

# Entry regulations and labour market outcomes: Evidence from the Italian retail trade sector

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## **Abstract**

The paper analyzes the relationship between barriers to entry and employment in the Italian retail trade sector. In Italy the opening of large outlets is regulated at the regional level. By using differences-in-differences estimators I study the effects of the rules implemented in Abruzzo and Marche, two otherwise close and similar Italian regions, that adopted very different policies: the first set tight restrictions on the opening of large stores; the second did not impose substantial entry barriers. The results show that entry barriers have a negative and sizeable impact on employment growth. Some evidence is also found that fiercer competition encourages the development of more efficient small retail trade shops. These findings are robust to a number of checks.

JEL classification: J21, J23, K23.

Keywords: entry barriers, employment growth, differences-in-differences estimator.

# 1 Introduction<sup>1</sup>

It is widely recognized that not only labour market regulation but also product market regulation affects economic growth. Product market regulation, and especially entry regulation, may affect start-up costs, reduce competition and increase rents for incumbent firms, with negative consequences both for consumers and job creation. However, policy makers often justify the existence of entry barriers by the need to support the level of employment in a given sector or area.

Recent theoretical studies (e.g. Blanchard and Giavazzi 2001) suggest that, at the aggregate level, increasing competition may have positive effects on long-term employment growth. Instead, at the sectoral level, the effects of increasing competition are ambiguous (Blanchard 2005). Since deregulation increases productivity, it may lead to lower employment for a given level of output. However, lower barriers and higher productivity lead to lower prices, higher demand and higher employment. Since the relationship between entry barriers and employment growth is controversial, whether lower entry barriers have a positive or a negative impact on sectoral employment is ultimately an empirical question.

Bertrand and Kramarz (2002) evaluate the effects of a stringent retail trade entry regulation introduced in France in 1973 — the so-called *Loi Royer* — explicitly aimed at protecting small retail shopkeepers from the increasing competition of large establishments. They estimate that this policy had a sizeable negative impact on employment growth in the French retail trade sector.

In this paper I analyze the employment effects of a retail trade sector reform introduced in Italy in 1998, the Bersani law, named after the Minister promoting it. This law was explicitly designed to increase competition in the Italian retail trade sector. Before the law, opening a retail trade establishment required a permit issued by the local council where the establishment was located. Since the introduction of the law, the permit is no longer required for new small establishments but it has been retained for stores larger than 1,500 square meters. Large store promoters have to apply to regional boards, which in turn process applications according to a commercial zoning plan issued by the regional authorities. The Bersani law does not set guidelines for regional zoning plans, giving local authorities broad scope to regulate entry. As a consequence of this decentralization, the Italian retail trade sector is currently regulated by a wide variety of regional laws that differ according to how far they limit the expansion of the number of large stores.

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The paper focuses on the effects of entry regulation on retail trade employment using regional variation in zoning plans to identify them. The analysis has two main purposes. First, I consider the effect of reducing entry barriers on total retail trade employment; second, I focus on how openings of large stores affect employment in small shops. This is an important issue from a policy viewpoint, because political resistance to the entry of large stores typically stems from the opposition of owners of small shops. This is particularly true in Italy, where the retail trade sector has a very low level of concentration.<sup>2</sup> While large store openings would be expected to hurt owners of small shops (the “incumbents”), in practice their effects on overall small-shop employment are ambiguous. For example, large stores may create positive externalities for small shops located in the same commercial area, as they attract potential buyers and reduce buyers’ search costs. Furthermore, since large shopping centres are typically composed of a large grocery store and many small shops, their advent may be coupled with the opening of many small shops. Thus, the entry of large stores may not necessarily reduce total small-shop employment.

Another aspect of small retail distribution is worth analyzing. It is widely recognized that in recent years the retail trade sector has been subject to many structural changes, not only because of the development of large stores, but also because of the growing number of new types of small retail trade firms, such as voluntary chains of small shops, often coordinated by a single wholesaler, franchisees, purchasing groups, retail cooperatives, etc. (see Boylaud and Nicoletti 2001). These new types of retail firms may set up not only large establishments, but also chains of small retail shops, which coexist and compete both with large stores and with traditional family-owned shops (the so called “papa-and-mama” shops). The rise of new forms of small distribution has led to a change in the composition of employment in small shops. When, for instance, chains of small shops are owned by a single wholesaler, they are managed by one or more salaried workers. On the contrary, traditional family-owned shops are typically managed by the owner and by other family workers. Even if the development of large stores does not necessarily affect total small retail trade employment, it may affect traditional and “new” types of small shops in different ways.

By using differences-in-differences estimators I compare the trends of retail trade employment in very homogeneous Italian administrative provinces located in Marche and Abruzzo, two regions in central Italy, with similar geographical, demographic and structural characteristics. A fairly liberal regulation was passed in Marche, coherently with the original spirit of the Bersani law. Abruzzo, on the other hand, drastically limited the entry of new large stores, setting a stringent ceiling on

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<sup>2</sup> According to Eurostat data (2004) in 2001 there were 130 establishments per 10,000 inhabitants in Italy, compared with 71 in the EU and just 35 in Germany and the UK.

the maximum number of new openings. These two opposite policies resemble a natural experiment in the effects of entry regulation on retail trade employment.

First I select a sample, denoted as *Sample*<sub>1</sub>, composed of people living in Ascoli Piceno and Teramo, two provinces located respectively in Marche and Abruzzo. Ascoli Piceno borders on Teramo towards the North. These provinces have very similar economic and socio-demographic characteristics except for local retail trade regulation, because, as mentioned above, the Abruzzo authorities set entry barriers to large outlets whereas the regional government of Marche did not. I then study the effects of entry barriers on the ratio between employment in the retail trade sector and the total working-age population, the share of employees in large outlets, and the share of people working in small shops (salaried and self-employed). All estimates control for population characteristics and province fixed effects and take into account possible differences in trends before the inception of the Bersani law.

Since Ascoli Piceno and Teramo are boundary areas and can be partly regarded as a single market, one might argue that promoters of large stores, planning to open in Abruzzo, might prefer to choose a location far from the border with Marche — i.e. far from Teramo — where competition is expected to be greater. Thus, employment growth in Teramo could be influenced not only by higher entry barriers, but also by the location decision of large-store promoters. To control for this potential source of bias I select another sample, *Sample*<sub>2</sub>, composed of people living in Pesaro and Ancona, located in the northern part of Marche, and Pescara and Chieti, located in southern Abruzzo. The distance between the two areas is around 300 kilometers and they cannot be considered a single market.

The results of the empirical analysis can be summarized as follows. First, in Italy as in France entry barriers negatively affect total sectoral employment by reducing the share of people employed in the retail trade sector in the total population by 0.8 percentage points in both *Sample*<sub>1</sub> and *Sample*<sub>2</sub>. Second, differently from Bertrand and Kramarz (2002), I show that the growing competition of large stores does not necessarily imply a reduction in the total number of people employed in small business units, supporting the hypothesis of the existence of positive externalities.

The increase in competitive pressure is associated with changes in the ownership structure of small shops. As expected, in the areas where entry barriers are lower, the number of small shop owners decreases, but this negative trend is compensated by the rise in the number of salaried small shop workers. Hence, even if small shop owners are expected to express strong political opposition to a reduction in entry barriers for large outlets, the usual motivation to support entry barriers —

i.e. that the free entry of large stores reduces employment — is rejected by the empirical evidence.

