber products. Industry 4.0 was less widespread in the mechanical, wood, agri-food and apparel industries. Overall Industry 4.0 products-related market kept growing during 2018, thanks to Italian companies' investments led by Enterprise 4.0 National Plan. Most widespread technologies were Industrial Internet of Things, Industrial Analytics and Cloud Manufacturing (Ministry of Economic Development, 2018).

Consultancy and training in digitalisation projects. Consultancy and training activities linked to digitalisation projects constituted, at the beginning of 2019, the smallest Industry 4.0-related market share. Moreover, workers and HR leaders were involved in the planning and development of digital solutions respectively in only 7.8% and 6.8% of the 192 enterprises considered in the survey carried out by the "Industry 4.0 Observatory" of the Polytechnic of

Milan and published in 2019. Most of the considered enterprises had already initiated a process to map their digital skills gap and design necessary training activities. However, mainly 4.0 enterprises tend to be aware of their gaps in digital skills; traditional enterprises (i.e. those not using 4.0 technologies and not planning to introduce them) are less able to identify their difficulties (Ministry of Economic Development, 2018).

The neglect of the “Skills and research” key line. By and large, the Enterprise 4.0 National Plan appears to be focused on subsidising companies’ investments (private resources allocated to this domain have been huge especially until 2019). By contrast, the key line on Skills and research has always been weaker (Prodi, Seghezzi and Tiraboschi, 2017) and most recent Italian governments have continued to neglect this axis. The introduction of a tax credit for workers’ training activities doesn’t seem enough for the realisation of a solid system that guarantees a successful match between high skills and productive needs. Today 41% of Italian population has basic or advanced digital

skills, compared to an average proportion of 58% in other EU countries and the share of Italian adult people involved in lifelong learning activities is smaller by over 3 percentage point than the EU average: similar bad performances have been detected with reference to the proportion of ICT specialists in Italian companies. However, Italian enterprises appear to be more and more aware, after the first investments in Industry 4.0, of the need for new skills and public policies focused also on this side of development are strongly recommended (Bandini, 2020).

The need for further interventions on the effects of digitalisation at work. Policy interventions more specifically targeted at the Industry 4.0 possible impacts on work (e.g. the blurring boundaries between subordination and self-employment, the risk of technological unemployment, skills needs) are strongly advocated. Although Industry 4.0 and notably Cyber Physical Systems are expected to challenge work, labour markets and labour relations, these issues are still not adequately addressed (Seghezzi and Tiraboschi, 2018).

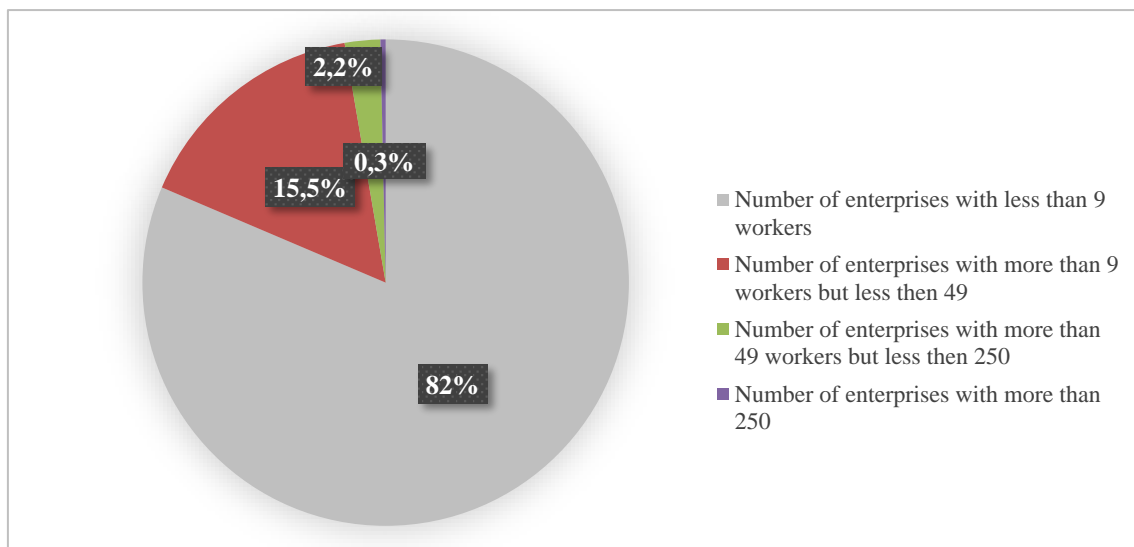
2.

GENERAL INDICATORS FOR THE MANUFACTURING SECTOR

Characteristics of manufacturing companies. The manufacturing sector in Italy is mostly made up of companies that have less than 10 employees (81.4%), followed by companies with 10-49 employees (15.9%), companies with 50-249 employees (2.4%), and companies with at least 250 employees (0.3%) (ISTAT, 2018 data). Employees are particularly concentrated in small

enterprises (30.5%), followed by large (24.1%), medium (23.1%) and micro enterprises (22.3%). Metal products and food industries are those with the highest number of enterprises (respectively 17.8% and 13.6%); plus, 14.7%, 12.5% and 10.9% of manufacturing workers are employed respectively in metal products, machinery and equipment production and food industries (ISTAT, 2018 data).

Figure 1. Dimension of enterprises in the manufacturing sector



Source: ISTAT database (http://dati.istat.it/Index.aspx?DataSetCode=DICA_ASIAUE1P)

