FIRM ENTRY AND EXIT IN LOCAL MARKETS: MARKET PULL AND UNEMPLOYMENT PUSH

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Firm Entry and Exit in Local Markets: Market Pull and Unemployment Push

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Abstract

Firm entry and exit flows in the retailing and consumer services may be viewed as market equilibrating processes. Local markets with considerable market room and high unemployment ought to be characterized by high subsequent entry rates and low exit rates. However, lack of entrepreneurial alertness may inhibit this. We examine the relationship and obtain empirical results for a range of selected industries in 563 Belgian municipalities. We show that, over a three-year period, (net) entry is positively affected by the presence of local 'market room' and also by future market pull. We find a significant 'unemployment push' effect on entry in easy-to-enter industries, but also a significant effect of unemployment on exit.

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1. Introduction

Why do individuals start-up firms? The simple economic answer is that they purposefully do so to improve upon their current economic situation. They expect the utility that they derive from being self-employed to exceed that of remaining wage-employed or unemployed. This relative utility difference may be especially large in case of (i) dissatisfaction with their current occupation, e.g. being unemployed, and (ii) perceiving a profit opportunity in the market. Obviously, these two cases suggest a very different relation between the economic welfare of a region and the start-up rate of new firms. The current paper seeks to uncover empirically how the prevalence of unemployed persons and of market opportunities increase the regional entry of new firms.

Flows of entry and exit of firms can be studies from different viewpoints. A first viewpoint is that of Schumpeterian creative destruction. New innovative firms, by introducing new products or new industrial processes, compete with incumbent firms. Entrepreneurs may fail in their new ventures or, occasionally, be successful, leading to the obsolescence of the incumbents and even temporary monopolies. In both cases, entries of new entrepreneurial firms are followed by exits. That is, the creative destruction process or the "seedbed" function of new firms has been closely linked with a turbulent industrial environment characterized by both high entry and exit rates (Beesley and Hamilton, 1984; Acs and Audretsch, 1992; Audretsch, 1995). This viewpoint may be especially valid for high-tech manufacturing industries. It may be said that Schumpeterian creative destruction is focused upon the consequences of entry more than on its causes.

A second viewpoint is that of entrepreneurs being alert to 'market room'. Kirzner (1973, 1979) argued that markets provide out-of-equilibrium profit opportunities, and that the function of the entrepreneur is to discover and exploit them. Entrepreneurs will tend to enter the market when there is a profit to be made. This entry will increase the number of firms and, hence, lower attainable profits. Therefore, the alertness to hitherto unnoticed profit opportunities will push the economy towards equilibrium. This viewpoint may be especially valid for industries serving a regional or local market, like retailing and consumer services. Product and process innovation are not the key drivers of firm dynamics in such industries (Pakes and Ericsson, 1998).

A third viewpoint is that of occupational choice. Knight (1921) emphasized that 'the laborer' will not accept less than (s)he can get from some other entrepreneur, or by turning entrepreneur him- or herself (Kihlstrom and Laffont, 1979:746). The occupational choice of an individual is determined by the entrepreneurial profit vis-à-vis the wage earned as an employee and vis-à-vis the unemployment benefit when looking for a job. This relative pay-off depends on the individual abilities and skills. It may be assumed that many of the not employed who register themselves as unemployed, would prefer a job over their current labor market status. When the region faces a high unemployment rate, the probability for an individual to find a job in accordance with his individual capacities will be low and self-employment may provide an interesting option. This is sometimes called the 'unemployment push effect'. Unemployed will normally only be able to enter industries with low barriers to entry. Retailing and consumer services industries are, therefore, more likely to be affected by this 'unemployment push effect' than the more capital- and knowledge-intensive manufacturing industries.

We study the contribution of 'market room' and the 'unemployment push effect' in explaining the (net) entry of new firms in retailing and consumer services industries. These industries are not characterized by sequences of temporary monopolies as predicted by Schumpeterian creative destruction. We instead approach entrepreneurial activity as an equilibrating force. We expect that in areas where there are, given population and income, for example many flower shops and plumbers, that there will be relatively few new entry and more exits of these shops and services than in areas with comparably few flower shops and plumbers. We also expect that when there are many jobs available in a region (unemployment is low), that the rate of entry will be lower and the rate of exit higher than in a region where there are few opportunities to find a job. The latter implies that entrepreneurial activity may to some extent help restoring equilibrium on the labour market.

