Job reallocation from the 80s to the COVID-19 crisis and beyond. Evidence from administrative data.*

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Abstract

This paper examines job reallocation in Italy from the 1980s to 2022, comparing the COVID-19 pandemic with previous recessions. Using administrative data for the universe of Italian firms, in contrast with recent evidence from the U.S. and with other recession episodes in Italy, we document that job reallocation *decreased* during the pandemic. While job reallocation between industries increased slightly, within-industry movements dropped sharply and substantially, driving aggregate trends. This decrease can be attributed to short-time work programs, more widespread during COVID-19 than in past recessions and more prevalent in Europe than in the U.S.

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1 Introduction

The COVID-19 pandemic has been a dramatic and unprecedented global shock that carried severe economic consequences. The decline in economic activity worldwide has been extremely strong, as in the darkest years of World War I and World War II in Europe. A key question concerning the economic effects of the pandemic is whether it has prompted a reallocation of labor and capital across firms and sectors. Historically, the degree of reallocation has varied widely across recessions. For example, Caballero and Hammour (2005) argue that financial frictions may actually lead to less reallocation during downturns. According to Foster et al. (2016) this occurred during the Great Recession in contrast to previous recession episodes. The extent to which factors move across firms and sectors also depends on policies. Acemoglu et al. (2018) show that reallocation is highly responsive to industrial policies because of their effects on the incentives for firms to innovate; Boeri and Terrell (2002) argue that unemployment insurance and other income-support measures shaped the reallocation of labor in transition economies.

The COVID-19 pandemic had unique features. On the one hand, government interventions to prevent the spread of the virus led to prolonged lockdowns for activities that rely on personal interactions, while other sectors continued to operate; this implied a highly heterogeneous economic impact across industries. On the other hand, governments swiftly implemented substantial policy responses to provide liquidity to firms, lower their operating costs, and preserve jobs. From a theoretical standpoint, asymmetric dynamics across sectors would suggest an increase in between-industry job reallocation, with affected sectors contracting to the advantage of unaffected sectors. At the same time, support measures for firms in difficulty would likely trigger a drop in job reallocation, as factors of production remain "frozen" within firms. Empirically, whether the pandemic has been a reallocation shock and whether it differs from prior recession episodes remains an important open question, to evaluate policy responses and the potential for scarring effects.

In this paper we study within- and between-sectors job reallocation in Italy over a long time horizon spanning 40 years. We rely on confidential administrative data on the universe of jobs in the non-farm private sector in Italy, dating back as far as 1983. Our observation window covers five major shocks and the recent COVID-19 pandemic. This long-run view on job flows represents a key novelty in the literature and allows us to verify to what extent job reallocation behaved differently during the pandemic compared to previous shocks.[1] The focus on Italy, which, in line with other major European countries (Germany, France, Spain,

[1] To the best of our knowledge Stiglbauer et al. (2003) is the only study using a 20-year-long panel in the context of Austria.

and the Netherlands) adopted different policies compared to the U.S. and the U.K., improves our understanding of how policy responses can affect job reallocation during downturns. To carry out our analysis and in line with the literature, we use the standard framework pioneered by Davis and Haltiwanger (1992), which focuses on excess job reallocation, capturing the extra creation and destruction of jobs on top of what is needed to accommodate the observed net change in employment.[2]

We document several novel findings. First, Italy experienced a drop in excess job reallocation during the COVID-19 pandemic, which contrasts with what occurred during the Great Recession, but is more similar to the dynamics observed in the recession following the exit of the Italian Lira from the EMS (1992–1993) and in the Eurozone sovereign debt crisis (2012–2013). Second, the decrease in excess job reallocation is entirely due to a drop in within-industry reallocation (from around 20 to 15 percent, an unprecedented level). Despite the pandemic shock hit sectors asymmetrically, the increase in between-sector job flows only partially compensates the fall in the within-industry component. This is in line with existing evidence, showing that between-sector job flows are typically smaller. Third, the decline in within-industry reallocation can be solely attributed to the services sector, especially among activities that were subject to lockdown measures. Fourth, job reallocation dropped more strongly in industries with a higher take-up of Short-Time Work (STW), which explains about 14 percent of the variance of within-industry excess job reallocation dynamics.[3]