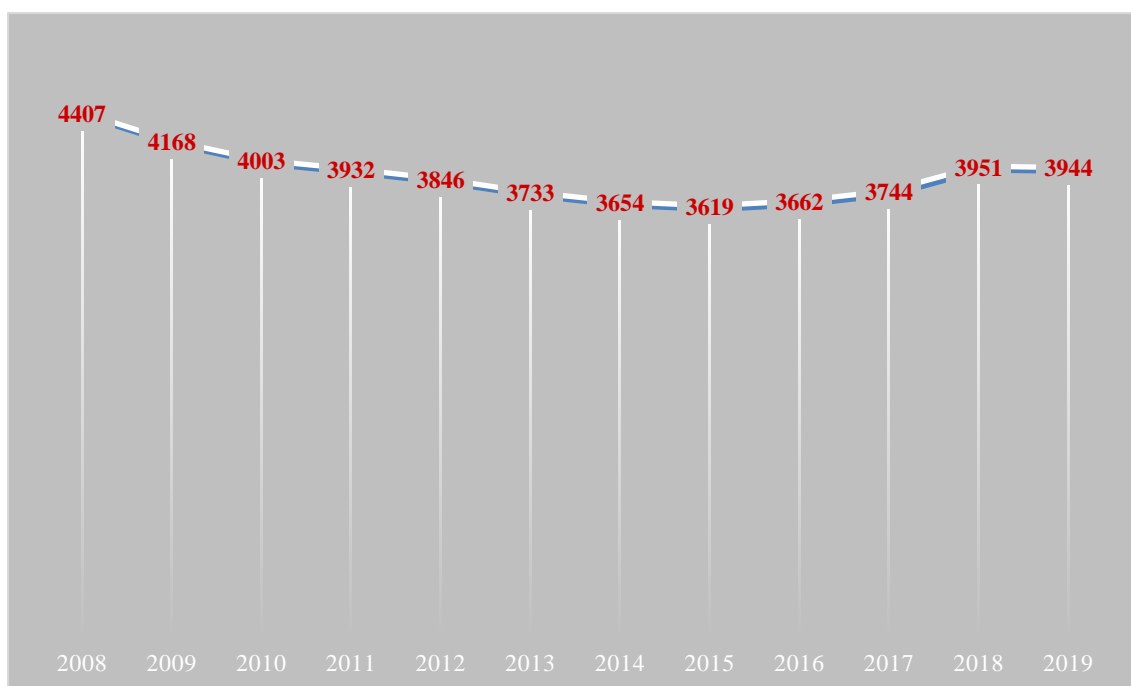
Level of employment. Manufacturing is the most important sector in Italy concerning the number of people employed (21.6% of overall workers),

immediately followed by the retail sector (19.8%) (ISTAT, 2018 data). The trend of employment in the sector has however been declining since 2008, with a slow

recovery that began in 2017 (Eurostat database, 2020). This trend goes hand in hand with a decrease in the number of enterprises in the manufacturing sector:

manufacturing companies reduced by 20,000 units from 2016 to 2018 (Confindustria, 2019).

Figure 2. Level of employment in manufacturing (based on NACE Rev 2)



Source: Annual enterprise statistics by size class for special aggregates of activities (NACE Rev. 2), Eurostat, 2020

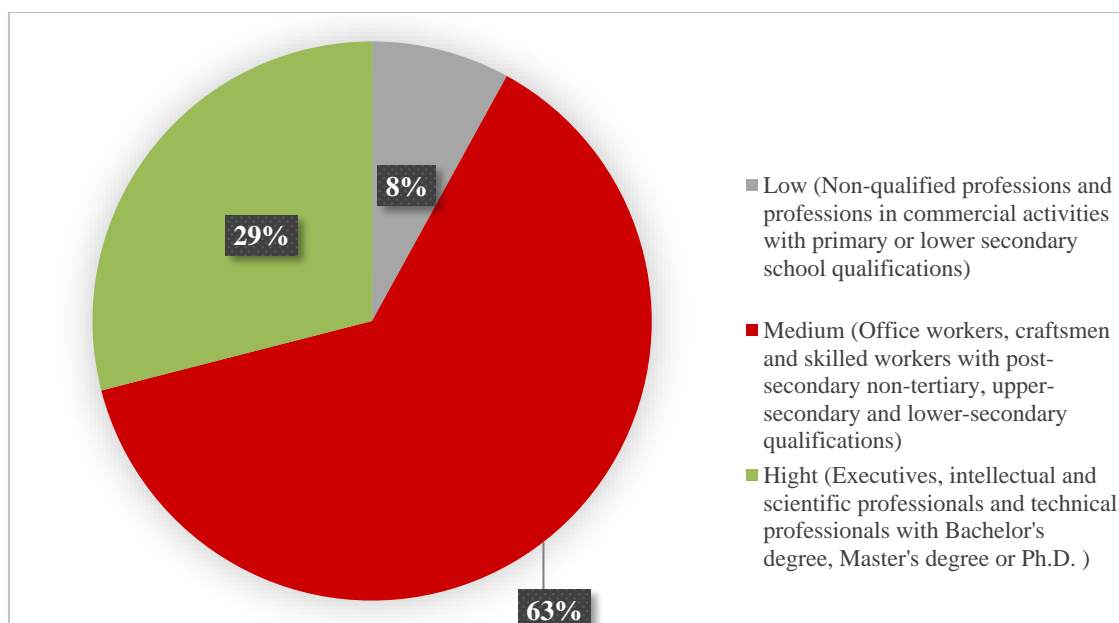
Workers' skills. Between 2008 and 2017, the Italian manufacturing industry experienced a growing polarisation of skills, with a progressive increase of low (incl. low qualified workers and salespeople) and high (incl. managers, professionals and technicians) skilled workers (Confindustria, 2019). This phenomenon is attributed to the deployment of digital technologies and the increasing complexity of modern global value chains, particularly requiring cognitive and manual though non-routine skills, which concentrate at

the top and bottom of skills distribution. Conversely, medium-level tasks tend to be performed by physical capital and technology. Despite this trend, in 2017, the majority of employees in Italian manufacturing (63%) were medium-skilled (incl. office clerks, craftsmen and skilled blue-collars, plant and machine operators and assembly workers), whereas highly qualified (incl. managers, intellectual, scientific and technical professionals) and low-skilled workers (incl. non-qualified professions and salespeople) corresponded

respectively to 29% and 8% of the total. Compared to data provided at the EU level in the same period, Italian manufacturing exhibits a higher concentration of craftsmen, skilled blue-

collars and technical professionals, and a lower incidence of managers and intellectual and scientific professionals (Confindustria, 2020).

