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Abstract

We investigate the long-term drivers of the labor share in Japan using data from the Japanese Industrial Productivity database from 1970 to 2012. The descriptive and econometric results indicate that the decline in the labor share observed in Japan during the period of analysis was highly concentrated in the low-knowledge-intensity sectors, the employment share of which has increased remarkably. These sectors also experienced a strong increase in non-regular workers, who constitute a secondary segment of the labor market in Japan, characterized by low wages and very limited union coverage. The low level of protection of this group of workers and the increase in market power concentration have probably contributed to reducing the bargaining power of labor vis-à-vis employers and, consequently, the labor share.

Keywords: labor share, non-regular work, markup, Japan

JEL Classification: E25, J30, L11, O14

Contents

1. INTRODUCTION

The Japanese economy has experienced a long period of stagnation coupled with an unprecedented increase in economic inequality in the last decades (Minami 2008; Funabashi and Kushner 2015). Both might be related to the decrease in the share of output distributed to labor via the effects on the aggregate demand patterns and on personal income inequality resulting from higher capital incomes. Different from other economic contexts, surprisingly, the analysis of the labor share in Japan has attracted only limited attention. Agnese and Sala (2011) focused on the period 1997–2009 and identified the main cause of the contraction in the labor share with evolutions of the labor relation systems, namely the decline in the strength of unions. Takeuchi (2005) suggested that the reasons behind the reduction in the labor share are an increase in the elasticity of substitution between labor and capital over time and a contemporaneous decrease in labor mobility and adjustments across the economy. Wakita (2006) instead paid attention to the role of depreciation in shaping the dynamics of the labor share in the years 1981–2003.

More generally speaking, the extensive literature about the dynamics of the labor share developed in the last two decades has identified a number of factors that are able to affect the labor share. The literature first connected its decrease to capital-augmenting technological change, increasing the substitutability of labor with capital (Bentolila and Saint-Paul 2003; Antràs 2004) and capital deepening (Karabarbounis and Neiman 2014; Piketty 2014; Piketty and Zucman 2014). The framework gains much explanatory power when taking labor and capital heterogeneity into account, separating high- and low-skilled workers (Arpaia, Prez, and Pichelmann 2009; Elsby, Hobijn, and Sahin 2013) and ICT and non-ICT capital (European Commission 2007; Lawless and Whelan 2011). The overall effect of skill-biased technological change on the labor share indeed depends on the interplay between the levels of substitutability of different types of capital and labor and on workers' relative skill premia (Karaborbonis and Neiman 2014).

The second set of explanations relates to market imperfections; when remunerations do not mirror workers' marginal productivity, the extent to which emerging rents accrue to capital or labor depends on the institutional settings that shape the bargaining power of workers vis-à-vis employers (Blanchard and Giavazzi 2003). The existing literature has emphasized particularly the role of product market competition (Azmat, Manning, and Van Reenen 2012; Barkai 2016; Autor et al. 2017) and labor market institutions (Bentolila and Sain-Paul 2003; European Commission 2007; Bental and Demougin 2010; OECD 2011).

The third group of drivers of the patterns of the labor share relates to globalization. Classical trade theories predict that developed countries specialize in capital-intensive industries, and this drives the labor share downwards, provided that the elasticity of substitution is lower than one (i.e., capital and labor are gross complements) (European Commission 2007). The introduction of labor heterogeneity (high- and low-skilled labor) complicates the predictions of the model, since the overall effect on the labor share will also depend on the relative elasticity of substitution of the different types of labor with respect to capital (Guscina 2006; ILO 2011). In addition, wage-setting institutions and rigidities can alter labor/capital substitutability and the impact of internationalization patterns on the labor share (Davis 1998; Decreuse and Maarek 2011). The threat of relocating the production process (or part of it) through FDI, outsourcing, or imports of intermediate inputs is also likely to affect the labor share via changes in the labor demand, wage elasticity, and bargaining power of labor (Harrison

2002; Jaumotte and Tytell 2007). The interplay of all these factors originates many possible outcomes, and the impact of the various trajectories of globalization on the labor share is ultimately an empirical matter (see Guerriero and Sen 2012).

