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# Labour Market, Job Opportunities, and Transitions to Self-Employment: Evidence from Switzerland from the Mid 1960s to the Late 1980s

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In recent years, self-employment has risen in several Western countries including Switzerland. The controversial discussion of this rise is attributable to shortcomings of empirical research, namely, to the lack of systematically considering, both at the macro- and the micro-level, the push and pull factors that may account for entry into self-employment. Little is known about how macroeconomic forces together with individual-level push and pull factors shape transitions into self-employment. Even less is known about how these factors play out in occupationally segmented labour markets. This paper thus examines how the overall climate for setting up a business, individual job opportunities, and structural characteristics of labour-market positions affect transitions to self-employment in the occupationally segmented Swiss labour market. Based on two data sets, we run event history models. The Swiss Life History Study provides information on transitions into self-employment. With the Swiss Job Monitor, we construct indicators of the time-variant aggregate- and individual-level opportunities and incentives for setting up a business. Results indicate that moves into self-employment are affected both by macroeconomic conditions, individual job opportunities, and structural characteristics of the labour market position, whereby pull factors dominate at the macro level and the interplay of push and pull factors at the individual level.

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## Introduction

After several decades of continuous decline, self-employment has increased in many Western industrial countries since the 1980s. This trend reversal is also apparent for Switzerland (Arvanitis and Marmet, 2001). This raises the question of what factors are conducive to people's entry into self-employment, in a segmented labour market especially. To date, existing research has not been very conclusive. This is

particularly true for the relative importance of push and pull factors, operating both at the macro- and the micro-level and in the context of particular types of labour markets. This paper attempts to partially fill this gap by investigating, for a highly segmented labour market, how macroeconomic conditions and individual job opportunities as well as structural characteristics of individuals' labour-market allocation affect mobility into self-employment. Switzerland is an interesting case for examining this question because

of its strongly segmented labour market. The theoretical interest thus focuses on the push and pull factors operative in this type of labour market. We will first present a brief review of previous research on self-employment. Next, we will provide a short account of the development of self-employment in Switzerland. After the theoretical considerations and the description of the data sets and the methods, we will present the findings. We will finally draw some conclusions regarding desirable future research on self-employment.

## Research on Self-Employment—A Brief Overview

The literature defines self-employment as a heterogeneous category including four types of self-employment: *self-employed*, *small employers*, *owner controllers*, and *owner directors*. The *self-employed* work without any employees. *Small employers* work together with some employees, additionally performing administrative and managerial tasks. *Owner controllers* focus exclusively on managerial tasks. *Owner directors* delegate some of the managerial tasks to directors and managers (Bögenhold and Staber, 1990, p. 267).

It is fair to say that research on self-employment in the German-speaking countries has been rather scarce, although it has gained increasing attention over the last couple of decades (Lohmann and Lubert, 2004).<sup>1</sup> In the Anglo-Saxon world, research on self-employment and entrepreneurship has been conducted for a longer time period and respective debates have been more intensive (Blau, 1987; Evans and Leighton, 1989; Steinmetz and Wright, 1989; Meager, 1992; Arum, 1997). German as well as Anglosaxon studies have been primarily concerned with the determinants of self-employment and the survival of newly founded establishments. Previous research has been hampered by two issues in particular. First, theoretical considerations are often not very elaborate. In particular, a systematic consideration of macro- and micro-level push and pull factors is still missing. Second, many studies are based on cross-sectional data, thus being hampered by the problem of sample selection bias (Carroll and Mosakowski, 1987; Meager, 1992). There is also some cross-national research on self-employment, relying largely on cross-sectional data as well. An exception is the volume by Arum and Müller (2004) investigating entry into and exits from self-employment across 11 countries. In contrast to

research on other forms of career mobility, empirical studies on self-employment often take labour-market opportunity structures measured at the macro-level into consideration. In studies based on aggregate data, the relationship between economic cycles and transitions into self-employment is even at the centre of attention (Steinmetz and Wright, 1989; Bögenhold and Staber, 1990; Meager, 1992; Parker, 1996; Göggel *et al.*, 2007).<sup>2</sup> In these instances, unemployment is seen as an important precondition of the transitions into self-employment. However, the aggregate-level findings about unemployment are still inconclusive to date (Aronson, 1991; Hughes, 2003).<sup>3</sup> Studies based on life-course data, exploring the significance of micro- and macro-level push and pull factor together with individual factors are absent to our knowledge.

## Self-Employment and Unemployment in Switzerland—Basic Facts

In Switzerland, the self-employed who work without any employees prevail. According to the *Swiss Establishment Census* 1985 firms with less than two full-time equivalents made up 30 per cent of all firms. Those with less than 10 full-time equivalents represented 84 per cent—a figure which is corroborated with our data and has remained constant until the present. Similar to other OECD countries, the rate of self-employment declined in Switzerland during the 1960s and 1970s (Arvanitis and Marmet, 2001). In 1970, 13.8 per cent of the working men and 4 per cent of the women were self-employed. Men's rate of self-employment has thereafter more or less stagnated until 2000, whereas the proportion of self-employed women has risen steadily to 7.5 per cent. The proportion of self-employment by economic sector has remained fairly stable between 1970 and 2000. Agriculture shows the highest rate of self-employment (around 45 per cent) but comprises a very low share of the total work force. In the industrial sector, the rate of self-employment is lowest (around 6.5 per cent). In the service sector, it has risen from 8.7 per cent in 1970 to 10.6 per cent by 2000.

