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Employer Association in Italy
Trends and Economic Outcomes

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Abstract**

This paper analyses the characteristics of employer association in Italy, using unique firm-level data with information on employers' affiliation choices as well as their characteristics. We document that a persistent decline in affiliation rates to employers' associations has occurred during the last two decades. We show that affiliated companies are positively selected, as they tend to be larger, older, more likely to be located in richer regions, to be export- and innovation-oriented, as well as more likely to provide training. Using longitudinal data and regression decomposition techniques, we show that more fragile and less innovative firms have been more affected by the persistent decline in affiliation rates. Using a firm fixed effect identification strategy, we also show that firms that become members of an employer association tend to experience a faster growth in employment, but there are no significant relationships with productivity dynamics. Finally, the paper analyses whether the level of representativeness of employers' associations has any effect on bargaining outcomes concerning the level of minimum wages, which are settled by these organizations in national industry-wide collective contracts after a negotiation process with trade unions. Results from this analysis show that a higher representativeness of employers' organizations has a weak positive relationship with the level of bargained wages.

JEL classification: J52, J31, J41

Keywords: industrial relations; employer association; collective bargaining; wage setting.

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1 Introduction

The functioning of trade unions and the effects of unionism have been extensively studied since the seminal work by Freeman and Medoff (1984). Instead, employers' associations, which are the most common negotiating partner of trade unions, have not received the same attention in the empirical literature until only very recently (Martins (2020)). Studying the characteristics of employers' associations is nevertheless a relevant issue, since these organizations typically shape the regulatory environment faced by firms and workers. This influence can occur either directly, such as in the context of collective contract negotiations, or indirectly, as employers' associations exert a powerful influence on policy proposals in virtually all countries. Moreover, these associations tend to provide important services, such as networks, coordination strategies, support and information regarding the regulatory environment, as well as guidance on business opportunities (see in particular Demougin et al. (2019)). In this context, empirical evidences can provide a better understanding of the characteristics of these organizations, of their actual representativeness and of their influence on firms' and regulatory outcomes.

This paper aims at providing new evidences on employers' associations in Italy. This is an interesting case study not only because Italy represents a large, manufacturing-oriented economy, but also because it is characterized by a relatively centralized collective bargaining system.[1] In a similar institutional context, employers' associations tend to be well structured and they tend to be relatively powerful (*e.g.* Katz (1993)). Indeed, some of the dispositions settled by collective contracts, particularly those concerning minimum wage levels, have a *de facto* legislative power and can be directly enforced by labor courts also in firms that are not members to such associations. Apart from this official function of writing collective agreements together with trade unions, Italian employers' associations typically exert a considerable soft power on the legislative process, too. For example, during 2019 alone, *Confindustria* (the largest employers' association) has been requested to provide a formal opinion on legislative issues to the Italian Parliament around twice a month.

Our empirical analysis is based on the INAPP-RIL survey. This is a firm-level survey that has been conducted in five waves between 2005 and 2015 and contains a rich set of information on employers' characteristics. Importantly, this database provides information on each employer's affiliation status. Given that official statistics on employers organizations are not publicly available, the data considered in this study currently represents the main nation-level representative database providing information on firms' affiliation rates.

We first show that affiliation rates have been declining over time. While in 2005

[1] Collective bargaining is one of the most common form of co-determination adopted among Western countries (see OECD (2018)). A more granular, but less common, form of co-determination is mandatory workers' representation in company boards (see Jäger et al. (2021)).

64% of the firms were affiliated and 84% of the workers were employed in an affiliated company, in 2015 the same percentages dropped to 44% and 67% respectively.[2] We then provide a detailed account of which firms' characteristics predict the decision to become member of an employer association, showing that affiliated companies tend to be positively selected. Indeed, even when controlling for differences in membership rates across sectors and regions, affiliated companies are more likely to be older, larger, to provide training, to be innovative, more productive and export-oriented. Moreover, we also show through decomposition techniques that the decline in affiliation rates over time has been less pronounced among more innovative, training-intensive and export-oriented firms.

The above evidences suggest that the decision to become member of an employers' association is more attractive for healthy, established and innovative firms. More marginal enterprises seem instead to gain less from these organizations, as they are more likely to be (and to become) unaffiliated. These results are consistent with the findings documented by Martins (2020) for Portugal. Through a firm fixed effect estimation strategy, we further explore this issue. In particular, we look at the association between firm performance and the decision to become member of (or leave) an employers' organization. We consider two measures of performance: employment and revenues per worker, which can be considered a measure of productivity.

Results from this analysis show that, for what concerns employment, membership to such organizations is associated to gains in workforce size as large as 20% when conditioning on firm fixed effects, thus exploiting only within-firm variation in the estimation of this effect. Instead, the relationship between membership and productivity, even if positive, was imprecisely estimated and not significant. The estimated large positive employment effect is likely to be only in part driven by spillovers related to membership status, such as a greater access to network opportunities and to other valuable services provided by employers' organizations. The considerable size of this marginal effect also suggests that the affiliation decision is likely to be driven by expectations about future firm's performance. That is, companies that plan to grow in size and face positive business cycle perspectives are more likely to become affiliated, while, on the other hand, fragile employers facing downsizing perspectives seem to find less value in the services provided by employers' associations and they tend to leave them.

We then investigate whether the behavior of employers' organizations is affected by the level of their representativeness. In particular, we focus on one of the most important outcomes of collective bargaining negotiations, namely contractual wages. These pay floors are settled by employers' associations through a negotiation process carried out

[2]Evidences on the evolution of affiliation rates over time are not abundant. Using aggregated data, Gooberman et al. (2019) documents a secular decline in the number of employer associations in the UK since the 1970s, and similar evidences have been provided by Silvia and Schroeder (2007) for Germany.

together with trade unions. Importantly, dispositions regarding wages are automatically extended to all companies at the national, sector-wide level, so that they are binding also for employers that are not affiliated to such organizations. In our analysis, we test whether the growth in contractual wages differs depending on the coverage of employers' associations, as measured by the affiliation rate of companies applying a given collective contract.

Results from this analysis show that, if anything, a higher representativeness of employers' organizations has a slightly positive effect on bargained wages, although this effect is small and only marginally significant. The dynamics of productivity and business cycle conditions within contracts have only small and not significant effects on contractual wages, a result consistent with previous evidences showing a quantitatively small sensitivity of wages to product market and unemployment dynamics at the Italian and European level (*e.g.* Rosolia (2015), Matano et al. (2019), Martins (2021), and Card and Cardoso (2021)). The only variable exerting a strong influence on contractual wages appear to be the consumer price index, for which we find an elasticity of around 1,5, implying that bargained pay levels were more than proportionally adjusted for the cost of living.

Overall, also the analysis on contractual wage dynamics suggests that employers' organizations tend to be more valuable for healthy firms, as greater employer association has a weak positive relationship with higher wage standards. Similarly, a decline in employers' affiliation rates tends to induce a downward pressure on negotiated pay levels, which could be in part the result of a tougher negotiation strategy adopted by employers' organizations as a response to the decline in their representativeness. These findings are consistent with evidences suggesting that cooperative relations with trade unions are more likely to arise where the density of employers' associations is higher (*e.g.* Behrens and Helfen (2016)). They are also broadly consistent with studies pointing out that members of employers' associations in advanced economies tend to view slack low-pay standards as a competitive threat, rather than as an opportunity (*e.g.* Haucap et al. (2001); Bosch (2018)).

The paper is organized as follows. Section 2 provides a short institutional framework on the Italian system of industrial relations. Section 3 presents the data along with descriptive evidences on the characteristics and evolution of employer association in Italy. Section 4 presents the results obtained from several regression models. Section 5 provide the conclusions.

2 Institutional setting

This section illustrates the main features governing the role and representativeness of the actors involved in social dialogue in Italy, with a particular focus on employer associations (see Caponetti (2018) and Forlivesi (2018)).

