Temi di Discussione

(Working Papers)

The role of regulation on entry:
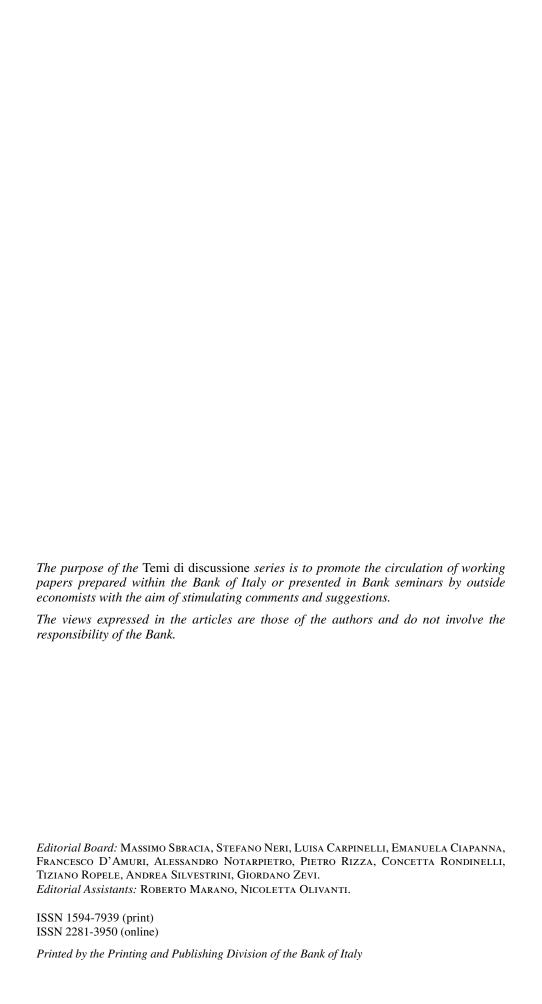evidence from the Italian provinces

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THE ROLE OF REGULATION ON ENTRY:
EVIDENCE FROM THE ITALIAN PROVINCES

by Francesco Bripi*

Abstract

This paper studies the effects of differences in local administrative burdens in Italy in the years preceding a major reform that sped up firm registration procedures. Combining regulatory data from a survey on Italian provinces before the reform (costs and time to start a business) with industry-level entry rates of limited liability firms, I explore the effects of regulatory barriers on entry across industries with different natural propensities to enter the market. Using different specifications the estimates show that lengthier and, to some extent, more costly procedures reduced the entry rate of limited liability firms in sectors with naturally high entry rates. These results also hold when I include measures of local financial development and of efficiency of bankruptcy procedures. Overall, the analysis confirms the view that administrative burdens on new start-ups matter for business creation.

Contents

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1. Introduction[1]

The importance of firm creation for the development of modern economic systems is widely acknowledged. Indeed, entry fosters competition, lowers prices, and promotes employment growth.[2] One of the main obstacles to firm creation is the burden of bureaucratic procedures. Excessive regulation or burdensome legal procedures for firm creation can deter firm entry and thus affect economic performance. As the evidence on cross-country variations in entry regulation has become increasingly available in recent years, this point has been widely reiterated in empirical works: see, for example, Djankov *et al.* (2002).

Less is known about the effects on economic performance when entry regulation or the administrative burdens associated with regulation levels vary within countries. Better regulation or lower red tape costs/delays in some regions of a country might exert significant differential effects on local market competition and ultimately local development with respect to regions where administrative burdens on entry are greater. Indeed, as documented in various Subnational Doing Business Reports,[3] there is evidence of great variability of regulatory burdens within some advancing and advanced countries. Despite the efforts of governments to simplify and reduce red tape, entry regulation remains particularly burdensome in many regional areas.

While most of these Subnational Reports focus on less developed countries or emerging markets, this paper focuses on Italy. Indeed, Italy is a particularly interesting case because the country is highly heterogeneous in terms of entrepreneurship and economic performance, with marked dualisms between the more developed regions of the Centre and North and those of the South. In this country the regulatory procedures for starting a business are determined by national regulation, so that the within-country heterogeneity of the costs and time of these procedures depend mainly on the efficiency of the local bureaus and the professional experts involved. Moreover, between 2008 and 2009 business registration was simplified with the introduction of the "Single Communication", which collapsed four procedures into one. One benefit of this simplification was a large time saving for entrepreneurs. According to the Doing Business Surveys and Bianco and Bripi (2010), it led to a significant reduction in the time necessary to start up a firm:[4] the time spent on dealing with procedures for starting up a small limited liability firm went from 23 days in 2004 to 10 in 2009, and to 6 days in 2011.

In order to evaluate the *potential* benefits of this reform on the entry rate, one should ideally consider the impact of the time saving on the rate of business creation. However, the reform was introduced only gradually and more than two years passed before it became fully effective.[5] After its full implementation, the entry rate changed dramatically in all areas of the country due to the financial and economic crisis. Since the crisis might have resulted in structural changes in the economy, any attempt to estimate the effects of the reform during this period would risk producing biased estimates of one of the parameters of interest to us (the effect of time on firm creation). For this reason I analyze the correlation between bureaucratic burdens on new start-ups in Italian provinces in the years immediately preceding the Single Communication reform.

I use data from a survey conducted by the Bank of Italy on firm creation procedures (costs and time) across Italian provinces. The survey, which used a similar methodology to that of Doing Business, showed a high variability of both costs and time in the pre-reform period across Italian provinces. For example, time delays in 2008 varied from about 10 days in the northern areas of the country to more than 30 days in the less developed South (see Bianco and Bripi, 2010). Drawing on this heterogeneity of red tape entry delays (and costs), due to the different levels of efficiency of the local public administrations and the local professional experts involved in the procedures, I explore whether the pre–reform heterogeneity of administrative burdens across provinces may have had a differential and significant impact on entry at local level.

The paper presents estimates showing that for provinces with more administrative hurdles to starting a business, the entry rate was lower than in other provinces with fewer hurdles. In particular, the evidence presented here shows that the time spent on dealing with entry administrative procedures negatively affected the entry rate of small firms; costs are also negatively correlated with entry, but the statistical significance of the results depends on the particular specification adopted. The result holds for both small and all limited liability firms. Therefore, this evidence suggests that reducing red tape delays was beneficial to entry at local level. In particular, the effects of heterogeneous administrative burdens may go some way to explaining the different levels of entrepreneurship (and ultimately of economic performance) in the more developed areas of the Centre and North and those of the South.

This paper is structured as follows. Section 2 discusses the related literature. Section 3 outlines the empirical methodology adopted and Section 4 presents the data used. Section 5 presents the main results and the estimates of the baseline model. Section 6 addresses endogeneity and Section 7 contains robustness checks. Section 8 concludes.

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[5] Parliament approved the reform in Law 40/2007, published in the Official Gazette on 2 April 2007. Initially there was a dual system whereby applications for company registration could be submitted under the old system (involving four procedures) or via a "Single Communication". This experimental period started at the beginning of 2008 and ended two years later in April 2010, when the Single Communication procedure became mandatory for all applications.

2.   Relation to the literature

A recent and growing literature argues that costly regulation hampers the creation of new corporations and economic growth: for a broad survey on the role of entry regulation see Djankov (2008).

Since the initial paper by Djankov *et al.* (2002) a large empirical literature on this topic has been developed, providing cross-country evidence of the negative effect of entry regulation on entry rates and entrepreneurship. This literature has drawn heavily on the international regulatory measures developed by the World Bank from 2004 onwards (World Bank). The paper that relates most closely to this work is that by Klapper *et al.* (2006): using data on European countries, they present evidence based on cross-country and cross-sector data that excessive entry regulation (measured in terms of the costs and time of bureaucratic procedures) reduces the entry rate. I start with a similar premise and apply their methodology to Italian provinces; however, my work concentrates on small- and medium-sized limited liability firms. In other related cross-country studies, Ciccone and Papaioannou (2007 and 2008) show that entry rates in industries that experienced expansionary global shocks are higher in countries with faster procedures for registering new businesses. Their work develops a two steps procedure – adopted in this paper – which correct the potential measurement error bias due to the role of idiosyncratic shocks in the variable used as a proxy for the frictionless benchmark. Desai *et al.* (2003) also provide evidence that entry regulation and other institutional factors (such as the protection of property rights, the level of corruption and the functioning of the legal system) have a negative impact on firm entry in European countries. Scarpetta *et al.* (2002) show a negative correlation between the entry of small and medium-sized firms in OECD countries and the levels of product market and labor regulation. Djankov *et al.* (2006) find that countries with better regulation grow faster.[6] Freund and Bolaky (2008) show that trade openness increases the per-capita income of countries that have lighter business regulation, especially on firm entry.

Within-country studies also confirm that entry regulation influences economic performance (see Table A.1). Most analyses on cross-sector liberalizations focus on developing countries. Kaplan *et al.* (2007) show that a program that significantly sped up firm registration procedures in Mexico increased new business start-ups – especially of mid-sized firms – by about 4%, even though the effect was temporary. Bruhn (2012) on the same reform shows that the program increased the entry rate and wages and decreased the income of incumbents and price levels. Yakovlev and Zhuravskaya (2007) show that a series of reforms between 2001 and 2004 which liberalized businesses (registration, licensing, and inspections) in Russia had a substantial positive effect on net entry and on small business employment. Chari (2011) shows that a reform that eased restrictions on entry in India during the 1980s led to an increase of about 15% of total

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[6]   Where this is a bundle of seven Doing Business regulation indexes, relative to starting a business, labor regulation rigidity, registering property transfers, getting credit, protecting investors, enforcing contracts and closing a business.

factor productivity (TFP). Sharma (2009) considers another policy reform in India, which removed license requirements in 1991 on the setup and expansion of factories and shows that the benefits of this liberalization (a reduction of the share of firms operating in the informal sector and an increase in the value added per informal worker) were greater in the states that had pro-employer labor laws.

Some papers that analyzed developed countries focused on specific sectors. Schivardi and Viviano (2011) find that regional entry barriers in the retail sector in Italy are associated with higher profit margins and lower productivity of incumbent firms; stricter regulation also has a negative effect on investment in ICT and on employment and it increases labor costs in large shops.

Another sector specific study is from Bertrand and Kramarz (2002), who examine the expansion decisions of local retailers following new zoning regulations introduced in France and find a strong relation between increases in entry deterrence (such as rejection of expansion or entry decisions) and decreases in employment growth.

3.   Methodology

I focus on cross-industry and cross-province interaction effects to analyze the impact of regulation on entry. As in Klapper *et al.* (2006), I use the methodology adopted by Rajan and Zingales (1998) to test whether industrial sectors with an intrinsically higher entry rate have greater business creation in locations with lower levels of bureaucratic obstacles to entry. In other words, I test whether the entry rate is lower in an industry with a higher ''natural'' propensity for entry when the province has higher costs/time for complying with bureaucratic requirements for incorporation. The advantage of this methodology is that since the traditional cross-section regressions might not be able to account fully for endogeneity (where sector dynamics in a region might affect the level of local entry time delays), the approach taken by Rajan and Zingales addresses these concerns in a consistent and simple way.

The reduced form empirical model is specified in equation (1):

$$Entry_{j,p} = \beta_0 + \mathbf{B_1} \cdot \Gamma_j + \mathbf{B_2} \cdot \Gamma_p + \beta_3 \cdot (Entry_j \cdot costs/time)_p + \beta_4 \cdot \phi_{j,p} + \beta_5 \cdot X_{j,p} + \varepsilon_{j,p} \qquad (1)$$

where the dependent variable is the entry rate of firms in industry j and province p.

The model includes industry and local dummy variables to control for any unobserved effect at the sector or province level (captured by the vectors of parameters $\mathbf{B_1}$ and $\mathbf{B_2}$). In addition to this and consistent with Rajan and Zingales, I control for any convergence effect by adding a firm share variable ($\phi_{j,p}$). The empirical exercise in this baseline model tests that $\beta_3 < 0$, where the variable of interest is the interaction between

the industry characteristic (i.e.: the entry rate of an ideal exogenous benchmark) and the regulatory variable (entry costs or time). The test reveals whether bureaucratic "burdens to entry" hamper business creation of "naturally" high entry sectors relatively more in those provinces with stricter regulation (e.g.: implying greater costs and/or time due to regulation).

Note that the specification adopted can be considered as a diff–in–diff estimation, where we assume for each sector the invariance of technology parameters (the "naturally" high sectoral entry rate proxied by that of the Italian province with the lowest level of regulatory burdens) between heavily and lightly regulated provinces. As a consequence, with this approach I can only estimate the relative magnitude on ''naturally high-entry'' industries (see Section 5).

