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THE LABOUR MARKET CONSEQUENCES OF SELF-EMPLOYMENT SPELLS: EUROPEAN EVIDENCE ***

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ABSTRACT: We examine how those re-entering paid-employment after a brief self-employment spell fare upon return using data from the European Community Household Panel. Unconditionally, those re-entering paid-employment appear to have considerably lower wages than those staying in the wage sector. This difference appears to be larger in Europe than in the US. Conditional analysis suggests, however, that the difference is more apparent than real: It seems that Europeans select negatively into (and possibly out-of) self-employment, i.e., the likelihood of entering (and exiting) entrepreneurship correlates negatively with unobserved ability and/or in-paid-employment productivity. Our analysis of non-wage outcomes indicates that the selection is mostly involuntary and that for highly educated men, the brief self-employment spells are unemployment in disguise.

JEL CODES: J230, J240, J310.

KEY WORDS: Self-employment, Job mobility, Earnings, Wage differentials, Selection.

1. Introduction

Each year, hundreds of thousands of Europeans enter self-employment and start their own businesses, although many of them exit shortly thereafter.[1] According to *Business demography in Europe* (EC, 2004a), three-year survival rates of European enterprises born in 1998 ranged from 53.5% (Denmark) to 66.9% (Norway), the lowest survival rates being in general in the services sector, such as in the hotel and restaurant business.[2] Smallest businesses and self-employment ventures are terminated even sooner than that: the death rates of very small (0–4 employees) European enterprises was in 2000 about 4–5 times higher than those of slightly larger (5–9 employees) enterprises.[3] Despite the recurrence and prevalence of entrepreneurial exits, not much is known about what happens to those Europeans who leave self- for paid-employment after a short spell. What are the economic consequences faced by the exiting entrepreneurs? In particular, what is the effect of self-employment experience on (subsequent) wage and non-wage outcomes, such as job security?

There is some evidence for the US on how those who revert back to paid-employment fare upon return (Bruce and Schuetze, 2004; Evans and Leighton, 1989; Williams, 2000). This evidence suggests that a year of self-employment lowers earnings compared to a year of work experience, even though not all findings for the US are entirely consistent with each other or across different demographic groups. No comparable analyses exist for Europe, except for Williams (2003) providing related evidence for one country, Germany.[4] The aim of this paper is to augment this earlier literature by providing the first comprehensive European evidence on these effects: Our data come from the *European Community Household Panel* (ECHP), which allows us to track flows from paid-employment either to self- or to unemployment, and back to paid-employment for most of the EU-15 countries.

Lack of comprehensive evidence for Europe is surprising, especially since many European policy-makers appear to have a strong prior belief that exiting entrepreneurs are somehow 'scarred' and that those leaving self- for paid-employment after an entrepreneurial spell are not treated fairly upon returning to paid-employment. It has been argued, in essence, that European labour markets are 'hostile' to returning entrepreneurs, at least when compared to the US.[5]

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1   *Business demography in Europe* (EC, 2004a), a publication by The Enterprise Directorate-General of the European Commission and Eurostat, tracks the number of genuine enterprise births and deaths by using harmonised data on business demography within the European Union. In the seven participating countries (Denmark, Spain, Italy, Luxemburg, the Netherlands, Finland and Sweden), the total number of enterprise births was on average about 664,000 between 1999–2001. There were about 89 newly born enterprises in the whole of the business economy for every 10,000 inhabitants aged between 20 and 59 years old in these EU countries, providing us with a rough indicator of the average density of birth rate.

2   These numbers refer to the participating countries listed in footnote 1; see *Business demography in Europe* (EC, 2004a), Tables 4.3 and 4.11.

3   See *Business demography in Europe* (EC, 2004a), Table 5.6. In Britain, as many as 50% of the self-employment ventures started in the early 1990s did not survive their first two years in business (Taylor, 1999). In Finland, the median survival time has been 4–5 years (Tervo and Haapanen, 2005).

4   While the focus of Williams' paper is on returns to schooling, it also documents that self-employment experience is rewarded a slightly lower return on the German job market than paid-employment experience.

5   A number of public statements appear to argue either explicitly or implicitly for such hostility: Upon listing the key policy options, the green paper on entrepreneurship (EC, 2003b, p. 10) notes that "Entrepreneurial activity depends on a positive appreciation of entrepreneurs in society. Entrepreneurial success should be valued and the stigma of failure reduced." The final report of a high-level expert group (EC, 2003a, p. 28) considering re-entry into self-employment states that "There is an evident stigma affecting entrepreneurs in difficulty (specifically within the general community) and entrepreneurs previously bankrupt. There is thus a need to introduce a campaign in Europe showing the benefits of a fresh start and a new entrepreneurship." The press release of the new action plan on entrepreneurship (EC, 2004b, p. 1) outlines "… key actions in five strategic areas… reducing the stigma of failure…". The (former) Commissioner Liikanen (Enterprise and the Informa-

This paper investigates whether the anecdotes and policy-makers' (somewhat pessimistic) views on the consequences of the short self-employment spells are supported by European labour market data: If the data backs the apparently strong prior perception, an additional year of self-employment should not only lower the earnings (of an exiting entrepreneur) relative to an additional year of paid-employment: It should lower them considerably and the effect should be larger in Europe than what has been documented for the US (by, e.g., Bruce and Schuetze, 2004; Williams, 2000).

If the European labour market appears not to welcome returning entrepreneurs, it is important to also examine *why* that might be the case: One possible reason for it is that leaving self- for paid-employment endows an individual with a stigma of failure. Such a stigma may emerge as an endogenous social norm (Landier, 2002) and hardly improves the position of an exiting entrepreneur in any market he enters upon return, be it the capital or the labour market (Gromb and Scharfstein, 2002). Earnings (or employment prospects) may also reduce if short self-employment spells erode or stagnate previously acquired job-specific skills (and, more generally, erode people's human capital; see, e.g., Bruce and Schuetze, 2004; Williams, 2000).[6]

While these are plausible explanations for the policy-makers' perception as well as for any *ex post* (end-of-period) wage difference between those with and without self-employment experience, the hostility of the European labour markets against exiting entrepreneurs may be more apparent than real. The perception and the potential wage difference may be due to natural job mobility and thereby attributable to selection. The two most obvious sources of selection are the choices to move to self-employment and return to paid-employment in a short time. If those who earn less in paid-employment select *into* self-employment, any wage difference upon return may be explained by differences in *ex ante* (start-of-period) wages. There are a number of explanations for low earnings in the wage sector, of which unobserved ability (i.e., low at-work productivity) and low reservation wages are among the most usual suspects. Selection *out of* self-employment after a short spell may also explain wage differences upon return. Besides low reservation wages, such differences could emerge if the individuals leaving self- for paid-employment come from the group of failing entrepreneurs (and if the propensity to fail is correlated with unobserved ability).

Our basic empirical set-up borrows heavily from the earlier work done with US data, especially Bruce and Schuetze (2004). We examine labour market flows within a five-year window and focus on documenting the effects of brief self-employment experiences on subsequent wage outcomes. Whenever possible, we contrast our results from ECHP with those obtained earlier for the US and investigate how the effects of brief self-employment spells compare with those of brief unemployment spells.

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tion Society) has nicely summarized what appears to be a widely held view among European policy-makers: "An important factor underlying Europe's poor record on entrepreneurship is indeed the stigma of failure. Many would-be entrepreneurs and good ideas are put off by the fear that if you fail once you will loose everything. You will not be given a second chance. This must change. Failure can be regarded as part of the learning curve." (Liikanen, 15 June 2000). While it is not entirely clear whether these positions and statements refer to the capital or labour markets (or to both), they all seem to imply that those leaving self-employment after an entrepreneurial spell are not treated fairly upon return.

6   Another possibility is that short spells in self-employment could be viewed as a human-capital enhancement or job training program, in which people acquire new skills enhancing their productivity and yielding returns upon reverting back to wage work. Self-employment can also be a part of an (extended) job-shopping process (Manning, 2003), by which individuals try to work themselves into better jobs through the process of active labour market search. Were these processes at work and strong enough, an additional year of self-employment should *increase* earnings relative to an additional year of paid-employment.