Figure 3. Proportion of blue-collars and white-collars in manufacturing sector



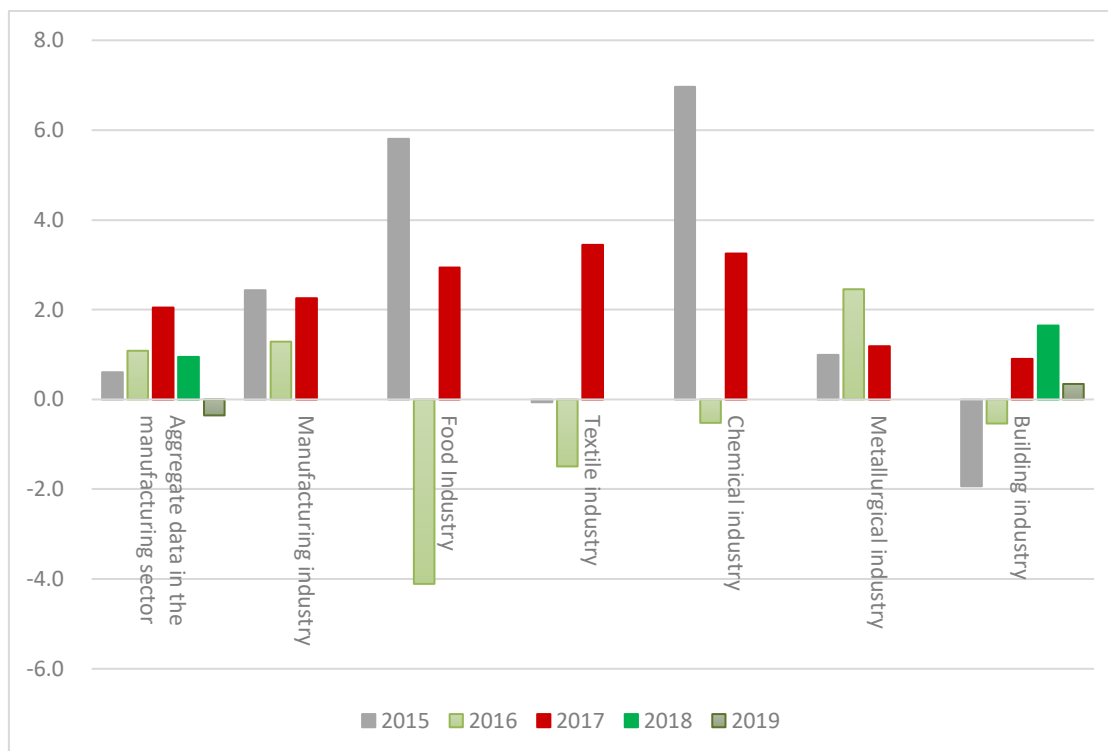
Source: Rapporto Confindustria, Dove va l'industria italiana?, edizione 2019. The report is based on Eurostat data, 2017

Labour productivity. As for labour productivity (measured as value added per hour worked), Italian performance was lower than that registered across EU countries between 1995 and 2018 (+0.4% compared to +1.6% in EU28). The productivity of capital contributed by 0.4% to this trend, while the impact of total factor productivity was zero. Italian sectors leading the growth of labour productivity were ICT services (+2.1%), financial and insurance businesses (+1.2%) and agriculture (+1.5%), while industry (incl. manufacturing) registered a weaker increase (+0.9%) (ISTAT,

2019). With specific reference to the manufacturing industry, in the 2006-2017 period, the pharmaceutical sector experienced the most considerable growth (+27.4%), followed by the manufacture of means of transport (+25.9%) and wood and paper industry (+21.8%). Worst performing sectors were the manufacture of electrical equipment (-7.3%) and electronic and optical products (+0.1%). No data are available in 2016 and 2017 as regards the manufacture of coke and refined petroleum products, although a 76.3% decrease in labour productivity was

already detected in this sector from 2006 to 2015 (ISTAT database).

Figure 4. Rates of change in labour productivity

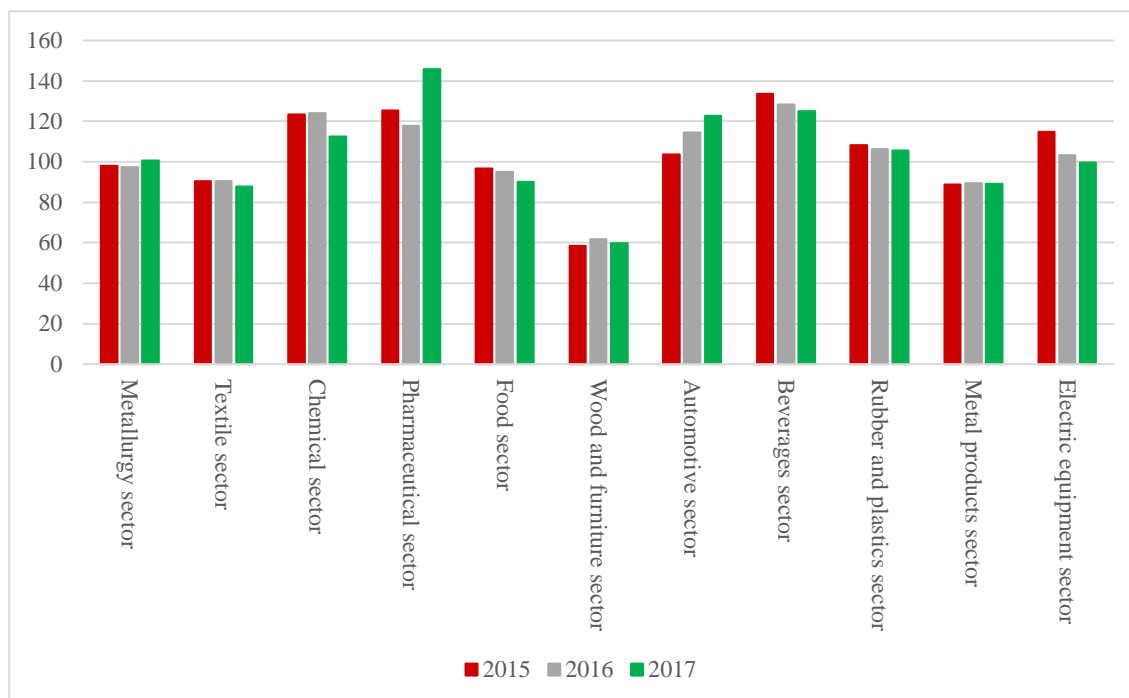


Source: Istat data base (<http://dati.istat.it/>)

Level of competitiveness. In 2017 (the most recent available data), most competitive manufacturing activities in Italy were those related to the pharmaceutical sector and the production of beverages, motor vehicles, oil products, machinery, chemical products and other means of transport, also characterised by high company dimensions and high levels of productivity, propensity to internationalisation and innovation. Above the average of manufacturing competitiveness levels, we can also detect the rubber, electronic, and paper

industries. By contrast, the least competitive sectors were those typically characterising *Made in Italy* and the Italian model of specialisation, such as food, textile, apparel, leather, metal products and furniture sectors. By and large, these sectors have not boasted significant competitiveness rates since 2008 and have not managed to improve their condition so far. Conversely, few sectors like metallurgy and the industry of electric equipment have experienced a recent decline in their performance (ISTAT, 2020b).