The results are robust to different checks. First, I compare the performance of the retail trade sector in the provinces of Marche and in the provinces of another Italian region, Emilia Romagna, which has similar low entry barriers. Second, I compare labour market trends in the provinces of Abruzzo and those observed in Molise and Puglia, regions with similar stringent entry regulations. I find that when regulations are similar, retail trade employment also rises at similar rates. These results indirectly confirm that the differences observed in the labour market of Marche and Abruzzo can reasonably be imputed to differences in entry barriers (and not to differences in un-observable factors).

The paper is organized as follows. Section 2 briefly reviews the main features of the regulatory framework. Section 3 describes the empirical model and provides some evidence to support the identification strategy. Results are presented in Section 4. Section 5 concludes.

## 2 Entry regulation

The Italian retail trade sector is currently regulated by the Bersani law,<sup>3</sup> issued in March 1998 to increase competition and encourage the modernization of the Italian retail trade sector. Before the Bersani law, opening either small or large-sized outlets was conditional on the issue of a permit by the local council.<sup>4</sup> The Bersani law defines three types of establishments: (1) small establishments, not exceeding 150 sq. m. floor space (2) medium-sized, i.e. between 150 and 1,500 sq. m., and (3) large establishments (in cities of over 10,000 inhabitants the thresholds are raised respectively to 250 and 2,500 sq. m.).

The law has eliminated authorization for small establishments, which now need only to notify their opening to the local board on a “silent-consent” basis. The local council has 60 days to veto new openings, but only for specific reasons. Instead, a system of formal *ex-ante* authorization is used for medium and large stores. Medium stores have to apply to the local council as under the pre-Bersani regime. Large store openings or enlargements are regulated at the regional level. The Italian regional authorities were compelled, by April 1999, to fix the rules for openings and issue

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<sup>3</sup> Legislative Decree n. 114/1998.

<sup>4</sup> The first national regulation of the retail trade sector was the “Regio decreto legge no. 2174” of 1926. This law required all commercial openings to be authorized by the local council, which could approve or reject applications at its own discretion. To increase transparency in the approval procedure, in 1971 a new national law (Law 476/1971) established that local councils had to set explicit rules for the location of new establishments according to a town plan. These plans regulated the opening of new retail trade establishments throughout the 1970s, 1980s and much of the 1990s, i.e. until the Bersani law.

a commercial zoning plan to coordinate the development of large stores according to environmental and urban considerations.<sup>5</sup> In the meantime, the law suspended any pending authorization procedure so that no new permits could be issued in the absence of a regional zoning plan.<sup>6</sup>

It is widely believed that, contrary to its objectives, the consequences of the Bersani law have been to strengthen entry barriers to large stores (see ISAE, 2002, for evidence and a discussion). First, no regional authorities met the deadline for issuing the local regulation. As a consequence, from the inception of the Bersani law in March 1998 until the end of 1999, no new opening permit was issued in Italy. Second, 17 out of 20 Italian regions introduced substantial limits to the development of large-sized outlets by restricting the maximum number of stores and/or the maximum retail floor space that could be opened in the area. The remaining 3 regions, Piedmont, Emilia-Romagna and Marche, set general guidelines for the application procedure, allowing for a relatively free entrance of new stores. As a result, the Italian distribution sector is currently regulated by a complex and heterogeneous set of local rules. However, the regional differences in the regulation of large store opening offer an excellent opportunity to test the effects of regulation on labour market outcomes.

### 3 Model

To identify the effects of regulation on employment one can compare employment growth in regions allowing free entry and in regions with higher entry barriers. A simple way to carry out this exercise is to use a differences-in-differences (DID) model. Consider, for instance, two regions, one imposing high entry barriers to large store openings, the second liberalizing large store entries. Consider a sample of individuals living in the two regions, before and after the inception of the local retail trade regulations. Denote sample units living in the liberalizing region as “treated” and the others as “non-treated”. As a first approximation, let  $Y_{irt}$  be an indicator variable for the employment status of the  $i$ -th unit, observed at time  $t$  and living in region  $r$ .  $Y_{irt}$  is equal to 1 if the  $i$ -th individual is employed in the retail trade sector and equal to zero otherwise.<sup>7</sup> Let  $\delta$  be the differential effect on employment due to free entry regulation. The policy effect  $\delta$  can be estimated by a standard DID

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<sup>5</sup> The Italian regional authorities also had to establish regional boards called “Conferenza dei servizi”, to process applications. The authorities could also decide the composition of the regional zoning boards. Nowadays most of them consist of local politicians, as well as consumers’ and small shopkeepers’ representatives.

<sup>6</sup> During this period, only large stores authorized before March 1998 could open.

<sup>7</sup> Bertrand and Kramarz (2002) study the effect of local regulation on the log of retail trade employment and on the share of retail trade employment in total employment in French departments. Here, since I prefer to control for possible unobserved heterogeneity, I limit the analysis to just very few provinces and I study the effects of regulation on the probability that a person is employed in the retail trade sector.

linear probability model (see Angrist and Krueger 1999):

$$Y_{irt} = \beta_t + \gamma_r + X_{irt}^T \beta_0 + \delta M_{irt} + \epsilon_{irt}, \quad (1)$$

where  $\beta_0$  is a vector of coefficients that includes a constant,  $X_{irt}$  are time-invariant individual characteristics,  $\beta_t$  is a vector of year and seasonal dummies, and  $\gamma_r$  is the region- $r$  fixed effect.  $M_{irt}$  is an interaction term equal to the product of the post-treatment year dummies and the dummy indicating the region where the  $i$ -th individual lives.  $M_{irt}$  is then equal to 1 if the person lives in a region with no barriers and data refer to the post-treatment period and equal to 0 otherwise.<sup>8</sup>

In this paper I focus on the retail trade sector performance in Marche and Abruzzo, two administrative regions located on the eastern coast of the country (see Figure 1). Marche borders in the South with Abruzzo. After 1998, Marche and Abruzzo adopted very different retail trade regulations.<sup>9</sup> In Abruzzo, the Bersani law was implemented in August 1999 (Regional Regulation no. 62). The Abruzzo authorities explicitly decided to protect the existing distribution network, based on small shops, from the growing competition of large outlets to preserve employment and the proximity services that small shops provide.

The authorities divided the region into local markets, roughly coinciding with the administrative provinces, and established that only one new large store permit could be given in each local market. As a consequence, the opening of a new large-scale outlet in one province prevents other openings in the same area. Additional large store openings are possible only if they are promoted by at least 12 small retailers, who merge their licences and apply to open a shopping centre. Thus, the regulation is clearly designed to prevent new entries.

The Marche authorities instead took a rather different route. The local government regulation, adopted in October 1999, was explicitly designed to increase competition in the distribution sector (see Regional Regulation no. 26). The commercial zoning plan did not impose limits on openings or enlargement of large stores. As originally suggested by the national regulation, new openings of large stores could be prevented only if they conflicted with urban plans for the old town centre or were to be located in congested and polluted areas. The liberalizing experience of Marche lasted just three years, however, as the local government, concerned about the unexpected and

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<sup>8</sup> I assume that individuals choose their place of residence independently from the treatment, i.e. independently from local retail trade regulation.

