



WP/20/39

# IMF Working Paper

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## Identifying Service Market Reform Priorities in Italy

By Nazim Belhocine and Daniel Garcia-Macia

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**IMF Working Paper**

European Department

**Identifying Service Market Reform Priorities in Italy<sup>1</sup>**

**Prepared by Nazim Belhocine and Daniel Garcia-Macia**

Authorized for distribution by Rishi Goyal

February 2020

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**Abstract**

Italy's labor productivity in market services has declined since 2000, underperforming manufacturing and peer European countries, especially in strongly regulated sectors. A model of monopolistic competition is used to identify which service sectors would benefit more from removing entry and/or exit barriers. Using Italian firm-level data, the paper finds that sectors with high markups, such as professional services, would primarily benefit from removing entry barriers. Sectors with a large mass of unproductive firms, such as retail, would instead benefit from removing exit barriers. Policy recommendations to improve efficiency are outlined in relation to the sectoral priorities identified in the data.

JEL Classification Numbers: L11, L80, E23.

Keywords: service market reform, firm entry/exit barriers, markups, productivity.

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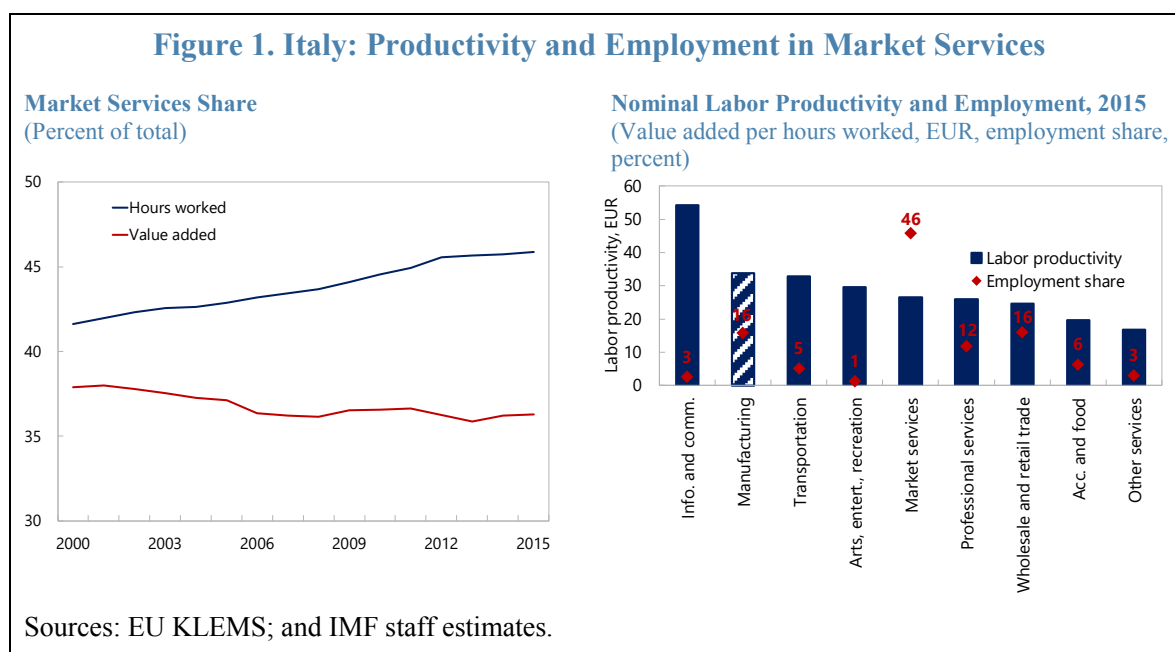
<sup>1</sup> This paper benefited from comments by Romain Duval, Rishi Goyal, Chiara Maggi, Roberto Torrini, and staff from the Bank of Italy, the Ministry of Economy and Finance and the Ministry of Economic Development. Special thanks are extended to Federico Diez and Chiara Maggi for sharing their codes. David Velazquez-Romero and Marta Burova provided excellent research and editorial assistance.

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## I. INTRODUCTION

Market services play an important role in the Italian economy (Figure 1).<sup>2</sup> They accounted in 2015 for 36 percent of total value-added, 47 percent of total hours worked, and 46 percent of employment. Among market service sectors, major employers include wholesale and retail trade, with 16 percent of economy-wide employment, and professional services, with 12 percent.

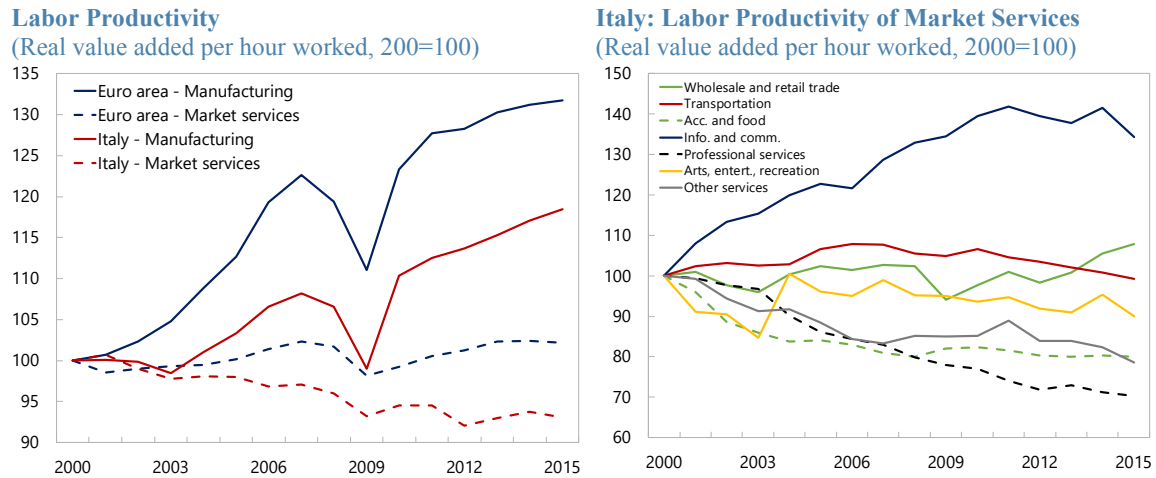


However, the aggregate labor productivity of the market services sector has fallen in comparison to manufacturing and peer countries (Figure 2). Between 2000 and 2015, productivity has been on a declining trend, falling by over 5 percent throughout this period, while remaining relatively stable in the euro area.<sup>3</sup> The sub-sectors that have experienced the sharpest falls are professional services (30 percent), accommodation and food services (20 percent), and other services (20 percent).

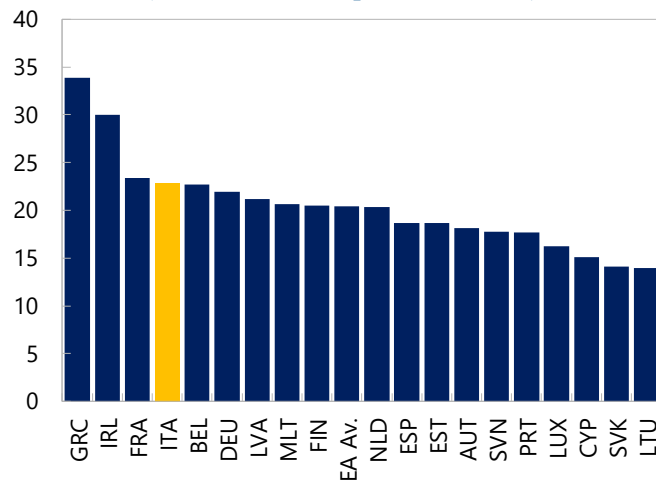
Beyond its impact on labor market outcomes, the weakening productivity of market services is likely to weigh on the manufacturing sector; services in Italy are more tightly integrated to the manufacturing sector than in other European countries (Figure 3).

<sup>2</sup> The definition of market services in this paper encompasses nonfinancial and nonreal estate market services: wholesale and retail trade, transportation, accommodation and food services, information and communication technologies (ICT), professional and administrative services, arts and entertainment, and other market services (Sections G, H, I, J, M, N, R and S from the NACE Rev 2). Financial and real estate services are excluded due to productivity measurement challenges.

<sup>3</sup> The performance of productivity growth in the services sector in the euro area and the policies necessary to revive it are discussed in Ebeke et al. (2019).

**Figure 2. Productivity in Market Services, Italy vs Euro Area**

Sources: EU KLEMS; and IMF staff estimates.

**Figure 3. Share of Services in Manufacturing Input, 2014**  
(Domestic and imported services)

Sources: EU KLEMS; and IMF staff estimates.

It is well established that a sector's productivity and entry and exit dynamics depend crucially on the regulatory environment. Several channels have been identified in the literature (see OECD, 2009, for a review). To name a few: 1) a lower regulatory burden facilitates the reallocation of resources towards more productive firms, including by favoring competition and reducing monopolistic rents; 2) a heavier regulatory burden reduces investment in knowledge-based capital and hence total factor productivity; and 3) regulatory frictions in upstream sectors that are inputs into downstream sectors have a negative impact on the performance of the latter. Indeed, service sectors in Italy are subject to stronger regulatory impediments than in most advanced economies (OECD, 2019).

This paper singles out which sectors in Italy would benefit most from removing entry and/or exit regulatory barriers in relation to their characteristics. A theoretical model of monopolistic competition is developed which predicts that removing entry barriers is most efficient in sectors with high markups, while removing exit barriers is most efficient in sectors with a large number of low productivity firms. Using firm-level data, sectors are classified according to their average markup and mass of unproductive firms. In sectors with high markups, such as administrative and professional services, removing entry barriers would consist of policies such as abolishing quotas for regulated professions, repealing the requirement for a manager or owner to be a professional, and eliminating minimum tariffs. In sectors with a large mass of unproductive firms, such as retail, policies should aim at: 1) fostering consolidation; 2) removing impediments to factor reallocation; and 3) lowering exit barriers through modernization of the insolvency framework, more efficient active labor policies and a better design of the social safety net.

