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

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Abstract

The paper analyses the effects of entry barriers on employment in the retail trade sector in Italy. The reform of the sector regulation of 1998 gave local authorities wide discretion in establishing limits to new large store openings. Different regions chose substantially different policies. Regional variation in regulation is used to identify the impact of large store openings on employment. Alternative empirical exercises suggest that after the lowering of entry barriers retail trade employment rate increased by 1 percent. This result is due to a raise in large store employment not accompanied by a reduction in small shop employment. The evidence also suggests that large store openings are associated to a change in the small shop ownership structure, with a reduction in the number of small shop owners.

JEL classification: J21, J23, K23.

Keywords: product market regulation, employment growth, differences-in-differences estimator.

1 Introduction [1]

It is widely recognised that not only labour market regulation but also product market regulation may affect job creation rates. Product market regulation, and especially entry regulation, may affect start-up costs of new entrants, reduce competition and increase rents for incumbent firms. However, policy makers often justify the existence of entry barriers by the need of supporting the level of employment in a given sector or in a given area.

Recent theoretical studies suggest that increasing competition may have positive effects on long-term employment growth at the aggregate level (see for example Blanchard and Giavazzi, 2001). Instead, at the sectoral level, the effects of deregulation 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 barries and employment growth is controversial, whether lower entry barriers have a positive or a negative impact on sectoral employment is ultimately an empirical question.

In spite of the relevance of the issue, especially in high-unemployment countries, in Europe few empirical studies focus on the effects of product market regulation on employment (see Peoples, 1998 for a review of the different effects of deregulation in the United States). Bertrand and Kramarz (2002) evaluate the effects of the so-called "Loi Royer", a stringent retail trade entry regulation introduced in France in 1973. This law was explicitly designed to protect small retail shopkeepers from the increasing competition of large establishments. They estimate that this policy had a sizeable negative impact on retail trade employment growth.

In this paper I analyse the employment effects of the reform of retail trade introduced in Italy in 1998, the Bersani law, after the Minister promoting the reform. This law was explicitely aimed at increasing competition. Before the law, opening a large or a small retail establishment needed a permit, issued by the municipality where the establishment was located. Now, the permit is no longer required for new small establishments and the authorisation regime is maintained only 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 government. The Bersani law did not regulate the composition of regional boards nor did it set

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guidelines for regional zoning plans, giving local authorities wide margins of discretion in terms of regulating entry. As a consequence of this decentralisation, the Italian retail trade sector is currently regulated by a wide variety of regional laws, that differ by the extent in which they limit the expansion of the number of large stores.

I focus on the effects of the entry regulation on total sectoral employment using regional variation in zoning plans to identify them. More precisely, I compare the regulations adopted by the regional governments of Marche and Abruzzo, two regions located in the central part of Italy, with similar demographic and productive characteristics. Marche approved a fairly liberal regulation, coherently with the original spirit of the Bersani law. Instead, Abruzzo drastically limited the entry of new large stores, setting a stringent ceiling to the maximum number of new openings. These two opposite policies resembles a natural experiment of the effects of entry deregulation on retail trade employment.

The analysis has two main purposes. First, I consider the overall effects of liberalization on employment. Second, I focus on how large store openings affect both employment and ownership structure of small shops. This is an important aspect, because the political resistance to large store entry typically stems from the opposition of small shop owners. This is particularly true in Italy, where the retail trade sector is characterised by a very low level of concentration. [2] While large store openings should be expected to hurt small shop owners (the "incumbents"), their effects on overall small shop employment is ambiguous, because large commercial or shopping centers are typically composed by a large food store and many small shops. However, those small shops tend to be organized in chains. These may be voluntary chains of a wholesaler and many small retailers taking out a franchise. New types of small retail distribution therefore modify the composition of small retail employment by increasing the share of employees in total small retail employment and contemporaneusly reducing the share of the self-employed. Owners of traditional shops might still be hurt by entry of large stores, even if total employment in small shop does not decrease. I therefore consider both total employment in small shops and the share of self-employed, used as a proxy for traditional shops.

Results can be summarized as follows. First, empirical evidence confirms that in Italy, as in France, entry barriers negatively affect total sectoral employment, by reducing it by 1 percent. Second, differently from Bertrand and Kramarz (2002), I show that small establishments are not equally affected by the rising competition of large stores. As expected, in the areas where large

[2] In 2001 in Italy there were 130 establishments per 10,000 inhabitants, vis-a-́vis 71 in the EU and just 35 in Germany and the UK.

store entry barriers are lower, the number of small shop owners decreases. However, this reduction does not imply a decrease in the total number of people employed in small retail units, since it is compensated by an increase in the number of small shop salaried workers. This evidence also suggests that trends towards integration are stronger in more competitive markets.

Since lowering entry barriers is associated to changes in ownership structure, small shop owners are expected to express strong political opposition to liberalization. However, the usual motivation to support entry deterrence, i.e. that free entry of large stores reduces employment, is rejected by the empirical evidence.

The paper is organised as follows. Section 2 briefly reviews the main features of the regulatory framework. Section 3 describes the data and reports some evidence on the Italian retail trade employment. Section 4 describes the identification strategy. Section 5 presents the results. Finally, Section 6 concludes.

2 The regulation of the distribution sector.

2.1 The national framework.

The Italian trade sector is currently regulated by the Bersani law,[3] issued in March 1998 with the aim to increase competition and favour the modernization of the Italian retail trade sector. Before the Bersani law, opening both small and large-sized outlets required obtaining a permit issued by the municipality governments. [4] The law defined three types of establishments: (1) small establishments (also called neighbourhood shops), no greater than 150 square meters (2) medium-sized, between 150 and 1,500 square meters, and (3) large establishments (in cities with more than 10,000 inhabitants the thresholds are raised to 250 and 2,500 square meters).

The law suppressed the need of authorisation for small establishments, that now need only to notice their opening to the municipality board, according to a "silent-is-consent" regime. The municipality has 60 days to stop the new opening, but only for a predetermined set of motivations. Instead, a formal *ex-ante* authorization regime holds for medium and large stores. Medium stores have to apply to the municipality government as in the pre-Bersani regime. Large store openings

[3] Decreto legislativo n. 114/1998.

[4] The first national regulation is the "Regio decreto legge no. 2174" of 1926. This law imposed that any commercial opening had to be authorised by the local municipality government, that might discretionary approve or reject applications. To increase transparency in the approval procedure, in 1971 a new national law (Legge n. 476/1971). established that municipalities had to set explicit rules for the location of new establishments, according to a municipality urban plan. Local plans regulated the Italian retail trade sector openings for all the Seventies, the Eighties and large part of the Nineties, until the Bersani law.

or enlargements are regulated at the regional level. According to the law, each regional government has to issue a commercial zoning plan aimed at co-ordinating the development of medium and large stores consistently with environmental and urban considerations. The Italian regional goverments are also delegated to establish regional boards called "Conferenza dei servizi", aimed at processing applications and at verifying that openings are coherent with the regional zoning plan.[5] The Italian regional goverments were compelled to update their local commercial regulations by April 1999. In the meantime the law stopped any pending authorization procedure so that no new permit could be licensed in the absence of a regional zoning plan.