Figure 5. Synthetic Indicator of Structural Competitiveness (ISCo)* by sector of economic activity. Manufacturing sector average: 100



* Competitiveness is measured by ISTAT via the ISCo indicator, considering profitability, foreign market competitiveness, cost competitiveness and innovation

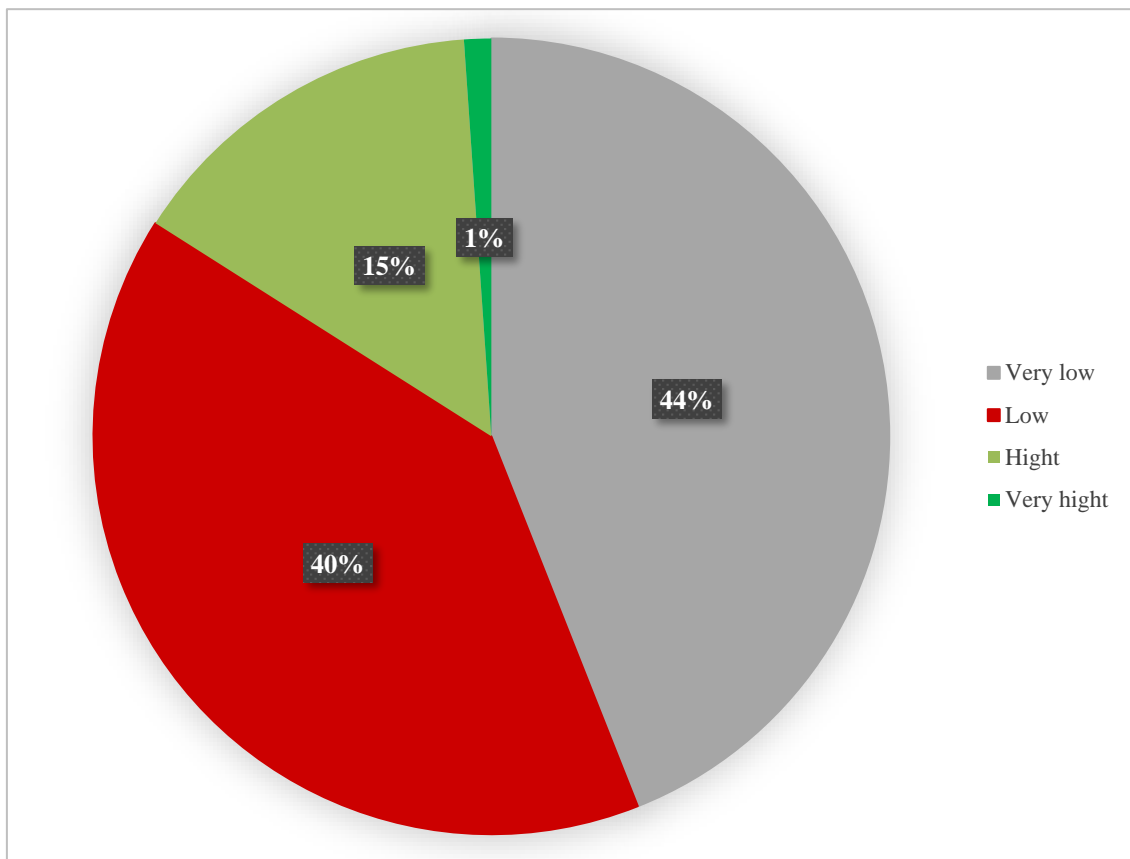
Source: Rapporto sulla competitività dei settori produttivi, ISTAT, 2020

Digitalisation. Between 2016 and 2018, 42.9% of manufacturing enterprises initiated a development path towards either technological modernisation, diversification of the core business, transition to new activities or innovative transformation. Among the areas which companies invested in, we can list: research and development, digitalisation, human capital, internationalisation and social and environmental sustainability. In regard to digitalisation in manufacturing, the pharmaceutical and chemical industries have the highest proportions of innovative enterprises, respectively with 94.1% and 86.6% of

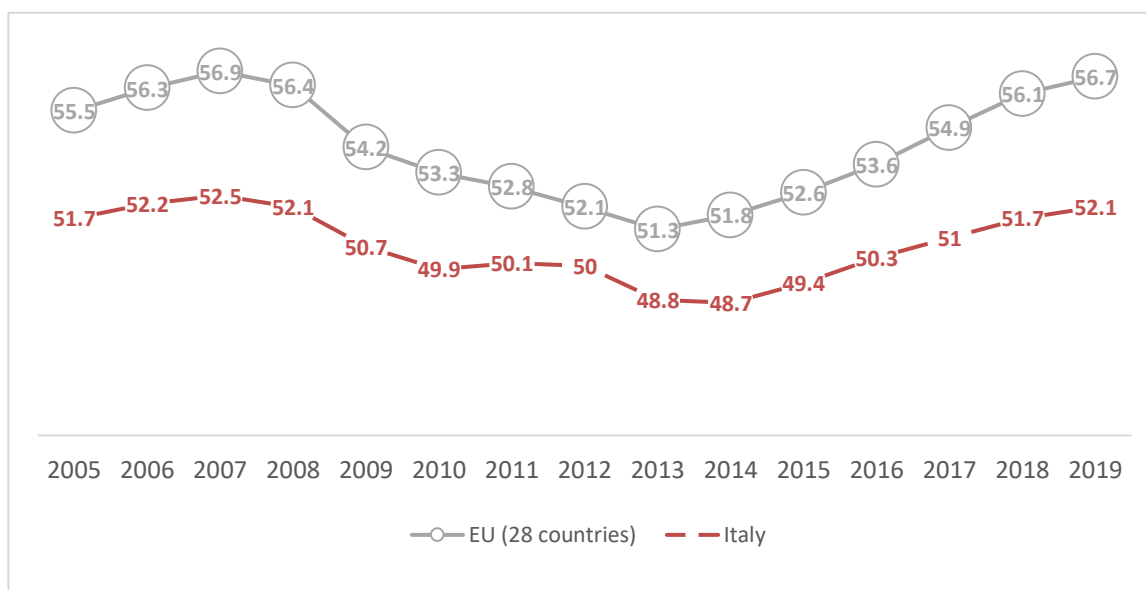
companies investing in digital technologies (ISTAT 2020a). With reference to governmental measures for Industry 4.0, in 2017 hyper-amortisation was mostly used by manufacturing enterprises: 4,400 of them benefitted from it. Interestingly, while a significant proportion of metalworking companies invested in Industry 4.0 capital goods, the average value of such investment was higher in companies producing oil, chemical and paper goods. This reflects the different degree of deployment of machinery and software and hence digital technologies in the various

manufacturing industries (Confindustria, 2019).