In this chapter, we shed light on the dynamics of the labor share in Japan over the period 1970–2012. In particular, we use JIP (Japan Industrial Productivity) data to show: (i) that the evolution of the labor share differed significantly across sectors; and (ii) how technological and institutional factors contributed to shaping its pattern over time. To achieve these aims, in the next section, we present the dataset and some preliminary descriptive evidence. We describe the empirical model and the econometric methods in section 3 and our results in section 4. Section 5 concludes and draws some policy implications.

2. DATA AND PRELIMINARY EMPIRICS

The data used in our empirical analysis refer to the period 1970–2012, and we extract them from the Japan Industrial Productivity (JIP) database, which the RIETI (Research Institute of Economy, Trade and Industry) and Hitotsubashi University, Tokyo, compiled. We include in our analysis all the market economy sectors with the exception of private medical, education, research, and hygiene services, which present excessively high levels of the labor share in some years. We refer to this aggregate as the total market economy (TME), consisting of 91 JIP sectors. We restrict the econometric analysis of the total labor share to 84 industries (referred to as the non-primary market economy – NPME) after having excluded primary sectors (1 to 6 – agriculture and 7 – mining). Lastly, we carry out the analysis of the drivers of the labor share for subsectors of market services (MSERV) and manufacturing (MAN) on a total of 78 sectors, after having excluded construction (JIP code 60) and utilities (62–66). We reclassify the manufacturing and market service industries according to the Eurostat classification as follows (see Appendix A for the details): medium- and medium-high-technology manufacturing sectors (MHM – 23 JIP sectors), medium- and medium-low-technology manufacturing sectors (MLM – 29 sectors), knowledge-intensive services (KIS – 12 sectors), and less-knowledge-intensive services (LKIS – 14 sectors).

We construct the labor share (S_L) as the ratio of nominal total labor compensation to nominal value added (at basic prices). The nominator includes both employee compensation and mixed income, that is, labor that self-employed and family workers supply (see Fukao and Perugini (2018) for the methodological details). JIP also provides disaggregated data on labor remuneration by the type of worker, which is particularly useful in allowing for the existing dichotomy and duality in the Japanese labor market between regular employment (with dependent, full-time, and open-ended contracts) and non-regular employment (temporary, part-time, self-employed, and family workers). For each employment type, besides the number of workers, JIP provides the average number of annual hours worked, which we use here to construct the share of non-regular employment in the total employment (L_{NR}/L). The database also supplies separately the stock of real IT and non-IT capital, which we use to build the capital intensity (on value added) variables (k_{IT}; k_{NIT}). We construct our technological change variable (TFP) starting from the TFP annual growth rate, as an index that is equal to 100 in the initial year (1970). Another distinctive feature of our dataset is the availability of the union density (UD) rate by sector, which we estimate by dividing the total number of union member workers in each sector (from the Basic Survey on Labour Unions) by the total number of workers. As regards the variables related to globalization, we measure trade openness (Trade) as the ratio of total imports plus total exports to value added, whereas we use the input–output JIP tables to derive a proxy for “broad” offshoring (Off), which the literature has commonly used since Feenstra and Hanson (1999), that is, the ratio of imported intermediate inputs to total intermediate inputs (IMF 2007).

Lastly, our measure of markup (Mark up) is related to the classical Lerner index of market power (see Maimaiti et al. 2010), and we compute it as the ratio of the value of output (minus indirect taxes and subsidies) to variable (labor + intermediate inputs) costs at the industry level (see Badinger (2007) as an example of the use of the same index at the broad sector level for the EU).

Figure 1 shows that the labor share in Japan in the TME (top left panel), compared with the level in the early 1970s, decreased by approximately ten percentage points in the following three decades. This was the result of the first wave of decline from the mid-1970s until the end of the 1990s, which was followed by a second wave from the late 1990s to the outburst of the 2007–2008 global crisis. The top-right panel of Figure 1 also shows that, contrary to what happened in contexts that researchers usually compare with Japan, like the US, the decline in the labor share mainly took place in services while remaining substantially unchanged in manufacturing.

Figure 1: Labor Share in the Total Market Economy and Macro-sector Aggregates

Source: Authors’ elaborations of the JIP database.