It is widely believed that contrary to its objectives, the consequences of the Bersani law were a strengthening of entry barriers to large stores (see ISAE, 2002 for evidence and literature on this topic). First, no regional government met the deadline for the issuing of the regional regulation. As a consequence, from the inception of the Bersani law in March 1998 until roughly the end of 1999 no new opening permit was issued in Italy.[6] Second, 17 out of 20 Italian regions introduced substantial limits to the development of large-sized distribution, by restricting the maximum number of stores and/or the maximum retail store floor that can be opened in the region. Just 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.

2.2 Two examples of local regulation.

In this paper I focus on entry regulations in Marche and in Abruzzo. These are two close administrative regions on the eastern coast of Italy, with a relatively homogeneous population and resource endowments (see Table 1). Marche is bordered on the South by Abruzzo (see Figure 1).

In Abruzzo, the Bersani law was implemented in August 1999 (Regional Regulation no. 62). The regional government of Abruzzo explicitly decided to protect the existing distribution network, based on small shops, from the rising competition of large outlets, to safeguarde employment and the proximity services that small shops may provide.

The government divided the regional territory into local markets, roughly coinciding with the administrative provinces, and established that only one new large store permit could be given in

[5] The regional governments could autonomously determine also the composition of the regional zoning boards. Nowadays most of them are composed by region and municipality politicians, as well as consumers' and small shopkeepers' representatives. The board examines applications and verifies that new openings are consistent with the local commercial zoning plan.

[6] During this period large store openings were possible only thanks to permits issued before March 1998.

each local market. As a consequence, the opening of a new large-scale outlet in a province prevents any other opening in the same area. Additional large store openings are possible only if they are promoted by at least 12 small retailers who merge their already existing licenses and apply for the opening of a shopping center. Thus, this regulation is clearly designed to prevent new entries.

The regional government of Marche took a rather different route. The local government regulation, adopted in October 1999, was explicitely aimed at increasing competition in Marche's distribution sector (see Regional Regulation no. 26). The commercial zoning plan did not impose limits to 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 historical center urban plans or they were planned to be located in congested and polluted areas. This liberalizing orientation however lasted just three years, as the local government, worried for the unexpected and rapid increase in large store applications, announced at the end of 2002 the intention to substantially revise the local regulation. Meanwhile, it stopped any new large store approval procedure. At the present time the new regional regulation is still under examination.

2.3 How binding are local regulations?

In this section I compare the number of applications processed in Marche and Abruzzo since the inception of the two regional regulations until the end of 2002, i.e. until the new stop imposed by the local goverment of Marche. Table 2 reports the number of authorized openings and the corresponding retail space in Marche and Abruzzo, by province of the new establishment.[7] During this period, 13 new large-scale outlets were authorised in Marche and 8 in Abruzzo (4 new licences and 4 mergers). The total floor space opened in Marche was around 133.000 square meters, 66 percent more than in Abruzzo.

The difference in the number of authorized openings can be influenced by economic factors like cyclical upturns that, for instance, affect only one of the two areas. Thus, Table 2 reports also the number of applications rejected and the corresponding retail floor space. During the period 1999-2002 in Marche, 36 per cent of all applications (in square meters) were rejected, against 46 per cent in Abruzzo, confirming that barriers to entry were higher in the latter region. However, it is worth noting that the rejection rate observed in Abruzzo is just a lower bound of the "true" rejection rate. As mentioned in the previous section, in Abruzzo just one new permit for each province is allowed and the first large store obtaining the permit impedes the entrance of other

[7] Data are kindly made available by the regional governments of Marche and Abruzzo.

potential competitors. It is then plausible to assume that potential competitors do not apply after the entry of the first new store, since they know that their applications are bound to be rejected.

3 The data and some evidence.

3.1 The data.

Data on trade sector employment are derived from the *Rilevazione Trimestrale delle Forze di Lavoro*, i.e. the Italian Labour Force Survey (LFS) conducted by the Italian Statistical Institute (Istat). This is the main source of information about the Italian labour market, both at the national and the regional level. [8]

The basic sample units are *de facto* households. The sampling procedure is a two-stage one: the first stage consists of the selection of the municipalities. Municipalities are divided in strata. All municipalities of the same administrative province are divided in two classes, according to population size of the municipality: above and below 20,000. All municipalities of the first group are sampled, while two municipalities of the second group are selected at random. The final LFS sample consists of on average more than 1,300 municipalities and 70,000 households (200,000 individuals). Each individual is required to report working status, sector of employment, whether she/he is a salaried worker, self-employed or unpaid family worker and the number of employees working in her/his local unit. [9] Most part of the empirical analysis presented in this paper is based on richer LFS files from 1996 to 2002, kindly provided by Istat, since the standard public-use files do not report neither information about the province of residence, nor about the size of the units where people work.

3.2 Evidence on the Italian retail trade sector.

Before formal analysis, I look at the sectorial employment performance in total and for different shop size. Figure 2 plots the share of retail trade employment and the share of employment in sectors other than retail trade in total working age population. Data refer to the period 1993-2002. Figure 3 reports the retail trade employment rates by size of establishment from 1996 to 2002. In general, retail establishments are classified on the basis of the retail floor space. This information however is not collected by the LFS. Consequently I divide establishments by the

[8] From October 1992 to January 2004 this survey was conducted quarterly, in January, April, July and October. Since January 2004 it has become a continuous survey, but micro-data are not available yet.

[9] This is collected as a categorical variable. Categories are: 1 if the person works for a single worker unit, 2 for 2-5 workers, 3 for 6-9 workers, 4 for 10-15 workers, 5 for 16-19 workers, 6 for 20-50 workers, 7 for 50-199 workers, 8 for 200-500 workers and 9 for 500+ workers.

number of employees in the local unit. According to the data of the Italian Ministery of Industry and Commerce, average employment in large stores ranges from 14 workers (for non-food stores) to around 200 (in food mega stores). Medium-sized establishments have on average 7 workers. In this paper, small retail establishments are defined as those with 1-5 employees, medium size establishments are defined as those with 6-15 workers, establishments with more than 16 employees are instead classified as large.[10]

First, it is worth mentioning that from 1993 to 2002 retail trade employment grew at rates than lower other sectors. After 1996 the fraction of total retail trade employment in total population increased slightly (panel (a)), but the performance of small establishments (panel (b)) was negative, employment in medium-sized establishments remained constant (panel (c)), and large store employment increased by 1 percentage point. Thus, in spite of the restrictive regulations adopted by Italian regional governments, large-sized distribution accounted for most of the trade sector employment growth.