Unconditionally, i.e., when not controlling for observables and selection, the European policy-makers perception appears to hold: There is a large *ex post* wage difference between those with self-employment experience and those with continued paid-employment experience, and, in light of the available data, the difference seems to be larger in Europe than in the US. However, already an unconditional difference-in-differences analysis of the *ex ante* and *ex post* wages shows that the effect of short self-employment spells is more apparent than real. Once we use *ex ante* wage in this fashion as a control for selection into self-employment, and more generally, as a control for unobserved differences in productivity at paid-employment, the *ex post* wage difference between those with and without self-employment experience nearly disappears. All this suggests that European employees select negatively into (and possibly out-of) self-employment, i.e., that the likelihood of entering (and exiting) entrepreneurship correlates negatively with the unobservable ability and/or productivity of the employed.

Our regression analysis and comparisons to the earlier analysis of Bruce and Schuetze (2004) for the US provide additional support for the view that a problem of negative selection may account for a larger share of the *ex post* wage difference in Europe than in the US, at least for men. In a regression controlling for a number of observables (demographics etc.), the estimated effect of brief self-employment spells on the wages of men reduces more in Europe than in the US when the *ex ante* wage is introduced as a control. Even for highly educated European men, to whom the effect might *a priori* seem particularly large and the stigma of failure pronounced, the negative effect of 4–5% that we find is conservative when compared to the range reported in Bruce and Schuetze (2004) for the US. However, neither this estimate nor our other estimates of negative effects are robust to introducing further controls for (negative) selection into and out-of self-employment.

These results do not corroborate the available anecdotal evidence and appear to challenge at least the most aggressive perceptions of the hostility of the European labour market towards returning entrepreneurs: In light of the *European Community Household Panel* (ECHP) data, European entrepreneurs do not seem to suffer (either in absolute terms or relative to their US counterparts) from a disproportionately bad stigma of failure upon return. Albeit our treatment of the labour market consequences of short *unemployment* spells is not as comprehensive, we find that they appear to be worse than the consequences of short self-employment spells. In particular, our results in no way challenge the findings from the earlier literature which suggest that spells of unemployment can in Europe be 'scarring' and have (persistently) negative returns (e.g., Arulampalam, 2001; Burda and Mertens, 2001; Pérez and Sanz, 2005).

Besides delivering the first comprehensive evidence of these effects for Europe, we attempt extending the previous analyses and identifying a new direction for the future research by providing an analysis of the nature of selection driving our findings: To interpret our findings, it turns out to be instrumental to understand whether *voluntary* or *involuntary* selection *into* and *out-of* self-employment accounts for them. While we cannot be fully conclusive on this front, our analysis of a set of non-wage outcomes suggests that besides being negative, selection is mostly involuntary. Using indicators of non-wage outcomes that are available from ECHP, we find, first, that self-employment seems to be unemployment in disguise (Earle and Sakova, 2000), especially for highly educated males: While self-employed, they are more likely to search for a new job in paid-employment than their less educated counterparts. The difference is *not* due to the higher propensity of the highly educated to search for a new job irrespectively of their current labour market status. Second, brief spells of self-employment are associated with increased probability of part-time employment upon returning to the wage sector, increased likelihood of outright unemployment, and decreased job security. This, too, suggests negative involuntary selection, in particular if most transitions to unemployment or job insecurity after self-employment can be characterized as involuntary (cf. Abowd, Kramarz, and Margolis, 1999; Pérez and

Sanz, 2005). Finally, there is some indication especially for men returning to paid-employment after a spell of self-employment that their perceived financial situation is worse when compared to those continuing in the wage sector.

In the next Section 2, we describe our data, present a descriptive analysis of the frequency and duration of self- and unemployment spells in Europe, and contrast them to those of the US. In Section 3 we investigate the effects of brief self- and unemployment spells on wage outcomes both using univariate (unconditional) and multivariate (conditional) methods and address the question of selection. Non-wage outcomes are analyzed in Section 4. In Section 5, we summarize our findings and consider their policy implications.

2. Data

2.1. Data source

The data for this study is drawn from the *User Data Base* (UDB) of ECHP by *Eurostat* (2003a) providing compatible (input-harmonised) pan-European data on living conditions, well-being, and the financial situation of private households and their members.[7] The eight annual waves of ECHP cover the EU-15 countries in 1994–2001, although Austria joined the survey at wave 2 in 1995, Finland at wave 3 in 1996, and Sweden at wave 4 in 1997. Furthermore, for Germany, Luxembourg, and the UK, the data is mostly from their reasonably ECHP-comparable national surveys.[8] The Swedish survey is not a panel but rather a series of cross-sections, so it is excluded from this study. The data for Belgium and the Netherlands is based on the continuation of ECHP's predecessors.

Bruce and Schuetze (2004) suggest considering the labour market consequences of brief spells of self-employment – in practise those occurring within a moving 5-year window of 6 annual observations. The sample constructed for this study is designed to be as comparable as possible with their US study. Thus, only 18–65-year olds in full-time paid-employment in the beginning (1996) and end (2001) of the only feasible five-year window (1996–2001) as well as in paid-, self-, or unemployment in the intermediate years (1997–2000) are included in our core sample.[9] In ECHP this group consists of 25,238 individuals.

2.2. Definitions and measurement

ECHP records the self-defined main activity status, on the basis of the most time spent, at the time of the interview as one of twelve mutually exclusive alternatives, and thus defining self-employment status seems straightforward. There are, however, some caveats: part-time entrepreneurship is not recorded, entrepreneurs owning less than half of their businesses are considered to be in

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7   The official documentation is available at http://forum.europa.eu.int/irc/dsis/echpanel/info/data/information.html. User-to-user documentation is available at http://epunet.essex.ac.uk/echp.php.

8   For these national surveys are used throughout, as the countries only implemented the first three waves of the ECHP from 1994 to 1996.

9   As the employment status must be known for all six years, only individuals interviewed in all the years in the window can be considered. Occasionally, i.e., when modelling selection and non-wage outcomes, we also make use of larger samples.

paid-employment, and the status is only known for one point (at the time of the interview) in time within a year. Unobserved part-time self-employment should not affect our findings, for paid-employment status is maintained simultaneously. Focusing mostly on single proprietors might be a concern upon studying, e.g., the effects of entrepreneurship on economic growth, but as our analysis focuses on individuals, it is less so. The facts that the employment status is only recorded at the time of the interview and that the twelve categories are mutually exclusive, bring about the possibility of 'round tripping', i.e., the existence of very short 'spurious' self-employment spells.[10] A comparison of the main (annual) statuses derived from the core data with those derived from the (somewhat incomplete) monthly calendar of activities suggests, however, that 'round tripping' is not an issue of concern.[11] Further details of the data and the definitions of variables can be found in the Appendix.

2.3. Descriptive statistics of self- and unemployment spells

Table 1 presents percentages of those who entered neither self-employment nor unemployment (Never Self-Employed or Unemployed), entered self-employment and possibly unemployment (Ever Self-Employed), and entered unemployment and possibly self-employment (Ever Unemployed) within the 5-year window. The percentages in Table 1 are conditional on being in paid-employment at the endpoints. The last window (1985–1990) of Bruce and Schuetze (2004) is provided for comparison.

Table 1: Frequencies of Labour Market Experiences.

Region: Years	Males			Females		
	Never Self-Employed or Unemployed	Ever Self-Employed	Ever Unemployed	Never Self-Employed or Unemployed	Ever Self-Employed	Ever Unemployed
EU-14: 1996–2001 (Our sample)	94.44% (14,146 obs.)	1.56% (234 obs.)	4.17% (624 obs.)	95.36% (9,783 obs.)	0.70% (72 obs.)	4.04% (414 obs.)
US: 1985–1990 (Bruce and Schuetze)	89.46% (789 obs.)	5.33% (47 obs.)	5.67% (50 obs.)	93.94% (310 obs.)	2.42% (8 obs.)	3.64% (12 obs.)

Notes: The reported percentages refer to those in paid-employment at the endpoints of the 5-year window between 1996–2001 in Europe and 1985–1990 in the US. The entries do not add up to 100%, as a few individuals were both self-employed and unemployed within the window. The numbers of observations are in parentheses.
Sources: The authors' calculations using ECHP for the EU; Bruce and Schuetze (2004) for the US.