The bottom panels of Figure 1 plot the trend over time of the S_L of the subsectors of manufacturing and services (MHM, MLM, KIS, and LKIS). The decline in the labor share in Japan took place almost exclusively in low-knowledge-intensive services, the macro-sector that experienced the largest expansion in terms of employment share and that, at the end of the period considered, accounted for over half of the total hours worked in the country (see Fukao and Perugini 2018). It is therefore apparent that any attempt to explain the pattern of the S_L in Japan needs a sectoral perspective of analysis.

3. EMPIRICAL MODEL AND ECONOMETRIC METHODS

Our empirical model builds on the theoretical framework that Bentolila and Saint-Paul (2003) proposed; under the assumption of constant returns to scale, capital- and labor-augmenting technological progress, and competitive markets, they identified a one-to-one relationship between the labor share and the capital–output ratio (the so-called share capital—SK—schedule). Fukao and Perugini (2018) expanded this framework to the case of heterogeneous capital (IT and non-IT capital). They assumed that production is organized into two processes: (i) an IT capital-intensive process, which employs labor and IT capital; and ii) a non-IT capital-intensive process, which employs labor and non-IT capital. The two processes have constant elasticities of substitution, and the elasticity of substitution between the two processes is equal to one. Under such assumptions, it is possible to express the labor share as a function of IT capital intensity (on output) and non-IT capital intensity, with changes in technological progress shifting this extended SK schedule.

The SK relationship is stable as long as the marginal product of labor is equal to the real wage. Any factor that is able to create a gap between them moves the economy *off* the schedule. As explained in the introduction, the existing literature has identified many factors that are able to play such a role. On this basis, and in view of the specificities of the Japanese economy, we relate the dynamics of the labor share to evolutions that have occurred in product and labor markets over the last decades. In particular, labor market features (see Hamaaki et al. 2012) have undergone massive changes in Japan along three main and intertwined dimensions: i) a decline in the lifetime employment system (Ono 2010; Kawaguchi and Ueno 2013); ii) an increase in non-regular work (Asano, Ito, and Kawaguchi 2013; OECD 2017a); and iii) a huge increase in the number of women in the labor force (Inoue, Nishikitani, and Tsurugano 2016). On the product market side, both domestic and international forces have reshaped the structural features of markets in terms of concentration, exposure to competitive pressures, and market power, giving rise to profit and markup patterns that differ significantly across sectors (Fukao and Nishioka 2017).

On this basis, our empirical model reads as follows:

$$\ln S_L^{it} = \beta_{0i} + \beta_0 \ln(C^{it})\beta_1 \ln(k_{IT}^{it}) + \beta_2 \ln(k_{NIT}^{it}) + \gamma \ln(Z^{it}) + \vartheta^{it} \tag{1}$$

where: $k_{IT}^{it}, k_{NIT}^{it}$ correspond to $\frac{K_{IT}^{it}}{Y^{it}}, \frac{K_{NIT}^{it}}{Y^{it}}$, respectively; C^{it} is a measure of technological change that summarizes the effects of all types of technical change that are not labor augmenting; and the set (Z_{it}) includes those factors that shift the economy off the SK schedule, being able to shape the relative bargaining power of labor and capital. In our case, they include variables related to globalization (*Trade* and *Off*), market competition (*Mark up*), and labor market institutional factors (*UD* and the importance of non-regular work to the total hours worked—L^h_{NR}/L^h). Lastly, β_{0i} are sector fixed effects and ϑ^{it} is a residual error term.

As O'Mahony, Vecchi, and Venturini (2018) noted in a similar context, equation 1 represents a static model and its estimated coefficients can be interpreted as long-run elasticities. However, when the time dimension is large, as in our case (1970–2012), the estimation of a static model may suffer from limitations due to the bias in the coefficients produced by non-stationarity of the time series. The standard approach to addressing such issues is to rewrite the equations as autoregressive distributed lag processes: ARDL(p,q). In our case, and assuming for simplicity a maximum lag order of one, the model reads:

$$\ln S_L^{it} = \alpha_{0i} + \alpha_1 \ln S_L^{it-1} + \alpha_2 \ln(C^{it}) + \alpha_3 \ln(C^{it-1}) + \alpha_4 \ln(k_{IT}^{it}) + \alpha_5 \ln(k_{IT}^{it-1}) + \alpha_6 \ln(k_{NIT}^{it}) + \alpha_7 \ln(k_{NIT}^{it-1}) + \varphi_1 \ln(Z^{it}) + \varphi_2 \ln(Z^{it-1}) + \vartheta^{it} \quad (2)$$