<sup>9</sup> Bertrand and Kramark (2002) argue that local regulation can be influenced by the political composition of the regional authorities. In particular, they argue that right-wing parties typically tend to protect small shop owners, especially self-employed. Left-wing parties protect instead salaried workers. Differences in the political composition of the regional authorities — left-wing in Marche, right-wing in Abruzzo — might explain the differences in local retail trade regulations.

rapid increase in large store applications, announced at the end of 2002 its intention to fully revise the local regulation. Meanwhile, all new large store approval procedures were suspended. At the present time the new regional regulation is still under examination.

The different approaches followed by the two regions had direct effects on the number of authorized and rejected openings and the corresponding floor space (Table 1).<sup>10</sup> During the period, 13 new large-scale outlets were authorized in Marche and 8 in Abruzzo (4 new licences and 4 mergers of existing licences). The total floor space opened in Marche was around 193,500 sq. m., almost twice the amount in Abruzzo. During the same period, in Marche 36 per cent of all applications (in sq. m.) were rejected, against 46 per cent in Abruzzo, confirming that barriers to entry were higher in the latter region. However, the rejection rate observed in Abruzzo is just a lower bound of the “true” rejection rate. As mentioned before, in Abruzzo just one new permit for each province was allowed, and the first large store obtaining the permit impeded the entrance of other potential competitors. Plausibly, potential competitors did not apply for new openings after the entry of the first new store, since their applications were bound to be rejected.

It is plausible to assume, as do Bertrand and Kramarz (2002), that large store entries start to affect employment from the time of their opening and not from the time they receive authorization. According to conversations with regional representatives on the boards of Marche and Abruzzo, openings occur on average 6-8 months after authorization if the commercial building already exists, otherwise it takes an average of 1 year and at most 2 years. Since in Marche and Abruzzo the first authorizations were issued in the first semester of 2000, it is reasonable to assume that the new openings occurred in 2001.

Moreover, since the Marche authorities halted all new authorizations from the end of 2002, we can expect that the effect of free entry in Marche lasted until the early months of 2003.

In this paper I rely on the quarterly Italian Labour Force Survey (LFS) — *Rilevazione Trimestrale delle Forze di Lavoro* — conducted by the Italian Institute for Statistics (Istat).<sup>11</sup> This is the main source of information about the Italian labour market, both at the national and the local level. Sample size averages 200,000 each quarter. Individuals are required to report their working status, sector of employment, whether salaried, self-employed or unpaid family workers, and the

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<sup>10</sup> Data have been kindly made available by the regional authorities of Marche and Abruzzo.

<sup>11</sup> From October 1992 to October 2003 this survey was conducted on a quarterly basis, in January, April, July and October. Since January 2004 it has become a monthly survey. Changes in sample design and in the survey questionnaire do not allow for data comparability over time. Hence, it is not possible to study the effects on employment after 2003. For instance it is not possible to test the effects of the stop imposed on new opening by the Marche authorities from the end of 2002.

total number of employees working in the same local unit as the interviewee.<sup>12</sup>

The data set used for the empirical analysis is composed of stacked LFS micro data on individuals aged between 15 and 64, living in Marche and Abruzzo from January 1996 to April 2003, i.e. before and after the inception of the Bersani law. I define people living in Marche from 2001 to 2003 as treated. People living in Abruzzo are the non-treated.

The possibility of identifying the effect of entry regulations on employment by using a model such as (1) is based on the strong assumption that employment in the treated and non-treated regions grew at the same rate in the pre-treatment period (i.e. before the local retail trade regulations) and that the differences observed after the treatment are caused by that treatment. If the two areas are affected by different trends in a period immediately preceding the treatment, one could find statistically significant, but spurious, “treatment” effects even when no treatment occurs (for a discussion see Angrist and Krueger 1999). In other words, one must be able to exclude that factors other than retail trade regulations have affected the development of the local retail trade sectors during the period considered.<sup>13</sup>

In general, all these objections are valid and the detection of the policy effect by the use of DID estimators can only be supported by empirical evidence.

First, if treated and non-treated regions are characterized by similar socio-demographic composition and economic structure (at least before the inception of the local regulation), there is likely to be a greater probability that differences in observed trends after the treatment will be due to the treatment. The two regions selected in this paper have relatively homogeneous population and resource endowments, as shown in Table 2, which reports some geographical and demographic characteristics (population, surface, population density, etc.), and some economic indicators, such as the number of business units per 1,000 inhabitants (distinct by sector: industry, building and

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<sup>12</sup> The basic sample units are *de facto* households. The sampling procedure is a two-stage one: the first stage consists of the selection of municipalities. Municipalities are divided into strata. All municipalities of the same administrative province are divided into two classes according to population size of the municipality: above and below 20,000. All municipalities in the first group are sampled, while two municipalities in the second group are selected at random. The final LFS sample consists of more than 1,300 municipalities and 70,000 households on average, equal to roughly 200,000 individuals. Most of the empirical analysis presented in this paper is based on richer LFS files, kindly provided by Istat, since the standard public-use files do not report information on either the province of residence, or the size of the units where people work. Size is collected as a categorical variable. Categories are: (1) single worker unit, (2) 2-5 workers, (3) 6-9 workers, (4) 10-15 workers, (5) 16-19 workers, (6) 20-50 workers, (7) 50-199 workers, (8) 200-500 workers, and (9) 500+ workers.

<sup>13</sup> For instance, one might argue that differences in local regulations are not exogenous to the development and structure of the retail trade sector before the reform. For instance, promoters planning to open large stores in Marche might have influenced the authorities to lower entry barriers. In this case the performance of the retail trade sector in Marche would not be the consequence of the regional regulation, but of the economic factors driving the choices of large store promoters.

construction, retail trade, other services) and the number of retail trade establishments, by size of establishment (1–5 employees, 6–15 employees and 16+ employees). Data are from the 1996 Census, i.e. two years before the Bersani law. The two regions have a similar share of establishments in total population, except for the industrial sector, which is relatively more developed in Marche. More importantly, in the retail trade sector the share of local units per 1,000 inhabitants is roughly similar: 2.9 in Marche and 2.7 in Abruzzo. Before the Bersani law, Marche and Abruzzo also had a similar retail trade structure, since there were roughly 27 small establishments per 1,000 inhabitants in Marche and 25 in Abruzzo.

No other possible pairs or groups of Italian regions are similarly homogeneous in all economic and geographical indicators. For instance, I could compare the effects of regulation on employment in Piedmont and Lombardy and/or in Emilia-Romagna. However, a comparison between these regions might be influenced by the differences in the local retail sector, which was much more concentrated in Lombardy than in other Italian regions.<sup>14</sup>

Thanks to the very large sample size of the Italian LFS (more than 6,500 working-age individuals living in Marche and Abruzzo participate each quarter in the survey), I can further strengthen the identification assumptions. First, I select a sub-sample (denoted by *Sample*<sub>1</sub>) composed of people living in two very close provinces of Marche and Abruzzo: Ascoli Piceno (Marche) and Teramo (Abruzzo). Ascoli Piceno is located in the southern part of Marche and borders directly on Teramo (see Figure 2). Since I am considering a very narrow geographical area at the boundary between the two regions selected, the behaviour of people living in this part of Italy are likely to be influenced by similar economic factors.