As the literature suggests a relationship between self-employment and unemployment, we will briefly summarize the relevant Swiss figures. During the period of interest, the Swiss labour market was not hit by substantial unemployment. The labour-market repercussions of the 1970s economic setback (oil shock) were minimal as unemployment was sent

‘abroad’ (Frick and Lampart, 2007, p. 16; Sheldon, 1993, p. 31). It was mostly foreign workers who lost their jobs or, simply, whose work permits were not renewed. The official unemployment figures ranged from well below 1 per cent in the 1960s and 1970s to a peak of 1.1 per cent in the mid-1980s. Unemployment was thus comparatively low.

## Theoretical Considerations

We first assess pull and push factors, operating at the micro- and macro-level, for transitions into self-employment. We then theorize how macroeconomic conditions (i.e. macro-level factors) and individual job opportunities (i.e. micro- or individual-level factors) affect entry into self-employment in a segmented labour market. We will argue that in order to understand what constitutes push and pull factors and how they operate we need to take into consideration structural characteristics of the labour market in which potential transitions to self-employment occur. We will finally consider how individual characteristics of labour-force participants affect mobility into self-employment.

### Push and Pull Factors into Self-Employment at the Micro- and Macro-Level

The distinction between *pull factors* and *push factors* is a helpful conceptual tool to analyse transitions into self-employment (Bögenhold and Staber, 1990; Meager, 1992). Push factors affect people’s employment decisions such that they are more or less forced into self-employment for lack of alternatives. According to Bögenhold (1989, p. 269), this type of transition to self-employment follows the logic of the ‘economy of scarcity’, i.e. the ‘economy of necessity’. Self-employment presents itself as an alternative when being faced with employment difficulties. By contrast, pull factors provide incentives for entering self-employment and lead to sought-after choices made by people who relate self-employment to favourable mobility chances, greater work autonomy, and better opportunities for self-fulfilment. According to Bögenhold (1989, p. 269), this type of transition into self-employment follows the logic of the ‘economy of self-fulfilment’. Against this background, the question arises of what kinds of conditions and characteristics act as pull and push factors at the individual and the aggregate level.

The answer depends on the labour-market context in which the potential transitions into self-employment

take place. In the case of the Swiss labour market, the strong occupation-specific segmentation is the outstanding feature. Making use of Sengenberger’s (1987) concept of the tripartite labour market, the Swiss labour market may be characterized by three main segments, namely, the firm-internal segment, the occupation-specific segment, and the peripheral segment for unskilled labour (Levy *et al.*, 1997; Buchmann *et al.*, 2001). The strong occupational segmentation of the Swiss labour market implies that access to the majority of job openings, namely those in the internal and in the occupation-specific labour market, is contingent upon the possession of the appropriate occupational certificate. To avoid substantial skill devaluation, mobility into another occupation-specific segment usually implies credentialed occupation-specific retraining.

At the *micro-level*, losing one’s job—be it because of a layoff or because of the shutdown of the establishment—may coerce people into self-employment and act as a *push factor*. This should especially be true when job prospects are bleak. Likewise, and in the case of an occupationally segmented labour market, in particular, people are more likely to be pushed into self-employment when they are confronted with minimal opportunities for job changes. *Individual job opportunities* relate to the job openings for which an individual, given his or her educational profile and other job-relevant personal characteristics, can apply with reasonable prospect of success. In other words, these are the job opportunities *within* the labour-market segment(s) to which people have access. Arguing the other way around, if individual job opportunities are good, a person will be more likely to change jobs than to enter self-employment.

In the context of a labour market as outlined earlier, opportunities and incentives to start new small-scale businesses vary by segment-specific location. We expect four structural locations to act as *pull factors* at the *micro-level*: first, transitions to self-employment are more likely in some sub-segments of the occupation-specific labour market than in others. In some occupations, avenues to self-employment are a feature of certified occupation-specific further training, focusing especially on the skills needed to run a business (e.g. title of master craftsman and professions). In the sub-segments of *foodstuff production* (e.g. bakers and butchers), *traditional crafts* (e.g. carpenters and plumbing), and the *classic professions* (e.g. doctors and lawyers), we therefore expect a higher share of self-employment.

Second, we expect the *service sector* to offer particularly favourable conditions to become self-employed.

The growth of the service sector has brought about new types of services (e.g. high-tech services) and the substantial proliferation of professional services such as consultancy, media, business and legal services, engineering, or medical services (Bell, 1976; Woderich, 1999). The growth of these economic activities offer increasing opportunities for self-employment, namely because these types of services show a higher degree of decentralization than traditional services, due to the use of new information and communication technologies.<sup>4</sup> Hence, the establishment of a business for these types of services does often not require a great amount of economic capital. In the industrial sector, on the contrary, the means of production (and, hence, economic capital) play a greater role for setting up a business than in many types of businesses in the service sector (Bögenhold, 1989). Assuming that the workers are most likely to become self-employed in the sector in which they have been previously employed (in order to make use of accumulated sector-based knowledge and networks), we expect employment in the service sector to facilitate transitions to self-employment.

Third, we argue that technological change, mostly brought about by new information and communication technologies, has impacted the relationship between firms located in the core sector of the economy and those located in the *peripheral sector* (Doeringer and Piore, 1971; Piore and Sabel, 1984; Steinmetz and Wright, 1989). Core-sector firms depend increasingly on firms in the peripheral sector. These firms are more flexible and better able to provide goods and services characterized by fluctuating demand. The increased importance of outsourcing strategies applied by core-sector firms provides new opportunities, incentives, and niches for self-employment in the peripheral sector. For workers from the core sector, this may act as a push and for workers from the peripheral sector as a pull force into self-employment. We expect that the latter mechanism will dominate. As employment in the peripheral sector does not provide good career advancement opportunities and offers instable jobs, primarily workers employed in the peripheral sector may grasp these new opportunities for self-employment.

