



WP 63_12

Giuliano Guerra

Repubblica e Cantone Ticino, Switzerland

Roberto Patuelli

University of Bologna, Italy

The Rimini Centre for Economic Analysis (RCEA), Italy

THE ROLE OF JOB SATISFACTION IN TRANSITIONS INTO SELF-EMPLOYMENT

Copyright belongs to the author. Small sections of the text, not exceeding three paragraphs, can be used provided proper acknowledgement is given.

The *Rimini Centre for Economic Analysis* (RCEA) was established in March 2007. RCEA is a private, nonprofit organization dedicated to independent research in Applied and Theoretical Economics and related fields. RCEA organizes seminars and workshops, sponsors a general interest journal *The Review of Economic Analysis*, and organizes a biennial conference: *The Rimini Conference in Economics and Finance* (RCEF). The RCEA has a Canadian branch: *The Rimini Centre for Economic Analysis in Canada* (RCEA-Canada). Scientific work contributed by the RCEA Scholars is published in the RCEA Working Papers and Professional Report series.

The views expressed in this paper are those of the authors. No responsibility for them should be attributed to the Rimini Centre for Economic Analysis.

The Rimini Centre for Economic Analysis

Legal address: Via Angherà, 22 – Head office: Via Patara, 3 - 47900 Rimini (RN) – Italy

www.rcfea.org - secretary@rcfea.org

The Role of Job Satisfaction in Transitions into Self-Employment

Giuliano Guerra

Ufficio per lo sviluppo economico, Repubblica e Cantone Ticino, Switzerland

Roberto Patuelli

Department of Economics, University of Bologna, Italy
The Rimini Centre for Economic Analysis (RCEA), Italy

This version: 02/09/2013.

Abstract

As observed in many advanced economies experiencing an increase of self-employment rates since the late 1970s, a flourishing small- and medium-size enterprise sector is traditionally associated with positive economic development and growth. In the regional context, areas benefiting from an established entrepreneurial culture are in general more successful and innovative, as well as better equipped to sustain structural changes and to lessen unemployment. It is therefore important to investigate the reasons why individuals choose self-employment, and why they do it despite lower protection, higher risks, and possibly more effort than what is required in a comparable wage employment position. Existing research identifies better prospects of entrepreneurial earnings as compared to wages as a major stimulus towards self-employment. However, besides pecuniary motivations, other factors may be considered when it comes to the occupational choice. These include displacement, uncertainty, (the threat of) unemployment, and (dis)-satisfaction. Building on a job quits model, we propose a representation of transition behaviour from wage to self-employment which includes subjective evaluations of pecuniary and nonpecuniary satisfaction on the previous job. Individual microdata are drawn from the Swiss Household Panel (SHP), and cover the time period 1999–2008. Additionally, we focus on the dynamics of job satisfaction in order to highlight the role played by shocks in subjective evaluations.

Keywords: self-employment, job satisfaction, job transition, Switzerland

JEL codes: C25, J62, M13

1. Introduction

Several studies have shed light on the role played by small-business owners in economic growth (e.g., Lucas, 1978; Kihlstrom and Laffont, 1979; Blau, 1985; Brock et al., 1986; Rees and Shah, 1986; Evans and Leighton, 1989; Carree and Thurik, 2005; Goetz et al., 2012), and on their ability to create new jobs (Birch, 1979; Wagner, 1995; Davis et al., 1996a; 1996b; Neumark et al., 2010; Malchow-Møller et al., 2011). Existing studies on transitions from wage- to self-employment identify start-ups as an important source of business dynamics and innovation (Jovanovic, 1982; Dunne et al., 1987; Evans, 1987a, 1987b; Audretsch and Feldman, 1996; Pakes and Ericson, 1998). At the same time, many policy interventions aiming to encourage self-employment have been implemented by national and regional governments in order to stimulate new employment opportunities and reduce unemployment (Blanchflower, 2000). Most governments offer assistance to small businesses, providing subsidies for individual start-ups. Universities often contribute as well, establishing start-up centres and incubators, with the dual aim of supporting newly-formed businesses and conducting related research. From a regional development perspective, filling up the gap between wage and self-employment earnings may contribute to the convergence of less dynamic and peripheral areas towards more successful and innovative regions (Reynolds, 1994; Reynolds, 1999; Acs and Armington, 2004).

Entrepreneurial attitudes and motivations have been largely investigated at the macro level (Aldrich, 1999). In addition to working conditions and wages, the size of the market, the stage of economic development, but also more dynamic factors such as the business cycle and unemployment (Evans and Leighton, 1990; Taylor, 1996; Blanchflower and Oswald, 1998; Ritsilä and Tervo, 2002), and structural characteristics like social security, pension benefits (Quinn, 1980) and taxation (Long, 1982; Blau, 1987; Schuetze, 2000), have been found to influence self-employment propensity. Moreover, socio-economic phenomena, such as immigration (Borjas and Bronars, 1989) and urbanization, have been pointed out as important determinants of entrepreneurship at the country level (Acs et al., 1994; Blanchflower, 2000).

However, despite the wide literature on entrepreneurial motivations, it is not always clear why individuals choose to start their own business and why they do it, despite this choice generally involving lower protection, higher risks and more effort than what is required in a comparable paid position. Economic models of career choice suggest a process of utility maximization, leading individuals to choose self-employment if the utility associated with this option exceeds the one of an equivalent paid position (Douglas and Shepherd, 2000). Better prospects of income from self-employment relative to wages are therefore traditionally regarded as a major stimulus towards self-employment (Rees and Shah, 1986). However, in addition to pecuniary reasons, other factors need to be considered. Emotional aspects such as displacement or insecurity often precede the formation of a company (Shapiro and Sokol, 1982). At the same time, the risk (or threat) of falling into unemployment, as well as boredom or frustration, seem to positively affect the likelihood to set up a businesses (Wennekers et al., 2001; Hofstede et al., 2004). Moreover, people expect to gain utility from work effort, risk bearing, independence, and other working conditions (Douglas and Shepherd, 2002). Finally, as outlined by Brockhaus (1982), self-employed individuals generally evaluate previous jobs as ‘unsatisfactory’, in terms of both the job itself, and of supervision and career opportunities. However, all such *ex post* evaluations (i.e., collected once the transition has already been made) may be influenced by the opportunities offered in the new working position.

Using the information derived from a sample of individuals continuously surveyed during their work experience, we look at the *ex ante* factors that are expected to influence the probability of choosing self-employment. In particular, we propose a representation of transition behaviour from wage to self-employment which includes (previous) subjective evaluations of job satisfaction and other personal and job-related characteristics. Rather than including the level of satisfaction in the

current job or assessments regarding past jobs characteristics, we rely on subjective levels of satisfaction that were reported *before* the choice was made, so as to measure real/actual perceptions about past working conditions. Among the satisfaction variables we include some that specifically account for pecuniary and nonpecuniary job aspects, so as to capture differences in individuals' reactions with respect to both forms of labour outcomes. By also including decisions about job change, which we regard as the 'soft', or less risky, alternative with respect to self-employment, we are able to test whether the reactions to a low level of satisfaction are different for the two alternatives. Finally, we aim to show the effects of short-term variations in the degree of satisfaction.

In this paper, we aim to contribute to the empirical evidence on self-employment choices in two ways. First, by explicitly addressing both pecuniary and nonpecuniary causes of transitions, we show that individuals react differently to low satisfaction levels with regard to income or to working conditions (i.e. pecuniary and nonpecuniary factors). Second, we study transitions to self-employment together with those to new paid jobs, to investigate whether the push factors that are mentioned as leading to self-employment could also lead to job switches into new paid employment. By disentangling the antecedents of self-employment from those of new paid employment, we aim to provide a better understanding of the former.

Our results, computed over an extensive data set of Swiss individual data (described in Section 3), suggest that pecuniary and nonpecuniary job satisfaction significantly affects transitions to self-employment and job changes. However, their effects are differentiated. While those who change job are more reactive to nonpecuniary dissatisfaction, those who choose self-employment tend to do so in reaction to low levels of pecuniary satisfaction. Variations in job satisfaction are also found to significantly influence transition probabilities.

The remainder of the paper is structured as follows. In Section 2, we discuss the literature on the determinants of self-employment transitions and we present the empirical model proposed in this paper. In Section 3, we briefly describe our data. In Section 4, we present empirical estimates for our model of self-employment transitions. In Section 5, we summarize and discuss our findings.