We can reformulate Equation (2) as an error, or equilibrium, correction model (ECM) as follows:

$$\Delta \ln S_L^{it} = \gamma_{0i} + \gamma_1 \Delta \ln(C^{it}) + \gamma_2 \Delta \ln(k_{IT}^{it}) + \gamma_3 \Delta \ln(k_{NIT}^{it}) + \phi_1 \ln(Z^{it}) + \gamma_4 \ln S_L^{it-1} + \gamma_5 \ln(C^{it-1}) + \gamma_6 \ln(k_{IT}^{it-1}) + \gamma_7 \ln(k_{NIT}^{it-1}) + \phi_2 \ln(Z^{it-1}) + \vartheta^{it} \quad (3)$$

Equation (3) represents the empirical specification that we estimate using the augmented mean group (AMG) estimator that Eberhardt and Teal (2010) proposed. The estimator is part of the panel time series literature, which emphasizes: i) possible non-stationarity of the processes; ii) cross-sectional dependence, that is, the possible correlation in the disturbances across sectors; and iii) slope, not just group time-invariant, parameter heterogeneity (Eberhardt 2013). Like other mean group (MG) approaches (Pesaran and Smith 1995; Pesaran 2006), the AMG estimator first estimates N group-specific ordinary least-squares regressions and then averages the estimated coefficients across groups. We control for cross-sectional dependence with the inclusion of a common dynamic effect, which in the AMG we obtain in the first-step estimation of a pooled regression model augmented with year dummies, resulting from first-difference ordinary least squares. The coefficients on the (differenced) year dummies represent an estimated cross-group average of the evolution of unobservables over time (the common dynamic process). We include this in the group-specific regression model, along with an intercept that captures time-invariant fixed effects. Lastly, we average the group-specific model parameters across the panel. By combining the parameters of equation (3), we can derive estimates of the long-run relationships between the explanatory variables and the S_L. As an example, the long-run effect (or co-integration parameter) of IT capital intensity on the labor share corresponds to $\gamma^L_{ITk} = -(\gamma_6/\gamma_4)$, while for non-IT capital intensity it is $\gamma^L_{NITk} = -(\gamma_7/\gamma_4)$. The coefficient of the lagged dependent variable (the labor share) γ_4 describes the speed of adjustment toward the long-run equilibrium, and inference regarding this parameter provides information on the presence of a long-run equilibrium relationship (Eberhardt and Presbitero 2015).

4. RESULTS

Before presenting the results of the estimation of our empirical models, we show some tests aimed at checking the presence of cross-sectional dependence (CD) and non-stationarity (Table 1), which strongly support the choice of the estimation method that we described in section 3. We test for cross-sectional dependence using the Pesaran (2004) CD test; in macro panel data, it may arise from globally common shocks with heterogeneous impacts across panels or be the result of spillover effects (Eberhardt and Teal 2011). The evidence that Table 1 provides shows that we cannot accept the null hypothesis of cross-sectional independence. To check the presence of unit roots, we perform the CADF test that Pesaran (2003) proposed, designed for heterogeneous panels with cross-sectional dependence (see Lewandowski 2007). We eliminate cross-sectional dependence by augmenting the standard Dickey–Fuller (DF) or the augmented DF regressions with the cross-section averages of lagged levels and the first differences of the individual series. The null hypothesis assumes that all series are non-stationary, and the results in Table 1 indicate that we cannot reject it, the only exceptions being the variables UD and Off. Again, as a preliminary step, we run Pedroni's panel cointegration tests, which clearly suggest rejection of the null hypothesis of no cointegration (Pedroni 1999).