*Sample*<sub>1</sub> ensures a very high degree of homogeneity in the pre-treatment period, but it also has some drawbacks. One can argue that large store promoters planning to open somewhere in Abruzzo might prefer to locate far from the border with Marche (where competition is presumably higher), and far from Teramo as well, since Teramo is the only province of Abruzzo bordering directly on Marche (see Figure 2). The labour market outcomes observed in Teramo could then be influenced not only by the more stringent regulation adopted in Abruzzo, but also by the choice of large store promoters in Abruzzo to locate far from the border with Marche. To control for the potential endogeneity of large store location (a similar problem is discussed by Neumark *et al.* 2005), I select another sample of individuals, labelled *Sample*<sub>2</sub> and composed of people living in the two provinces Pesaro and Ancona (Marche) and in the two provinces of Pescara and Chieti (Abruzzo). Pesaro

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<sup>14</sup> According to the 1996 Census data on Lombardy, the average size of retail trade establishments was roughly twice that recorded in Piedmont and Emilia Romagna.

and Ancona are in the northern part of Marche. Pescara and Chieti are in the southern part of Abruzzo (see Figure 3).<sup>15</sup> Even if in principle the units of *Sample*<sub>2</sub> might be affected by unobserved heterogeneity, the distance between the treated and the non-treated provinces is now roughly 300 kilometers and they cannot be considered a single market. Thus, in *Sample*<sub>2</sub> the effects of the endogeneity of location (if any) are expected to be negligible.

Second, to provide evidence that retail trade employment in Marche and Abruzzo followed a similar trend in the pre-treatment period, Figures 4 and 5 report the share of total retail trade employment in total working-age population for treated and non-treated individuals, respectively for *Sample*<sub>1</sub> and *Sample*<sub>2</sub>, from January 1996 to April 2003.

Consider first *Sample*<sub>1</sub>. At the beginning of the period in both treated and non-treated areas the share of people occupied in the retail trade sector was very similar. The patterns instead diverge significantly after 2001. At the end of the period total retail employment was around 0.11 per cent of total population in the treated areas and 0.09 per cent in the non-treated areas. Consider now *Sample*<sub>2</sub>. Between 1996 and the first half of 2003 the share of retail trade employment was systematically higher in treated areas than in non-treated, but the pattern of the employment rate was roughly similar. After 2001, employment in the retail trade sector increased faster in the treated areas, but the differences are much smaller than in *Sample*<sub>1</sub>. Thus, in *Sample*<sub>2</sub> the policy effect  $\delta$  might be close to zero. Nevertheless, like Figure 4, Figure 5 shows that before the Bersani law the growth pattern of the employment rate in the retail trade sector was similar in both treated and non-treated provinces.<sup>16</sup>

Tables 3 and 4 report the composition of *Sample*<sub>1</sub> and *Sample*<sub>2</sub>, before and after the treatment. Note that the high degree of homogeneity between treated and non-treated areas is also confirmed by the LFS data. In both areas, before the treatment, large store employees accounted for roughly 1 per cent of total working-age population; people working in small shops represent around 6 per cent of the population. Shop owners amount to 4 per cent; the majority of them, roughly 70 per cent, being men. Incidentally, Tables 3 and 4 also report the employment rate broken down by sector of employment before and after the treatment (industry, building and construction, retail trade, other services). The Tables show that, with the exception of the retail trade sector, employment

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<sup>15</sup> Note that Pesaro and Ancona do not border directly on Ascoli Piceno, but they are separated by another province, Macerata. Macerata, however, is excluded from *Sample*<sub>2</sub> because in this area, as in Teramo, applications may be influenced by the development of large outlets in Ascoli Piceno. Similarly, Pescara and Chieti do not border on Ascoli Piceno either.

<sup>16</sup> Note that in *Sample*<sub>1</sub> before 2001 not only the trends but also the levels of the employment rate were very similar.

in other sectors follows a very similar pattern in both treated and non-treated areas. The rise of employment in the retail trade sector in treated areas does not seem to be influenced by the negative employment performance of other sectors. This evidence may be viewed as indirect confirmation that, with the exception of the retail trade sector, the two areas were not subject to region-specific shocks.

Finally, I also consider a sample — labelled  $Sample_1^*$  — composed of people living in Pesaro and Ancona and people living in Ravenna, Forlì and Rimini. Ravenna, Forlì and Rimini are located in Emilia Romagna and border on Marche in the North (Figure 6). Since Emilia Romagna, like Marche, did not impose entry barriers to large outlets after the Bersani law (see Section 2),  $Sample_1^*$  is composed only of treated individuals. Similarly, consider a sample — denoted by  $Sample_2^*$  — composed of people living in Pescara and Chieti (in Abruzzo) and people living in Campobasso, Isernia and Foggia (located in Molise and Puglia). Campobasso, Isernia and Foggia are close to the border with Abruzzo (Figure 7) and have a similar restrictive regulation. Thus,  $Sample_1^*$  and  $Sample_2^*$  are homogeneous areas, not only because of geographical proximity, but also because of similar retail trade regulation.

Figures 8 and 9 (like Figures 4 and 5) report the share of total retail trade employment in total working-age population, respectively for  $Sample_1^*$  and  $Sample_2^*$ . Consider first  $Sample_1^*$ . Between 1997 and 1999 employment rose more sharply in Emilia Romagna than in Marche (probably because of regional specific shocks). However, from 2001 onwards, in the two regions the share of total retail trade employment in total population increased at very similar rates. The growth patterns of retail trade employment in  $Sample_2^*$  (Pescara and Chieti versus Campobasso, Isernia and Foggia) are instead very similar during the entire period 1996–2003. Thus, no evidence is found that, after 2001, the retail trade sector in the provinces of Marche and Abruzzo was affected by shocks other than the retail trade regulations.

I then estimate the following model

$$Y_{ipt} = \beta_t + \gamma_p + X_{ipt}^T \beta_0 + \delta M_{ipt} + \alpha Z_{ipt} + \epsilon_{ipt} \quad (2)$$

where  $p$  denotes the province where the  $i$ -th person lives and the other variables are defined as in model (1). More precisely, in addition to time and province dummies, the model also controls for gender, potential experience (age minus years of schooling), educational attainment (university degree, high school certificate, vocational diploma) and marital status (single, married, other), since it can contribute to the determination of reservation wages.<sup>17</sup>  $M_{ipt}$  is equal to 1 if the

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<sup>17</sup> Other household background variables such as the number of household members are highly non-significant and

person lives in a province of Marche and data refer to the post-treatment period (2001-2003) and equal to 0 otherwise.  $Z_{ipt}$  is instead a dummy included to control for possible differences in trends before the reform.  $Z_{ipt}$  is set equal to 1 for persons living in the treated area from 1998 onwards and equal to 0 otherwise. Thus,  $Z_{ipt}$  captures differences in trends after 1998 (i.e. differences also in a pre-treatment period), while  $M_{ipt}$  captures differences in trends after 2001 and measures the additional effect due to the reform.<sup>18</sup> Thus, this model is identified under the more general assumption that the growth pattern of the employment rate may differ between treated and non-treated areas, although this difference is constant over time (and equal to  $\alpha$ ). The inclusion of  $Z_{ipt}$  is especially relevant for all estimates based on *Sample*<sub>2</sub>, since it is composed of provinces located in two separate and potentially (more) heterogeneous areas. Estimates are carried out by clustering standard errors to control for correlation of the units living in the same province (see Bertrand, Duflo and Mullainathan 2004).

Equation (2) is the benchmark for all empirical exercises presented in the next section. All exercises are carried out separately for both *Sample*<sub>1</sub>, *Sample*<sub>2</sub> (and for *Sample*<sub>1</sub><sup>\*</sup> and *Sample*<sub>2</sub><sup>\*</sup> to provide further robustness checks).

