

INFLATION AND CONTRACTUAL WAGES: THE ITALIAN BARGAINING SYSTEM

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1. Introduction

The relationship between inflation and wages has always been a central topic in macroeconomic and becoming more relevant in the recent period, due to the unexpected increase of level prices, observed in the most developed economies. Recent international studies focused on the factors that characterized the bargaining system over the world to analyse the responsiveness of negotiated wages to economic conditions (among them Babic et al., 2022; D'Amuri, 2022; Suthaharan et al., 2022; Ardagna, 2021; Rizzotti et al., 2021).

In Italy, inflation starting growth since August 2021, driven by the increase in energy goods prices. In May, the acquired inflation for 2022, measured by the harmonized index of consumer prices (HICP) was 6.4 percent. In the last months, inflation return to the level of the yearly 1990s. The measurement of compensation used in this work is the contractual wage that represents approximately the 80 percent of total remuneration¹. To better understand the relationship between inflation and wages in Italy, it is necessary to explore some characteristics of the Italian bargaining system because the formation of total compensation origins mainly on it.

This study makes a focus on the peculiar factors of bargaining system that most influence contractual wage changes: 1) the inflation forecasting indicator used to set contractual increases - Harmonized Index Excluding Imported Energy Goods – HICP; 2) the duration of national collective bargaining agreements; 3) the share of collective bargaining agreements in force (ISTAT, 2021).

The dynamic of contractual wages and inflation is analysed in time series, from 2009, year of bargaining system reform, to 2021 and an overview for the year 2022 is presented.

¹ The percentage is calculated between gross remuneration per employee - full-time equivalent (*National Account*) and cash wages per employee according to collective agreement (*Contractual wages survey*).

2. The Italian bargaining system

Unlike the largest part of State of Europe, in Italy doesn't exist "minimum wage" defined by law and valid for all employees in every sectors², but minimum wages are set through national collective bargaining agreements (NCBAs), which play a central role in the definition of total compensation for regular employees. In Italy the bargaining system takes place at two level: 1) *national level* (first level), is the most important and involves trade unions and employers associations for each economic activities in the Italian territory; 2) *company - territorial level* (second level), that integrates first level.

The National Collective Bargaining Agreement (NCBA), the result of first level of negotiation, sets basic wages and general rules (i.e. hour of work, day off, employment condition etc.). Looking at National Council for Economics and Labour database³ there are more than one thousand contracts registered for private sector (release of 16 May 2022). NCBAs are fundamental in the composition of total remuneration for regular employees. There are not official statistics on the coverage of collective bargaining, but according to the result of the *Structure of Earnings Survey*, in 2018, the 98% of companies with more than 10 employees are covered by collective agreements⁴ (ISTAT, Audition of 29 January 2020) and the compensation defined by NCBA represents more than three quarters of the total gross wage, in all activity sectors. In 2021 contractual wages make up the 85 percent of total remuneration for total economy, 75 percent of the industrial sector, the 88 percent of private services and the 83 percent for public administration (Figure 1)⁵.

Firm and territorial agreements (second level) play a limited role in industrial relations in Italy, because of the small size of companies (negotiations represents higher cost for companies) and because second-level contracts remain substantially subordinate to the national contract. The information available from the INVIND survey of Bank of Italy, regarding companies with at least 20 or more employees in the non-financial private sector, report that the companies that adopt a second level bargaining has remained stable at around 20 per cent in the period 2010-2016 and

² The largest part of European countries has a minimum wage fixed by law. At of 1 January 2022, 21 out of the 27 European Union state member, have a minimum wage, except: Denmark, Italy, Cyprus, Austria, Finland and Sweden (OECD).

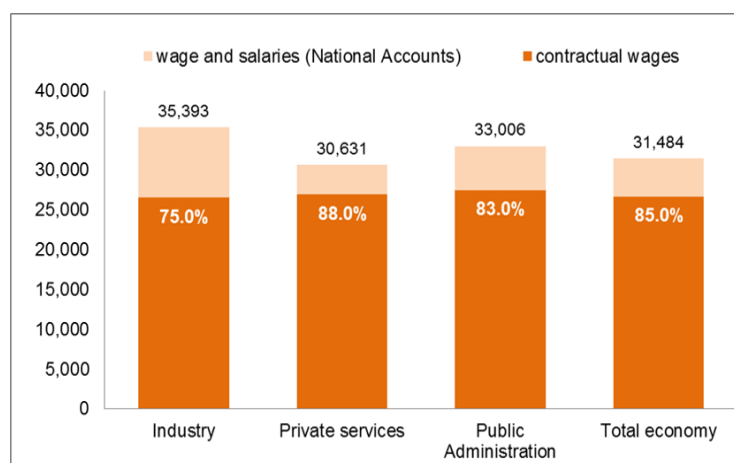
³ <https://www.cnel.it/Archivio-Contratti>.