Finally, the extended versions of the baseline model include some additional control variables ($X_{j,p}$) that might have an impact on entry (mainly other institutional factors, such as the role of financial development and the costs of bankruptcy regulation).

4. Data

I use data from three main sources. Entry regulation data are taken from a dataset recently built at the Bank of Italy measuring the costs (in terms of euros of income per capita) and time (days and hours) of regulation and bureaucracy across the Italian regions.[7] The data was collected in a survey, following the Doing Business methodology[8] with some minor changes in order to better mirror the Italian economic system, where the average firm size is smaller than in other developed countries.[9] The areas depend mostly on the coverage of the regulatory survey as described by Bianco and Bripi (2010). The survey was conducted in all the regional capital cities and in some cases also in capital cities of other provinces.[10] However, in order to reduce the noise bias of the survey data (indeed, in some cases there were less than two respondents for each location), I only consider the regional capital cities with at least two respondents. If there is only one respondent for a regional capital city, then I take the average regulatory value of the other provinces in the same region, where at least two answers per province capital

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[7] The survey was conducted between December 2008 and January 2009. See Bianco and Bripi (2010).

[8] See http://www.doingbusiness.org.

[9] The major difference with respect to the Starting a Business indicator of the Doing Business methodology is the standard firm size: in the survey conducted in Italy the standard firm has three owners and 20 employees, as opposed to 5 owners and an average of 35 employees in the Doing Business Survey (see Bianco and Bripi, 2010). Note that the survey included the costs associated with the use of intermediaries such as professional experts, even when these were not compulsory, but widely used in practice. However, similarly to the Doing Business methodology, I excluded these additional costs from this dataset, as they might be influenced not only by the efficiency of the local bureaucratic system (the major concern here), but also by the conditions of the local professional services market.

[10] Italy is divided into 20 regions and each region into provinces. The region is a larger portion of territory, corresponding to the NUTS2 European territorial classification system. The provinces correspond to NUTS3 level and roughly to U.S. counties.

are available. In this way, I am left with regulatory data from 21 locations: 18 regional capital cities plus Bozen (which is considered separately from Trento due to their special status of autonomous provinces), Veneto and Sardinia.[11]

Firms' demography data is from the Infocamere (Movimprese) dataset, which contains all firms registered in the local Public Enterprises Registrar in Italy. In this way, I rely on actual demographic data and avoid sample selection problems that might affect other databases. Since these data are collected at province level, this is the geographic unit for all the dataset.

Moreover, since the regulatory data survey is based on the procedures necessary to start up a small limited liability firm, whose legal form is "Srl" (*Società a responsabilità limitata*, or limited liability company), I restrict the analysis to firms with this legal form. Srl firms are interesting to analyze because they are the most common legal form for new entrepreneurial activities, among all possible types of limited liability firms (hereinafter Ltds): indeed, they represent 87.2% of all Ltds in Italy (92.9% in the sample used here) and usually have a smaller average size than other types of limited company.[12] Moreover, since the number of procedures (and the relative costs and time they require) to start up a Srl is rather similar to that of other Ltds, I also consider − as dependent variables − the entry rate of Srls as well as that of all limited liability firms, where the first group (Srls) is used to better proxy smaller Ltds.

The analysis is confined to active registered firms: these are the companies that did not start a bankruptcy procedure during the period of analysis. Despite the fact that the regulatory data was surveyed between December 2008 and March 2009, I consider the average entry rate (the dependent variable) in the years 2005, 2006 and 2007. This was a period during which no big changes occurred to the entry regulations of Ltds in Italy,[13] and it precedes the recent financial and economic crisis, which might have resulted in structural changes to the economy and consequently also have altered entry dynamics. Finally, the sample is further restricted to companies with at least two owners.[14]

Following Klapper *et al.*'s example (2006), the methodology adopted in this paper requires the use of an entry rate as a benchmark that proxies the natural propensity to enter the market, in the "absence" of regulatory burdens. In this exercise the variable is

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[11] In these two regions, since there were insufficient observations in the regional capital cities (Venice and Cagliari, respectively), I took the average values of the regulatory and entry variables surveyed in the other provincial capital cities of the respective regions with at least two respondents; they are: Belluno, Rovigo, Treviso and Vicenza in Veneto; Nuoro, Oristano and Sassari in Sardinia.

[12] Another type of limited firm is a joint stock company (SpA), the legal form required for listing on the stock exchange. By comparison, the average size of Srls and SpAs in the sample is 1.21 and 14.59 employees per firm respectively, while that for limited liability firms is 3.96.

[13] Indeed, the implementation of the SC reform only began in February 2008.

[14] Italian law allows incorporation of some limited liability companies (namely, in the form of Srls or SpAs) with only one owner. Since this form of incorporation comes with considerable tax advantages, individual firms might prefer this form, even if *de facto* they act similarly to personal unlimited liability firms. For this reason, they have been excluded from the sample.

taken from different sources. When I use the average entry rate of Milan – the city with the lightest burdens in terms of costs and time due to regulation – the data are from the same source of the other entry rates (Infocamere – Movimprese); all entry rates are average values of the yearly rates computed between 2005 and 2007. I also use the average entry and growth rates of value added of US and UK firms as interacting variables, taken from the OECD's Business Demography database (average of yearly rates from 2004 to 2006).

With regard to the other data, the growth rate of value added, income per capita, population, and firm sales are from the Italian National Institute of Statistics (ISTAT); bank credit (granted only to firms and not to households or government) is from the Bank of Italy (Base Informativa Pubblica - BIP online). Measures of social capital are from various sources, as described in the Appendix (Table A.2). Finally, the data on corruption is from Golden (2004).

All variable definitions and sources are described in the Appendix (Table A.2).

I consider 39 sectors in 21 provinces.[15] By interacting observations across sectors and provinces, the dataset has 819 observations. The sectors included in the analysis are classified according to ATECO 2002 nomenclature with two digits, which is the national classification system adopted by ISTAT, corresponding to the international NACE Rev. 1.1.[16] The sectors belong to the following main categories: manufacturing; electricity, gas and water supply; construction; wholesale and retail trade; hotels and restaurants; transport, storage and communications; real estate, renting and business activities. However, since most provinces do not have any registered firm in some sectors, I dropped the industries whose entry rates are zero in most provinces.[17] This left me with 35 sectors in 21 cities, for a total of 735 observations. Tables 1.1 to 1.4 show the main statistics of the variables used in the econometric exercise.

5.   Results

Since the major focus here is on the effect of administrative burdens across provinces on the entry rate, a glance at the data shows that time and costs of entry are negatively correlated with the average entry rate of Srl firms in the sample (Figure 1).

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[15]   Indeed, the coverage of the local Public Enterprises Registrars is at province level. Italy is subdivided into 20 regions. Nineteen of these are further subdivided into provinces (including that of the regional capital city), while Trento and Bozen have a special autonomous status on legislative matters.

[16]   Where necessary, data were converted from ISIC Rev. 3.1 to NACE Rev. 1.1, using concordance tables from the United Nations Statistics Division: http://unstats.un.org/unsd/cr/registry/regot.asp?Lg=1.

[17]   Specifically, I dropped those sectors with three or less non-empty observations; the industries excluded are: manufacture of tobacco products (NACE code DA 16); manufacture of coke, refined petroleum products and nuclear fuel (NACE code DF 23); collection, purification and distribution of water (NACE code E 41); air transport (NACE code I 62).

Moreover, the econometric methodology adopted here is a difference-in-difference approach, comparing the entry rate between high and low entry industries in provinces with high and low levels of bureaucratic obstacles to business creation. Table 1.4 shows preliminary evidence of the effect of regulation on entry, by comparing the entry rates of provinces with high and low levels of regulatory barriers to entry (those in the first and the fourth quartile of the costs & time distribution) and the sectors with the lowest and highest entry rates (again, the first and fourth quartile of the distribution). Note that the difference between the average entry rates of lightly and heavily regulated provinces in high entry sectors is much greater than the same difference in low entry sectors (2.20% as against 0.24%). More in general, moving from the low entry sectors and high regulation provinces to the high entry and low regulation clusters increases the average entry rate from 0.51% to 4.07%. Finally, according to this descriptive analysis entry regulation is negatively correlated to entry in the top and lowest quartiles of the entry distribution.

However, this descriptive analysis does not address the endogeneity concerns expressed above. Nor does it take into account the likely biases induced by observed and unobserved confounding factors at province and/or sector level. In order to tackle these issues, I estimate the baseline model described in equation (1) and examine the hypothesis that entry regulation hampers firm creation using as interacting variable the entry rate of Milan, the Italian city with the lowest levels of cost and time to start a business in the sample.[18] In the sections that follow alternative entry rates will be used as interacting variables.[19]

Table 2 summarizes the estimates of the baseline model as outlined in equation (1) using the bureaucracy measures of entry cost and time interacted with the entry rates of the Milan province,[20] the industry firms' share, region and sector specific dummies. The estimates use tobit regression analysis censoring at zero and 100.[21] In the first three columns the dependent variable is the entry rate of Srl firms (the *proxy* of small companies), while in the remaining three it is the entry rate of the broader aggregate of all limited liability companies. Accordingly, the benchmark variable in each of the two groups is – respectively – the average entry rate of Srls and of all Ltds in the province of

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[18]   Milan is also Italy's "business capital": the national stock exchange is located there and the city boasts a highly dynamic economic system (with the highest level of income per capita in the sample, equal to is €33,605) and the highest average number of registered and newly registered firms. The average number of registered active firms in Milan from 2005 to 2007 period is 8,049.1, while the average number of newly registered limited liability firms is 237.7.

[19]   As a further check I also ran regressions using as alternative benchmark variables the entry rate of Bozen, which is the second province in the costs&time ranking and has special cultural features that differentiate it from all the other Italian provinces (about 50 per cent of the population speaks German, because of their historical and cultural proximity with Austria). The estimates using Bozen values as interacting variables (which for the sake of brevity are not shown here but are available on request to the author) confirm most of the results described in the text.

[20]   In order to exclude any endogeneity effect, in all regressions using Milan as a benchmark the observations from this province are excluded from the sample.

[21]   All estimates were replicated by censoring the entry rate only at zero level and by in/ex-cluding the entry rates above 100. In all these cases most of the results in this paper are confirmed (not shown here, but available on request to the author).

Milan. Columns *i* to *iii* show that the entry rate of Srl firms is lower in provinces where procedures are longer and more costly to the entrepreneur. Indeed, the coefficients of the interaction terms of time and of costs&time (the monetized value of the entrepreneur's time to set up a business) variables are both negative – as expected – and significant at the 1% level. Also the coefficient of the interaction term of the costs variable is negative and significant at the 5% level.

Moving to the case of entry of all Ltd firms (columns *iv* to *vi* of Table 2), the coefficients of the interaction terms of all three variables (costs, time and of costs&time) are negative and significant. Note that, even though the methodology does not allow a direct interpretation of the magnitude of the coefficients, the absolute values of the coefficients of the time variable (column *ii* and *v*) are greater than those relative to costs (column *i* and *iv*).

To gauge the economic significance of these results, note that the model is a diff–in–diff estimation, where the empirical specification includes the differences between clusters with high and low regulation provinces, and clusters with high and low natural entry sectors:

$$Entry_{j,p} = \beta_0 + \beta_1 \cdot Sector_j + \beta_2 Prov_p + \beta_3 Sector_{Nat} \cdot Prov_p + \varepsilon_{j,p} \qquad (2)$$

where $Sector_{Nat}$ is the "natural" sector variable, proxied here by the entry rate of Milan on the assumption of unchanged technology parameters in each sector. As shown in Table A3 in the Appendix, a change of the policy variable consists of a movement, keeping industry characteristics constant, from high to low regulation provinces and is given by β_1 ($=y_{le} - y_{He}$); for a given level of regulation a change from low to high entry sectors amounts to β_2 ($=y_{HE} - y_{He}$). The usual diff–in– diff estimator is given by $\Delta\Delta y = \Delta y_l - \Delta y_H = (y_{lE} - y_{le}) - (y_{HE} - y_{He}) = \beta_3$. Accordingly, consider the difference between the entry rates of the median high and low regulation provinces (at the 25th and 75th percentile, respectively) and the difference between the median entry rate of the low entry sector (that is the sector at the 25th percentile of the whole distribution) and that of the high entry sector (at the 75th percentile). In other terms, the coefficient estimated in column *ii* in Table 2 implies that because of time differences due to administrative efficiency, moving from Sardinia (at the 75th percentile of the time delays distribution[22]) to Turin (which is at the 25th percentile of time to register a new business) benefits entry into the naturally high entry sector (other business activities, NACE code 74) relatively more than in the low entry sector (manufacture of other non-metallic mineral products, NACE code 26): the difference in entry rates of Srl firms between these two sectors in Turin is 1.4% higher than the difference in entry rates between the same industries in Sardinia. As a comparison, the mean difference in entry rates between these two sectors

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[22]   Note that this distribution does not include Milan, as the province is excluded from the estimates sample when used as a benchmark.

across provinces is 2.53%,[23] suggesting that the effect of entry costs accounts for about 54% of the mean difference.