Our results contribute to the fast-growing literature on job reallocation during the COVID-19 pandemic. Using survey data from the U.S., Barrero et al. (2021) document a persistent increase in excess job reallocation since the start of the pandemic and a shift in employment towards industries with a high share of teleworkable occupations. Anayi et al. (2021) replicated the analysis for the U.K., finding similar results. Consolo and Petroulakis (2022) take a more macro perspective and, relying on a Bayesian VAR model, find that the reallocation shock occurring during the pandemic explained a small fraction of the labor market dynamics in the U.S.. Our results suggest a key difference between the U.S. and Italy and other European countries: the reliance on STW during the pandemic. Both firms and workers had unprecedented access to these policies, as opposed to previous more stringent eligibility criteria. For instance, during the global financial crisis, only specific firms met the criteria and accessed STW; however, in the pandemic, virtually all restrictions were removed. Over 7 million hours were authorized in 2020–2021, surpassing the 2 million during the Great

[2]See Citino et al. (2023) for a more detailed description of the methodology and the data construction.

[3]The take-up of policies at the industry-level is endogenous in this setting and thus we cannot easily claim causality. Given the almost universal eligibility criteria for STW during the pandemic, it is impossible to identify an appropriate counterfactual for firms taking up STW.

Recession (2009-10).[4]

Our findings also contribute to the literature on the drivers of the reallocation of factors, in particular labor. Relying on cross-country data, Haltiwanger et al. (2014) show that hiring and firing regulations and policies play a substantial role in explaining differences in labor reallocation across countries. Other works focus on individual countries and suggest that large shocks, such as exchange rate and trade shocks (Gourinchas, 1999; Levinsohn, 1999; Moser et al., 2010), financial crises (Foster et al., 2016), structural reforms (Eslava et al., 2004) typically trigger substantial hikes in labor reallocation. We complement these findings presenting long-run evidence on job reallocation from Italy over the business cycle and providing evidence on the role of the policies enacted during the pandemic, in particular STW schemes.

Finally, our findings relate to the literature on the effects of reallocation of factors on growth. Starting from the early work of Baily et al. (1992) and Foster et al. (2001), a large literature studied the consequences of the reallocation of factors and business dynamism on productivity growth, typically advocating for a large role of reallocation in spurring growth. Recent work by Hsieh and Klenow (2018) challenges this view, suggesting that the role of reallocation in explaining productivity growth is rather small. Further work by Garcia-Macia et al. (2019) shows that the reallocation of jobs towards innovative firms accounts for a small share of overall reallocation. Hence, the drop in reallocation during COVID-19 that we document may not translate into persistently lower growth. This also suggests that the costs of STW in terms of allocative efficiency may be lower than previously thought, in line with Giupponi et al. (2022).

The rest of the paper is organized as follows. Section 2 details the data that make this study possible. Section 3 describe the methodology and Section 4 presents our main results. Section 5 presents extensions and discussion. Section 6 concludes.

2 Data

Our analysis relies on confidential administrative firm-level data sourced from the Italian Social Security Institute (INPS), spanning four decades, from 1983 to 2022. These data encompass all firms operating in the non-farm private sector with a minimum of one employee.[5]

[4]Our focus on jobs complements recent studies on workers' transitions during the pandemic, with the aim of understanding the effects of the pandemic on unemployment and labor force participation (Basso et al., 2022; Cortes and Forsythe, 2023) also across the workers' skill and age distribution (Bluedorn et al., 2022).

[5]The composition of the statistical population for administrative purposes has evolved notably during the four decades under examination. To ensure consistency, we focus our analysis on businesses within the private

The database contains approximately 1.5 million firms annually, with numbers increasing from 1.4 million in 1990 to 1.8 million in 2021. Employment levels are recorded on a monthly basis and are subsequently aggregated into quarterly figures by averaging the data over the three months of each quarter. The sector of activity of each firm is recorded according to the 4-digit NACE industry classification; this allows us to disentangle the within- and between-industry components of reallocation and to identify the specific sectors contributing to reallocation dynamics.[6]

The comprehensive administrative data used in our study offer several notable advantages. First, they are free from the systematic attrition bias commonly found in survey data. Second, their granularity enables the exploration of variations across the entire spectrum of firm sizes and addresses the issue of over-representing larger, more stable firms, which tend to have a smaller impact on reallocation. Third, the size of the dataset allows for the construction of meaningful measures of reallocation, both within and between industries, even for narrowly defined sectors. Lastly, it covers the adjustment period after the pandemic shock, until December 2022.

