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Firm formation, survival rates and job creation effects in sectoral and regional perspectives

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Abstract

Firm formation activities and their impacts on employment, competition, structural change and technology have become a major focus of regional economic policy over the last 20 years. Yet the analysis of the effects of firm formation and its different dimensions has suffered from incomplete data and insufficient report systems concentrating on but a few characteristics of newly founded firms.

A new firm formation module has been designed within the framework of a Regional Economy Policy Information System (WIBIS) in order to overcome the lack of quantitative data on business start-ups and their growth and development characteristics. The module provides continuous annual figures on new firms utilising existing social-insurance-based data on a national and regional scale.

The system allows for the monitoring of different aspects of firm formation activities: Balance of new firms and firm closures, survival rates, gross and net employment effects of firm formation activities, estimation of quality of jobs created (after 3 years). The figures can be broken down by sector (NACE) so e.g. technology intensive sectors can be distinguished from others and also by region so spatial disparities can be monitored.

The paper will present the results of a recent new firms monitoring study based on WIBIS. To give an example the study has yielded that 64% of the firms have survived the first 3 years. It allows for some tentative explorations to the contribution of new firms to structural change and gives first quantitative answers to the technology orientation, employment qualification and growth prospects of newly founded firms.

1. Introduction

The dynamic element of regional development is often attributed to newly founded firms. There are strong presumptions that the presence and growing number of new firms, and especially new technology based firms, is a strong supporting element for a region in its attempt to become a more active space. These firms play an important role both for the development of regions and for the dynamics of market processes, especially for the realisation of research intensive innovations. In contrast to established firms, their innovative activities are mainly oriented towards their clients, towards existing product programmes, towards specific demand potentials and towards the desire for modifications (Mowery/Rosenberg 1979). For small and new firms, innovations are "every day business" - the generation of innovations is their core-business, innovation oriented thinking and acting is taken for granted (Gundrum/Walter 1995).

In the following we will take a closer look at the impact of new firm formation for the re-emergence of the Styrian Economy. The Austrian province of Styria has for decades suffered from a more or less closed border to the East (Hungary) and South (former Yugoslavia) and was also handicapped by the existence of an "old industrial area" in its Northern part with a domination of large, mostly nationalised firms - both facts were impediments for entrepreneurial activity and new firm formation

Yet the period since the '90s has brought about some relevant changes: Through the opening of the borders towards the Eastern and Southern neighbours and through the European integration Styria has changed from a closed border region at the outskirts of the West European market societies to a core area of the European Union and has offered the advantages of a stable economy with access to the internal market and a simultaneous vicinity to the South-Eastern regions of Europe. These changes of course represent a challenge for Styrian firms calling for increased innovation, flexible production, networking activities and co-operation with R&D institutions.

The assumption is that new firms play an important role in this process. The natality and survival rates of new firms, their employment effects, their contribution to structural change and their technology-orientation have moved to the center of regional and

national economic policy considerations. For instance the success stories of US-NTBFs (new technology based firms) which grew into large enterprises creating thousands of jobs has led to the assumption that new firms can contribute significantly to increasing employment and growth (Felderer, B., et al., 1999).

To which extent new firms contribute to the development of regions e.g. in terms of employment and structural change has so far not been quantified in a sufficient way. A sound regional data base on firm start-ups and closures, their characteristics and their development patterns has therefore been one of the central requirements for an Economy and Innovation Policy Information Systems (named W.I.B.I.S.). It should be mentioned that there is an enormous diversity of methodological approaches and sources in the field of firm start-ups statistics and monitoring. Here a new approach will be presented which offers the opportunity to give quantitative answers to the following issues in the framework of new firms:

- To which extent do new firms contribute to economic structural change ?

The assumption is that new firms help to generate competitive economic structures by creating new markets and delivering impulses to established firms for productivity and innovative activity to grow. Relative sectoral differences in the growth of firms measured by the changes in the number of employees give evidence on structural changes in the region. Apart from numbers of new firms and jobs offered in different sectors the regional firm formation rate ((# new firms minus # firm closures) divided by # established firms) is a valuable indicator of economic structural change. In peculiar the respective rates in the technology and the business service sector will be given close attention.

- What is the new firms' net contribution to employment ? Is their growth sustainable ?