Fourth, we expect employment in *small firms* to act as a pull factor on the micro-level. Small firms facilitate the acquisition of skills necessary to become self-employed. They act as role models for setting up one's own business (Strohmeier and Leicht, 2000; Müller and Arum, 2004). Taking into account that small firms offer more limited career opportunities than big firms, these incentives should result in a higher voluntary transition rate into self-employment of employees from small firms.

Irrespective of micro-level opportunities and constraints, *macro-level* conditions influence people's decision to become self-employed. Regarding *push forces* at the macro-level, economic recession periods with high *unemployment* are indicative of the general chances for job changes. When unemployment is high and job vacancy rates are low, people may anticipate that the prospects of changing jobs crumble. This may result in preventive moves into self-employment, which are perceived as the only alternative. Hence, transition probabilities into self-employment should grow with the increasing aggregate-level unemployment rate. However, Arum and Müller (2004, p. 15) caution that we should not automatically expect a positive relationship between the aggregate-level unemployment rate and the self-employment rate. They argue that although the pool of people particularly prone to enter self-employment increases as the unemployment rate grows, employed people might be reluctant to leave their jobs and steady income under these conditions.

At the other end of the scale, the *overall economic situation* may also develop *pull forces*. Individuals might consider entry into voluntary self-employment at times when the overall economic climate is favourable. Several reasons sustain this argument. First, a favourable overall economic climate not only provides incentives to set up a business but also reduces the risk of eventual failure. Second, it is easier in prosperous economic times to get the necessary (bank) credits or ask friends/family for lending money to set up a business. Third, the prospects of finding a job again, should the new business nonetheless crash, are better in a thriving economy. All in all, mobility into self-employment should increase as the overall economic outlook becomes favourable.

Given the complexity of the theoretical arguments, we summarize the push and pull factors in Table 1. Push and pull factors are not mutually exclusive forces. Rather, at any given point in time, there is likely to be a distinctive interplay between push and pull factors, and the relative impact of these counteracting forces may vary according to the allocation to labour-market segments. Against this background, we argue that the relative weight of push and pull factors operating in Switzerland during the observation period (late 1960s to late 1980s) was in favour of pull factors, because the Swiss labour market was not hit by substantial unemployment as discussed earlier.

Finally, the effects of push and pull factors may vary for unemployed people and employed persons. For unemployed people, push factors are likely to predominate. For employed people who are on the brink of

**Table 1** Push and pull factors at the micro- and macro-level

Micro-level	Macro-level
<i>Push factors</i>	
Job loss	Unemployment rate
Individual job opportunities	
<i>Pull factors</i>	
Certain occupational credentials	Favourable economic climate
Service sector employment	
Peripheral sector employment	
Small-firm employment	

becoming unemployed, the likelihood of moving into self-employment may also increase with growing unemployment. For securely employed people, however, transitions to self-employment tend to be deliberate choices triggered by perceived upward-mobility chances, life-style reasons, and prosperous economic outlooks.

### Individual Characteristics of Labour-Force Participants

To set up a business requires financial means, skills, and know-how. Moreover, self-employment is riskier compared to paid employment (Rees and Shah, 1986). Businesses can fail and income prospects for the newly self-employed are uncertain. This raises the question of which individual resources are likely to facilitate the transition process and to reduce the risk of failure and low income (which could deter people from setting up a business). Although individual characteristics are not at the centre of our theoretical considerations, research has shown their importance for self-employment.

Arguing along the lines of human capital theory (Becker, 1975; Mincer, 1974), we maintain that two important components of human capital, namely *formal education* and *work experience*, help people acquire the knowledge and the skills necessary for the transition to self-employment (Davidsson and Honig, 2003; Kim *et al.*, 2006). First, well-educated and experienced people are more likely to detect market niches and to gather relevant information. These people are also in a better position to evaluate the potential of a newly established firm and to choose the optimal time point for setting up the business. Second, well-educated and experienced people are more productive, they are more likely to organize the start-up process efficiently and to show greater abilities of finding investors and clients, thus enhancing the

probability that a business can take up trade. Brüderl *et al.* (1992) and Kim *et al.* (2006) also qualify *management experience* as an advantageous component of human capital when it comes to setting up a business.

As additional individual characteristics, we consider *social origin*, *gender*, and *family situation*. With regard to *social origin*, the literature shows that children of self-employed parents are more likely to make the transition to self-employment themselves [e.g. for men, see Hundley (2006) and McManus (2001)]. These children are in a much better position to acquire, at early ages, the skills as well as the cultural and social capital needed for self-employment than their counterparts of other social milieus. Moreover, children often inherit the company set up by their parents. Findings of several studies (Arum, 1997; Meyer and Harabi, 2000; Arvanitis and Marmet, 2001; Davidsson and Honig, 2003; Minniti and Nardone, 2007; Wagner, 2007) suggest that women are less likely than men to make the transition to self-employment net of everything else. Differences between men and women in the role attributed to paid work may account for unequal transition rates to self-employment. *Being married* and the presence of (small) *children* are likely to lower risk taking and, hence, the probability of self-employment. Married men with children encounter the financial burdens of being the ‘breadwinner’, a situation which is not conducive for the often risky and work-intensive transitions to self-employment. For mothers, the substantial increase in household chores associated with children may restrain self-employment. However, recent empirical research suggests that self-employment presents itself as a flexible alternative to paid-employment for mothers, allowing them to choose working hours and locations freely (Budig, 2006; Wellington, 2007).