Collective bargaining in Italy is characterized by a two-tier structure, where the first tier (Contratti Collettivi Nazionali di Lavoro - CCNL) sets minimum wages schedules and work standards at the industry-wide level, and the second tier, at the decentralized level (firm or local), negotiates additional components of wages and other regulatory aspects. Collective bargaining at the industry level takes place between trade unions and employer associations (or their sectoral federations), while firm-level bargaining is conducted by employee representative bodies elected in works councils.

While on the unions' side there is a relatively small number of actors (seven main confederations,[3] and a number of minor unions), the landscape on the employers' side is much more fragmented, with 25 main organizations,[4] reflecting the different characteristics and interests of affiliated firms.

Employer associations originated as a response to the spread of workers' associations, to preserve the interests of affiliated firms through national collective bargaining, and their representation is mainly based on the sector of economic activity, dimension and legal status of affiliated firms. However, recent technological and organizational changes, together with the rapid emergence of new sectors and business models, have called firms to join together according to different criteria, giving rise to new cross-sectoral associations that overcome the traditional organization based on sectors of economic activity. Moreover, the organizational structure of employer associations can be at the confederal, federal or local (regional) level, and firms can join more than one association.

Fragmentation and pluralism have also been fostered by collective bargaining decentralization process, the inadequacy of national collective agreements to adjust to the changing world of work and regulatory uncertainty characterizing the whole system of industrial relations. In this context, large companies, with sufficient bargaining power, can choose to apply the most convenient collective agreement or even opt out of the employer association, simply relying on firm-level agreements. Recent examples include FCA-Fiat Chrysler Auto, Luxottica and IBM, that dropped their membership with respective employer organizations to gain further flexibility compared to national sector-level agreements, or signed company-level agreements with different provisions. On the other hand, small and medium firms often join together in new organizations to identify alternative

[3]CGIL, CISL, CISAL, Confsal, Casartigiani, UGL and UIL.

[4]Associazione bancaria italiana (ABI), Associazione Trasporti (ASSTRA), Confederazione italiana agricoltori (CIA), Confederazione Italiana Dirigenti e Alte Professionalità (CIDA), Confederazione Italiana di Unione delle professioni intellettuali (CIU), Confederazione Nazionale dell'artigianato e della piccola e media impresa (CNA), Confederazione nazionale coltivatori diretti (Coldiretti), Confederazione generale dell'agricoltura (Confagricoltura), Confederazione autonoma dei dirigenti, quadri e direttivi della PA (Confedir), Confartigianato, Confcommercio, Confederazione Cooperative Italiane (Confcooperative), Confesercenti, Confederazione generale italiana dei trasporti e della logistica (Confetra), Confindustria, Confederazione italiana armatori (Confitarma), Confservizi, Conftrasporto, Consiglio Nazionale dell'Ordine degli Assistenti Sociali (CNOAS), Consiglio Nazionale Geometri e Geometri laureati, Confederazione produttori agricoli (Copagri), Legacoop, Osservatorio Nazionale sul Volontariato, Osservatorio Nazionale sull'Associazionismo, Utilitalia.

collective agreements, instead of resorting to firm-level bargaining.

In an attempt to stem increasing fragmentation and decreasing representation, employer associations recently started offering a number of additional services to their members. Such services, that currently represent a major driver of membership, range from services strictly connected to the collective bargaining activity of associations (credit management, collective agreements or disputes with public administration) to services related with mandatory obligations for firms (taxes, payrolls, safety or mandatory certifications and training) or with business development, as well as fiscal and welfare services for the entrepreneur (health care, social security, insurance). Moreover, some employer associations allow associative relationships that do not involve representation in collective bargaining and the application of the national collective agreements (i.e. members can choose to apply a different collective agreement with respect to the one signed by the employer association), but only the provision of services.

3 Data and descriptive statistics

Our analysis on employer association is based on the INAPP-RIL survey, which is a longitudinal survey on Italian firms in the private non-agricultural sector. This survey is composed of five waves (2005, 2007, 2010, 2015). Each wave contains around 20,000 companies, and part of these firms are observed more than once across waves.

The INAPP RIL survey represents the main national-level representative source of information on employer representation in Italy, as it contains a specific question about whether firms are members of an employers' association. The database also contains a rich set of information on firms' characteristics (including a section on collective bargaining and industrial relations), that allows us to conduct an in-depth analysis on the evolution and the determinants of membership to employers' associations, as well as the effects of the latter on numerous outcomes. Table A1 in the Appendix provide a definition of all the variables derived from the INAPP RIL survey that we have considered, together with information on their mean and standard deviation in each wave.

In this section we provide descriptive evidence on the evolution of employer association over time, on the characteristics of affiliated and unaffiliated companies, and on their dissimilarity. Section 4 presents instead regression analyses on the determinants of affiliation and on its effects at the firm and aggregate level.

3.1 Decline of employer association over time

The INAPP-RIL survey allows us to uncover the evolution of employer association in the recent years. Figure 1 shows the evolution of employer associations' membership rates

Figure 1 **Evolution of Employers' Association Membership Over Time**

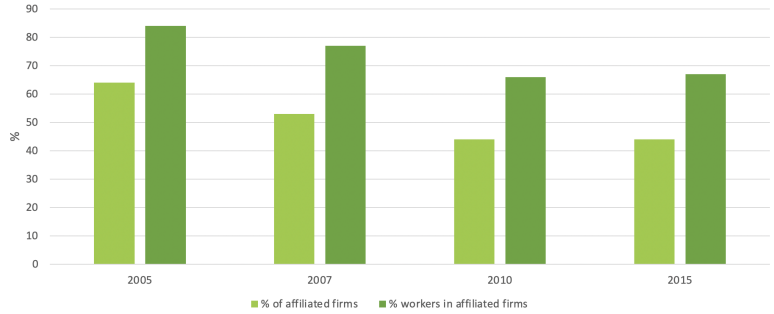


Figure 2 **Evolution of Employers' Association Membership by Firms' Size**

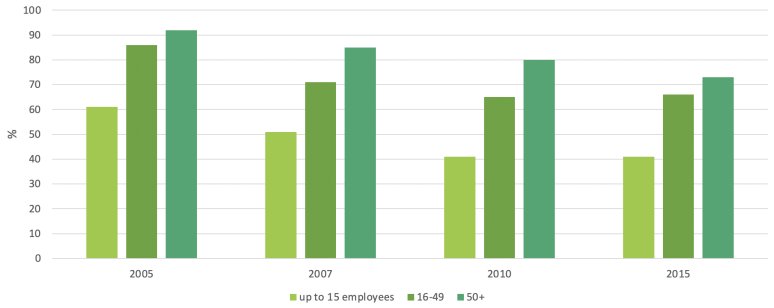


Figure 3 **Evolution of Employers' Association Membership by Area**

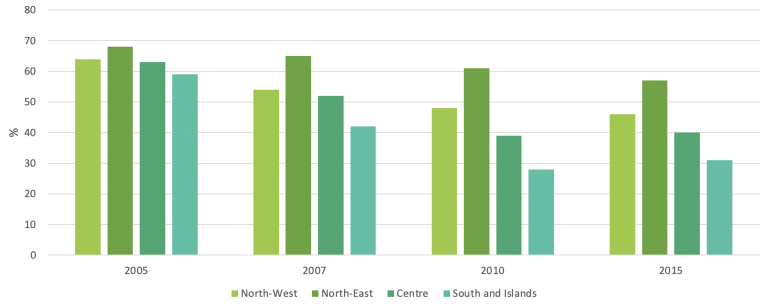
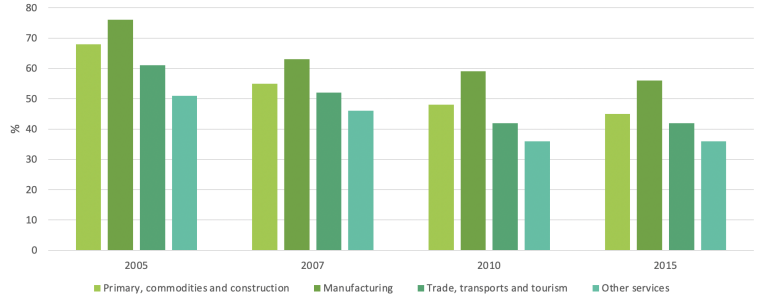


Figure 4 **Evolution of Employers' Association Membership by Sector**



Source INAPP-RIL survey. Statistics weighted using sampling weights. The percentage of workers in affiliated firms is obtained by multiplying each firm by its number of employees.

in the five waves of the INAPP-RIL survey.[5] As it can be noticed, a clear decreasing pattern emerges. While, in 2005, 64% of the firms were affiliated and 84% of the workers were employed in an affiliated company, in 2015 the same percentages were 44% and 67% respectively. Most of this decline took place between 2005 and 2010, while membership rates remained relatively stable between 2010 and 2015.