The contribution of new firms to employment growth has been subject of a number of empirical studies with sometimes very heterogeneous results. In order to clarify this issue the basic figures of number of jobs offered by new firms (by sectors) have to be given. However, an additional important fact often overlooked in new firms related discussion is the balance of "birth" and "death" rates of firms in a given period. The indicator of natality and survival rate of new firms can help to quantify net job creation effects in this field.

- Do new firms create qualified employment ?

Apart from sheer numbers of jobs created by new firms there is a qualitative aspect: It has yet to be confirmed or declined that an essential part of the qualified workforce is employed in new firms (in relation to the individual sector), thereby also generating a learning effect with other connected firms.

2. Data sources for monitoring new firm formation

The basic idea of InTeReg's firm formation monitoring which has been developed in collaboration with a partner organisation is to tap and process existing administrative data in a new way: The original data is taken from the Austrian "Hauptverband der österreichischen Sozialversicherungsträger" (head organisation of the regional social insurance bodies) which includes individual data on all Austrian enterprises (with at least one employed person) and data on the individual employees on a regular basis ranging back into the past 25 years. The strictest level of confidentiality has been applied: the database does not contain names or locations of neither individual enterprises nor employees. This basic set of original data which comprises millions of data is being merged with information vectors in the fields of qualification and vocational background of the employed persons taken from different current and nationwide official sample surveys.

The result of all these efforts is a database which covers the total population of enterprises and employed persons in Austria¹.

A major benefit this methodological approach offers shall be the main focus of this paper and shall be discussed in brief: It is a new way to obtain quantitative data on new

¹ It provides respective figures on an annual basis which can be differentiated among various other parameters by the following attributes :

enterprises:

- region (district and/or NUTS-III)
- sector (NACE 2-digit sectors or aggregates)
- size (from 1 employed person onwards)
- change in employment between begin and end of the year

employed persons:

- type of employment
- sex
- qualification (level of education, ISCED-standard)
- salary

firms, their structure and their development paths which offers the opportunity to give answers to the questions raised in the introduction of this paper.

The basic idea for the monitoring of firm formation activities is that this database gives figures on the number of jobs offered in a firm at the beginning and at the end of a year.

- Firstly one can distinguish the group of growing firms (in terms of employment) from the stable and the shrinking firms.
- Secondly - and for the firm formation statistics even more important - the "birth" and "death" of firms can be logged: A firm is defined as a newly founded one as soon as it registers at least one employed person for the first time, in other words when it moves from zero to N employed persons. Reciprocally the "death" of a firm is logged when it withdraws registration of all employed persons from the social insurance and does not re-register within a given period.

Strengths of this method:

- No additional surveys needed
- It allows for a balance between natality and mortality rates of firms in a given period as they are based on exactly the same concept - as a result net effects of firm formation activities in different sectors and regions can be quantified.
- It gives the opportunity not only to monitor the employment growth of new firms but also the survival rates in different sectors and regions.
- Additionally the quality of jobs created within a given period (according to salaries and qualification of the employed persons) can be monitored.

Weaknesses of this method:

- It does not include "one-man-bands" - there is no information on the founder. However additional analysis of other social insurance bodies' data (e.g. social insurance for entrepreneurs) may be a way to add this group to the database.
- The database does not give concrete names / addresses so it can not be used for in-depth sample surveys on issues like "reasons hampering firm formation and growth"
- There are some problems in distinguishing organisational re-registrations from "genuine" formation processes. Further analysis is required.