2. Literature Review and Model

Existing research on self-employment transitions makes a wide use of rational agent-based models assuming that individuals choose self-employment if the expected utility of this option exceeds the one associated with wage employment (Casson, 1982; Baumol, 1990). Better prospects of entrepreneurial earnings as compared to wages are, according to the greater part of this literature, a major stimulus towards self-employment (Rees and Shah, 1986; Fujii and Hawley, 1991; Taylor, 1996).

However, besides pecuniary motivations, other factors come into consideration when it comes to occupational choice. Recently, the assumption that earnings act as a proxy for utility has been relaxed. Hamilton (2000) shows that the nonpecuniary benefits of self-employment are substantial, with most entrepreneurs entering – and staying in – business despite lower initial earnings and lower earnings growth with respect to wage employment (for a discussion of the trade-off between independence and wage, see Croson and Minniti, 2012). Although there are other plausible explanations for this kind of stickiness (e.g., barriers to exit or the inability to rejoin paid work easily, as well as an (irrational) rise of commitment to self-employment), nonpecuniary aspects need to be addressed. Evans and Leighton (1990) and Taylor (1996) find that, besides higher

expected earnings, the independence offered by self-employment positively influences individual decisions towards business ownership. Moreover, several personality traits have been found to influence the entrepreneurial process (Shane et al., 2003). Individuals who have a marked need for achievement are more likely to become entrepreneurs and to succeed (Collins et al., 2004). The same appears to happen for risk-taking individuals, even if they generally do not perceive their actions as risky (Corman et al., 1988). Firm founders also appear to differ from the general population in terms of locus of control (Shapero, 1975; Bowen and Hisrich, 1986) self-efficacy (Baum, 1994), and in cultural-cognitive terms (Knörr et al., 2013). Moreover, socioeconomic characteristics have been found to (positively) influence self-employment choices, especially during favourable economic cycles: access to technology, financial means, demand for goods and services, market opportunities and innovation (Mason, 1989; Giacomini et al., 2011).

A nonpecuniary aspect which is often advocated as a major driving force in entrepreneurship is the one associated with (dis-)satisfaction. Brockhaus (1982) finds self-employed workers to be relatively strongly dissatisfied with their previous (dependent) work, supervision and career opportunities. More generally, emotional factors such as feeling inappropriate/displaced and uncertainty often precede the formation of a company (Shapero and Sokol, 1982), and self-employment can allow individuals to cope with negative emotions better (Patzelt and Shepherd, 2011). Indeed, at the macro level, countries with lower rates of satisfaction with life and society in general have been shown to experience higher self-employment rates (Noorderhaven et al., 2004). Moreover, (the threat of) unemployment, as well as being bored or angered, has been shown to positively affect self-employment choices (Wennekers et al., 2001; Hofstede et al., 2004). Thus, individuals dissatisfied with their job may be expected to be more inclined to enter self-employment. As a result, self-employed individuals generally report higher satisfaction with their job than employees (Blanchflower and Freeman, 1997; Blanchflower and Oswald, 1998; Blanchflower, 2000; Taylor, 2004). This kind of *ex post* assessments, however, could be influenced by the opportunities offered in the new position.

A promising representation of the choice problem faced by individuals addressing the question of whether or not leaving a paid position for venturing into self-employment is the one provided by the job quits literature (Flanagan et al., 1974; Freeman, 1978; McEvoy and Cascio, 1985; Akerlof et al., 1988; Clark et al., 1999). Within this framework, it is assumed that individuals consider the opportunity of voluntarily leaving their job as a function of their expectations regarding pecuniary and nonpecuniary benefits outside of the current employer compared to those offered inside, in addition to mobility costs (Lévy-Garboua et al., 2007). Job quits are observed among individuals reporting a positive difference between the sums of pecuniary and nonpecuniary benefits and costs of current and future positions, where job satisfaction is a monotonic, discrete function of these sums (Akerlof et al., 1988). Dissatisfied workers have higher quit rates than satisfied workers because the former perceive the expected present value of their job as being lower with respect to the one offered by outside opportunities. Alternatively, mobile workers experience greater increases in satisfaction if they were willing to leave than if they were not (Bartel and Borjas, 1981; Gottschalk and Maloney, 1985; Clark, 2001). As a result, quitters report higher satisfaction levels in their new job than in their old one (Akerlof et al., 1988).

We propose a representation of transition behaviour from wage to self-employment which includes (previous) subjective evaluations of job satisfaction. We assume that transitions to self-employment

are taken into consideration if the expected pecuniary and nonpecuniary (net) benefits of entrepreneurship are greater than those in paid work. However, since individuals do not have complete and adequate information on these potential benefits *before* entering self-employment, and since they are likely to estimate them on the basis on their experience, their level of education and existing opportunities, job satisfaction variables can be seen as a indicator summing up perceptions about the comparative advantage of remaining in the current job against the alternatives (Clark and Oswald, 1996; Taylor, 2004). Moreover, we assume that there are differences between workers' reactions with respect to pecuniary and nonpecuniary job aspects, and thus we include satisfaction variables regarding both. Unlike most of the studies cited above, we are able to discriminate between the evaluations regarding pecuniary and nonpecuniary benefits, and to address the question of whether the inclusion of subjective variables and their variations in time matter in modelling self-employment transitions and job changes.

In order to facilitate a comparison with the existing literature on job quits, and to investigate whether job satisfaction affects the latter and self-employment transitions differently (as we might expect, since the former decision might be more conservative and less risky), we consider also those who quit their job but remain in paid employment.

Given the existence of self-selection biases in models explaining entrepreneurial choices (Dennis, 1996; Hughes, 2003; Benz and Frey, 2008; Dawson et al., 2009) – optimistic individuals may choose to enter self-employment or to simply evaluate differently the costs that the more heterodox option (self-employment) implies in terms of mobility and risks – we include controls for objective job characteristics, so as to regard job satisfaction as the ‘excess’ reward in the current paid job with respect to average rewards potentially available to the worker in self-employment.

Moreover, given the (relatively) high persistence of job satisfaction levels and the reduced propensity to react to dissatisfaction with longer tenure and greater age (Cornelißen, 2009), we propose to look not only at the level of job satisfaction, but also at its variation. Variations in this variable may hide recent changes in working conditions and serious concerns about the current and future job position. Moreover, since it is likely that, when assessing their satisfaction, workers also include general assessments regarding available alternatives, changes in job satisfaction may reveal the opening of new opportunities against which a comparison is made, or improvements in the pre-existing alternatives.

Our empirical strategy is as follows. For a cross-section of individuals reporting a working status as employee at time $t - 1$ and $t - 2$, we estimate the effects of (dis-)satisfaction and other determinants on transition probabilities by means of a multinomial logit model (MNL; McFadden, 1974; Greene, 2007) taking the form:

$$\Pr(y_t = i) = \frac{e^{X_{t-1,t-2}\beta^{(i)}}}{\sum_i e^{X_{t-1,t-2}\beta^{(i)}}}, \quad (1)$$

where $i = 1, 2, \dots, I$ are the possible outcomes of the transition function y , evaluated at time t , and X are the explanatory variables evaluated at time $t - 1$ and $t - 2$. In our model, we assume that there are $I = 3$ outcomes: “staying in the current (paid) job”, “changing job/employer”, and “changing status from wage- to self-employed”. We thus estimate two sets of coefficients, $\beta^{(2)}$ and $\beta^{(3)}$,

corresponding to the second and third outcomes, respectively, where $\beta^{(1)}$ is set to zero for identification purposes. $\Pr(y_t = i)$ is the probability that the worker will choose the outcome i at time t . Probabilities of transition are linked to the individual and job characteristics, including job satisfaction levels evaluated at time $t - 2$ and recent variations in job satisfaction.¹ The matrix of covariates X includes standard socioeconomic variables evaluated at time $t - 1$, such as age, gender, nationality, marital status, and the level of education. Additionally, we control for union membership and homeownership. Job characteristics are included as well, and they account for the level of earnings, the number of working hours, and self-assessments regarding job insecurity and unemployment risk. Time fixed effects, controlling for the influence of the business cycle on transition decisions, are incorporated in the model as well.