In analyzing these trends, it is interesting to notice that Italy has been characterized by a long economic recession, with negative or flat GDP growth in all years from 2008 up until 2013. Thus, the trends described above are consistent with the hypothesis that the extent of employer association tends to be pro-cyclical. Indeed, the decline in representation flattened out as the economy started to recover. It is also worth noticing that since 2011 a series of reforms concerning collective bargaining and the possibility of opting out from part of the dispositions of collective agreements started to kick in. The relationship between decentralization of collective bargaining and employer association density can be quite complex and influenced by several institutional and organizational factors (*e.g.* Katz (1993)). On this respect, Sheldon et al. (2016) provide recent qualitative evidences for Italy suggesting that decentralization of the bargaining process may represent a threat to employers' organizations and induce a decline in affiliation rates.

Figure 2 shows membership rates by year and class of firms' size. As can be noticed, larger companies are more likely to be affiliated in all years. However, the decline in membership rates over time has been quite similar for all types of firms. Indeed, membership rates dropped from 92% to 73% among companies above 50 employees, while the same rate dropped from 61% to 41% among companies below 15 employees between 2005 and 2015.

Figure 3 shows the evolution of employer association by geographical area and time. In this case, it appears that the decline in affiliation rates has been more heterogeneous, as this general decline has been accompanied by an increase in regional differences between companies located in the North-Eastern part of the country, with respect to companies located elsewhere. Indeed, between 2005 and 2015 membership rates decreased only from 68% to 57% in the North-East, while they decreased from 64% to 46% in the North-West, from 63% to 40% in the Center and from 59% to 31% in the South of Italy. Also in this case, it appears that the decline in employer association has hit the most those regions that were more negatively affected by the economic recession.

Finally, Figure 4 shows the evolution of employer association by sector and time. It appears that companies in the manufacturing sector are the most likely to be affiliated to an employers' association. In this case, the decline in membership between 2005 and 2015 has been relatively similar in size across sectors, changing from 76% to 56% in the manufacturing sector, from 68% to 45% in the primary, commodities and construction

[5]All descriptive statistics are computed using sampling weights. As mentioned, a definition of each variable derived from the INAPP-RIL survey is provided by Table A1 in the Appendix.

sectors, from 61% to 42% in the trade, transport and tourism sectors and from 51% to 36% in the rest of the services sectors.

3.2 Characteristics of affiliated firms

In order to gain a more detailed picture of the characteristics of affiliated companies, we have relied on the rich set of variables available in the INAPP-RIL survey. In this section, we present descriptive statistics on firms' characteristics by membership status derived from the 2015 wave of the INAPP-RIL database, which is the most recent wave available. For comparison purposes, where possible we compute the same descriptive statistics on the 2005 wave of the database, in order to gain a better understanding of the evolution of the characteristics of affiliated companies over time.

Table 1 provides descriptive statistics on several firms' dimensions by membership status computed on the 2015 wave. As can be noticed, members of an employer's association tend to be larger (17,6 employees *vs* 6,5 employees); they tend to be older (25,3 years old *vs* 20,6 years old); they are more likely to be located in the North and to belong to the manufacturing sector; they are more likely to apply a collective agreement, to engage in decentralized bargaining and to have a firm-level presence of trade unions. Affiliated firms are also more export-oriented, more likely to provide training and more innovative. However, no significant differences emerges in the level of revenues per worker between affiliated and non-affiliated firms, while the proportion of incorporated businesses is higher among unaffiliated companies.

In general, the above findings suggest that firms affiliated to employers' associations tend to be positively selected, considering dimensions such as their propensity to provide training or to introduce innovations. Moreover, they are larger and more likely to be located in the richest regions of the country. For what concerns the higher propensity to apply a collective contract, the result is not surprising considering that, according to the Italian legislation, members to an employers' association are committed to all the clauses contained in collective agreements signed by the association to which they belong.

Table 2 provides similar descriptive statistics computed on the 2005 wave of the database.[6] As can be noticed, most relationships hold also in this sample. In particular, affiliated firms tend to be larger, more likely to be located in the North, to belong to the manufacturing sector, to be export-, innovation-oriented and to provide training. However, affiliated firms have also slightly lower average revenues per worker and are less likely to be incorporated.

In Section 4.1 we provide a regression analysis on the determinants of the decision of becoming affiliated to an employer's association. This analysis allows to gain a better

[6]Due to inconsistencies across questionnaires in different waves of the INAPP-RIL survey, some of the variables considered in 2015 were not available in the 2005 wave.

Table 1 **Descriptive Statistics by Employers' Association Membership - INAPP-RIL 2015**

Type of firm:	**Affiliated**		**Not Affiliated**			
Variable	Mean	St.dev.	Mean	St.dev.	Difference	Observations
N. employees	17,3	266,9	6,5	42,3	**	26079
Log revenues per worker	4,63	1,25	4,63	1,42		16280
Age of firm	25,3	13,7	20,6	11,7	**	26058
North	62,9%		48,3%		**	26079
Centre	21,9%		25,9%		**	26079
South	15,2%		25,8%		**	26079
Utility/construction s.	13,4%		12,5%		**	26079
Manufacturing s.	24,6%		14,8%		**	26079
Services s.	62,0%		72,7%		**	26079
Applies collective contr.	88,1%		69,5%		**	26079
Presence of trade union	8,3%		2,6%		**	26079
Second-level bargaining	5,3%		1,0%		**	26079
Innovative firm	40,0%		28,2%		**	26079
Access fiscal incentives	6,4%		3,6%		**	26079
Provides training	42,9%		25,6%		**	26079
Exports production	19,1%		14,4%		**	26079
Not incorporated	42,8%		33,0%		**	26079

*Source: INAPP-RIL, 2015 wave. Statistics weighted using sampling weights. **: 0.01 significance in the two-sided test of equal average between affiliated and non-affiliated firms (test performed using sampling weights).*

Table 2 **Descriptive Statistics by Employers' Association Membership - INAPP-RIL 2005**

Type of firm:	**Affiliated**		**Not Affiliated**			
Variable	Mean	St.dev.	Mean	St.dev.	Difference	Observations
N. employees	13,4	165,3	2,564	9,235	**	18.758
Log revenues per worker	4,619	0,983	4,780	0,984	**	7.631
North	58,8%		57,1%		**	18.781
Centre	23,9%		25,1%		**	18.781
South	17,3%		17,7%		**	18.781
Utility/construction s.	13,7%		11,1%		**	18.781
Manufacturing s.	27,4%		11,5%		**	18.781
Services s.	58,9%		77,3%		**	18.781
Second-level bargaining	6,1%		0,8%		**	17.269
Innovative firm	51,2%		39,6%		**	18.058
Provides training	22,6%		8,4%		**	18.446
Exports production	23,2%		14,4%		**	18.374
Not incorporated	56,9%		58,5%		**	18.781

*Source: INAPP-RIL, 2005 wave. Statistics weighted using sampling weights. **: 0.01 significance in the two-sided test of equal average between affiliated and non-affiliated firms (test performed using sampling weights).*

understanding of the differences in firms' characteristics between affiliated and unaffiliated companies taking into account sample selection mechanisms, such as differences in affiliation rates across sectors or regions that could be ascribed to historical and institutional factors. Furthermore, in Section 4.2 we discuss the results derived from an Oaxaca decomposition designed to test whether the decline in affiliation rates observed between 2005 and 2015 can be ascribed to composition effects, or whether membership rates have declined among firms with similar characteristics. Before turning to this analysis, in the next section we provide further evidence on differences between members and non-members to employers' associations using the dissimilarity index method.