3. Contribution of New Firms to Structural Change in Styria

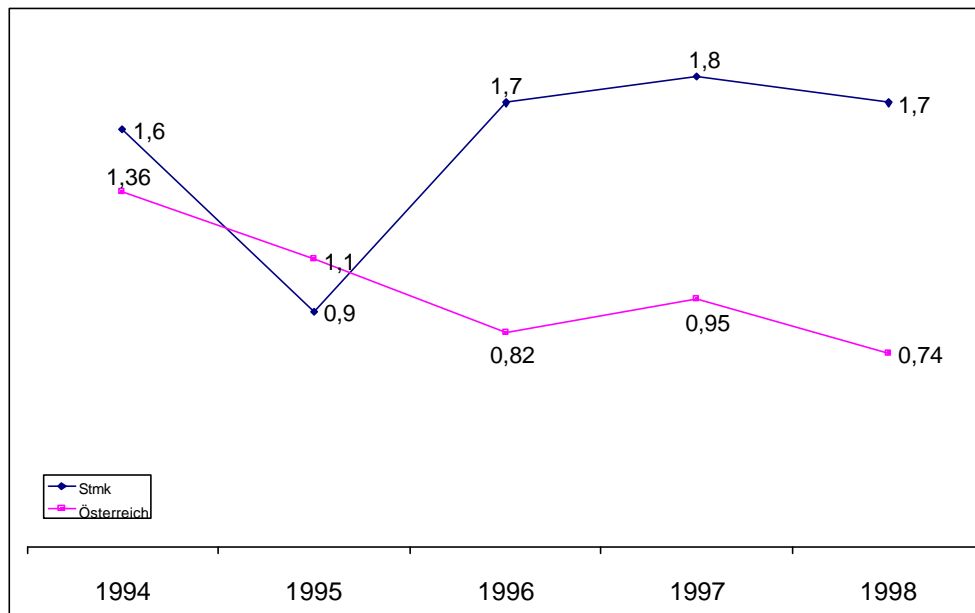
New firm formation has been regarded as a motor for economic growth and structural change (Mayerhofer et al. 1998), or at least as a process with substantial impacts on the latter (Reynolds et al., Egelin et al., 1997). High firm formation rates in the service sector are seen as an important fact for a shift towards the tertiary sector in high developed industrial countries. The regional significance of new firms dynamic for the recovery of old industrial regions is also sufficiently verified. (Hamm, Wienert, 1990). New firms fill market niches and contribute to the variety of goods and services offered in a region. Their role in innovation processes and technological change was already mentioned by Schumpeter (1911) and empirically confirmed e.g. by (Rothwell, 1982; Acs Audretsch, 1993).

To be able to evaluate the phenomenon of regional structural change, of technological progress and the role which new firms play in that process we need a different interpretation of a market economy offered by traditional economic theory. A market economy is more than a set of markets working towards a balance of supply and demand. The important aspect of a market economy is its ability to initiate change from within. This innovative ability is the essential element creating growth and welfare. A market economy is about dynamic rather than static efficiency; it is the ability of a market economy to endogenously create change. (Steiner M., 1999). A dynamic market involves a dynamic process in which new firms emerge, existing firms grow and unsuccessful ones vanish; this can be thought of in terms of the Schumpeterian notion of "creative destruction". (OECD,1998)

In the long run structural change requires a sufficient number of new firms emerging in other sectors than the established firms are in. Therefore a good indicator for assessing regional structural change is the „net firm formation rate“ ($\# \text{ new firms} - \# \text{ firm closures}$, divided by $\# \text{ established firms}$). In other words, this monitoring of „natality“ and „mortality“ is a sound indicator for a sustainable impact of new firms in a specific sector. Over the period of 1994 -1998 firm formation and closure rates in Styria and Austria have been monitored in the way described above. Over this period Styria has shown a considerably high increase in new firm formations, on the other side the failure

rates also have risen. Since 1996, however, the „net firm formation rate“ in Styria has been almost twice as high as in Austria for any given year.