### Data and Methods

The analyses are based on two data sets. The first one is a mailed retrospective life history survey conducted in 1989 (Buchmann and Sacchi, 1997). It is representative for Swiss citizens of both sexes in the German-speaking part of Switzerland, who were born between 1949–1951 and 1959–1961, respectively.<sup>5</sup> The survey includes detailed biographical information on education, occupation and the family, providing exact dates of education, family, and labour force transitions.<sup>6</sup> The *Swiss Job Monitor* is used for constructing time-variant micro-level push and macro-level pull factors. This data set is a representative random sample of job

advertisements published in newspapers and advertisers in the German-speaking part of Switzerland between 1950 and 2002 (Sacchi *et al.*, 2005). The sample was drawn by a two-stage method whereby ~70 newspapers and advertisers (stratified by region and circulation) were selected by chance. For each year, 500 job advertisements published in the selected newspapers and advertisers were then randomly selected. The full sample for the observation period considered here includes 26,500 job advertisements with a total of 34,000 vacant positions. The data provide *annual, occupation-level* information on the number of advertised jobs (i.e. job openings).<sup>7</sup>

We analyse first transitions into self-employment after labour market entry only. They are defined as job changes, which result in a (self-declared) spell of self-employment, taking effect at the beginning of a new job spell. Family helpers are not defined as self-employed. Due to data restrictions, we consider the transitions taking place within the first four or five jobs only.<sup>8</sup> The observation period is defined as the time span between the month of labour-force entry after completion of formal education and the event (i.e. month of transition into self-employment as defined earlier) or—where no event occurs—the time of the survey, respectively. It begins with the labour-market entry of the first respondent in the early 1960s and ends at the time of the survey 1989.<sup>9</sup> For the small minority of respondents with incomplete job histories, the time span between labour force entry and completion of the fourth job spell is covered.<sup>10</sup>

Our analyses are based on a Cox regression model. The requirement of proportional hazard rates for time-constant covariates (Blossfeld *et al.*, 1986) is met. The hazard rates for men and women, for respondents from the older and younger cohorts, with different education and from different social origins run parallel albeit on differing levels (results not shown). Regarding the covariates, we use the (logarithmic) *number of potentially accessible job openings per person and year* as a micro-level push indicator. This innovative indicator enables us to go beyond existing research and measures job opportunities at the individual level and time dependent (Appendix 1 provides a brief description of the construction principles). It discriminates between the chances for job changes and those for transitions to self-employment. Taking into account that push factors might not work in the same way for non-employed people, we additionally take into account the *interaction between the (logarithmic) number of job openings per person and being out of the labour force*. We also looked at the respondents'

reported reasons for leaving their last job and coded *layoff* or *shutdown of the establishment* as a micro-level push factor. An additional indicator measures whether someone left the job because it was insecure, badly paid, temporary, or had a bad working atmosphere.

We use several time-varying indicators to capture segment-specific micro-level pull factors for self-employment. The *occupational group* indicates the occupational sub-segment to which an individual has access due to his or her credentials. Based on the 1980-two-digit code of the Swiss Federal Office of Statistics (Bundesamt für Statistik, 1981) and additional recoding of similar occupational categories, we distinguish between respondents with food industry occupations, metal and building trade occupations, professional and artistic occupations, and higher service sector occupations. Office clerks serve as reference group. Occupational groups that have not shown a statistically significant effect have been combined within the category 'other occupations'.<sup>11</sup> *Core industry* measures whether someone's job is situated within a core or peripheral industry. The gross value added per person in 1985 has been used to distinguish between the two categories. In Switzerland, core industries consist of banks, insurances, consulting, and the chemical industry. A dummy variable distinguishes between *very small firms with less than 10 employees* and larger firms. *Sector* distinguishes between jobs in the service sector and those in the industrial and agricultural sector.

The classic macro-level push indicator is the (logarithmic) *unemployment rate*. However, in the case of Switzerland, the available unemployment series is afflicted with serious measurement problems and relatively reliable from 1978 onwards only (Sheldon, 1993). An ideal alternative would be an indicator capturing the collective sentiment or the general climate for setting up a business.<sup>12</sup> The only available indicator tapping subjective perceptions of general economic prospects, inflation, and employment, exists from 1973 onwards only. Given this time restriction, we use the (logarithmic) *total number of jobs advertised in a given year* as a proxy for the general economic climate as an alternative. There are two reasons of why the total number of advertised jobs per year may be regarded as an appropriate macro-indicator for the perceived economic prospects and for the sentiment for setting up a business. First, the model controls very well for *individual* job opportunities in all potentially accessible labour market segments. Thus, the total number of advertised jobs measures *general* job opportunities *beyond* the segment-specific individual opportunities, which in the Swiss context might only

be accessed by costly and time-consuming retraining. Pull effects of the total number of advertised jobs on job changes may therefore be neglected. Second, the correlation between this macro-indicator and the one specifically tailored for the measurement of the subjective perception of economic prospects—available from 1973 onwards—is strong (0.78), implying that both indicators tap very similar dimensions. Against this backdrop, we believe that the total number of advertised jobs is a suitable measure for the cyclical change of perceived overall economic prospects. To analyse whether an unfavourable economic climate with only few jobs available exerts push forces and a favourable economic climate with an abundance of vacant jobs advertisements develops pull forces, we also included a quadratic term into our model.

Human capital is measured by several variables. *Educational attainment at the time of labour-force entry* is a time-constant covariate and defined by three categories, referring to lower secondary education, vocational training/school (reference category), and higher education combining baccalaureate, tertiary vocational training, and university.

A time-varying dummy variable captures *vocational training after labour-force entry*, assuming the value of 1 in the month of earning the degree. Other types of training after labour market entry have been excluded due to their lacking effect. *Labour-market experience* is time-varying, measuring months worked since labour-force entry. In the final model, we only include the linear term of labour market experience as there is no pronounced curvilinear effect of work experience on moves into self-employment.<sup>13</sup> *Not in labour force* captures spells without gainful employment. Their duration is measured in months by *duration of labour force interruption*.