We use detailed information at the 4-digit industry level to examine measures devised to support businesses during the COVID-19 crisis in Italy. These include: (i) the use of STW schemes; (ii) financial support to firms through extended loan guarantees and debt moratoriums; (iii) cash transfers to companies experiencing a revenue decrease of more than one-third during the early pandemic phase.[7] Furthermore, we incorporate data on the extent of workers' exposure to contagion risks related to close physical proximity and their capacity to work remotely. These measures were developed specifically for Italian occupations, with a methodology inspired by similar measures created for the U.S. economy.[8]

Finally, we use aggregate GDP data from the Italian National Statistics Institute (ISTAT) to identify technical recession periods in Italy.[9] Notably, the COVID-19 recession episode actually began in Q3-2019, before the pandemic burst; it ended in Q2-2020, with an extremely sharp GDP contraction followed by a strong rebound in Q3-2020. Two things are worth noticing. First, Italian GDP contracted very mildly in the last two quarters of 2019 (-0.1 and

non-farm sector, specifically those falling under 2-digit NACE codes from 10 to 82.

[6]The INPS data has been extensively used in economic research to study a variety of labor market phenomena and public policies, including among others short-time-work schemes (Giupponi and Landais, 2018), career spillovers in firms (Bianchi et al., 2023), firms' political connections (Akcigit et al., 2023) and gender inequality (Casarico and Lattanzio, 2019).

[7]See Cascarino et al. (2022) and Bank of Italy (2020).

[8]For a detailed account of these measures, which were designed for Italian occupations with an approach akin to the measures developed for the U.S. economy, please refer to Barbieri et al. (2022) and Dingel and Neiman (2020).

[9]Technical recessions are defined as two consecutive quarters of negative growth in real GDP.

-0.8 percent); the drop in GDP induced by the pandemic and the associated containment measures was a very different shock of a much larger scale (-5.9 in Q1-2020 and -12.6 percent in Q2-2020). Second, after the COVID-19 outbreak only the first two quarters entailed a recession, w all the following quarters recorded positive GDP growth (relative to the previous quarter) except for 2020-Q4. This is important, as reallocation of workers often occur during the recovery phase after large shocks.

3 Key indicators of job flows and reallocation

To carry out our analysis consistently with the existing literature, we use standard measures of job flows proposed by Davis and Haltiwanger (1992) and Davis and Haltiwanger (1999). Denote by E_{it} the average employment level of firm i in quarter t. Correspondingly, define the yearly employment growth rate between a quarter t and the same quarter of the previous year $t-1$ as the *arc* percentage change $g_{it} = \frac{E_{it}-E_{it-1}}{X_{it}}$, where $X_{it} = \frac{1}{2}(E_{it} + E_{it-1})$ is the average employment level between t and $t-1$. Job creation at the firm level is equal to the growth rate g_{it}, and zero otherwise, that is:

$$JC_{it} = \max\{g_{it}, 0\}. \tag{1}$$

Similarly, job destruction at the firm level is equal to:

$$JD_{it} = \max\{-g_{it}, 0\}. \tag{2}$$

At any other level of aggregation, be it sector-level or economy-wide, aggregate job creation and destruction can be expressed as employment-weighted averages of the respective firm-level indicators.

$$JC_t = \sum_i \left(\frac{X_{it}}{X_t}\right) \cdot JC_{it} \tag{3}$$

$$JD_t = \sum_i \left(\frac{X_{it}}{X_t}\right) \cdot JD_{it}, \tag{4}$$

where $X_t = \sum_i X_{it}$ is average total employment in period t. It follows from this definition that job creation is the sum of all employment gains at expanding firms, while job destruction is the sum of all employment losses at shrinking firms (appropriately rescaled by average

employment between t and $t-1$). Excess job reallocation (ER_t) is the amount of job creation and destruction that exceeds what is required to accommodate the absolute change in employment level, given by the difference between creation and destruction:

$$ER_t = JC_t + JD_t - |JC_t - JD_t|. \tag{5}$$

Changes in excess job reallocation over time are due either to heterogeneous employment dynamics between sectors or between firms that belong to the same sector. To separate the two, we follow the decomposition proposed by Davis and Haltiwanger (1992) for the excess reallocation into a between- and a within-sector component:

$$ER_t = \underbrace{\sum_s (JC_{st} + JD_{st} - |JC_{st} - JD_{st}|)}_{\text{within-component}} + \underbrace{\sum_s (|JC_{st} - JD_{st}|) - |\sum_s JC_{st} - JD_{st}|}_{\text{between-component}} \tag{6}$$

The within-sector component is the sum across sectors of the excess job reallocation within each sector: it reflects the contribution of the shifting of employment opportunities among firms operating within the same industry. The between-sector contribution is measured by summing the absolute employment change across all sectors and subtract from it the absolute employment change of the overall economy: it reflects the contribution of the shifting of opportunities across sectors.