Table 1: Net Firm Formation rate: Comparison Austria / Styria 1994-1998

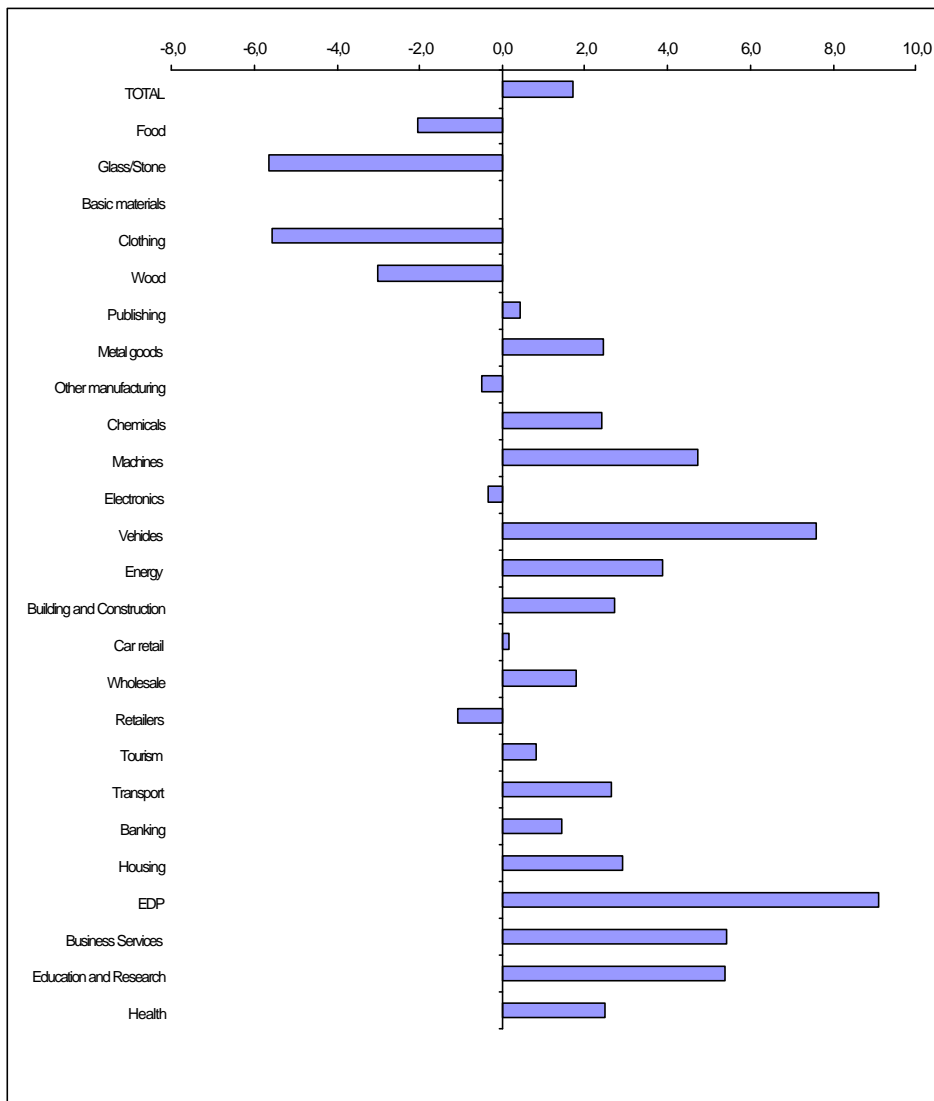


Source: JR-InTeReg & Synthesis

This „outperformer“ pattern goes along with an above-average increase in economic growth and employment in Styria from 1995 / 1996 onwards, especially in technology-oriented sectors, which may have stimulated respective start-ups and outsourcing activities. At the same time the regional economic funding and promotion agenda have been „privatised“ and moved to a independent Agency. It started target-group oriented funding schemes including ones for business start-ups which have provided both „hard“ and “soft” infrastructure (e.g. advice on business planning, venture capital etc). To which extent this has contributed to the effect shown above, e.g. by reducing the risk of firm closures, would require more in-depth analysis.

In order to assess the impact of firm formation activities on economic structural change in a region a closer look has to be taken at individual sectors.

Table 2: Net Firm Formation rate in Styria by sectors



Source: JR-InTeReg & Synthesis

Exemplary two sectors usually regarded as growth and innovation sectors shall be examined more closely: Technology (within the manufacturing sector) and business services (within the service sector). These analyses reveal strengths and weaknesses of the regional economy to its representatives at Economic Policy level which otherwise may have gone undetected.

- **Structural change by new firms in the service sector**

At first glance there is good news: In the service sector as a whole the net growth effect of Styria (5,4%) is higher than the Austrian average. But a look at structural rates (defined by quota of new firms in the given sector divided by the quota of established firms) reveals a different picture: Although the Styrian firm formation rates are higher than the Austrian average, they scarcely contribute to structural change in the service sector. The structural rate of the service sector is rarely above the value of 1. So the start up activities in the service sector can be interpreted as “structural preserving”. The „highflier“ sector is the IT-sector (EDP), as expected, with a structural rate of 1,73 which contributes to the highest extent to the change in sectoral structure. But this figure is 15% below the Austrian average. Also the business service sector shows a relatively high structural rate of 1,30 but that is as well 6% below the Austrian benchmark. Almost the whole service sector shows lower structural rates than the Austrian average. It is a clear deficit that Styria has got especially in the qualified business sector: Start up activities in this sector do not compensate the deficit in a way they do in the whole of Austria.

A reason for this deficit may be the absence of large „lead“ service sector enterprises in the Styria region as such enterprises have so far chosen other locations in other Austrian cities for their major establishments. For the time being there obviously has been a lack of incentives for such businesses to establish local offices in Styria. This may change in the near future considering Styria’s geographical location close to future EU accession countries. A continuous monitoring of the structural rate in the business service sector in the future will put this projection to the test.