## 4 Results

In this section I provide a measure of the impact of free entry regulation on total employment in the retail trade sector (Section 4.1). Second, the total effect on employment is decomposed by size of establishment. Since LFS data do not allow the total floor space of establishments to be derived, I distinguish the establishments by looking at the number of employees. This classification is based on data from the Italian Ministry of Industry and Commerce, which reports aggregate data on the number of establishments, floor space and number of employees of large outlets (Ministero delle Attività Produttive, various years). In these data, small retail establishments have 1-5 employees, average employment in medium stores ranges from 7 to 15 and employment in large stores from 12 workers (for non-food stores) to around 200 (in food mega-stores). Thus, I define shops with 1-5 employees as small. To be conservative, only outlets with at least 16 employees are classified as large.<sup>19</sup>

Section 4.2 looks at the performance of employment in large stores, Section 4.3 at the dynamics

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the corresponding estimated coefficients are not presented in this paper

<sup>18</sup> Other possible specifications for  $Z_{ipt}$  have been adopted. The results are not reported as they do not affect the main results. They are available upon request.

<sup>19</sup>The estimation exercises presented in this section are carried out also for different thresholds (firms larger than 20 employees, firms larger than 50 employees) with no relevant effects on results. They are available upon request.

of small retail employment and small shop employment composition, after the opening of large stores.<sup>20</sup> Section 4.4 presents further robustness checks.

#### 4.1 The total effect on employment

Table 5 reports the estimated coefficients of the DID model (2). As Figure 6 also suggests, the estimated policy effect  $\delta$  is positive and equal to 0.008 in *Sample*<sub>1</sub>. It is also positive in *Sample*<sub>2</sub>, i.e. when controlling for population composition and province fixed effects.

Since the dependent variable is the share of total retail employment in total population, the estimated effect of free entry corresponds to an 0.8 percentage point increase in the total employment rate (under the assumption that employment in other sectors is not displaced by the increase in the retail trade sector, see Tables 3 and 4). The size of the estimated effect is very large indeed, as it corresponds to a growth rate of retail trade employment of around 4 per cent each year. This effect, however, is not very different from the findings of Bertrand and Kramarz (2002), who estimate the elasticity of total retail trade employment to the stock of authorized floor space. If their estimated elasticities were applied to the authorized floor space in Marche and Abruzzo (see Table 1), the corresponding annual growth rate of employment in Marche would be around 3 per cent. This very high growth rate might also depend on the halting of applications from March 1998 until the approval of the regional law in October 1999. Presumably in Marche, after a 2-year interruption (from March 1998 to the beginning of 2000), many large store promoters who could not apply before applied immediately after the introduction of the new liberalizing rules. Thus, after an initial period of rapid increase in the number of new openings (and in the number of large store employees), the annual growth rate of retail trade employment should also have slowed (if the Marche authorities had not impose a second suspension of authorizations from 2003 onwards).

#### 4.2 Large store employment

One may wonder whether and to what extent the total effect of the liberalization of large store openings is due to the employment performance of large stores.

Let  $Y_i$  now be equal to 1 if the  $i$ -th individual is a large store employee and equal to 0 otherwise. Like Table 5, Table 6 reports the estimated coefficients of the DID model for *Sample*<sub>1</sub> and *Sample*<sub>2</sub> respectively. The independent variables are defined as in Section 4.1. Standard errors are clustered

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<sup>20</sup> The effects of regulation on medium-sized stores are instead excluded from the analysis because as mentioned in Section 2, the system of authorization did not undergo major changes after the inception of the Bersani law. The liberalization of small shop openings was instead a national reform with no regional variation.

by province. As expected, the policy effect  $\delta$  is positive in both *Sample*<sub>1</sub> and *Sample*<sub>2</sub> and accounts for most of the total increase in retail trade employment (0.005 in *Sample*<sub>1</sub>, 0.008 in *Sample*<sub>2</sub>).

### 4.3 How do small shops react to increasing competition?

The results presented so far suggest that the substantial increase in the employment rate observed in the retail trade sector in Marche was driven by the openings of large stores between 2001 and early 2003. We do not know, however, whether small business units were forced to leave the market because of the increasing competition of large stores.<sup>21</sup>

Let  $Y_i$  be equal to 1 if the *i*-th individual is employed in a small retail trade unit and equal to 0 otherwise. The DID estimates for the probability of observing a small retail worker are reported in Table 7. The policy effect  $\delta$  is positive in *Sample*<sub>1</sub> (Ascoli Piceno) and equal to .003. The DID estimator is instead negative, but not statistically significant, in *Sample*<sub>2</sub> (Pesaro and Ancona). Thus, the entry of large stores does not necessarily imply a significant reduction in the number of people employed in small retail trade units.

The positive (or non-negative) effect of large store openings on small retail trade employment supports the hypothesis that large stores generate positive spillover externalities.<sup>22</sup> This positive effect, however, is found only in *Sample*<sub>1</sub> (Ascoli Piceno) and not in *Sample*<sub>2</sub> (Pesaro and Ancona). This result might be due to the endogeneity of the location of small shops. As already stated, since Ascoli Piceno and Teramo are two very close provinces, part of their territory can be viewed as a single market. Therefore, people planning to open a small shop in that area might prefer to locate it in Ascoli Piceno and benefit from agglomeration externalities (instead of locating in Teramo, where these externalities are presumably lower). Unfortunately, LFS data do not allow a measure of shop entry to be derived and this hypothesis cannot be directly tested.

The LFS data, allow instead a distinction to be made between shop owners and salaried workers, and help to answer the question whether all types of small shops benefit from the positive externalities associated with large store openings. Let  $Y_i$  be equal to 1 if the *i*-th individual is a small-shop owner and equal to 0 otherwise. The DID estimates are reported in Table 8. Confirming the findings of Bertrand and Kramarz (2002), in Italy as well the number of shop owners decreases in areas with lower entry barriers. The effect is significant at the 5 per cent level in *Sample*<sub>1</sub> and

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<sup>21</sup> For example, the rise in total employment could be due to an increase in the number of employees in medium-sized stores, which are better able than small shops to react to increasing competition from large stores.

<sup>22</sup> For instance, Bertrand and Kramarz (2002) admit that large commercial centres may generate positive spillovers on small shops located at the “fringe” of commercial areas, but they do not report evidence for their hypothesis (see also Boylaud and Nicoletti 2001, and Flath 2003).

at the 20 per cent level in *Sample*<sub>2</sub>. Estimates have also been carried out for the male sub-sample, amounting to 70 per cent of total small shop owners (see Tables 3 and 4). In this sub-sample the negative sign of the policy effect is highly significant in *Sample*<sub>2</sub> as well (Table 9).

Table 10 reports the DID estimates of a model where  $Y_i$  is equal to 1 if the *i*-th individual is a small-shop salaried worker and equal to 0 otherwise. The effect is positive but significant only in *Sample*<sub>1</sub>. As before, when only male workers are considered, the effect is positive and highly significant in both samples (Table 11). This evidence is compatible with the hypothesis that increased competition may force traditional family owned small shops to exit the market and may encourage the development of more efficient small retail shops.