Previous literature documents that the largest share of job reallocation occurs among firms belonging to the same industry (Davis and Haltiwanger (1992) or Foster et al. (2001) among others). As shocks often have an asymmetrical impact on firms belonging to the same sector, some are able to expand while others are forced to shrink. Since the task-specific skills of workers are more valuable for firms operating in the same industry, most of reallocation is naturally observed within sectors. The COVID-19 pandemic shock has been somewhat different in this respect, as its effects have been rather homogeneous across firms within the same sector, therefore curbing the scope for within-industry reallocation.[10]

[10]For example, the hotel industry has been hit in its entirety by lockdowns; their impact has therefore been the roughly same for all the hotels, irrespective of their quality.

4 Was COVID-19 a large reallocation shock?

As a first step, we focus on excess reallocation rates and study their behavior over a long horizon. Figure 1 illustrates the year-on-year excess reallocation rates for each quarter spanning the last four decades. It is noteworthy that excess reallocation remained relatively stable, fluctuating within the range of 20 to 25 percent of total employment for approximately four decades, aligning closely with the patterns observed in other advanced economies.[11]

From 2017 onward, we observe a strong declining trend. The overall excess job reallocation between 2020 and 2022 did not depart from this descending trend and the level of excess reallocation stood well below those reached during previous recessions. Importantly, except a sharp but moderate increase in Q2-2020 followed by a decline of similar size in the next quarter, excess reallocation remained well below historical averages, including during the fast recovery in 2021 and 2022.

In Figure 2 we dissect excess reallocation into within-sector and between-sector components at the 4-digit industry level, following the formulation in equation (6). This analysis is limited to years after 1997, when industry codes are available for all firms. As in Davis and Haltiwanger (1992) the majority of excess reallocation takes place within sectors. However, the COVID-19 crisis introduced two contrasting patterns: a marked reduction in within-sector reallocation alongside a rise, albeit less pronounced, in between-sector reallocation. Notably, the decrease in within-sector reallocation was both substantial and historically unprecedented, plummeting from 20 to 15 percent. These shifts do not offset each other, resulting in overall reallocation being lower and displaying relatively minor fluctuations throughout the pandemic than in previous quarters.

Over the course of four decades, Italy faced a series of recessions that markedly differed in their origins, severity, and duration. Given this extensive historical perspective, we can examine how reallocation patterns responded to various economic downturns. Notably, we find that between-sector reallocation exhibited comparable increases in both the 2002 and 2009 crises; however, such fluctuations were not exclusive to recessionary periods but also occurred during periods of economic stability. During the COVID-19 pandemic, between-sector reallocation exhibited a trajectory consistent with other recessions and normal economic times. Conversely, the decline in the within-sector component was significantly more pronounced, presenting a distinctive contrast to the what documented on U.S. data (Barrero

[11] See the work of Contini and Revelli (1997); Contini and Trivellato (2005) for international comparisons in the 1990s. These measures have been produced for many countries including the U.S. (Bertola and Rogerson, 1997; Pinkston and Spletzer, 2004), the U.K. (Hijzen et al., 2010), Germany (Boeri and Cramer, 1992), Austria (Stiglbauer et al., 2003) and Sweden (Persson, 2000).

et al., 2021).

5 What can explain the drop in reallocation?

Results so far show two main results. First, excess job reallocation dropped after the COVID-19 pandemic, following a trend initiated several quarters before. Second, differently from previous recessions, the within-sector component of excess job reallocation declined substantially during the pandemic.

In our attempt to understand the factors underlying these aggregate dynamics, we begin by delving into the sectoral dimension, motivated by the strong sectoral component of the COVID-19 shock (Guerrieri et al., 2022). Importantly, the impact of the recession had a strong sector-specific component due to the containment measures that have been taken by Governments, which in several countries —including Italy— dictated the shut down of the sectors that were not deemed "essential".