Moving to costs differences, the entry differential between Trento and Catanzaro (the provinces at the 25th and 75th percentiles of costs to start a business respectively), when moving from the manufacture of other non-metallic mineral products to other business activities is 0.66%; this corresponds to about 26% of the mean difference in entry rates between these two sectors across provinces.

Hence, the empirical findings of the baseline model show a larger gap between actual sectoral entry (of Srls and all Ltds) and the frictionless benchmark in Italian provinces with longer and more costly administrative entry delays.

5.1 *Extension to the baseline model: financial development and bankruptcy efficiency*

In order to take into account the role of other regulatory and institutional factors that might affect entry, I consider two additional features of the business environment that can greatly affect business creation: the level of financial development and the bureaucratic burdens of bankruptcy regulation. To the extent that burdensome entry regulations go together with these other factors (that is lower financial development and less efficient bankruptcy procedures), they could all capture similar aspects of an unfavorable business environment. It follows that the addition of these variables to the empirical model not only allows an investigation into whether they have an impact on entry, but can also ensure that the effect of entry regulation is not driven by these other institutional factors. This is why I extend the baseline model to include these measures, as described below.

I first check whether entry rates in the sample are also affected by the efficiency of the local financial system. Indeed, a wide literature has shown that financial development is essential to overcoming firms' liquidity constraints, which are more binding on businesses at the start-up stage.[24]

In order to assess whether access (or obstacles) to external finance is an additional determinant of firm entry, I add the interacted variable *Extdep x Findev* to the baseline model, where the industry characteristic (*Extdep*) measures the degree of dependence on external finance, a standard measure in this type of exercise,[25] and the proxy for the level

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[23] This difference is computed according to the following formula: $\hat{\beta}_3 \Phi \left(\frac{x'\hat{\beta}_3}{\sigma(\varepsilon)} \right) (entry_{74} - entry_{26})(entry_{TO} - entry_{SAR})$, where $\hat{\beta}_3 \Phi \left(\frac{x'\hat{\beta}_3}{\sigma(\varepsilon)} \right)$ is the marginal effect computed on β_3.

[24] For evidence on the United States see Evans and Jovanovic (1989). Some studies focus on Italy: Guiso et al. (2004b) show that financial development enhances entrepreneurship and entry rates, while Di Patti and Dell'Ariccia (2004) find significant, but not monotonic relations between bank competition and entry.

[25] The *Extdep* variable is from de Serres *et al. (*2006) which, following Rajan and Zingales's (1998) methodology, compute a measure of external financial dependence – for manufacturing as well as services sectors – as the industry-level median of the ratio of capital expenditures minus cash flow over the capital expenditures of U.S. listed firms.

of local financial development (*Findev*) is the ratio between private credit (granted only to firms and not to households or government) and local output (indeed, the focus is on firms, not the whole economy so I proxy local output with firm sales).

The results of the estimates using the financial development variable are summarized in Table 3. Note first that when only the interacted variable of financial development is included as regulatory regressor (column *i*), the effect is, as expected, positive and significant on the entry of Srl firms. When I add the interacted financial variable (*Extdep x Findev*) to the baseline model, the coefficients of the financial variable (see columns *ii* to *iv*) have the expected sign and are significant in all specifications considered. Moreover, the effect of regulation (measured by costs, time, and costs&time) on entry persists in all the specifications including the finance interaction variables.

I also check whether entry is affected by the effectiveness of bankruptcy regulation. Since an efficient bankruptcy system eases access to external financing by firms, burdensome bureaucratic procedures of closing a business due to the entrepreneur's default are expected to hamper initial financing at the entry stage. Empirically, I check whether entry depends – in addition to the costs and time of entry regulation – on the regulatory measures of bankruptcy proceedings. For this purpose, I use the regulatory data on costs, time and recovery rates[26] of the "Closing a Business" indicator surveyed in each province corresponding to regional capital cities.

The estimates including only the interacted recovery rate variables (see column *v* of Table 3) show that the efficiency of bankruptcy proceedings – measured by the recovery rate – does not affect entry of Srl firms. In the other columns the bankruptcy variable is an additional regressor of the baseline model (1); specifically, in columns *vi* and *vii* the extended model includes the recovery rate[27] interacted with the exit rate of Milan – a proxy of the "natural exit". The coefficients of the interacted bankruptcy variable have the expected positive sign but are not significant in either estimate; by contrast, the interacted coefficients of entry costs and time variables remain negative and significant. In columns *viii* to *x* I repeat the previous estimates by using the same interacting variable (the entry rate of Milan) for both the bankruptcy and the entry regulation variables. This allows a direct test on whether the results on entry regulation are driven by any possible correlation among the entry and exit regulation variables. This

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[26] The recovery rate measures the percentage of a credit that can be recovered through the bankruptcy procedure by creditors of a business that defaults on its loan. A higher recovery rate for creditors implies greater ex-ante credit availability (White and Berkowitz, 2004; Hart, 2000) and therefore it is expected to affect entry positively. The recovery rate used here is built according to the Doing Business methodology: the calculation takes into account the outcome (whether the business emerges from the proceedings as a going concern or the assets are sold piecemeal) and the costs and the time the money remains tied up in insolvency proceedings. For a more complete description of the Closing a Business indicator see Bianco and Bripi (2010).

[27] The results shown in the paper use the recovery rate, a variable which by construction includes the time and costs of bankruptcy proceedings. The estimates that include these two variables confirm the main results in the text but they are not shown here for the sake of brevity. However, they are available under request to the author.

second group of estimates confirms that entry (not bankruptcy) regulation is a significant barrier to entry. When I repeat all the previous estimates using the entry rate of all Ltd firms as a dependent variable (not shown here), most of the results are confirmed.

In general all regulatory burdens to entry reflect a highly regulated business environment. The correlations in Table 1.2 show that higher entry costs and time are associated (unexpectedly) with higher levels of local financial development and more costly (and time-consuming) bankruptcy procedures. Since all these factors could represent various features of the same business institutional environment, I estimate the baseline model extended with all the interactions included above.

Table 4 reports the results for Srl firms. I add both the financial and bankruptcy interacted variables described above to the baseline model. When all the regulatory variables are included (columns *ii, iv* and *vi*), all the results obtained so far are confirmed: the coefficients of entry costs and of financial development have the predicted sign and are significant (both at 5%); the time coefficient is significant at 1%; as above, as expected the recovery rate – the proxy for the efficiency of bankruptcy procedures – has a positive effect, but it is not significant. Again, when I repeat the same exercise using the entry rate of all firms in Milan as the interacting variable, I obtain similar results (not shown here).

Also in this case, in order to make sense of the economic relevance of these estimates, I compare the difference of the entry rates between the industries at the 75th and at the 25th percentiles of $Entry_{MI,Srl}$ (other business activities and manufacture of other non-metallic mineral products, respectively) with the differential between a province with high and low time delays (Sardinia and Turin, respectively). The coefficient estimated in Table 4 (column *vi*) implies that due to time differences the difference in entry rates of Srl firms between the two sectors in Turin is 1.4% higher than the difference in entry rates between the same industries in Sardinia. This means that moving from Sardinia to Turin benefits the high entry sector more, and the effect represents about 55% of the observed 25th-75th difference in industry entry rates.

In conclusion, the horse-race evidence shows that, controlling for other aspects of the business environment, the main results of the baseline model are confirmed: entry time delays (and to a lesser extent costs) remain important determinants of new firm creation in high entry industries; a more efficient local financial system also spurs entry whereas the efficiency of bankruptcy procedures (costs, time and recovery rates) does not have any significant effect.

6   Other endogeneity issues

The results obtained so far show that administrative barriers can actually deter entry across Italian provinces. However, one should view these results with some caution, since the problem of endogeneity might still affect the estimates.

A first issue arises because the level of red tape entry delays in a given province might be due to the low level of entrepreneurship in that area. For example, public bureaus might be less efficient in dealing with start-up procedures in provinces where there is traditionally lower demand for that service. In order to address this endogeneity concern, I resort to IV estimation of administrative obstacles to entry (costs and time) using social capital as the instrument. Indeed, lower levels of social capital might induce public officials to work less efficiently or professional experts to impose higher fees, thus increasing the burdens of bureaucratic procedures. Since the seminal work of Putnam et al. (1993) on Italian regions, social capital has gained increasing importance in economic studies focused on the persistent gaps in development across Italian regions: see, for example, Guiso, *et al.* (2004a) and Nannicini *et al.* (2010). Despite its wide use, social capital remains an elusive concept and its definition and measurement is still the object of debate among scholars. Therefore, I use various commonly adopted measures for institutional variables: blood donation, electoral turnout, a measure of trust and newspaper readership.[28] For the sake of brevity Table 5 reports the results of the first and second stage IV tobit regressions only on the costs&time variable. In the second stage (Panel B) all the instruments have a significant and negative impact on the endogenous regressor. For the validity of our instruments, I also report the first stage results in Panel A, where for each instrument, the endogenous regressor has the correct sign and it is significant. The Wald test provides evidence that the instrumented variable is endogenous, except for the trust instrument (column *iii*). Nevertheless, when I use the four instruments jointly (last column), the null exogeneity is rejected by the Wald test and the J test of over-identifying restrictions for the endogenous variables is far from rejecting the null hypothesis.[29] Moreover, the F test of excluded instruments in the first stage is well above the value of 10, the threshold recommended by Staiger and Stock (1997). In order to be more confident about the strength and the validity of the instruments I also use the LM-J joint test of the structural parameter and the over-identification restrictions:[30] the confidence intervals derived from the LM-J tests are not

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[28]   These data have been used extensively by various authors. Guiso *et al.* (2004a) and Nannincini *et al.* (2010) use blood donation and voter turnout at referenda. Heliwell and Putnam (1995) use voter turnout at referenda and newspaper readership in the Italian regions. De Blasio and Nuzzo (2010) use measures of trust.

[29]   The test for the over-identifying restrictions in limited dependent variables is the J-statistic proposed by Finlay and Magnusson (2009).

[30]   While the conditional likelihood-ratio is the most powerful test for the linear model, the LM-J test is robust in the presence of weak instruments for a larger class of limited dependent variables, such as the endogenous tobit. It is implemented using the Stata ado-file rivtest. See Finlay and Magnusson (2009).

wider than the Wald confidence intervals,[31] indicating that instruments are not weak and that point estimates are not biased.

A second issue regards the use of the entry rate of Milan province as the main benchmark for addressing the endogeneity concerns. While it is methodologically correct to use Milan as the province for the natural entry rate, since it records the lowest costs and time due to regulation, this entry rate might: *a*) either be affected by national regulation and/or by strong economic linkages of the Milan province with other provinces having higher costs or time of starting a business; *b*) or include shocks that are idiosyncratic only to that area and not to the rest of the sample.

The first case (*a*) might arise because Milan is part of the same legal system at national level that also affects the average level of regulation (for example, by imposing a higher number of procedures than in other countries). One way to address this concern is to replicate the estimates of the baseline model (1) by using the entry rate of another location as a weighting variable. To this end, I use the entry rate of the U.S. This choice has several key advantages. First, the U.S. has very low barriers to entry and – more generally – places a low overall regulatory burden on firms. Secondly, it is a highly developed economy with a highly diversified productive structure across many sectors. Finally, but no less importantly, since the U.S. economy is very independent from any Italian province, its entry rate may plausibly be considered as a much more exogenous choice than that of Milan.

The estimates using the U.S. entry rate as interacting variable confirm all the previous results of the horse-race estimates. Both entry time and costs are a significant barrier to entry (see Table 6, Panel A). Also the interacted financial variable has a significant role on entry (columns *iii* and *vi*), while the efficiency bankruptcy procedures seems to play no significant role on entry.[32]

To test the baseline model using data from a European country, I repeat the estimates of this baseline model using, as interacting variables, the entry rate of the UK, one of the most business-friendly countries in Europe. The estimates (see Table 6, Panel B) confirm the previous results for the control variables of financial development and bankruptcy procedures. Moreover, entry time is a significant barrier to entry, whereas the coefficients of the costs variable are negative, but do not exert a significant impact on the dependent variable.

The second case (*b*) might arise because Milan is the business capital of Italy; in this case, its entry rate might also reflect shocks that are idiosyncratic to that area, such as the establishment of large multinational firms setting up their own local branch in

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[31]   The Wald test is not robust against weak instruments.