Finally, the estimates presented in this section are based on the assumption that lower entry barriers started to affect small shop employment from the time of large store openings. It is also likely that marginal small retail trade units preferred to exit the market from the time of the authorization of large store outlets (i.e. from 2000), as a response to the expected increase in competition. Note, however, that this assumption is in general less restrictive than the one tested in this paper. Moreover, alternative models where the time of the treatment coincides with the time of large store authorization substantially confirm the results presented in this section.<sup>23</sup>

#### 4.4 Further robustness checks

If the estimated coefficient  $\delta$  is a good measure of the policy effect, one would expect that in areas affected by similar regulations  $\delta = 0$ . Thus, I estimate model (2) for *Sample*<sub>1</sub><sup>\*</sup> and *Sample*<sub>2</sub><sup>\*</sup>, i.e. for samples composed of individuals who are assigned a similar treatment. Table 12 reports the estimated  $\delta$  for total employment, large store employment and small shop employment (for simplicity the coefficients of the other individual characteristics are not reported, but are available upon request). In these samples, composed of equally treated (or non-treated) individuals, the estimated policy effect is always statistically not different from zero.

## 5 Conclusions

The paper presents empirical evidence in favour of the hypothesis that not only labour market rigidities, but also product market regulation affects labour market outcomes. The case studied is a reform introduced in Italy in 1998, called the “decreto Bersani”. Since this law empowered regional authorities to regulate large store openings, entry barriers in Italy now vary considerably

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<sup>23</sup> Results are available upon request.

across regions. This regional variation can be used to identify the effects of entry barriers on the labour market. The empirical results, based on two different samples, confirm that in Italy, as in other countries, lowering entry barriers leads to higher employment. Thus, entry barriers, often justified by politicians as a way of protecting employment, may instead achieve the opposite effect.

The positive effect on employment is caused by two factors. First, lowering entry barriers reduces start-up costs for large stores. As a consequence, in liberalized areas the growth of employment in large stores accounts for most of the total employment growth. Second, large stores do not necessarily compete with small retail shops, since the number of workers in small retail establishments does not significantly diminish after liberalization. Greater competition, even if it has a negative effect on traditional family-owned shops, may encourage the development of new types of small shops, with consequences for the composition of employment in small shops.

The results presented in this paper may be criticized on various grounds. First, it can be argued that they are specific to a narrow geographical area and cannot easily be generalized to the overall Italian retail trade sector. As already stressed, however, looking at a very small area is a way of strengthening the assumptions underlying the identification of the policy effect. Moreover, the dynamics observed in Marche and Abruzzo are very similar to those observed in Italy as a whole. Between 1996 and 2003 Italian retail trade employment grew by almost 1 per cent. This growth was entirely due to the increase in the number of people employed in large stores. The number of shop owners diminished by 0.5 per cent but, as in Marche, it was compensated by a rise in the number of small shop salaried workers.

Second, the estimates presented in this paper refer to short-term dynamics, as they cover only a short time period after the reform. In principle, I cannot exclude that in the medium-long run the (relatively) free entry of large stores in Marche might force small shops to leave the market, producing a negative impact on small retail trade employment. However, the retail trade sector, and especially traditional small shops, typically have higher than the average mortality rates. For example, in Italy in 2000 the mortality rate of small shops (equal to the ratio between small shops leaving the market and total small shops in operation) was equal to 7.9 per cent, larger than the average mortality rate equal to 6.5 per cent.<sup>24</sup> Thus, it is not implausible to look at the effects of large store openings just 2–3 years after liberalization. Moreover, the evidence presented in this paper suggests that some adjustment in small shop employment did actually take place during this short time horizon.

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<sup>24</sup> Data are derived by the Italian Register of Firms, the main source of information available in Italy on firm demography. The average mortality rate refers to all non-agricultural operating firms.

Finally, it must be stressed that the evidence presented in this paper does not allow for a complete evaluation of the effects of large store free entry on the labour market. One would expect lowering entry barriers to change the types of jobs created and destroyed (full time versus part-time), with possible effects also on wages paid in the retail trade sector. Moreover, a complete evaluation of the welfare effects of entry regulation should not be limited to the labour market, but should also take account of other related questions, such as the relationship between free entry and firms' profit margins, consumer prices and, ultimately, aggregate consumption. All these issues call for further empirical investigation.

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## Tables and Figures

Table 1: Floor space applications in Marche and Abruzzo from 2000 to 2002. Source: Author's calculations based on data provided by the regional boards of Marche and Abruzzo.

	Approved applications			Rejected applications		
	Number	Sq. m.	Sq. m./pop.	Number	Sq. m.	Sq. m./pop.
Marche						
Pesaro	4	41,700	12.4	0	0	0.0
Ancona	4	40,300	12.0	1	34,000	7.6
Macerata	1	6,600	2.2	2	36,000	11.9
Ascoli Piceno	4	104,900	28.3	2	6,000	1.6
Total	13	193,500	13.4	5	76,000	5.2
Abruzzo						
Teramo	2	24,500	8.5	2	12,000	4.2
Pescara	2	31,500	10.7	0	0	0.0
Chieti	4	42,200	11.0	2	48,000	12.6
L'Aquila	0	0	0.0	1	8,000	2.7
Total	8	98,200	7.7	5	68,000	5.4

Table 2: Marche and Abruzzo: Geographical characteristics. Source: Author's calculations based on Census data. (1) Data refers to the 2001 Italian Population Census. (2) Data refers to the 1996 Italian Census of Industry and Services.

	Marche	Abruzzo
Geographical characteristics		
-Area (thousand hectares)	969	1,079
-Population (thousand)	1,469	1,281
-Number of municipalities	246	305
-Average municipality area	25.4	28.3
-Density (population/area)	1.5	1.2
-Non-mountain area (thousand hectares)	397	245
-Number of non-mountain municipalities	122	78
-Population living in non-mountain area (thousand)	1,162	796
-Average non-mountain municipality area	30.1	31.8
-Density non-mountain area (population/area)	2.9	3.2
Number of establishments per 1,000 inhabitants (2)		
-Industry	21.3	11.6
-Building and construction	15.1	13.7
-Retail trade	29.0	27.4
-Other services	34.5	29.8
-Total	99.9	82.4
Number of retail trade establishments per 1,000 inhabitants (2)		
-Establishments with 1-5 employees	27.5	26.3
-Establishments with 6-15 employees	1.3	0.9
-Establishments with 16+ employees	0.2	0.1
-Total	29.0	27.4

Table 3: Composition of *Sample*<sub>1</sub> (percentages and averages). Source: Author's calculations based on LFS data, from January 1996 to April 2003.

	Treated		Non-treated	
	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment
Age	40.1	39.9	38.7	39.8
Sex				
-Men	48.8	49.1	49.0	49.6
-Women	51.2	50.9	51.0	50.4
Educational attainment				
-University degree	6.6	6.8	5.9	6.6
-High school certificate	24.3	27.6	28.3	30.2
-Vocational diploma	6.1	6.2	4.4	3.7
-Compulsory education	63.1	59.4	61.4	59.5
Labour market status				
(as percentage of total population)				
-Employed	55.7	57.3	48.9	51.5
-Unemployed	4.3	4.1	5.5	2.7
-Out of the labour force	40.0	38.6	45.6	45.8
Sectoral composition of employment				
(as percentage of total population)				
-Industry	20.1	22.1	13.2	14.5
-Building and construction	4.2	4.1	4.9	5.3
-Retail trade	8.3	9.8	8.1	7.8
-Other services	19.0	18.6	20.3	21.8
Share of trade sector employees				
-Large establishments	0.9	1.0	0.8	0.4
-Small establishments	6.0	7.0	6.4	6.3
-of which:				
-shop owners	3.8	3.5	4.4	4.3
— men	71.0	69.8	74.7	71.7
— women	33.9	30.2	25.3	28.3
-salaried workers	1.7	2.9	1.6	1.5
— men	54.4	43.7	52.6	50.0
— women	45.6	56.3	47.4	50.0
Number of observations	15,565	6,114	15,324	5,975

Table 4: Composition of *Sample*<sub>2</sub> (percentages and averages). Source: Author's calculations based on LFS data, from January 1996 to April 2003.