3.3 Dissimilarity of firms depending on affiliation status

In this section, we use the Duncan and Duncan (1955) dissimilarity index to provide a synthetic measure of differences between affiliated and unaffiliated companies. This index is defined as

$$D = \frac{1}{2} \sum_{j=1}^{J} \left| \frac{a_j}{a} - \frac{na_j}{na} \right|$$

where j index a labor market cell, J is the total number of cells, a_j is the number of affiliated firms in cell j, a is the total number of affiliated firms, while na_j and na are the number of non-affiliated firms in cell j and the total number of non-affiliated firms, respectively. The index D ranges between 1, in case of perfect similarity between the sample composition of affiliated and non-affiliated firms, and 0 in case of perfect dissimilarity.

In constructing this index, an important step consists in defining labor market cells. We have followed an approach similar to Martinez Matute and Martins (2020), who provide cross-country evidence on dissimilarity between affiliated and non-affiliated firms in Europe, defining a labor market cell as the interaction between sectors, regions and classes of firms' size. In particular, we have used a definition of cells constructed using three firm size levels (below 15, between 15 and 49 and above 49 employees), four geographic levels (North-West, North-East, Center and Southern Italy) and twelve industry levels. For comparison purposes we have computed the same dissimilarity index both in the 2015 wave of the INAPP-RIL database and on the 2005 wave.

Table 3 provides the dissimilarity index computed using the above mentioned two sources of information. As can be noticed, the dissimilarity index is considerably higher in the smaller 2005 wave of the database (0,516 instead of 0,339). To put these results in perspective, notice that Martinez Matute and Martins (2020) find for Italy a dissimilarity index of 0,306 using the 2013 European Company Survey. This level can be considered similar to the one reported for the 2015 wave. Instead, the one computed in 2005 seem to be relatively high, considering that in the analysis of Martinez Matute and Martins

Table 3 **Dissimilarity Index in the INAPP-RIL 2015 and 2005 Databases**

INAPP-RIL 2005 Database	**INAPP-RIL 2015 Database**
0,516	0,339
Observations	*Observations*
18941	26079

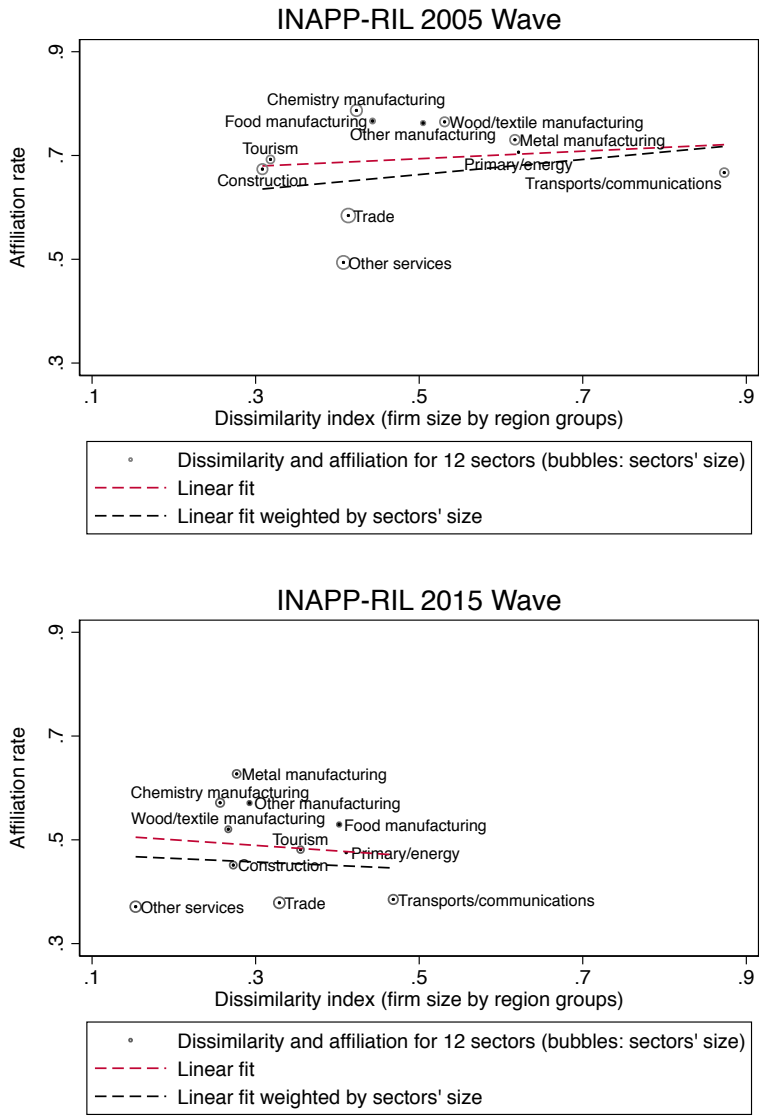
The dissimilarity index is computed separately for cells of three firm size levels, four geographic levels and twelve industry levels in the INAPP-RIL 2005 and 2015 databases.

(2020) the dissimilarity index ranges between 0,161 and 0,583 in European countries, and Italy appears to be in the middle of this distribution. On this respect, it should be noticed that the 2005 wave also coincides with the highest affiliation rate among the various INAPP-RIL waves, thus our finding of a high dissimilarity seems consistent with the positive association between affiliation rates and dissimilarity levels documented at the European level by Martinez Matute and Martins (2020).

In order to gain a better understanding on the relationship between the dissimilarity index and affiliation rates, Figure 5 provides the correlation between the dissimilarity index computed separately for each sector, and affiliation rates to employers' associations within each industry. In constructing this indexes of segregation, we have defined labor market cells as the interaction between three classes of firms' size and four geographical location categories. As can be noticed, the correlation between the sector-specific dissimilarity indexes and affiliation rates is slightly positive or flat within each wave of the INAPP-RIL database. In general, in both databases manufacturing, transport and finance sectors have a relatively higher affiliation rates to employer's associations, while the communications, trade and other services sectors have relatively lower membership rates.

In the 2005 wave, the range of the estimated dissimilarity indexes is more wide. This issue could be in part ascribed to the fact that this sample is smaller in size, but also to the decline in affiliation rates may have played a role. Indeed, as former affiliated companies become un-affiliated, the dissimilarity among firms within sectors may become lower. Finally, the general shift of industries from the top-right corner (high affiliation rates and dissimilarity) to the bottom-left corner (low affiliation rates and dissimilarity) of the graph across time is consistent with the positive relationship between affiliation and membership rates documented by Martinez Matute and Martins (2020).

Figure 5 **Correlation Between Dissimilarity Index and Affiliation Rates Across Sectors and Time**



Source 2005 and 2015 INAPP-RIL databases. The dissimilarity index is computed in each sector using four geographical location categories and three firms' size categories. Sectors' size (represented by the diameter of each bubble) is computed by summing up the number of employees in each sector using sampling weights.

4 Empirical analysis

In this section, we present the results derived from different regression analyses conducted on several waves of the INAPP-RIL databases. First, in Section 4.1 we consider the determinants of firms' decision to become members of an employers' association, by considering as an outcome of interest the affiliation status of firms.