[32]   By comparing the entry rates in the US industries at the 75th and 25th percentiles (basic metals and land transport) and the differential between a long and short time delays province (Sardinia and Ancona), the coefficient estimated in column *vi* in panel A (Table 6) implies that the differential in entry rates of Srl firms is 1.06%, about one fourth of the mean entry rate in our sample between the two provinces.

Italy.[33] Then, using the actual entry rate of Milan could imply a measurement error leading to biased estimates of the effect of administrative burdens on entry in industries that faced expansionary demand and technology shifts.

Consistent estimates of the effect of administrative burdens on entry in industries with potentially high business creation require a measure of industry entry rate that does not reflect idiosyncratic shocks to the area of Milan. I address this problem by following the two-step procedure developed by Ciccone and Papaioannou (2007). They estimate a cross-country model of entry regulation on the employment growth rate and address the measurement error by using the free-entry industry employment growth in a (hypothetical) country facing world-average demand and technology shifts. By adapting their method to this cross-province dataset, I use the free-entry industry entry rate in a (hypothetical) location facing national-average demand and technology shifts. The model is estimated in two steps, where in the first step I estimate the following:

$$Entry_{j,p} = \beta_0 + \mathbf{B_1} \cdot \Gamma_j + \mathbf{B_2} \cdot \Gamma_p + \beta_3 \cdot \phi_{j,p} + \beta_j \cdot costs\&time_p + \varepsilon_{j,p} \qquad (3)$$

where $\mathbf{B_1}$ is the industry effect, $\mathbf{B_2}$ is the province effect, β_3 is the coefficient of the firm's share and β_j is the marginal effect of the costs&time to register new businesses on entry in industry j. Since $\mathbf{B_1}$ captures sectoral entry in the absence of entry restrictions, I use tobit estimates (excluding the province of Milan) of the industry effects ($\hat{\mathbf{B}}_1$) as a proxy for frictionless sectoral entry in response to national shocks, which I denote by *Nat-Entry$_j$*.

In the second step I use *Nat-Entry$_j$* as a proxy of sectoral frictionless entry in the country; that is, I estimate (again, excluding Milan) the following model:

$$Entry_{j,p} = \gamma_0 + \Delta_1 \cdot \Gamma_j + \Delta_2 \cdot \Gamma_p + \gamma_3 \cdot \phi_{j,p} + \gamma_4 \cdot Nat\text{-}Entry_j \cdot costs\&time_p + \Gamma_5 \cdot X_{j,p} + \omega_{j,p} \qquad (4)$$

where *Nat-Entry$_j$* is the benchmark.

Note that if the benchmark variable ($Entry_{MI,Srl}$) is a good proxy for national frictionless entry, then it should be positively correlated with the *Nat-Entry$_j$* proxy.[34] Table 7 reports the estimates using IV tobit of the two-step procedure described above. The results mostly confirm the previous findings: a large number of regulatory burdens deter entry relatively more in sectors with a higher propensity to enter. The effect of

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[33] Indeed, Milan is the city where most multinational firms establish their branch office – often by creating a newly registered firm to fully comply with Italian law – and operate throughout the country. Bureaucratic burdens of starting a business are less relevant for these firms, as they are usually quite large or might benefit from financial transfers from the parent foreign company. Indeed, comparing the average number of employees and average total assets of foreign and domestic firms (those with ultimate foreign or domestic ownership) registered in Milan in the years 2005, 2006 and 2007 from the Bureau Van Dijk dataset, gives 159 as against 60 employees for domestic companies and €57,629.7 as against €10,848.6 for domestic companies.

[34] The low level of the correlation between $Entry_{MI,Srl}$ and the *Nat-Entry$_j$* (0.328, statistically different from zero) suggests that there is a potential error bias in the $Entry_{MI,Srl}$ variable.

administrative burdens is negative using all three measures (costs, time and costs&time), but it is significant with regard to time and costs&time (columns *iii* to *vi*).[35]

7 Robustness checks

Since Italy is a highly heterogeneous country in terms of economic development, the detrimental effect of red tape delays on firms' entry might be concentrated in some less developed areas of the country.[36] To check this point, I multiply the interacted entry regulatory variables of interest (*Entry_{MI} x costs/time*) with two dummies, one for higher and another for lower per capita income (the first group comprises the regions with a per capita income above the sample median, equal to €23,671):[37] see Table 8.1, Panel A columns *i* to *iii*. The estimates show that time has a differential negative impact on entry independently of the level of development, while the effect of costs is relevant only in low income provinces.

It is interesting to repeat the same exercise considering the level of corruption. Indeed, the international evidence produced by Djankov *et al.* (2002) shows that the level of barriers to entry is correlated with the level of corruption and the size of the unofficial economy (see also Friedman *et al.*, 2000). Since corruption in Italy is more pronounced in the southern regions than in the rest of the country (for example, Pinotti, 2012), the concern here is that the pervasive presence of corruption might deter official entry in the most corrupted provinces, inducing a greater number of firms to operate in the market without being officially registered. As in the previous case, I interact the provinces with a high and low corruption dummy (one above and another below or equal to the median level of the inverse corruption index in the sample, equal to 0.956; here corruption is proxied using an index developed by Golden (2004): see Table 1.1 for more details). Unsurprisingly,[38] the estimates show that time has a negative and significant effect on entry independently of the corruption group considered (Table 8.1, columns *iv* to *vi*), whereas the effect of costs is significant only in high corruption provinces.

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[35]   As a robustness check, these results also hold when we divide the regressors between provinces with a high and a low income level and with a high and a low corruption index (not shown here).

[36]   As is well known, there are significant dualisms between the Centre–North of the country and the South. For example, see the Bank of Italy (2009).

[37]   The following provinces are in the high income group: Aosta, Veneto, Bologna, Bozen, Florence, Milan, Rome, Turin, Trento and Trieste; those in the low income group are: Ancona, Bari, Campobasso, Catanzaro, L'Aquila, Naples, Sardinia, Palermo, Perugia and Potenza.

[38]   Indeed, the two groups are very similar to those of high and low income. The low corruption group includes the following provinces: Ancona, Veneto, Bologna, Bozen, Florence, Milan, Perugia, Turin, Trento and Trieste; the high corruption group includes: Aosta, Bari, Campobasso, Catanzaro, Genoa, L'Aquila, Naples, Sardinia, Palermo, Potenza and Rome.

The effects of regulation might be more concentrated in some macro–sectors, such as manufacturing rather than services.[39] Accordingly, I split the whole sample into two parts, one for each macro-sector. The analysis on the entry rate of Srl firms (Table 8.2) shows that the coefficients of time (columns *ii* and *v*) and of costs&time (columns *iii* and *vi*) are negative and significant in both the manufacturing and services specifications, whereas costs have a negative and significant effect on entry only in services (columns *i* and *iv*).

All these estimates repeated on entry of all Ltd firms give similar results (not shown here).

7.1 *Sensitivity analysis*

A more detailed breakdown of the contribution of each province and sector is given by a sensitivity analysis of the stability of the estimated coefficients of entry regulation. For this purpose I run regressions on the model including financial development and bankruptcy variables, as in Table 4, and exclude from the sample one sector or one province at a time.

The sensitivity analysis shows a remarkable stability of the estimated coefficients (Figure 2). In fact, both the entry time and cost coefficients are always significant. Moreover, in the analysis by sectors, the three that have some impact on the estimated coefficients (manufacturing of other transport equipment, NACE code 35; real estate activities, NACE code K70; research and development, NACE code K73), are the sectors with the highest mean entry rate (see Table 1.3) and have a similar impact on both time and cost coefficients. Finally, and most surprisingly, the analysis by provinces shows an almost complete invariance of both the coefficients to each province in the sample.

7.2 *Other robustness checks*

I also check whether the results are robust while controlling for growth opportunities. Indeed, regulatory obstacles to entry might prevent potential entrants from responding to new business opportunities. Empirically I follow the method of Fisman and Love (2007), by interacting the province-level variable of interest with a direct measure of output shocks to industries, measured by the growth rate of value added in Milan. The estimates using this growth opportunity measure (see Table 9) confirm that the coefficients of the interaction terms of time and of costs&time still enter significantly at the 1% confidence level, while both coefficients of costs are significant but only at 10%.

Alternatively, in order to mirror the nature of worldwide growth opportunities more closely, I repeat the previous estimates using the U.S. average sector growth rate.

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[39] The manufacturing sectors are the NACE Rev. 1 codes from 15 to 36, while the services sectors considered here are: electricity, gas and water supply; construction; wholesale and retail trade; hotels and restaurants; transport, storage and communications; real estate, renting and business activities.

As before (the results are not shown here) only time is a significant barrier to entry, while the coefficient of the variable interacted with costs is not significant.

7.3 Effects of barriers to entry

Finally, I investigate the effects of entry regulatory restrictions on the growth rate of the local economic systems and on mark-ups.

Starting with the growth analysis, since growth data include both incumbent firms and new entrants, the expected effects are not straightforward: on the one hand, incumbent firms should benefit from higher rents due to higher barriers to entry; on the other hand, they could also become less efficient because of a lower competitive pressure from new businesses. To test this, I run OLS regressions of the average growth rate on the interacted growth opportunity variable (*average growth rate of value added* x *costs* or *time of entry*). The results (summarized in Table 10.1) confirm that only entry red tape delays have a hampering effect on aggregate growth, whereas the coefficients regarding the costs variable are negative but not significant.

Higher barriers to entry might also benefit incumbents through an increase in the mark–up. To check for this effect, I regress the average mark-up from 2005 to 2007 on the interacted variables of entry costs and time, financial development and bankruptcy proceedings. The results (see Table 10.2, columns *i* to *iii*) show that costs (not time) have a significant impact on mark–ups, but the effect is very small. Since this result might depend on the presence of larger firms, which usually should suffer less from new entrants' competition, I repeat the previous estimates excluding the last three deciles of the sample size. In this cases (Table 10.2, columns *iv* to *vi* shows only the case where the last decile is excluded) the estimates show the effect is still significant for costs and that the effect is larger, but still very limited.

8.   Conclusions

Using data across Italian provinces, this paper estimates the impact of administrative business on firm creation. I find that the time delays (and to a lesser extent the costs) of bureaucratic burdens due to inefficient administrative procedures reduce the entry rate in industries that should have "naturally" high entry relative to low entry sectors. In particular, the negative effect of time is evident on the entry rate of both smaller (proxied by Srls) and all limited liability firms. The evidence on costs depends on the particular specification adopted; however, in most specifications these also have a significant and negative impact on entry. The results are robust to the addition of other regulatory variables to the baseline model (financial development and bankruptcy procedures), to controlling for the level of local economic development and the level of

corruption. The effect persists both within the manufacturing and the services macro-sectors. On the other hand, the effect of costs is significant only in less developed provinces, but it is independent of the level of corruption.

The simplification of entry procedures is an on-going process in many parts of the world. In the OECD countries, bureaucratic burdens to business start-ups are on average lower than in less advanced economies, but they still represent significant barriers to entry. In Italy national regulation until 2007 imposed considerable procedural and administrative burdens at the start-up stage. In 2008 business registration was simplified by the introduction of the Single Communication, which collapsed four procedures into one. The reform, which was not fully implemented until 2010, enabled a significant time saving of about 35% on average, as estimated by Bianco and Bripi (2010) and by the the Doing Business Surveys. According to a Subnational Report on Italy by the World Bank (World Bank, 2012), the time for starting a business in many Italian regions surveyed in 2012 was lower than the OECD average (12 days), while costs are still about three times greater than the average of these advanced countries.

This paper provides evidence that the administrative burdens in the years just before the reform were a significant obstacle to firm creation in high entry industries and in heavily regulated provinces. Therefore, the findings of the paper neither confirm nor invalidate the results of the Single Communication, but its results are consistent with the spirit of the reform i.e. reducing the regulatory barriers may improve the efficient reallocation of resources.

Table 1.1. Summary statistics of main variables*

Variable		Mean	Std. Dev.	Min	Max
Entry costs	(euros)	22.3	8.88	10.2	44.9
Entry time	(days)	18.2	7.12	10.5	34.0
Bankruptcy costs	(euros)	14.0	7.03	3.5	25.5
Bankruptcy time	(days)	854.1	457.59	105.0	1,800.0
Bankruptcy recovery rate	(%)	0.5	0.10	0.3	0.7
Credit to firms	(thous. of euros)	13,000	23,800	888.92	119,000
Firm sales	(thous. of euros)	1,710.91	4,675.06	62.00	69,000
Adult population	(thousands)	801.0	768.80	82.2	2,589.3
Population	(thousands)	1,202.7	1,144.52	123.9	3,871.3
Income per capita	(euros)	22,206.7	5,922.10	1,4073.0	33,605.0
Corruption index		1.0	0.42	0.4	1.8
Entry rate Srls		2.7	7.89	0.0	145.0
Entry rate all Ltds		3.3	8.98	0.0	163.7
Firms share		1.999	3.77	0.0	25.26
Output share		1.9	1.70	0.0	10.3
Entry$_{MI,Srl}$		2.2	2.05	0.0	7.8
Entry$_{MI,All}$		3.0	2.95	0.1	13.5
Entry$_{US}$		10.3	4.88	2.3	25.8
Growth$_{MI}$		0.0	0.98	-2.2	1.7
Growth$_{US}$		7.3	24.50	-5.8	146.3
Mark–up		1.1	0.48	0.08	8.7

* The total number of observations for each variable is 735.