A substantial body of literature has investigated the productivity, growth and employment payoffs from improving the regulatory environment in Italy and removing competition barriers in product and service sectors. Typically, three different approaches have been used to estimate the payoff from product market regulation (PMR) reforms: 1) DSGE-based models as in Lusinyan and Muir (2013), Forni et al. (2010), National Reform Programme (2012), Pinelli et al. (2016), Andrle et al. (2018); 2) cross-region or cross-country approaches, e.g. regulatory burden against sectorial differences in entry rates as in Bripi (2015), dynamic panel analysis to evaluate the payoff from moving to the frontier as in OECD (2009) and Bouis and Duval (2011), and firm-level heterogeneity in Lanau and Topalova (2016); and 3) specific reforms' impact, e.g. one-stop shops on entry as in Amici et al. (2016).

These papers find potentially large gains on growth, productivity, and employment of PMR reforms. For instance, Forni et al. (2010) find that reducing markups in services to the levels prevailing in the rest of the euro area induces an 11 percent increase in Italian GDP in the long run and a 3.5 percent increase in welfare. Half of the GDP increase would be realized in the first three years. OECD (2009) simulation using a dynamic panel of OECD countries finds that Italy's labor productivity could increase by about 14 percent over 10 years if its product market regulation (especially in professional services) was aligned to international best practice. Lusinyan and Muir (2013) find that closing roughly half the gap in product and labor markets with the rest of the euro area and best practice cases in the OECD could raise real GDP by  $5\frac{3}{4}$  percent after 5 years and by  $10\frac{1}{2}$  percent in the long run. Andrle et al. (2018) estimate a 4 percent output gain in the steady-state from a package of product market deregulation (closing half the gap with the frontier) and other structural reforms. González-Torres (2016) uses a general equilibrium framework with heterogeneous firms and households, and finds that cutting firm startup procedures boosts both aggregate productivity and output. While this paper does not aim to provide a quantification of reform impacts, it contributes to the literature by identifying reform priorities at the sectoral level.

More broadly, given the importance of some service sectors (e.g. professional services and network industries) as an input into other industries, additional gains from reducing barriers would ensue by boosting the aggregate productivity of downstream industries, as shown in Bourlès et al. (2013), Duval and Furceri (2018), and Gal and Hijzen (2017). Regarding the timing of reform payoffs, Bouis et al. (2019) find that the positive dividends become typically apparent two to three years after, as prices start dropping, and productivity and output increase significantly. They also find no evidence of short-term costs, even under adverse macroeconomic conditions. As shown in OECD (2016), adequately sequencing market liberalization reforms is critical to reap the short- and long-term benefits.

The rest of the paper is organized as follows. Section II describes the model and its policy implications. Section III explains the data sources and the main empirical findings. Section IV links the findings to Italy's performance in competition indicators. Section V concludes by providing specific policy recommendations to foster efficiency and competition in the sectors that were found to be least efficient.

## **II. THEORETICAL FRAMEWORK**

### **A. Model Setup**

A model of firm competition is used to study the effects of entry and exit barriers on efficiency. The model builds on a version of Felix and Maggi (2019) without endogenous entry and with a trans-log demand function, as proposed in Bergin and Feenstra (2000). Appendix I lays out the model and its calibration with Italian data.

The following provides an intuitive summary of the model. The goal of the model is to determine equilibrium prices and quantities for a set of monopolistically competitive firms. Firms are heterogeneous in their productivity and use labor as their only input. The aggregate labor supply is increasing in real wages, implying that lower prices increase aggregate labor supply and thus aggregate output. Consumers have a trans-log demand function for product varieties. This demand specification has two empirically relevant properties in equilibrium. First, average markups are decreasing in the number of active firms. Second, firm-level markups are increasing in a firm's productivity.<sup>4</sup>

The model departs from Felix and Maggi (2019) in that it has: 1) a fixed production cost, necessary for firms to have a motive to exit; 2) entrants with below-average productivity, as observed in the data, to study the effects of entry barriers; and 3) the modelling of entry and exit barriers discussed in the following two sections.

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<sup>4</sup> Campbell and Hopenhayn (2005) and Hsieh and Klenow (2014), respectively, provide evidence for these two properties.



## B. Exit Barriers

Conceptually, exit barriers are defined as any distortion preventing the displacement of low-productivity incumbent firms by higher-productivity incumbents, either directly or indirectly via general equilibrium effects. Exit barriers thus include policies that limit the expansion of highly productive incumbents into the markets of low-productivity firms.

In the model, exit barriers are introduced as a lump-sum transfer to firms conditional on them being active. This lump-sum transfer allows firms operating with negative net profits, which are also the least productive, to survive. The transfer is financed with lump-sum taxes on consumers.<sup>5</sup> The latter is a conservative assumption—assuming taxation were distortionary would amplify the negative effects of exit barriers.

This reduced-form specification is meant to capture various economic distortions which incentivize the survival of low-productivity firms in Italy. These include protracted insolvency procedures, which imply a transfer of value from creditors to debtors as interest payments are missed; policies favoring firms below a certain size or penalizing firm growth; and different forms of government subsidies to firms that keep workers on payroll after negative shocks, thus slowing their separation from low-productivity firms.<sup>6</sup>

Figure 4 illustrates the effect on the productivity distribution of *reducing* exit barriers, i.e., reducing the transfer to firms. As transfers are reduced, firms at the bottom of the profit distribution, which are also at the bottom of the productivity distribution, are pushed to exit. As a result, the average firm productivity increases.

Figure 5 shows the impact of reducing exit barriers on average productivity and markups. The Figure plots comparative statics, i.e., a continuum of static equilibria, one for each value of the lump-sum transfer.<sup>7</sup> As transfers fall and low-productivity firms exit, average markups increase. This occurs for two reasons: the number of active firms falls, which relaxes competitive pressure, and their productivity is higher, translating into higher markups due to the trans-log demand function.

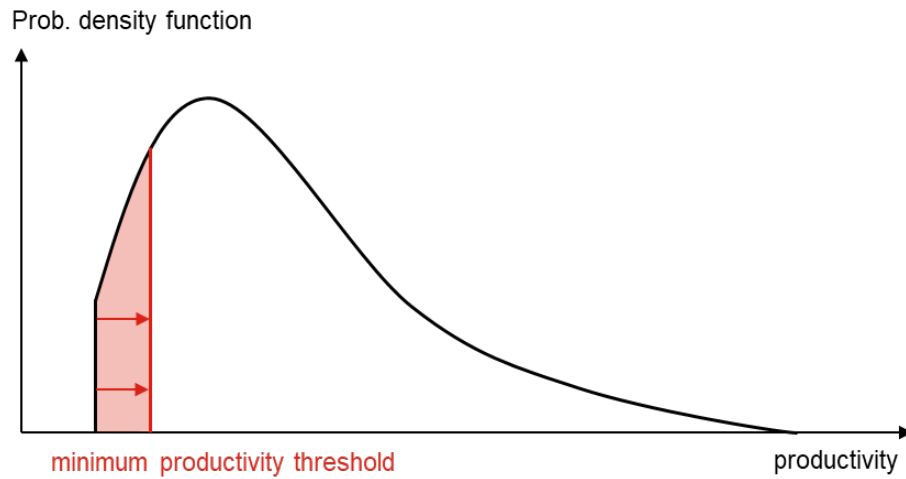
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<sup>5</sup> Since consumers are also firm owners, the lump-sum tax is neutral for consumer welfare, beyond its effects on production choices.

<sup>6</sup> For instance, in Italy, the average length of insolvency proceedings was about 7 years in 2018 and the mechanism of payroll subsidy, known as CIG, plays an important role in preserving employment (see Belhocine et al. 2018 for further discussion).

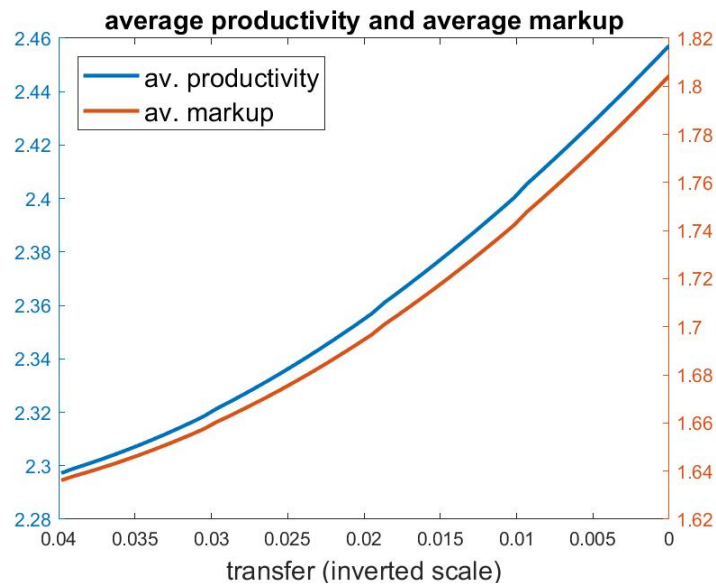
<sup>7</sup> Strictly speaking, the x-axis scale is based on the minimum productivity among surviving firms for each level of the transfer. Minimum productivity is monotonically decreasing in transfers, but in a non-linear way. See Appendix I for details.