- **Structural change by new firms in the manufacturing sector**

In the manufacturing sector the situation is much more favourable. The structural change released by new firms shifts towards the knowledge intensive technology sector, and the impact is much more stronger as compared to the Austrian benchmark.

| | Styria | Austria |
|-------------------------------------|--------|---------|
| Manufacturing Sector (total) | 0,73 | 0,64 |
| <i>Technology Sector</i> | 1,14 | 1,02 |

Source: JR-InTeReg & Synthesis

This positive diagnose can be attributed to a large extent to a very strong automotive supplier industry in Styria which has been further developed by the establishment of a regional Automotive Cluster Management (AC Styria). The economies of scale have allowed for enormous growth rates in this sector (output growth +92%, 1995 to 1998) and this has encouraged indigenous and foreign direct investment.

The shift towards technology-intensive manufacturing should have also encouraged firm formation in the technology-oriented *service sector* (see Gassler/Fröhlich „Technologieorientierte Unternehmensneugründungen in Österreich“, 1997). However, further analysis will be required to segregate the effect of knowledge-intensive businesses within the business service sector, on a regional basis.

4 Sustainability and quality of new firm formation in Styria

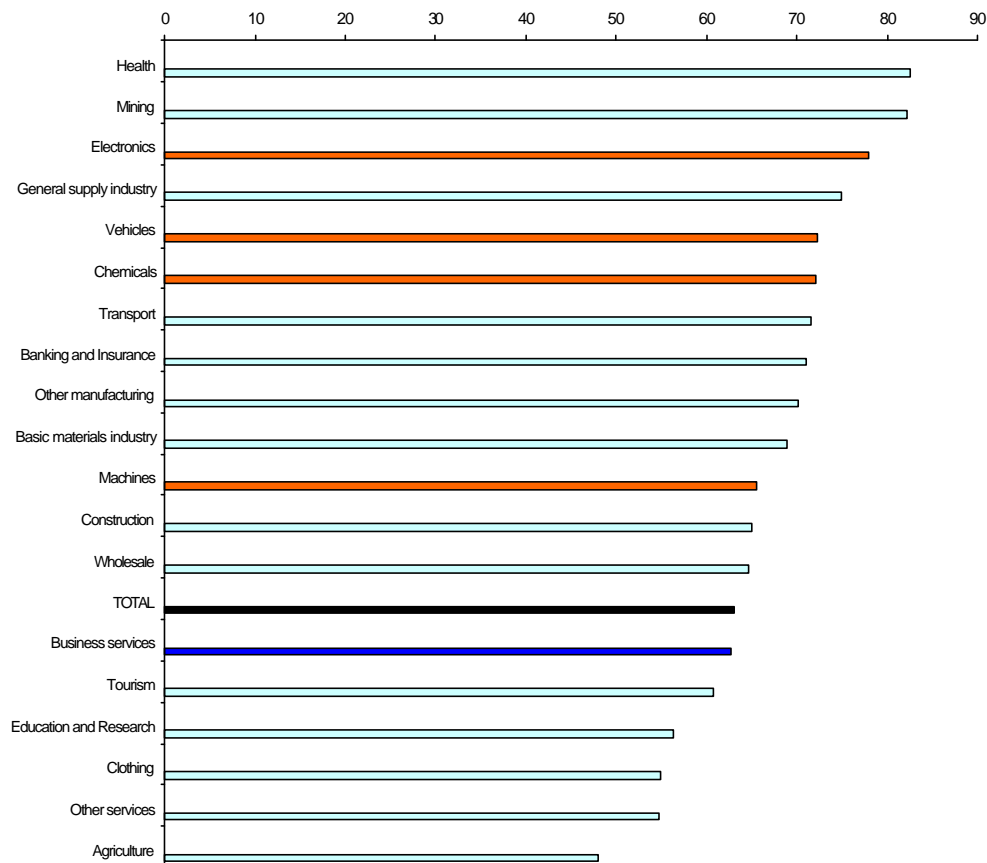
The database presented in Chapter 2.) also allows for the monitoring of employment growth paths of new firms over a given period - in this case the period was defined as 3 years - and so for the generation of quantitative data with respect to survival rates, firms' contribution to employment, expansion tendencies, qualification of new jobs offered.