Figure 6. Manufacturing enterprises by level of digitisation



Source: Indagine ICT Istat, 2019

Figure 6. Employment rate of low-skilled* workers (age group 20-64)

* The employment rate of low skilled persons is calculated by dividing the number of persons in employment with at lower secondary education

Source: Eurostat, 2019

Main priorities and issues at stake

The need for workers' training. Italy is very backward in terms of digital technology integration within firms: only 9% of B2C (business-to-consumer) firms sell online while, more generally, the level of digitalisation in manufacturing is low (DESI, 2020). As regards the level of e-skills in human capital (both "internet user skills" and "advanced skills and development") Italy is ranked last in Europe together with Bulgaria and Romania, with 30% of human capital with basic skills and 10% with advanced skills (DESI, 2020). In addition, because of the introduction of new technologies, 15.2% of jobs are at high risk of automation and a further 35.5% may undergo significant changes in the way they are performed

(Nedelkoska, Quintini, 2018). In this context, it would be essential to invest in training for adults, but only 60.2% of companies (with at least 10 employees) provide training for their workers (less than the OECD European average of 76%). It could therefore be essential to strengthen the role of joint interprofessional training funds (established and managed by social partners in Italy and aimed at financing vocational training), that are regarded as valuable tools to reach a large number of workers even in SMEs and to provide training adapted to the needs of the market (OECD, 2020).

Strengthening workers' participation.

Worker participation at company level appears to be necessary to face the key challenges of our time in a sustainable and inclusive way (Hoffmann et al.,

2020). Moreover, the post-Fordist economic system has laid the foundations for a more participatory model: there has been a shift from the 'hard' task and performance management typical of the Taylorist model to a greater search for workers' ideas which is functional to the mantra of continuous improvement. These processes are pushing towards a more horizontal and less vertical work organisational model (Accornero, 2001). However, as far as Italy is concerned, practices of direct employee participation have developed later than in other countries and they are largely weak, as characterised by little communication about the organisation of work between employees and management (Eurofound, 2015). Plus, they are generally managed solely by employers and not integrated in the industrial relations framework, with very few exceptions (Armaroli, 2020).

Collective bargaining over data protection and data usage. Datafication and big data are not only the core of the two most discussed new business and technology models (i.e. platform economy and Industry 4.0) but have already permeated also traditional organisations, entering all their departments (marketing, production, sales, finance) (Degryse, 2016; Bodie et al., 2017). Despite this trend, in Italy, the role of workers' representatives is still limited to ensuring the protection of workers' data against potentially excessive surveillance and monitoring by management. By contrast, labour representation does not actively participate in decision-making processes concerning data collection, analysis and usage at workplaces (Dagnino, Armaroli, 2019).

3.

FUNDAMENTALS OF INDUSTRIAL RELATIONS IN THE ITALIAN MANUFACTURING SECTOR

Industrial relations in Italy are characterised by a low degree of legal institutionalisation (in the sense that legislation and the state play a limited role in the regulation of collective bargaining) and a 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) (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).

Union pluralism is indeed an important element of industrial relations in Italy. There are three main trade union confederations: CGIL (Confederazione Generale Italiana del Lavoro), CISL (Confederazione Italiana Sindacati Lavoratori) and UIL (Unione Italiana del Lavoro).

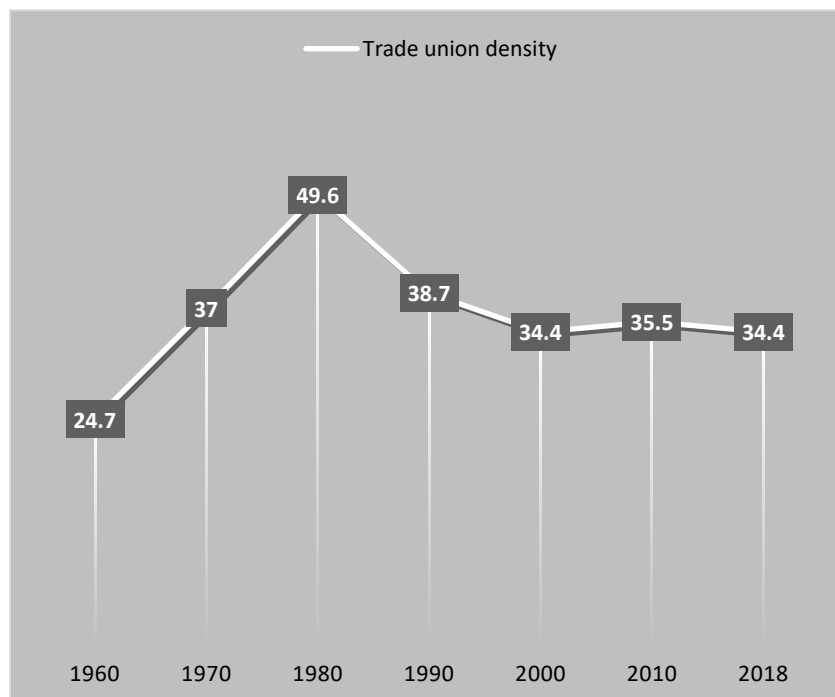
Trade union federations (representing both blue-collars and white-collars) of CGIL, CISL and UIL covering manufacturing are: FIOM-CGIL, FIM-CISL and UILM-UIL (gathering metalworkers); FILCTEM-CGIL, FEMCA-CISL and UILTEC-UIL (gathering workers in various sectors incl. chemical, pharmaceutical, textile, eyewear, rubber, glass, leather, ceramic sectors and industrial laundries); FLAI-CGIL, FAI-CISL and UILA-UIL (gathering workers in the food sector as well as agriculture); FILLEA-CGIL, FILCA-CISL and FENEAL-UIL (gathering workers in wood, cement and brick industry as well as constructions); and SLC-CGIL, FISTEL-CISL and UILCOM-UIL (gathering workers in paper industry as well as in entertainment and telecommunication sectors).

Further associations operating in manufacturing are mostly - though not exclusively - affiliated either to UGL (Unione Generale del Lavoro), CONFSAL (Confederazione Generale Sindacati Autonomi Lavoratori) or CISAL (Confederazione Italiana Sindacati Autonomi Lavoratori).

In addition to these associations, there is FEDERMANAGER-CIDA representing managers in the industrial sectors and

signing NCLAs with main employers' associations.

Figure 6. Trade union density in Italy



Source: OECD Stat (<https://data.oecd.org/>), 2020

According to OECD database, **trade union density** in Italy was in 2018 at 34.4% after experiencing a decline from the 1980s and a stabilisation since 2000. In 2012-2013 trade union density in manufacturing was 31.4% (CNEL-ISTAT, 2015).

Not considering the NCLAs signed by the least representative trade union organisations, there are approximately 45 NCLAs reached by CGIL, CISL and UIL or FEDERMANAGER and covering Italian manufacturing sector (CNEL, 2019). This significant number is explained by the fact that many commodity-related sectors have specific NCLAs; plus, even single commodity-related sectors can be covered by various NCLAs as they can be signed by either

employers' associations representing large companies (generally adhering to CONFINDUSTRIA), employers' associations representing small and medium companies (generally affiliated to CONFAPI or CONFIMI), employers' associations representing craft companies (affiliated e.g. to CNA or CONFARTIGIANATO) or employers' associations representing cooperatives (affiliated e.g. to LEGACOOOP or CONFSCOOPERATIVE). In the metalworking sector, we have a further first-level collective agreement signed by the automotive group FCA-CNH Industrial with national trade union organisations (with the exception of FIOM-CGIL), following the decision of the former management of FIAT to leave

CONFINDUSTRIA representation system and disapply its NCLA in 2011.