⁴ Excluding agriculture sector.

⁵ Elaboration on: *National Account, domestic wage and salaries per employee (full time equivalent) data and Contractual wages Survey, cash contractual wages per employee for economic activity data*.

involved only the 30-40 percent of workers in private-sector (D'Amuri and Nizzi, 2017).

Figure 1 – Share of total remuneration explained by contractual wages. Main aggregates - Year 2021.



Sources: Istat, National Account and Contractual wages Survey

The Italian bargaining system was reformed in 2009 by the “*Accordo Quadro sulla riforma degli assetti contrattuali*”⁶ signed between trade unions and CISL, UIL and later by UGL, and in 2018 by the inter confederal agreement “*Patto di fabbrica*” signed only by Confindustria⁷. The most important innovations of 2009 agreement are: 1) the length of collective agreement passed from four years to three years, for both economic and condition working part (in the 1993 agreements, the negotiations should take place every two years for economic part and every four years for condition working); 2) to determine pay rise at the time of renewals, a three-years forecast index inflation based on the HICP (Harmonized European Consumer Price index), excluding the trend of imported energy goods price, is used (from 1993 to 2009, the planned inflation rate (TIP) was the index used to adjust contractual wages to inflation).

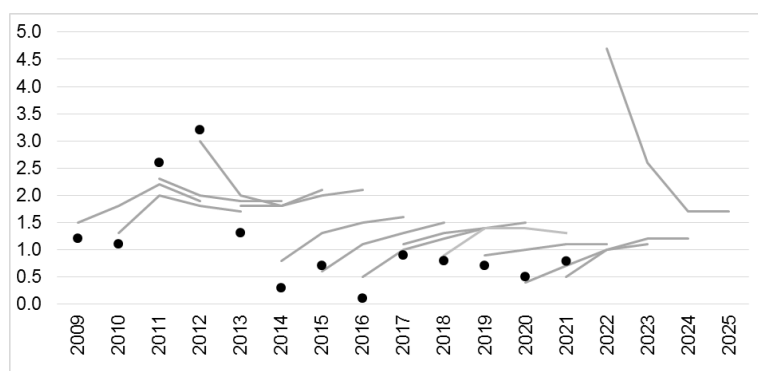
⁶ The 2009 agreement was experimental and had a duration of four year, but it continues to be applied.

⁷ The most important innovation is that collective agreement can modify the value of remuneration to take account of the processes of transformation and organizational innovation.

3. Forecast of provisional HICP excluding energy goods price

The Harmonized Index Excluding Imported Energy Goods - HICP is calculated by National Institute of Statistic (ISTAT) and every year in May/June releases the forecast of provisional index for current year and for the following three years. Since 2010, ISTAT also publishes the realized HICP excluding imported energy goods of previous year (i.e. in June 2022, ISTAT produced forecasts for 2022, 2023, 2024 and 2025 and released the realized HICP in 2021). Figure 2 shows the difference between forecasts and realization of HICP net imported energy goods. Black points represent the inflation values realized in every year; lines, composed by four points, disclose the inflation previsions for current years and following three years.

Figure 2 – *HICP excluding imported energy goods: difference between forecast 2009-2025 (line) and realization 2009-2021 (point).*



Sources: Isae, Istat, communication on forecast HICP net imported energy goods.

Over the period 2009-2020, HICP excluding imported energy goods presents important mismatching between forecast and realization. Since 2013 to 2019, the difference between forecast and realization has always been positive for every annual forecast, leading to an increase in contractual wages in real term; in fact, HICP and HICP net imported energy goods from 2009 to 2021 presents a very similar growth (Figure 3). Only in 2011 and 2012 the realization has been always higher than forecasts, due to an unexpected and significant increase of energy price level (11.2% y/y in 2011 and 13.9% y/y in 2021); while for 2021 and 2022 realization values exceed forecasts only the first year of previsions. Each forecasts set covers a period of four year. For example, the forecast made in May 2013 concern 2013, 2014, 2015

and 2016. Its possible individuate two contractual period: 2013-2015 and 2014-2016 (as mentioned above the contractual length is three year). Table 1 reports the difference between the sum of three forecasts for every contractual period and the realized inflation, from 2009 to 2021 (there is no information about realized inflation for 2022 that will be release by ISTAT on May/June 2023).