**Figure 4. Reduction of Exit Barriers and Its Impact on the Productivity Distribution**



Note: the “minimum productivity threshold” is the productivity level at which profits after the transfer are zero. Firms below that level cannot operate. A reduction of transfers increases the minimum productivity threshold.

**Figure 5. Reduction of Exit Barriers and Its Impact on Average Productivity and Markup**

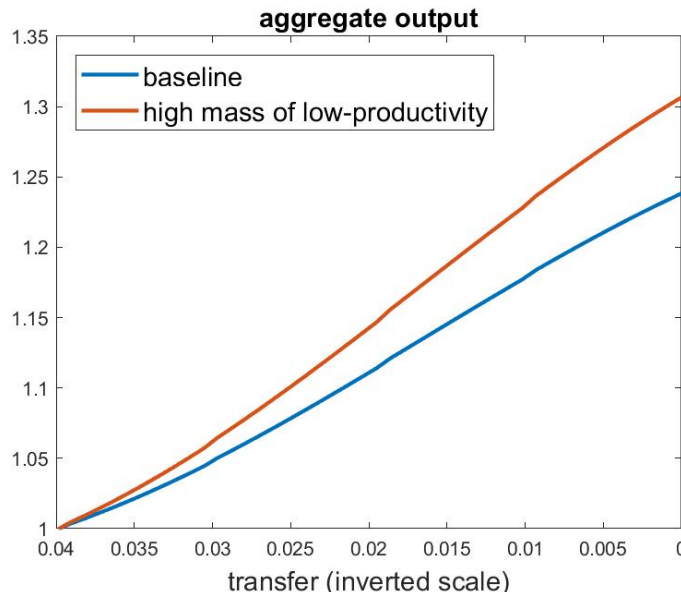


Note: Productivity is measured in logs. Markups are measured as the ratio of price to marginal cost minus one. Higher values for the transfer imply a lower minimum productivity across active firms.

Assuming there is no relevant disutility from labor, welfare is monotonically increasing in real aggregate output. Figure 6 shows the effects of lowering exit barriers on real aggregate output, which is equal to the sum of firm-level sales net of fixed costs, divided by the price index. The price index captures the love of variety embedded in the demand function, with a higher number of varieties lowering aggregate prices (see equation (3) in Appendix I). In general, reducing exit barriers increases aggregate output as the positive effect of a higher average productivity dominates the negative effects of having less variety to consume and higher markups.<sup>8</sup> This result is in line with Edmond et al. (2018), which find negative output effects of entry subsidies and size-dependent taxes in a model calibrated to the US.

In addition to the baseline calibration, Figure 6 shows the effects of an alternative calibration with a higher initial mass of low productivity firms. Specifically, the mass of firms below the maximum entry productivity threshold for entrants is increased by 20 percent and proportionally reduced for the rest of the distribution.<sup>9</sup> Under this alternative calibration, the effects of removing exit barriers are stronger, as more inefficiently-subsidized firms are pushed to exit, causing the average productivity to rise faster.

**Figure 6. Reduction of Exit Barriers and Its Impact on Real Aggregate Output**



Note: the orange line corresponds to an economy with a higher relative mass of low-productivity firms. Specifically, the relative mass of firms below the maximum entry productivity threshold for entrants is increased by 20 percent. Real aggregate output is normalized to one at the highest level for the transfer (0.04) to meaningfully compare the two calibrations.

<sup>8</sup> Although it is possible to find parameters such that a small positive exit barrier increases output due to its pro-competition effect, even in those cases exit barriers are not a first-best policy. Policies directly encouraging competition, such as removing entry barriers, would be preferable to subsidizing the production of low-productivity firms, as the latter requires raising revenue from other sectors or firms. On the other hand, negative exit barriers (i.e. a lump-sum tax on active firms) are never optimal.

<sup>9</sup> This increases the share of output below half of the productivity mean (a statistic that will be used in Section III) by 0.3 percentage points.

### C. Entry Barriers

Entry barriers include any distortions limiting the incentives of new firms to start production, such as quotas or excessively stringent regulations. In the model, a *reduction* of entry barriers is introduced as an increase in the mass of entrants. Thus, the model is agnostic on the exact source of entry barriers; it only focuses on the impact of adding more entrants on the market equilibrium.

As depicted in Figure 7, the productivity of entrants is drawn from the distribution of existing firms, bounded above by a maximum productivity threshold. This threshold is calibrated such that the relative productivity of entrants is similar to that observed in the data. With entrants featuring lower average productivity than incumbents, the immediate effect of removing entry barriers is a reduction in average productivity, as shown in Figure 8.<sup>10</sup> However, more entry also implies more firms, which reduces average markups. This effect is compounded by the fact that lower-productivity firms charge lower markups.

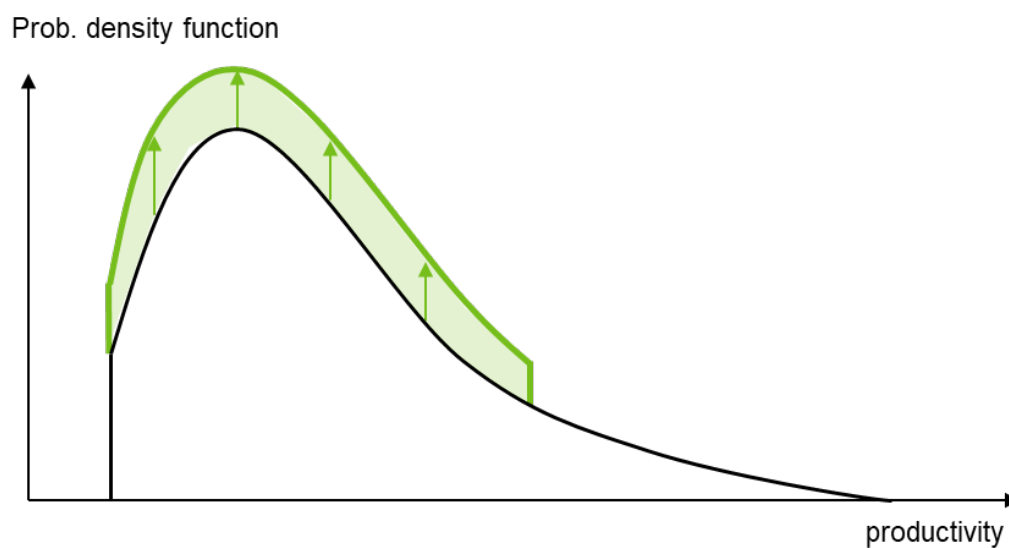
Figure 9 shows that removing entry barriers is always optimal, as it causes a monotonical increase in real aggregate output. In this case, the gain from reduced markups and increased variety dominates the loss in average productivity, in contrast to the impact of lowering *exit* barriers. Figure 9 also plots an alternative calibration with higher initial markups, modeled as a 20 percent reduction in the initial mass of firms. The Figure demonstrates that reducing entry barriers is particularly beneficial in such a setup, since the scope for spurring competition is larger when a market is initially dominated by few firms.

The model abstracts from the potential endogenous increase in entry after a reduction in exit barriers. Similarly, the calibration ensures that no incumbents are endogenously pushed to exit after a reduction in entry barriers. These two assumptions are made to transparently illustrate the direct effects of entry and exit barriers and because any indirect effects could take longer to operate in practice. Including these channels would magnify the output gains of removing entry and exit barriers.

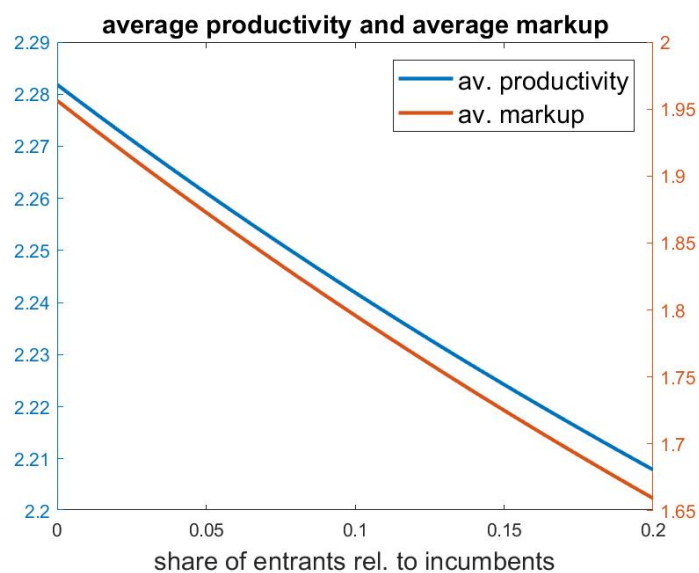
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<sup>10</sup> This is a static or short-run effect. In a long-run steady state, entrants would grow to be as productive as the average incumbent.

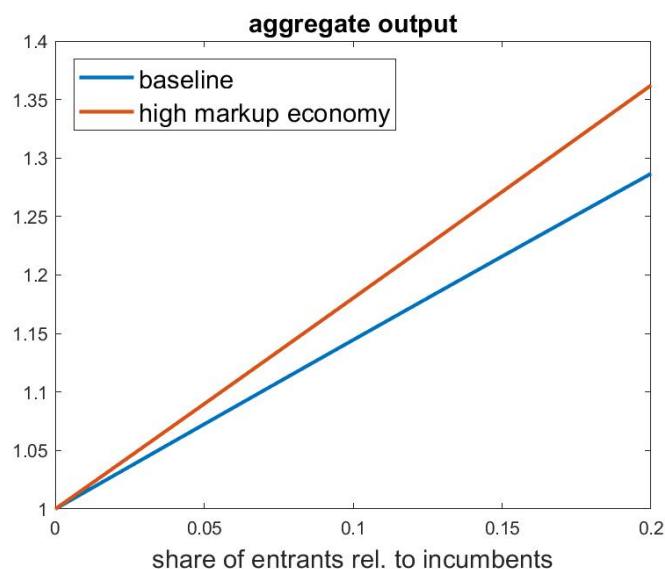
**Figure 7. Reduction of Entry Barriers and Its Impact on the Productivity Distribution**



**Figure 8. Reduction of Entry Barriers and Its Impact on Average Productivity and Markup**



Note: Productivity is measured in logs. Markups are measured as the ratio of price to marginal cost minus one. Higher values for the share of entrants imply a lower minimum productivity across active firms.