Italy has a **multi-level collective bargaining structure**, as specified in cross-sectoral agreements from the 1990s (Tomassetti, Forsyth, 2020). The first level is the national (either sectoral or cross-sectoral) and the second level is either territorial (regional or provincial) or firm-level (sometimes further articulated into group-level, company-level, workplace-level, department-level, etc.). Criteria of coordination are:

- Delegation: the second contractual level (territorial or company) can regulate matters that are specifically devolved by the national collective agreement.
- Ne bis in idem: the second level can regulate matters not covered by the national collective agreement. This criterion though is apparently disappearing from cross-sectoral agreements.
- Derogation: the second level can modify (also in peius) the regulations contained in national collective agreements, though within the limits and in line with the procedures established at the national level.

Collective bargaining coverage has been steady over the last 30 years, particularly thanks to voluntary extension mechanisms in individual employment contract and case law, in a context characterised by the lack of a legal extension mechanism. In 1985 it was 85% and in 2016 it was 80%. 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 labour representation body and subsequently, by any company-level collective agreement. However, due to the quite high 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).

Main **workplace labour representation bodies** are:

- **Unitary labour representation body** (*Rappresentanza sindacale unitaria*, RSU), firstly envisaged in a 1993 agreement signed by CONFINDUSTRIA and the three main trade union confederations. Its role and composition have been confirmed, though with some changes, in the following cross-sectoral collective agreements signed until today. As a result, the RSU can be established in workplaces with more than 15 employees and its members are elected by workers among lists presented by the trade unions that have signed or adhered to the above-mentioned cross-sectoral agreements. It is endowed with bargaining rights at the workplace level.
- **Workers' representatives for safety** (*Rappresentanti dei lavoratori per la sicurezza*, RLS): as set forth in Legislative Decree No. 81/2008, they operate in each workplace (one RLS in workplaces

with up to 200 employees; three RLS in workplaces with 201 to 1000 employees and six RLS in larger workplaces). The RLSs have the legal right to access workplaces, receive all documentation concerning risk assessment and prevention measures, and call in the authorities if prevention/protection measures are not adequate. Interestingly, in some sectors (e.g. energy and chemical-pharmaceutical), NCLAs have extended the competences of RLSs also to environmental issues, thus giving rise to the figure of RLSA (the workers' representative for safety and the environment), or RLSSA (the workers' representative for health, safety and the environment).

Participation rights. Though enshrined in Article 46 of the Constitution, the right of workers to collaborate in the management of companies has never materialised. Participation practices can thus be introduced either unilaterally by management or by collective bargaining and generally take the form of:

- **Joint labour-management committees**, that are generally established via collective bargaining and aimed at promoting non-confrontational relations to deal with single issues (e.g. welfare, performance-related pay, skills and training, health and safety, etc.). One example is the National joint observatory for the metalworking industry established with the task of monitoring the economic development of the sector,

company-level collective bargaining and worker participation systems. Another example is the Company joint observatory, envisaged by the NCLA for the chemical and pharmaceutical sector, as a place for information and discussion between workers' representatives and management on issues like organisational and technological changes and their impact on work (ADAPT, 2020).

- **Direct employee participation practices** (i.e. teamwork, continuous improvement groups, suggestion schemes, etc.), generally promoted and implemented by management. However, from 2016 the Budget Laws have established fiscal incentives (and then also contributory cuts) for those companies introducing, via collective bargaining, both variable pay schemes for employees related to productivity goals and employee participation practices. The introduction of these measures has engendered a moderate increase in company-level collective agreements on the topic, especially in the manufacturing sector (ADAPT, 2018).
- **Employee shareholding**, allowed thanks to specific Articles included in the Civil Code. However, it is not widespread.

Main priorities and issues at stake

Social dumping via collective bargaining. Among the possible side

effects of union pluralism, there is the fragmentation of representation (as regards both labour and management side) and the multiplication of NCLAs. In Italy, there are currently 935 national collective agreements in force (CNEL, 2020), compared to 922 in 2019 (CNEL, 2019) and 844 in 2018 (CNEL, 2018). Although the proliferation of NCLAs can be the result of physiological processes of sectoral specialisation and/or transformation, this phenomenon has been explained also in terms of social dumping, given the rise of collective agreements signed by non-representative employers' and trade union organisations with the sole aim of lowering wage levels and labour costs (Gottardi, 2016; Tomassetti, 2019). Though more widespread in other sectors, the manufacturing industry is not immune to the problem, as well-demonstrated by an empirical research conducted on the apparel industry (Rizzuto, 2019). Among the proposed solutions, the most discussed one is the introduction of mechanisms to measure the representativeness of trade unions and employers' associations in order to select applicable and lawful NCLAs (Carinci et al., 2014). For some scholars, such a regulation can no longer be postponed (De Luca Tamajo, 2018; Caruso, 2017); for others, it would imply a dangerous political interference with the autonomy of social partners. And it's not just that: as the assessment of social partners' representativeness would require the identification by law of the boundaries of economic sectors, that however rapidly change and evolve, this solution is bound to be ineffective and

unsustainable in the long run (Tiraboschi, Massagli, 2019).

Scant development of company-level collective bargaining and almost total absence of territorial bargaining.

Issues such as productivity and innovation goals could be better dealt with by collective bargaining in companies (or territories) rather than at the sectoral level, as they may vary significantly across different areas or enterprises. However, the number of company-level collective agreements has reduced lately compared to the figures reached in the Eighties (Sateriale, 2017). According to some reports (Fondazione Di Vittorio, 2020; ADAPT, 2020; OCSEL, 2019), the diffusion of company-level collective bargaining increases in a way directly proportional to the company size and it thus generally excludes small enterprises. In addition, partly due to the location of large manufacturing groups, company-level collective bargaining concentrates in specific areas (i.e. in Central or Northern Italy), leaving other territories largely uncovered. Moreover, territorial collective bargaining, which should have the potential to extend the benefits of collective negotiations also to small enterprises (Bavaro, 2017; Bellardi, 2008), is found to be limited to specific areas and sectors (agriculture, construction). Finally, even where it takes place, collective bargaining does not always give rise to very good practices and in many cases, confrontational relations, scant worker participation and limited trade union involvement in developmental issues (e.g. worker training, performance-

related pay, welfare policies, organisational innovation) still prevail (Tomassetti, 2017).