- **Survival rates of new firms**

Here the principal question is not what firms have in common but why they behave differently. Firms with different conducts or with differences in some decisive points are able to survive within the same economic environment. These differences are the result of different strategies influencing the decisions on different levels of the firm. As long as firms are essentially regarded to be similar and identifiable by means of a few characteristics, all variation around the ideal are accidental “outliers”. From an evolutionary perspective, these “outliers” are the typical elements. It is the variety of the system which is the driving force of the economic process. Only because of variety is selection possible – selection as the mechanism that some of the firms are better able to resist the pressure of the economic environment and the pressure of competition. (Steiner M., 1999)

The recent empirical exploration of InTeReg shows that in Styria 63% of all new firms „survive“ the first three years which is 4%-points higher than the Austrian average. Vice versa 37% of the new firms are closed down within the first critical three years.

Table 3: Survival rates after three years by sectors



Source: JR-InTeReg & Synthesis

Table 3. adds a sectoral perspective: It reveals that the 4 technology sectors (highlighted) have accomplished survival rates between 68% and 79% which are way above the average (63%). This examination of survival rates in different sectors can be seen in the light of some findings in the field of firm formation research: The results confirm research findings which state that survival rates in the technology intensive sectors (NTBFs) have lower closure rates than other new firms. A study by Westhead/Storey, 1994, amongst a sample of high technology firms located on and off Science Parks found very low closure rates. Tentatively it can be argued that a positive regional milieu for NTBFs in Styria may have contributed to these high survival rates.

Styria was the first region in Austria to establish technology parks for start-ups many of which are linked to regional academic institutions.

On the other hand new business service sector firms' survival rates are slightly below the average. As mentioned before, the database does not yet allow for the segregation of knowledge-intensive businesses within the business service sector. This closer look would be required as recent research findings suggest that survival rates of the former should be much better.

- **Employment creation by new firms**

Apart from economic structural change contributed by new firms the job creation potential of new enterprises is in the very interest of economic policy.

For the following analysis all new firms started in Styria during the period 1993 - 1995 were monitored. The database allows for the monitoring of new firms during the first critical years and for the determination of the average number of jobs offered after three years. Those new firms that had survived the first critical three years - in Styria 63% - have offered 12.940 new jobs (there is a total of app. 400.000 jobs in established firms in Styria):

- 37% of the new firms closed down within a period of 3 years.
- The remaining firms either expanded or remained stable wrt jobs offered
- The average job growth of surviving firms amounted to 1,74 jobs per firm after three years. On the average a new firm started with 3,66 employees – with a job growth of 1,74 jobs the average firm offered 5,4 jobs after three years.

60% of the 12.940 new jobs have been created in the service sector, 25% in the manufacturing sector (see Table 4.). A closer look at new firms in the technology sector reveals that the gross employment creation effect amongst surviving firms is rather modest – at least within the first 3 years - due to the fact that the sheer number of new firms in the technology sector is rather low. The following table presents a ranking of sectors by gross job creation effects of new firms after 1 year and 3 years.

Table 4: Gross job creation effects of new firms after 1 year and 3 years by sectors (total = 100%)

| | After 1 year in % | After 3 years in % |
|-----------------------------------|-------------------------|--------------------------|
| TOTAL | 100,0 | 100,0 |
| Wholesale, maintenance and repair | 19,2 | 16,1 |
| Basic materials | 8,1 | 10,6 |
| Business services | 7,6 | 9,5 |
| Construction | 10,3 | 8,9 |
| Other manufacturing | 7,4 | 7,8 |
| Tourism | 9,1 | 6,9 |
| Health | 3,7 | 4,7 |
| General supply | 2,5 | 2,8 |
| Transport | 2,4 | 2,6 |
| Machines | 1,6 | 1,4 |
| Electronics | 1,1 | 1,3 |
| Chemicals | 1,0 | 1,1 |
| Vehicles | 0,7 | 0,9 |
| Clothing | 1,0 | 0,5 |
| Banking | 0,5 | 0,4 |
| Energy | 0,2 | 0,4 |
| Other (public ..) | 22,6 | 21,1 |

Source: JR-InTeReg & Synthesis

Clearly the gross employment effect contributed by new firms in sectors such as wholesale, basic materials, business services and construction is much higher than the effect by technology sector firms.

But considering the new firms' development the technology sector start-ups have better growth prospects on the one hand and start as larger entities (i.e. with a higher number of employees) on the other: The job growth rates of new firms range from 42% growth in machinery (i.e. 6 new jobs per firm after 3 yrs), 46% in chemicals (6 new jobs), 66%

in electronics (5 new jobs) up to 130% in the motor vehicle sector, in each case within three years of existence (the average is 1,74 new jobs) . In the motor vehicle sector the average growth per firm in absolute figures amounts to 19 new jobs offered after three years of existence, that means that new Styrian firms in this sector have been able to offer 12 new jobs more per firm than the Austrian average in this sector.