**Figure 9. Reduction of Entry Barriers and Its Impact on Real Aggregate Output**

Note: the orange line corresponds to an economy with high initial markups, calibrated as a 20 percent smaller initial mass of firms. Real aggregate output is normalized to one when there is zero entry.

#### D. Policy Implications

Table 1 summarizes the policy implications of these findings. The model predicts that removing exit barriers would be most effective in economies or sectors with a high mass of unproductive firms, while removing entry barriers would be most effective in sectors with high average markups. Where both distortions are present, policies should facilitate both entry and exit. However, it is important to note that Table 1 displays policy *priorities*, while the model shows that removing entry and exit barriers is optimal for any sector.

**Table 1. Implications of the Model for Policy Priorities**

		Markups	
		Low	High
Mass of Low-Productive Firms	High	Facilitate exit	Facilitate entry and exit
	Low		Facilitate entry

Note: the table entries show the policies that would have a higher impact as a function of the productivity distribution and average markups in an economy/sector.

### III. EMPIRICAL RESULTS

#### A. Data

Italian firm-level data are sourced from Orbis for the period 2006–2016. After excluding non-market sectors, one-employee firms, and extreme outliers, a sample of around 400,000 firms per year remains for the period 2011–2016, where sample size is largest and more stable. The cleaned sample covers  $\frac{2}{3}$  of non-financial corporate value added, although coverage is more limited in a few service subsectors. Aggregate GDP deflators are obtained from IStat and industry-level deflators from Eurostat. Appendix II describes in detail the sample selection procedure.

The data are used to classify sectors along the two dimensions identified as signaling exit and entry frictions: the tail of low-productivity firms and average markups, respectively.

#### B. Productivity Distribution

Comparing the labor productivity distribution across sectors requires controlling for potential differences in the production function's labor intensity. A common way to control for this issue is to use the distribution of the marginal product of labor in revenues (MPLR). The MPLR of a firm is approximated by the value added per worker multiplied by the labor share—itsself calculated as employee compensation over value added at the sector level and averaged over time.

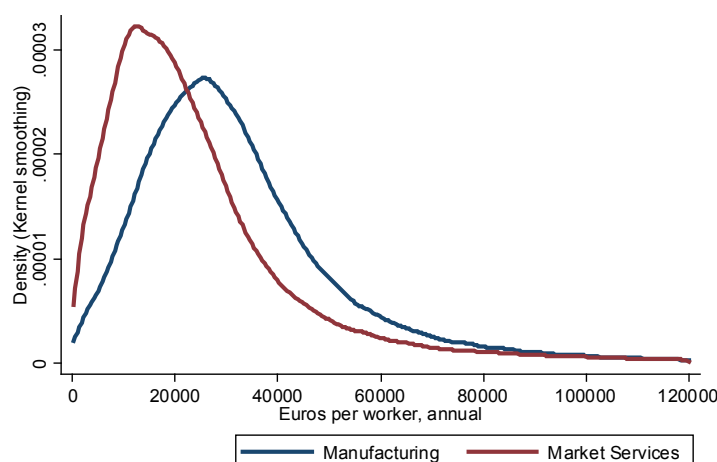
In a model without frictions or mismeasurement, the MPLR should be equalized across firms and sectors (Hsieh and Klenow, 2009). Figure 10 shows that this is not the case in the data. In fact, market services display a substantially thicker mass of firms at the bottom of the distribution compared to manufacturing.<sup>11</sup>

A more conservative approach to compare the distribution of labor productivity across sectors is to condition on sectoral means. Figure 11 shows the share of labor productivity in firms below  $\frac{1}{2}$  of their sector's average labor productivity.<sup>12</sup> Even after this adjustment, market service sectors tend to feature a larger mass of firms at the low productivity end, with the exception of the ICT sector. Among market services, the entertainment and professional and administrative sectors stand out with a particularly high mass of firms at the bottom of the distribution, followed by other services, transport, accommodation and food, construction, and retail and wholesale trade.

<sup>11</sup> Comparing empirical distributions across sectors requires a similar data coverage. While smaller firms in services are underreported in Orbis, including them would make the gap between services and manufacturing even larger, as those firms tend to be at the bottom of the productivity distribution. Moreover, the gap is not purely due to geographical factors either. Both in the North-Center and in the South, market services feature a thicker left tail of firms with low MPLR. The main difference is that the MPLR distributions in the South are shifted to the left for both manufacturing and market services.

<sup>12</sup> Appendix II underlines that the choice of the productivity threshold is not critical, as a very similar ranking of sectors is obtained for the share of firms below  $\frac{3}{4}$  of the mean.

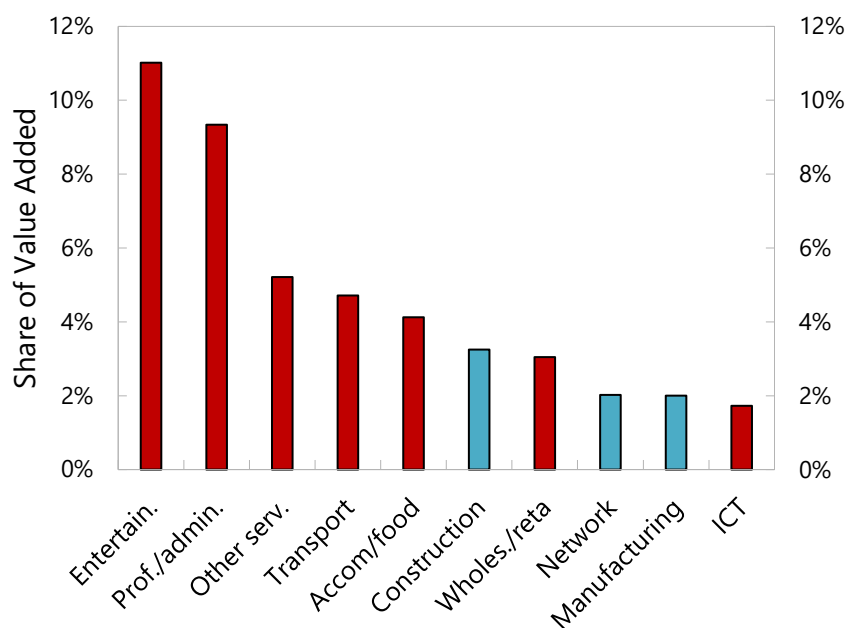
**Figure 10. Marginal Product of Labor Across Italian Firms by Sector, 2016**



Source: Orbis.

Note: Kernel density function. MPL of the firm =  $\alpha \frac{y_i}{l_i}$ . Labor share  $\alpha$  calculated at the sector level (NACE main sectors). Firms with an MPL below €100 or above €120,000 are dropped.

**Figure 11. Mass of Firms with Labor Productivity Below ½ of Their Sectoral Mean, 2011–2016**



Source: Orbis.

Note: Red bars indicate service sectors. Labor productivity is defined as value-added per worker. Firms with labor productivity below €100 or above €200,000 are dropped. The values displayed are yearly share averages for the period from 2011 to 2016.



### C. Markups

Firm-level markups are estimated as in IMF (2019). The method consists of two steps. First, a production function is estimated at the sector level following Akerberg et al. (2015). The production function is assumed to be Cobb-Douglas in capital and a variable input, defined as the sum of employee compensation and the cost of goods sold. This formulation keeps the number of parameters to be estimated at a minimum and exploits the fact that variable input data are available for most firms. Second, markups are identified as in De Loecker and Warzynski (2012) by dividing the production function exponent on the variable input by the firm's share of the variable input over sales. Intuitively, firms with higher markups will operate with a smaller share of variable input over sales in equilibrium, making the aforementioned ratio higher.<sup>13</sup>