The effects of Covid-19 on industrial relations. The Covid-19 emergency brought about significant challenges to companies and workers, and subsequently, it considerably affected the content and dynamics of industrial relations. Notably, in the acute phase of the pandemic, social partners had to shift their focus from issues such as digital innovation and the ageing of the workforce (which constituted the priority in many workplaces and territories) to the negotiation and management of economic support measures, work organisation rearrangements and health and safety matters. Importantly, remote working went from being a privilege of certain sectors and a limited number of workers, to representing the main topic of several collective negotiations, also given its

strong promotion by the Italian government (Dagnino et al., 2020). Moreover, the pandemic has turned out to be an accelerator of the effects of digitisation (UNCTDA, 2020) and it has forced social partners to invest in training and innovation in times of low productivity. To support this trend, the Italian government has set up a fund (“Fondo Nuove Competenze”) to which companies can apply, after the signature of a dedicated collective agreement, for financing employee training (Impellizieri, Massagli, 2020). Finally, some assumptions have been made about how industrial relations in Italy will change after Covid19. For instance, there are claims that industrial relations will be more cooperative, oriented to productivity goals and aimed at endowing companies and workers with further economic support measures in addition to those provided by government (Castro, 2020).

4.

APPROACHES AND PRACTICES OF NATIONAL TRADE UNIONS FOR DIGITALISATION IN THE MANUFACTURING SECTOR

The information contained in this paragraph was obtained through six semi-structured interviews with six national trade union representatives,

conducted between April and May 2020, and a focus group with 10 local trade unionists and worker representatives, held on October 19, 2020.

Trade union representatives interviewed	Participants in the focus group
<ul style="list-style-type: none">• WR1: General Secretary of a national trade union federation in the metalworking sector (Fim – CISL).• WR2: member of the Secretariat of a national trade union federation in the metalworking sector (Fiom – CGIL).• WR3: General Secretary of a national trade union federation in the food industry (Fai – CISL).• WR4: member of the Secretariat of a national trade union federation (Femca – CISL), with expertise in the apparel industry.• WR5: member of the Secretariat of a national trade union federation (Femca – CISL), with expertise in the chemical-pharmaceutical sector• WR6: member of the Secretariat of a national trade union federation (Uiltec – UIL), with expertise in the chemical-pharmaceutical sector	<ul style="list-style-type: none">• WR8: member of the workplace representation body in a chemical enterprise, adhering to Femca-CISL• WR9: Head of the Training Department of a regional trade union federation in the metalworking sector (Fim –CISL Veneto)• WR10: member of the workplace representation body in a textile company, adhering to Femca-CISL• WR11: General Secretary of a local trade union federation (Femca – CISL, Valsesia Vercelli)• WR12: member of the workplace representation body of an automotive company, adhering to Fiom-CGIL• WR13: member of the workplace representation body of a steel enterprise, adhering to Fiom-CGIL• WR14: member of the workplace representation body of chemical enterprise, adhering to Uiltec-UIL• WR15: member of the workplace representation body of an an eyewear sector enterprise, adhering to Femca-CISL• WR16: member of the workplace representation body of a chemical enterprise, adhering to Femca-CISL• WR 17: General Secretary of a local trade union federation (Uiltec – UIL, Vicenza).

General approaches and practices of national trade unions

Vision and perspective. All respondents believe that it is not possible to combat digitisation, which needs to be known and governed. All federations point to training as an essential tool to deal with digitisation, as it influences every aspect of work (i.e. production, organisation, security, privacy, skills). Some respondents (WR1, WR4) would like to see trade unions more proactive towards digitisation. Other respondents (WR2) are particularly attentive and highlight the problems arising from ungoverned digitisation (i.e. the polarisation of skills; the weakening of national sectoral-level collective bargaining, given the increasingly blurring contours of economic sectors; and the obsolescence of traditional distinctions between subordination and self-employment, as they are more and more overlapping). Respondents also identify some obstacles in implementing their approach to digitalisation: i.e. the lack of awareness and knowledge among social partners about the rapidity of current transformations (WR4, WR1) and the difficulty of communicating their vision to workers and managers (WR6). Other respondents (WR2 and WR3) believe that digitalisation should be governed by participatory models of industrial relations and that an obstacle is represented by companies trying to manage the phenomenon unilaterally. Similar views have been expressed also by local trade unionists and worker representatives, who however have

placed emphasis on possible risks and challenges for workers. WR8, for instance, believes that the introduction of digitisation changes the organisation of work and eliminates several job tasks, forcing workers to specialise. WR 10, instead, states that digitisation is both an opportunity and a challenge: an opportunity for the company (e.g. digitalisation of services during the Covid-19 emergency) and a challenge for workers (e.g. transformation of the production process).

Research activities. Many trade union federations have not carried out research activities on digitisation. Respondents say that, in general, initiatives in this field have been episodic, sometimes in collaboration with employers' organisations (WR6) or led by individual companies (WR5). Moreover, the task of organising research activities generally lies with trade union confederations, which may then involve sectoral federations (WR3). However, trade union organisations in the metalworking sector stand out as particularly engaged in research. Indeed, FIOM-CGIL relied on the Sabattini Foundation (a research organisation established on the initiative of the same trade union) to start its own reflection on digitisation in 2017: a position paper was then released and discussion groups with local worker representatives were organised throughout the country to verify the actual impacts of digitalisation. Plus, empirical studies were conducted in four Italian regions: Veneto, Piedmont, Lombardy and Emilia-Romagna (the latter study was carried out in

collaboration with IG Metall of Wolfsburg, given the interdependency of the respective automotive chains) (WR2). Conversely, FIM-CISL promoted and participated in a study on the effects of the World Class Manufacturing methodology on the Italian establishments of FCA-CNH Industrial (Campagna et al., 2015); it also contributed to write 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, in collaboration with the ADAPT research team; and in 2018, it promoted, along with the Association of clerks and managers of FCA-CNH Industrial (ACQF), the research “Clerks and managers towards Work 4.0” focused on 10 metalworking companies (WR1). At the local level, a digital literacy project has been promoted and implemented between 2019 and 2020 by FIM-CISL in the Veneto region, in partnership with the University of Padova and the training provider, IAL: the initiative was intended to design and promote digital literacy programmes in metalworking companies and more than 600 workers have already attended these courses. Finally, UILTEC-UIL is working with the employers’ association, Federchimica, to deepen the impact of digital transformation at company level: the idea is to set up working groups made up of managers from different companies, that discuss with trade union representatives about current transformations and jointly plan developmental paths.