Looking at the composition of small retail employment can be useful to verify whether the Italian trade sector has been subject to structural changes. For instance, if the number of small traditional shops rises, also the number of shop owners is likely to increase. Conversely, if small retailers are involved in some kind of integrating processes, a reduction in the number of small shop owners might be accompanied by an increase in the number of small retail employees. Figure 4 plots the fraction of small shop owners (panel (a)) and the fraction of small retail salaried workers in total population. The negative trend observed in the aggregate was entirely due to a reduction in the number of traditional shop owners. During the same period, the number of salaried workers remained roughly constant, confirming the existence of a trend towards small retail integration. In the next section I formally analyze the role of regulation, if any, in explaining these processes.

4 The identification strategy.

The differences in implementation of trade liberalization chosen by different regions offer a great opportunity to test the effects of regulation on labour market outcomes, via a standard differences-in-differences exercise.

Ideally, assume that it is possible to observe the labour market condition of a homogenous set

[10] Because the number of employees is collected as a categorical variable (see footnote 8) I could alternatively define shops with 6-9 employees as medium and stores with 10+ employees as large. Instead, to be sure that I am considering only individuals subject to changes in entry regulation I prefer to consider stores with 10-15 workers as medium-sized.

of individuals at time t_1. Let Y_i be an indicator variable equal to 1 if the person is employed in the retail trade sector and to 0 otherwise. Assume that people live in a homogenous region that is administratively divided in two areas, $Area_1$ and $Area_2$. Part of the original sample -for example those living in $Area_1$- is exogenously assigned a treatment at time t_2. Because of this treatment, the probability of being employed in the trade sector at time t_2 is:

$$E(Y_i|Area_1, t_2) = E(Y_i|Area_1, t_1) + \alpha. \tag{1}$$

where α is the effect of regulation. The remainder of the sample, say those residing in $Area_2$, is assigned a different treatment β and the probability of being a trade sector employee at time t_2 is:

$$E(Y_i|Area_2, t_2) = E(Y_i|Area_2, t_1) + \beta. \tag{2}$$

Thus, the differential effect of two different regulations on labour market outcomes is

$$[E(Y_i|Area_1, t_2) - E(Y_i|Area_1, t_1)] - [E(Y_i|Area_2, t_2) - E(Y_i|Area_2, t_1)] = \alpha - \beta = \delta. \tag{3}$$

Empirically, in order to estimate Equation 3 it is necessary to define the reference population, the nature and the timing of the experiment. The identification of the policy effect δ is based on the strong assumption that the treatment and the control groups are homogenous. For this reason, I focus on the regional regulations adopted in Marche and Abruzzo. Thus, I first select a sample (in what follows denoted as $Sample_1$) composed by people living in two very close provinces: Ascoli Piceno and Teramo. Ascoli Piceno in located in the Southern part of Marche and borders directly on Teramo, that is instead located in Abruzzo (see Figure 5). Since I am considering a very narrow geographical area, it is plausible to assume that people living in this part of Italy are influenced by similar economic factors. Nevertheless, as shown in Table 2, from 1999 to 2002 64,000 square meter floor were authorized in Ascoli Piceno and just 24,000 in Teramo. This large difference, confirmed also when dividing the authorized floor space by the province population size, can be imputed to the diffences in entry regulation.

However, since the two provinces are quite close, it is also plausible to assume that the rapid increase in the entry process of new large competitors registered in Ascoli Piceno after 2000 increased competition in Teramo as well. So, large stores planning to open in Abruzzo might have preferred to open far from the border of Marche, i.e. far from Teramo. To control for endogeneity in large store location, I select another sample of individuals, defined as $Sample_2$ and composed of people

living in Pesaro or Ancona, located in Marche, and by people living in Pescara or Chieti, located in Abruzzo. Pesaro and Ancona are in the Northen part of Marche. Pescara and Chieti are in the Southern part of Abruzzo (see Figure 5). 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 $Sample_2$ since in this area, as in Teramo, applications may be influenced by the development of large outlets in Ascoli Piceno. Similarly, also Pescara and Chieti do not border on Ascoli Piceno. The provinces included in $Sample_2$ can then be considered as separated markets.[11]

As Bertrand and Kramarz (2002), I assume that large store entry started affecting employment trends from the time of the opening and not from the time of the authorization. According to conversations with the regional representatives at the boards of Marche and Abruzzo, on average the opening occurs 6-8 months after the authorization if the commercial building already exists, otherwise it takes on average 1 year and no more than 2 years. Thus, since in Marche and Abruzzo the first authorizations were issued in the first semester of 2000, it is reasonable to assume that actual openings occurred in 2001. Consider $Sample_N$, $N = 1, 2$. I define as "treated" those individuals living in a province of Marche and as "non-treated" those living in Abruzzo. Summing up, in $Sample_1$ the treated are those living in Ascoli Piceno. In $Sample_2$ the treated are those living in Pesaro and Ancona. I further assume that the decision about the area of residing is independent from the treatment. This assumption however will be further discussed in the next section.

Consider a dataset of stacked LFS microdata, reporting individual characteristics. Thus, $\delta = \alpha - \beta$ is the differential effect due to the entry regulations adopted in Marche and Abruzzo. Let Y_{ipt} be an indicator variable for the employment status of the $i-th$ sample unit, observed at time t and living in province p . The policy effect δ can be estimated by a standard differences-in-differences linear probability model (see Angrist and Krueger, 1999):

$$Y_{ipt} = \beta_t + \gamma_i^p + X_{it}^T \beta_0 + \delta M_i + \epsilon_i \tag{4}$$

where β_0 is a vector of coefficients which includes a constant, X_{it} are time-variant individual characteristics, β_t is a vector of year and seasonal dummies, and γ_i^p is the province p fixed effect. Finally, M_i is an interaction term equal to the product of the post-treatment year dummies, and the dummy indicating the treatment (i.e. the region where the province is located), i.e. it is equal to 1 if the province p belongs to Marche and data refer to the post-treatement period and it is equal to 0 otherwise. Equation 4 is the benchmark for all empirical exercises presented in the next

[11] The province of Pesaro includes also Urbino, a quite large historical center where no large store openings are allowed. The municipality of Urbino is then excluded from $Sample_2$.

section. For standard robustness checks, all exercises are separately carried out for both $Sample_1$ and $Sample_2$.

The estimation strategy proposed in this paper differs from the one adopted by Bertrand and Kramarz (2002). Bertrand and Kramarz (2002) regress the log of regional employment on the log of authorized floor space and on the ratio of authorized and total requested floor space. However, applications for floor space are endougenous to regulation, becuase in more restrictive areas large store promoters tend to apply less frequently. Thus, since Bertrand and Kramarz (2002) find that in regions governed by right-wing parties the regional boards reject applications with higher probability, they instrument the application process by the use of the political composition of the regional government. The identification strategy adopted in this paper is instead based on the characteristics of the local regulation, that in Abruzzo explicitly imposes a ceiling to the expansion of large stores. Differences in regulation allow for a direct and simple measure of the impact of entry barriers. As a drawback, the relationship between the employment growth rate and the authorized floor space is only indirectly derived.