Panel (a) of Figure 3 illustrates the contributions of both the manufacturing and the services and construction sectors to the within-component of excess job reallocation. Over the past quarter-century, the manufacturing sector's contribution has exhibited a consistent decline, reflecting a structural shift in employment away from manufacturing and toward the services sector. In contrast, there has been a concurrent rise in the contribution of the service sector until around 2010, after which it reached a plateau. However, during the COVID-19 crisis, there is no discernible reduction in the within-component of excess reallocation in manufacturing. Conversely, the entire decline can be attributed to the services sector.

Panel (b) of Figure 3 undertakes a similar analysis, categorizing sectors into "essential" and "non-essential" activities, as delineated by the Italian legislative measures implemented during the onset of the pandemic and the subsequent nationwide lockdown. Both essential and non-essential activities exhibit a negative contribution to the overall decline in reallocation. However, the reduction is more pronounced for non-essential activities, which were subject to temporary cessation of operations.[12].

To study this heterogeneity more systematically, we relate the drop in excess reallocation in each 4-digit sector to a series of sectoral observable characteristics. We estimate the following regression using OLS:

$$\Delta ER_i^{within} = \alpha + \mathbf{x}_i'\beta + \gamma_j + \epsilon_i \tag{7}$$

[12]This was mandated as per the government decree (DPCM) of March 25, 2020.

where i is a 4-digit sector, γ_j is a 2-digit sector fixed effect and Δ is the difference operator between Q4-2019 and Q1-2021, the time window in which we observe a drop in the (aggregate) within-component of excess reallocation. In this period the containment and support measures were simultaneously and fully in place, while they started to be progressively lifted afterwards.

The vector $\mathbf{x}'_{it}$ contains the following characteristics: drop in revenues, the take-up of government support measures (Short-Time-Work schemes, loan guarantees, debt moratorium, and cash-transfers), proximity and teleworkability index (see section 2 and table notes for more details). Table 1 displays the results. All regressions condition on a dummy for whether industry i is an "essential" industry. The goal of these tests is to identify characteristics of a sector that correlate with higher changes in excess reallocation, without asserting causality. Column (1) shows that the change in revenues between 2021 and 2019 has a statistically significant association with the change in excess reallocation. A 1 percent fall in revenues in the sector is associated to a 0.11 percentage points fall in excess reallocation. Column (2) documents a strong positive association between excess reallocation and STW: a 100 hours increase is associated with a 5.1 percentage points decline in the excess reallocation of a given sector. In column (3) we look at financial support: subsidies are negatively correlated with excess reallocation, while the take-up of loans and of the debt *moratorium* are positively correlated. Column (4) we consider the nature of the typical tasks within each sector; results show that teleworkability is positively associated with excess reallocation, while we find no statistically significant association with proximity. In column (5) and (6) we consider all these variables together. In column (6) we also include 2-digit sector fixed effects.

Overall, these results indicate that a stronger drop in revenues is associated with a lower within-sector reallocation of jobs. In contrast, being part of essential sectors or industries offering increased work-from-home opportunities correlates with a less severe shock and consequently more promising prospects for the future, and higher excess reallocation. This is in line with evidence from Caballero and Hammour (2005) suggesting that reallocation is more intense if the recovery is stronger. Here, excess reallocation is higher if the sectoral impact of the pandemic is weaker.

Furthermore, a lower within-sector reallocation is linked to a greater reliance on policy measures that do not hinge on future firm performance, such as short-time work schemes or subsidies contingent on substantial revenue declines. In contrast, other forms of financial assistance, like loan guarantees and debt moratoriums, even if they offer significant support (some loan guarantee programs provided full coverage), are somewhat tethered to a firm's future performance. Defaulting in the future could incur costs due to bankruptcy

expenses and harm to the firm's reputation. While these observations do not establish causation, they suggest that policy measures whose uptake is not contingent on forward-looking performance indicators are associated with reduced reallocation of workers.