Table 1 shows that both in the EU and the US those in paid-employment rarely experience brief spells of self-employment or unemployment; nevertheless roughly one in twenty Europeans and one in ten Americans did so within the 5-year windows considered. While in the US spells of self-employment and unemployment are roughly equally common, in the EU four out of five such spells are unemployment spells. Especially among European females, short self-employment spells are rare

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10 This was kindly pointed out by an anonymous referee.

11 The status at the time of the interview and the main annual status are the same 98% of the time (note that this figure should remain below 100% as long as there remains variation in the dates of status switches and/or in the times of interviews).

indeed.[12] Because long-term self-employment is excluded (by definition) both from our and Bruce and Schuetze's (2004) analysis, a plausible conjecture and explanation for these findings is that the self-employment spells are longer in Europe than in the US.

Table 2 reports the durations of self-employment experiences.[13] In both Europe and the US most are self-employed for only one year: in the EU this is true for 55% of spells for males and 65% of spells for females. Note that these figures are not standard survival rates *per se*, as here (by definition) all those in self-employment exit by the end of the window, i.e., return to paid-employment. These figures nevertheless compare rather well to, e.g., Taylor's (1999) estimates of the one-year survival rates of British self-employment ventures in the early 1990s. His estimates show that 59% of the self-employment spells of men last one year and that the corresponding rate for women is 63%. Overall, Table 2 suggests that self-employment spells are somewhat longer in Europe than in the US, confirming our above conjecture.

Table 2: Durations of Self-Employment Experiences.

Region: Years	Self-employment experience							
	Males				Females			
	1 year	2 years	3 years	4 years	1 year	2 years	3 years	4 years
EU-14: 1996–2001 (Our sample)	55.13% (129 obs.)	27.78% (65 obs.)	12.39% (29 obs.)	4.70% (11 obs.)	65.28% (47 obs.)	18.06% (13 obs.)	11.11% (8 obs.)	5.56% (4 obs.)
US: 1985–1990 (Bruce and Schuetze)	76.60% (36 obs.)	10.64% (5 obs.)	12.77% (6 obs.)	0.00% (0 obs.)	100.00% (8 obs.)	0.00% (0 obs.)	0.00% (0 obs.)	0.00% (0 obs.)

Notes: The reported percentages refer to those in paid-employment at the endpoints of the five-year window indicated in the first column, and that have at least some self-employment experience in the intermediate years. Entries are percentages of individuals having the number of years in self-employment specified in the column header. The numbers of observations are in parentheses.

Sources: The authors' calculations using ECHP for the EU; Bruce and Schuetze (2004) for the US.

These results are consistent with some earlier evidence, such as van Stel (2006, p. 7). According to him, the self-employment entry rates are typically higher in the US than in Europe but also exit rates are higher in the US. These numbers are not inconsistent with the finding that many European countries have a higher business ownership rate than the US. Indeed, figures derived from COMPE-DIA database, harmonising business ownership rates across OECD countries, suggest that in the late 1990s the non-agricultural business ownership (unincorporated and incorporated self-employment) rate was in the EU about 11% and in the US about 10%.

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12   It should be noted that those entering but not exiting self-employment or unemployment within the window are not included in our core sample.

13   Throughout this paper the number of years refers to the number of surveys conducted at roughly one year intervals.

3. Wage outcomes

3.1. Unconditional analysis

In Table 3 we present average hourly wages at the end of the window for individuals in the core sample, separating those who remained in paid-employment for the entire five-year period and those who had either a self-employment or unemployment spell before returning to paid-employment by the end of the window. In the EU, the hourly wages of those returning to paid-employment from self-employment are only about three-fourths to four-fifths of the corresponding wages of those that remained in paid-employment. For US males, but not for females, the difference in wages associated with self-employment experience is considerably less – only about five per cent. Average hourly wages of the group with unemployment experience are lower than those of the group with self-employment experience.

Table 3: Average Hourly Wages by Labour Market Experiences.

Region: Years, type	Males			Females		
	Never Self-Employed or Unemployed	Ever Self-Employed	Ever Unemployed	Never Self-Employed or Unemployed	Ever Self-Employed	Ever Unemployed
EU-14: 1996–2001, net	€10.49 ***	€7.76 ***	€6.91 ***	€9.13 ***	€6.84 ***	€6.69 ***
Difference in differences	€1.01 ***	-€0.23	-€1.29 ***	€0.56 ***	-€0.26	-€0.61 ***
(Our sample)	(14,146 obs.)	(234 obs.)	(624 obs.)	(9,783 obs.)	(72 obs.)	(414 obs.)
EU-14: 1996–2001, gross	€14.38 ***	€10.74 ***	€9.26 ***	€12.53 ***	€9.56 **	€8.89 ***
Difference in differences	€1.58 ***	-€0.63 *	-€1.92 ***	€0.96 ***	-€0.47	-€1.05 ***
(Our sample)	(13,341 obs.)	(232 obs.)	(605 obs.)	(9,405 obs.)	(72 obs.)	(404 obs.)
US: 1985–1990, gross	$17.32 [n/a]	$16.66 [n/a]	$15.95 [n/a]	$12.77 [n/a]	$9.79 [n/a]	$8.31 [n/a]
(Bruce and Schuetze)	(789 obs.)	(47 obs.)	(50 obs.)	(310 obs.)	(8 obs.)	(12 obs.)

Notes: Figures on the first lines of each section refer to average nominal gross or net hourly earnings in euros (€) or US dollars ($) at the endpoint of the five-year window indicated in the first column. Figures on the second lines for the EU refer to a difference-in-differences estimate (cf. Meyer, 1995), i.e., to $\Delta \overline{y}^1 - \Delta \overline{y}^0 = \overline{y}_1^1 - \overline{y}_0^1 - (\overline{y}_1^0 - \overline{y}_0^0)$ where a bar indicates average over individuals, the subscript denotes the time period (= 0 if the initial period), and the superscript denotes the group (= 1 if in the treatment group, e.g., ever self-employed). Since – besides the currency and the reference point – the concept of hourly earnings is not identical in the EU and the US studies, the levels should not be compared directly. The numbers of observations are in parentheses. The results of two-sided t-tests (without assuming equal variances in the groups) comparing the mean wage of the group specified in the column heading to the remainder of the sample are also reported, with ***, **, and * respectively indicating statistical significance at 1, 5, and 10 per cent levels (n/a = not available).

Sources: The authors' calculations using ECHP for the EU; Bruce and Schuetze (2004) for the US.

The numbers and comparisons in Table 3 suggest that, unconditionally, the European policy-makers perception appears to hold, at least for men: there is a large *ex post* wage difference between those with self-employment experience and those with a continued work experience, and in light of the available data, the difference seems to be larger in Europe than in the US.

The table also reports the results of a difference-in-differences analysis of the *ex ante* and *ex post* wages, because the most obvious explanation for the differences in the end-of-window wages is that

they merely mirror differences in the initial wage level and thus some form of selection. That is, the wage difference between the group of individuals who remained the entire period in paid-employment and the group of individuals with a self-employment experience might simply be due to an unobserved difference in the average productivity of the two groups. Once we use *ex ante* wage as a control for selection (and more generally, as a control for unobserved differences in productivity at paid-employment), the *ex post* wage difference between those with and without self-employment experience nearly disappears. Due to lack of data we unfortunately cannot compare these to corresponding US estimates. The difference-in-differences analysis thus provides evidence of negative selection (i.e., the entrants have initially lower wages in paid-employment, as compared to those remaining in paid-employment; we return to this issue below). It also shows that the effect of short self-employment spells may be more apparent than real. Interestingly, the same cannot be said to apply to the short unemployment spells: The *ex post* wage difference between those with and without unemployment experience does *not* fully disappear when the *ex ante* wage is used as a control for selection.