Table 1: Tests for Unit Roots and Cross-Sectional Dependence (NPME)

	Unit Root Test		**CSD**	
	Z (t-Bar)	**P-Value**	**CD Test**	**P-Value**
S_L	1.686	(0.954)	34.10	(0.000)
k_{IT}	1.098	(0.864)	207.14	(0.000)
k_{NIT}	0.056	(0.522)	31.96	(0.000)
C (TFP)	–2.537	(0.006)	26.12	(0.000)
L^h_{NR}/L^h (hours)	0.816	(0.793)	118.79	(0.000)
UD	–4.597	(0.000)	118.15	(0.000)
Trade	–0.778	(0.218)	127.23	(0.000)
Off	–2.081	(0.019)	207.34	(0.000)
Markup	0.340	(0.633)	43.71	(0.000)

Notes: Markup: 1970=1; TFP: 1970=100.

Source: Authors' elaborations of the JIP database.

Table 2 presents the results of our estimates (long-run coefficients and the coefficient for the lagged level of the labor share). The lagged S_L-level variable is statistically significant in all the models that we estimate, confirming the existence of an error correction; the large size of the coefficient, a common feature in this estimation environment (Imbs et al. 2005), suggests a relatively high speed of adjustment to the long-run equilibrium.

As regards the SK schedule, the results indicate high substitutability between labor and non-IT capital in both manufacturing and services. However, in manufacturing, the elasticity of substitution exceeds the value of 1 (which would identify the Cobb–Douglas case) first in medium–low-technology sectors in which, on the contrary, IT capital is complementary to labor. As regards market services, the negative sign of non-IT capital (i.e., an elasticity of substitution with labor higher than one) is driven by the knowledge-intensive segment (KIS). On the contrary, IT capital is complementary to labor in low-knowledge-intensive tertiary market industries. The TFP is mostly insignificant; this result is not unexpected, considering the inclusion in the model of different types of capital (which capture the embodied technological change) and of other variables—in particular the market power of firms—that capture factors that would otherwise converge with the coefficient of the TFP.

Table 2: Long-Run Drivers of the Total Labor Share in Japan (1970–2012)

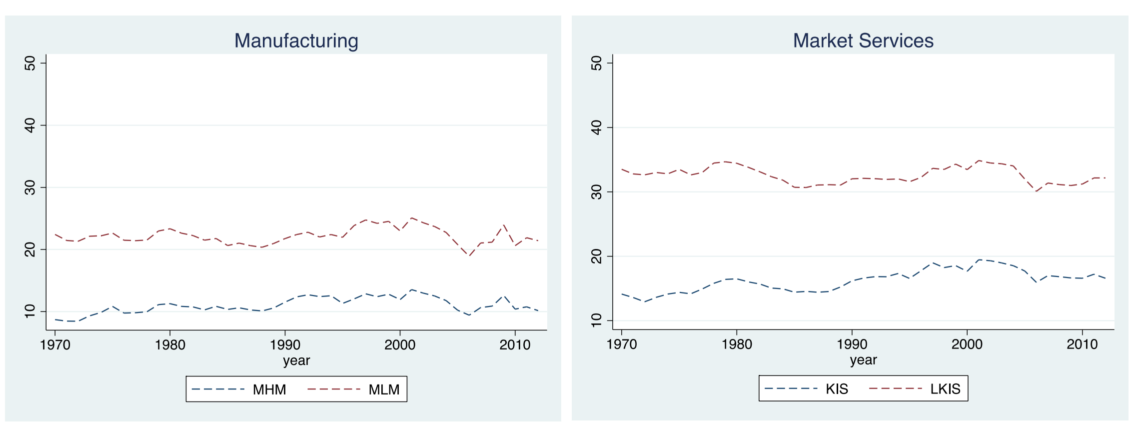
	NPME	MAN	MLM	MHM	MSERV	LKIS	KIS
k_{IT}	0.053*	0.059	0.113***	0.044	0.015	0.086*	0.049
	(0.031)	(0.043)	(0.037)	(0.078)	(0.036)	(0.050)	(0.110)
k_{NIT}	–0.036***	–0.065***	–0.048***	–0.052	–0.048**	–0.023	–0.062**
	(0.013)	(0.019)	(0.016)	(0.036)	(0.020)	(0.024)	(0.031)
C (TFP)	0.054	0.151	0.242*	–0.121	–0.008	0.164*	–0.033
	(0.079)	(0.110)	(0.125)	(0.182)	(0.097)	(0.093)	(0.304)
L^h_{NR}/L^h	–0.041**	–0.013	–0.009	–0.000	–0.080**	–0.168***	–0.019
	(0.020)	(0.025)	(0.030)	(0.050)	(0.039)	(0.063)	(0.046)
UD	–0.097***	–0.117**	–0.069	–0.170**	–0.045	–0.107**	–0.001
	(0.034)	(0.048)	(0.053)	(0.072)	(0.045)	(0.046)	(0.091)
Trade	–0.021***	0.008	–0.002	–0.010	–0.013*	–0.015***	–0.025
	(0.006)	(0.013)	(0.015)	(0.020)	(0.007)	(0.005)	(0.020)
Off	0.005	–0.004	–0.006	–0.025	0.027**	0.009	0.051*
	(0.009)	(0.013)	(0.022)	(0.020)	(0.012)	(0.021)	(0.027)
Markup	–2.657***	–3.146***	–3.167***	–3.306***	–1.743***	–1.543***	–1.715***
	(0.223)	(0.237)	(0.315)	(0.351)	(0.308)	(0.125)	(0.324)
ECM	–0.696***	–0.727***	–0.735***	–0.737***	–0.583***	–0.642***	–0.550***
	(0.034)	(0.036)	(0.044)	(0.056)	(0.067)	(0.108)	(0.067)
RMSE	0.0277	0.0326	0.0327	0.0317	0.0126	0.0093	0.0145
Wald chi^2	1,318.28***	1,635.49***	911.17***	938.95***	402.68***	61,069.86***	226.73***
Obs.	3,528	2,184	1,218	966	1,092	588	504
Groups	84	52	29	23	26	14	12