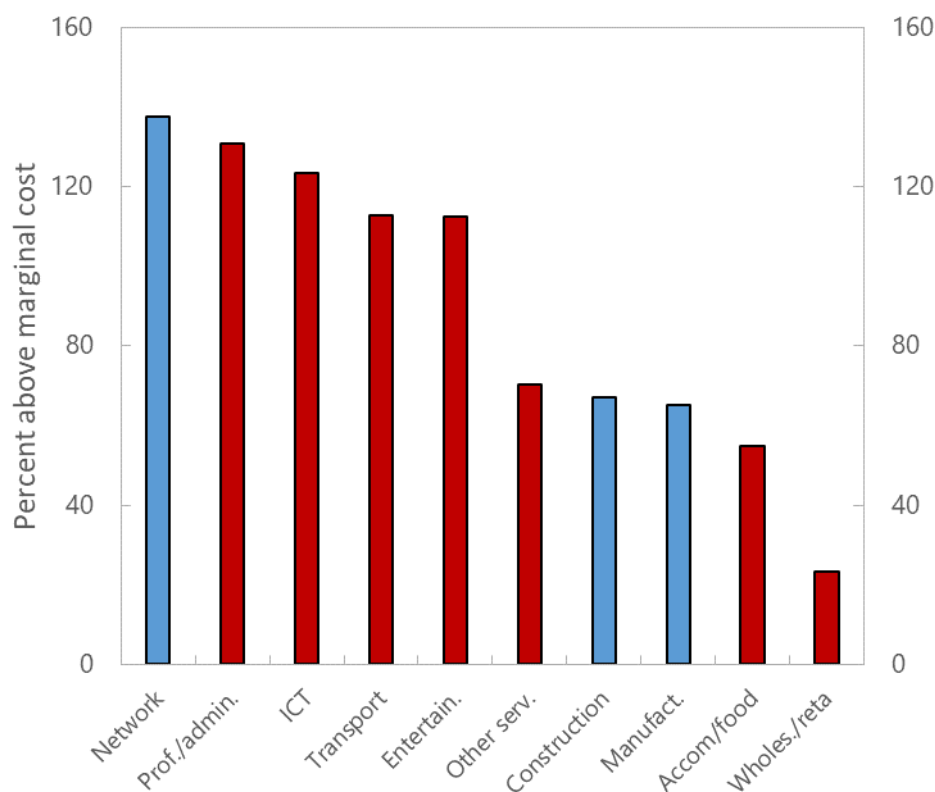
Figure 12 shows the estimated average markup by sector in Italy. Most market service sectors feature higher-than-average markups, starting with administrative and professional services and ICT. Although the network sector tops the ranking, this is likely less indicative of policy distortions than for other sectors, as this sector includes many firms with natural monopoly properties.<sup>14</sup>

A caveat is that some of the sectors with high estimated markups, such as administrative and professional services, include a high share of self-employed workers which are not captured in Orbis. However, estimated markups for one-employee firms are higher than average, suggesting that excluding self-employed workers does not overestimate markups. A related concern is that the labor income of firm managers might be misreported as capital income, leading to an overestimation of markups in small firms. Appendix II shows that the ranking of sectors is quite similar when only including firms with more than 10 employees. In particular, markups in administrative and professional services remain significantly above average.

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<sup>13</sup> Markup calculations are based on real variables. Variable inputs are deflated with the GDP deflator, capital (fixed assets) is deflated with the manufacturing deflator, and sales are deflated at the industry level. For NACE-4 sectors with missing deflator data, the next available superior level of aggregation is used.

<sup>14</sup> While this methodology allows for heterogeneous production function exponents across sectors, it does not disentangle pure monopolistic rents from markups required to compensate for fixed costs.

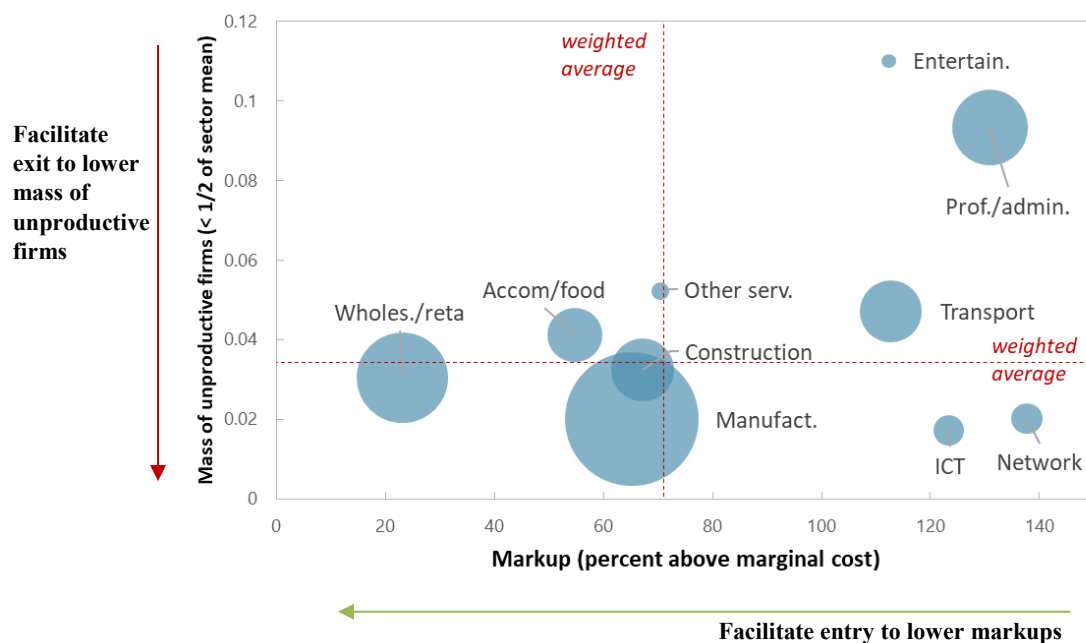
**Figure 12. Average Markup by Sector, 2005–2016**

Source: Orbis (firm-level data), IStat and Eurostat (deflators).

Note: Markups are estimated as in De Loecker and Warzynski (2012), using a Cobb-Douglas production function estimated as in Akerberg et al. (2015). Red bars indicate service sectors.

### D. Policy Implications

To identify policy priorities for each sector, Figure 13 merges the results of Figures 11 and 12 in a scatter plot, mimicking Table 1's spatial presentation. Sectors with high markups, located on the right-hand-side of the scatter plot, are the sectors where lowering entry barriers would yield more benefits. The largest of those in terms of employment are professional and administrative service sectors, as well as networks. Sectors with a thick tail of unproductive firms, located on the upper side of the chart, would benefit the most from reducing exit barriers. The largest of those is wholesale and retail trade. Overall, manufacturing appears to be the sector with comparatively less evidence of frictions, consistent with it being lesser regulated.

**Figure 13. Sectoral Distortions and Policy Recommendations**

Sources: Orbis, IStat and Eurostat.

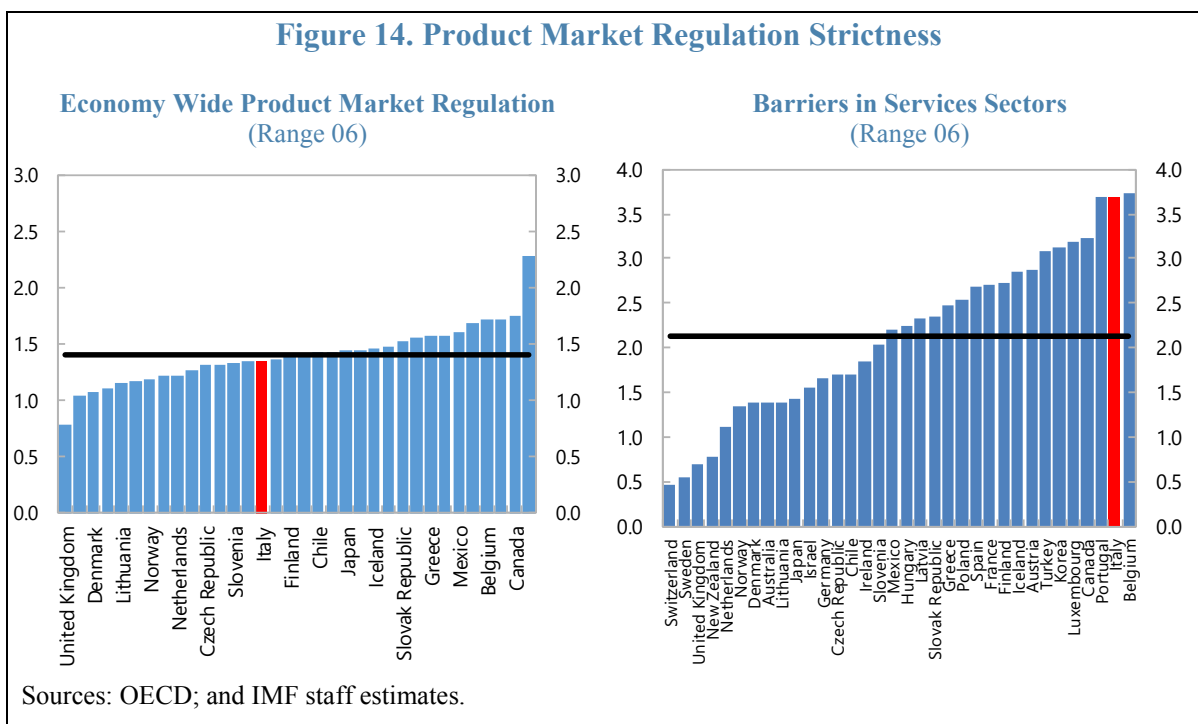
Note: The size of dots is proportional to the sector's employment share.

#### IV. EVIDENCE ON THE STATE OF REGULATION IN ITALY

The recent history of PMR reforms in Italy experienced three waves (see Bugamelli et al., 2018): 1) late 1990s to beginning 2000s, introduced significant liberalizations in network industries (electricity, gas and telecom); 2) 2006–07, (Bersani's decrees) focused on professional services and the retail sector with further adjustments in the telecom, insurance and banking industries; and 3) 2012–14 (Monti reforms) broadened the scope with further liberalization of network industries, professional services, retail, transport, water and postal services. The adoption in August 2017 of the first Annual Competition Law (ACL)—for the first time since 2009 when the requirement to approve such a law annually was legislated—was the last major effort in implementing pro-competition policies.<sup>15</sup> However, the emphasis was more on consumer protection, while actual pro-competition measures were subsequently weakened, delayed or partially implemented (see next section).