These empirical findings are roughly in line with others in this field. It can be said, however, that there is no consistent view on to what extent new firms contribute to job growth. Analyses for the USA (Birch, 1979) and for Great Britain (Gallagher et al., 1991) have suggested that new firms are the main source of employment growth. New results say that new firms tend to remain rather small (Cramer, 1987; Davis et al., 1996) and that in the short run employment growth in existing firms is much more significant than in new firms. However, the principle impact of new firms on employment is undeniable. Regional growth-clusters go along with high firm formation rates though this does not necessarily mean high total economic growth rates - high firm formation rates are a necessary but not a sufficient requirement. (Reynolds et al., 1994). A study by (Westhead/Cowling, 1995), says that high technology firms located on and off science parks created app. 7,8 jobs within three years, on the average. A paper by (Tether/Storey, 1997), says that technology-based new firms significantly outperform firms from the general population in terms of their rate of employment creation. It also says, that the mean rate of direct employment creation amongst surviving technology-based firms has been modest (much less than ten new jobs per firm per year).

- **Qualification of jobs offered by new firms**

One of the key factors concerning employment effects of new firms is the quality of new jobs created. The assessment of qualification and salary can be seen as a further indicator for structural change.

The average rate of „high qualified“ jobs offered by new firms surviving the critical three years amounts to 23,8% in Styria, which is 2.9%-points below the Austrian

benchmark². The average rate of „high qualified“ jobs offered by established firms is 20,8% in Styria and 22,2% in Austria respectively. It can be said that in total figures new firms contribute to a shift towards better qualified jobs.

The database also allows for a sectoral analysis of the rate of high qualified jobs in new firms compared to the rate of high qualified jobs in established firms („structural qualification rate“):

- A higher rate of "high qualified" jobs in new firms indicates a contribution to structural change towards high qualified jobs.
- If the rate of "high qualified" jobs in new firms is lower than in the established ones, there is a contrary effect: new firms are not able to give a positive contribution to qualified jobs.

As a result three groups of sectors can be distinguished:

| | | |
|---|----|---|
| Manufacturing sector: Basic materials industry and Other manufacturing Service Sector: Wholesale, Tourism, Business Services, Health | ↑↑ | Rate of high qualified jobs in new firms > than rate of high qualified jobs in established firms - Sectors with a positive contribution to structural change towards high qualified jobs |
| Manufacturing sector: General supply industry, Clothing, Chemicals, Machines, Construction Service Sector: Other services | ≈ | Rate of high qualified jobs in new firms = rate of high qualified jobs in established firms - Sectors that have no impacts on structural change towards high qualified jobs |
| Manufacturing sector: Electronics; Vehicles; Energy Service Sector: Transport, Banking | ↓↓ | Rate of high qualified jobs in new firms < than rate of high qualified jobs in established firms. - Sectors in which jobs created by new firms have a more unfavourable qualification structure than in established firms. |

Source: JR-InTeReg & Synthesis

As a consequence of this analysis, it can not be confirmed that technology sector start-ups in general contribute to a higher level of formal qualification, whereas most of the newly established service sector firms favour a shift towards „better qualified“ jobs.

² In the following „High qualified“ job owners are defined as employees with a university or a college degree (in Austria: „Höhere Schule mit Matura“ or „Universität“).

To put these findings into perspective it has to be emphasised that the „founder“ him/herself and his/her qualification is not included in the analysis shown above but only the employed persons in the new firms are considered. However these findings can be seen as a practical proxy for the total qualification, as a recent Austrian study (Bacher, M. et al., 1998) says that self-employed persons have a formal qualification similar to the average profile level - on the average their (formal) qualification is not much higher than the one of employed persons‘, as one might expect.