Job satisfaction is evaluated on a 0–10 scale, where 0 corresponds to the answer “not at all satisfied” and 10 is “completely satisfied”. Dynamic effects of satisfaction on transition probabilities are accounted for through the inclusion of the percentage change between the individual’s satisfaction level at time $t - 1$ and the level of satisfaction expressed in the year before, divided by the latter:

$$\frac{\Delta x_{t-1}}{x_{t-2}} = \frac{x_{t-1} - x_{t-2}}{x_{t-2}}. \quad (2)$$

In addition to satisfaction measures, we control for objective job characteristics. The log of personal income is used as a measure of pecuniary rewards, while in order to control for nonpecuniary aspects, we include variables measuring the number of weekly worked hours, the feeling of job insecurity (ranged 1–5), which is found by Cornelißen (2009) to exacerbate the effects of dissatisfaction, and the risk of falling into unemployment (on a 0–10 scale). A set of additional variables is used to control for differences in human and financial capital: the level of education (distinguishing between individuals with a vocational or a university degree against the reference of those with basic education), union membership, and homeownership. The latter variable is included since previous studies have shown that both self-employment probabilities and earnings are strongly influenced by liquidity constraints (Evans and Jovanovic, 1989; Holtz-Eakin et al., 1994; Black et al., 1996; Lindh and Ohlsson, 1996; Blanchflower and Oswald, 1998). Moreover, financial capital, and in particular real estate, is an important source of collateral for entrepreneurs, which is expected to reduce the default premia (Henley, 2005).²

Furthermore, we control for age (which is expected to capture both work experience and wealth accumulation possibilities), nationality, marital status, and gender. Some of these characteristics are expected to capture differences in individual perceptions of, and attitudes to, risk (risk aversion), since individuals may be differently aware of the risk of failure in entrepreneurship or of unemployment in paid work (for an overview of the factors influencing the probability of entering self-employment, see Georgellis et al., 2005).

¹ We select satisfaction levels at time $t - 2$ in order to interpret them, in our model specification, as initial levels, while variations in job satisfaction measure changes from the satisfaction level evaluated at time $t - 2$ to the level in $t - 1$.

² It would be worth to address parental background as well, and more specifically the example (familiar role models) provided by the parents, which has been shown to represent a powerful predictor of the propensity towards business ownership. Although our data set would allow to control for parental occupation, unfortunately the number of cases recorded is too small to provide significant insights.

3. Data

About 650,000 individuals operate as self-employed agents in Switzerland, including incorporated self-employed (i.e., employed by their own company) and family workers (FSO, 2011a).³ Comprising more than 15 per cent of all economically active individuals, they run businesses in the retail, trade, manufacturing, financial and insurance sectors, as well as in accommodation and food services (FSO, 2000, 2011a).

Despite the recent rise in numbers – the Swiss self-employment rate peaked at 18 per cent in 1997 – Switzerland has a relatively low proportion of self-employed individuals in comparative terms (OECD, 2011).⁴ The fact that earnings differentials between self-employed and dependent workers still play in favour of the latter could be a reason (FSO, 2011a, 2011b). Moreover, the Swiss historically low unemployment rates and good working conditions may have prevented individuals from taking unnecessary risks.

The combination of higher wages and low unemployment, along with the recent removal of restrictions on EU citizens wishing to live or work in Switzerland, have made the country particularly attractive for immigrants (both resident immigrants and cross-border commuters). As a result, Switzerland is experiencing a flourishing labour market trend. In 2011, the number of employed individuals rose by 2.6 per cent, while in the European Union and the Euro zone employment stagnated (FSO, 2011a). The small but performing Swiss labour market is particularly well suited to study labour market outcomes. Our results could be easily extended to other small countries in Europe (Luxembourg, Denmark, Belgium, the Netherlands), as well as to (cross-border) urban contexts in larger countries.

Our empirical analysis makes use of waves 1–10 of the Swiss Household Panel, a unique longitudinal database for Switzerland, for the time period 1999–2008. We select men and women above age 18 in the first wave and under age 65 in the last wave, obtaining a sample of over 38,000 observations regarding economically active and inactive individuals who are tracked during the ten years of the survey.

Transitions between four possible employment status categories across all panel waves are summarized in Table 1. As it can be seen from it, the majority of the individuals in wage employment stay in that category from one year to another (more than 92 per cent). Only a small proportion of employees at any time turn to self-employment in the following year (1.9 per cent). Nearly 4 per cent quit wage employment and exit the labour force (presumably retiring, for the most part), and very few become unemployed (1.2 per cent). Among those who were self-employed at $t - 1$, more than 78 per cent remain self-employed in the following year, whereas a considerable minority transits into wage employment (15.7 per cent) or exit the labour force (5.1 per cent), suggesting that, on average, the self-employed are older than wage employees. In general, self-employment is less stable than wage employment, although transition rates into unemployment and

³ FSO stands for the Swiss Federal Statistical Office.

⁴ In 2010, Switzerland was the 29th country in the OECD ranking, far below the leading countries – Turkey, Greece, Mexico, Korea, Chile and Italy, each displaying more than 25 per cent of self-employed people on total employment – and also lower than the OECD average (15.9 per cent).

inactivity do not differ much for these two categories. Finally, among those who were unemployed in year $t - 1$, the most frequent occurrence is to become either employed or inactive (54.9 and 19.7 per cent respectively) or to remain in unemployment (22.8 per cent). Few individuals enter self-employment (2.6 per cent), although this probability is higher than for those in wage employment. Among those recorded as inactive, the majority remains inactive in the following year (76.4 per cent) or enters wage employment (18.1 per cent). Transitions into self-employment or unemployment are again rare.

Table 1: Transitions between employment categories

Year $t - 1$	Year t				Total cases
	Employed	Self-employed	Unemployed	Inactive	
Employed	25,419 (92.6)	511 (1.9)	316 (1.2)	1,207 (4.4)	27,453 (100.0)
Self-employed	524 (15.7)	2,626 (78.6)	19 (0.6)	171 (5.1)	3,340 (100.0)
Unemployed	387 (54.9)	18 (2.6)	161 (22.8)	139 (19.7)	705 (100.0)
Inactive	1,208 (18.1)	192 (2.9)	173 (2.6)	5,105 (76.4)	6,678 (100.0)
Total cases	27,538 (72.1)	3,347 (8.8)	669 (1.8)	6,622 (17.3)	38,176 (100.0)

Note: Transition probabilities between brackets. Transitions refer to the occupational status of individuals observed at any time t in relation to their status at time $t - 1$. Individuals aged 18–65 and living in Switzerland are considered for the years 1999–2008.

In order to analyse transitions from wage- to self-employment, we restrict the data to only the cases in which individuals were employed at times $t - 1$ and $t - 2$ and either (1) stayed in wage employment without changing their job/employer (henceforth, the ‘stayers’), (2) voluntarily quit their job and switched to a new employer (‘job changers’) or (3) became self-employed (‘emergent entrepreneurs’)⁵ at time t . The information is drawn from the pooled sample of observations from 2001 (Wave 3) to 2008 (Wave 10), which has been further restricted in order to select cases where information on all the listed covariates was available. This confines our analysis to a sample of 4,713 individuals among which 3,004 stay in the previous job (63.7 per cent), 1,266 quit their job/employer (26.9 per cent) and 443 (9.4 per cent) were found to enter self-employment at some time.

In order to investigate the drivers of transitions we consider the variables listed in Table 2. They account for the level of satisfaction regarding pecuniary and nonpecuniary job aspects, human and financial endowments, as well as for other demographic and job characteristics. A correlation matrix for all variables is provided in Appendix A, in Table A.1.

⁵ Unfortunately, our SHP data set does not allow us to distinguish between self-employed individuals with or without employees.

Table 2: Variable definitions

Variable Name	Definition
Satisfaction	
Satisfaction: income	Self-evaluated degree of satisfaction for income of current main job (from 0 ‘not at all satisfied’ to 10 ‘completely satisfied’)
% change in satisfaction: income	As in Equation (2)
Satisfaction: job conditions	Self-evaluated degree of satisfaction for work conditions of current main job (from 0 ‘not at all satisfied’ to 10 ‘completely satisfied’)
% change in satisfaction: job conditions	As in Equation (2)
Demographics	
Age	Age in the year of interview
Male	Gender of the respondent: male 1; female 0
Ethnic minority	First nationality of the respondent: foreign 1; Swiss 0
Not married	Civil status in year of interview: not married 1; married 0
Human and financial capital	
Education2	Highest level of education achieved: secondary education 1; elementary education 0
Education3	Highest level of education achieved: tertiary education 1; elementary education 0
Union membership	Syndicate/employees association membership: member (active/passive) 1; not a member 0
Homeownership	Home property: owner/co-owner 1; tenant 0
Objective work characteristics	
Income (CHF/1,000)	Yearly total personal income, net
Working hours	Number of hours worked per week
Job (in-)security	Self-evaluated feeling of job security: very secure 1; quite secure 2; a bit insecure 3; very insecure 5
Risk of unemployment	Self-evaluated risk of becoming unemployed in the next 12 months: from 0 ‘no risk at all’ to 10 ‘a real risk’

Note: all variables are extracted from the Swiss Household Panel (SHP) and relate to workers living in Switzerland in the time period 1999–2008.