To offer a more comprehensive understanding of the factors contributing to the reduction in excess reallocation within sectors, we conduct a variance decomposition using what is referred to as "uncorrelated variance shares" (UVS) of each of the components (see Gibbons et al. (2014) for a discussion and an application). For a given regressor, the UVS represents the increase that ensues when a specific regressor is introduced into the model, while considering the presence of all other variables. Formally, the UVS of a variable d, controlling for other covariates x is:

$$UVS(d,x) = R^2(y,x,d) - R^2(y,x) = \frac{RSS(y,x,d) - RSS(y,x)}{TSS(y)}, \tag{8}$$

where RSS is the regression residual sum of squares and TSS is the total sum of squares of the dependent variable. We report the results in Table 2: the predominant portion of the explained variance can be attributed to short-time work measures, underscoring the notion that labor market institutions focused on job preservation played a significant role in shaping the dynamics of excess job reallocation. Conversely, financial support measures, being in an "essential" industry or a revenue decline, do not make substantial contributions to explain the overall variance of excess reallocation.

6 Conclusion

Leveraging on administrative microdata dating back to the early 1980s, this study offers a comprehensive analysis of the long-term job reallocation trends in Italy. Traditional metrics for job flows and excess reallocation, following the approach of Davis and Haltiwanger (1992), are computed. Contrary to findings in the U.S., our study reveals that the COVID-19 shock resulted in only a minor and temporary uptick in job reallocation in Italy. Importantly, this fluctuation was significantly smaller than the ones that Italy experienced during other recessions over the past four decades.

Our results highlight a robust association between excess reallocation and policy measures, particularly short-time working schemes aimed at preserving existing employee-employer relationships. These measures have been widely adopted in several European nations, in contrast to the U.S. where their use has been relatively limited. During the pandemic, Italy

expanded the availability of short-time work programs compared to previous recessions.

All together, these factors point to policies such as short-time work programs as a pivotal factor in explaining the limited increase in excess job reallocation in Italy and, more broadly, in Europe, in the aftermath of the COVID-19 pandemic.

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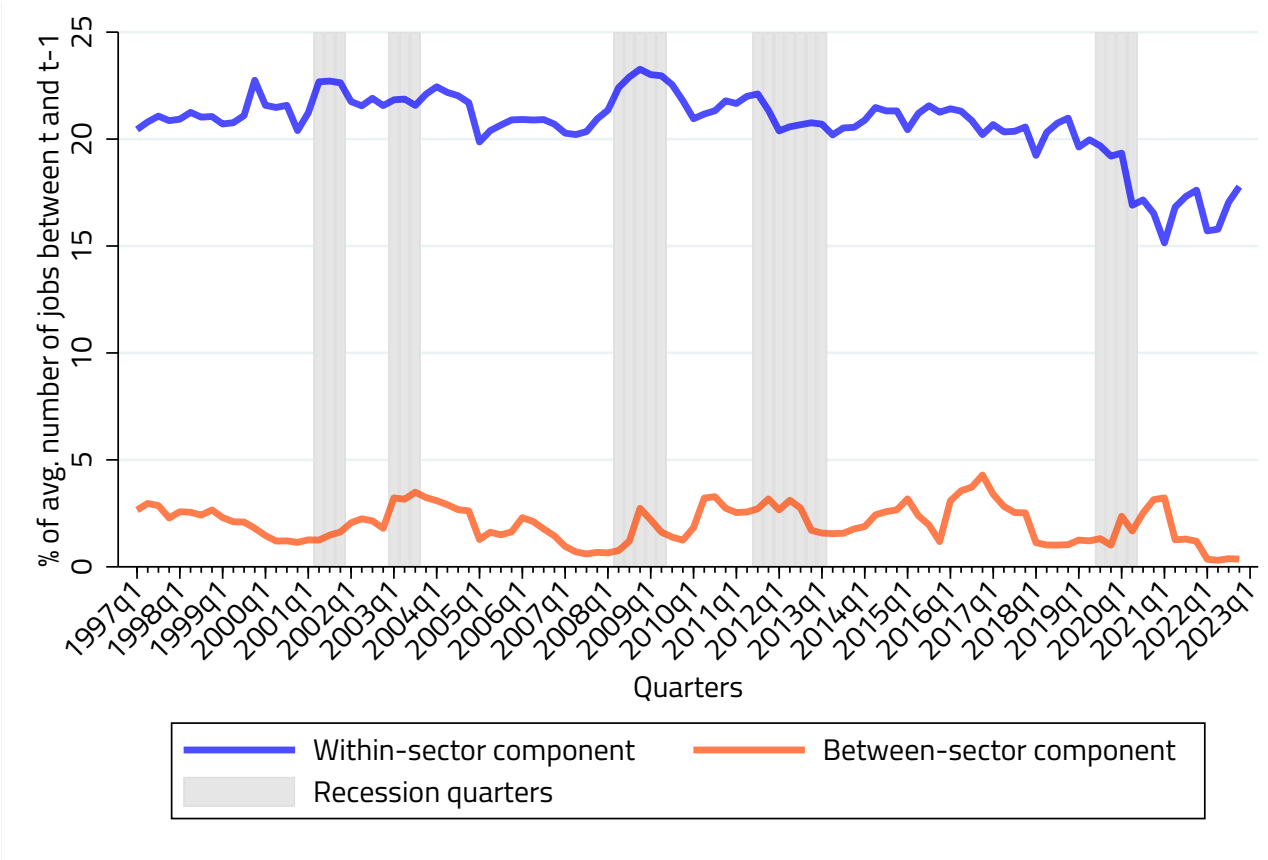
7 Figures and Tables