Notes: RMSE is the root mean squared error test (sigma); we compute the average long-run coefficients from the ECM results; and we calculate the standard errors via the delta method.

Source: Authors' elaborations of the JIP database.

As regards the labor market variables, the share of non-regular workers plays a negative role in the total S_L, and low-knowledge-intensive services drive this effect. This is likely to be the result, first, of the composition effect of the particularly large presence of irregular workers in LKI services, as Figure 2 clearly describes; in LKI services, non-regular labor accounts for about 35% of the total hours worked compared with significantly lower levels of KISs and manufacturing. We should consider this fact along with the increase in the regular/non-regular workers' wage gap, which basically tripled over the period considered in all sectors (see also OECD 2017a).

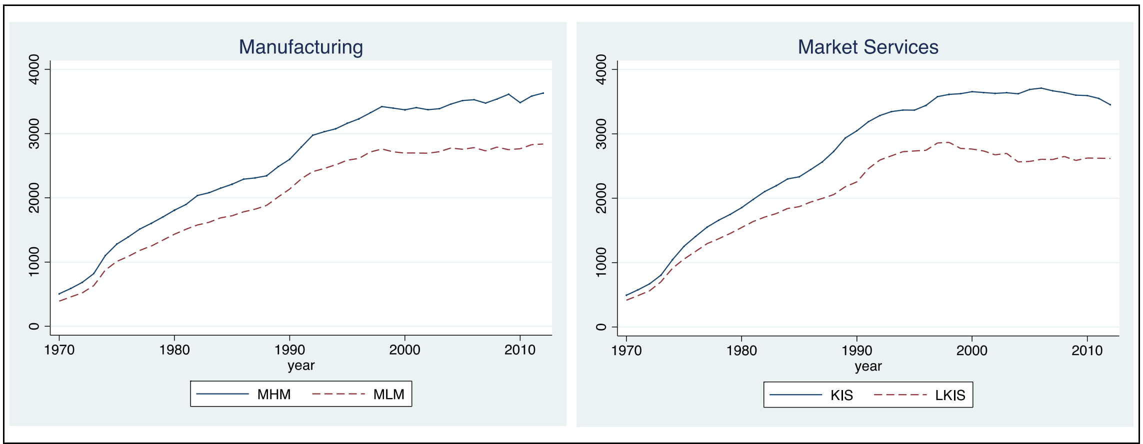
Figure 2: Shares of Hours Worked: Non-regular Work in Macro-sectors of Manufacturing and Services



Source: Authors' elaborations of the JIP database.