Table 3 provides separate descriptive statistics for the samples of the stayers, job changers, and the emergent entrepreneurs. We test differences in the means with *t*-tests against the null hypothesis of equality in the means in the tested groups, and report our findings in Table 4.

The level of satisfaction with income in the sample of job changers and in the one of emergent entrepreneurs is on average lower than the one of the stayers (6.9, 7.0 and 7.3, respectively), suggesting that dissatisfaction linked to pecuniary aspects may act as a push factor. On the other hand, although percentage changes in income satisfaction are slightly higher among the former two groups than in the control group of the stayers (5.3 and 4.8, versus 2.5 per cent), all values are very close to zero and heterogeneity is high.

Table 3: Descriptive statistics, by group

	Stayers			Job changers			Emergent entrepreneurs		
	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.
Satisfaction									
Satisfaction: income ($t - 2$)	7.313	8.00	1.990	6.863	7.00	2.181	6.966	7.00	2.231
% change in satisfaction:	0.025	0.00	0.384	0.053	0.00	0.615	0.048	0.00	0.490
Income									
Satisfaction: job conditions ($t - 2$)	7.933	8.00	1.679	7.516	8.00	1.839	8.240	8.00	1.638
% change in satisfaction: job conditions	0.015	0.00	0.257	-0.002	0.00	0.337	0.042	0.00	0.371
Demographics									
Age	43.762	45.00	11.176	36.245	36.00	11.013	45.489	46.00	10.198
Male	0.494	0.00	0.500	0.475	0.00	0.500	0.549	1.00	0.498
Ethnic minority	0.111	0.00	0.314	0.112	0.00	0.315	0.081	0.00	0.273
Not married	0.357	0.00	0.479	0.538	1.00	0.499	0.248	0.00	0.432
Human and financial capital									
Education2	0.138	0.00	0.345	0.164	0.00	0.371	0.200	0.00	0.400
Education3	0.135	0.00	0.342	0.166	0.00	0.372	0.208	0.00	0.406
Union membership	0.237	0.00	0.426	0.185	0.00	0.389	0.156	0.00	0.364
Homeownership	0.514	1.00	0.500	0.441	0.00	0.497	0.644	1.00	0.479
Objective work characteristics									
Income (CHF/1,000)	62.385	58.310	43.179	56.057	50.200	58.353	72.243	49.250	99.962
Working hours	31.269	35.00	12.011	32.815	35.00	11.366	32.571	35.00	15.321
Job (in-)security	1.720	2.00	0.721	1.982	2.00	0.965	1.809	2.00	0.848
Risk of unemployment	1.624	1.00	2.224	2.835	2.00	3.017	1.679	0.00	2.599
Cases	3,004			1,266			443		

Note: The data are drawn from the SHP and refer to workers living in Switzerland in the years 1999–2008.

The level of satisfaction with working conditions is on average higher among the emergent entrepreneurs than in the reference group of stayers (8.2 and 8.0, respectively), while the job changers are the least satisfied (7.5). This evidence suggests that the emergent entrepreneurs benefit from more advantageous job conditions or they assess them in a more optimistic way than the ones deciding to stay in wage employment (either changing their job/employer or not). Variations in job satisfaction regarding nonpecuniary aspects are also higher among the group of those that turn to self-employment than among individuals deciding to stay in wage employment, either changing their job or not (4.2, 0.0 and 1.5 per cent respectively), but again average variations are small and heterogeneity is high.

In general, in all samples there is less heterogeneity for assessments regarding the level of satisfaction with working conditions than with income. Moreover, in all samples the percentage

change in income satisfaction is on average higher than the one in nonpecuniary satisfaction, which may indicate that improvements in the perceptions regarding pecuniary job aspects are more likely to occur (consistently with the underlying distribution of income, that is expected to be more linear in time), even if the high heterogeneity observed suggests that there are many winners and losers.

Table 4: *t*-tests on mean equality of explanatory variables

	<i>t</i> (j. changers vs stayers)	<i>t</i> (e. entrepreneurs vs stayers)	<i>t</i> (e. entrepreneurs vs j. changers)
Satisfaction			
Satisfaction: income ($t - 2$)	7.253***	3.603***	-0.918
% change in satisfaction: income	-1.799*	-1.150	0.172
Satisfaction: job conditions ($t - 2$)	7.971***	-3.854***	-7.894***
% change in satisfaction: job conditions	1.766*	-2.067**	-2.399**
Demographics			
Age	22.373***	-3.285***	-16.712***
Male	1.267	-2.301**	-2.892***
Ethnic minority	-0.081	2.033**	1.965**
Not married	-12.366***	4.851***	11.753***
Human and financial capital			
Education2	-2.477**	-3.706***	-1.845*
Education3	-2.844***	-4.348***	-2.176**
Union membership	4.024***	4.054***	1.468
Homeownership	4.790***	-5.491***	-8.035***
Objective work characteristics			
Income (CHF/1,000)	4.004***	-3.592***	-4.180***
Working hours	-3.925***	-2.125**	0.362
Job (in-)security	-9.938***	-2.503**	3.489***
Risk of unemployment	14.743***	-0.501	7.533***

Note: * denotes means significantly differing from the reference group at 10% significance level, ** 5%, *** 1%. Data are drawn from the SHP and refer to workers living in Switzerland in the years 1999–2008.

The average age in the emergent entrepreneurs sample is 45.5, which is significantly higher than the average age of 43.8 in the stayers sample. Job changers are on average much younger (36.2). Consistently with the evidence collected elsewhere, our data show a gender gap: there is a higher share of males in the emergent entrepreneurs sample than in the stayers and changers ones (54.9 per cent, compared to 49.4 and 47.5 per cent, respectively). The emergent entrepreneurs sample has a significantly lower proportion of foreigners than the other samples, which reflects a peculiarity of the Swiss labour market, where immigrants are less likely than natives to become entrepreneurs

(Guerra et al., 2012). The percentage of non-married individuals (single, divorced or widow) is considerably higher among the job changers (53.8 per cent) than among the stayers and the emergent entrepreneurs (35.7 and 24.8 per cent).

With regard to the proxies for human and financial endowments, self-employment candidates seem to be more likely to have attained a vocational (20.0 per cent) or university degree (20.8 per cent) than those staying in wage employment (16.4 and 16.6 per cent among the job changers; 13.8 and 13.5 per cent among the stayers). There are significant differences between the shares of those who are members of a union in the three groups (23.7 per cent among the stayers, 18.5 among the changers and only 15.6 among the emergent entrepreneurs). Homeownership rates are higher among the emergent entrepreneurs than among the stayers and the changers (64.4 per cent, against 51.4 and 44.1 per cent, respectively). This preliminary evidence suggests that the probability of transition towards self-employment is associated positively with the level and quality of both human and financial capital, and negatively with union membership, this latter result possibly being related to the different work functions of individuals belonging to the two groups.

Emergent entrepreneurs earn much more (CHF9,860 more per year, +15.8 per cent) than the average stayer, while job changers report on average significantly lower earnings (CHF6,330 less per year, -10.1 per cent). Differences among the three averages are significant at the 1 per cent level. However, heterogeneity in the emergent entrepreneurs sample is particularly high, which suggests that turning to self-employment is not always profitable *per se*.⁶ There are little, although significant, differences between the working hours reported in the three samples, with a higher number of hours dedicated by the job changers and the emergent entrepreneurs to their working activity. Similarly, differences between those deciding to stay in the current job, the job changers and those turning to self-employment can be found with regard to the level of job insecurity, with an average level of 1.7, 2.0 and 1.8 respectively. Finally, there is little exposure to unemployment risk in both the stayers and the emergent entrepreneurs samples (1.6 and 1.7, respectively), while job changers are significantly more exposed (2.8).

We abstain from considering the industrial and professional composition of our sample, since the inclusion of these characteristics was found to capture objective work conditions, without increasing goodness of fit. Furthermore, the high number of missing values for these variables would considerably reduce our sample size. Similarly, the inclusion of regional dummies was found not to affect our results.

4. Empirical Results

Our MNL model, consistently with Equation (1), is estimated by maximum likelihood (ML) using the covariates discussed in Section 3, and using the subsample of the stayers as the reference category. Table 5 reports a first set of estimates: column (2) shows the vector of regression coefficients and standard errors for the job changers, while column (3) reports estimation results for the emergent entrepreneurs.

⁶ In fact, the median income among the stayers (CHF58,310) is higher than for the job changers (CHF50,200) and the emergent entrepreneurs (CHF49,250), which is consistent with FSO data (FSO, 2011a).