*Father's occupational position* differentiates between respondents whose father worked as a manual worker, as an employee or civil servant or as a manager, entrepreneur or another type of self-employed worker when the respondent was 15 years old. Manual workers serve as reference group. The few respondents with missing data have been coded in a separate missing category. *Gender* distinguishes between men and women, with women being coded 1. Family characteristics include the *birth of first child* (assuming the value of 1 six month before birth), and the interaction effect *child × gender*, which captures the different effect of children for men and women. A dummy is used to differentiate the two *birth cohorts* with the younger one (1959–1961) coded 1.

## Results

Descriptive statistics for all variables are presented in Table 2. The last column refers to the event distribution for time-constant variables, showing considerable variation by education, gender, social origin, and birth cohort. Only 12.7 per cent of the respondents becoming self-employed entered the labour market with lower secondary education. About 66.7 per cent had vocational training, and 20.6 per cent held a degree of higher education.<sup>14</sup> The majority of the self-employed (52.8 per cent) had a father who was a manager, entrepreneur, or was otherwise self-employed. Furthermore, women (32.3 per cent) and respondents from the younger birth cohort (30.6 per cent) become self-employed a lot less often than men and respondents of the older cohort. The latter is due to the fact that we can observe the younger cohort until the age of about 30 years only.

The multivariate results are shown in Table 3. First, the indicator for *individual job opportunities* shows the hypothesized negative effect: The smaller the number of job openings for which a given person could apply with reasonable chances of success, the more likely is the transition to self-employment. As individual job prospects improve, self-employment becomes more unlikely. This amounts to saying that good individual job opportunities entice people to stay in wage employment—either with their old employer or with a new employer. In these circumstances, people are not threatened by unemployment and, hence, not pushed into self-employment. When individual job opportunities are bleak, however, people might see their only alternative in self-employment and bleak individual job opportunities act as an individual-level push factor into self-employment. Neither the indicator measuring actual job loss nor the one for unfavourable working conditions show any effect at all (and have thus been excluded from the final model). We explain this by the low occurrence of unemployment within Swiss workers during our observation period.

Our findings provide support for the hypothesis that in a highly segmented labour market, certain segments act as pull forces by providing incentives to become self-employed. First, membership in specific *occupational groups* increases the transition probability into self-employment. Respondents with *food-industry* occupations are much more likely to become self-employed than the reference group with office jobs. In our sample, this occupation-specific segment is mostly composed of bakers and butchers—most of them men.

**Table 2** Weighted means and standard deviations<sup>a</sup>

	Mean	SD	Percentage events <sup>b</sup>
<i>Dependent variable</i>			
Entry into self-employment	0.004	0.07	
<i>Micro-level push factors</i>			
Individual job opportunities	2.471	0.74	
Job loss	0.032	0.17	
Unfavourable working conditions	0.157	0.36	
<i>Micro-level pull factors</i>			
Occupational group (office jobs)	0.211	0.41	
Food industry occupations	0.013	0.11	
Metal and building trade occupations	0.136	0.34	
Professional and artistic occupations	0.057	0.23	
Higher service sector occupations	0.021	0.14	
Other occupations	0.562	0.50	
Service sector	0.733	0.44	
Core industry	0.086	0.28	
Small firm <10 employees	0.292	0.45	
<i>Macro-level push factors</i>			
Unemployment rate	-1.691	2.04	
<i>Macro-level pull factors</i>			
Total number of advertised jobs	6.352	0.39	
<i>Human capital</i>			
Education (vocational training)	0.683	0.47	66.7
Lower secondary education	0.249	0.43	12.7
Higher education	0.130	0.34	20.6
Vocational training after labour market entry	0.053	0.22	
Labour market experience	60.442	54.30	
Not in labour force	0.213	0.41	
Duration of labour force interruption (months)	17.840	47.25	
<i>Individual and family characteristics</i>			
Father's occupational position (manual worker)	0.318	0.47	15.5
Employee/civil servant	0.315	0.46	28.8
Manager/entrepreneur/other self-employed workers	0.315	0.46	52.8
Missing	0.049	0.22	2.9
Gender: women	0.498	0.50	32.3
Child	0.301	0.46	
Birth cohort: 1959–1961	0.402	0.49	30.6

<sup>a</sup>Based on episode file with  $N = 34\,398$ .

<sup>b</sup>For time-constant covariates only.

Respondents with *metal and building trade* occupations are also more likely to set up their own businesses. Likewise, *higher service sector* occupations provide better chances of becoming self-employed. And, of course, *professional and artistic* occupations are the classic occupational groups with excellent chances of self-employment. Second, our hypothesis that the service sector generally provides more favourable conditions to become self-employed cannot be corroborated. The probability to set up a business does not differ between people who have been employed in the service and the industrial or agricultural sector. Third, respondents employed in the *peripheral segment* are

more likely to become self-employed compared to their counterparts holding jobs in the *core segment*. The respective probability is about 50 per cent higher. We believe this to be the result of new opportunities and niches for self-employment in the peripheral segment, of which people who have formerly been employed in this segment make use of. Fourth, respondents employed in very *small firms* of less than 10 employees are significantly more likely to make the transition to self-employment. Their probability to set up a business is more than twice as high compared to people employed in firms of any other size. Given that there is no variation in the rate of becoming