	Treated		Non-treated	
	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment
Age	39.8	40.3	38.8	39.5
Sex				
-Men	48.8	49.6	47.8	49.6
-Women	51.2	50.4	52.2	50.4
Educational attainment				
-University degree	7.6	9.0	7.4	8.2
-High school certificate	27.0	29.0	29.5	32.4
-Vocational diploma	5.5	6.1	3.8	4.2
-Compulsory education	59.9	55.9	59.4	55.2
Labour market status (as percentage of the population)				
-Employed	55.2	60.9	47.2	53.3
-Unemployed	4.1	2.6	5.6	3.4
-Out of the labour force	40.7	36.5	47.3	43.4
Sectoral composition of employment				
-Industry	18.5	20.5	10.5	13.9
-Building and construction	3.9	4.0	4.0	4.1
-Retail trade	8.9	9.6	7.9	8.0
-Other services	21.6	24.8	20.6	23.3
Share of trade sector employees				
-Large establishments	0.9	1.8	1.0	1.1
-Small establishments	6.5	6.0	5.9	5.4
-of which:				
-shop owners	3.7	3.1	3.2	3.0
— men	70.1	66.9	52.3	50.1
— women	29.9	33.1	47.7	49.9
-salaried workers	2.3	2.2	2.2	1.9
— men	52.3	50.1	57.8	56.1
— women	47.7	49.9	42.2	43.9
No. Observations	46,340	18,904	32,976	13,475

Table 5: Total employment in retail trade sector: DID estimator. Source: Author's calculations based on LFS data, from January 1996 to April 2003. (1) Standard errors are clustered by province.

	Sample 1		Sample 2	
	Coeff.	St. err.(1)	Coeff.	St. err.(1)
Policy effect $\delta$	0.008	0.000	0.008	0.003
Difference in trends: $\alpha$	0.011	0.000	-0.006	0.007
Men	-0.011	0.003	-0.009	0.006
Potential experience*Man	0.011	0.000	0.010	0.001
Potential experience <sup>2</sup> *Man	0.000	0.000	0.000	0.000
Potential experience*Woman	0.004	0.001	0.004	0.000
Potential experience <sup>2</sup> *Woman	0.000	0.000	0.000	0.000
Single	-0.008	0.015	-0.012	0.005
Married	-0.002	0.014	-0.001	0.003
University degree	-0.046	0.006	-0.040	0.002
High school certificate	0.010	0.014	0.012	0.002
Vocational diploma	0.004	0.021	0.008	0.013
Constant	0.030	0.029	0.054	0.006
Year dummies	Yes		Yes	
Seasonal dummies	Yes		Yes	
Province dummies	Yes		Yes	

Table 6: Large store employment: DID estimator. Source: Author's calculations based on LFS data, from January 1996 to April 2003. (1) Standard errors are clustered by province.

	Sample 1		Sample 2	
	Coeff.	St. err.(1)	Coeff.	St. err.(1)
Policy effect $\delta$	0.005	0.000	0.008	0.004
Difference in trends: $\alpha$	-0.003	0.000	0.002	0.001
Men	0.002	0.001	0.000	0.001
Potential experience*Man	0.001	0.000	0.002	0.000
Potential experience <sup>2</sup> *Man	0.000	0.000	0.000	0.000
Potential experience*Woman	0.000	0.000	0.001	0.000
Potential experience <sup>2</sup> *Woman	0.000	0.000	0.000	0.000
Single	0.000	0.001	-0.007	0.002
Married	0.000	0.006	-0.007	0.003
University degree	-0.003	0.003	-0.011	0.004
High school certificate	0.008	0.003	0.005	0.001
Vocational diploma	0.004	0.001	0.007	0.003
Constant	-0.005	0.006	0.016	0.002
Year dummies	Yes		Yes	
Seasonal dummies	Yes		Yes	
Province dummies	Yes		Yes	

Table 7: Small retail employment: DID estimator. Source: Author's calculations based on LFS data, from January 1996 to April 2003. (1) Standard errors are clustered by province.

	Sample 1		Sample 2	
	Coeff.	St. err.(1)	Coeff.	St. err.(1)
Policy effect $\delta$	0.003	0.000	-0.001	0.002
Difference in trends: $\alpha$	0.014	0.000	-0.008	0.006
Men	-0.011	0.003	-0.009	0.005
Potential experience*Man	0.008	0.001	0.008	0.001
Potential experience <sup>2</sup> *Man	0.000	0.000	0.000	0.000
Potential experience*Woman	0.003	0.001	0.003	0.000
Potential experience <sup>2</sup> *Woman	0.000	0.000	0.000	0.000
Single	-0.015	0.010	-0.005	0.004
Married	-0.005	0.002	0.006	0.003
University degree	-0.039	0.006	-0.029	0.003
High school certificate	-0.001	0.009	0.007	0.002
Vocational diploma	-0.004	0.025	0.001	0.011
Constant	0.038	0.016	0.038	0.004
Year dummies	Yes		Yes	
Seasonal dummies	Yes		Yes	
Province dummies	Yes		Yes	

Table 8: Small shop owners: DID estimator. Source: Author's calculations based on LFS data, from January 1996 to April 2003. (1) Standard errors are clustered by province.

	Sample 1		Sample 2	
	Coeff.	St. err.(1)	Coeff.	St. err.(1)
Policy effect $\delta$	-0.006	0.000	-0.007	0.004
Difference in trends: $\alpha$	0.010	0.000	-0.004	0.001
Men	-0.003	0.001	0.000	0.002
Potential experience*Man	0.006	0.000	0.005	0.000
Potential experience <sup>2</sup> *Man	0.000	0.000	0.000	0.000
Potential experience*Woman	0.002	0.001	0.001	0.000
Potential experience <sup>2</sup> *Woman	0.000	0.000	0.000	0.000
Single	-0.012	0.000	-0.010	0.002
Married	0.001	0.007	0.004	0.002
University degree	-0.037	0.005	-0.023	0.001
High school certificate	-0.008	0.005	0.000	0.002
Vocational diploma	-0.022	0.015	-0.002	0.004
Constant	0.024	0.001	0.015	0.006
Year dummies	Yes		Yes	
Seasonal dummies	Yes		Yes	
Province dummies	Yes		Yes	

Table 9: Small shop owners: Men, DID estimator. Source: Author's calculations based on LFS data, from January 1996 to April 2003. (1) Standard errors are clustered by province.

	Sample 1		Sample 2	
	Coeff.	St. err.(1)	Coeff.	St. err.(1)
Policy effect $\delta$	-0.002	0.000	-0.012	0.004
Difference in trends: $\alpha$	0.006	0.000	-0.002	0.003
Potential experience	0.006	0.001	0.004	0.000
Potential experience <sup>2</sup>	0.000	0.000	0.000	0.000
Single	-0.033	0.005	-0.029	0.010
Married	-0.012	0.002	-0.003	0.012
University degree	-0.058	0.007	-0.037	0.003
High school certificate	-0.015	0.009	0.000	0.004
Vocational diploma	-0.044	0.031	-0.002	0.007
Constant	0.052	0.000	0.033	0.008
Year dummies	Yes		Yes	
Seasonal dummies	Yes		Yes	
Province dummies	Yes		Yes	

Table 10: Small shop salaried workers: DID estimator. Source: Author's calculations based on LFS data, from January 1996 to April 2003. (1) Standard errors are clustered by province.