Table 1.2. Correlation among regulation variables

	Costs	Time	Financial Development	Recovery Rate
Costs	1			
Time	0.2796***	1		
Findev (= credit /sales)	0.0907**	0.1495***	1	
Recovery Rate	0.0075	0.0043	0.0542	1

** and *** denote statistical significance at 5% and 1%, respectively.

Table 1.3. Summary statistics of entry rate of Srls by sector*

Sector code (NACE Rev. 1.1)	Description	Mean	Std. Dev.	Min	Max
DA15	Manuf. of food products and beverages	0.33	0.475	0.00	2.12
DB17	Manuf. of textiles	1.21	1.785	0.00	6.92
DB18	Manuf. of wearing apparel, dressing and dyeing of fur	2.55	4.572	0.00	16.70
DC19	Tanning and dressing of leather, luggage, handbags, saddlery, harness and footwear	3.61	7.129	0.00	25.00
DD20	Manuf. of wood and of products of wood and cork, except furniture, straw and plaiting	0.58	0.801	0.00	3.12
DE21	Manuf. of paper and paper products	1.60	2.815	0.00	12.07
DE22	Publishing, printing and reProd. of recorded media	1.65	3.491	0.00	16.42
DG24	Manuf. of chemicals and chemical products	2.16	4.065	0.00	16.24
DH25	Manuf. of rubber and plastics products	4.31	5.008	0.00	20.22
DI26	Manuf. of other non-metallic mineral products	1.17	1.808	0.00	7.81
DJ27	Manuf. of basic metals	5.04	13.541	0.00	61.69
DJ28	Manuf. of fabricated metal products, except machinery and equipment	1.91	2.564	0.24	12.05
DK29	Manuf. of machinery and equipment n.e.c.	2.62	3.965	0.00	18.45
DL30	Manuf. of office, accounting and computing machinery	2.56	4.904	0.00	19.17
DL31	Manuf. of electrical machinery and apparatus n.e.c.	2.93	4.183	0.00	14.76

DL32	Manuf. of radio, television and communication equipment and apparatus	3.94	4.863	0.00	13.63
DL33	Manuf. of medical, precision and optical instruments, watches and clocks	1.11	1.644	0.00	7.44
DM34	Manuf. of motor vehicles, trailers and semi-trailers	2.23	2.333	0.00	7.50
DM35	Manuf. of other transport equipment	8.69	17.213	0.00	75.68
DN36	Manuf. of furniture, manufacturing n.e.c.	1.10	1.566	0.00	5.93
E40	Electricity, gas, steam and hot water supply	5.33	9.907	0.00	37.95
F45	Construction	1.77	1.527	0.59	7.76
G50	Sale, maint. and repair of motor vehicles/cycles, retail sale of fuel	0.85	0.853	0.00	4.15
G51	Wholesale trade and commission trade, except of motor vehicles and motorcycles	1.49	1.987	0.04	9.67
G52	Retail trade, except of motor vehicles and motorcycles, repair of personal and household goods	0.32	0.242	0.09	1.20
H55	Hotels and restaurants	0.49	0.494	0.00	1.79
I60	Land transport, transport via pipelines	0.19	0.308	0.00	1.31
I61	Water transport	1.73	5.743	0.00	26.08
I63	Supporting and auxiliary transport activities, travel agencies	2.25	5.965	0.00	28.03
I64	Post and telecommunications	1.44	2.359	0.00	10.46
K70	Real estate activities	6.31	8.563	1.40	41.78
K71	Renting of machinery without operator and of household goods	2.12	2.278	0.00	10.62
K72	Computer and related activities	3.65	4.051	0.42	20.54
K73	Research and development	12.71	32.022	0.00	145.0
K74	Other business activities	3.70	5.993	0.39	29.09

* Each sector has 21 observations.

Table 1.4. Low and high entry rates by sector in the lowest and highest quartile of start up bureaucratic burdens.

	NACE code	NACE description	low regulation provinces (1st quartile)	high regulation provinces (4th quartile)
Low entry sectors (1st quartile)	I60	Land transport, transport via pipelines	0.06	0.20
	DA15	Manuf. of food products and beverages	0.28	0.15
	G52	Retail trade, except of motor vehicles and motorcycles, repair of personal and household goods	0.26	0.26
	DD20	Manuf. of wood and of products of wood and cork, except furniture, straw and plaiting	0.42	0.21
	H	Retail trade, except of motor vehicles and motorcycles, repair of personal and household goods	0.40	0.18
	G50	Sale, maintenance and repair of motor vehicles/cycles, retail sale of fuel	0.68	0.61
	I63	Supporting and auxiliary transport activities, travel agencies	0.73	1.23
	I64	Post and telecommunications	1.11	0.54
	DL33	Manuf. of medical, precision and optical instruments, watches and clocks	1.01	0.56
	DC19	Tanning and dressing of leather, luggage, handbags, saddlery, harness and footwear	2.52	1.14
High entry sectors (4th quartile)	I61	Water transport	1.37	0.00
	DM34	Manuf. of motor vehicles, trailers and semi-trailers	3.22	1.74
	K71	Renting of machinery without operator and of household goods	2.51	1.87
	K74	Other business activities	2.52	1.69
	K72	Computer and related activities	2.99	2.83
	DL30	Manuf. of office, accounting and computing machinery	4.05	0.00
	K73	Research and development	3.62	4.24
	DM35	Manuf. of other transport equipment	11.13	2.08
	K70	Real estate activities	4.49	4.26
	E40	Electricity, gas, steam and hot water supply	4.78	0.00

Table 2. Baseline model: determinants of entry rates; interacting variable: entry rate of firms in the province of Milan.

	(i) Srl	(ii) Srl	(iii) Srl	(iv) All Ltds	(v) All Ltds	(vi) All Ltds
$\text{Entry}_{MI,Srl}$ x cost	-1.080** (0.496)					
$\text{Entry}_{MI,Srl}$ x time		-2.296*** (0.240)				
$\text{Entry}_{MI,Srl}$ x costs&time			-0.955*** (0.171)			
$\text{Entry}_{MI,All}$ x cost				-1.095** (0.467)		
$\text{Entry}_{MI,All}$ x time					-2.038*** (0.681)	
$\text{Entry}_{MI,All}$ x costs&time						-0.852*** (0.0610)
Firms share	0.00501 (0.116)	-0.210* (0.113)	-0.173* (0.0929)	-0.00279 (0.137)	-0.241* (0.137)	-0.198** (0.0971)
Observations	692	692	692	692	692	692
Pseudo R^2	0.09	0.12	0.13	0.10	0.14	0.16

The table reports tobit estimates with censoring at 0 and 100 of equation (1). The dependent variable in columns (*i–iii*) is the average entry rate of Srl firms; in columns (*iv- vi*) it is the entry rate of all Ltd firms. It is regressed on costs or time due to entry bureaucratic burdens at province level interacted with the average entry rate of new Srls/all Ltds s in Milan ($\text{Entry}_{MI,Srl/All}$) and on the industry's share of firms in the total number of firms in the province (Firms share). All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** p<0.01, ** p<0.05, * p<0.1.

Table 3. The role of entry and bankruptcy regulation and of financial development on the entry rate of Srl firms; interacting variables: entry rates of Srl firms in the province of Milan.

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
$\text{Entry}_{MI,Srl}$ x cost		-1.106** (0.501)				-1.10** (0.478)			-1.082** (0.463)	
$\text{Entry}_{MI,Srl}$ x time			-2.310*** (0.243)				-2.32*** (0.243)			-2.307*** (0.240)
$\text{Entry}_{MI,Srl}$ x costs&time				-0.958*** (0.172)						
$\text{Exit}_{MI,Srl}$ x rec. rate					-0.00298 (0.0211)	0.00382 (0.0160)	0.0104 (0.0118)			
$\text{Entry}_{MI,Srl}$ x rec. rate								0.390 (2.287)	-0.0495 (2.221)	-0.590 (1.822)
$\text{Entry}_{MI,All}$ x costs&time										
Extdep x Findev	0.138** (0.0684)	0.156** (0.0656)	0.171*** (0.0647)	0.163*** (0.0598)						
Firms share	0.0742 (0.129)	0.0216 (0.119)	-0.192* (0.113)	-0.155* (0.0939)	0.0521 (0.109)	0.0120 (0.105)	-0.191* (0.109)	0.0596 (0.132)	0.00473 (0.122)	-0.213* (0.115)
Observations	692	692	692	692	692	692	692	692	692	692
Pseudo R^2	0.09	0.09	0.12	0.14	0.09	0.09	0.12	0.09	0.09	0.12

The table reports tobit estimates of equation (1). The dependent variable is the average entry rate of Srl firms. It is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average entry rate of new Srl firms in Milan ($\text{Entry}_{MI,Srl}$); on the recovery rate (derived from costs and time of bankruptcy proceedings) at province level interacted with the average exit or entry rate of Srl firms in Milan ($\text{Exit}_{MI,Srl}$, $\text{Entry}_{MI,Srl}$); on the ratio between average bank credit to private firms and sales (Findev) interacted with the degree of dependence on external finance (Extdep); on the industry's share of firms in the total number of firms in the province (Firms share). All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** p<0.01, ** p<0.05, * p<0.1.

Table 4. The role of entry and bankruptcy regulation and of financial development on the entry rate of Srl firms; interacting variable: Srl entry rate in the province of Milan

	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Entry$_{MI,Srl}$ x costs	-1.080** (0.496)	-1.120** (0.482)				
Entry$_{MI,Srl}$ x time			-2.296*** (0.240)	-2.330*** (0.246)		
Entry$_{MI,Srl}$ x costs&time					-0.955*** (0.171)	-0.969*** (0.180)
Exit$_{MI,Srl}$ x recovery rate		0.00280 (0.0165)		0.00935 (0.0118)		0.0124 (0.0136)
Extdep x Findev		0.154** (0.0692)		0.165** (0.0656)		0.154** (0.0609)
Firms share	0.00501 (0.116)	0.0266 (0.107)	-0.210* (0.113)	-0.175 (0.108)	-0.173* (0.0929)	-0.133 (0.0874)
Observations	692	692	692	692	692	692
Pseudo R^2	0.09	0.08	0.12	0.11	0.13	0.12

The table reports tobit estimates of equation (1). The dependent variable in columns is the average entry rate of Srl firms. It is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average entry rate of new Srl firms in Milan (Entry$_{MI,Srl}$); on the ratio between average bank credit to private firms and sales (Findev) interacted with the degree of dependence on external finance (Extdep); on the recovery rate (derived from costs and time of bankruptcy proceedings) at province level interacted with the average exit rate of Srl firms in Milan (Exit$_{MI,Srl}$); on the industry's share of firms in the total number of firms in the province (Firms share). All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 5. Instrumental variables tobit regressions second stage results; interacting variable: Srl entry rate of Milan firms.

Panel A: First stage					
	(i)	(ii)	(iii)	(iv)	(v)
Entry$_{MI,Srl}$ x Blood donation	-0.026*** (0.003)				-0.011*** (0.003)
Entry$_{MI,Srl}$ x Election		-0.078*** (0.006)			-0.030*** (0.008)
Entry$_{MI,Srl}$ x Trust			-6.027*** (0.469)		-4.699*** (0.458)
Entry$_{MI,Srl}$ x Newspapers				-4.496*** (0.465)	-1.583*** (0.564)
F test for excluded instruments					84.48

Panel B: Second stage					
	Blood	Election	Trust	Newspapers	Blood, election, trust, newspapers
Entry$_{MI,Srl}$ x cost&time	-0.687*** (0.234)	-0.472** (0.202)	-0.817*** (0.178)	-0.513*** (0.243)	-0.689*** (0.143)
Firms share	-0.109 (0.199)	-0.0656 (0.202)	-0.135 (0.195)	-0.074 (0.203)	-0.108 (0.195)
Exogeneity Wald test (*p–value*)	0.1108	0.0016	0.1731	0.0197	0.0036
Overidentification J test (*p-value*)					0.4504
LM-J test confidence set					[-0.9664,-0.3881]
Wald test confidence set					[-0.9693,-0.4080]
Observations	700	700	700	700	700

The table reports IV tobit estimates of equation (1) using the two-step Newey estimator. The dependent variable is the average entry rate of Srl firms. The endogenous regressor is costs&time due to entry bureaucratic burdens at province level interacted with the average entry rate of new Srl firms in Milan (Entry$_{MI,Srl}$). The instruments employed are measures of social capital: blood donation (column *i*), election turnout at referenda (column *ii*), general trust in others (column *iii*); newspapers readership (column *iv*). The other regressor is the industry's share of firms in the total number of firms in the province (Firms share). All regressions include a constant, province dummies and two-digit industry dummies. Standard errors are reported in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Panel A reports first stage estimates of instruments and the F test of joint significance of the excluded instruments. Panel B reports second stage estimates of instrumented variables and of firms share. It also reports: the Wald test of exogeneity of the instrumented variable; the confidence set of the LM-J weak instruments robust test and that of the Wald test, which is not robust to weak instruments (rivtest command in Stata); J test for overidentification (rivtest command in Stata).