Finally, note that this simple framework cannot be applied for studying the effects of full liberalization of small retail establishments also introduced by the Bersani law in 1998, since it was a national reform.

5 The results.

In this section I first provide a measure of the impact of free entry regulation on total retail trade employment (Section 5.1). The total effect is then decomposed by size of the establishment. The effects of regulation on large store employment are presented in Section 5.2. Section 5.3 looks at the effects on small retail employment and small shop employment composition. Finally, Section 5.4 provides further robustness checks.

5.1 The total effect on employment

One of the main concerns about differences-in-differences estimators is the assumption that treated and non-treated areas must be interested by the same trend in the pre-treatment period. Figure 6 reports the share of total retail trade employment in total working-age population for treated and non-treated individuals. Panel (a) refers to $Sample_1$, i.e. respectively to Ascoli Piceno (treated) and Teramo (non-treated). Panel (b) refers to $Sample_2$, i.e. to Pesaro and Ancona (treated) and Chieti and Pescara (non-treated). Data refer to the period 1999-2002.

Consider first $Sample_1$. At the beginning of the period for both treated and controls not only the trend, but also the levels of retail trade employment were similar. The two patterns diverged significantly after the second half of 2001 and at the end of the period total retail employment was around .11 in treated areas and .09 in non-treated areas. Consider now $Sample_2$. Between 1999 and 2000 in treated areas the share of total employment was around .005 percentage point higher than in non-treated areas. As in $Sample_1$ employment rates diverged after 2001 and the share of trade sector employees grew faster in treated areas. Figure 6 supports the main identification assumption described in Section 4, that is treated and non-treated units were subject to the same trend in the pre-treatment period. Moreover, it suggests that the impact of retail trade liberalization might be positive.

Differences in unconditional means do not take into account population composition nor province fixed effects. To evaluate the effects of free entry of large stores on total retail employment, let Y_i be equal to 1 if the i-th individual is employed in the retail trade sector and to 0 otherwise. Consider Model 4. Within this framework, the policy effect δ corresponds to the effect of a relatively free entry regulation on total retail employment rate. The coefficients of the DID model are reported in Table 4. Additional to time and province dummies, the model controls also for sex, potential experience (age minus years of schooling), educational attainment (university degree, high school attainment, vocational attainment) and marital status (single, married, other status), used as proxy for reservation wages (other household background variables like the number of houshold members are highly non-significant). Sample composition is reported in Table 3. 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, 2002). The estimated policy effect δ is equal to .010 percent in Ascoli Piceno ($Sample_1$) and to .009 percent in Pesaro and Ancona ($Sample_2$). Thus, also when controlling for possible spillover effects, as in $Sample_2$, the effect of free entry on total employment is large and positive. Since the dependent variable is the share of total retail employment in total population, the estimated effect corresponds to 1 percentage point increase in total employment rate due to liberalization, under the assumption that employment in other sectors is not displaced by the increase in the retail trade sector. The size of this estimated effect is very large indeed, since it implies an annual growth rate of retail trade employment by around 4.5 percent each year. This effect, however, is similar to the findings of Bertrand and Kramarz (2002), who estimate the elasticity of total retail employment to the stock of authorized floor space. If their estimated elasticity is applied to the authorized floor space in Marche and Abruzzo (Table 2), the corresponding annual

growth rate in Marche would be around 3 percent each year. This very high growth rate might depend also on the stop imposed to the application procedure from March 1998 to the approval of the regional law, i.e. October 1999. Presumably in Marche, after a 2-year stop, many large store promoters, who could not apply before, would applied immediately after the introduction of the new liberalizing rules. Thus, it is plausible to expect that after an initial period of rapid increase in authorizations and employment, also the annual growth rate of retail trade employment would slow down (if in Marche the government would have not imposed a second stop in authorizations from 2003 onwards).

5.2 Large store employment.

One might wonder whether and to what extent the total effect of a partial liberalization of large store openings is due to the employment performance of the liberalized segment.

Figure 7 reports the share of large store employees in total working-age population for treated and non-treated individuals. Panel (a) refers to $Sample_1$, i.e. respectively to Ascoli Piceno (treated) and Teramo (non-treated). Panel (b) refers to $Sample_2$, i.e. to Pesaro and Ancona (treated) and Chieti and Pescara (non-treated).

Similar to Figure 6, unconditional means confirm that large store employment trends (and in $Sample_1$ also employment levels, see Panel (a)) are very similar in treated and non-treated areas, at least until 2001. Afterwards, the number of large store employees increases significantly only in the treated areas.

Table 5 reports the estimated coefficients of Model 4 for $Sample_1$ and $Sample_2$ respectively. The dependent variable Y_i is now equal to 1 if the i-th individual is a large store employee and is equal to 0 otherwise. The other independent variables are defined as in the previous section. Standard errors are clustered by province. Once again the size of the coefficients is very similar in both samples and around .6-.7 percentage point. Since the dependent variable is the share of large store employees in total population, estimates suggest that around 70 percent of the increase in total retail employment is due to the raise of large store employees. Finally, note that the estimated coefficients for potential experience are lower than in Table 4. Thus, on average, large store employees are younger than the total pool of retail trade employees.

5.3 How do small retail react to increasing competition?

Similarly to the previous sections, Figure 8 reports the share of people employed in small retail establishments in total working age population. Consider first panel (a), i.e. Ascoli Piceno (treated)

and Teramo (non-treated). After 2001, small retail employment in the two provinces diverges significantly, being higher in Ascoli Piceno (treated). In $Sample_2$ (Figure 8 - panel (b)) the level of small retail employment of treated and controls is similar both before and after the treatment. Thus, no direct evidence is found that free entry of large stores reduces the number of people employed in small establishments.

Let Y_i be equal to 1 if the i-th individual is employed in a small retail establishment and equal to 0 otherwise. The DID model estimates are reported in Table 6. The policy effect δ is positive in $Sample_1$ (Ascoli Piceno), even if its size is small and equal to .002 percent. The DID estimator is instead roughly equal to zero in $Sample_2$ (Pesaro and Ancona). Thus, also when controlling for fixed effects, the data suggest that allowing for large store free entry does not reduce the number of people employed in small retail establishments.