Schultz (1975, 1980) and, more particularly, Kirzner (1973, 1979) have argued that what accounts for entry in low barriers to entry sectors is a situation of market disequilibrium. Entry (and exit) is a consequence of the entrepreneurial discovery of profit opportunities due to prevailing "erroneous" market transactions (Kirzner, 1979:205). The opportunity for new entrepreneurial activity in retail and consumer service industries will depend closely on demand and supply characteristics of the regional or local market. The central question becomes whether the market is able to support new firms and therefore additional supply, or if it is already "saturated" (Serra, ReVelle and Rosing, 1999:638), or even crowded.

The equilibrium number of establishments in local retailing and consumer services markets is primarily dependent upon local demand. Most firms have but one establishment in many of these industries, see e.g. Carree (2002, Table 1). Hence, we use 'firms' to denote local units in the rest of this paper. Bresnahan and Reiss (1991) derive and estimate their so-called entry threshold, a measure of the market size required to support a given number of firms. Markets that have fewer firms than the entry threshold should show (net) entry of firms in the subsequent period and markets that have more firms than this threshold are expected to show (net) exit of firms.

The extent of this error-correction process can only be determined empirically. Error-correction can be slow with market disequilibria remaining for several decades, or it can be fast with convergence taking place within one or two years. Entry and exit dynamics are not likely to be completely determined by the 'market pull effect' but also by other factors. In particular, we investigate the role of the extent of regional or local unemployment, affecting the individual occupational choice parameters: is there an 'unemployment push' effect? The present article addresses these issues using a dataset for a range of carefully selected retail and consumer service industries in 563 local regions (municipalities) of Belgium. Data include number of firms, entry, exit, factors determining market size and local unemployment statistics.

The assessment is conducted using a three-step procedure. In the first step, the predicted (equilibrium) number of firms is obtained separately for each selected industry. We seek to include the relevant demand factors that may influence the maximum number of firms that the market may sustain. This first step draws on Carree and Dejardin (2007), but we notably extend the analysis by also correcting for 'shopping centers'. This is the second step. That is, if there are relatively many firms in a certain area in various industries, than could have been expected on basis of demand factors alone, then this area probably serves as 'shopping center'. An area that serves this role will probably have a greater capacity to sustain firms of many different but interdependent (Harris and Shonkwiler, 1996) types of retail and consumer services. In the third step, we explain entry, exit and net entry patterns from (i) 'market room' (or market disequilibrium), defined as the difference between the expected (equilibrium) number of firms and the actually observed one, from (ii) development of demand due to population growth (future market pull) and (iii) the number of unemployed.

The paper is organized as follows. In the next section we extend our discussion of the error correction and unemployment push hypotheses. The firm entry and exit flows in local markets

are more specifically discussed as equilibrating processes. Sections 3 and 4 are devoted respectively to an explanation of the methodology applied in the empirical study and to an exposition of the data for Belgium. Section 5 discusses the empirical results. Section 6 concludes.

2. Firm entry and exit flows as equilibrating processes

Suppose a local market is characterized by free entry and exit and identical (potential) incumbent firms. Whenever there exists an equilibrium number of firms, firm entry or exit should occur as long there is a discrepancy between the equilibrium and actual number of firms. From an empirical viewpoint, emerging questions are then how many and which markets are in disequilibrum, and how fast equilibrium is restored. As Schultz (1980) has pointed out, disequilibrium should be seen as a necessary outcome in a dynamic economy and it would persist unless by the result of entrepreneurial actions. Kirzner (1973, 1979) is close to that position. According to this last author, the stock of profit opportunities is exogenously fed by economic conditions that are changing continuously and the market equilibrium cannot be considered as the prevailing situation at all. Much more, the description of a concrete equilibrating process is required for the market equilibrium to exist and this process is carried by the entrepreneur. By his or her action, driven by the pursuit of (pure) profit, the entrepreneur contributes to the production of shared knowledge and reduces the economic agents' ignorance. The entrepreneur acts on the agents' coordination with regard to their supply and demand plans on the market (Kirzner, 1997). This is the equilibrating impact of the entrepreneurial action.