Table 1 – *HICP excluding imported energy goods: difference between forecasts and realization. Year 2009-2021.*

Data forecast	Contractual period										
	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021
May 2009	0.6	-1.0									
May 2010		-1.8	-1.6								
May 2011			-0.9	1.0							
Aug. 2012				2.0	3.6						
May 2013					3.3	4.8					
May 2014						2.5	2.7				
May 2015							1.3	2.1			
May 2016								0.9	1.2		
May 2017									1.4	2.2	
May 2018										1.7	2.1
May 2019											1.0

Source: elaboration on communication on forecast HICP excluding imported energy goods.

For 2010-2012 and 2011-2013 contractual period, inflation forecasts have always been lower than realized values (marked in red), implying that renewals occurred in that period linking the economic increases to current provisional values, generated a lost in real term. At the contrary, in the period 2009-2011 and since 2012-2014, economic pay generate always a gain in real term.

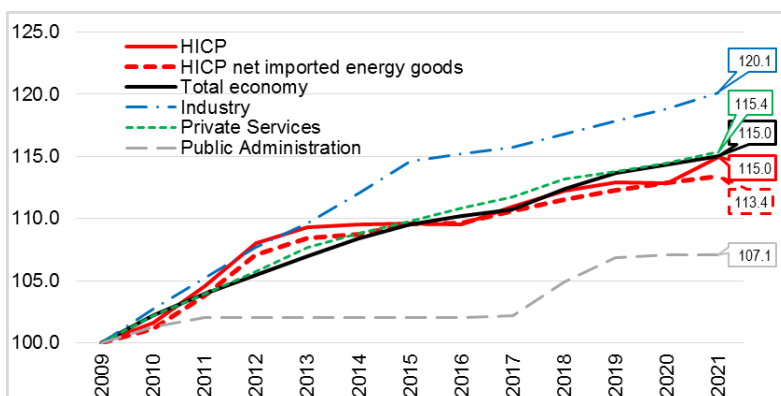
4. Inflation and contractual wages growth

The contractual wage used in this study is calculated by ISTAT from the monthly *contractual wage and salaries* survey ([Retribuzioni-contrattuali-Nota-informativa.pdf \(istat.it\)](#)). Data refer to a representative sample of 73 national collective bargaining agreements (December 2015=100) that involve about 12.6 million of employees, except apprentices and managers. The survey covers all the economic activity sectors. The national collective bargaining agreements are the most representative for number of employees respect to the other contracts of the same sector. The remuneration elements considered have a general and continuous feature, including additional monthly payments and other amounts made on a higher

than monthly periodicity; it excludes occasional bonuses, overtime work, arrears and lump sum payments and the amounts established by decentralized agreements (second level). From 2009 to 2021 the HICP annual average rate was 1.2 percent, the same of contractual wages growth in total economy. In the end of the period, both HICP and wages increased by 15.0 percent with differences across sectors (Figure 3). The HICP excluding imported energy goods was slightly lower, increasing by 13.4 percent. The annual average rate of nominal contractual wages rose more than inflation for industrial sector, 20.1 percent, and for private services, 15.4 percent. Public administration lost more than the other sectors in real terms, because nominal contractual wages only grow by 7.1 percent. In this sector, contractual wage were frozen to 2009 level until 2018. Only in 2018 the renewals started, referred to 2016-2018 contractual period.

Data show that in absence of inflationary shocks and with a slight and constant increase of prices level, wages grow in line with inflation.

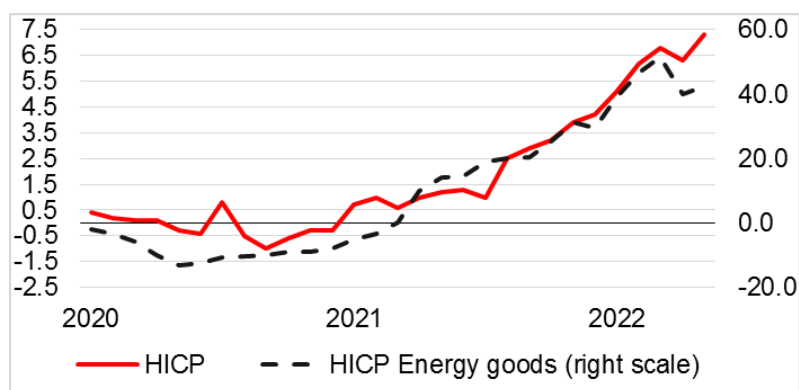
Figure 3 – Inflation and contractual wages growth. Index numbers (2009=100). Years 2009-2021.