3.2. Conditional analysis

3.2.1. Basic regression results

The dependent variable in our basic regressions is the logarithm of the hourly wage at the end of the window. We make use of both net and gross hourly wages, although the latter is not available for Luxembourg: additional details, exact definitions and descriptive statistics are provided in the Appendix. The independent variables are similar to those used by Bruce and Schuetze (2004) and are also described in detail in the Appendix. The independent variable of most interest is the years spent in self-employment within the window, as well as the years spent in unemployment. The reference point is an individual remaining in paid-employment throughout the window. A number of other independent variables are used to control for (observable) individual heterogeneity: both age and tenure are controlled for, and their effects are allowed to be non-linear. As the union membership variable employed by Bruce and Schuetze (2004) is unavailable from ECHP, a membership in a club or an organisation is used as a proxy.[14] As an individual's race is unavailable, being born abroad is used as a proxy. The education dummies are qualitatively similar to those used by Bruce and Schuetze (2004). The married dummy is used, although ECHP also has more versatile information on cohabitation status. The number of children is defined in a round-about way (see Appendix); its cut-off is two years lower than that of Bruce and Schuetze (2004). There are minor inconsistencies in the definitions of capital income across countries, but since all of the estimated specifications include country dummies, this is not an issue of concern. As a direct counterpart of the metropolitan statistical area indicator employed in the US study is unavailable, a similar dummy indicating living in a densely-populated area is constructed. The unemployment rate is defined at the finest NUTS level available in ECHP (112 regions in total), which is less refined than the county level used by Bruce and Schuetze (2004).

The descriptive statistics (see the Appendix) suggest that in our European estimating sample, individuals are on average older; have longer tenure; are more educated; are more often married; and have fewer children than the individuals in the US sample of Bruce and Schuetze (2004). The average regional unemployment rate is almost twice as high as the corresponding US figure.

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14   Admittedly this is a poor proxy. It rather captures an individual's general social capital, involvement in various networks, and/or willingness to join associations. Excluding this variable does not affect our results.

Following Williams (2000) and Bruce and Schuetze (2004), we use the logarithm of (either net or gross) hourly wage at the beginning of the five-year window as our first-cut control for the potential endogeneity of self-employment and unemployment experience. The rationale for using this control is the same as that of using the difference-in-differences estimate: Workers who become self-employed (or unemployed) for a short spell may do so because of their low productivity (and thus poor earnings capacity) in the wage sector. The assumption is that the wage at the beginning of the five-year window captures this time-invariant unobserved individual heterogeneity and the self-selection it induces.

Table 4 reports ordinary least squares (OLS) estimates of the model with the natural logarithm of the male (columns 1–4) or female (columns 5–8) worker's average hourly net (columns 1, 2, 5, and 6) or gross (columns 3, 4, 7, and 8) wage as the dependent variable. The variance-covariance matrix has been estimated using White's (1980) heteroscedasticity-consistent estimator.[15]

While the wage at the beginning of the five-year window is only an imperfect control, its importance in understanding the processes at work becomes clear if we first consider regressions *not* using the control (columns 1, 3, 5, and 7). These regression results for Europe are similar to those obtained by Bruce and Schuetze (2004) for the US and suggest that self-employment experience might be associated with reduced wages upon returning to paid-employment: The coefficients range from -0.05 (men) to -0.12 (women) and are statistically significant at better than 5% level.[16] Contrasting these results to the estimations in which the wage at the beginning of the five-year window *is* used as a control (Columns 2, 4, 6, and 8) provides a number of interesting findings: First, the wage at the beginning of the five-year window obtains a significant and positive coefficient and its size is close to what is reported in Bruce and Schuetze (2004). Second, the coefficient of self-employment experience is now clearly smaller in absolute value. This finding is expected if both men and women select negatively into self-employment. Third, these regression results provide support for the view that a worse selection problem may account for the larger *ex post* wage difference in Europe relative to the US: A comparison to Bruce and Schuetze (2004) shows that the estimated effect of brief self-employment spells on the wages of men reduces in absolute (and especially in relative) value more in Europe (from -0.051 to -0.021) than in the US (from -0.131 to -0.108) when the *ex ante* wage is introduced as a control.[17] A corresponding comparison for women do not provide as clear indications of a worse selection problem in Europe.

With one exception (column 4) the coefficients capturing self-employment experiences are not significant at 10% level when the *ex ante* wage is introduced as a control. If we took these (mostly imprecisely measured) coefficient estimates seriously, they would suggest that an additional year in self-employment reduces the post self-employment wage by about 2–3% for a male and by about 5–6% for a female as compared to a year of continued paid-employment. The corresponding findings of Bruce and Schuetze (2004) for their most recent wave (i.e., 1985–1990) suggest that for men the US equivalent is 11% (significant at the 5% level) and that for women it is 13% (not significant at the 5%

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15   In the tests the null hypotheses of homoscedasticity (not shown) are rejected in all specifications at one per cent level.

16   We obtain a similar, negative relation for unemployment experience. The coefficient of the unemployment years variable is for men larger in absolute value (i.e., more negative) than the coefficient of the self-employment years variable. The opposite holds for women.

17   The US numbers are from columns 13 and 14 in Table 5 of Bruce and Schuetze (2004) and refer to 1985–1990.

level).[18] It thus appears that the effect of discontinued self-employment on subsequent wages is nearly non-existent and possibly *less* severe in European labour markets.

Table 4: Regression Results of the Wage Models.

Variable	Males				Females			
	Wage, net, end		Wage, gr., end		Wage, net, end		Wage, gr., end	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Wage, net, start		.593 ***				.643 ***		
Wage, gr., start				.622 ***				.670 ***
Self-empl. years	-.051 ***	-.021	-.051 ***	-.028 **	-.121 ***	-.055	-.124 **	-.064
Unempl. years	-.122 ***	-.079 ***	-.128 ***	-.082 ***	-.098 ***	-.056 ***	-.111 ***	-.066 ***
Age	.019 ***	-.004 *	.021 ***	-.006 **	.028 ***	-.002	.030 ***	.000
Age^2	-.211 ***	.030	-.245 ***	.048	-.337 ***	.004	-.377 ***	-.021
Tenure	-.005 **	-.011 ***	-.003	-.011 ***	-.002	-.011 ***	-.001	-.012 ***
Tenure^2	.699 ***	.693 ***	.671 ***	.710 ***	.764 ***	.707 ***	.782 ***	.769 ***
Tenure unavail.	.028	-.026 *	.041 **	-.034 **	.025	-.023	.018	-.029
Club member	.043 ***	.017 ***	.052 ***	.018 ***	.048 ***	.015 **	.058 ***	.016 **
Born abroad	-.023	-.019	-.022	-.023	-.038 *	-.021	-.034	-.023
Education, med.	.152 ***	.069 ***	.153 ***	.064 ***	.190 ***	.069 ***	.200 ***	.069 ***
Education, high	.442 ***	.210 ***	.483 ***	.218 ***	.442 ***	.165 ***	.482 ***	.174 ***
Married	.070 ***	.016 **	.058 ***	.012 *	-.026 ***	-.021 ***	-.027 ***	-.026 ***
Number of kids	.010 ***	.004	.006 *	.004	-.004	-.004	-.013 ***	-.007 **
Capital income	.007 **	.004 ***	.009 ***	.005 ***	.005 ***	.004 ***	.006 ***	.004 ***
Densely pop.	.054 ***	.021 ***	.069 ***	.027 ***	.053 ***	.022 ***	.065 ***	.026 ***
Unemployment	-.010 ***	-.004 ***	-.012 ***	-.005 ***	-.004 ***	-.001	-.006 ***	-.002 **
A constant and country dummies included in all specifications (complete results available upon request).								
Observations	14979	14979	14153	14153	10259	10259	9871	9871
Adjusted R^2	0.60	0.75	0.64	0.79	0.54	0.73	0.59	0.78

Notes: Entries are White (1980) heteroscedasticity-consistent OLS coefficient estimates. Estimated with Stata 9.2 SE for Windows. ***, **, and * respectively indicate statistical significance at 1, 5, and 10 per cent levels.

Source: The authors' estimates based on ECHP.

The coefficients of unemployment experiences are significant at the 1% level even after controlling for endogeneity using the wage at the beginning of the five-year window. According to the table, an additional year in unemployment reduces the post unemployment wage by about 8% for a male and by about 5–6% for a female, compared to a year of continued paid-employment. The 1985–1990 US estimates of Bruce and Schuetze (2004) are 16% (significant at the 5% level) for a male and 9% (not significant at the 5% level) for a female.

The coefficient estimates on the other variables – not to be discussed in great detail here – are consistent with Bruce and Schuetze (2004) as well as with most other reported wage regressions we are aware of.