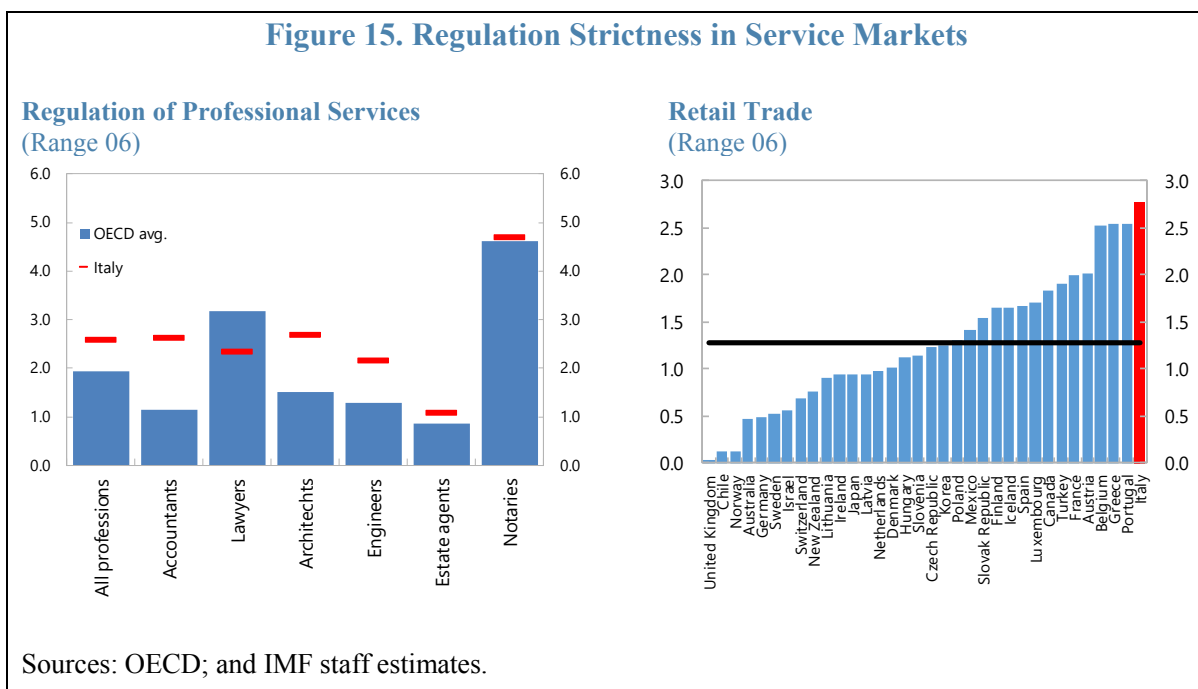
<sup>15</sup> Law No.99 of 2009 provides for the transmission to the Government of an annual report from the Competition Authority. This document forms the basis for the Ministry of Economic Development to submit an annual competition bill to Parliament. The first ACL was adopted under Law 124/2017 and drew on the 2014 annual report of the Competition Authority (see AGCM, 2014) which proposed a variety of measures aimed at addressing the existing regulatory barriers to entry and competition in the insurance, postal, communications, pharmaceutical, electricity, gas and fuel distribution sectors; as well as further liberalization of professional services (notaries, lawyers, architects and engineers).

Despite these reforms, Italy still lags in several competition indicators relative to other OECD countries. The economy-wide PMR score was slightly lower than the OECD average in 2018, although service sectors featured much higher regulatory impediments than the average (Figure 14).



Professional services and retail trade are the two sub-sectors in market services that are major outliers compared to the rest of the OECD (Figure 15). As seen in Figure 13, these two sectors are among the ones that would benefit the most from removing entry and exit barriers, respectively. Note that for professional services, the categories of accountants, estate agents, architects and engineers are among the most regulated professions.

Work by the European Commission (2017) arrives at similar conclusions. Relying on a composite indicator based on EU country level data and based on a different methodology, it finds that the overall level of restrictiveness for professions in Italy is higher than the EU weighted average for six out of seven professions analyzed. The professions include the same ones identified by the OECD as the most regulated.



## V. REFORM PRIORITIES IN HIGHLY REGULATED SECTORS

The empirical evidence and regulatory impediments discussed in the previous two sections are the starting point for identifying the type of reforms and policies that would be advisable for Italy to undertake. This section provides specific reform recommendations for three of the main regulated sectors, as well as economy-wide measures. These reforms have been advocated by several institutions over the years, including the Italian Competition Authority, the European Commission, and the OECD.<sup>16</sup>

### A. Professional Services

Mocetti et al. (2019) report that about 5.4 million workers are employed in regulated professions, accounting for 24 percent of total employment—roughly  $\frac{1}{3}$  more than in the early nineties. Consistent with the conclusions from Section III, the authors find also that the entry rate in these professions is lower than in other occupations and wages are higher. Several measures can be specifically adopted to foster entry and reduce distortions, including:

- *Eliminating minimum tariffs (equo compenso).* The 2018 Budget Law introduced rules on “fair compensation” for professionals when contracting with general government, banks, insurance companies and large firms.<sup>17</sup> The remuneration of

<sup>16</sup> When referencing the work of the Italian Competition Authority, this paper uses its Italian acronym AGCM, which stands for Autorità Garante della Concorrenza e del Mercato.

<sup>17</sup> A “fee schedule” system was previously in place before it was repealed by the Monti government in 2012.

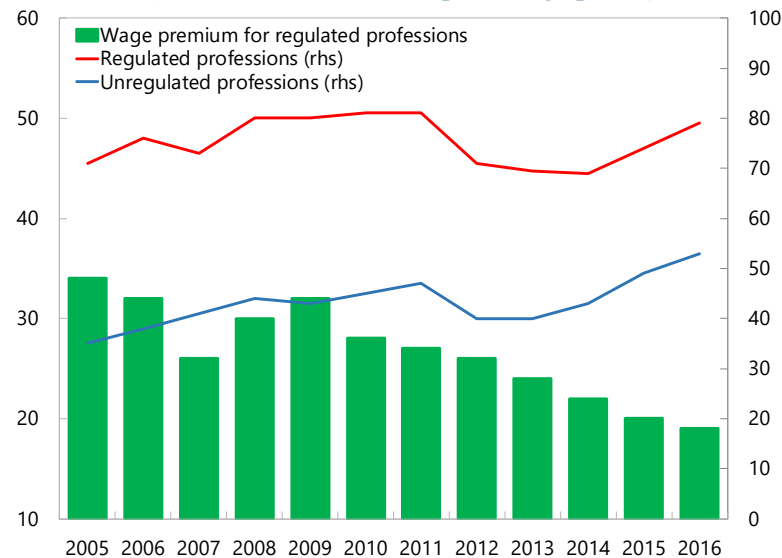
service professionals is now subject to a fairness assessment by the courts, which factors in parameters established at the ministerial level in setting compensation.<sup>18</sup>

- *Abolishing quantitative restrictions for regulated professions.* The ACL increased the number of notaries from 1 for every 7,000 inhabitant to 1 for every 5,000 inhabitant and enlarged the geographical scope of their activities with the possibility of opening a second office within the same region. However, subsequent amendments made it possible for local orders to limit competition among providers. Other professions remain subject to binding quotas such as pharmacists.
- *Repealing the requirement for a manager or owner to be a professional.* Several past efforts to increase entry of non-professionals into regulated professions have failed. The latest attempt was in the distribution of pharmaceutical products. The ACL allowed limited liability companies to own pharmacies, including non-pharmacists, and the removal of the limit to own more than four pharmacies. However, the implementation of these provisions has been hampered by issues of interpretation in light of the existing legal framework with diverging views between the Ministry of Health and other bodies, including the Federation of Pharmacists. Law firms have been only partially liberalized with non-professionals allowed to own only up to  $\frac{1}{3}$  of shares.
- *Reform professional orders to limit conflict of interest.* Lusinyan and Muir (2013) note that the governance of professional orders has often led to conflict of interests as some members are both competitors and responsible for the oversight of the orders' activities and disciplinary matters. Pagliero (2016) finds evidence that this is even more severe in cases where the regulation is written by the professional body itself, with the primary goal of maximizing its own surplus. Mocetti et al. (2019) find that regulated occupations are characterized by a wage premium of about 9 percent, which rises to 18 percent for those regulated by a professional order. Requiring the separation of the administrative, education and disciplinary functions, while removing restrictions on advertising, should support entry and remove restrictions that protect incumbents.

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<sup>18</sup> The fair compensation legislation was introduced via the Decree Law 148/2017.

**Figure 16. Earnings Trends for Self-Employed Professionals<sup>1</sup>**  
(Thousands of euros and percentage points)



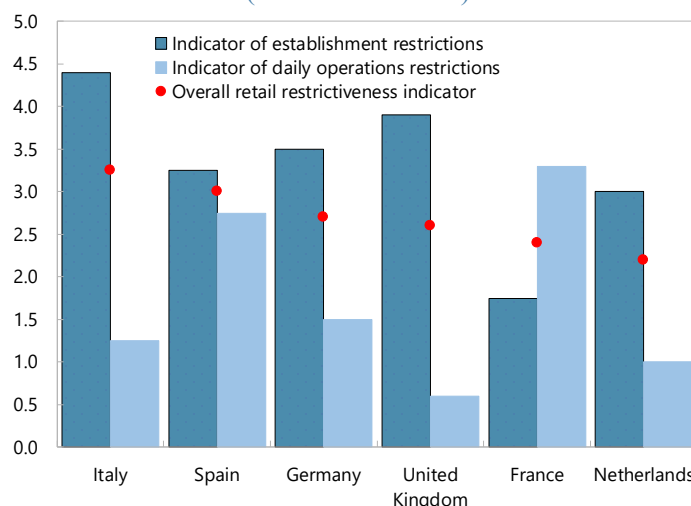
Sources: Reproduced from BoI (2019).

<sup>1</sup> Annual earnings of self-employed professionals as reported in sector studies. Earnings of regulated professionals are compared with professionals who perform non-manual and non-routine jobs in unregulated professions. The wage premium of regulated professions is estimated using a linear regression of the annual earnings of self-employed professionals using a regulation indicator. See Mocetti et al. (2019).