Lobbying. All the interviewees complain about the lack of involvement of trade unions in the definition of national public policies, especially with regard to the transformation of work. The last real experience of social dialogue reported by WR1 is the so-called “Cabina di Regia” of the Industry 4.0 Plan (a consultative-coordinating body that included national and local institutions, trade associations, trade unions and the academic world), which was then followed by a Commission on Artificial Intelligence set up by the former Ministry of Labour and Social Policies, Luigi di Maio. Overall, relationships with public authorities mainly involve trade union confederations and only when specific sectoral topics are concerned, trade union federations may be directly engaged. All the interviewees (and particularly WR3) share the need to improve the involvement of social partners in policy making concerning lifelong learning. At the same time, obstacles to a fruitful dialogue with public authorities have been identified in the lack of shared demands across different trade unions and the prevalence of a short-term approach, related to specific problems (WR4). In addition, respondents report quite good examples of lobbying and social dialogue in some regions and local areas (e.g. Emilia-Romagna), particularly in relation to the use of the European Regional Development Fund. Finally, WR1 has long advocated the creation of so-called “digital territorial ecosystems”, conceived as local networks and areas of debate involving social partners, public institutions and VET providers. Within

these digital territorial ecosystems, WR1 would support the development of a local skills monitor system.

Training activities. All interviewees confirm that training courses for trade union representatives have been carried out with modules dedicated to digitalisation. In general, these courses (conducted at both national and regional level) are organised by trade union confederations (e.g. the Research Centre of CISL), though involving representatives of trade union federations among participants. WP5 stresses the importance to focus on the improvement of the skills of trade union delegates, particularly as regards workers' training. WR2 complains about the lack of partnerships between trade unions and universities/research organisations in the design of trade union training activities. That is why, FIOM-CGIL is working on a possible collaboration with the Scuola Superiore Sant'Anna of Pisa on topics linked to Industry 4.0 and innovation in welfare and health. In addition to engaging with some EU-cofunded projects on training measures for trade unionists (e.g. "Smart Unions for New Industry (SUNI)" initiative), FIM-CISL has set up a partnership with Fastweb Digital Academy, to provide trade union representatives with basic digital skills. Finally, as reported by WR6, UILTEC-UIL has launched a training course on digital communication for worker representatives, with a test phase led in Sicily. Plus, the same trade union is cooperating with the employers' association Federchimica in the organisation of joint training seminars

for worker representatives and company managers.

Collective bargaining. Collective bargaining varies greatly from sector to sector. In the metalworking sector, great attention has been paid to worker training especially via the introduction, in the 2016 renewal of the NCLA, of an individual right to training, materialising in 24 hours in three years devoted to training due to each metalworker employed. WR1 believes that the right to training should be the starting point for obtaining an individual right to skills assessment and validation; plus, negotiations for revising the job classification system in line with current organisational transformations are ongoing. Alongside training, WR2 believes that new information rights should be introduced to deal with organisation and technological innovation at the national and company level with a participatory approach. Relevant experiences in this sense have been reported in some companies operating in the packaging and automotive industry in the Emilia-Romagna region but they are not widespread. Plus, WR2 reveals that company-level collective bargaining struggles to cover issues such as organisational innovation and productivity (which though are relevant in the light of Industry 4.0), mainly due to the difficulty to establish a normative framework enabling information and participation on these matters. According to WR2, the tax credit for worker training increased the number of collective agreements on this issue and probably, a tax credit also for

technological investments could help expand the matters covered by collective bargaining. Similarly, WR4 operating in the food industry stresses the need for a preventive approach to digitalisation, thanks to collective negotiations taking place prior to the introduction of new technologies. An important initiative in this sense has been launched jointly by trade unions and managers at Unilever Italian sites (Roesel, 2019). Overall, at the company level, many worker representatives strongly emphasise the need to assess the lack of basic digital skills among workers. Coherently, the NCLA for the chemical and pharmaceutical sector placed emphasis on worker training, especially via the enhancement of a trade union delegate in companies with specific responsibilities for occupational training (WR6) and the provision of an individual booklet for the registration of training activities (WR5). Conversely, in the eyewear sector, a new job classification system has been recently introduced. Experience in this field and in the apparel industry has proved that it is hard to establish a general framework covering all companies within a sector as they may largely differ as regards the organisation of work. Therefore, general guidelines can be established at national level, but company-level collective bargaining should be allowed to make adjustments (WR4). Other issues increasingly covered by collective bargaining, also due to the Covid-19 pandemic, are working time (with reduced time and eased procedures to set changes in working time at company level, as revealed by WR5), remote working (with, for instance, the 2020 joint

initiative “Flexibility, Objectives, Results (FOR)” for a new way of working in the chemical sector) and health and safety. Notably, possible risks of remote working have been reported by worker representatives, who highlight the need for their containment through collective bargaining (WR10, WR11, WR12, WR13, WR15, and WR17). Other relevant issues to be covered by collective bargaining at company level, are data collection and usage (WR12). Finally, as regards possible new levels for collective bargaining, WR2 and WR4 stress the importance to set homogeneous rules within a same production chain, whereas WR6 highlights the potential of “local networks”, where SMEs could jointly face the challenges related to digitalisation.

Multi-stakeholder programmes. Only a few of the interviewed federations reported multi-stakeholder programmes. WR1 complains about a lack of cooperation with employers’ associations in the metalworking sector and blames social partners and public authorities, who are often slow at recognising relevant issues and actively operating to address them: there still is an anti-innovation culture to be contrasted in Italy. Conversely, in the chemical and pharmaceutical sector, collaboration between trade unions and employers’ associations on developmental issues has been reported (WR6 and WR5). A joint laboratory for the study of digital transformation in the food industry is also advocated by WR6 in partnership with the employers’

association, Federalimentare, and its member organisations.

Impact of digitisation on the internal organisation of trade unions. All respondents claim that digitalisation has changed the way they communicate with their members. Generally, social networks have been integrated with more traditional means of communication (WR1). By and large, the restrictions imposed by the pandemic led to an increase in remote work even for trade unions. Digitalisation has also changed traditional tools for members' enrolment (WR4). As revealed by WR1, for instance, FIM-CISL is working on the application of blockchain technology to the registration of trade union members. Other trends are the increase in distance

learning (WR6, WR1), distance collective bargaining (WR12, WR17) and the provision of union services through new tools such as apps (WR1, WR3). As far as membership is concerned, digitalisation has not apparently changed membership rate or composition: a process of increase in the number of white collars (compared to blue collars) started several years ago (WR5). WR2 and WR5 believe that digitalisation has led to changes in workers' needs and demands (e.g. training), in the face of which trade union offer was not adequate. Finally, WR9 believes that in order to become more efficient in performing its work, the trade union movement should exploit new technologies to extract more data and information.

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