Section 4.2 provides an anlysis of the determinants of the decline in affiliation rates over time, adopting an Oaxaca decomposition approach. Using this method, we uncover along which firms' characteristics the decline in employer association was more pronounced and how the affiliation choice has evolved over time, while controlling for differences in sample composition.

We then turn to an analysis of the effects of membership to an employers' association in Section 4.3, by studying whether becoming affiliated has an effect on firms' outcomes. In particular, we use productivity and employment as two outcomes of interest, and we perform a regression analysis on the panel section of the INAPP-RIL data, using firm fixed effects to account for time constant unobserved heterogeneity across companies.

Finally, in Section 4.4 we study whether employers' associations are influenced by the dynamics of their representativeness in collective bargaining negotiations. In particular, we look at whether contractual wages bargained by trade unions and employers' associations are affected by the dynamics of affiliation rates among firms that apply collective contracts, linking the INAPP-RIL data to a hand-collected database on contractual wages.

4.1 Determinants of membership to employers' associations

In this section, we analyze the main drivers of firms' decision to become members of an employer association. In particular, we employ a linear probability model, in which the outcome of interest is a binary variable equal to one if a given company is affiliated to an employers' organization. The regression model reads as follows

$$y_j = \beta x_j + s_j + r_j + s_j * r_j + e_j \tag{1}$$

where y_j is an indicator variable equal to one if firm j is affiliated to an employers' association, x_j is a set of covariates and a constant term, s_j is an industry fixed effect, r_j is a geographic area fixed effect, while e_j is the residual. An interaction between industry and region fixed effects is also included in order to control for the role of sector-specific differences in affiliation decisions in each geographical location.

We have estimated the regression model of equation (1) on the 2015 wave of the INAPP-RIL database.[7] We have included fourteen sector fixed effects and twenty region

[7] In this section we have chosen to present results considering only the 2015 wave of the INAPP-RIL

Table 4 **OLS Regression on the Determinants of Membership to Employers' Associations - INAPP-RIL 2015**

Variable	**Coefficient**	**St. Err.**	**P val.**
Log firm size	0,039	0,003	0,000
Log revenues per worker	0,008	0,003	0,003
<3 years old firm	-0,052	0,050	0,294
3-10 years old firm	-0,085	0,012	0,000
Presence of trade union	0,082	0,010	0,000
Applies a collective contract	0,229	0,012	0,000
Second-level bargaining	0,052	0,011	0,000
Access fiscal incentives	0,028	0,011	0,010
Innovative firm	0,070	0,008	0,000
Provides training	0,102	0,008	0,000
Exports production	0,018	0,010	0,077
Not incorporated	0,064	0,010	0,000
Observations		16270	
R^2		0,207	
RMSE		0,440	

The outcome is an indicator for members of an EA. Fourteen sector-by-twenty region fixed effects are also included in the regression. Robust standard error and two-sided test P values are reported. This sample is taken from the 2015 INAPP-RIL survey.

fixed effects, while the set of controls contained in the vector x_j is listed in Table 4. Descriptive statistics for each of these variables were discussed in Section 3.2 and presented in Table 1. The use of this linear probability model allows us to evaluate which kind of firms are more likely to be members of an employers' association, taking into account that this decision tends to be highly heterogeneous across sectors and regions. Moreover, studying affiliation decisions using a multivariable regression model also allows to estimate the separate role of a very rich set of characteristics in driving the decision to be a member of an employers' association. Indeed, the set of covariates available through the INAPP-RIL questionnaire and included in the model accounts for several firms' demographic characteristics, productivity and innovation propensity, as well as for the structure of industrial relations within each company.

Table 4 provides the estimated regression coefficients, robust standard errors and p values of the two-sided test on the equality of the coefficient to zero, as estimated using the linear probability model presented above. As can be noticed from Table 4, a 10%

database for two main reasons. First, due to inconsistencies in the questionnaire across years, the number of variables that could be included in a pooled regression on more than one INAPP-RIL wave would have been smaller and less detailed on several firms' characteristics. Secondly, results were qualitatively similar when using a more restricted pooled regression model, while the next section presents quantitative evidence on how have the determinants of affiliation evolved over time between 2005 and 2015.

increase in the number of employees is associated to an increase in the probability of being affiliated of around 0,4 percentage points. Moreover, younger firms are relatively less likely to be members of an employers' association. The regression results also suggest that the application of collective contracts, the presence of trade unions at the firm level, the presence of firm-level bargaining, the propensity to introduce innovations in the production process and to provide training are all factors that have a positive effect on the probability of affiliation. In particular, the effects of training and of the application of collective contracts appear to be quite strong, as companies providing training are 10 percentage points more likely to be affiliated, while the same effect is of 20 percentage points for companies applying collective contracts. Also unincorporated businesses are more likely to be affiliated. The 2015 wave of the INAPP-RIL survey also contains information on whether the firm had access to fiscal incentives during the previous year, and this variable appears to have a positive effect on the outcome.

There are some variables that have less clear effects on affiliation rates. In particular, the propensity to export has a positive, but only marginally significant effect on the probability of affiliation. The survey also contains information on revenues per worker, which can be interpreted as a rough measure of a firm's efficiency in the production process. Overall, this variable appears to have a positive effect on the probability of membership, although the size of the marginal effect is not particularly large.

Overall, the results of this regression analysis provide a quite coherent picture on the characteristics of affiliated companies. Firms that decide to be member of an employers' association tend in general to be positively selected, considering that such firms are larger, more innovative, engage more in decentralized bargaining and they provide training opportunities. Such firms are also more likely to be unionized, a factor that in the Italian context has been shown to be associated with higher capital investments (*e.g.* Cardullo et al. (2020)). Moreover, affiliated companies seem to be in general more established, as they tend to be older, and they appear to be export oriented and better connected to public institutions, as they more often benefit from fiscal incentives. On the contrary, younger and smaller firms are less likely to be affiliated. In conclusion, these results suggest that employers' associations provide more valuable services to relatively healthier companies, while unaffiliated firms may consider the decision to become member as a burden due to potential costs and obligations that are attached to this decision. For example, among potential costs there are stricter labor regulations and employee representation standards that are typically attached to legally binding collective agreements signed by these organizations.

4.2 Determinants of the decline in affiliation rates over time

In this section, we adopt an Oaxaca decomposition approach in order to study the drivers of the decline in affiliation rates over time, which we have documented, from a descriptive point of view, in Section 3.1. For this purpose, we estimate a linear probability model similar to the one presented in the previous section. However, we fit two separate regressions for the 2005 and 2015 waves of the INAPP-RIL surveys. The model estimated within each year reads as

$$y_j = \beta x_j + e_j$$

where y_j is an indicator variable equal to one if firm j is affiliated to an employers' association, x_j is a set of covariates (which include industry fixed effect, geographic area fixed effect and other firms' characteristics) and a constant term, while e_j is the residual. Let $\hat{y}_j^{05}$ and $\hat{y}_j^{15}$ denote the average affiliation rates in 2005 and 2015 respectively. Using standard results (see Jann (2008)) the difference in affiliation rates over time can be decomposed as follows

$$\begin{aligned} \hat{y}_j^{15} - \hat{y}_j^{05} = & \underbrace{\beta^{15}\left[E(x_j)^{15} - E(x_j)^{05}\right]}_{E} + \underbrace{(\beta^{15} - \beta^{05})E(x_j)^{15}}_{C} + \\ & + \underbrace{(\beta^{15} - \beta^{05})\left[E(x_j)^{15} - E(x_j)^{05}\right]}_{I} \end{aligned} \tag{2}$$

where E is an endowment effect, which captures the effect that differences in observable firms' characteristics over time exert on affiliation rates. C represent a coefficient effect, which captures the amount of differences over time in the propensity of being affiliated among firms with equal observable characteristics, while I is an interaction effect, accounting for the fact that composition and coefficient effects may coexist.