At the origin of the entrepreneurial discovery of pure profit opportunities is alertness, the specific trait of the Kirznerian entrepreneur. Pure profit opportunities exist because ignorance exists. Ignorance is therefore to be considered as an explanation for market disequilibrium. What accounts for the persistence of market disequilibrium could also be interpreted as a lack of entrepreneurial activity. The possibility of a lack of entrepreneurship as an explanation for the persistence of the market disequilibrium leads to the discussion of individual choices between different professional occupations that include being an entrepreneur[1]. In that case,

[1] Kirzner's analysis did not deal directly with the occupational choice problem. A discussion of this extension is proposed by Dejardin (2006). We use the term Kirznerian or even Kirznerian-type (and not Kirzner's) entrepreneur.

the risky reward as an entrepreneur is to be compared against other job-related revenues and even against being or becoming unemployed. Occupational choice models describe the expected pay-offs to be determined by a variety of individual factors, including individual abilities, skills and attitudes toward risk (Lucas, 1978; Kanbur, 1979; Kihlstrom and Laffont, 1979; de Wit and van Winden, 1991; Jovanovic, 1994).

The social and economic environment may have an important but non-trivial impact. A region characterized by a high level of unemployment might be argued to have abundant potential resources in terms of entrepreneurship. Generally speaking, because of a relatively lower probability to find a job as an employee, unemployment (or its threat) may be an incentive for an individual to create his or her own enterprise, supporting the argument of an unemployment push effect. An important counter-argument is that many of the unemployed are not without reason unemployed: they lack essential skills. In addition, at the aggregate level, high regional or local unemployment rates may have reversed effects as profits and the options for creating new business opportunities may be limited[2]. Hence, it is important for the researcher to control for market opportunities when investigating the 'unemployment push' hypothesis. The finding by Evans and Leighton (1991) that unemployed people were about twice as likely to create their business as employed people has been considered as an important support for the 'unemployed push' hypothesis (Carree, 2002).

To complete this short discussion, notice that a situation of long-run profit (or market disequilibrium) in classical microeconomic analysis is associated with the existence of a scarce resource or some barriers to entry. We focus on retail and consumer service industries which have on average lower barriers than manufacturing industries. It should be clear, however, that some legal access condition or required skills to some of the industries like pharmacies or plumbing, may affect entrepreneurial dynamics. In Belgium, such legal conditions with regard to professional access are defined at the Federal State level.

3. Methodology

The empirical study is conducted using a three-step procedure. First, the local equilibrium number of firms in year *t* is estimated, for each particular industry. The equilibrium number of firms is assumed to depend upon the market size. Population and total personal income are

[2] For an early discussion of the controversial impact of unemployment on firm creations, see Storey (1991).

included as key determinants. We compute initial market room as the difference between the estimated equilibrium and the actual number of firms. In the second step we adjust this market room for the region being a 'shopping center', so that more retailing and consumer service activities may be expected. Third, we predict the number of entries and exits in the region and industry from the market room and unemployment in the base year. This indicates the importance of adjustment for disequilibrium in local (labor) markets.

The economic size of a regional or local market is largely determined by the number of people who live in that area and the amount of money they earn. Furthermore, retail and consumer service industries are characterized by low entry barriers and by customers who desire a short distance to the shop. This implies that establishments are restricted to the extent that they can grow in size. Hence, a growing economic size of the market will lead to a demand for a growing number of outlets. We denote by N^*_{ijt} the equilibrium number of firms in industry *i* in a local market *j* in period *t*, where $N^*_{ijt} = \alpha_{0i} + \alpha_{1i} Pop_{jt} + \alpha_{2i} TotInc_{jt}$. For simplicity, we assume a linear relation between the equilibrium number and total population and total personal incomes.[3] The variable *TotInc* can also be written as *Pop**(*TotInc*/*Pop*): the population-weighted average income per capita. Retail and consumer service industries selling products with a relatively high income elasticity are likely to have high values for α_{2i}.