Figure 1: Excess reallocation rate

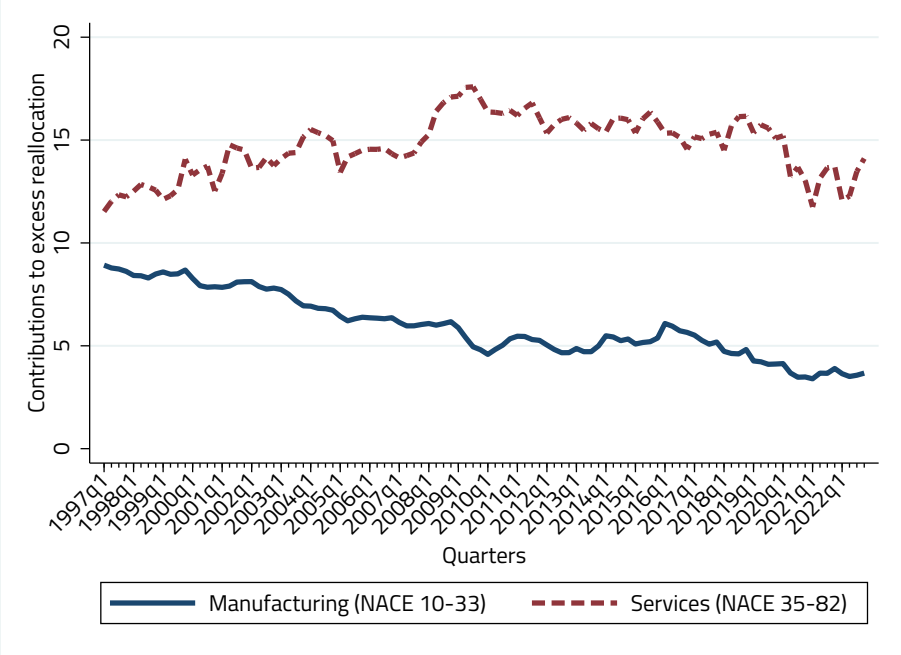
Note: The figure displays yearly excess reallocation rates (Equation 5) for private non-farm employment (NACE 10-82), measured in each quarter between 1984 and 2022. Grey bars indicate quarters of recessions. The excess job reallocation rate is expressed as a percentage of the average employment between a given quarter and the same quarter of the previous year.