In the present context, the most interesting element of the decomposition provided in equation (2) is represented by the coefficient component C, as this element allows to uncover how much did the affiliation rate change between 2005 and 2015 among firms with the same observable characteristics. For this component of the difference in affiliation rates, we have also computed the separate contribution of each explanatory variable. In this way, we can show how much did the propensity of being affiliated change over time among firms with the same observable characteristic. Thus, this exercise provides a clear picture of which type of companies have been more affected by the decline in association rates.

Table 5 provides the results derived from the Oaxaca decomposition model described above. In general, the affiliation rate decreases by 19 percentage point in the sample of analysis between 2005 and 2015. Only around 12% of this decline can be ascribed to differences in the sample composition over time. Instead most of the decline is linked to differences in the propensity of being affiliated among observationally similar firms.

Table 5 **Oaxaca Decomposition on the Decline of Affiliation Rates (Pooled 2005 and 2015 INAPP-RIL Databases)**

Variable	**Parameter**	**St. error**	**P val.**
Affiliation rate 2015	0,602		
Affiliation rate 2005	0,791		
Difference in affiliation	-0,189	0,012	0,000
Endowments	-0,024	0,040	0,548
Coefficients	-0,239	0,033	0,000
Interaction	0,074	0,044	0,095
	Detailed decomposition of coefficients' component		
Log n. employees	-0,089	0,015	0,000
Log revenues per worker	-0,021	0,016	0,181
Firm-level bargaining	0,017	0,003	0,000
Innovative firm	0,028	0,007	0,000
Provides training	0,035	0,007	0,000
Export oriented	0,014	0,006	0,016
Not incorporated	0,023	0,009	0,009
North-West		*Omitted*	
North-East	0,007	0,006	0,307
Center	0,001	0,005	0,904
South	-0,008	0,005	0,088
Primary/commodities		*Omitted*	
Manufacturing	0,017	0,007	0,020
Construction	0,009	0,009	0,301
Trade	0,006	0,006	0,309
Tourism	0,002	0,002	0,364
Transport	0,007	0,007	0,331
Other services	0,018	0,012	0,129
Constant	-0,277	0,029	0,000
Observations		23039	

Oaxaca decompostion computed on the INAPP-RIL database (2005 and 2015 waves) to divide decline in affiliation rates over time into an endowments, coefficients and interaction effect. The contribution of each explanatory variable to the coefficient effect is reported in the lower part of the table. Standard error are reported clustering at the sector level (12 groups).

Indeed, the coefficient component of the decompostion accounts for more than 120% of the raw difference in affiliation rates over time. Instead, the interaction term has a mitigating effect on the decline of employer association.

Table 5 also reports the contribution of each characteristic to the total coefficient effect. As can be noticed, the decline in affiliation rates has been significantly stronger among larger firms, while it has been weaker among firms that applied a second-level collective contract, those that were unincorporated, that were more likely to provide training, that were innovative and that were export-oriented. Overall, this picture seem consistent with the hypothesis that the decline in representation was less pronounced for employers more inclined to engage in decentralized bargaining, thus more likely to be unionized, as well as for firms operating in more international, innovative and complex sectors, where employees' training is more common. Instead, the decline in affiliation rates has been more pronounced among fragile and marginal employers.

4.3 Employer association and firm outcomes

We now turn to the an analysis of the effects of membership to an employers' association on firm outcomes. In particular, we focus on employment and productivity, which we approximate using revenues per worker, as the two outcomes of interest.

There are several mechanisms that could explain the presence of an effect of being member to such organizations on firm's performance. Employers' associations could provide support for businesses in terms of knowledge about investment opportunities, training programs, they could ease the creation of partnerships with other firms or protect them from excessive competitive pressures. Moreover, in some instances such organizations could provide a platform to influence the regulatory environment. On the other hand, there could also be significant costs, such as fees, stricter managerial and organizational commitments and similar indirect costs.

To study the effects of membership on firms' outcomes, we have to take into account the fact that the decision to become member of an employers' association is likely to be driven by considerations concerning firms' performance and the expected benefits of becoming affiliated. Indeed, as shown in the previous sections, affiliated companies tend to be positively selected. In order to deal with the potential issue of firms' selection in and out of employers' organizations, in this section we rely on the longitudinal structure of the INAPP-RIL database, estimating a firm fixed effect regression on the pooled waves of the survey. In particular, we estimate the following regression model

$$y_{jt} = \beta x_{jt} + \tau_t + f_j + e_{jt} \qquad t = 2005,\ 2007; 2010; 2015 \tag{3}$$

where y_{jt} is an outcome of interest (log employment or log revenues per worker) at firm j in period t, x_{jt} is a vector of controls that includes an indicator variable for firms that

Table 6 **Descriptive Statistics on the Pooled INAPP-RIL Sample of Analysis (All Waves)**

Variable	**Mean**	**St. dev.**
Log revenues per worker	4,57	2,40
N. employees	61,6	889
Member of EA	62%	
N. years in the sample	1,59	0,78
Changes membership status	0,13	0,33
Observations	61304	

Descriptive statistics computed on the pooled waves of the INAPP-RIL database. The years of each wave are 2005, 2007, 2010 and 2015. Observations for which some variables contain missing values are dropped.

are affiliated to an employers' organization, f_j is a firm fixed effect and e_{jt} is the residual. The effect of time on the outcome (τ_t) is modeled either as a linear trend or as a year fixed effect using two alternative model specifications.

In equation (3), the effect of membership on firms' outcomes is identified only by companies that change their affiliation status over time. Moreover, the effects of all unobservable, time-constant differences across firms on the outcomes are fully accounted for. Even if the endogeneity of the affiliation decision can not be controlled for to a full extent in this model, as companies may decide to become members or to leave an organization due to the expectations about their performance, this model represents the most restrictive viable strategy to reduce the bias driven by the self selection of affiliated companies.

Table 6 provides descriptive statistics on the sample of analysis derived from the four waves of the INAPP-RIL databse. As can be noticed, the average number of years available for each firm is 1,59 and the overall panel structure is unbalanced. Moreover, only 13% of the observations belong to firms that change their membership status over time. Thus the variability to estimate the marginal effects of interest is rather limited in this context. From the table, it can be noticed that around 62% of the firms are affiliated, and their average size is rather large (62 employees).[8]

Table 7 presents the results of the fixed effect regression analysis. The top part of the table reports the results considering as an outcome of interest log employment, the lower part considers as an outcome log revenues per worker. Coefficients reported on the left

[8]The difference in the level of this variable (as well as other potential discrepancies) with respect to the descriptive evidence reported for the 2015 wave of the INAPP-RIL database in Table 1 can be ascribed not only to the fact that different years are pooled together in this sample, but also to the fact that sampling weights could not be used in computing the summary statistics of Table 6. Indeed, the definition of such weights is inconsistent across different waves of the INAPP-RIL survey.

Table 7 **Fixed Effect Regression on the Effects of Membership to Employers' Associations**

	Outcome: Log Number of Employees					
Variable	**Coeff.**	**St. Err.**	**P val.**	**Coeff.**	**St. Err.**	**P val.**
Member of EA	0,276	0,056	0,000	0,274	0,056	0,000
Revenues per worker	0,021	0,010	0,041	0,024	0,012	0,040
Linear time trend		Yes				
Year fixed effects					Yes	
Firm fixed effects		Yes			Yes	
Observations		61304			61304	
Adj. R^2		0,820			0,820	
RMSE		0,642			0,652	
	Outcome: Log Revenues per worker					
Variable	**Coeff.**	**St. Err.**	**P val.**	**Coeff.**	**St. Err.**	**P val.**
Member of EA	0,041	0,149	0,784	0,128	0,139	0,357
Log n. employees	0,199	0,096	0,038	0,196	0,093	0,037
Linear time trend		Yes				
Year fixed effects					Yes	
Firm fixed effects		Yes			Yes	
Observations		61304			61304	
Adj. R^2		0,300			0,394	
RMSE		2,007			1,866	

Fixed effects regressions computed on the pooled waves of the INAPP-RIL database. The years of each wave are 2005, 2007, 2010 and 2015. Standard errors are clustered at the firm level.

of the table were derived from the specification with linear time trends. Instead, on the right we report the coefficients of the specification with year fixed effects.