The small positive effect found only in Ascoli Piceno supports the hypothesis that large store might generate positive spillover externalities. Bertand and Kramarz (2002), for instance, admit that large commercial centers may generate positive spillovers on small shops located at the "fringe" of commercial areas, since they increase the probability of success of small shops. Nevertheless, they do not find evidence for their hypothesis (see also Boylaud and Nicoletti, 2001 and Flath, 2003). In Italy a direct example of positive externality is the typical structure of large shopping centers, composed by a large food store and many small shops (classified as small also in the LFS). Thus, the opening of a large shopping center is often accompanied by the opening of many small shops. However, why is this positive effect found only in Ascoli Piceno ($Sample_1$) and not in Pesaro and Ancona ($Sample_2$)? This result might be due to the endogeneity of the location choice between treated and non-treated areas. Since Ascoli Piceno and Teramo are two vey close provinces, large part of their territory can be viewed as a single market. Therefore, people planning to open a shop in that market might have preferred to locate in Ascoli Piceno and to benefit from agglomeration externalities. Unfortunately, LFS data do not allow to derive a measure of shop entry and this hypothesis cannot be tested. Nevertheless, when controlling for this location effect, as in $Sample_2$, small retail employment growth does not differ between treated and non-treated areas.

However, even if large store openings do not reduce small retail employment, do they affect employment composition? Let Y_i be equal to 1 if the i-th individual is a small shop owner and be equal to 0 otherwise. The DID estimator is reported in Table 7. The effect of free entry of large stores is negative. Confirming the findings of Bertrand and Kramarz (2002), also in Italy the number of shop owners decreases in areas with lower entry barriers. The effect is statistically

significant only in $Sample_1$ where large store openings are more numerous both in absolute and in relative terms.[12] The effect of the share on small retail salaried workers is instead positive (see Table 8: here Y_i is equal to 1 if the i-*th* individual is a small shop salaried workers and it is equal to 0 otherwise). The effect, however, is significant only in $Sample_1$. Thus, some evidence is found that large store might force small retailers to restructuring and integration. In particular, this evidence is compatible with the hypothesis that in more competitive markets the development of chains is stronger, since they imply an increase in the share of salaried workers and a reduction in the share of the self-employed. Thus, the development of large store is likely to be associated to the development of new types of small shops.

5.4 Further robustness checks

The DID model used so far is identified if retail employment dynamics for both treated and non-treated areas can be explained by a common trend and population composition. However, if retail employment does not grow at the same rate for both groups in the pre-treatment period, identification breaks down. One way to assess the plausibility of the identification condition is to use data on more than one pre-reform period and to test that in the pre-reform $\delta = 0$ (simply because no reform took place). Alternatively, it is possible to apply a "double" DID estimator. Consider data from 1996 to 2002 and the following model:

$$Y_{ipt} = \beta_t + \gamma_i^p + X_{it}^T \beta_0 + \delta M_i + \delta^* M_i^* + \epsilon_i \tag{5}$$

where $\beta_t, \gamma_i^p, X_{it}$ and M_i are defined as in model 4. M_i^* is instead a dummy equal to 1 if the person lives in the treated area, but in a pre-treatment period. Here it is defined as equal to 1 if the person lives in a province of Marche after 1999 and it is equal to zero otherwise. M_i^* captures differences in trends before the reform (i.e. in years 1999 and 2000), while M_i is now the additional effect due to the reform. Thus, this model is identified under the more general assumption that the employment growth rate may differ between treated and non-treated areas, but this difference must be constant over time (and equal to δ^*). This robustness check is particularly relevant for all estimates based on $Sample_2$, since it is composed by provinces located in two separated areas and potentially (more) heterogeneous. The estimated policy effect δ is reported in Table 9 (other coefficients are omitted) and confirms the results presented in the previous sections. Large store free entry increases total

[12] Estimates have been carried out also for the male sub-sample, who amount to 2/3 of small shop owners. In this subsample the negative sign of the policy effect is significant also in $Sample_2$ and it is equal to -1 percent.

retail employment, since the raise in the number of large store employees is not accompanied by a significant reduction in small retail employment.

6 Conclusions

The paper presents empirical evidence that supports the hypothesis that not only labour market rigidities, but also product market regulation affects labour market outcomes. The case of study is a reform introduced in Italy in 1998, aimed at reducing entry barriers in the Italian retail trade sector. Since this new law, called "decreto Bersani", delegated the Italian regional governments for regulating large store openings, nowadays in Italy entry barriers varies considerably across regions. This regional variation, however, can be used to identify the effects of entry barriers on the labour market. The empirical results, based on two alternative model specifications and two different samples, confirm that in Italy, as in France, lowering entry barriers leads to higher employment, not only in the segment of distribution involved in liberalization, but also in the whole retail trade sector. Thus, the evidence presented in the paper suggests that entry barriers, often justified as a way to protect employment, may rather achieve the opposite target.

The positive effect on employment of lowering entry barriers is due to two factors. First, lowering entry barriers reduces start-up costs for large stores. As a consequence, in liberalized areas large store employment growth accounts for the most part of the total retail employment growth. Second, large stores do not necessarily compete with small retail shops, since the number of workers in small retail establishments does not decreases after liberalization. Instead, the evidence presented in the paper supports the hypothesis that higher competition may lead to structural changes, as reflected by changes in small shop employment composition. This issue is worth exploring in future research.

The findings of this paper suggests that high-unemployment regions, like those located in the Southern part of Italy, could have substantially risen their employment rate by lowering entry barriers of large stores.

Finally, regulation restrictions may affect other relevant dimensions, like productivity, profit margins and prices. These aspects will be object of future research.

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Figures and Tables

Figure 1: Marche and Abruzzo

Figure 2: Employment rates in Italy: retail trade sector and other sectors. Employment rates are normalized by dividing them by the corresponding values oberved in April 1996. Population aged 15-64. Centered moving average.

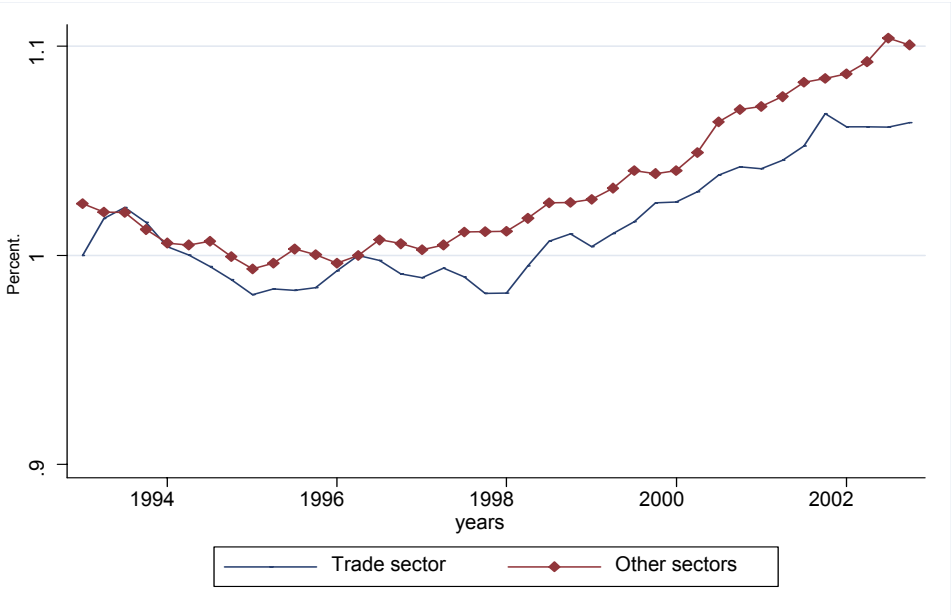

Figure 3: Fraction of total retail employed in total population in Italy by size of establishment. Population aged 15-64. Centered moving average.