Figure 2: Within-sector and between sector contributions to excess reallocation

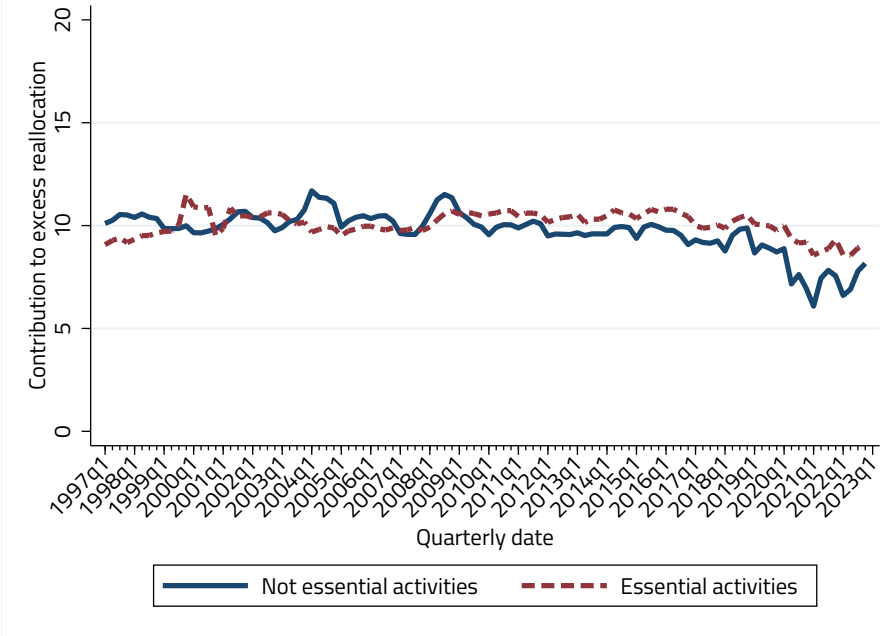


Note: The figure displays the within-sector component and the between-sector component of the overall excess reallocation rate for private non-farm employment (NACE 10-82), measured in each quarter between 1997 and 2022, as specified in Equation 6. Grey bars indicate quarters of recessions. Sectors are 4-digit NACE industries. Both components are expressed as a percentage of average employment between a given quarter and the same quarter of the previous year.

Figure 3: Contributions of specific classes of sectors to excess reallocation



(a) Manufacturing and services



(b) Essential and not essential activities

Note: Panel (a) displays the contributions of manufacturing and services to the overall excess reallocation rate. Services also include constructions. These correspond to the within-manufacturing and the within-services contributions to the excess reallocation rate, computed as in Equation 6. Both series are expressed as a percentage of average overall employment between a given quarter and the same quarter of the previous year. Panel (b) displays the contributions of "essential" and "not essential" activities to the within component of the excess reallocation rate.

Table 1: Sector-level factors associated with excess reallocation

	Δ excess reallocation (p.p.)					
	(1)	(2)	(3)	(4)	(5)	(6)
%Δ revenues (2-dig)	0.110				0.0599	
	(0.04)				(0.03)	
Essential sector	2.517	0.800	2.217	2.596	0.322	0.569
	(1.28)	(1.13)	(1.08)	(1.50)	(0.82)	(0.67)
STW p.w.		-5.156			-3.787	-5.042
		(1.18)			(1.02)	(1.31)
Loan guarantees p.w.			0.331		0.0824	-0.135
			(0.12)		(0.10)	(0.07)
Subsidies p.w.			-7.083		-2.385	-0.671
			(1.55)		(1.06)	(0.74)
Moratorium p.f.			4.321		4.085	3.356
			(1.03)		(0.91)	(0.94)
Proximity index				-0.0392	-0.00241	0.00183
				(0.03)	(0.02)	(0.01)
Teleworkability index				0.0358	0.0314	0.0557
				(0.02)	(0.01)	(0.02)
R^2	0.215	0.288	0.296	0.188	0.423	0.666
2-dig NACE FE	NO	NO	NO	NO	NO	YES

Notes: The table presents industry-level (4-digit NACE) OLS regressions of the change in within-industry excess reallocation between 2019Q4 and 2021Q1 against industry-level indicators. Δ revenues is the percentage change in revenues between 2019Q4 and 2021Q1 in the 2-digit sector to which the 4-digit industry belongs. Essential sector is a dummy for whether more than 75% of the 5-digit industries in the 4-digit industry are classified as essential activities. STW p.w. corresponds to the maximum amount of short-time-work hours used by the 4-digit industry in any quarter of 2020, normalized by the number of workers in that industry in 2019Q4. Similarly, loan guarantees and subsidies p.w. correspond to their maximum amount for that 4-digit industry in any quarter of 2020, normalized by the number of workers in that industry. Moratorium p.f. is the maximum share of firms for that 4-digit industry that received a moratorium in any quarter of 2020. Teleworkability and proximity indices at the 4-digit level are defined as described in Section 2 Standard errors in parentheses are clustered at the NACE 2-digit level. Stars indicate conventional significance levels: 10%, 5% and 1%.

Table 2: Variance decomposition of the drop in excess job reallocation

	share (1)
Variance share explained by the drop in sales	1.9%
Variance share explained by short-time-work	13.6%
Variance share explained by financial support	3.8%
Variance share explained by proximity and teleworkability indices	1.1%
Variance share explained by essential activity	0.1%

Notes: The Table reports uncorrelated variance shares (Gibbons et al., 2014) accounted for by different covariates in a regression of the change in within industry excess reallocation against such covariates. The uncorrelated variance share formula is reported in Equation 8.