**Table 3** Determinants of the transition into self-employment

Cox-regression	<i>B</i>	SE	Exp <i>B</i>
<i>Micro-level push factors</i>			
Individual job opportunities	-0.66**	0.26	0.52
Job loss	-	-	-
Unfavourable working conditions	-	-	-
<i>Micro-level pull factors</i>			
Occupational group (office jobs)			
Food industry occupations	1.61**	0.53	5.01
Metal and building trade occupations	1.17***	0.36	3.22
Professional and artistic occupations	1.27***	0.37	3.57
Higher service sector occupations	1.59***	0.45	4.93
Other occupations	0.25	0.38	1.28
Service sector	-	-	-
Core industry	-0.63 <sup>+</sup>	0.36	0.53
Small firm <10 employees	0.85***	0.25	2.34
<i>Macro-level push factors</i>			
Unemployment rate	-	-	-
<i>Macro-level pull factors</i>			
Total number of advertised jobs	1.88***	0.43	6.55
Total number of advertised jobs squared	-	-	-
<i>Human capital</i>			
Education (vocational training/school) <sup>a</sup>			
Lower secondary education	-1.39*	0.66	0.25
Higher education	0.10	0.29	1.10
Vocational training after labour market entry	1.13***	0.33	3.08
Labour market experience	-0.01*	0.00	0.99
Not in labour force	1.71***	0.34	5.55
Duration of labour force interruption (months)	-0.02**	0.01	0.98
<i>Individual and family characteristics</i>			
Father's occupational position (manual worker) <sup>a</sup>			
Employee/civil servant	0.57*	0.29	1.76
Manager/entrepreneur/other self-employed workers	1.11***	0.28	3.02
Missing	0.22	0.55	1.25
Gender: women <sup>a</sup>	-0.31	0.34	0.73
Child	-0.67 <sup>+</sup>	0.37	0.51
Child × Gender	1.20*	0.57	3.32
Birth cohort: 1959–1961 <sup>a</sup>	-0.16	0.24	0.85
<i>N</i>	2095		
<i>df</i>	22		
Events	148		
Episodes	34 315		
Log pseudo-likelihood	-937		
Wald $\chi^2$	410***		

<sup>a</sup>Time-constant covariate.

<sup>+</sup> $P \leq 0.10$ ; \* $P \leq .05$ ; \*\* $P \leq .01$ ; \*\*\* $P \leq .001$ .

self-employed for people employed in firms with 10 and more employees, the finding supports our argument that very small firms might indeed be role models for setting up a business. According to this line of reasoning, people employed in these firms would acquire all the skills necessary for running their own business (Strohmeyer and Leicht, 2000; Arum and Müller, 2004).

Turning to the macro-level, we have argued that the *unemployment rate* should act as a push factor. Contrary to the findings for other countries, it does not seem to affect transitions to self-employment in Switzerland. Bearing in mind that caution is in order due to the afore-mentioned measuring problems, the result implies that macro-level push forces have indeed been absent in Switzerland during the

observation period. This is attributable both to the comparatively low unemployment rate for the observed years and the exceptionally thorough measurement of individual-level push factors provided in this study. The finding for the second macro-indicator, the *total number of advertised jobs*, serving as a proxy for the general climate for setting up a business, supports the latter interpretation. It shows a linear and strong positive effect, acting as a pull factor. Good economic prospects motivate people to set up their own business. Under these conditions, the chances of succeeding in one's new company are high. People may therefore be enticed to move into self-employment. Further analyses (not shown) demonstrate that the effect of the total number of advertised jobs is almost but not entirely linear. Slight push effects seem to occur during the economic slump of the early 1970s. However, they are too weak to be statistically relevant. Overall, pull effects are by far more dominant for the observed time period.

Overall, the empirical evidence suggests that individual job opportunities act as an individual-level push factor. The probability of moving into self-employment is the higher, the lower people's individual chances of job changes. Location in particular labour market segments provide incentives for setting up a business, thus representing an individual-level pull factor. When individual-level opportunities are controlled for, favourable economic outlooks motivate people to become self-employed and they thus act as macro-level pull factor. The structure of these findings and the missing relationship between unemployment and self-employment suggests that pull factors have been far stronger in the observed period than push factors.

We turn to *individual characteristic next* and begin by discussing the *human capital* effects. Respondents who have completed only lower secondary education at the time of labour-force entry are significantly less likely to become self-employed than respondents of the reference group who served an apprenticeship. People with higher education (i.e. completion of a baccalaureate, higher vocational training, or university) do not differ significantly from the reference category. These findings do not support human capital assumptions, according to which the probability for transitions to self-employment should increase with increasing human capital. They are more in line with a 'threshold' explanation, implying that people with compulsory schooling only are lacking the necessary skills and know-how needed to cope with the planning and the administrative tasks required to set up a business. Better-educated individuals are able to deal with these requirements no matter their

educational degree. *Vocational training after labour-market entry* greatly increases the probability for self-employment. We suspect that people who decide to serve an apprenticeship after they have been in the labour force for a while do this in anticipation of becoming self-employed.

The probability for setting up a business decreases as *labour-market experience* increases: it is at the earlier stages of the occupational career that people set up their own business. This suggests that, at the beginning of the occupational career, people might be more willing to take the risks of setting up a business. Likewise, the opportunity costs tend to be lower at this stage as people have not yet accumulated a lot of firm-specific skills and know-how. The findings for *not in the labour force* and *duration of labour-force interruption* indicate that not employed people have a higher transition rate into self-employment, which decreases with increasing duration of the labour-force interruption. This holds for men and women, as further tests (not shown) have revealed. Not employed people face smaller opportunity costs when setting up their own business. As necessary market skills and networks devalue with time the transition probability decreases eventually. An alternative explanation may be that people who plan to become self-employed deliberately enter a short phase of non-employment to organize the setup process.<sup>15</sup>

*Social origin*, measured by father's occupational position, significantly affects the probability for self-employment. Sons and daughters of manual workers/foremen are the least likely to set up a business; children of managers, entrepreneurs, or otherwise self-employed fathers are most likely to become self-employed themselves. The latter grow up in social milieus in which they can easily acquire, at an early age, the skills and know-how necessary to set up a business. Furthermore, they might often inherit the parental business.