The inclusion of satisfaction variables improves the goodness of fit (with respect to a base model including only objective job and personal characteristics, not shown), without affecting sign and significance of other coefficient estimates (McFadden's pseudo- R^2 of 0.167 against 0.156 in the base model; AIC 6,238.03 against 6,405.62; BIC 6,543.63 against 6,660.90 in the base model). A χ^2 -based likelihood ratio (LR) test confirms that the inclusion of subjective variables leads to a highly significant model improvement.

Table 5: MNL estimates for the transition probability of choosing a new job or becoming entrepreneurs

	(2) Job changers		(3) Emergent entrepreneurs	
	Coefficients	Standard errors	Coefficients	Standard errors
Satisfaction				
Satisfaction: income	-0.024	0.026	-0.219	0.039***
% change in satisfaction: income	0.201	0.099**	-0.309	0.168*
Satisfaction: job conditions	-0.142	0.030***	0.216	0.050***
% change in satisfaction: job conditions	-0.516	0.161***	0.549	0.246**
Objective work characteristics				
Income (CHF, log)	-0.008	0.067	-0.389	0.089***
Working hours	0.012	0.004***	0.014	0.006**
Job (in-)security	0.199	0.055***	0.126	0.089
Risk of unemployment	0.133	0.017***	-0.031	0.029
Demographics				
Age	-2.197	0.156***	0.355	0.252
Male	-0.156	0.091*	0.410	0.154***
Ethnic minority	-0.113	0.127	-0.092	0.208
Not married	0.156	0.090*	-0.437	0.148***
Human and financial capital				
Education2	0.519	0.110***	0.645	0.160***
Education3	0.543	0.112***	0.983	0.164***
Union membership	-0.190	0.095**	-0.569	0.155***
Homeownership	0.002	0.083	0.231	0.13*
(Intercept)	7.073	0.753***	-0.978	1.203
Observations	4,301			
LR χ^2 (dof)	1,230.51 (46)			
McFadden's pseudo- R^2	0.1669			
AIC	6,238.03			
BIC	6,543.63			
Log-likelihood	-3,071.02			

Note: ML estimates of the probability to transit from a current paid job to either (2) a new one or (3) to self-employment. Year dummy variables are included but not shown. Data are drawn from the SHP and refer to workers living in Switzerland in the years 1999–2008. * denotes coefficients statistically significant at the 10% level, ** 5%, *** 1%.

According to our results, job satisfaction significantly affects transition probabilities, although its effects are different for job changers and emergent entrepreneurs. On the one hand, the level of satisfaction regarding pecuniary job rewards (i.e., income) negatively affects the probability of entering self-employment, whereas the effect on the chances of changing job is not statistically significant. Thus, income dissatisfaction represents a push factor for entrepreneurial choices, while it does not affect job quits. With regard to the effect of variations in income satisfaction, recent improvements discourage decisions towards self-employment but increase the probability associated with job quits. After converting the log-odds-ratio coefficients estimated against the reference category (see Table 6), we can see that an increase of one unit in satisfaction over income decreases by 20 per cent the probability of becoming self-employed against the one of staying in the current job ($e^{-0.22} = 0.80$). The effect of recent shocks is instead more limited, as the 0.73 marginal effect (-17 per cent) on the odds-ratio refers to a considerable variation (100 per cent increase) of satisfaction. On the other hand, the level of satisfaction about nonpecuniary job aspects (i.e., work conditions) negatively influences the relative probability of job quits ($e^{-0.14} = 0.87$) (versus staying), but positively the one of moving towards self-employment ($e^{0.22} = 1.24$). These results are reinforced by the effects of the same sign found for the variation variable.

Table 6: Converted (odds-ratio) MNL coefficients for satisfaction variables (vs the reference category)

	(2) Job changers	(3) Emergent entrepreneurs
Satisfaction: income	0.98	0.80***
% change in satisfaction: income	1.22**	0.73*
Satisfaction: job conditions	0.87***	1.24***
% change in satisfaction: job conditions	0.60***	1.73**

Note: See Table 5 for the original estimated coefficients. * denotes coefficients statistically significant at the 10% level, ** 5%, *** 1%.

We argue that individual perceptions regarding pecuniary and nonpecuniary job rewards do matter when deciding to take the risk of quitting an existing job for a new career (possibly in self-employment). According to our results, job changers do not change for money but to improve their working conditions (e.g., to get away from annoying colleagues/boss or to get a more satisfying job), whereas emergent entrepreneurs are generally more satisfied with their working conditions (most likely because of different job functions) but change mostly in hopes of increasing their income. Consistently with these findings, recent shocks to satisfaction influence the choices of individuals. Income satisfaction change negatively affects the choice of entering self-employment, while having a positive effect on the probability of job change, possibly increasing the worker's self-esteem and therefore her chances of making a job change, especially if unsatisfied with working conditions. Shocks to the worker's satisfaction with nonpecuniary conditions impact on choice probabilities consistently with the levels.

The opposite signs found for the effects of our two measures of job satisfaction on transition probabilities towards self-employment may reflect differences in the workers' reactions between

subjective evaluations of pecuniary and nonpecuniary aspects. Such differences may arise because of the different nature and distribution of the underlying work characteristics (income and job conditions, respectively). Moreover, one might argue that it is easier, for the worker, to assess satisfaction with current earnings (by comparing them with what was earned in the past, with earnings in comparable positions and with expectations regarding future earnings, thanks to an underlying variable – i.e., income – that is generally increasing over time) than with work conditions (which are more subject to favourable and unfavourable changes and less easily comparable with what is offered by the alternatives). Finally, problems of self-selection may arise, where more optimistic workers may choose to become self-employed.

As for the effects of the objective job characteristics, we find a negative effect for the level of (log) income on self-employment probabilities, which suggests that higher wages provide a disincentive for transitions into self-employment, while there are no apparent effects on job quits. The number of hours worked is positively and significantly associated to transition probabilities, both for emergent entrepreneurs and for job changers, suggesting that there is a certain degree of self-selection of the most active/assiduous workers for more challenging outcomes.⁷ As for the effects of the other measures of objective working conditions, both the level of self-reported job insecurity and risk of unemployment do not seem to significantly influence transitions to self-employment, but they positively affect job quits. This result is consistent with the expectation stated in Section 2 that the feeling of job insecurity exacerbates satisfaction (Cornelißen, 2009). Entrepreneurs can be expected to be less sensitive to this factor, as they (presumably) accepted the risk associated with an independent job, while the career of wage employees depend on the employer's choices.

With regard to our control variables, the probability of quitting appears to be negatively influenced by the age of the respondent, as well as by gender (i.e., males are less likely to quit), whereas the opposite holds for the probability to enter self-employment,⁸ although the effect of age is not significant in this case. Nationality does not seem to affect transition probabilities (most likely because of the very few foreigners in our sample), whereas being single or divorced decreases the probability of entering self-employment, because of the inability of singles to draw on the partners' pecuniary and nonpecuniary contributions (which may be crucial, especially in the early times of self-employment), but is positively related to job quits.

Transition probabilities are positively affected by the level of education, suggesting that higher levels of human capital – as expected – increase knowledge regarding the alternatives, whereas unionized workers are more reluctant to change their job/status. Education may then actually reinforce the effect of job dissatisfaction, as suggested by Cornelißen (2009). Homeownership is seen as a factor positively influencing self-employment transitions, consistently with Henley (2005), since it reflects wealth accumulation and because of the fact that housing wealth usually represents a source of collateral for business ownership. Finally, time dummies are mostly significant, reflecting business cycle dynamics.

5. Conclusions

The recent increase of self-employment in Switzerland (in a trend consistent with the rest of the world) has raised the attention of the academic community and of the public on the effects of small business growth on economic development. The strong belief that small businesses foster innovation and competitiveness has led to a number of policy interventions aiming to encourage start-up activities, although their effects are often disputed. In this framework, it is important to investigate the reasons why individuals choose self-employment, and why they do it despite lower protection, higher risks, and often more effort than what is offered in a comparable wage employment position.

Using microdata from a panel of Swiss individuals for the years 1999–2008, we investigate the factors that are expected to affect the probability of choosing self-employment (or, alternatively, of just quitting a job for another), given a previous employment position. The availability of panel data allows us to observe the occupational dynamics of each individual, as well as his/her self-assessed satisfaction over pecuniary and nonpecuniary job characteristics, and the actual working conditions, along both dimensions. Such a data setting enables us to condition observed changes in terms of occupational status on the *status quo* (in terms of job satisfaction and objective working conditions) recorded *before* the change, differently from most of the related literature. Also, we are able to discriminate between the drivers of job change and of transitions towards self-employment.