## B. Retail Sector

- *Relax the strict conditions on opening new retail outlets.* According to a retail restrictiveness indicator constructed by the EC (see European Commission, 2018a), Italy is among the most restrictive EU countries and performs worse than peers. Restrictions apply primarily to the authorization process for opening a new outlet, which features strict conditions. In addition, Italy scores among the highest in the EU on the number of permits required for the procedure. Requirements include various impact assessments and specific requirements linked to the location (European Commission, 2019).
- *Remove restrictions on sales promotions and allow distribution of some products in retail stores.* Opening hours of shops were fully liberalized in 2011 through Decree Law 201/2011. However, severe restrictions remain on sales promotions, discounts, and below-cost sales. Moreover, the distribution of some products, including non-prescription drugs, is not allowed. The recently proposed law on re-regulating stores' opening hours could have a sizeable impact on employment (see Rizzica et al., 2019).

**Figure 17. Restrictiveness in the Retail Sector, 2018**  
(Index from 0 to 5)



Sources: European Commission, 2018a.

### C. Transportation and Energy

In this area, some measures were introduced in 2017 to encourage the use of tenders to award local public transport service contracts (Decree Law 50/2017) and assign the Italian Regulatory Authority for Energy, Networks and the Environment the task of regulating and supervising the waste sector (Law 205/2017). However, the network industries and energy sectors continue to experience higher operating costs and lesser competition than their EU peers (European Commission, 2019). Measures to enhance entry and exit include:

- *Opening up local transport services to competition.* The ACL envisaged a new regulatory framework to foster competition in the non-public transportation services, including private-hire vehicle services and those offered through new technological platforms to connect passengers with drivers such as Uber and MyTaxi (see AGCM, 2018). However, the implementing measure was not adopted within the timeframe of the delegation granted to the Ministry of Economic Development and the Ministry of Infrastructure and Transport.
- *Reducing the extent of vertical integration in railways.* The state-owned monopolist Ferrovie dello Stato owns most of the railway infrastructure and the major transport operators. It also benefits from directly awarded contracts, perpetuating barriers for newcomers. Moreover, intercity (long distance) service is still run exclusively by Trenitalia. As regards motorways, beyond the chronic issue of concessions being directly awarded to the incumbent, and the long length of concessions, there is still no competition in the market for electronic toll systems (European Commission, 2018b). With a push for further liberalization of the sector, following the full opening of the high speed train services, regions should be encouraged to take steps to open tenders for both train and road services.



- *Continuing on the path of liberalizing postal services.* The monopoly of Poste Italiane on the delivery of legal notifications and traffic fines was abolished by the ACL. However, the 2018 Budget Law conditioned the licensing of future providers to various storage characteristics that may hinder the entry of new operators into this market. Moreover, it introduced an extension of the perimeter of the universal provision of postal services, reserving postal items up to 5kg to Poste Italiane.
- *Phasing out regulated tariffs of retail gas and electricity markets.* The transition to the free market in the energy sector, envisaged in the ACL and Law 124/2017, has been postponed to 2022 by Law Decree 162/2019. Despite the large reliance on gas in electricity generation, electricity prices in Italy remain high, reflecting in part deficient transmission infrastructure and the lack of competition in the final sale of electricity (Lusinyan and Muir, 2013, European Commission, 2019).<sup>19</sup>
- *Eliminating asymmetric obligations for new entrants in fuel distribution.* There are currently exclusive contracts between fuel distributors and suppliers which hinder entry. The owner of the outlets (typically oil companies) and the fuel distributor (the dealer) have a very cumbersome contractual relationship, which provides protection to the dealers, for instance using fixed margins.

#### **D. Economy-Wide Policies**

Broader policies to improve market dynamism and eliminate distortions would further increase efficiency. Measures include:

- *Eliminating barriers to exit.* The adoption of pro-competition measures can create winners and losers. Facilitating adjustment puts the onus on a well-functioning social safety net, a modern and efficient insolvency regime, and active labor market policies to foster labor mobility and workers' retraining. Correspondingly, weaknesses in such policies and institutions would increase the reluctance of individuals and companies to exit markets, even temporarily (Pezzoli, 2019), making exit privately and socially costly and leading to the adoption of suboptimal policies that protect incumbents or insiders and hamper an efficient reallocation of resources.

For instance, the Cassa Integrazione Guadagni (CIG) is a wage supplementation fund which provides cash payments to employed workers following reduced working hours or redundancies.<sup>20</sup> Entitled workers receive 80 percent of their average gross

<sup>19</sup> The Italian retail power market is composed of two distinct segments: (i) households and small enterprises purchase electricity under a standard offer in the "Maggio Tutela" market; and (ii) customers with turnover greater than €10 million purchase electricity at prices directly negotiated with retailers. The standard offer price is set at the beginning of each regulatory quarter by the regulator; and while officially it is not considered as a regulated price, it represents a reference value that discourages competition among retailers.

<sup>20</sup> The Jobs Act of 2015 cancelled the use of CIG for firms that have ended or are about to end production, allowing it to be used only in cases of reorganization or financial and economic difficulties. The 2016 inter-ministerial Decree No. 950575 delayed the activation of this provision until 2018, conditional on the existence of good prospects for a rapid sale of the company. On September 13, 2018, the Council of Ministers decided to extend further this provision until 2020 under the so-called "Emergency Decree".

earnings of the previous 3 months, reduced by 20 percent after the first year. Support can last up to 24 months over a period of 5 years. Italy should adopt measures to improve social safety nets and labor market flexibility which would address more directly concerns over potential job losses and reallocation of labor. These measures, together with aligning wages with productivity at the firm level, would help alleviate any negative impact on employment while supporting demand and reallocation of labor toward more productive sectors and activities.

In addition, policies which disincentivize firm growth, either by impeding the expansion of high-productivity incumbents or by favoring smaller firms (e.g. through subsidies or tax evasion), distort the efficient exit of low-productivity firms and should be avoided. Pursuing the modernization of the insolvency regime after the adoption of the new insolvency code in February 2019 would also support an efficient turnover of firms.<sup>21</sup> However, complementary efforts are needed to ensure the effectiveness of the reform, such as improving court functioning, ensuring qualified insolvency administrators, and reforming civil procedures to simplify processes, facilitate collateral sales and incentivize courts to reduce backlogs. Consistent implementation across the country would require development of uniform practices and attention to resource allocation. Insolvency reform should be complemented by financial policies that continue strengthening bank balance sheets to improve credit allocation and facilitate the efficient exit of firms (Schivardi et al., 2017).

- *Strengthening the institutional framework.* Measures include enhancing the Competition Authority's powers to enforce pro-competitive regulations; investing in evidence-based regulatory policies; and facing up the challenges of multi-level governance by introducing benchmarking practices among regions and stimulating the diffusion of norms and best practices (see OECD, 2009).<sup>22</sup>
- *Securing political adhesion to reforms.* It is important to build political momentum and consensus for reforms by fostering consultation by ministries and regulatory agencies with stakeholders, publishing the results of consultations, revealing the parties consulted, and using impact analyses and other benchmarking tools to better communicate the need for and benefits of reforms (see OECD, 2009).

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<sup>21</sup> The reform will enter into force in August 2020. The authorities are working on pending secondary legislation, among others, on early warning mechanisms and liquidation procedures. However, the special insolvency regime for large enterprises is excluded from the reform. This special regime is inefficient and costly (See Belhocine et al., 2018). It is advisable to fold it into the modernized framework, with specific well-defined circumstances for potential state intervention if necessary, in line with international best practice.

<sup>22</sup> This could also go toward limiting the impact on competition of the shared competencies among different levels of government. For instance, regional jurisdiction over certain regulations, such as opening of new retail outlets, hampers the application of a unified legislation across the country and provides leeway for restrictions and barriers to entry. The sharing of competencies between regions and the center is enshrined in the Italian Constitution.

## APPENDIX I. MODEL

### A. Set Up

#### Consumers

A representative consumer maximizes utility under a symmetric trans-log demand function, as in Feenstra (2003). The trans-log specification does not have a closed-form utility representation but does yield to a simple demand function (see equation (2)). The consumer chooses the quantity  $q_i$  of each variety  $i \in [0, M]$ , where  $M$  is the mass of varieties produced, taking variety prices  $p_i$  and income  $E$  as given. The consumer derives income from supplying labor competitively and owning firms. Consumer maximization yields an inverse demand function for each variety  $p_i(q_i)$ .

#### Firms

Each variety is produced by one monopolistically competitive firm. Firms are endowed with heterogenous productivity  $a_i$ , distributed across firms with cumulative density function (cdf)  $F(a)$ . The production of a firm  $q_i$  is a function of firm-specific technology and labor:

$$q_i = a_i l_i.$$

Production requires a fixed cost  $K$ . The government pays a lump-sum transfer  $t \geq 0$  to each active firm, financed with lump-sum taxes on consumers.

Firms choose their labor input to maximize profits:

$$\pi_i = \max_{l_i} \{ p_i(q_i)q_i - Wl_i + t - K, 0 \}, \quad (1)$$

where  $\pi_i = 0$  if the firm decides not to produce ( $l_i = 0$ ).

#### Labor Market

Aggregate labor supply is an increasing function of real wages:

$$L^S = \left( \frac{W}{P} \right)^\nu,$$

where  $P$  is the aggregate price level. Nominal wages are taken as the numeraire, i.e.  $W = 1$ .

#### Goods Market

Consumer expenditure  $E$  is equal to total income:

$$E = WL^S + \int_0^M \pi_i di - Mt.$$

Aggregate real output is equal to total expenditure divided by the aggregate price index:  $\frac{E}{P}$ .