	Sample 1		Sample 2	
	Coeff.	St. err.(1)	Coeff.	St. err.(1)
Policy effect $\delta$	0.009	0.000	0.004	0.004
Difference in trends: $\alpha$	0.003	0.000	-0.003	0.009
Men	-0.007	0.006	-0.011	0.003
Potential experience*Man	0.002	0.000	0.003	0.001
Potential experience <sup>2</sup> *Man	0.000	0.000	0.000	0.000
Potential experience*Woman	0.001	0.000	0.001	0.000
Potential experience <sup>2</sup> *Woman	0.000	0.000	0.000	0.000
Single	-0.003	0.007	0.002	0.003
Married	-0.008	0.006	-0.003	0.002
University degree	0.000	0.002	-0.003	0.004
High school certificate	0.005	0.005	0.006	0.003
Vocational diploma	0.013	0.010	0.001	0.007
Constant	0.012	0.015	0.027	0.003
Year dummies	Yes		Yes	
Seasonal dummies	Yes		Yes	
Province dummies	Yes		Yes	

Table 11: Small shop salaried workers: Men, DID estimator. Source: Author's calculations based on LFS data, from January 1996 to April 2003. (1) Standard errors are clustered by province.

	Sample 1		Sample 2	
	Coeff.	St. err.(1)	Coeff.	St. err.(1)
Policy effect $\delta$	0.001	0.000	0.010	0.005
Difference in trends: $\alpha$	0.008	0.000	-0.011	0.008
Potential experience	0.001	0.001	0.003	0.001
Potential experience <sup>2</sup>	0.000	0.000	0.000	0.000
Single	-0.007	0.017	-0.005	0.003
Married	-0.009	0.020	-0.002	0.004
University degree	-0.005	0.002	-0.007	0.009
High school certificate	0.000	0.009	-0.003	0.005
Vocational diploma	-0.003	0.006	-0.017	0.009
Constant	0.013	0.020	0.014	0.003
Year dummies	Yes		Yes	
Seasonal dummies	Yes		Yes	
Province dummies	Yes		Yes	

Table 12: Robustness check: Comparing homogeneous areas. Policy effect  $\delta$ . DID estimator. Source: Author's calculations based on LFS data, from January 1996 to April 2003. (1) Standard errors are clustered by province.

	Sample 1		Sample 2	
	Coeff.	St. err.(1)	Coeff.	St. err.(1)
Total retail trade employment	0.004	0.005	0.001	0.009
Large store employment	0.005	0.003	0.000	0.000
Small shop employment	-0.001	0.007	0.001	0.008
Individual characteristics	Yes		Yes	
Year dummies	Yes		Yes	
Seasonal dummies	Yes		Yes	
Province dummies	Yes		Yes	

Figure 1: Marche and Abruzzo and other bordering regions.



Figure 2: Provinces of Marche and Abruzzo included in  $Sample_1$  (shaded area).



Figure 3: Provinces of Marche and Abruzzo included in  $Sample_2$  (shaded area).



Figure 4: Fraction of total retail employment in total population in treated and non-treated areas. *Sample<sub>1</sub>*. Population aged 15–64. Source: Author’s calculations based on LFS data, from January 1996 to April 2003.

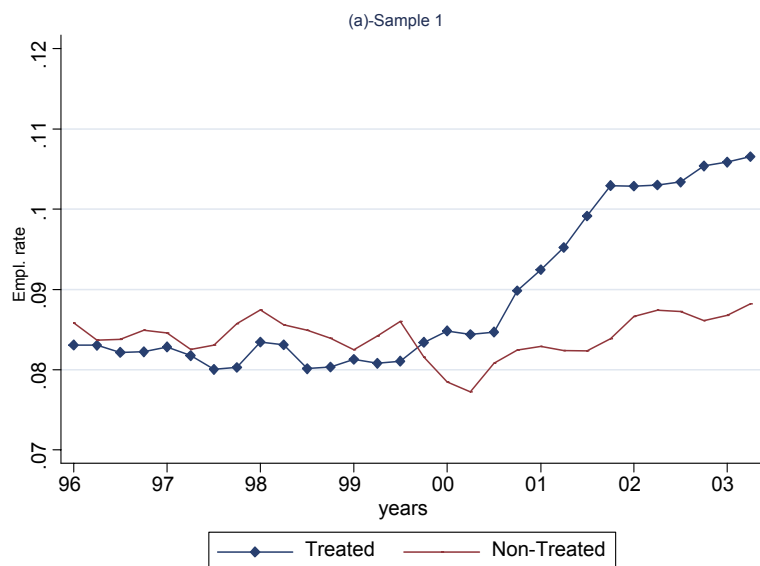


Figure 5: Fraction of total retail trade employment in total population in treated and non-treated areas. *Sample<sub>2</sub>*. Population aged 15–64. Source: Author’s calculations based on LFS data, from January 1996 to April 2003.

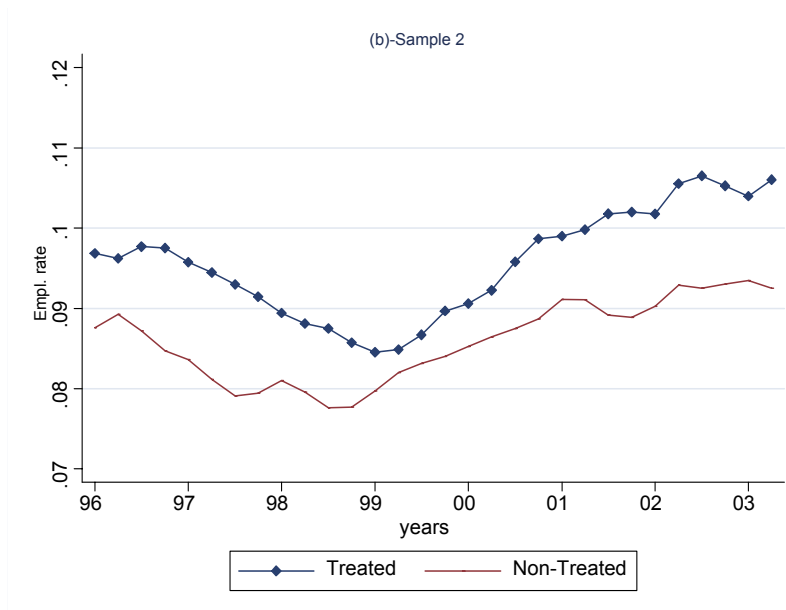


Figure 6: Provinces of Marche and Emilia Romagna included in  $Sample_1^*$  (shaded area).



Figure 7: Provinces of Abruzzo and Molise and Puglia included in  $Sample_2^*$  (shaded area).



Figure 8: Fraction of total retail trade employment in total population in equally treated areas. *Sample*<sub>1</sub><sup>\*</sup>. Population aged 15–64. Source: Author’s calculations based on LFS data, from January 1996 to April 2003.



Figure 9: Fraction total retail trade employment in total population in equally non-treated areas. *Sample*<sub>2</sub><sup>\*</sup>. Population aged 15–64. Source: Author’s calculations based on LFS data, from January 1996 to April 2003.