We show that job satisfaction significantly affects transition probabilities towards self-employment or just new jobs. However, its effects are different for the two cases examined. Those who choose self-employment tend to do so in reaction to low levels of pecuniary satisfaction (instead, their level of nonpecuniary satisfaction is higher than the one reported by the reference group of stayers). On the other hand, job changers are more reactive to nonpecuniary dissatisfaction. Therefore, the distinction between pecuniary and nonpecuniary satisfaction allows us to uncover different effects of subjective job assessments on transition probabilities that a single satisfaction measure would not capture. Variations in job satisfaction are also found to significantly influence transition probabilities (e.g., shocks to income satisfaction may actually push individuals towards a job change).

The limitations of our study could be addressed in several directions. From a theoretical viewpoint, a microeconomic model describing the relationship between satisfaction (in levels and variations) and occupational choice should ideally be developed to improve the economic identification and interpretation of the effects commented upon in this paper. From a methodological viewpoint, our analysis could be enhanced by considering a specific order or nesting between the occupational choices considered here. Consequently, ordered or nested logit approaches could be tested in further studies, although our diverging results on the effects of pecuniary and nonpecuniary satisfaction on job changers and emergent entrepreneurs seem to suggest that the two occupational choices should be seen as alternative and motivated by opposite factors (dissatisfaction with working conditions and income, respectively). Moreover, nested logit estimation would require information on the characteristics of the alternative job opportunities. Additionally, logit analyses for the decision of entering self-employment (from wage employment) could be compared to similar ones on the

decision of leaving self-employment for wage employment, in order to evaluate a possible dual effect of satisfaction over pecuniary and nonpecuniary factors. Finally, it would be interesting to test whether the same job changers and emergent entrepreneurs studied in this paper have actually found better conditions in their new occupation once the choice been made.

Some policy considerations may be attempted, on the basis of our findings. The divergent reactions of the job changers and emergent entrepreneurs with respect to (time and cross-sectional) differences in pecuniary and nonpecuniary satisfaction suggest that, on the one hand, if they want to reduce turnover managers should pay more attention to employees who are dissatisfied with actual working conditions (since job changers have been found to be particularly exposed to such issues). Paying more attention to the employees' personal needs, offering flexibility and social interaction opportunities, are some of the measures that could be considered. On the other hand, if their aim is to reduce the risks of future competition managers should care about pecuniarily dissatisfied workers, given their higher probability of switching to self-employment. In this case, specific incentives and bonus structures, along with a challenging position, could be well suited. Moreover, it is likely that, given the dominance of levels over variations in job satisfaction, workers will tend to absorb temporary shocks in job satisfaction without changing their perception about the available alternatives. Therefore, more attention is needed for those individuals that show persistently low satisfaction levels.

Finally, considering our results, it might be worth asking ourselves why an individual (an emergent entrepreneur) would express a different level of satisfaction over income than another individual receiving the same income. It seems reasonable to assume that self-employment candidates are somehow 'predestined' to start a business. Indeed, in their preceding job they are among the most active workers and they are generally less sensitive with respect to working conditions. This process of (self-)selection of less satisfied workers into more suitable jobs is expected to favour the job matching process, allowing for a more effective match between the needs of the workers and of businesses. Moreover, the competition generated by employees-turned-entrepreneurs, if in the same business field, may foster growth and economic development. Therefore, from a general perspective, these choices – though they often reflect objective and/or subjective problems – should be favoured rather than deterred. Facilitating them (e.g., by means of specific start-up programs, youth employment measures, micro- and facilitated credit) could give rise to efficiency and productivity gains in the labour market, thanks to an improved distribution of skills and aspirations between employees and independent workers.

Acknowledgments

The first author wishes to thank Rico Maggi for his generous assistance and his motivational impulses that led this paper to participate to the NARSC Student Paper Competition. We are grateful to John T. Addison (University of South Carolina) and Anzelika Zaiceva (Università degli Studi di Modena e Reggio Emilia), as well as to participants to the 58th Annual North American Meetings of the Regional Science Association International (Miami, FL), the Tinbergen Institute Workshop (Amsterdam), the BOMOPAV Economics Meeting (Venice) and seminars at the University of Oviedo (Oviedo) and the Institute for Employment Research (Nuremberg), for useful

comments on the paper. Finally, we wish to thank the Editor Douglas Cumming, and three anonymous reviewers for their valuable comments.

References

- Acs Z and Armington C (2004) Employment Growth and Entrepreneurial Activity in Cities. *Regional Studies* 38: 911-927.
- Acs ZJ, Audretsch DB and Evans DS (1994) Why Does the Self-Employment Rate Vary Across Countries and Over Time? CEPR Discussion Papers 871. London: CEPR.
- Akerlof GA, Rose AK, Yellen JL, et al. (1988) Job Switching and Job Satisfaction in the U.S. Labor Market. *Brookings Papers on Economic Activity* 1988: 495-594.
- Aldrich H (1999) *Organizations Evolving*, London Thousand Oaks: Sage Publications.
- Audretsch DB and Feldman MP (1996) R&D Spillovers and the Geography of Innovation and Production. *The American Economic Review* 86: 630-640.
- Balli HO and Sørensen BE (2012) Interaction Effects in Econometrics. *Empirical Economics* (forthcoming).
- Bartel AP and Borjas GJ (1981) Wage Growth and Job Turnover: An Empirical Analysis. In: Rosen S (ed) *Studies in labor markets*. Chicago London: The University of Chicago Press, 65-90.
- Baum R (1994) The Relation of Traits, Competencies, Vision, Motivation, and Strategy for Venture Growth. Unpublished Ph.D. Thesis., University of Maryland, College Park.
- Baumol WJ (1990) Entrepreneurship: Productive, Unproductive, and Destructive. *Journal of Political Economy* 98: 893-921.
- Benz M and Frey BS (2008) Being Independent is a Great Thing: Subjective Evaluations of Self-Employment and Hierarchy. *Economica* 75: 362-383.
- Birch DL (1979) *The Job Generation Process*, Cambridge: M.I.T. Program on Neighborhood and Regional Change.
- Black J, Meza Dd and Jeffreys D (1996) House Prices, The Supply of Collateral and the Enterprise Economy. *The Economic Journal* 106: 60-75.
- Blanchflower DG (2000) Self-Employment in OECD Countries. *Labour Economics* 7: 471-505.
- Blanchflower DG (2004) Self-Employment: More May not Be Better. *Swedish Economic Policy Review* 11: 15-74.
- Blanchflower DG and Freeman RB (1997) The Attitudinal Legacy of Communist Labor Relations. *Industrial and Labor Relations Review* 50: 438-459.
- Blanchflower DG and Oswald AJ (1998) What Makes an Entrepreneur? *Journal of Labor Economics* 16: 26-60.
- Blau DM (1985) Self-Employment and Self-Selection in Developing Country Labor Markets. *Southern Economic Journal* 52: 351-363.
- Blau DM (1987) A Time-Series Analysis of Self-Employment in the United States. *Journal of Political Economy* 95: 445-467.
- Borjas GJ and Bronars SG (1989) Consumer Discrimination and Self-Employment. *Journal of Political Economy* 97: 581-605.
- Bowen DD and Hisrich RD (1986) The Female Entrepreneur: A Career Development Perspective. *The Academy of Management Review* 11: 393-407.
- Brock WA, Evans DS and Phillips BD (1986) *The Economics of Small Businesses: Their Role and Regulation in the U.S. Economy*, New York: Holmes & Meier.
- Brockhaus RH (1982) The Psychology of the Entrepreneur. In: Kent CA, Sexton DL and Vesper KH (eds) *Encyclopedia of entrepreneurship*. Englewood Cliffs: Prentice-Hall, Inc., 39-56.
- Carree MA and Thurik AR (2005) The Impact of Entrepreneurship on Economic Growth. In: Acs ZJ and Audretsch DB (eds) *Handbook of Entrepreneurship Research*. Boston Dordrecht London: Kluwer Academic Publishers, 437-471.
- Casson M (1982) *The Entrepreneur: An Economic Theory*, Totowa: Barnes & Noble Books.
- Clark A, Georgellis Y and Sanfey P (1999) Job Satisfaction, Wage Changes and Quits: Evidence from Germany. *Research in Labor Economics* 17: 95-121.