We estimate the equilibrium number by using the actual number of firms in markets. In some markets there will be more firms than the equilibrium number, in some there will be less. One might assume that *on average* the actual number of firms is close to the equilibrium number. This implies that we may use regression equation (1) to estimate the parameters of the determinants of the equilibrium number of firms:

(1) $N_{ijt} = \alpha_{0i} + \alpha_{1i} Pop_{jt} + \alpha_{2i} TotInc_{jt} + \varepsilon_{ijt}$

[3] Obviously, more sophisticated models like a Hotelling or Salop locational model could be used. However, these require assumptions with regard to for example the spatial distribution of firms and customers, their travel costs and their incomes. Our model should be seen as a linear approximation.

where ε_{ijt} is the error term.[4] Using the regression outcome we define market room as $Room_{ijt} = \hat{N}_{ijt} - N_{ijt} = -\hat{\varepsilon}_{ijt}$. By construction the sum of all market rooms in a country is zero. However, there is an important additional determinant of the number of outlets, namely whether a local market functions as a 'shopping center' for a bigger region. It means that customers of adjacent or close local markets come to one specific central local market that functions as 'shopping center'. Usually, but not always, this is a city or sizeable town. In other cases it may be a shopping center in a suburban local market or a tourist area. When there are more firms in several retail and/or consumer service industries than expected on basis of population and total income, this could indicate that the local market serves a 'shopping center' role. We adjust the market room for the presence of 'shopping centers' as follows. We predict the estimated market room of industry i from the market rooms estimated for *other* industries using equation (2):

$$(2)\quad Room_{ijt} = \beta_{1i} Room_{1jt} + ... + \beta_{i-1,i} Room_{i-1,jt} + \beta_{i+1,i} Room_{i+1,jt} + ... + \beta_{Ii} Room_{Ijt} + \nu_{ijt}$$

The β-parameters are expected to be positive in case industries provide non-competing products: where there are disproportionally many shops of industry A ($Room_A$ is negative), one is also likely to find disproportionally many of industry B ($Room_B$ is negative). The variable $AdjRoom_{ijt}$ is the predicted value from equation (2): how much of market room can be predicted from being located (or not) in a 'shopping center'. This adjustment factor is incorporated in equation (1) to give:

$$(3)\quad N_{ijt} = \alpha_{0i} + \alpha_{1i} Pop_{jt} + \alpha_{2i} TotInc_{jt} + \alpha_{3i} AdjRoom_{ijt} + \eta_{ijt}$$

Our procedure ensures that the estimates for α_{0i}, α_{1i} and α_{2i} of equation (3) are identical to those of equation (1), although standard errors differ. The estimate for α_{3i} is always –1 and is always statistically significant (at 1%), but not reported. The new market room variable is

[4] It is no problem in case the actual number of firms is on average higher or lower than the equilibrium number. This is corrected for by the constant in equations (4)-(6) and, in case this deviation is dependent upon the size of the market, corrected for by the number of incumbents in equations (4)-(6).

now computed as $Room_{ijt} = \hat{N}_{ijt} - N_{ijt} = -\hat{\eta}_{ijt}$. We use this variable in our three main equations, predicting entries, exits and their difference:

(4) $Ent_{ij,t+1} = \kappa_{0i} + \kappa_{1i} Room_{ijt} + \kappa_{2i} Unemp_{jt} + \kappa_{3i} PopGr_{jt} + \kappa_{4i} N_{ijt} + \omega^{e}_{ijt}$

(5) $Ext_{ij,t+1} = \lambda_{0i} + \lambda_{1i} Room_{ijt} + \lambda_{2i} Unemp_{jt} + \lambda_{3i} PopGr_{jt} + \lambda_{4i} N_{ijt} + \omega^{x}_{ijt}$

(6) $Ent_{ij,t+1} - Ext_{ij,t+1} = \mu_{0i} + \mu_{1i} Room_{ijt} + \mu_{2i} Unemp_{jt} + \mu_{3i} PopGr_{jt} + \mu_{4i} N_{ijt} + \omega^{n}_{ijt}$

where $\mu_{ki} = \kappa_{ki} - \lambda_{ki}$ for k = 0 to 4. The number of entries and exits in a local market are related to the market room, the number of unemployed, to population growth and to the number of incumbent firms in the industry. We control for the change in population to correct for market growth or decline which (potential) entrepreneurs may want to account for. This can be interpreted as future market pull. A local market that tends to grow will, ceteris paribus, have more market room available in the future. We control for the number of incumbent firms because the numbers of entries and exits are likely to be *per se* larger in case there are more firms in a market present (a scale effect). The 'error-correction' hypothesis would suggest that $\kappa_{1i} > 0$ and $\lambda_{1i} < 0$ so that $\mu_{1i} >> 0$. The 'unemployment push' hypothesis would suggest that $\kappa_{2i} > 0$ so that also $\mu_{2i} > 0$. Entrepreneurs taking future market pull into consideration would imply that $\kappa_{3i} > 0$ and $\lambda_{3i} < 0$ so that $\mu_{3i} >> 0$. We estimate equation (4)-(6) using OLS (with robust standard errors). Equations (4) and (5) could also be estimated using a count model, but this would hamper comparison with equation (6).[5] Our model is estimated for one time frame. The period *t* is always 1998. The results for period *t+1* are given for 1999-2001 (three-year reaction).