### Entry and Exit Barriers

Exit barriers are introduced by setting the government transfer to a positive value:  $t > 0$ .<sup>23</sup> This prevents a segment of firms with negative net profits from exiting (i.e. employing zero labor).

A reduction of entry barriers is modeled as an exogenous increase in the mass of firms. Entrant productivity is drawn from the incumbents' c.d.f., censored above at productivity  $\bar{a}$ .

## B. Equilibrium

### Definition

An equilibrium is defined by aggregate quantities  $\{M, L^S, E\}$ , firm-level quantities  $\{q_i, l_i\}$ , the aggregate price level  $P$ , and firm-level prices  $\{p_i\}$  for each firm  $i$  such that consumers maximize utility, firms maximize profits (equation (1)), and the labor and goods markets clear, i.e.:

$$L^S = \int_0^M l_i \, di,$$

$$E = \int_0^M p_i q_i \, di.$$

### Solution

As shown in Feenstra (2003), under a symmetric trans-log demand function, consumer optimization implies that the demand for firm  $i$  is given by

$$q_i = \left( \frac{1}{M} - \gamma(\ln p_i - \overline{\ln p}) \right) \frac{E}{p_i}, \quad (2)$$

where  $\gamma$  is a parameter governing the level and dispersion of markups across firms. The average price level is given by:

$$\overline{\ln p} = \frac{1}{M} \int_0^M \ln p_i \, di.$$

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<sup>23</sup> Since transfers are lump-sum, it is immaterial whether firms above the exit threshold receive the transfer or not.

The aggregate price index is defined as:

$$\ln P = \frac{1}{2\gamma M} + \overline{\ln p} - \frac{1}{2}\gamma MV(\ln p_i), \quad (3)$$

where  $V(\cdot)$  is the variance operator. The first term reflects love of variety, as prices decrease for a larger number of firms/varieties.

Firm profit maximization implies that:

$$p_i = \left(1 + \frac{s_i}{\gamma}\right) \frac{1}{a_i},$$

where  $s_i$  is the expenditure share of firm  $i$ , given by

$$s_i = \max\left\{0, \frac{1}{M} - \gamma(\ln p_i - \overline{\ln p})\right\}.$$

Notice that the price  $p_i$  is equal to the markup  $\tau_i = 1 + \frac{s_i}{\gamma}$  multiplied by the marginal unit cost  $\frac{1}{a_i}$ .

The explicit solution of the model is obtained numerically after discretizing the productivity distribution across firms.

### C. Calibration

Table A1 displays the parameter values chosen for the illustrative examples in Section 2. The firm productivity distribution  $F(a)$  is specified as a log-normal  $LN(\mu_a, \sigma_a)$ , which is the functional form that fits the data best, bounded between €1,000 and €200,000 to avoid extreme values. The mean  $\mu_a$  and standard deviation  $\sigma_a$  are estimated from the 2016 Italian labor productivity distribution with the aforementioned bounds, normalized by an approximate average wage of €20,000. This normalization is necessary since nominal wages are normalized to one in the model.

The parameter determining the markup distribution  $\gamma$  cannot be identified separately from  $M$ , so  $\gamma$  is set to 1 and  $M$  is set to the maximum such that all firms have a strictly positive market share ( $s_i > 0$ ). The labor supply elasticity is set to  $\nu = 0.5$ , in the lower range of the literature's estimates, to reflect the relatively higher labor rigidity in Italy (see Peterman, 2016). Lower values of  $\nu$  would imply stronger effects of removing entry and exit barriers.

Comparative statics for exit barriers are calculated for a range of transfers such that the lower bound of the productivity distribution is increased by 0 to 4 percent of the productivity range. Note the transfer  $t$  corresponding to each of these points does not need to be explicitly calculated, as it is a lump-sum reallocation between consumers and firms. The entry cost  $K$  is

chosen such that the lowest-productivity firm at the maximum truncation level (4 percent) has zero profits. Results are shown for the baseline calibration and for an economy where the relative density of firms below  $\bar{a}$  is increased by 20 percent, to reflect the case with a high density of low-productivity firms.

Comparative statics for entry barriers are calculated for the relative mass of entrants over incumbents ranging from 0 to 0.2. As with exit barriers, the explicit entry barrier does not need to be calculated. The maximum productivity threshold from which entrants are drawn  $\bar{a}$  is calibrated such that the average productivity of entrants (firms of less than 5 years of age) relative to incumbents is 68 percent, as in the Italian data. Results are shown for the baseline calibration and for an economy where the initial mass of firms  $M$  is 20 percent lower, to reflect the case with high initial markups. The calibration ensures that no incumbent is pushed to exit by new entrants.

Table A1. Parameter Values		
Variable	Symbol	Value
Markup level parameter	$\gamma$	1
Labor supply elasticity	$\nu$	0.5
Productivity log-normal mean	$\mu_a$	0.61
Productivity log-normal std. deviation	$\sigma_a$	0.78
Max productivity threshold entrants	$\bar{a}$	1.38
Fixed cost	$K$	0.37
Mass of firms	$M$	0.6

## APPENDIX II. FIRM-LEVEL ANALYSIS

### A. Sample

The estimation sample in Orbis is constructed excluding the following firm-year observations:

- non-market sectors: agriculture, mining, financials, real estate, public administration and extraterritorial bodies;
- duplicate consolidated accounts (C2 category in Orbis);
- non-positive firm age;
- one or less employees;
- value added below €100.

When calculating average markups by sector, the additional exclusion conditions are applied:

- non-positive fixed assets;
- growth below -100 percent or above 100 percent in operating turnover, fixed assets, or variable costs;
- variable costs over value added below 1 percent or above 100 percent.

Small modifications of the above thresholds do not change the results substantially.

### B. Robustness Results

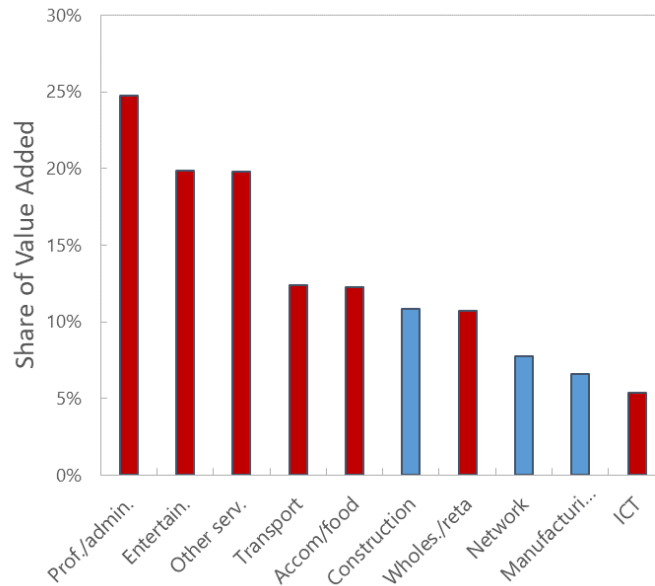
#### Productivity distribution

Figure A1. shows that looking at the fraction of output produced by firms below 75 percent of their sectoral productivity mean, instead of 50 percent as in Figure 11, yields a very similar ranking of sectors.

#### Markups

Figure A2 shows that estimated markups for firms with 10 or more employees are slightly lower on average than for the whole sample (Figure 12), but the ranking across sectors is largely maintained.

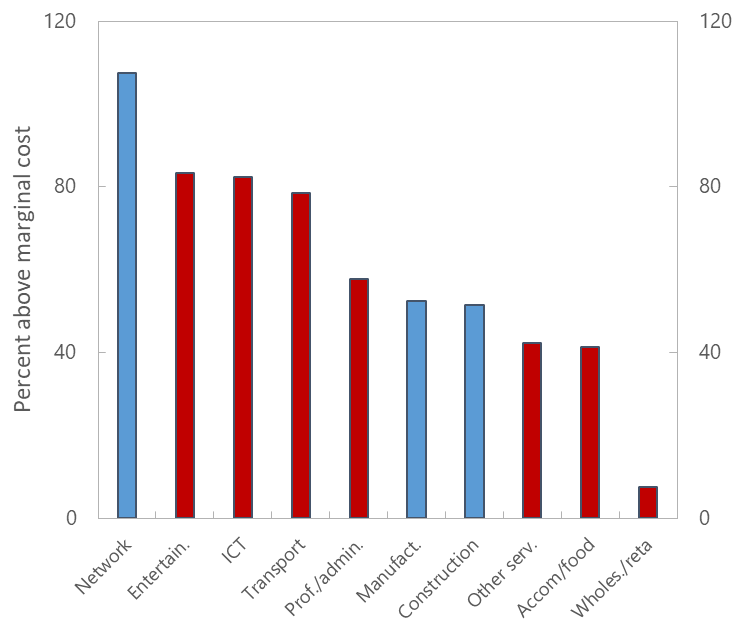
**Figure A1. Mass of Firms with Labor Productivity Below 3/4 of Their Sectoral Mean, 2011–2016**



Source: Orbis.

Note: Red bars indicate service sectors. Labor productivity is defined as value-added per worker. Firms with labor productivity below €100 or above €200,000 are dropped. The values displayed are averages of the ratios in each year between 2011 and 2016.

**Figure A2. Average Markup by Sector Excluding Small Firms, 2005–2016**



Source: Orbis (firm-level data), IStat and Eurostat (deflators).

Note: Firms with less than 10 employees are excluded. Markups are estimated as in De Loecker and Warzynski (2012), using a Cobb-Douglas production function estimated as in Akerberg et al. (2015). Red bars indicate service sectors.



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