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18   It should be noted that the female self-employment estimate of Bruce and Schuetze (2004) – facing the problem of rather small sample sizes – has to be treated with caution, as it is statistically significant for only one of the seven 5-year windows considered.

3.2.2. Regression results for different educational levels

So far we have allowed the consequences of self- and unemployment spells to differ only by gender. Yet we cannot exclude the possibility that the effects of lost experience in paid-employment are heterogeneous. Williams (2000) argues, for example, that individuals' ability to maintain their human capital outside paid-employment may vary across industries and would-be wage occupations. We consider therefore the possibility that the effects of self-employment (and unemployment) spells depend on the (initial) level of formal education an individual has. Formal education is a proxy for individuals' general (and sometimes also industry-specific) human capital, because educational investments are a primary means to accumulate it. While it is the finite lifespan of an individual that ultimately causes his/her general human capital to depreciate, the rate of that depreciation can well depend on whether one is in paid- or self-employment. It is for example possible that spells of self-employment disproportionately stagnate the professional skills of the highly educated, leading to a reduced wage after exiting. Because self-employment may also be a means to maintain human capital when wage-sector employment is not available (Bruce and Schuetze, 2004), the effects of short self-employment spells on the wages of the highly educated can only be assessed empirically. Given their prior concerns, it should indeed be of special interest to European policy-makers to know whether the effects are particularly large, or the stigma of failure pronounced, for the highly educated.

Table 5: Regression Results of the Wage Models of the Highly Educated Sub-Sample.

Variable	Males, highly educated		Females, highly educated	
	Wage, net, end	Wage, gr., end	Wage, net, end	Wage, gr., end
	(1)	(2)	(3)	(4)
Wage, net, start	.634 ***		.652 ***	
Wage, gr., start		.660 ***		.678 ***
Self-empl. years	-.042 *	-.049	-.043	-.064
Unempl. years	-.142 ***	-.160 ***	-.031	-.061 *
Also including: Age, Age^2, Tenure, Tenure^2, Tenure unavail., Club member, Born abroad, Married, Number of kids, Capital income, Densely pop., Unemployment as well as a constant term and country dummies (complete results available upon request).				
Observations	3663	3501	3065	2999
Adjusted R^2	0.60	0.62	0.59	0.65

Notes: White (1980) heteroscedasticity-consistent OLS coefficient estimates. Some output not reported in the interest of space (complete results available upon request). The dependent variable as indicated in the column header. Estimated with Stata 9.2 SE for Windows. ***, **, and * respectively indicate statistical significance at 1, 5, and 10 levels.
Source: The authors' estimates based on ECHP.

Table 5 suggests that brief spells of self-employment might have more detrimental labour market consequences for the highly educated men, than for the less educated, i.e., for those not holding a master equivalent or a higher degree.[19] However, even for these *highly educated* European men, to whom the stigma of failure might be particularly pronounced, the negative effect of 4–5% – significant at 10% level only in the case of net wage – is conservative when compared to the range reported for the

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19   As for females, the evidence is more mixed. If anything, we do not find any significant differences between the highly and less educated.

whole US sample of Bruce and Schuetze (2004). Moreover, it turns out (see Section 3.3.2) that the above estimate for the highly educated men is not stable or particularly robust to introducing further controls for selection into and out-of self-employment.

Interestingly, the effects are more pronounced for unemployment and highly statistically significant for males across the board: An additional year of unemployment reduces the wage of the highly educated about 14–16%. This reduction is 7–9 percentage points lower for the less educated. This difference is statistically significant at better than 5% level.[20]

3.3. Robustness

Albeit the wage at the beginning of the five-year window seems to work as expected as a first-cut control for selection, it is imperfect and not entirely unproblematic: It may itself be endogenous and appears to best control for selection into self-employment. We therefore probe in this subsection the robustness of our results to alternative specifications and estimation procedures, and introduce further controls for selection.

3.3.1. Wage growth specification

We begin by considering an alternative procedure to introducing the initial wage as a control. The most obvious alternative specification is a wage growth model, which is a restricted version of the level specification with the coefficient of the initial wage restricted to one yielding a difference-in-differences estimate conditional on the observables (in levels). The level specification that we have used so far gives a difference-in-differences estimate conditional on the observables (in levels) *and* a lagged dependent variable (obtained by deducting from both sides of the level regression equation the lagged wage with a coefficient equal to one). Because the two are nested, we can test them against each other: The null hypothesis that the coefficient of the lagged wage is one can be rejected at better than 1% level. This rejection suggests that the data are not as consistent with the wage growth model as it is it with the level specification. We have nevertheless estimated the wage growth model. For brevity, we do not report these results in a table, but just note that they echo our previous findings: the effects of short self-employment spells are statistically insignificant.

3.3.2. Selection

Besides selection from paid- into self-employment and vice versa, an initial selection into paid-employment (at the beginning of the five-year window) has to be considered. Below we make an attempt to deal with all of three types of selection both separately and jointly.

An established way to deal with the initial selection into paid-employment (at the beginning of the five-year window) is to use Heckman's (1979) two-step procedure. Implementing it boils down to making plausible exclusion restrictions to the second stage equation, i.e., finding instruments for the first stage, which in this case is a Probit specification of the probability of being employed at the beginning of the five-year window. These variables should be observed also for those not selecting into the sample; they should affect the participation decision but not post-selection wages. We use the following: (log of) the person's non-work net private income in euros the year prior to the initial period

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20   Results of these tests are not reported here but are available upon request.

(*Non-wage income*),[21] and a dummy indicating that the person has been admitted to a hospital as an in-patent during the past 12 months prior to the date of the interview (*Hospital stay*).[22] We wish to stress that we have also tried other variables in the selection equation, but found that our qualitative results are robust to such changes.

Self-selection from paid- into self-employment may make the self-employment experience endogenous in our basic (level) regressions, even if the initial wage is included as a regressor. To address the concern, we resort to instrumental variable methods. We implement a two-stage least squares (2SLS) version of the wage (level) model using indicators for receiving a windfall (an inheritance, a gift or lottery winnings of 50,000 euros or more received by someone in the household the year prior survey, *Windfall*),[23] having a self-employed spouse (*Spouse self-empl.*), and being a smoker (*Smoker*) as instruments. The earlier literature (e.g., Lindh and Ohlsson, 1996) provides strong support for using *Windfall* as an instrument, while the findings of a recent study by Brown, Farrel and Sessions (2006) suggest the use of *Spouse self-empl*. The *Smoker* instrument may sound a bit surprising but is a proxy of one's risk taking behaviour and correlates possibly with the desire to be one's own boss.[24]

The third selection relates to the concern that those exiting self-employment after a brief spell may primarily be those with low ability and/or those who have failed as an entrepreneur. While ECHP includes information on the reason of leaving previous employment status, the sale or closure of own or family business define *one* category and therefore provides no new information about the reasons of an entrepreneurial exit. Neither do we know whether the spell of self-employment was meant to be temporary (from the outset) nor whether self-employment in fact continues as a secondary activity. Despite these problems we are able to introduce a new control variable to address the issue of selection out of self-employment. The variable is based on the idea that those forced to exit self-employment due to poor profitability of their businesses are hurt financially in the process. If anything, that should show up as a reduction of one's satisfaction with personal finances from the initial to the final period. The variable is based on the person's subjective satisfaction with his/her financial situation (on a five-point Likert scale from not satisfied to fully satisfied) in the beginning and at the end of the self-employment spell. The indicator (*Hurt financially*) obtains the value of one for someone whose perceived financial situation worsened and is equal to zero otherwise. We include this new variable as a new control to our basic wage regressions. While it is not entirely satisfactory, the assumption is that the indicator allows capturing the higher tendency of the financially less successful self-employed to revert back to paid-employment.

As a final undertaking we incorporate all three selection 'controls' into a single estimation procedure. Wooldridge (2002) shows that in a context such as ours, 2SLS with the inverse Mills ratio from the first stage added as a regressor to the second stage is consistent and that the procedure of specifying a first-stage Heckman-style selection equation and a second-stage instrumental variables estima-

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21   Gross amount for Finland and France.

22   Not available for Luxembourg. We also experimented with self-reported health (on a five-point Likert scale) as well as the body mass index for the same purpose. They performed quite similarly, but as one's self-perception of health might relate to the wage offer or prevailing labour market status, and the body mass index is only available from 1998 on (a two-year forward value was used) and even then for only nine countries, the one mentioned was preferred.