Sources: Istat, CPI survey, communication on forecast HICP net imported energy goods, contractual wages survey

Starting from the second half of 2021, level prices has been increasing, driven by the rise in energy goods and, as more energy good price is variable, as more forecasts of HICP, using to determinate contractual pay, become difficult.

In only two years, the energy goods price passed to -13.1 percent of May 2020 to 42.6 percent of May 2022. The inflation, measured by HICP, rise to 7.3 percent reaching the early 1990s' (Figure 4).

Figure 4 – HICP and energy goods price. Monthly changes. January 2020- May 2022.

Sources: Istat, CPI survey

The current period of elevated inflation has, so far, a weak impact on contractual wage dynamic. The renewals, signed after June 2021 and before June 2022, linked economic increases of 2021-2023 contractual period, to the forecasts published in June 2021 and equal to 0.5 percent y/y in 2021, 1 percent y/y in 2022 and 1.2 percent y/y both in 2022 and 2023, implying that inflationary pressure will not be transmitted to wages in this round of negotiations⁸. On 7th June 2022 ISTAT published a new set of inflation forecasts that will be used in the ongoing wage negotiations. The new forecasts (4.7 percent in 2022, 2.6 percent in 2023 and 1.7 percent both in 2024 and 2025) reflect the higher level of inflation that represent the basis for wages increasing in the renewals upcoming in the 2022 second semester. According to the information available in March 2022, concerning the share of agreements that will remain in force and the increases already negotiated by the contracts that will be paid in the following months, the projection for 2022 of the wage dynamic is 0.8 percent (this percentage could increase more after some contract renewal), while the HICP acquired inflation in May 2022 over the whole year is 6.4 percent⁹.

⁸ According *Contractual wage survey*, from July 2021 to March 2022, 13 contractual agreements have been renewed and refers to about 11.2 percent of total employees. Among this only construction applied higher increases than the forecast HICP. For more details: *Contratti collettivi e retribuzioni contrattuali - I trimestre 2022* (istat.it).

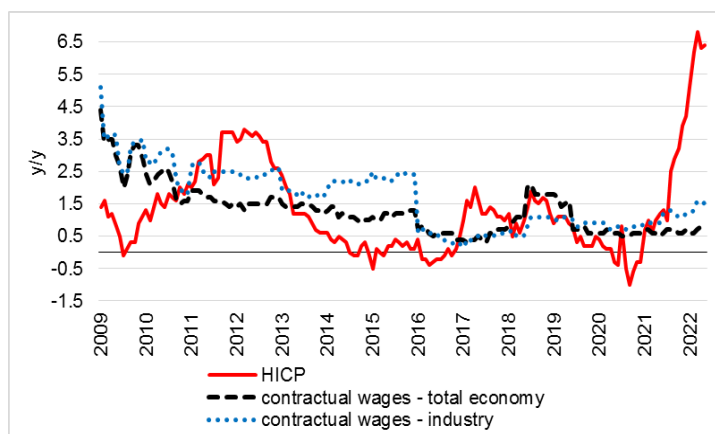
⁹ For more details: <https://www.istat.it/it/archivio/271998>.

5. The “stickiness” of contractual wages

The elements that generate stickiness of contractual wages are: 1) the use of forecast inflation index, excluding the dynamic of energy goods (the aim of linking contractual rises to HICP less imported energy good was precisely to avoid the rebound of wages driven by a higher level of energy prices, considering their great volatility); 2) the three-year length of the agreement; 3) the timelessness of contractual renewals.

The increases that will be paid over the contractual period, are fixed *ex ante* during negotiations and are linked to the inflation observed at that time; this implies that when price level suddenly increase (i.e. due to a rise in energy price) contractual wages can't adjust immediately and the consequence could be a temporary loss of purchasing power for many employees. Moreover, although contracts may contain recovery clauses, they are often not used¹⁰.

Figure 5 – Adjustment lag between contractual wages and HICP (change y/y). January 2009-May 2022.



Sources: Istat, consumer price index survey, contractual wages survey.

Figure 5 shows, from January 2009 to May 2022, the lag of contractual wage adjustments, for total economy and industrial sector, respect changes in inflation