4. Data

The dataset has been collected from the Belgian National Institute of Statistics (NIS). Number of entries, exits and incumbents are obtained for all Belgian municipalities, but excluded are

[5] Unreported estimation results using a negative binomial count model present results which are very much in line with results as reported in the paper.

the municipalities of the large cities in Belgium. There are 589 municipalities but we exclude the 19 municipalities of Brussels and we exclude the other six Belgian cities with more than 100,000 inhabitants (in 1998), being Antwerpen, Gent, Charleroi, Liège, Brugge and Namur. We exclude the big cities since they cannot be considered as one local market. The travel distance from one part of town to the other can be considerable. Lastly, we exclude the tiny municipality of Herstappe (less than one hundred inhabitants). This leaves us with 563 observations.

Explanatory variables in our analysis include: population (*Pop*), the sum of all personal income in 1998 (*TotInc*) and population growth from 1990 to 1998 (*PopGr*). The number of unemployed people (*Unemp*) was measured in June 1998. The stock of incumbent firms (*N*) was measured at the end of 1998. The entries (*Ent*) and exits (*Ext*) are those of the years 1999, 2000 and 2001. The data are derived from the stock of active taxable firms and self-employed (in the value-added-tax books) at the end of each year, as well as the number of registrations and deletions per year, from 1998 to 2001.

We paid special attention to select retail and consumer service industries that are composed of firms with very similar economic activities. We used an industrial definition according to the five-digits NACE-Belgium. The industries were selected to have their firms dependent upon local market conditions and to be commonly present in municipalities. Accordingly, industries with a large majority of municipalities with zero firms were not taken into consideration. The industries were also selected to suffer only to a limited extent from competition from supermarkets and department stores. The following 13 industries (NACE-Belgium code) were chosen: Plumbing (45330), Painting (45441), Butcheries (52220), Bakeries (52240, 15812; retail sale and craftsmen of bread and confectionery), Pharmacies (52310), Clothing (52421-52424), Shoe stores (52431), Flower shops (52483), Jewelry (52484), Restaurants (55301), Fast food outlets (55302), Caterers (55522) and Real estate agencies (70311). There is clearly spread among the industries in terms of income elasticity and required skills.

Summary statistics of the number of incumbents (in 1998), entrants and exits are presented in Table 1. For entry and exit we provide data for the three-year period 1999-2001. The average number of incumbents per municipality range from less than 3 for jewelry to about 13 for plumbing, 14 for bakeries and 16 for fast food and for restaurants. The average number of entrants and exits are both lowest for jewelry and both highest for fast food. Net entry is positive for six out of 13 industries (plumbing, painting, caterers, fast food, restaurants, real

estate). In none of the retail industries we find a positive net entry. Restaurants show the strongest growth in number of firms, with the butcheries and bakeries the strongest decline. Industries with relatively high (low) entry rates also display relatively high (low) exit rates.

5. Results

The estimates for equation (1) and (3) are presented in Table 2. The table shows the R-squared for equations (1), (2) and (3) as R^2before, R^2resid and R^2after, respectively. The R-squared of equation (1) ranges from 60% to 84%. This indicates that population and total income predict the number of outlets in the various retail and consumer service industries reasonably well. The correction for 'shopping centers' raises the R-squared to values between 72% and 92%. Hence, this correction makes the prediction of the number of firms more accurate. Industries that were found to have strongly correlated market rooms (high value of β-coefficients) include (i) clothes with jewelry and with shoe stores; (ii) butcheries with bread and (iii) restaurants with real estate. Population has a significant impact on the number of firms in each retail or consumer industry. This effect is positive, as expected, with one exception: real estate. This industry has a high income elasticity with many low income families, often in more populated municipalities, not using their services. Total incomes has a significant positive effect on the number of firms in five industries, while there is a negative effect for bakeries and butcheries. The number of outlets in the latter two industries have apparently decreased faster in relatively high income areas versus relatively low income areas in Belgium. The market room derived from equation (3) is constructed to have zero mean and its spread is given in the last column of Table 1.