According to these results, becoming member of an employer association is associated to a strong firm-level growth in employment by around 27%. This coefficient is statistically different from zero and similar in size in both regression specifications. Revenues per worker are also positively associated with employment growth, although this effect is small in size. In the lower part of Table 7 we report the results of the fixed effect model in which the outcome of interest is productivity. As can be noticed, in this case the effect of affiliation to an employer association is positive but not statistically different from zero.

Overall, these results suggest that employment growth is positively affected by firms' affiliation decision, but this positive effect does not go along with an improvement in the efficiency of the production process. The null effect on productivity may be in part driven by measurement error, which is likely to be higher for this variable and to drive the estimated coefficient toward zero. On the other hand, the positive employment effect is likely to incorporate not only the causal effect of membership on firms' size, but it could also be biased upward due to the fact that companies could decide to become affiliated

taking into account expectations about their future employment growth.

On this last respect, it should be noticed that the positive association between employment and affiliation decision is quite large, suggesting that, on one hand, firms expecting to grow in size may be more willing to become affiliated. Such companies could indeed consider a valuable service the availability of network opportunities and strategic support services provided by employers' organizations. On the other hand, those firms cutting production levels and downsizing probably find less value in their affiliation and they could be more likely to withdraw from employers' organizations.

4.4 Employer association and collective agreements' minimum wages

In this section, we assess whether the level of representativeness of employers' associations has an influence on their negotiation behavior when they bargain collective agreements. In particular, we test the hypothesis on whether bargained minimum wages tend to be set differently depending on the share of firms that are affiliated to employers' associations among companies applying the same collective contract. Indeed, like in several other countries, Italian collective contracts are bargained by employers' associations (the other bargaining party being trade unions), but their application for what concern minimum wages is automatically extended at the industry-wide level beyond the group of firms that are members of these organizations.

The influence of social partners on negotiated wage dynamics has been mostly considered with reference to the role of trade unions, as this topic has been extensively studied since the seminal work by Freeman and Medoff (1984).[9] However, surprisingly little is known instead about the influence of the representativeness of employers' organizations on negotiated wages, even if these associations typically represent the negotiating partner of trade unions in contexts characterized by collective bargaining (OECD (2018)). The literature on contractual wages set by collective bargaining has also focused on their elasticity to firms' business cycle conditions (*e.g.* Abowd and Lemieux (1993), Fougère et al. (2018), Martins (2021)), productivity dynamics (*e.g.* Card and Cardoso (2021)) as well as their relationship with other, government-legislated pay floors (*e.g.* Avouyi-Dovi et al. (2013)). On this respect, some studies on Italy have found a negative relationship of unemployment and the exposure to international competition with contractual wages set through collective bargaining, even if these associations do not appear to be quantitatively large (see Rosolia (2015) and Matano et al. (2019)).

In Italy, employers' associations regularly bargain with trade unions the level of minimum wages. These negotiations are carried out at a quite centralized level, and each

[9] A good overview of the extensive literature on the relationship between trade unions and wages that followed since the seminal contribution by Freeman is provided by Card et al. (2004).

collective contract sets several wage floors that have to be applied for different occupations within each sector at the nation-wide level. As shown by Fanfani (2020), in the recent years contractual wages have followed very similar dynamics within each collective agreement for different occupations. Therefore, the average level of contractual wages of a collective contract can be considered a good approximation of the growth rate followed by all occupation-specific minimum wages within the same contract.

In our analysis, we have matched the average contractual wage of the collective agreement applied by each firm in all the available waves of the INAPP-RIL database.[10] We have then aggregated the INAPP-RIL database at the contract-year level, by computing averages on several firms' characteristics within each contract in each wave. The resulting sample of analysis is composed of 148 collective contracts observed over several years, for a total of 431 observations.

Using this database, we have estimated the following regression model

$$w_{ct} = \beta x_{ct} + \tau_t + f_c + e_{ct} \qquad t = 2005,\ 2007; 2010; 2015$$

where w_{ct} is the average minimum wage in collective contract c and year t, x_{ct} is a vector of time varying contract-level explanatory variables, τ_t is either a year fixed effect or, in a less restrictive specification, a linear time trend, f_c is a collective contract fixed effect and e_{ct} is the residual.

Our dependent variable of interest included in the vector x_{ct} is a measure of the representativeness of employers' associations among firms that apply the collective contract c. We have adopted two alternative definitions of employer associations' representativeness: the share of affiliated firms and the share of workers employed by affiliated firms. Since the model includes collective contract fixed effects, we have relied as identifying variation only on changes in minimum wages and in employer association within the same collective agreement over time. Indeed, the model fully accounts for all time-constant unobserved heterogeneity in contractual wages between different agreements. In order to account for residual correlation, we have clustered standard errors at the collective contract level. Moreover, we have weighted the regression by the size of collective agreements, as measured by the total number of workers employed under each contract in each year.

Table 8 provides descriptive statistics on the sample of analysis and on the explanatory variables included in the regression. As can be noticed, the yearly growth rate of average minimum wages within contracts is of 2,5%. Among firms applying the collective contracts, 61% are affiliated. Moreover 78% of the workers to which the collective con-

[10]Data on contractual wages was derived from a hand-collected database on virtually all most relevant Italian collective agreements, while minor contracts that have a dubious legal validity for what concerns wage setting dispositions were not covered. A detailed discussion of the characteristics of contractual wage data is provided by Fanfani (2020).

Table 8 **Descriptive Statistics on the Aggregated INAPP-RIL Contractual Wage Data**

Variable	**Mean**	**St. dev.**
Log avg. contractual wage	7,319	0,149
Yearly growth rate of contractual wages	0,025	0,004
Share of affiliated firms	0,614	0,169
Share of workers in affiliated firms	0,776	0,146
CPI (1=2015)	0,919	0,057
Log contract employment	12,63	1,554
Log avg. firm size	1,939	0,674
Log avg. revenues per worker	4,770	0.828
Share second-level barg.	0,089	0,097
Share exporters	0,231	0,178
Share manufacturing	0,300	0,331
Share services	0,555	0,390
Share primary/energy	0,012	0,073
Share constructions	0,133	0,247
Share north-west	0,319	0,099
Share north-east	0,242	0,086
Share centre	0,236	0,096
Share south	0,202	0,096
N. of collective contracts	148	
Observations	431	

Descriptive statistics computed on the aggregated database constructed from the pooled waves of the INAPP-RIL database matched to the contractual wage data. Each observation represents a collective contract-year pair. Contractual wages are hand-collected from collective contracts. The CPI index is taken from the Italian National Statistical Agency (ISTAT). All other variables are computed for each contract-year pair from the INAPP-RIL survey using sampling weights. The years included in the sample are 2005, 2007, 2010 and 2015. Observations for which some variables contain missing values are dropped. Descriptive statistics are weighted by the number of employees in the contract-year pair.