23   Not available for Germany or the UK. For Greece the cut-off is about 30,000 euros (10,000,000 GRD).

24   Smoking at the work place is prohibited by law in Europe. In the observation period there was both economic and social pressure towards restricting smoking during working hours. There have also been national anti-smoking campaigns in part motivated by the additional burden smoking is causing the (public) health care systems. All this suggests that *Smoker* is in the European context potentially a useful instrument.

tion can be applied to any kind of endogenous variable (without any additional assumptions). This makes it reasonably easy to integrate our first two selection controls with the third, which simply involves adding the new control variable to the second stage equation. It thus is reasonably straightforward to bring the three selection controls into one framework.

Table 6 below provides the results for the whole sample (columns 1–4) as well as for the highly educated sub-sample (columns 5–8). In the interest of space, the results are provided for males' net wage – the results for the gross wage as well as for females were qualitatively fairly similar (complete results available upon request). The first three coefficient columns in both the left (columns 1–3) and the right (columns 5–7) panels study the selections separately; columns 5 and 8 study them jointly as discussed above.

As can be seen in Table 6, when considered separately (columns 1 and 5), the initial selection into paid-employment does not change our previous findings qualitatively. The insignificant coefficients of the inverse Mills ratios (λ) in the second stages suggest that this type of selection is not severe. The first-stage results suggest that the variables used to identify the selection model perform as expected. Note that the initial wage remains among the controls.

Table 6: Regression Results of Wage Models with Selection.

Selection:	Males: all (dependent variable: net wage)				Males: highly ed. (dependent variable: net wage)			
	1. →Paid Heckman	2. →Self 2SLS	3. Self→ OLS	All →P→S→ Wooldr.	1. →Paid Heckman	2. →Self 2SLS	3. Self→ OLS	All →P→S→ Wooldr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Wage, net, start	.593 ***	.589 ***	.593 ***	.586 ***	.634 ***	.626 ***	.634 ***	.637 ***
Self-empl. years	-.021 **	-.196	-.025 *	-.356	-.042 **	-.284	-.037	.060
Unempl. years	-.080 ***	-.078 ***	-.080 ***	-.079 ***	-.142 ***	-.143 ***	-.142 ***	-.142 ***
Education, med.	.077 ***	.069 ***	.069 ***	.078 ***				
Education, high	.223 ***	.212 ***	.210 ***	.226 ***				
Hurt financially			.035	.544			-.061	-.204
λ (second stage)	.074			.077	-.010			-.043

Also including: Age, Age^2, Tenure, Tenure^2, Tenure unavail., Club member, Born abroad, Married, Number of kids, Capital income, Densely pop., Unemployment as well as a constant term and country dummies (complete results available upon request).

Exclusion restrictions in Heckman selection (first-stage coefficient estimates).

Hospital stay	-.032			-.032	-.126			-.126
Non-wage income	-.016 ***			-.016 ***	-.015 **			-.015 **

Instruments in two-stage least squares (estimated first-stage coefficients; implemented as a one-step procedure).

Windfall		.161 ***		.110 ***		.182 ***		.086
Spouse self-empl.		.010		.007		.009		.012
Smoker		.012 ***		.011 ***		-.001		-.002
Obs., first stage	35944			35944	6078			6078
Obs., second stage	14979	14979	14979	14979	3663	3663	3663	3663
Adjusted R^2		.74	.75	.73		.59	.61	.61

Notes: Estimated with Stata 9.2 SE for Windows. ***, **, and * respectively indicate statistical significance at 1, 5, and 10 per cent levels. Heckman selection is estimated as a heteroscedasticity consistent two-step procedure. 2SLS is estimated in a single step with heteroscedasticity consistent standard errors.

Source: The authors' estimates based on ECHP.

When we double-control for selection from paid- into self-employment by instrumenting *Self-empl. years* (columns 2 and 6), its coefficient becomes indistinguishable from zero. The first-stage co-efficients nevertheless suggest that the instruments have some power. It is worth stressing that we have also considered a number of other instruments and their combinations; the coefficient of interest in-variably remained statistically insignificant, and its sign and size vary across the instrument sets.

Controlling for the selection from self- into paid-employment (columns 3 and 7) using *Hurt fi-nancially* as an additional regressor slightly weakens the negative effect of self-employment experi-ence.

Considering the three types of selection jointly (columns 4 and 8) confirms that if anything, our empirical results are inconsistent with the perceptions of the lack of sympathy of the European labour market towards returning entrepreneurs: In light of ECHP data, European entrepreneurs do not seem to suffer from a disproportionately bad stigma of failure upon return. It moreover seems that some form of negative selection accounts for most, if not all, of the (unconditional) *ex post* wage difference be-tween those with self-employment experience and those with a continued work experience. The most usual explanation for such selection is that the likelihood of entering (and exiting) entrepreneurship correlates negatively with the unobservable ability and/or productivity.

3.3.3. Alternative comparison group

As a final check, we re-run our basic estimations using an alternative comparison group. As in Bruce and Schuetze (2004), our alternative group consists of those who remain at the wage-sector for the entire 5-year window but who have at least one job change during the period. This alternative comparison group may be more appropriate than the one we have used so far if there are, e.g., (nega-tive or positive) returns to being mobile in the European labour market, and if people who are hetero-geneous in their (unobserved) propensity to switch jobs or occupations, self-select for mobility.[25] Were that the case, we would in our basic estimations be comparing 'apples to oranges'; the estimations might therefore either under- or overestimate the consequences of brief self-employment spells.

Comparing results in Table 7 to Table 4 and Table 5 suggest that we have not been grossly over- or underestimating the effects of self-employment; as with Bruce and Schuetze (2004), the estimated coefficients are less statistically significant. In particular, out of the eight reported self-employment coefficients, only two are statistically significant at the 10% level. This comparison does not challenge our basic finding that European entrepreneurs do not seem to suffer from a disproportionately bad stigma of failure upon return.

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25   As a number of findings in the literature on the 'hobo syndrome' suggest (see, e.g., Munasinghe and Sigman, 2004, and the references therein).

Table 7: Regression Results of the Wage Models with an Alternative Comparison Group.

	Educ., all				Educ., high			
	Males		Females		Males		Females	
	Wage, net	Wage, gr.	Wage, net	Wage, gr.	Wage, net	Wage, gr.	Wage, net	Wage, gr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Wage, net, start	.455 ***		.466 ***		.525 ***		.539 ***	
Wage, gr., start		.502 ***		.503 ***		.552 ***		.573 ***
Self-empl. years	-.016	-.025 *	-.054	-.060	-.040	-.052 *	-.039	-.064
Unempl. years	-.071 ***	-.079 ***	-.056 ***	-.066 ***	-.135 ***	-.170 ***	-.048	-.081 **

Also including: Age, Age^2, Tenure, Tenure^2, Tenure unavail., Club member, Born abroad, Education med. (columns 1 to 4), Education high (columns 1 to 4), Married, Number of kids, Capital income, Densely pop., Unemployment as well as a constant term and country dummies (complete results available upon request).

Observations	3587	3566	2266	2256	824	822	679	679
Adjusted R^2	0.71	0.77	0.71	0.76	0.50	0.57	0.56	0.63

Notes: Entries are White (1980) heteroscedasticity-consistent OLS coefficient estimates. Estimated with Stata 9.2 SE for Windows. ***, **, and * respectively indicate statistical significance at 1, 5, and 10 per cent levels.

Source: The authors' estimates based on ECHP.

4. Non-wage outcomes

How can we reconcile the relatively large unconditional *ex post* wage difference between those with and without self-employment experience with the lack of a conditional wage difference? While it appears that some form of negative selection provides an obvious reconciliation, what remains to be understood is whether the selection is *voluntary* or *involuntary*. Selection by low-wage (low-ability) employees into and subsequently out-of self-employment is likely to be involuntary, if self-employment is unemployment in disguise (Earle and Sakova, 2000) and, in particular, if the low-ability employees face a higher likelihood of becoming displaced from wage work. On the contrary, selection is probably voluntary if it is negative due to low (unobservable) reservation wages that correlate, e.g., with the likelihood of having a preference for being one's own boss. While it is evident that we cannot deliver fully conclusive evidence on the nature of the selection that we have documented, an analysis of a number of non-wage outcomes provides a first step towards a better understanding of it.