Tables 3, 4 and 5 show the results of the regression explaining entry, exit and net entry. We will first discuss the results of the 'error-correction' hypothesis that market room leads to more entry but less exit. Table 3 shows that for ten out of 13 industries there is a significant positive effect of market room on entry. There is but one industry with an (insignificant) negative effect: fast food. Table 4 shows that for only four out of 13 industries there is a significant negative effect on exit. There are two industries, pharmacies and flower shops, that combine a significant positive effect on entry and a significant negative effect on exit. Not surprisingly, Table 5 shows that these two industries have the fastest speeds of 'error-correction'. There are again ten out of 13 industries that have a significant positive effect of

market room on *net* entry. The results show some support for the 'error-correction' hypothesis.

We now turn to the 'unemployment push' hypothesis. Table 3 shows that there are seven out of 13 industries with a significant positive effect of unemployment on subsequent entry of firms. There is no industry with a significant negative effect. The results strongly suggest that barriers to entry for unemployed are different across industries. The list of industries with the least impact of unemployment contains (in order): plumbing, painting, real estate, jewelry, butcheries and pharmacies. The entrepreneurial activities in these industries require a more specific (and scarce) set of skills than for example shoe stores, flower shops and fast food. The results for the effect of unemployment on the number of exits are more surprising at first sight. Unemployment leads to more subsequent exit in eight out of 13 industries. A straightforward explanation would be that areas with high numbers of unemployed are economically the more depressed areas of Belgium from which entrepreneurs would tend to flee. However, there is possibly an additional explanation. Belgium provides business start-up loans to help unemployed people wanting to enter self-employment.[6] This may induce more entry, but might also lead to more subsequent exit. Van Stel and Storey (2004) also question policies designed to raise rates of new firm formation in the U.K. However, we must be careful to draw strong conclusions because we only consider regional and not individual data. The net effect of unemployment on entry as given in Table 5 shows no clear relation. In most industries there is no significant effect of unemployment on net entry.

Local markets may also show signs of upcoming market opportunities: population is on the increase. Table 3 shows that population growth has a significant positive effect on subsequent entry in eight out of 13 industries. Butcheries are a clear exception. This industry may be the one (out of 13) suffering most from the opening of a supermarket in a local community which becomes more likely when population is on the increase. The effect of population growth on exit is less clear. The effect of future market pull is significant for net entry in only four industries of which plumbing, real estate and restaurants show the strongest effects. Hence, the actual market room appears to affect net entry of firms more consistently than the potential market room due to increasing population.

[6] The measure is based upon a Royal Decree of December 22, 1992. Upon cessation of activities, the self-employed person regains his or her rights on unemployment benefit and is not demanded to repay the outstanding loan balance, under some criteria.

As the net entry regressions are interpreted jointly with the entry and exit ones, it appears as if (i) error-correction in local markets is mostly due to entry and less so due to exit and (ii) unemployment has an effect on market turbulence (entry plus exit). The first finding is in line with Carree and Thurik (1999): exit is less affected by profit opportunities than entry. Potential entrepreneurs will be attracted by profitable markets. Incumbent entrepreneurs are already committed to the market and probably will have more personal reasons, like retirement, for deciding to leave the market. Hence, it is the variation in the rate of entry across local markets that is the source behind the error-correction process rather than variation in the rate of exit. The second finding is in line with the study by Evans and Leighton (1990). They have found a higher exit rate out of self-employment for unemployed workers. It is thus likely that in regions with many unemployed, more people start little businesses and many of them fail. This interpretation is to be supported by further research.

6. Conclusion

Firm entry and exit flows in the retailing and consumer services may be viewed as market equilibrating processes. Local markets with considerable market room, growing population and high unemployment may be thought of having high subsequent entry rates and possibly low exit rates. We examine this relationship and obtain empirical results for a range of carefully selected industries in Belgian municipalities.