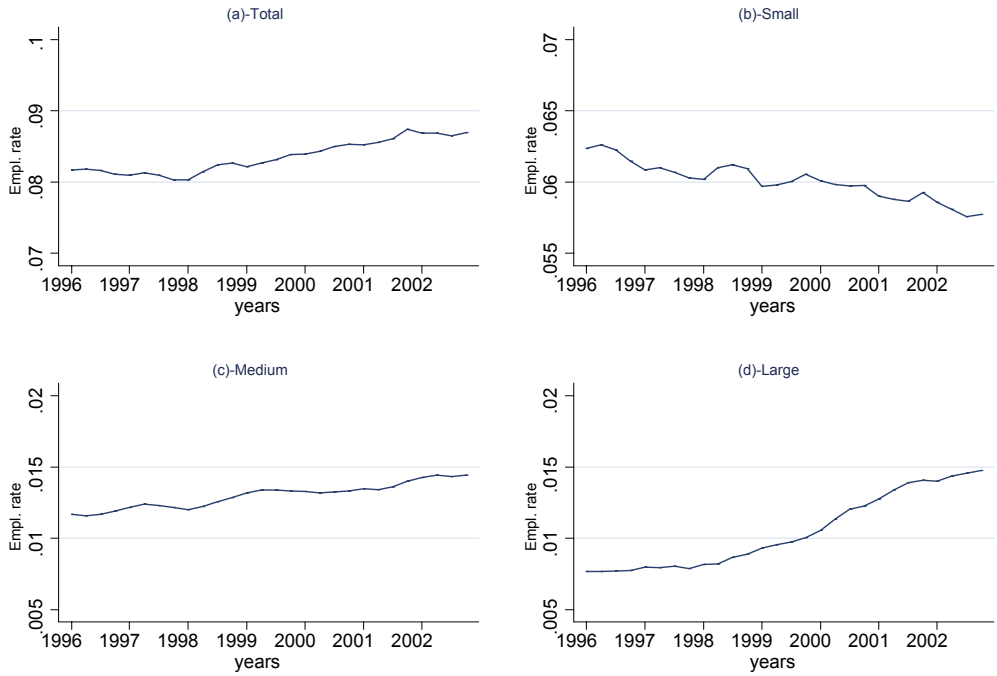

Figure 4: Fraction of small retailers in total population by type of employment. Population aged 15-64. Centered moving average.

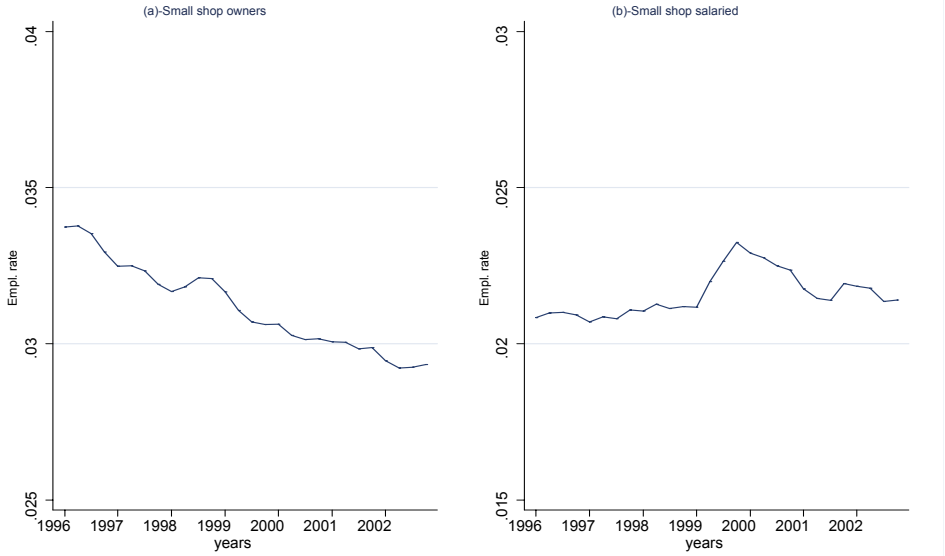

Figure 5: Provinces of Marche and Abruzzo

Figure 6: Fraction of total retail employees in total population in treated and non-treated areas. Population aged 15-64. Centered moving average.

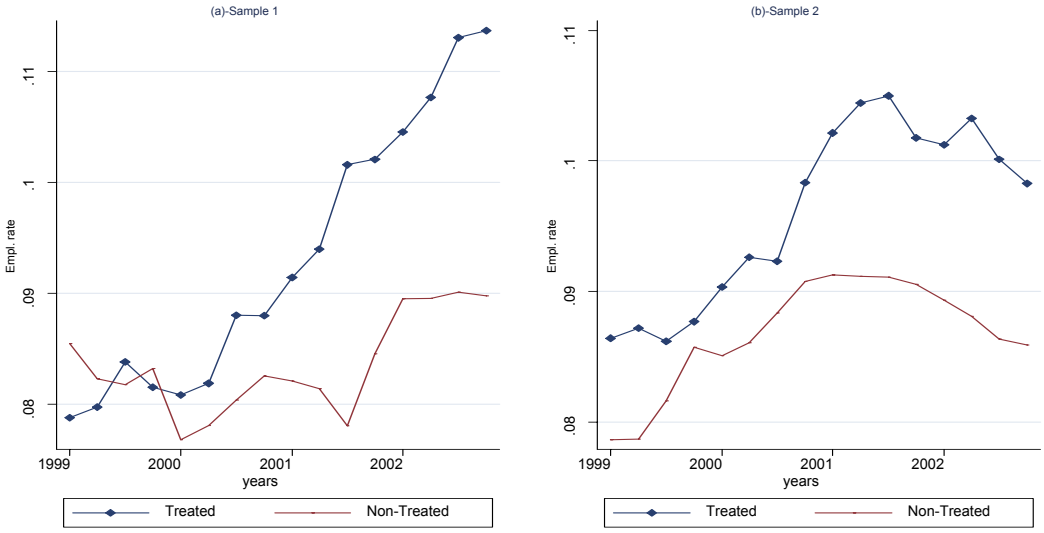

Figure 7: Fraction of large store employees in total population in treated and non-treated areas. Population aged 15-64. Centered moving average.