Table 8 provides a first account of non-wage outcomes by exploring the probability of looking for a new job, reported separately for highly educated and others, as well as by the employment status. The table suggests that the probability of looking for a (new) job while in self-employment is as much as ten percentage points higher for the highly educated men than for the others. The difference is statistically significant at 5% level. Note that in other employment statuses job search probabilities are roughly comparable across the two groups. Furthermore, if one compares highly educated and others in self-employment on a more permanent basis (i.e., by not restricting the sample to short self-employment spells), the highly educated have a *lower* probability of a job search (not shown but available upon request). These findings suggest that self-employment may be unemployment in disguise, especially for highly educated males; a finding that is more consistent with involuntary than voluntary selection into self-employment of the highly educated European men.

Table 8: Probabilities of Looking for a Job According to the Employment Status.

Looking for a job while…	Males				Females			
	Obs.	Educ., High[a]	Others[b]	Diff. [c]	Obs.	Educ., High[a]	Others[b]	Diff. [c]
Self-empl.	(331)	18.75%	8.37%	*10.38%* **	(87)	8.00%	3.23%	*4.77%*
Unempl.	(882)	88.54%	89.19%	*-0.64%*	(602)	91.43%	85.51%	*5.92%* *
In paid-empl.	(66,507)	7.81%	7.21%	*0.60%* **	(45,440)	7.31%	6.82%	*0.49%* *

Notes: Refers to the whole 5-year window, i.e., to a maximum of 6 × 14,979 (males) and 6 × 10,259 (females) observations: The calculations are based on somewhat smaller numbers of observations, as the job search variable (Looking for a job = 1 if PS001 = 1, 3, 5; else = 0) is missing for some individuals. Due to national differences the measure is only partly usable for Germany, Luxemburg, and the UK. Entries *not* in italics are the percentages of the individuals looking for a (new) job at the time. Entries in *italics* are differences (c) between the estimates for the highly educated (a) and others (b). ***, **, and * respectively indicate statistical significance at 1, 5, and 10 per cent levels.

Source: The authors' estimates based on ECHP.

Table 9 reports odds ratios (coefficients below one indicate negative effects) of logit estimations for several non-wage outcomes (see the Appendix for the unconditional results). In this table, the dependent variables are end-of-period dummies for (i) part-time paid-employment, (ii) unemployment, (iii) job security, (iv) satisfaction with household's financial situation, (v) ability to make ends meet, and (vi) having money left to save in the household. The independent variables are the same as those used in columns 2 and 6 of Table 4, with the following adjustments: First, in order to ease interpretation of the logit estimations, the self-employment and unemployment years variables are re-coded as dummies indicating whether the person did or did not have self-employment or unemployment experience within the window. Second, the initial period value of the dependent variable is included as a control of unobserved individual effects. Third, we re-run regressions (iv) to (vi) with the wage growth (log difference of the end and initial period wages) as an additional regressor in order to control for wage-related changes in financial situation.

Table 9 suggests that the probability of part-time employment is over two and a half times higher for those having self-employment experience. For males – but not for females – we find some indication that financial situation (the middle and bottom panels of Table 9) is worse for those with self-employment experience. For example, for those who have self-employment experience, the probability of being normally able to save money is only 0.594 times that of the corresponding probability of those who have no such experience (this difference is significant at 1% level); the finding is robust to controlling for wage growth.

Table 9: Regression Results of the Non-Wage Outcome Models.

Labour market outcomes

Variable		Part-time empl. at the end	Obs.	Unempl. at the end	Obs.	Present job security	Obs.
Males	Ever Self-Empl.	2.714 **	(12,861)	2.054 **	(15,865)	.659 **	(11,907)
	Ever Unempl.	1.610		–		.571 ***	
Females	Ever Self-Empl.	2.660 ***	(8,637)	1.541	(11,200)	.788	(8,510)
	Ever Unempl.	1.570 ***		–		.597 ***	

Finances

Variable		Satisfied w. financial situation	Obs.	The h-hold is able to make ends meet	Obs.	Money left to save in the household	Obs.
Males	Ever Self-Empl.	.800	(11,890)	.830	(13,055)	.594 ***	(14,856)
	Ever Unempl.	.771 **		.625 ***		.766 ***	
Females	Ever Self-Empl.	1.253	(8,489)	.872	(8,985)	.918	(10,164)
	Ever Unempl.	.810		.769 **		.803 *	

Finances (with wage growth as an additional control)

Variable		Satisfied w. financial situation	Obs.	The h-hold is able to make ends meet	Obs.	Money left to save in the household	Obs.
Males	Ever Self-Empl.	.852	(11,890)	.850	(13,055)	.603 ***	(14,856)
	Ever Unempl.	.864		.688 ***		.832 *	
Females	Ever Self-Empl.	1.431	(8,489)	.941	(8,985)	.970	(10,164)
	Ever Unempl.	.865		.799 *		.825	

Notes: Entries are partial odds ratios of heteroscedasticity consistent logit estimations. A unit increase in the variable (here switching from not having self-employment or unemployment experience to having it) increases the probability of the event defined by the dependent variable by the number of times the coefficient indicates. Since *Ever Unempl.* Perfectly predicts a large share of the outcomes of the dependent variable upon considering *Unempl. At the end*, it is excluded from the two equations in question (and the ever unemployment – unemployed at the end alternative is not considered). Estimated with Stata 9.2 SE for Windows. ***, **, and * respectively indicate statistical significance at 1, 5, and 10 per cent levels.
Source: The authors' estimates based on ECHP.

Brief spells of self-employment are thus associated with increased probability of part-time employment upon returning to the wage sector, increased likelihood of outright unemployment, and decreased job security. This suggests negative involuntary selection, in particular if transitions from self-employment to unemployment or to job insecurity can be characterized as involuntary (cf. Abowd et al., 1999; Pérez and Sanz, 2005). Finally, the interpretation of having negative involuntary selection in the data is not inconsistent with the finding that the perceived financial situation of men returning to paid-employment after a spell of self-employment is worse when compared to those continuing in the wage sector.

5.   Conclusions

Hundreds of thousands of Europeans enter self-employment each year, but self-employment spells are typically brief. Many of the new entrepreneurs therefore exit soon after entry. How do those who return to paid-employment fare in the labour market? Many European policy-makers appear to know the answer: those leaving self- for paid-employment after an entrepreneurial spell are not given a proper second chance. This paper investigates whether this perception of the consequences of the short self-employment spells is supported by the European Community Household Panel (ECHP), which allows us to track flows from paid-employment to self-employment and unemployment as well as the subsequent returns back to the wage sector.

In an unconditional analysis, the European policy-makers perception appears to hold: There is a large *ex post* wage difference between those with self-employment experience and those with a continued work experience. Moreover, in light of the available data, the difference appears to be larger in Europe than in the US. However, unconditional and conditional difference-in-differences analyses of the *ex ante* and *ex post* wages show that the effect of short self-employment spells is not quite as real as many have thought. It appears that European employees select negatively into (and possibly out-of) self-employment, i.e., that the likelihood of entering (and exiting) entrepreneurship correlates negatively with the unobservable ability and/or productivity. Our estimations in which such selection is controlled for do not corroborate the available anecdotal evidence. We conclude that European entrepreneurs do not seem to suffer (either in absolute terms or relative to their US counterparts) from a disproportionately bad stigma of failure upon return.

While not fully conclusive, our analysis of non-wage outcomes suggest that it could be negative *involuntary* selection that explains the large ex post wage difference between those with self-employment experience and those with a continued work experience. Indeed, self-employment seems to be unemployment in disguise (Earle and Sakova, 2000), especially for highly educated males: While self-employed, they are more likely to search for a new job in paid-employment than their less educated counterparts.

Our empirical treatment of the labour market consequences of short unemployment spells is not as comprehensive as that of the self-employment, but we nevertheless find that they appear to be worse than the consequences of short self-employment spells. Our results mostly corroborate the findings from the earlier literature suggesting that unemployment spells have negative returns (e.g., Arulampalam, 2001; Burda and Mertens, 2001; Pérez and Sanz, 2005).