We show that, over a three-year period, (net) entry is positively affected by the presence of local 'market room', supporting the idea of a market pull effect. There is much less evidence for a negative effect on the exit rate. Thus, the analysis suggests that firm entry is more flexible and more important in the adjustment process towards local market equilibrium than exit. We expected a positive effect of unemployment on entry flows. And, indeed, a significant 'unemployment push' effect on firm entry has been estimated for about half of the industries, especially those with relatively low entry barriers. For the other half of industries there was no significant effect found. These industries usually require more specific skills that most unemployed will not possess. It appears that the unemployed, if they become self-employed, choose relatively easy-to-enter industries like shoe stores, flower shops and fast food. An interesting result is the pervasive positive effect of the unemployment level on firm exits. It would be more in line with the 'unemployment push' hypothesis to find a negative

effect, because the self-employed will be reluctant to exit if there are no alternative jobs. An absence of an effect from unemployment on exit flows would have certainly have been more comfortable for defending the public policy initiatives promoting self-employment among the unemployed. Further research into this policy implication using individual data is needed.

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Table 1. Summary statistics: averages across municipalities

	Population	*Pop. Growth*	*Total Income*	*Unemployment*
	14124 (963, 91460)	438 (-1011, 3450)	5707 (291, 42395)	517 (20, 7513)
Industry	*Stock*	*Entry*	*Exit*	*Market room*
Shoe stores	3.49 (0, 34)	0.61 (0, 8)	0.92 (0, 9)	0 (-12.94, 6.78)
Clothing	10.06 (0, 113)	1.95 (0, 21)	2.42 (0, 31)	0 (-27.07, 21.44)
Pharmacies	6.72 (0, 56)	0.77 (0, 6)	0.94 (0, 13)	0 (-11.54, 12.27)
Bakeries	13.95 (0, 105)	2.25 (0, 21)	3.42 (0, 28)	0 (-45.50, 19.59)
Butcheries	9.47 (0, 81)	0.91 (0, 15)	2.06 (0, 19)	0 (-20.87, 16.72)
Painting	6.68 (0, 55)	1.44 (0, 21)	1.29 (0, 12)	0 (-18.70, 14.66)
Plumbing	13.05 (0, 76)	2.37 (0, 15)	2.25 (0, 15)	0 (-21.37, 25.11)
Real estate	7.49 (0, 108)	1.83 (0, 20)	1.60 (0, 32)	0 (-37.31, 22.95)
Caterers	4.64 (0, 34)	1.19 (0, 10)	1.04 (0, 10)	0 (-8.12, 9.00)
Fast food	15.66 (0, 134)	5.47 (0, 48)	5.46 (0, 49)	0 (-51.27, 36.68)
Restaurants	15.90 (0, 214)	4.25 (0, 46)	3.53 (0, 54)	0 (-42.16, 41.34)
Jewelry	2.63 (0, 28)	0.31 (0, 6)	0.47 (0, 6)	0 (-7.81, 5.22)
Flower shops	6.86 (0, 54)	1.23 (0, 9)	1.44 (0, 14)	0 (-23.94, 10.42)

Minimum and maximum numbers are given between brackets. Entry and Exit are for a three-year period (1999-2001). The other variables are measured in 1998.

Table 2: Determinants of the number of firms in 1998

Industry	Population	Total Income	constant	R^2before	R^2resid	R^2after
Shoe stores	0.300***	-0.0001	-0.214	0.646	0.335	0.765
Clothing	0.301**	0.0015***	-2.971***	0.744	0.496	0.871
Pharmacies	0.264***	0.0005**	0.265	0.810	0.127	0.834
Bakeries	1.277***	-0.0006**	-0.386	0.838	0.484	0.916
Butcheries	1.042***	-0.0009***	-0.267	0.713	0.463	0.846
Painting	0.327***	0.0002	1.124***	0.598	0.354	0.740
Plumbing	0.293*	0.0011***	2.416***	0.802	0.143	0.831
Real estate	-0.708***	0.0032***	-0.986**	0.599	0.521	0.808
Caterers	0.193***	0.0002	0.505***	0.664	0.168	0.720
Fast food	1.269***	0.0001	-2.659***	0.777	0.437	0.874
Restaurants	0.517**	0.0019***	-2.481***	0.646	0.694	0.892
Jewelry	0.202***	0.0000	-0.476***	0.695	0.297	0.785
Flower shops	0.406***	0.0002	0.237	0.790	0.139	0.819

Note: ***, ** and * mean significant at the 1%, 5% and 10% significance levels, respectively. The three R-squared are the one 'before' correcting for shopping centers (equation (1)), the R-squared of equation (2) and the one 'after' correcting for shopping centers (equation (3)).