Despite the considerably lower proportion of self-employed women (see descriptive findings), men and women show a similar probability to become self-employed once other factors are controlled for. Differences arise regarding the presence of children, as the interaction term *child\*gender* demonstrates. Fathers are slightly less likely to set up a business than their childless counterparts, whereas mothers have a much higher chance to become self-employed. The responsibility for the financial well-being of the family may discourage men to take the risks of a possible business failure when becoming self-employed. The result for women with children is in line with recent research, which suggests that small-scale

self-employment may offer greater work-time flexibility, thus helping women to combine work and family (Budig, 2006; Wellington, 2007).

## Conclusions

Our paper has addressed the question of how push and pull forces at the micro- and macro-level affect the transition probability to self-employment in a segmented labour market. We have attempted to elaborate systematically what role individually accessible job openings, segment-specific employment conditions, and the overall macro economic situation play for the decision to set up one's own business in such a type of labour market. Our analysis goes further than existing research, first, by being able to measure push and pull forces not only at the macro-level but also at the micro-level and, second, by testing the respective hypotheses for a pertinent case of a segmented labour market, namely Switzerland.

Our findings show that forces at the macro- and the micro-level do indeed play a role for self-employment. This is evident when looking at the complex structure of influence related to overall economic conditions and individual labour market opportunities. During the period we have observed in Switzerland, push factors seem to have exclusively operated at the individual level. People have become self-employed at times when the individually accessible job openings have become scarce. Pull factors can be observed at the micro- and the macro-level. Results for the micro-level imply that in occupationally segmented labour markets like the Swiss one, segment-specific locations facilitate the transition to self-employment. This holds for certain sub-segments of the occupation-specific segment, for peripheral segments and for employment in very small firms. Taken together, the findings for the micro-level suggest that in segmented labour markets job opportunities and conditions within sub-segments have to be taken into account to explain transitions into self-employment satisfactorily.

At the macro-level, the relative weight of pull factors has by far been greater than that of push factors for the observed period. This is to say that, until the end of the 1980s when our period of observation ends, decisions to become self-employed have a pronounced voluntary component in Switzerland. In this respect, it is noteworthy that the push factor at the macro-economic level (i.e. the unemployment rate) does not work at all in the Swiss context. On the one hand, we attribute this finding to the low unemployment during the observation period. On the other hand, it is highly

plausible that push forces operate mainly on an individual level. Once they are controlled for as they are in our model, the overall economic situation is likely to act more as a pull than as a push force. This argument is supported by the fact that the coefficient for the total number of advertised jobs, which measures the overall economic situation, loses some of its strength when individual job opportunities are not included in the model.<sup>16</sup>

In conclusion, self-employment is not only a counter-cyclical response to job opportunities in the paid sectors, as some literature suggests (e.g. Steinmetz and Wright, 1989). However, our analyses raise two questions future research should address. First, are the strong pull effects at the macro-level specific for Switzerland and for the observation period or can they also be observed for other countries during comparable economic conditions once individual job opportunities are controlled for at the micro-level? Second, further research is needed to address the question of whether push and pull forces have specific effects on individuals depending on their segment-specific locations. For this type of analyses, much larger samples are needed than the one that was at our disposal. We believe that future research would benefit greatly by distinguishing more clearly between push and pull factors at the macro- and micro-level. Our paper has taken a first step in this direction by taking into account the crucial role of individual level job opportunities for transitions into self-employment and by providing an appropriate measure.

## Notes

1. For Germany, see Brüderl *et al.* (1992), Bögenhold (1989), Bögenhold and Staber (1990, 1991), (Pfeiffer, 1994), McManus (2001), Luber and Leicht (2000), and Lohmann and Luber (2004). For Switzerland, see Arvanitis and Marmet (2001), Graber *et al.* (1996), Harabi (2001), and Harabi and Meyer (2000).
2. Some econometric studies additionally consider real-interest and tax rates (Parker, 1996; Göggel *et al.*, 2007).
3. For a series of Western industrial countries, Bögenhold and Staber (1990, 1991), Parker (1996), Steinmetz and Wright (1989), and Göggel *et al.* (2007) show that aggregate self-employment increases with increasing unemployment. In some studies, the relationship becomes weaker over time. Blanchflower (2000) finds

positive effects for some countries and negative effects for others. Evans and Lighton (1989) find a weak cyclical effect. Bögenhold and Staber (1990, 1991) and Göggel *et al.* (2007) also examine the significance of economic growth for aggregate levels of self-employment. The former study finds no effects for some countries and positive effects for others. The latter study finds a non-linear influence. Cross-national micro-level results (Arum and Müller, 2004) are also mixed. For the Netherlands, Australia, and Japan, there is no effect; for Italy, there is a positive effect, but only for women. Finish results from Tervo (2006) report effects for individuals from self-employed families only.