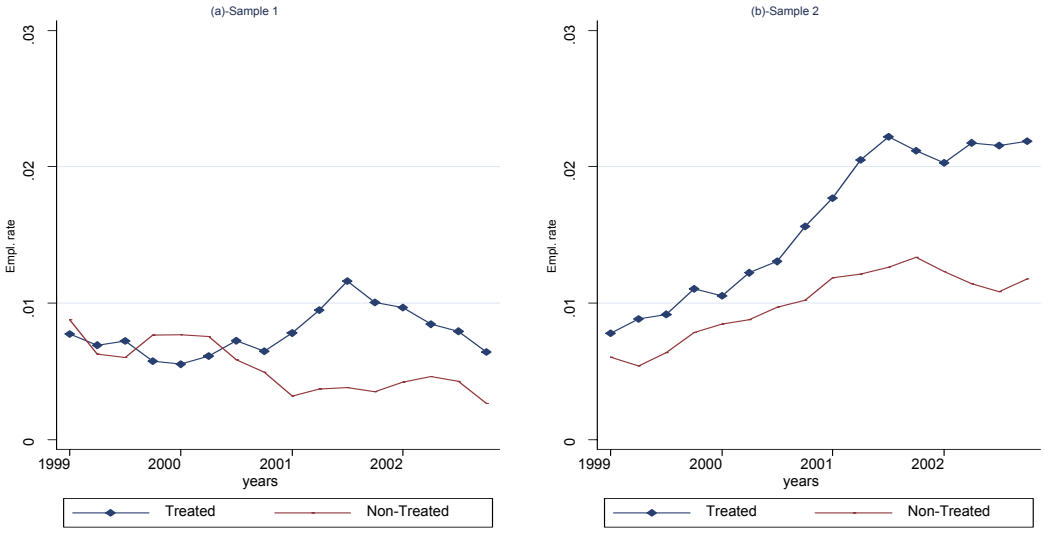

Figure 8: Fraction of small retail employees in total population in treated and non-treated areas. Population aged 15-64. Centered moving average.

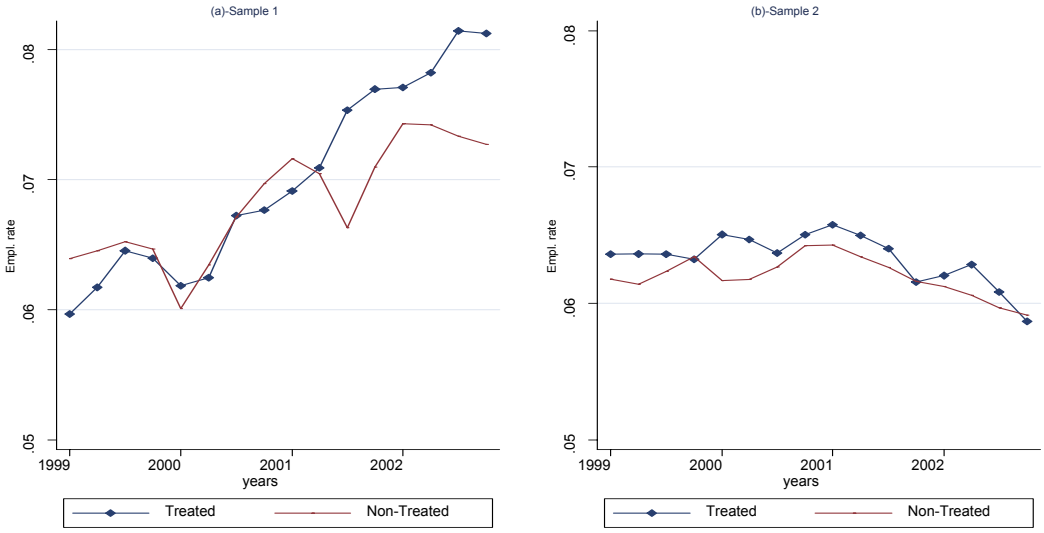

Table 1: Marche and Abruzzo: Structural characteristics. Census data.

	Marche	Abruzzo
Area (thousand hectars)	969	1,079
Population (thousand)	1,469	1,281
No. of municipalities	246	305
Average municipality area	25.4	28.3
Density (pop./area)	1.5	1.2
Non-mountain area (thousand hectars)	397	245
No. 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 (pop./area)	2.9	3.2
Share of trade establishments in total establishments: 1996	33.9	36.5
Share of trade establishments in total establishments: 2001	32.0	29.5
Share of trade employees in total establishments: 1996	20.2	21.9
Share of trade employees in total establishments: 2001	19.5	18.5
Average size of trade establishments: 1996	2.2	2.0
Average size of trade establishments: 2001	2.3	2.1

Table 2: Floor space applications in Marche and Abruzzo from 2000 to 2002.

	Approved applications			Rejected applications		
	Number	Square Meters	Sq. m./pop.	Number	Square Meters	Sq. m./pop.
			Marche			
Pesaro	4	22,500	6.7	0	0	0.0
Ancona	4	39,500	8.8	1	34,000	7.6
Macerata	1	7,000	2.3	2	36,000	11.9
Ascoli Piceno	4	64,000	17.3	2	6,000	1.6
Total	13	133,000	9.2	5	76,000	5.2
			Abruzzo			
Teramo	2	24,000	8.4	2	12,000	4.2
Pescara	2	21,500	7.3	0	0	0.0
Chieti	4	34,500	9.0	2	48,000	12.6
L'Aquila	0	0	0.0	1	8,000	2.7
Total	8	80,000	6.3	5	68,000	5.4

Table 3: Sample composition (percentages and averages).

	$Sample_1$	$Sample_2$
Sex		
–Man	49.2	49.1
–Woman	50.8	50.9
Age	39.9	39.7
Educational attainment		
–University degree	6.9	8.4
–High school	28.8	30.5
–Vocational	5.0	5.3
–Compulsory	59.3	55.9
Labour market condition		
–Employed	53.8	54.8
–Unemployed	4.1	3.6
–Out of the labour force	42.1	41.6
Share of Trade sector employees	8.4	8.8
–Large	0.8	1.4
–Medium	1.2	1.6
–Small	6.4	5.9
– –shop owner	3.9	3.1
– –employee	2.0	2.3
– –unpaid family worker	0.5	0.5
No. Observations	24,360	52,048
–treated	12,186	25,303
–non-treated	12,174	26,745

Table 4: Total employment in retail trade sector: Differences-in-differences estimator.