In view of the employment share that LKI industries achieved in most recent years, it is not surprising that what happens in these sectors affects the labor share of aggregate services and of the total economy. However, we cannot rule out the possibility that the massive presence and availability of non-regular workers in such industries also adversely affects the bargaining power of regular workers, provided that the two types of work have a high rate of substitutability. The fact that, in those sectors in which non-regular work is more intensive (LKI services and ML manufacturing), the wage rates of regular workers experienced significantly weaker growth than those in other sectors with a lower presence of non-regular workers corroborates this descriptively (see Figure 3). This is also probably related to a significant extent to changes on the labor market supply side, namely the massive entrance of women into the labor force, concentrated markedly in LKI services, in which they accounted for over 40% of the hours worked in the most recent years compared with less than 35% in KISs and less than 30% in manufacturing.

Figure 3: Regular/Non-regular Hourly Wage Gap, LKIS Services

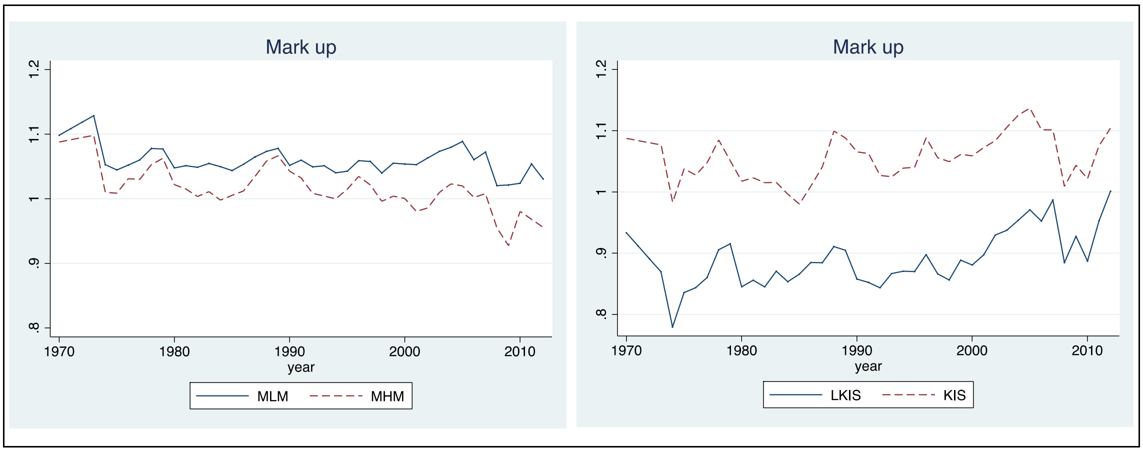


Source: Authors' elaborations of the JIP database.

Stronger unions are associated in our results with a smaller labor share. The explanations for this outcome can relate to the Japanese labor relations model, the declining unionization rate, and the labor market evolutions in the past decades. The Japanese employment system is characterized by strong decentralization of the role of unions at the company level, and principles of cooperation with the management rather than conflict and antagonism mainly inspire union activities (Fujimura 2012). Enterprise unions in Japan have also primarily organized themselves around regular employees, and the increase in non-regular workers over time has significantly reduced the coverage of the company workforce in discussions with the management. The resulting asymmetry of the action of unions might induce, wherever possible, the substitution of regular jobs with less rigid and cheaper labor or with a type of capital. The evolution of the peculiar bargaining systems of Japan (*Shunto*) might also have contributed to shaping this effect. The *Shunto* system was traditionally based on annual wage negotiations between enterprise unions and employers, which took place in the spring and involved two key parameters: wage revision and bonuses (see Komiya and Yasui 1984). Due to adverse economic conditions, unions have been focusing increasingly on protecting the existing pay structures and jobs rather than on wage growth (see OECD 2017b); bonus bargaining, the only form of negotiations on remuneration that survived, concerns non-regular workers to a much more limited extent (Kato 2016).