- **Spatial characteristics**

The analysis of geographical determinants or locational behaviour of new firms has not been in the key focus of the project. A brief summary with respect to spatial aspects of new firms reveals a rather homogenous pattern considering the three major types of regions within the Province of Styria:

| | firm formation rate (measured by # employees) | firm formation rate (measured by # firms) | rate of new firms in the technology sector |
|-------------------------------------|---|---|--|
| Styria TOTAL | 4,6 | 13,7 | 1,9 |
| Agglomeration (around Capital Graz) | 3,3 | 14,2 | 1,8 |
| Industrial area (Upper Styria) | 6,0 | 13,1 | 2,1 |
| Rural area (SEW-Styria) | 6,1 | 13,0 | 2,0 |

Source: JR-InTeReg & Synthesis

It can be said that there is a slightly higher firm formation rate in the agglomeration around the Capital Graz. However, these new firms start with a very small size (app. 3 employees as opposed to 6 employees in the two other regions). As one could expect the rate of new firms in the technology sectors is above the average in the industrial area of Upper Styria although not significantly higher – in the agglomeration it is slightly below the average. One is tempted to question the “urban-incubator-hypothesis” but it would require more analysis within the technology-oriented service sector in order to accept or decline this hypothesis on the basis of the given concept.

5 Summary, policy recommendations, future perspectives:

- An assessment of effects of new firms should also consider firm closures: The net firm formation rate ($\# \text{ new firms} - \# \text{ firm closures}$, divided by $\# \text{ established firms}$) in the given region (Styria) and period (1994-1998) is in a range of a mere 0,9 and 1,8%. However, this rather diminutive net effect of (e.g.) 1,8% represents a balance of 11,5% new firms and 9,5% firm closures – in other words the “turbulence effect” (see Mayerhofer et al., 1998) amounts to 21% of existing businesses.
- New firms foster the ongoing structural change towards the tertiary sector. A way to reveal regional structural effects is to analyse the effect of new “technology firms” within the manufacturing and of new “business service firms” within the service sector respectively: While new firms in the given region contribute to a shift towards technology orientation within the manufacturing sector to an above-national-average extent a more “preserving” pattern can be found for the business service (and the IT) sector; it reveals positive structural effects but remains way behind the national average.
- Those new firms that had survived the first critical three years – i.e. 63% in the given region - have offered 12.940 new jobs which is app. 3% of the total employment. The average job growth of surviving firms amounted to 1,7 jobs per firm within three years of existence. 60% of the new jobs have been created in the service sector, 25% in the manufacturing sector. Considering sectoral survival rates again deficits for the business service sector can be monitored whereas the survival rates of new manufacturing firms in the technology sector are very good.
- With respect to the quality of jobs created by new firms it can be said that in general they have not contributed to a shift to better qualified and paid jobs. Here new firms in the business service sector have offered “better” jobs than new manufacturing firms in the technology sector.

These findings lead to some policy recommendations

- Although there is a positive firm formation rate (in absolute figures) in the business service sector it is not sufficient in order to close the gap to other regions – on the contrary strong efforts will be required as not to stay behind in this field. On the one hand start-up development and funding activities will have to be targeted to the

needs of these businesses, on the other hand networking activities within small firms will be required to create larger entities with better growth prospects, which again may stimulate further business start-ups in this field.

- Technology sector start-ups find a supportive milieu in Styria. Here it can be recommended to continue the good support and to enhance support for businesses in later phases of their business growth cycle (e.g. in “going global” activities).
- Generally the growth patterns of new firms will have to be considered in more detail while designing new development programmes for this target group: Empirical evidence shows that in many sectors comparatively few new firms have the desire and capability to grow significantly (see also Gassler, Fröhlich, 1997) and that there are specific growth barriers in different phases of the new firm’s “life cycle”. Efforts to stimulate direct investment should be targeted towards sectors with a negative structural rate – in Styria this is true for e.g. the business service sectors.
- One recent measure is based on discussions with start-up experts after the launch of the firm formation monitoring system (which registers new firms which employ at least 1 person). It has become evident that “employer firms” face problems different to “one-man-bands” e.g. the recruitment of qualified staff. Young entrepreneurs often do not have the ability to meet the expectations of new employees wrt income and social activities and can not compete with large companies in this respect. Based on this background the SFG Styrian Wirtschaftsförderungs Gesellschaft in collaboration with InTeReg has developed a programme for this target group to give young entrepreneurs support and incentives to risk the step from a “one-man-band” to a business with a minimum of one employee.

Future development of the new firm formation monitoring system will be focussed on a better segregation of knowledge-intensive businesses within the business service sector, on a regional basis. This will be an important focus for further development performed in the framework of a new business service sector monitoring module. Generally the system will be developed in order to identify growth barriers in sectoral and/or regional perspectives. It is very likely that the regional economic environment creates specific growth patterns which could be identified and communicated to economic policy representatives so they can adapt their development programmes and target them in a more effective way.

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