Table 6. The role of entry, bankruptcy regulation and of financial development on the entry rate of Srl firms; interacting variable: entry rate in the US and in the UK.

Panel A: interacting variable is the entry rate in the US						
	(i)	*(ii)*	*(iii)*	*(iv)*	*(v)*	*(vi)*
Entry$_{US}$ $_x$ costs	-0.294***	-0.298***	-0.288***			
	(0.0953)	(0.0990)	(0.0973)			
Entry$_{US}$ x time				-0.304***	-0.304***	-0.301***
				(0.0614)	(0.0617)	(0.0624)
Exit$_{US}$ x recovery rate		0.253	0.278		0.229	0.256
		(0.426)	(0.433)		(0.409)	(0.416)
Extdep x Findev			0.124*			0.127*
			(0.0698)			(0.0694)
Firms share	0.0579	0.0588	0.0737	0.0331	0.0337	0.0496
	(0.0867)	(0.0875)	(0.0895)	(0.0811)	(0.0816)	(0.0825)
Observations	727	727	727	727	727	727
Pseudo R^2	0.09	0.09	0.09	0.09	0.09	0.09

Panel B: interacting variable is the entry rate in the UK						
	(i)	*(ii)*	*(iii)*	*(iv)*	*(v)*	*(vi)*
Entry$_{UK}$ x cost	-0.0365	-0.0266+	-0.0336			
	(0.134)	(0.137)	(0.135)			
Entry$_{UK}$ x time				-0.378**	-0.373**	-0.379**
				(0.178)	(0.180)	(0.184)
Exit$_{UK}$ x recovery rate		0.278	0.306		0.231	0.261
		(0.437)	(0.444)		(0.435)	(0.441)
Extdep x Findev			0.141**			0.149**
			(0.0682)			(0.0646)
Firms share	0.0431	0.0450	0.0613	0.0170	0.0177	0.0354
	(0.088)	(0.091)	(0.094)	(0.099)	(0.100)	(0.102)
Observations	727	727	727	727	727	727
Pseudo R^2	0.09	0.09	0.09	0.09	0.09	0.09

The table reports tobit estimates of equation (1). The dependent variable is the average entry rate of Srl firms. In Panel A it is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average entry rate of US firms (Entry$_{US}$); on the ratio between average bank credit to private firms and sales (Findev) interacted with the the degree of dependence on external finance (Extdep); on the recovery rate (derived from costs and time of bankruptcy proceedings) at province level interacted with the average exit rate of US firms (Exit$_{US}$); on the industry's share of firms in the total number of firms in the province (Firms share). In Panel B it is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average entry rate of UK firms (Entry$_{UK}$); on all the other variables as in Panel A. All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** p<0.01, ** p<0.05, * p<0.1.

Table 7. The role of entry, bankruptcy regulation and financial development on the entry rate of Srl firms; interacting variable: average national entry rate of Srl firms. Instrumental Variable estimates.

	(i)	*(ii)*	*(iii)*	*(iv)*	*(v)*	*(vi)*
Nat-Entry$_{Srl}$ x costs	-0.295	-0.290				
	(0.211)	(0.217)				
Nat-Entry$_{Srl}$ x time			-0.386***	-0.386***		
			(0.144)	(0.142)		
Nat-Entry$_{Srl}$ x costs&time					-0.193***	-0.193***
					(0.0271)	(0.0266)
Exit$_{MI,Srl}$ x rec. rate		-0.00275		0.000406		-0.000142
		(0.0215)		(0.0179)		(0.0187)
Extdep x Findev		0.132*		0.127*		0.124
		(0.0799)		(0.0741)		(0.0759)
Firms share	0.0607	0.0701	0.0539	0.0693	0.0568	0.0706
	(0.125)	(0.107)	(0.126)	(0.109)	(0.126)	(0.108)
Observations	692	692	692	692	692	692

The table reports second-stage IV tobit estimates of equation (4). The dependent variable is the average entry rate of Srl firms. It is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with Nat-Entry$_{Srl}$, the average entry rate of Srl firms estimated as in equation (3); the recovery rate (derived from costs and time of bankruptcy proceedings) at province level interacted with the average exit rate of Srl firms in Milan (Exit$_{MI,Srl}$); the ratio between average bank credit to private firms and sales (Findev) interacted with the degree of dependence on external finance (Extdep); the industry's share of firms in the total number of firms in the province (Firms share). All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** p<0.01, ** p<0.05, * p<0.1.

Table 8.1 The role of entry regulation in provinces with high and low levels of income per capita and of corruption; interacting variable: entry rates of Srl firms in the province of Milan.

	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Entry$_{MI,Srl}$ x costs x high income	-0.673					
	(0.505)					
Entry$_{MI,Srl}$ x costs x low income	-0.840*					
	(0.463)					
Entry$_{MI,Srl}$ x time x high income		-2.559***				
		(0.349)				
Entry$_{MI,Srl}$l x time x low income		-2.349***				
		(0.255)				
Entry$_{MI,Srl}$ x costs&time x high income			-1.047***			
			(0.208)			
Entry$_{MI,Srl}$ x costs&time x low income			-0.937***			
			(0.184)			
Entry$_{MI,Srl}$ x costs x low corr.				-0.682		
				(0.514)		
Entry$_{MI,Srl}$ x costs x high corr.				-0.862*		
				(0.492)		
Entry$_{MI,Srl}$ x time x low corr.					-2.593***	
					(0.336)	
Entry$_{MI,Srl}$ x time x high corr.					-2.366***	
					(0.246)	
Entry$_{MI,Srl}$ x costs&time x low corr.						-1.036***
						(0.204)
Entry$_{MI,Srl}$ x costs&time x high corr.						-0.938***
						(0.182)
Firms share	-0.0618	-0.139	-0.0855	-0.0662	-0.136	-0.0971
	(0.0901)	(0.104)	(0.0823)	(0.0900)	(0.113)	(0.0859)
Observations	692	692	692	692	692	692
Pseudo R^2	0.09	0.12	0.14	0.09	0.12	0.14

The table reports tobit estimates of equation (1). The dependent variable is the average entry rate of Srl firms. It is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average entry rate of new Srl firms in Milan (Entry$_{MI,Srl}$) and with a dummy=1 if the province has a level of per capita income higher/lower than the sample median (high/low income); a similar approach is taken for corruption; on the industry's share of firms in the total number of firms in the province (Firms share). All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** p<0.01, ** p<0.05, * p<0.1.

Table 8.2 The role of entry regulation in manufacturing and services; interacting variable: entry rate of Srl firms in the province of Milan.

	Manufacturing			Services		
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Entry$_{MI,Srl}$ x cost	-1.914			-1.089**		
	(1.325)			(0.512)		
Entry$_{MI,Srl}$ x time		-3.701***			-2.125***	
		(0.626)			(0.358)	
Entry$_{MI,Srl}$ x cost&time			-1.289***			-0.932***
			(0.0560)			(0.127)
Firms share	-1.079	-0.701	-0.708	0.0926	-0.165	-0.141*
	(0.892)	(0.533)	(0.535)	(0.132)	(0.104)	(0.0848)
Observations	398	398	398	294	294	294
Pseudo R^2	0.11	0.14	0.15	0.09	0.12	0.14

The table reports tobit estimates of equation (1). The dependent variable is the average entry rate of Srl firms. It is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average entry rate of new Srl firms in Milan (Entry$_{MI,Srl}$); on the industry's share of firms in the total number of firms in the province (Firms share). Manufacturing estimates include sectors between 15 and 36 of the NACE Rev. 1 codes, while the services sectors considered here are: electricity, gas and water supply; constructions; wholesale and retail trade; hotels and restaurants; transport, storage and communications; real estate, renting and business activities. All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** p<0.01, ** p<0.05, * p<0.1.

Table 9. Baseline model: determinants of entry rates; interacting variable: growth rate of value added in the province of Milan.

	(i) Srl	(ii) Srl	(iii) Srl	(iv) All Ltds	(v) All Ltds	(vi) All Ltds
$Growth_{MI}$ x cost	-0.275* (0.143)			-0.270* (0.162)		
$Growth_{MI}$ x time		-0.506*** (0.0813)			-0.503*** (0.0992)	
$Growth_{MI}$ x costs&time			-0.227*** (0.0417)			-0.231*** (0.0432)
Firms share	0.0255 (0.117)	-0.00169 (0.110)	-0.0180 (0.113)	0.0293 (0.140)	0.00282 (0.135)	-0.0152 (0.139)
Observations	692	692	692	692	692	692
Pseudo R^2	0.09	0.09	0.09	0.10	0.10	0.10

The table reports tobit estimates of equation (1). The dependent variable is the average entry rate of Srl firms in columns *i to iii*, and of all ltd. firms in columns *iv* to *vi*. It is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average growth rate in Milan ($Growth_{MI}$); on the industry's share of firms in the total number of firms in the province (Firms share). All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** p<0.01, ** p<0.05, * p<0.1.

Table 10.1 The role of entry, bankruptcy regulation and financial development on the growth rate of productivity; interacting variables: growth of value added in the province of Milan and in the US.

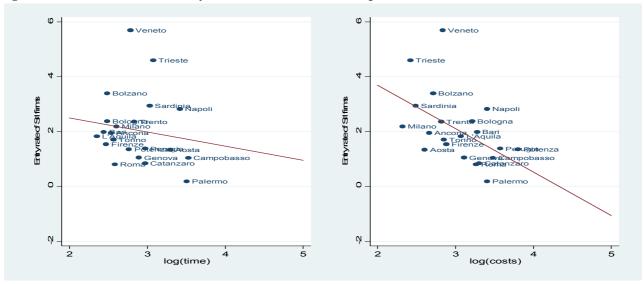|	(i)	(ii)	(iiI)	(iv)	(v)	(vi)
$Growth_{MI}$ x costs	-0.303 (0.308)					
$Growth_{MI}$ x time		-0.897** (0.366)				
$Growth_{MI}$ x cost&time			-0.387*** (0.0510)			
$Growth_{US}$ x costs				-0.129 (0.0883)		
$Growth_{US}$ x time					-0.0765*** (0.0174)	
$Growth_{US}$ x cost&time						-0.0322*** (0.00720)
$Exit_{MI,Srl}$ x rec. rate	-0.00283 (0.00306)	-0.00250 (0.00299)	-0.00200 (0.00296)			
$Exit_{US}$ x rec. rate				-0.00119 (0.00275)	-0.00205 (0.00278)	-0.00164 (0.00290)
Extdep x Findev	0.0237 (0.0339)	0.0233 (0.0335)	0.0238 (0.0338)	0.0254 (0.0333)	0.0249 (0.0335)	0.0245 (0.0333)
Firms share	0.0231 (0.0223)	-0.0176 (0.0241)	-0.0198 (0.0169)	0.0255 (0.0288)	0.0198 (0.0260)	0.0217 (0.0261)
Output share	-0.0904** (0.0406)	0.0332 (0.101)	0.0644 (0.0934)	-0.106* (0.0572)	-0.102* (0.0511)	-0.0975* (0.0511)
Observations	681	681	681	681	681	681
R^2	0.359	0.384	0.396	0.359	0.385	0.396

The table reports OLS regressions. The dependent variable is the average growth rate of productivity at province and sector level. It is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average growth rate in Milan ($Growth_{MI}$) or alternatively of the US ($Growth_{US}$); on the recovery rate (derived from costs and time of bankruptcy proceedings) at province level interacted with the average exit rate of Srl firms in Milan ($Exit_{MI,Srl}$) or alternatively of the US ($Exit_{US}$); on the ratio between average bank credit to private firms and sales (Findev) interacted with the degree of dependence on external finance (Extdep); on the industry's share of firms in the total number of firms in the province (Firms share); on output share is the industry share in total value added. All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province level). *** p<0.01, ** p<0.05, * p<0.1.