4. Steinmetz and Wright (1989), for the United States, and Luber and Leicht (2000), for Western European countries, show that the growth of the service sector is at least partly responsible for the increase in self-employment.
5. The German-speaking part of Switzerland comprises about 65 per cent of the population. The data set does not include foreigners without Swiss citizenship.
6. Employment histories include jobs held after the completion of formal education. Respondents were directed to report only those jobs that lasted 4 months at least.
7. Additional analyses have shown that job advertisements are indeed a reliable source to measure opportunity structures. The findings of two Swiss firm surveys reveal, first, that ~44 per cent of the vacancies occurring between 1992 and 1994 were advertised in print media. Second, the number of advertised vacancies remains the same in economically similar years (Sacchi *et al.*, 2005). These results provide evidence that a representative sample of job advertisements covers a considerable proportion of the overall labour demand. The vacancies most likely to be advertised are those for which it is not easy to find prospective incumbents. Vice versa, there seems to be hardly any vacancy that is not advertised in principle. We thus conclude that the more the particular skill demand exceeds the supply, the more likely it is that the respective vacancies will be advertised in print media. Against this background, the data of the *Swiss Job Monitor* used to measure job opportunities indicate the intensity of the demand for particular combinations of occupational qualifications, work experience, and work-related personality attributes. It is exactly this property that renders job advertisements a highly appropriate data source for examining the *demand for labour* and the respective shifts across time.
8. Despite this restriction, and as a result of the high job stability in Switzerland, we still cover the full job history for the overwhelming majority (84 per cent) of respondents.
9. The majority of the older cohort enters the labour market in the second half of the 1960s. Most transitions into self-employment occur during the 1970s and 1980s. Alternatively, the observation window and the definition of the time at risk may start earlier in the life course, including the transition into the labour market. We refrain from doing so for two reasons. First, the number of respondents who start their first job as self-employed is very low. Second, we are interested in work environment effects (i.e. sector and firm size), which cannot be studied before labour market entry is completed.
10. Sideline jobs of respondents completing university training do not count as relevant job spells.
11. The occupational groups in the model consist of the following 1980 two digit codes: 22 = food industry occupations; 41–52 = metal and building trade occupations; 60–62, 83, 85 (without the non-academic occupations 854–856), 88–89, 90–91 = professional and artistic occupations; 67, 72 = higher service sector occupations; 68–69 = office jobs.
12. Interest rates, another potential alternative, have little explanatory power in our model. They have traditionally been low in Switzerland. Credit in capital markets (and thus the costs for self-employment) has been comparatively cheap for the observation period.
13. The missing curvilinear effect is not surprising as the analyses are based on a cohort sample. This reduces substantially the age range and, hence, limits the power of the statistical test.
14. The low figure for respondents with higher education indicates that we miss some of

the younger cohort's transitions into self-employment, whose members are only about 30 years old and have only just completed tertiary education at the time of the survey.

15. It is unlikely that these phases of non-employment are involuntary as there are only very few spells of unemployment in our data set.
16. It remains significantly positive though (results not shown).
17. Job vacancies in the 1960s (1961–1970) are linked with the matrix of the 1970 Swiss Census; those in the 1970s with the 1980-Swiss Census and those in the 1980s with the respective matrix of 1990.
18. By doing this, we avoid the rather unrealistic situation of unskilled workers without any occupational credentials having better job opportunities compared to workers with credentials.

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## Appendix 1

Four steps are needed to construct indicators of individual labour-market opportunities. First, we classify all job advertisements by gender, age, and required experience and aggregate the number of respective job openings by year and occupation. This procedure yields the number of advertised jobs per year and occupation for eight groups of prospective employees: men and women younger or older than 30 years with or without experience.

Second, the information provided in job advertisements is in many instances not sufficient to infer the educational requirements necessary to apply for the advertised jobs with reasonable prospect of success. Occupation-specific credentials are often taken for granted and not explicitly listed in advertisements. We therefore need external information on skill barriers in the Swiss labour market. The Swiss Census of 1970, 1980, and 1990 provide the necessary information as they include matrices of occupation-specific credentials and occupations held. The individual cells of these

matrices show the degree to which given educational credentials are linked to given occupations. For each cell of the matrices, we compute the transition probability according to the following formula:

$$w_{ab} = \frac{x_{ab}}{x_a}$$

where  $w_{ab}$  is the transition probability of occupation-specific credential  $a$  to occupational activity  $b$ ,  $x_{ab}$  is the number of individuals equipped with occupation-specific credential  $a$  and active in occupation  $b$ ,  $x_a$  is the total number of individuals equipped with occupation-specific credential  $a$ .

These transition probabilities may be interpreted as estimates of the accessibility of job openings for people with given occupation-specific credentials when applying for job openings within given occupations.

Third, we construct job opportunity indicators by linking the job-advertisement data with the transition probabilities according to the following formula:

$$O_{iaj} = \sum_{b=1}^B (w_{ab} \cdot n_{ibj}) + \sum_{ob=1}^{OB} (w_{ob} \cdot n_{ibj})$$

where  $O_{iaj}$  is the number of advertised jobs in year  $j$  weighted by the transition rate of individuals belonging to group  $i$  with occupation-specific credential  $a$ ,  $w_{ob}$  is the transition rate into occupation  $b$  of individuals without any occupation-specific credentials,  $w_{ab}$  is the transition rate from occupation-specific credential  $a$  into occupation  $b$ ,  $n_{ibj}$  is the number of published job openings in year  $j$  for occupation  $b$  which are accessible for individuals belonging to group  $i$ .

This formula states that we multiply the number of advertised jobs per occupation and year with the occupation-specific transition probability of individuals with certain credentials.<sup>17</sup> Thereafter, we aggregate the estimated opportunity per occupation-specific credential (including the state 'no occupation-specific credential'). Finally, we add, per occupation, a constant measuring the aggregated opportunity of people without any occupation-specific credential to the occupation in question.<sup>18</sup> This procedure is repeated for each calendar year and for each of the eight specified groups of prospective employees. It yields the number of job openings per year and per occupation advertised for men and women under (and above) 30 years of age equipped with (and without) experience.

Fourth, we match the job indicators with the individual career history data on the basis of respondent's occupation-specific credentials and occupational experiences at a given point in time.