- Clark AE (2001) What Really Matters in a Job? Hedonic Measurement Using Quit Data. *Labour Economics* 8: 223-242.
- Clark AE and Oswald AJ (1996) Satisfaction and Comparison Income. *Journal of Public Economics* 61: 359-381.
- Collins CJ, Hanges PJ and Locke EA (2004) The Relationship of Achievement Motivation to Entrepreneurial Behavior: A Meta-Analysis. *Human Performance* 17: 95-117.
- Corman J, Perles B and Vancini P (1988) Motivational Factors Influencing High-Technology Entrepreneurship. *Journal of Small Business Management* 26: 36-42.
- Cornelißen T (2009) The Interaction of Job Satisfaction, Job Search, and Job Changes. An Empirical Investigation with German Panel Data. *Journal of Happiness Studies* 10: 367-384.
- Crosan DC and Minniti M (2012) Slipping the Surly Bonds: The Value of Autonomy in Self-Employment. *Journal of Economic Psychology* 33: 355-365.
- Davis SJ, Haltiwanger J and Schuh S (1996a) Small Business and Job Creation: Dissecting the Myth and Reassessing the Facts. *Small Business Economics* 8: 297-315.
- Davis SJ, Haltiwanger JC and Schuh S (1996b) *Job Creation and Destruction*. Available at: URL|.
- Dawson CJ, Henley A and Latreille PL (2009) Why Do Individuals Choose Self-Employment? IZA Discussion Paper 3974.
- Dennis WJ (1996) Self-Employment: When Nothing Else Is Available? *Journal of Labor Research* 17: 645-661.
- Douglas EJ and Shepherd DA (2000) Entrepreneurship as a Utility Maximizing Response. *Journal of Business Venturing* 15: 231-251.
- Douglas EJ and Shepherd DA (2002) Self-employment as a Career Choice: Attitudes, Entrepreneurial Intentions, and Utility Maximization. *Entrepreneurship Theory and Practice* 26: 81-90.
- Dunne T, Roberts M and Samuelson L (1987) The Impact of Plant Failure on Employment Growth in the US Manufacturing Sector. Unpublished manuscript. University Park: Pennsylvania State University.
- Evans DS (1987a) The Relationship Between Firm Growth, Size, and Age: Estimates for 100 Manufacturing Industries. *The Journal of Industrial Economics* 35: 567-581.
- Evans DS (1987b) Tests of Alternative Theories of Firm Growth. *Journal of Political Economy* 95: 657-674.
- Evans DS and Jovanovic B (1989) An Estimated Model of Entrepreneurial Choice under Liquidity Constraints. *Journal of Political Economy* 97: 808-827.
- Evans DS and Leighton LS (1989) Some Empirical Aspects of Entrepreneurship. *The American Economic Review* 79: 519-535.
- Evans DS and Leighton LS (1990) Small Business Formation by Unemployed and Employed Workers. *Small Business Economics* 2: 319-330.
- Flanagan RJ, Strauss G and Ulman L (1974) Worker Discontent and Work Place Behavior. *Industrial Relations: A Journal of Economy and Society* 13: 101-123.
- Freeman RB (1978) Job Satisfaction as an Economic Variable. *The American Economic Review* 68: 135-141.
- FSO (2000) *Federal Population Census*. Database available at: <http://www.bfs.admin.ch/bfs/portal/en/index.html>.
- FSO (2011a) *Statistical Yearbook 2011*, Zurich: Verlag Neue Zürcher Zeitung.
- FSO (2011b) *Statistisches Jahrbuch der Schweiz 2011 - Digital*. CD-Rom.
- Fujii ET and Hawley CB (1991) Empirical Aspects of Self-Employment. *Economics Letters* 36: 323-329.
- Georgellis Y, Sessions JG and Tsitsianis N (2005) Self-Employment Longitudinal Dynamics: A Review of the Literature. *Economic Issues* 10: 51-84.
- Giacomin O, Janssen F, Guyot J-I, et al. (2011) Opportunity and/or Necessity Entrepreneurship? The Impact of the Socio-Economic Characteristics of Entrepreneurs. MPRA Paper 29506.
- Goetz SJ, Fleming DA and Rupasingha A (2012) The Economic Impacts of Self-Employment. *Journal of Agricultural and Applied Economics* 44: 315-321.
- Gottschalk P and Maloney T (1985) Involuntary Terminations, Unemployment, and Job Matching: A Test of Job Search Theory. *Journal of Labor Economics* 3: 109-123.
- Greene WH (2007) *Econometric Analysis*, Upper Saddle River: Prentice-Hall.
- Guerra G, Patuelli R and Maggi R (2012) Ethnic Concentration, Cultural Identity and Immigrant Self-Employment in Switzerland. In: Nijkamp P, Poot J and Sahin M (eds) *Migration Impact Assessment: New Horizons*. Cheltenham Northampton: Edward Elgar, 147-171.
- Hamilton Barton H (2000) Does Entrepreneurship Pay? An Empirical Analysis of the Returns to Self - Employment. *Journal of Political Economy* 108: 604-631.

- Henley A (2005) Job Creation by the Self-employed: The Roles of Entrepreneurial and Financial Capital. *Small Business Economics* 25: 175-196.
- Hofstede G, Noorderhaven NG, Thurik AR, et al. (2004) Culture's Role in Entrepreneurship: Self-Employment out of Dissatisfaction. In: Brown TE and Ulijn J (eds) *Innovation, Entrepreneurship and Culture: The Interaction between Technology, Progress and Economic Growth*. Cheltenham Northampton: Edward Elgar Publishing, 162-203.
- Holtz-Eakin D, Joulfaian D and Rosen HS (1994) Entrepreneurial Decisions and Liquidity Constraints. *The RAND Journal of Economics* 25: 334-347.
- Hughes KD (2003) Pushed or Pulled? Women's Entry into Self-Employment and Small Business Ownership. *Gender, Work & Organization* 10: 433-454.
- Jovanovic B (1982) Selection and the Evolution of Industry. *Econometrica* 50: 649-670.
- Kihlstrom RE and Laffont J-J (1979) A General Equilibrium Entrepreneurial Theory of Firm Formation Based on Risk Aversion. *Journal of Political Economy* 87: 719-748.
- Knörr H, Alvarez C and Urbano D (2013) Entrepreneurs or Employees: A Cross-Cultural Cognitive Analysis. *International Entrepreneurship and Management Journal* 9: 273-294.
- Lévy-Garboua L, Montmarquette C and Simonnet V (2007) Job Satisfaction and Quits. *Labour Economics* 14: 251-268.
- Lindh T and Ohlsson H (1996) Self-Employment and Windfall Gains: Evidence from the Swedish Lottery. *The Economic Journal* 106: 1515-1526.
- Long JE (1982) Income Taxation and the Allocation of Market Labor. *Journal of Labor Research* 3: 259-276.
- Lucas RE, Jr. (1978) On the Size Distribution of Business Firms. *The Bell Journal of Economics* 9: 508-523.
- Malchow-Møller N, Schjerning B and Sørensen A (2011) Entrepreneurship, Job Creation and Wage Growth. *Small Business Economics* 36: 15-32.
- Mason CM (1989) Explaining Recent Trends in New Firm Formation in the UK: Some Evidence from South Hampshire. *Regional Studies* 23: 331-346.
- McEvoy GM and Cascio WF (1985) Strategies for Reducing Employee Turnover: A Meta-Analysis. *Journal of Applied Psychology* 70: 342-353.
- McFadden D (1974) Conditional Logit Analysis of Qualitative Choice Behavior. In: Zarembka P (ed) *Frontiers in Econometrics*. New York: Academic Press, 105-142.
- Neumark D, Wall B and Zhang J (2010) Do Small Businesses Create More Jobs? New Evidence for the United States from the National Establishment Time Series. *Review of Economics and Statistics* 93: 16-29.
- Noorderhaven N, Thurik R, Wennekers S, et al. (2004) The Role of Dissatisfaction and per Capita Income in Explaining Self-Employment across 15 European Countries. *Entrepreneurship Theory and Practice* 28: 447-466.
- OECD (2011) *OECD Factbook 2011: Economic, Environmental and Social Statistics*. Database available at: <http://www.credoreference.com/book/oecdfactbook>.
- Pakes A and Ericson R (1998) Empirical Implications of Alternative Models of Firm Dynamics. *Journal of Economic Theory* 79: 1-45.
- Patzelt H and Shepherd DA (2011) Negative Emotions of an Entrepreneurial Career: Self-Employment and Regulatory Coping Behaviors. *Journal of Business Venturing* 26: 226-238.
- Quinn JF (1980) Labor-Force Participation Patterns of Older Self-Employed Workers. *Soc Secur Bull* 43: 17-28.
- Rees H and Shah A (1986) An Empirical Analysis of Self-Employment in the U.K. *Journal of Applied Econometrics* 1: 95-108.
- Reynolds P (1994) Autonomous Firm Dynamics and Economic Growth in the United States, 1986-1990. *Regional Studies* 28: 429-442.
- Reynolds PD (1999) Creative Destruction: Source or Symptom of Economic Growth? In: Acs ZJ, Carlsson B and Karlsson C (eds) *Entrepreneurship, Small & Medium-Sized Enterprises and the Macroeconomy*. Cambridge New York Melbourne: Cambridge University Press, 97-136.
- Ritsilä J and Tervo H (2002) Effects of Unemployment on New Firm Formation: Micro-Level Panel Data Evidence from Finland. *Small Business Economics* 19: 31-40.
- Schuetze HJ (2000) Taxes, Economic Conditions and Recent Trends in Male Self-Employment: A Canada-US Comparison. *Labour Economics* 7: 507-544.
- Shane S, Locke EA and Collins CJ (2003) Entrepreneurial Motivation. *Human Resource Management Review* 13: 257-279.