Table 10.2 The role of entry, of bankruptcy regulation and of financial development on mark - ups; interacting variables: growth of value added in the province of Milan and in the US.
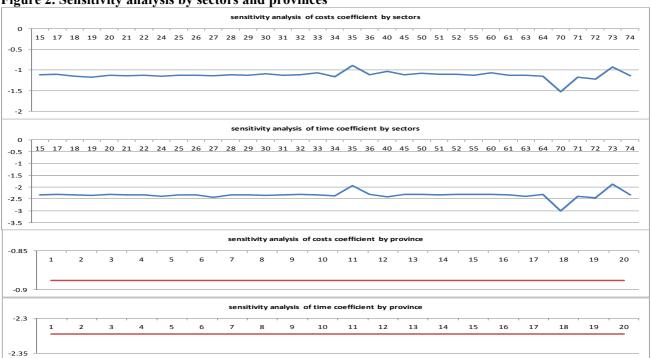
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
	Mark up whole sample			Mark up (only firms up to 90th pct of size)		
Entry$_{MI,Srl}$ x cost	0.0184*			0.0246*		
	(0.00890)			(0.0120)		
Entry$_{MI,Srl}$ x time		-0.000826			-0.000303	
		(0.00469)			(0.00902)	
Entry$_{MI,Srl}$ x cost&time			0.00148			0.00326**
			(0.00111)			(0.00135)
Exit$_{US}$ x rec. rate	0.00101	0.00128	0.00120	0.000411	0.000804	0.000632
	(0.000857)	(0.000808)	(0.000808)	(0.000922)	(0.000812)	(0.000808)
Extdep x Findev	0.00204	0.00221	0.00218	0.00379	0.00396	0.00394
	(0.00382)	(0.00384)	(0.00384)	(0.00415)	(0.00419)	(0.00419)
Firms share	-0.0133*	-0.0137*	-0.0134*	-0.0173**	-0.0177**	-0.0173**
	(0.00667)	(0.00668)	(0.00667)	(0.00704)	(0.00703)	(0.00701)
Observations	667	667	667	656	656	656
R^2	0.61	0.61	0.61	0.68	0.68	0.68

The table reports OLS regressions. The dependent variable is the average mark – up of all ltd. firms at province and sector level in columns *i* to *iii*, in columns *iv* to *vi* the sample is restricted to firms up to the 90th percentile of the size distribution. It is regressed on: costs or time due to entry bureaucratic burdens at province level interacted with the average entry rate of new Srl firms in Milan (Entry$_{MI,Srl}$); on the ratio between average bank credit to private firms and sales (Findev) interacted with the the degree of dependence on external finance (Extdep); on the recovery rate (derived from costs and time of bankruptcy proceedings) at province level interacted with the average exit rate of Srl firms in Milan (Exit$_{MI,Srl}$); on the industry's share of firms in the total number of firms in the province (Firms share). All regressions include a constant, province dummies and two-digit industry dummies. White (1980) standard errors are reported in parentheses (clustered at province evel). *** p<0.01, ** p<0.05, * p<0.1.

Figure 1. Costs and time Vs Entry of Srl firms across Italian provinces

Figure 2. Sensitivity analysis by sectors and provinces

APPENDIX

Table A.1. Table of within country studies of entry regulation

	Cross-sector analyses	
Authors (year)	Subject	Effects
Bruhn (2012)	Reform (SARE) that simplified new business registration in Mexico (reducing the number of procedures and the time to comply with these).	Increased entry and wages; decreased income of incumbents; decreased price level.
Chari (2011)	Reform that relaxed entry and size restrictions for a subset of manufacturing industries License Reform in India.	Increased total factor productivity.
Sharma (2009)	Reform reducing the number of procedures (removed license requirements) on the setup and expansion of factories in India.	Larger decline in the number of informal establishments and a larger increase in value added per informal worker in the states with pro employer labor laws.
Aghion *et al.*, (2009)	Entry threat on innovation in the UK, where entry restrictions identified by a large number of policy reforms undertaken during the Thatcher era.	Increased innovation in technologically advanced sectors; the reverse in laggard industries.
Kaplan et al. (2007)	Reform (SARE) that simplified new business registration in Mexico (reducing the number of procedures and the time to comply with these).	Increased entry, especially of mid-size firms.
Yakovlev & Zhuravskaya (2007)	Several reforms which simplified new business creation in Russia, by reducing procedures, licensing requirements and inspections by public officials.	Increased employment of small businesses and the number of small businesses per capita.
Monteiro & Assuncao (2006)	Simplification in entry regulation procedures in Brazil.	Increase in new businesses creation.

	Sector specific analyses	
Authors (year)	Subject	Effects
Bertrand & Kramarz (2002)	Time and regional variation in boards' approval decisions on entry and enlargement of French businesses in the retail trade industry.	Increase in sector regional concentration and decrease of employment growth.
Schivardi & Viviano (2011)	Entry regional regulation as a barrier to entry in Italian retail trade industry.	Larger profit margins and lower productivity of incumbent firms. Negative effect on investment in ICT, on employment and increased labor costs in large shops. Also higher consumer prices in areas with more stringent entry regulation.

Table A.2. Variables: definition and sources

Variable	Definitions and sources
	Industry level variables
Entry$_{MI,Srl/All}$	Ratio between the number of new Srls/all Ltds and the total number of firms in the province of Milan. New firms are: firms newly registered in the same year. Average for the years 2005–2007. I compute this variable for two-digit ATECO 2002 industries. Source: Infocamere.
Entry$_{US}$	Ratio between the number of new firms and the total number of firms in the U.S. New firms are firms newly registered in the same year. Average for the years 2004–2006. I compute this industry level variable for two-digit ISIC rev. 3.1 industries, and then convert into NACE Rev. 1.1. Source: OECD STAN Database.
Entry$_{UK}$	Ratio between the number of new firms and the total number of firms in the UK. New firms are firms newly registered

in the same year. Average for the years 2004–2006. I compute this industry level variable for two-digit ISIC rev. 3.1 industries, and then convert into NACE Rev. 1.1.
Source: OECD STAN Database.

$Exit_{MI,Srl/All}$ — Ratio between the number of closing Srls/all Ltds and the total number of firms in Milan. Closing firms are those firms that are to be cancelled during the same year. Average for the years 2005–2007. I compute this variable for two-digit ATECO 2002 industries.
Source: Infocamere.

$Exit_{US}$ — Ratio between the number of firm deaths and the total number of firms in the U.S. in the same year. Average for the years 2004–2006. I compute this industry level variable for two-digit ISIC rev. 3.1 industries, and then convert into NACE Rev. 1.1.
Source: OECD STAN Database.

Extdep — Industry j's dependence on external finance defined as capital expenditure minus internal funds (cash flow from operations) divided by capital expenditure.
Source: de Serres *et al.* (2006).

Value Added$_{MI}$ — Since value added in real terms at sectoral 2 digit level is available only at regional (and not provincial) level, the data for the region of Lombardy – for the years 2005, 2006 and 2007 – have been rescaled at province level using as weights the ratio between the value added of the Milan province at 1 digit level over the region total.

Growth$_{MI}$ — Annual compounded growth rate of value added in real terms in industry j in the province of Milan over the 2005-2007 period (Value Added$_{MI}$). I compute this variable for two-digit ATECO 2002 industries.
Source: Istat.

Growth$_{US}$ — Annual compound growth rate of value added in real terms in industry j in the US. Average for the years 2004–2006. I compute this industry level variable for two-digit ISIC rev. 3.1 industries, and then convert into NACE Rev. 1.1.
Source: OECD STAN Database.

Growth$_{UK}$ — Annual compound growth rate of value added in real terms in industry j in the UK. Average for the years 2004–2006. I compute this industry level variable for two-digit ISIC rev. 3.1 industries, and then convert into NACE Rev. 1.1.
Source: OECD STAN Database.

Mark – up — Simple average over the years 2005–2007 of the ratio between operating revenue and total assets of ltd. Firms in Italy. The data are available at firm level and for two-digit NACE Rev. 2 industries. They have been converted into NACE Rev. 1.1 and collasped at the median value by province and industry (2 digit code).
Source: bureau Van Djick.

Province level variables

(entry) Costs — Direct start-up costs of obtaining legal status to operate a firm as a share of local income per capita.
Source: Bianco and Bripi (2010).

(entry) Time — Direct start-up time of obtaining legal status to operate a firm, days.
Source: Bianco and Bripi (2010).

(entry) Costs&time — Monetized value of costs and time of start up regulation: costs x time.
Source: Bianco and Bripi (2010).

Closing costs — Direct costs of a bankruptcy proceeding, as a share of local income per capita.
Source: Bianco and Bripi (2010).

Closing time — Direct costs of a bankruptcy proceeding, days.
Source: Bianco and Bripi (2010).

Recovery rate — Share of credit that can be recovered by the creditor bank through bankruptcy proceeding. It is built following the Doing Business methodology (http://www.doingbusiness.org).
Source: Bianco and Bripi (2010).

Credit — Bank credit to private firms, average for the years 2005–2007.
Source: Bank of Italy.

Sales — Sales at province level, thousands of euros, average for the years 2005–2007. Data represent the sum of firm of sales at province level across the 35 sectors included in the sample.
Source: ISTAT.

Population — Adult population (from 15 to 64 years old) at province level in 2005, thousands of units.
Source: ISTAT.

Income — Income per capita, computed as the ratio between value added in real terms and adult population in each province. Average for the years 2005–2007, units of Euros.
Source: ISTAT.

Corruption — Corruption is proxied by using a measure of the incidence of the requests by the judiciary (over the total number of members) to the relevant chamber of the Parliament to investigate a national legislator for suspected malfeasance (a majority vote by the floor was required by the Italian constitution until 1994). The data cover most of the post war period (from 1948 to 1992).
Source: Golden (2004).

Blood — Blood donation: number of blood bags donated over 1 million inhabitants in 1995.
Source: Guiso *et al.* (2004a) on data from AVIS.

Election — Average turnout at referenda between 1946 and 1989. For each province turnout data are averaged across time.

	Source: Guiso *et al.* (2004a) on data from the Ministry of Interior.	
Trust	Number of people answering yes to the following question: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" Year: 2003. Source: ISTAT.	
Newspapers	Percentage of people who read a newspaper at least once a week. Period: 2005-2007. Source: ISTAT	
Industry - Province level variables		
Entry $_{Srl/All}$	Ratio between the number of new Srls/all Ltds and the total number of firms in each province. New firms are firms newly registered in the same year. Average for the years 2005–2007. I compute this variable for two-digit ATECO 2002 industries. Source: Infocamere.	
Firms share	Share of registered firms in the year 2005 in industry j in total firms of province *p*. Source: Movimprese.	
Output share	Share of industry j in total value added in real terms of province *p*. Average for the years 2005–2007. Note that since value added in real terms at sectoral 2 digit level is available only at regional (and not provincial) level, the data of each region– for the years 2005, 2006 and 2007 – have been rescaled at province level using as weights the ratio between the value added of the province at 1 digit level over the region total. Source: ISTAT.	
Productivity	Ratio between value added in real terms and employment in industry *j* in province *p*.	

Table A.3. Table Diff–in–diff estimation

	Low entry sectors (*e*)	High entry sectors (*E*)
High regulation provinces (*H*)	y_{He} $(= \beta_0)$	y_{HE} $(= \beta_0 + \beta_2)$
Low regulation provinces (*l*)	y_{le} $(= \beta_0 + \beta_1)$	y_{lE} $(= \beta_0 + \beta_1 + \beta_2 + \beta_3)$

References

BANK OF ITALY, (2009), "Il Mezzogiorno e la politica economica dell'Italia", conference proceedings at Bank of Italy, ed. by Cannari, L. and Franco, D. Nov 2009; available at: http://www.bancaditalia.it/pubblicazioni/seminari_convegni/mezzogiorno_4/4_volume_mezzogiorno_2010.pdf.

BERTRAND, M., KRAMARZ, F. (2002), "Does entry regulation hinder job creation? Evidence from the French retail industry", Quarterly Journal of Economics 117, 1369–1413.

BIANCO, M., BRIPI, F. (2010), "Administrative burdens on business activities: regional disparities", Giornale degli Economisti e Annali di Economia 69, no. 2.

BLACK, S. E. and STRAHAN, P. (2002), "Entrepreneurship and the availability of Bank Credit", Journal of Finance, 67, pp. 2807-33.