Table 9 **Effects of Employers' Association Representativeness on Contractual Wage Growth**

	Outcome: Log avg. contractual wage					
Variable	**Coeff.**	**St. Err.**	**P val.**	**Coeff.**	**St. Err.**	**P val.**
Sh. affiliated firms	0,041	0,032	0,197	0,042	0,026	0,111
CPI	1,471	0,351	0,000	1,636	0,304	0,000
Log contract employment	-0,000	0,006	0,985	-0,006	0,006	0,365
Log avg. firm size	-0,010	0,009	0,307	-0,005	0,008	0,504
Log avg. rev. per worker	0,006	0,007	0,388	0,002	0,006	0,763
Share second-level barg.	-0,007	0,057	0,900	-0,009	0,054	0,872
Share exporters	0,000	0,039	0,991	0,019	0,035	0,598
Share manufacturing				-0,058	0,039	0,138
Share services				0,019	0,041	0,650
Share primary/energy				-0,003	0,040	0,948
Share north-west				0,008	0,041	0,846
Share north-east				0,007	0,044	0,879
Share centre				0,048	0,034	0,166
Year fixed effects		Yes			Yes	
Contract fixed effects		Yes			Yes	
Observations		431			431	
Adj. R^2		0,980			0,983	
RMSE		0,021			0,019	
	Outcome: Log avg. contractual wage					
Variable	**Coeff.**	**St. Err.**	**P val.**	**Coeff.**	**St. Err.**	**P val.**
Sh. workers in affiliated firms	0,048	0,040	0,234	0,040	0,036	0,275
CPI	1,557	0,323	0,000	1,709	0,298	0,000
Log contract employment	-0,003	0,007	0,658	-0,008	0,007	0,272
Log avg. firm size	-0,009	0,008	0,261	-0,004	0,007	0,542
Log avg. rev. per worker	0,004	0,006	0,544	0,000	0,006	0,948
Share second-level barg.	-0,007	0,058	0,911	-0,012	0,055	0,822
Share exporters	0,002	0,039	0,958	0,019	0,036	0,595
Share manufacturing				-0,056	0,040	0,166
Share services				0,020	0,044	0,642
Share primary/energy				-0,003	0,042	0,938
Share north-west				0,017	0,044	0,696
Share north-east				0,012	0,044	0,789
Share centre				0,046	0,034	0,182
Year fixed effects		Yes			Yes	
Contract fixed effects		Yes			Yes	
Observations		431			431	
Adj. R^2		0,981			0,983	
RMSE		0,021			0,020	

Regressions computed on the aggregated INAPP-RIL database matched to the contractual wage data. The number of collective contract fixed effects included is 148. Years included are 2005, 2007, 2010 and 2015. Standard errors are clustered at the collective agreement level and regressions are weighted by total employment within each aggregation cell.

tract is applied are employed in an affiliated company. Overall, the number of variables that we are able to construct using the INAPP-RIL survey is quite rich and allows to take into account a large set of potential shifts in the sample composition of firms applying a given contract over time. We complement this information including also the consumer price index as a control, since contractual wage negotiations typically take into account inflation dynamics.

Table 9 shows the results of the regression model presented above. As can be noticed, the coefficient associated to the variables measuring the representativeness of employers' associations are always positive, but they are never statistically different from zero. The point estimates suggest that contractual wages may grow by an additional 0,4% for a 10% growth in affiliation rates of firms. Similarly, contractual wages grow by an additional 0,3-0,2% for a 10% growth in the share of workers employed in affiliated companies. Thus, the share of affiliated firms seems to have a slightly stronger positive impact on contractual wage growth, but also in this case the significance test is marginally rejected at the 10% level in the more saturated model specification. This evidence suggests that greater affiliation rates to employers' associations do not translate into a lower growth in contractual wages, an hypothesis that could have been relevant if membership rates were perceived by bargaining parties as a signal to engage into tougher negotiations. Instead, rather the opposite seems to be true, as a higher level of employer association seems to have, if anything, only a small positive influence on negotiated wage levels.

It is interesting to notice that most other variables accounting for the composition of the underlying population of firms that apply collective agreements seem to have no significant influences on contractual wage dynamics. In particular, productivity is positively associated to contractual wage growth, but this relationship is not statistically significant.[11] The size of total employment within a collective contract is negatively associated to contractual wage growth, but also this relationship is not significantly different from zero. The only variable that seems to play an important role in driving contractual wages is the consumer price index. In this case, the adjustment of contractual wages to the cost of living appears to be more than proportional, as a 10% growth in prices is associated to a growth in contractual wages between 15 and 17%, depending on the model specification.

Overall, this analysis further corroborates the hypothesis that employers' organizations tend to be more valuable for healthy firms, as greater employers' representation tends to be (weakly) associated with higher wage standards. Similarly, a decline in employers' affiliation rates seems to induce a downward pressure on negotiated pay levels. The hypothesis that stronger employers' associations may not be inclined to negotiate

[11] This result differs from the findings documented by Card and Cardoso (2021) for Portugal, which show a positive and significant association between average value added per worker of covered firms and contractual wage growth.

slack wage standards has been put forward in the qualitative and theoretical industrial relation literature (see respectively Bosch (2018) and Haucap et al. (2001)). Our results seem consistent with this notion.

More generally, according to our results the dynamics of negotiated wages also seem to respond very weakly to business cycle conditions and productivity, while they tend to adjust more than proportionally to the cost of living. The former evidence could be in part the consequence of weak statistical power, given the small sample size, but it seems to be overall coherent with previous evidences on Italy (Rosolia (2015) and Matano et al. (2019))) and other European countries (*e.g.* Martins (2021)).

5 Conclusions

We have provided novel evidences on employer association in Italy, showing that affiliation rates have been declining across the last two decades. We have shown that affiliated firms are positively selected and that the decision to become member to such organizations is positively correlated with firms' performance. These results are consistent with evidences documented for Portugal by Martins (2020). They suggest that dynamic and innovative firms gain more benefits from the services provided by employers' organizations. On the other hand, our evidences also suggest that in order to improve their representativeness, employers' organizations should provide better quality services to marginal, potentially fragile and financially distressed firms. Indeed, this type of companies risks being under-represented in the current system of collective bargaining, as well as being excluded from important policy negotiation platforms.

We have also provided direct evidences on the link between wages negotiated in collective contracts and the degree of representativeness of employers' organizations, finding a weak positive relationship between pay growth and affiliation rates. The fact that improving employer association may lead to potentially higher wages is consistent with qualitative evidences on the preferences of employers' associations (Bosch (2018)) and with theoretical arguments on incumbents' incentives against competitors with low labor standards (*e.g.* Haucap et al. (2001)). Recent evidences on other forms of shared governance, in particular mandatory employee representation in companies' boards, suggest that wage growth could be instead less affected by co-determination at a more granular level (*e.g.* Jäger et al. (2021)). Future research should further investigate the role of employers' organizations in shaping collective bargaining as well as firm-level outcomes, in order to provide a more comprehensive picture of the functioning of such associations across different institutional contexts.

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6 Data Appendix

Table A1 **Description of Variables Derived from the INAPP-RIL Survey**

Name of the variable	**Definition**	*Weighted mean (s.d.) or proportion* 2005	2007	2010	2015
Affiliation status	The firm is member of an employers' association	63%	53%	44%	43%
N. employees	Number of employees in the firm	11,6 (155)	12,2 (117)	10,8 (291)	11,2 (179,2)
Revenues per worker	Revenues during previous year/N. employees	4,68 (0,96)	6,15 (2,36)	4,63 (1,35)	4,57 (1,48)
Firm-level bargaining	Firm engages in decentralized bargaining	4,9%	n.u.	n.u.	2,9%
Presence of trade union	Presence of trade unions' representatives within the firm	n.u.	n.u.	n.u.	5,1%
Applies a collective contract	The firm applies a collective contract	n.u.	n.u.	n.u.	77,6%
Access fiscal incentives	The firm has benefited from a fiscal incentive on investments, innovation or R& D during the last 3 years.	n.u.	n.u.	n.u.	4,8%
Innovative firm	The firm has adopted an innovation in product or processes during the previous 3 years	53%	n.u.	n.u.	33%
Provides training	The firm has provided training activities to employees during the previous year	22%	n.u.	n.u.	33%
Export oriented	The firm exports all or part of its products	22%	n.u.	n.u.	16%
Not incorporated	The firm is an unincorporated business	53%	n.u.	n.u.	37%
Geographic dummy variables	Up to 20 Italian regions				
Sector dummy variables	Up to 12 industries				

n.u. stands for "not used in the analysis". Reasons for not using the variables listed are either differences in the questionnaire across waves or model selection. Descriptives reported in other parts of the paper may differ due to the omission of all observations with at least one missing value in the context of regression analyses.

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