- Shapero A (1975) The Displaced, Uncomfortable Entrepreneur. *Psychology Today* 9: 83-88.
- Shapero A and Sokol L (1982) The Social Dimensions of Entrepreneurship. In: Kent CA, Sexton DL and Vesper KH (eds) *Encyclopedia of entrepreneurship*. Englewood Cliffs: Prentice-Hall, Inc., 72-90.
- Taylor M (2004) Self-Employment in Britain: When, Who and Why? *Swedish Economic Policy Review* 11: 139-173.
- Taylor MP (1996) Earnings, Independence or Unemployment: Why Become Self-Employed? *Oxford Bulletin of Economics and Statistics* 58: 253-266.
- Wagner J (1995) Firm Size and Job Creation in Germany. *Small Business Economics* 7: 469-474.
- Wennekers S, Noorderhaven N, Hofstede G, et al. (2001) Cultural and Economic Determinants of Business Ownership across Countries. In: Bygrave WD, Autio E, Brush CG, et al. (eds) *Frontiers of Entrepreneurship Research 2001: Proceedings of the Twenty-First Annual Entrepreneurship Research Conference*. Babson Park: Center for Entrepreneurial Studies, Babson College, 179-190.

Appendix A

Table A.1 presents pairwise correlations between all the explanatory variables employed in this paper. The data are drawn from the SHP and refer to workers living in Switzerland in the years 1999–2008.

Table A.1: Correlation matrix

	Satisfaction: % change in income ($t - 2$)	% change in satisfaction: income	Satisfaction: job conditions ($t - 2$)	% change in satisfaction: job conditions	Age	Male	Ethnic minority	Married	Education2	Education3	Union membership	Home-ownership	Income (CHF/1,000)	Working hours	Job (in-)security	Risk of unemployment
Satisfaction: income ($t - 2$)	1															
% change in satisfaction: income	-0.45***	1														
Satisfaction: job conditions ($t - 2$)	0.41***	-0.15***	1													
% change in satisfaction: job conditions	-0.16***	0.24***	-0.51***	1												
Age	0.10***	-0.03***	0.06***	-0.02***	1											
Male	0.00	-0.01*	-0.06***	0.00	-0.02***	1										
Ethnic minority	-0.07***	0.00	-0.07***	0.00	-0.04***	0.02***	1									
Not married	-0.08***	0.02***	-0.06***	0.00	-0.45***	0.00	-0.07***	1								
Education2	0.04***	0.00	0.00	0.00	0.08***	0.14***	-0.05***	-0.06***	1							
Education3	0.04***	0.01	-0.01	0.00	0.03***	0.07***	0.04***	-0.01***	-0.14***	1						
Union membership	0.04***	-0.01**	-0.08***	0.00	0.07***	0.11***	-0.03***	-0.04***	0.06***	0.05***	1					
Homeownership	0.09***	-0.01	0.08***	0.00	0.16***	0.03***	-0.20***	-0.22***	0.05***	-0.02***	0.01*	1				
Income (CHF/1,000)	0.15***	-0.01*	0.00	0.00	0.19***	0.32***	-0.01*	-0.07***	0.14***	0.23***	0.11***	0.04***	1			
Working hours	-0.02***	0.00	-0.05***	0.00	-0.04***	0.46***	0.04***	0.11***	0.11***	0.05***	0.07***	-0.07***	0.30***	1		
Job (in-)security	-0.14***	0.00	-0.13***	-0.06***	-0.01***	0.00	0.05***	0.04***	-0.01	-0.01**	-0.01***	-0.03***	-0.07***	-0.05***	1	
Risk of unemployment	-0.16***	0.00	-0.16***	-0.02***	-0.05***	0.00	0.06***	0.06***	-0.01	-0.03***	-0.03***	-0.06***	-0.06***	-0.01***	0.4461***	1

Notes: * identifies statistically significant correlations at the 10% level (two-tailed); ** 5%; *** 1%.

Appendix B

The following tables report the estimates obtained by computing separate regressions for men and women. Table B.1 reports our results for men, while Table B.2 reports the ones for women.

Table B.1: MNL estimates for the transition probability of men choosing a new job or becoming entrepreneurs

	(2) Job changers		(3) Emergent entrepreneurs	
	Coefficients	Standard errors	Coefficients	Standard errors
Satisfaction				
Satisfaction: income	-0.034	0.036	-0.247	0.054***
% change in satisfaction: income	-0.028	0.127	-0.426	0.218*
Satisfaction: job conditions	-0.147	0.043***	0.320	0.077***
% change in satisfaction: job conditions	-0.724	0.235***	0.795	0.380**
Objective work characteristics				
Income (CHF, log)	-0.171	0.090*	-0.549	0.119***
Working hours	0.020	0.006***	0.012	0.009
Job (in-)security	0.134	0.080*	0.010	0.136
Risk of unemployment	0.138	0.024***	0.007	0.043
Demographics				
Age	-2.186	0.211***	0.350	0.392
Ethnic minority	-0.412	0.194**	0.110	0.316
Not married	0.262	0.139*	-0.495	0.242**
Human and financial capital				
Education ²	0.611	0.18***	1.235	0.262***
Education ³	0.541	0.171***	1.542	0.259***
Union membership	-0.131	0.146	-0.313	0.251
Homeownership	-0.009	0.125	0.152	0.203
(Intercept)	8.710	1.072***	0.455	1.860
Observations	2,107			
LR χ^2 (dof)	658.06 (44)			
McFadden's pseudo- R^2	0.1871			
AIC	2,951.29			
BIC	3,211.33			
Log-likelihood	-1,429.65			

Note: ML estimates of the probability to transit from a current paid job to either (2) a new one or (3) to self-employment. Year dummy variables are included but not shown. Data are drawn from the SHP and refer to male workers living in Switzerland in the years 1999–2008. * denotes coefficients statistically significant at the 10% level, ** 5%, *** 1%.

Table B.2: MNL estimates for the transition probability of women choosing a new job or becoming entrepreneurs

	(2) Job changers		(3) Emergent entrepreneurs	
	Coefficients	Standard errors	Coefficients	Standard errors
Satisfaction				
Satisfaction: income	-0.008	0.039	-0.212	0.058***
% change in satisfaction: income	0.484	0.164***	-0.145	0.288
Satisfaction: job conditions	-0.130	0.043***	0.137	0.068**
% change in satisfaction: job conditions	-0.305	0.229	0.393	0.328
Objective work characteristics				
Income (CHF, log)	0.154	0.117	0.022	0.172
Working hours	0.002	0.006	0.015	0.008**
Job (in-)security	0.278	0.077***	0.201	0.122*
Risk of unemployment	0.125	0.025***	-0.062	0.041
Demographics				
Age	-2.272	0.245***	0.214	0.360
Ethnic minority	0.128	0.171	-0.158	0.281
Not married	0.107	0.131	-0.273	0.201
Human and financial capital				
Education2	0.470	0.142***	0.252	0.206
Education3	0.544	0.152***	0.501	0.220**
Union membership	-0.218	0.127*	-0.754	0.201***
Homeownership	0.013	0.113	0.262	0.174
(Intercept)	5.468	1.206***	-4.404	1.942**
Observations	2,194			
LR χ^2 (dof)	635.54 (44)			
McFadden's pseudo- R^2	0.1652			
AIC	3,303.95			
BIC	3,565.85			
Log-likelihood	-1,605.97			

Note: ML estimates of the probability to transit from a current paid job to either (2) a new one or (3) to self-employment. Year dummy variables are included but not shown. Data are drawn from the SHP and refer to female workers living in Switzerland in the years 1999–2008. * denotes coefficients statistically significant at the 10% level, ** 5%, *** 1%.