While the variables related to globalization seem to offer rather limited insights, the proxy for market competition emerges as a key driver of the labor share. The two results are not unrelated, since it is not unlikely that the markup indicator also depicts the market environment that increasing competitive pressures resulting from globalization forces shape (the correlation between “trade” and “markup” amounts to –0.32, which is significant at 1%). The negative sign and the magnitude of the coefficient clearly indicate that, when firms are able to produce extra profits, rent-sharing patterns develop in a direction that is detrimental to workers. This does not come as a surprise, given the labor market evolutions that we have already described, which all acted against the bargaining position of a specific segment of labor. Our evidence is consistent with expectations based on the existing theoretical and empirical literature on the effects of market competition on the labor share (Bentolila and Saint-Paul 2003; Barkai 2016; Autor et al. 2017) and provides new corroborating evidence. The evolution of the markup by subsectors suggests that its impact was particularly significant in low-knowledge-intensive sectors, therefore deepening the (already) disadvantaged position of labor in this part of the economy.

Figure 4: Markup in Macro-sectors of Manufacturing and Services



Source: Authors’ elaborations of the JIP database.

Figure 4 shows that, while competition in manufacturing (especially medium-high technology) increased, the opposite holds for services, particularly LKISs. This evidence, taken together with the sharp decrease in self-employment and family work (from 25.5% in 1970 to 10% in total market services and from 30% to 11% in LKISs) addresses the possibility of a remarkable process of market concentration in those segments, such as retail trade (see Matsuura and Motohashi 2005) and hotels and restaurants (Høj and Wise 2004), which significantly increased their employment share over time.

5. FINAL REMARKS AND POLICY ADVICE

This chapter dealt with the long-run drivers of the labor share in Japan. We based the analysis on JIP data for the period 1970–2012 and provided a detailed sector-level picture of how technological factors, labor, and product market institutions affected the share of output accruing to labor. Our results indicate that the decline in the labor share that Japan experienced during the four decades considered concentrated highly in the low-knowledge-intensity sectors, the employment share of which has increased over time and reached over 50% of the total hours worked. This part of the Japanese economy has some particular features, which our econometric analysis indicates as being possible explanations for the decline in the labor share. LKI services experienced a remarkable increase in non-regular workers; this is a secondary segment of the labor market in Japan, characterized by low wages and very limited union coverage/protection. The presence of this type of workers is favored by the intrinsic characteristics of these industries, in which the accumulation of knowledge is relatively less important and regular and non-regular labor are highly substitutable, with consequent effects on the equilibrium wages of both labor market segments. Low-knowledge-intensity services are also the part of the economy in which the market power of firms has increased remarkably as a result of a process of concentration that has occurred over the last decades, when, for example, large firms in the trade sectors replaced small family businesses, gaining market power and bargaining power vis-à-vis labor.

The decline in the labor share in Japan therefore seems to relate to a significant extent to the convergence in some segments of the economy of adverse circumstances originating in market forces, structural changes, and labor and product market institutions. Policy makers who are willing to address the issues connected to the decrease in the labor share should target primarily these secondary labor segments, implementing measures that are able to reduce asymmetries in terms of labor protection and representation. At the same time, they should devote attention to preserving high enough levels of market competition to prevent employers from gaining excessive bargaining power and further compressing labor remuneration.

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APPENDIX A: INDUSTRY AGGREGATES

Industry Aggregate	
TME	Total market economy: all JIP sectors excluding housing (72), private education (80), private research (81), private medical (82), and private hygiene (83)
NPME	Non-primary market economy: ME minus primary sectors (1–6) and mining (7)
MAN	Manufacturing: JIP sectors 8–59
MLM	Medium- and medium-low-technology manufacturing: JIP sectors: 8–22, 30–41, and 58–59
MHM	Medium- and medium-high-technology manufacturing: JIP sectors: 23–29 and 42–57
MSERV	Market services: JIP sectors: 61, 67–71, 73–79, and 85–97
LKIS	Less-knowledge-intensive services: JIP sectors: 67–68, 71, 73–74, 77, 79, 86–88, and 94–97
KIS	Knowledge-intensive services: JIP sectors: 61, 69–70, 75–76, 78, 85, and 89–93