BRUHN, M. (2012), A Tale of Two Species: revisiting the Effect of Registration Reform on Informal Business Owners in Mexico, Policy Research Working Paper no. 5971.

CHARI, A.V. (2011), "Identifying the Aggregate Productivity Effects of Entry and Size Restrictions: an Empirical Analysis of License Reform in India", 3 American Economic Journal: Economic Policy, no. 2, May, 66-96.

CICCONE, A., PAPAIOANNOU, E. (2007), "Red Tape and Delayed Entry", Journal of the European Economic Association, vol. 5 no 2-3, pp. 444–58.

CICCONE, A., PAPAIOANNOU, E. (2008), "Entry Regulation and Intersectoral Reallocation", Economics Working Papers, Universitat Pompeu Fabra, no. 1353.

DE BLASIO, G., NUZZO, G. (2010) "Individual determinants of social behaviour", Journal of Socio-Economics, vol. 39 (2010) p.466 – 473.

DE SERRES, A., KOBAYAKAWA, S., SLØK, T., VARTIA, L. (2006), "Regulation of Financial Systems and Economic Growth", OECD Economics Dep.t Working Papers No. 506.

DESAI M., GOMPERS P., LERNER J., (2003), "Institutions, Capital constraints and Entrepreneurial firm dynamics: evidence from Europe", NBER WP no. 10165.

DI PATTI, E.B., DELL'ARICCIA, G. (2004), "Bank competition and firm creation", Journal of Money, Credit, and Banking, 36, 225–252.

DJANKOV, S., LA PORTA, R., LOPEZ-DE-SILANES, F., SHLEIFER, A. (2002), "The regulation of entry", Quarterly Journal of Economics 117, 1–35.

DJANKOV, S., CARALEE MCLIESH, C. AND RAMALHO, R. (2006), "Regulation and growth", Economics Letters, 92, pp. 395–401.

DJANKOV, S. (2008), "The Regulation of Entry: a Survey", CEPR Discussion Papers, no. 7080.

EVANS, D.S., JOVANOVIC, B. (1989), "An estimated model of entrepreneurial choice under liquidity constraints", Journal of Political Economy, 97, 808–827.

FISMAN, R., LOVE, I. (2007), "Financial dependence and growth revisited", Journal of the European Economic Association Papers and Proceedings, vol. 5, pp. 470-479.

FRIEDMAN, E., JOHNSON, S., KAUFMAN, D, ZOIDO-LOBATON, P. (2000), "Dodging the Grabbing Hand: Determinants of Unofficial Activity in 69 Countries", Journal of Public Economics, vol. 76, no. 3, pp. 459–93.

GOLDEN, M.A. (2004), "Datasets on Italian parliamentary malfeasance, preference votes, and members of the Chamber of Deputies, Legislatures I–XI (1948–1992)", (http://www.golden.polisci.ucla.edu).

GUISO, L., SAPIENZA, P. AND ZINGALES, L. (2004a), "The Role of Social Capital in Financial Development", American Economic Review, vol. 94, no. 3, pp. 526–556.

GUISO, L., SAPIENZA, P. AND ZINGALES, L. (2004b), "Does Local Financial Development Matter?", The Quarterly Journal of Economics, MIT Press, vol. 119, no. 3, pp. 929 – 969.

HELIWELL, J.F. and PUTNAM, R.D. (1995) 'Economic Growth And Social Capital in Italy," Eastern Economic Journal, VOL. 21, pp. 295 – 307.

HAUSE, J. C., DU RIETZ, G., (1984), "Entry, Industry Growth, and the Microdynamics of Industry Supply," Journal of Political Economy, vol. 92 (4), Aug, pp. 733-57.

KAPLAN, D.S., PIEDRA, E., SEIRA, E, (2007), "Entry Regulation and Business Start-ups: evidence from Mexico," Journal of Public Economics, Elsevier, vol. 95(11), pages 1501–1515.

KLAPPER L., LAEVEN L., RAJAN R. (2006), "Entry regulation as a barrier to entrepreneurship," Journal of Financial Economics, vol. 82 , pp. 591–629.

MONTEIRO, J., ASSUNCAO, J. (2006), "Outgrowing the Shadows: Estimating the Impact of Bureaucratic Simplification and Tax Cuts on Informality and Investment," Pontifica Universidade Catolica, Department of Economics, Rio de Janeiro, Brazil.

NANNICINI, T., STELLA, A., TABELLINI, G., TROIANO, U. (2010), "Social Capital and Political Accountability," CEPR Discussion Papers, no. 7782.

PINOTTI, P. (2012), "The economic costs of organized crime: evidence from southern Italy," Temi di discussione (Economic working papers), no. 868, Bank of Italy.

PUTNAM, R.D., LEONARDI, R. NANETTI, R.Y. (1993), "Making Democracy Work," Princeton University Press.

RAJAN, R., ZINGALES, L. (1998), "Financial dependence and growth", American Economic Review, 88, 559–586.

SCARPETTA, S., HEMMINGS, P., TRESSEL, T., WOO, J. (2002), "The role of policy and institutions for productivity and firm dynamics: evidence from micro and industry data", OECD Economics Dept. Working Papers, no. 329.

SCHIVARDI, F., VIVIANO, E. (2011), "Entry Barriers in Italian Retail Trade", Economic Journal, Royal Economic Society, vol. 121 (551), pp. 145–170, March.

SHARMA, S. (2009), "Entry Regulation, Labor Laws and Informality", Enterprise Analysis Unit, World Bank.

STAIGER, D., STOCK, J.H. (1997). "Instrumental variables regression with weak Instruments", Econometrica, vol. 65, pp. 557-586.

WORLD BANK "Doing Business Reports", various years, Washington DC: http://www.doingbusiness.org.

WORLD BANK (2012), "Doing Business in Italy 2013", Washington DC: http://doingbusiness.org/reports/subnational-reports/italy.

YAKOVLEV, E., ZHURAVSKAYA, E. (2007), "Deregulation of Business", CEPR Discussion Papers, no. 6610.

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S. MAGRI, *Debt maturity choice of nonpublic Italian firms* , Journal of Money, Credit, and Banking, v.42, 2-3, pp. 443-463, **TD No. 574 (January 2006).**

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F. ALTISSIMO, R. CRISTADORO, M. FORNI, M. LIPPI and G. VERONESE, *New Eurocoin: Tracking Economic Growth in Real Time,* Review of Economics and Statistics, v. 92, 4, pp. 1024-1034, **TD No. 631 (June 2007).**

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F. D'AMURI, GIANMARCO I.P. OTTAVIANO and G. PERI, *The labor market impact of immigration on the western german labor market in the 1990s,* European Economic Review, v. 54, 4, pp. 550-570, **TD No. 687 (August 2008).**

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2011

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2012

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G. Gobbi and R. Zizza, *Does the underground economy hold back financial deepening? Evidence from the italian credit market*, Economia Marche, Review of Regional Studies, v. 31, 1, pp. 1-29, **TD No. 646 (November 2006).**

S. Mocetti, *Educational choices and the selection process before and after compulsory school*, Education Economics, v. 20, 2, pp. 189-209, **TD No. 691 (September 2008).**

M. Pericoli and M. Taboga, *Bond risk premia, macroeconomic fundamentals and the exchange rate*, International Review of Economics and Finance, v. 22, 1, pp. 42-65, **TD No. 699 (January 2009).**

F. Lippi and A. Nobili, *Oil and the macroeconomy: a quantitative structural analysis,* Journal of European Economic Association, v. 10, 5, pp. 1059-1083, **TD No. 704 (March 2009).**

G. Ascari and T. Ropele, *Disinflation in a DSGE perspective: sacrifice ratio or welfare gain ratio?,* Journal of Economic Dynamics and Control, v. 36, 2, pp. 169-182, **TD No. 736 (January 2010).**

S. Federico, *Headquarter intensity and the choice between outsourcing versus integration at home or abroad*, Industrial and Corporate Chang, v. 21, 6, pp. 1337-1358, **TD No. 742 (February 2010).**

I. Buono and G. Lalanne, *The effect of the Uruguay Round on the intensive and extensive margins of trade,* Journal of International Economics, v. 86, 2, pp. 269-283, **TD No. 743 (February 2010).**

S. Gomes, P. Jacquinot and M. Pisani, *The EAGLE. A model for policy analysis of macroeconomic interdependence in the euro area,* Economic Modelling, v. 29, 5, pp. 1686-1714, **TD No. 770 (July 2010).**

A. Accetturo and G. de Blasio, *Policies for local development: an evaluation of Italy's "Patti Territoriali",* Regional Science and Urban Economics, v. 42, 1-2, pp. 15-26, **TD No. 789 (January 2006).**

F. Busetti and S. Di Sanzo, *Bootstrap LR tests of stationarity, common trends and cointegration,* Journal of Statistical Computation and Simulation, v. 82, 9, pp. 1343-1355, **TD No. 799 (March 2006).**

S. Neri and T. Ropele, *Imperfect information, real-time data and monetary policy in the Euro area,* The Economic Journal, v. 122, 561, pp. 651-674, **TD No. 802 (March 2011).**

G. Cappelletti, G. Guazzarotti and P. Tommasino, *What determines annuity demand at retirement?,* The Geneva Papers on Risk and Insurance – Issues and Practice, pp. 1-26, **TD No. 805 (April 2011).**

A. Anzuini and F. Fornari, *Macroeconomic determinants of carry trade activity,* Review of International Economics, v. 20, 3, pp. 468-488, **TD No. 817 (September 2011).**

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R. Cristadoro and D. Marconi, *Household savings in China,* Journal of Chinese Economic and Business Studies, v. 10, 3, pp. 275-299, **TD No. 838 (November 2011).**

P. Guerrieri and F. Vergara Caffarelli, *Trade Openness and International Fragmentation of Production in the European Union: The New Divide?,* Review of International Economics, v. 20, 3, pp. 535-551, **TD No. 855 (February 2012).**

V. Di Giacinto, G. Micucci and P. Montanaro, *Network effects of public transposrt infrastructure: evidence on Italian regions,* Papers in Regional Science, v. 91, 3, pp. 515-541, **TD No. 869 (July 2012).**

A. Filippin and M. Paccagnella, *Family background, self-confidence and economic outcomes,* Economics of Education Review, v. 31, 5, pp. 824-834, **TD No. 875 (July 2012).**

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F. Cingano and P. Pinotti, *Politicians at work. The private returns and social costs of political connections*, Journal of the European Economic Association, v. 11, 2, pp. 433-465, **TD No. 709 (May 2009).**

F. Busetti and J. Marcucci, *Comparing forecast accuracy: a Monte Carlo investigation*, International Journal of Forecasting, v. 29, 1, pp. 13-27, **TD No. 723 (September 2009).**

A. Finicelli, P. Pagano and M. Sbracia, *Ricardian Selection*, Journal of International Economics, v. 89, 1, pp. 96-109, **TD No. 728 (October 2009).**

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A. Accetturo e L. Infante, *Skills or Culture? An analysis of the decision to work by immigrant women in Italy,* IZA Journal of Migration, v. 2, 2, pp. 1-21, **TD No. 815 (July 2011).**

G. Barone and G. de Blasio, *Electoral rules and voter turnout,* International Review of Law and Economics, v. 36, 1, pp. 25-35, **TD No. 833 (November 2011).**

FORTHCOMING

M. Bugamelli and A. Rosolia, *Produttività e concorrenza estera*, Rivista di politica economica, **TD No. 578 (February 2006).**

M. Bratti, D. Checchi and G. de Blasio, *Does the expansion of higher education increase the equality of educational opportunities? Evidence from Italy,* in R. Matoušek; D. Stavárek (eds.), Labour, **TD No. 679 (June 2008).**

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Y. Altunbas, L. Gambacorta and D. Marqués-Ibáñez, *Bank risk and monetary policy,* Journal of Financial Stability, **TD No. 712 (May 2009).**

M. Taboga, *The riskiness of corporate bonds*, Journal of Money, Credit and Banking, **TD No. 730 (October 2009).**

F. D'Amuri, *Gli effetti della legge 133/2008 sulle assenze per malattia nel settore pubblico,* Rivista di Politica Economica, **TD No. 787 (January 2011).**

E. Cocozza and P. Piselli, *Testing for east-west contagion in the European banking sector during the financial crisis,* in R. Matoušek; D. Stavárek (eds.), Financial Integration in the European Union, Taylor & Francis, **TD No. 790 (February 2011).**

F. Nucci and M. Riggi, *Performance pay and changes in U.S. labor market dynamics*, Journal of Economic Dynamics and Control, **TD No. 800 (March 2011).**

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F. D'Amuri and G. Peri, *Immigration, jobs and employment protection: evidence from Europe before and during the Great Recession,* Journal of the European Economic Association, **TD No. 886 (October 2012).**