Table 3: Determinants of the number of entrants during 1999-2001 (equation (4))

Industry	Market room	Unemployed	PopGrowth	Stock	constant	R^2
Shoe stores	0.027	0.524***	0.227***	0.081***	-0.038	0.402
Clothing	0.063**	0.187	0.095	0.166***	0.142	0.676
Pharmacies	0.045**	0.178*	0.221**	0.085***	0.012	0.349
Bakeries	0.027	1.224***	0.226	0.109***	-0.006	0.656
Butcheries	0.046***	0.108	-0.239**	0.089***	0.117	0.431
Painting	0.158***	-0.100	0.243	0.274***	-0.446***	0.561
Plumbing	0.067***	-0.170	0.512***	0.182***	-0.135	0.579
Real estate	0.113***	-0.093	0.408*	0.227***	0.004	0.708
Caterers	0.124***	0.449***	0.372***	0.185***	-0.064	0.474
Fast food	-0.058	3.837***	1.141***	0.217***	-0.400**	0.846
Restaurants	0.050**	1.674***	0.339	0.220***	-0.256	0.840
Jewelry	0.059*	-0.011	0.178***	0.116***	-0.070*	0.280
Flower shops	0.093***	0.477***	0.385***	0.118***	-0.001	0.471

Note: ***, ** and * mean significant at the 1%, 5% and 10% significance levels, respectively.

Table 4: Determinants of the number of exits during 1999-2001 (equation (5))

Industry	Market room	Unemployed	PopGrowth	Stock	constant	R^2
Shoe stores	-0.071**	0.495***	0.076	0.186***	-0.020	0.594
Clothing	-0.004	0.404	0.192	0.212***	-0.005	0.812
Pharmacies	-0.122***	0.522***	0.219**	0.081***	0.027	0.529
Bakeries	0.060	1.111***	-0.072	0.224***	-0.246*	0.787
Butcheries	0.001	0.308	-0.025	0.206***	-0.046	0.732
Painting	0.031	0.268*	0.055	0.186***	-0.107	0.583
Plumbing	-0.003	0.358**	-0.081	0.160***	0.009	0.665
Real estate	0.014	0.255	-0.253	0.211***	-0.002	0.751
Caterers	0.009	0.190	0.110	0.216***	-0.106	0.546
Fast food	-0.088**	3.176***	0.477	0.259***	-0.434***	0.872
Restaurants	-0.002	0.756***	-0.516***	0.216***	-0.061	0.863
Jewelry	-0.013	-0.045	0.137*	0.153***	0.027	0.386
Flower shops	-0.078**	0.797***	0.395***	0.129***	-0.030	0.596

Note: ***, ** and * mean significant at the 1%, 5% and 10% significance levels, respectively.

Table 5: Determinants of the net number of entrants during 1999-2001 (equation (6))

Industry	Market room	Unemployed	PopGrowth	Stock	constant	R^2
Shoe stores	0.099***	0.030	0.151	-0.105***	-0.018	0.250
Clothing	0.068**	-0.217	-0.097	-0.046***	0.147	0.172
Pharmacies	0.167***	-0.343**	0.003	0.004	-0.015	0.210
Bakeries	-0.033	0.113	0.298	-0.115***	0.240*	0.363
Butcheries	0.044	-0.200	-0.214	-0.118***	0.162	0.475
Painting	0.128***	-0.368***	0.189	0.088***	-0.339***	0.071
Plumbing	0.070**	-0.528***	0.593***	0.022	-0.143	0.065
Real estate	0.100***	-0.348	0.661**	0.016	0.006	0.100
Caterers	0.115***	0.259	0.262**	-0.031	0.043	0.075
Fast food	0.030	0.662	0.664	-0.042	0.034	0.056
Restaurants	0.052*	0.917**	0.855**	0.004	-0.915	0.088
Jewelry	0.072*	0.034	0.041	-0.037	-0.096**	0.055
Flower shops	0.171***	-0.320	-0.010	-0.010	0.029	0.154

Note: ***, ** and * mean significant at the 1%, 5% and 10% significance levels, respectively.

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