	$Sample_1$			$Sample_2$		
	coeff	st. err	p-value $H_0 : \beta = 0$	coeff	st. err	p-value $H_0 : \beta = 0$
Policy effect δ	0.010	0.000	0.014	0.009	0.004	0.084
Man	-0.013	0.009	0.395	-0.014	0.005	0.066
Pot. exp.*Man	0.010	0.001	0.031	0.010	0.002	0.009
Pot. exp.^{2}*Man	0.000	0.000	0.016	0.000	0.000	0.008
Pot. exp.*Woman	0.004	0.001	0.214	0.004	0.001	0.006
Pot. exp.^{2}*Woman	0.000	0.000	0.188	0.000	0.000	0.005
University att.	-0.012	0.023	0.696	-0.015	0.004	0.027
High scholl att.	-0.008	0.022	0.775	-0.007	0.005	0.244
Vocational att.	-0.045	0.002	0.022	-0.037	0.005	0.006
Single	0.020	0.025	0.571	0.016	0.001	0.001
Married	-0.001	0.014	0.969	0.001	0.017	0.946
Constant	0.047	0.028	0.341	0.074	0.016	0.148
Year dummies	Yes			Yes		
Seasonal dummies	Yes			Yes		
Province dummies	Yes			Yes		
No. Obs.	24,360			52,048		
R^2	0.033			0.030		

Table 5: Large store employment: Differences-in-differences estimator.

	$Sample_1$			$Sample_2$		
	coeff	st. err	p-value $H_0 : \beta = 0$	coeff	st. err	p-value $H_0 : \beta = 0$
Policy effect δ	0.006	0.000	0.010	0.007	0.002	0.045
Man	0.001	0.002	0.846	0.001	0.002	0.426
Pot. exp.*Man	0.001	0.000	0.119	0.002	0.000	0.005
Pot. exp.^{2}*Man	0.000	0.000	0.157	0.000	0.000	0.005
Pot. exp.*Woman	0.000	0.000	0.469	0.001	0.000	0.006
Pot. exp.^{2}*Woman	0.000	0.000	0.324	0.000	0.000	0.004
University att.	-0.004	0.001	0.209	-0.006	0.003	0.177
High scholl att.	-0.002	0.008	0.815	-0.008	0.003	0.089
Vocational att.	-0.001	0.004	0.847	-0.006	0.003	0.107
Single	0.007	0.003	0.251	0.002	0.001	0.299
Married	-0.002	0.001	0.220	0.008	0.003	0.059
Constant	0.000	0.004	0.970	0.010	0.003	0.035
Year dummies	Yes			Yes		
Seasonal dummies	Yes			Yes		
Province dummies	Yes			Yes		
No. Obs.	24,360			52,048		
R^2	0.006			0.008		

Table 6: Small retail employment: Differences-in-differences estimator.

	$Sample_1$			$Sample_2$		
	coeff	st. err	p-value $H_0 : \beta = 0$	coeff	st. err	p-value $H_0 : \beta = 0$
Policy effect δ	0.002	0.000	0.059	-0.001	0.005	0.905
Man	-0.015	0.001	0.040	-0.012	0.004	0.045
Pot. exp.*Man	0.008	0.000	0.013	0.006	0.001	0.012
Pot. exp.^{2}*Man	0.000	0.000	0.032	0.000	0.000	0.014
Pot. exp.*Woman	0.003	0.001	0.294	0.003	0.001	0.017
Pot. exp.^{2}*Woman	0.000	0.000	0.249	0.000	0.000	0.021
University att.	-0.015	0.014	0.468	0.003	0.003	0.418
High scholl att.	-0.009	0.008	0.478	0.009	0.004	0.094
Vocational att.	-0.041	0.003	0.041	-0.019	0.005	0.028
Single	0.008	0.019	0.759	0.013	0.002	0.006
Married	0.000	0.022	0.993	-0.004	0.013	0.755
Constant	0.048	0.022	0.270	0.002	0.010	0.823
Year dummies	Yes			Yes		
Seasonal dummies	Yes			Yes		
Province dummies	Yes			Yes		
No. Obs.	24,360			52,048		
R^2	0.022			0.018		

Table 7: Small shop owners: Differences-in-differences estimator.

	$Sample_1$			$Sample_2$		
	coeff	st. err	p-value $H_0 : \beta = 0$	coeff	st. err	p-value $H_0 : \beta = 0$
Policy effect δ	-0.008	0.000	0.005	-0.004	0.004	0.383
Man	-0.003	0.002	0.401	-0.002	0.001	0.084
Pot. exp.*Man	0.005	0.000	0.029	0.004	0.000	0.002
Pot. exp.^{2}*Man	0.000	0.000	0.004	0.000	0.000	0.002
Pot. exp.*Woman	0.002	0.001	0.439	0.001	0.000	0.031
Pot. exp.^{2}*Woman	0.000	0.000	0.399	0.000	0.000	0.032
University att.	-0.012	0.008	0.360	-0.002	0.005	0.696
High scholl att.	0.001	0.004	0.871	0.007	0.002	0.018
Vocational att.	-0.037	0.000	0.002	-0.019	0.002	0.001
Single	-0.008	0.010	0.587	0.002	0.002	0.489
Married	-0.019	0.015	0.432	-0.006	0.003	0.161
Constant	0.023	0.011	0.290	0.004	0.005	0.477
Year dummies	Yes			Yes		
Seasonal dummies	Yes			Yes		
Province dummies	Yes			Yes		
No. Obs.	24,360			52,048		
R^2	0.025			0.018		

Table 8: Small shop salaried workers: Differences-in-differences estimator.

	$Sample_1$			$Sample_2$		
	coeff	st. err	p-value $H_0 : \beta = 0$	coeff	st. err	p-value $H_0 : \beta = 0$
Policy effect δ	0.009	0.000	0.014	0.002	0.004	0.623
Man	-0.010	0.006	0.341	-0.013	0.005	0.073
Pot. exp.*Man	0.002	0.000	0.138	0.002	0.001	0.083
Pot. exp.^{2}*Man	0.000	0.000	0.071	0.000	0.000	0.055
Pot. exp.*Woman	0.001	0.000	0.143	0.001	0.000	0.066
Pot. exp.^{2}*Woman	0.000	0.000	0.133	0.000	0.000	0.027
University att.	-0.008	0.001	0.094	0.001	0.002	0.660
High scholl att.	-0.015	0.009	0.325	-0.005	0.003	0.230
Vocational att.	0.001	0.003	0.878	0.001	0.005	0.805
Single	0.012	0.010	0.439	0.010	0.005	0.145
Married	0.014	0.006	0.269	0.003	0.010	0.769
Constant	0.023	0.008	0.226	0.036	0.002	0.001
Year dummies	Yes			Yes		
Seasonal dummies	Yes			Yes		
Province dummies	Yes			Yes		
No. Obs.	24,360			52,048		
R^2	0.011			0.0103		

Table 9: Robustness check for the policy effect: Differences-in-differences estimator for the period 1996-2002.

	$Sample_1$			$Sample_2$		
	coeff	st. err	p-value $H_0 : \beta = 0$	coeff	st. err	p-value $H_0 : \beta = 0$
Total retail employment	0.010	0.000	0.001	0.009	0.004	0.076
Large store employment	0.007	0.000	0.012	0.007	0.002	0.047
Employed in small establishments	0.001	0.000	0.158	-0.001	0.006	0.928
of which: small shop owners	-0.008	0.000	0.011	-0.002	0.004	0.627
of which: small shop salaried workers	0.009	0.000	0.014	0.002	0.004	0.625