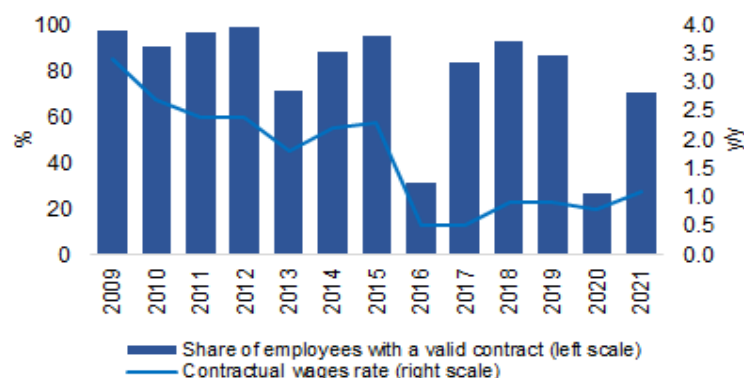
¹⁰ The 2009 agreement introduces the possibility to adopt recovery rules when realized inflation is higher or lower than forecasted HICP to adjust compensation to inflation level but doesn't exist an automatic compensation (only the agreement for metal industry experienced it for the period 2016-2019). Often the trade unions and worker's associations, decide to verify the potential compensation with some delays (i.e. the collective agreement for energy and oil sector, signed on 21 of July 2022, will applicate possible compensation on July 2024 for the period 2022-2023.)

rate. Between 2013 and 2016, contractual wages are always higher than inflation. It happens because wages don't adjust immediately respect changes in price level. The large part of renewal, especially in industrial sector, occurring between 2011 and 2012, covering the following three years (2012-2014 for contract signed in 2011 and 2013-2015 for contract signed in 2012) and linked the contractual increases to a provisional inflation available at the time of renewals, when the price level was higher than the following years (2.9 percent y/y in 2011 and 3.3 percent y/y in 2012)¹¹.

The intensity of contractual wages increases also reflects the share of contracts in force in the period.

Contract renewals can take significant time. They are not automatic and although they should take place every three years, a delays are present very often (for example the contract for private pharmacies expired in 2013 and was signed only in 2021).

Figure 6 – Share of employees with valid contract and contractual wages rate. Industry. Years 2009-2021.



Source: Elaboration on contractual wages survey data

Over the period 2009-2021, negotiations on renewals occurred regularly and promptly for industrial sector (Figure 6). The share of employees with a valid contract¹² has always been, in the average of the period, about 80 percent of total

¹¹ The forecasts inflation in the communication of May 2011 were: +2.3 percent in 2011+2.0% in 2012, +1.9% in 2013 and 1.9% in 2014. The forecast inflation in the communication of August 2012 were: 3.0% in 2012, +2.0% in 2013, +1.8% in 2014 and +2.1% in 2015.

¹² The share of employees with a valid contract is calculated like the difference between 100 and the share of employees awaiting for a renewals, monthly released by Istat on the database I.Stat.

employees of the sector, except in 2016 and 2020 (respectively 31.4 percent and 27 percent). In 2020 COVID-19 pandemic slowed down negotiations (only 4 out of 11 expired contracts have been signed for industrial sector). Figure 7 shows a different situation for private services. In the same period, negotiation took place slowly and only the 50 percent of employees had a valid contract.

Figure 7 – Share of employees with valid contract and contractual wages rate. Private services. Years 2009-2021.



Source: Elaboration on contractual wages survey data

Data clearly show that a larger share of contracts in force, is associated with a higher change rate in contractual remuneration. For industrial sector, the change rate of contractual wage is 1.7 percent in the annual average of the period, higher than private services increases, only 1.3 percent. This evidence confirms that new contract renewals could improve wages level in a sector.

6. Conclusion

The high level of energy price become a central issue in industrial relation, generating a debate on the opportunity to use a different inflation indicator. The problem with recent renewals, however, was not only the use of the HICP net imported energy goods to calculate increases, but rather the choice to determine economic increases *ex ante*, during the renewal and fixing them in annual tranches (Nespoli F., 2022). A valid tool would be represented by the definition *ex post* of contractual increases thought the application of recovery clauses, introduced by the

2009 reform of bargaining system but rarely implemented. A higher wages growth could be allowed also by a greater use of territorial and company's agreements.

In the upcoming renewals, it will be necessary find a balance between worker's association, who demand for a higher remunerations, and trade unions. A wage increase represents an additional cost for companies, who have already supported the higher prices in raw material and energy (D'Amuri, 2022).

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SUMMARY

This study intends to analyse, over time, the relationship between inflation and contractual wages in Italy, starting from 2009, year of bargaining system reform. Considering the importance, in Italy, of bargaining's system on the formation of total compensation, a focus has been conducted on the main characteristics.

To analyse the relationship, the work uses contractual wages calculated by ISTAT.

In absence of inflationary shock, the bargaining system worked and contractual wages growth in line with inflation. The real test will be in autumn, when the high inflation level could reduce the purchasing power for many employees. The results confirm the existence of wage stickiness in Italy. According to the structural features of bargaining system, contractual remuneration can't adjust immediately to changes in price level.