The European Commission has especially in recent years intensified its efforts in promoting entrepreneurship. Its *Green Paper on Entrepreneurship in Europe* (EC, 2003b, p. 4) insists, for instance, that "Europe needs to foster entrepreneurial drive more effectively." A few years earlier the European Council approved the *European Charter for small enterprises* in 19–20 June 2000 recommending that the governments' should focus their strategic efforts on a number of actions believed to be vitally important for the operation of small enterprises. The findings of this paper suggest a number of conclusions that are relevant to the design of these policy efforts: First, they help to better understand the incentives of Europeans to enter self-employment in the first place. It seems that the prospect of having to face a hostile labour market upon return (after a short spell of self-employment) is not what hampers European entrepreneurship. Second, a problem of Europe appears to be its inability to make entrepreneurship an attractive career alternative for its best and brightest. What Europe needs is positive voluntary selection into entrepreneurship (instead of the negative involuntary selection that our results appear to imply). The nature of selection may for example explain why Europe is often said to have an

insufficient amount of growth-seeking entrepreneurial activity. Moreover, if the entries into and exits from short-term entrepreneurship can on average be related to negative selection, it cannot be the case that a significant number of the best European talents test their new ideas or technological innovations on the market by making an entrepreneurial entry. The reason for this is that such experimenting is risky: Many of the talented making an 'experimental' entrepreneurial entry should re-enter the wage sector soon after entry, implying (possibly) positive selection. Finally, policy measures that aim for a more active market for mergers and acquisitions as well as deeper stock markets could facilitate positive selection out-of, and thus also entry into self-employment.

Appendix

In ECHP the self-defined main activity status (UDB: PE001) – on the basis of the most time spent – of the target person during the interview is one of the following (Eurostat, 2003b, p. 210):[26]
– working with an employer in paid-employment (15+ hours per week; PE001 code 1),
– working with an employer in paid apprenticeship (15+ hours per week; PE001 code 2),
– working with an employer in training under special schemes related to employment (15+ hours per week; PE001 code 3),
– self-employment (15+ hours per week; PE001 code 4),[27]
– unpaid work in a family enterprise (15+ hours per week; PE001 code 5),
– in education or training (PE001 code 6),
– unemployed (PE001 code 7),
– retired (PE001 code 8),
– doing housework, looking after children or other persons (PE001 code 9),
– in community or military service (PE001 code 10),
– other economically inactive (PE001 code 11),
– working less than 15 hours (PE001 code 12),
– not applicable (PE001 code -8), or missing (PE001 code -9).

Only 18–65-year olds ($18 \leq PD003 \leq 65$ throughout the window) in paid-employment (PE001 code 1) in the beginning (1996) and end (2001) of the only feasible five-year window (1996–2001) as well as in paid- (PE001 code 1), self- (PE001 code 4), or unemployment (PE001 code 7) in the intermediate years (1997–2000) are included in our sample. In ECHP this group consists of 25,238 individuals. By country, Ireland (835) and Greece (1,210) have the smallest number of included individuals, whereas Germany (3,096) and the UK (2,484) have the largest.

Table A1 describes the details of the variables used in the analysis. Some aspects are also discussed in the text. Table A2 presents the descriptive statistics of the sample. Some related aspects are also discussed in the text. Table A3 studies the unconditional non-wage outcomes.

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26   Whereas PE001 defines the status at the time of the interview, the 'calendar of activities' records the monthly status January (PC001) through December (PC012) in the year preceding the survey, albeit in a less detailed manner. The monthly status is not, however, available for the Netherlands or Sweden, and is only partially available for France. The most frequent activity last year (PC013) is also among the calendar entries, but it is not available for the Netherlands or Sweden. The calendar information is not exploited in here, although it offers some potentially interesting avenues for further research.

27   As the definition of self-employment status is crucial here, it is worthwhile to discuss it in some detail. In ECHP, self-employed persons (or entrepreneurs) are defined as those engaged in economic activities for the acquisition of income on their own account and risk. Those working in an unlimited, limited, or partnership company are considered entrepreneurs if they alone (or with their immediate families) own at least half of the company (as reported in Pyy-Matikainen, Sisto, and Reijo, 2004). In the ECHP, those temporarily absent are considered working if there is an arrangement for their return to work. Those absent for over half of a year are considered working only if receiving pay. Those employed in highly seasonal activities are not considered to be working during the off-season. Self-employment status is nevertheless intact if the place of work or equipment for business is maintained. As the self-employment reported main activity status is mutually exclusive, defining self-employment seems trivial (PE001 code 4). There are, however, at least two potentially important caveats. Firstly, entrepreneurs owning alone or with their immediate family less than half of their companies are not included in the definition of self-employed. This may result to the exclusion of especially high-tech and/or growth-orientated entrepreneurs that often have a number of founders (and thus stock holders) and/or have received significant external funding by selling their stock to outsiders. Secondly, as the main activity status is defined at the time of the interview on the basis of most time spent, the role of part-time entrepreneurship at the time of the interview and activity during the rest of the year is unclear. In the European context these are not likely to be major problems as far as the overall level of entrepreneurial activity is concerned, but may bias results, e.g., if one were to study economic effects of entrepreneurial activity.

Table A1: Construction of the Variables.

Variable	Description	Unit[a]	Time	Construction[b]	Bruce et al.[c]
Wage, net, start or end	Worker's net hourly wage	Log €, nominal	1996, 2001	Monthly net wage & salary (PI211M) / Weekly working hours (PE005) * 4	–
Wage, gr., start or end	Worker's gross hourly wage	Log €, nominal	1996, 2001	Monthly gr. wage & salary (PI211MG) / Weekly working hours (PE005) * 4	Ln(Wage)
Self-empl. years	Years in self-employm. in the window	Count, years	1997–2000	Status: self-empl. (PE001 = 4), count of years between the endpoints	Years Self-Employed
Unempl. years	Years in unemploym. in the window	Count, years	1997–2000	Status: unemployed (PE001 = 7), count of years between the endpoints	Years Unemployed
Age	Worker's age	Count, years	1996	Worker's age at the time of the interview (PD003)	Age
Age^2	Worker's age (above) squared	Years^2 per 1000	1996	Worker's age (above) squared per thousand	Age-sq./1000
Tenure	Worker's tenure	Count, years	1996	(Interv. year, mnth (PG007; PG006) – job start year, mnth (PE011; PE012))/12	Tenure
Tenure^2	Worker's tenure (above) squared	Years^2 per 1000	1996	Worker's tenure (above) squared per thousand	Tenure sq./1000
Tenure unavail.[d]	Worker's tenure (above) unavailable	Dummy	1996	Worker's tenure (above) unavailable (coded zero in Tenure and its square)	–
Club member[e]	Member of a club or an organisation	Dummy	1996	A sport, entertainment or other club, group or org. member (PR002 = 1)	Union
Born abroad[f]	Worker is born abroad	Dummy	1996	Person has been born abroad (PM001 = 4 or 6)	Non-White
Education, med.	Has a bachelor or equiv. degree	Dummy	1996	Highest completed educ.: 2nd stage of secondary (ISCED 3, PT022 = 2)	Some college
Education, high	Has a master or eq. or higher degree	Dummy	1996	Highest completed educ.: recognised 3rd level (ISCED 5–7, PT022 = 1)	College Graduate
Married	Worker is married	Dummy	1996	Present marital status: married (PD005 = 1)	Married
Number of kids	Number of household members under 16	Count, heads	1996	Number of household members (HD001) – those 16 or above (HD002)	Number of kids
Capital income[g]	Household's net capital income	€1,000, nominal	1996	Net capital income (HI121, gross amount for Finland and France)	Capital inc./1000
Densely pop.[h]	Household in a densely pop. area	Dummy	1996	Urb. (HG016 = 1); Community (HG017 = 3); Dens. (REGIO d3densit ≥ 500)	MSA
Unemployment[i]	Local unemployment rate (NUTS aggr.)	Per cent	1996	Regional (ECHP NUTS aggr.) unemployment rate (REGIO un3rt)	Unempl. rate

Notes: (a) Units correspond to (except for currency; *Tenure* in years rather than in months) Bruce and Schuetze (2004); (b) the codes in parentheses refer to variables in ECHP, with the two exceptions extracted from the Eurostat New Cronos REGIO database; (c) the column indicates the nearest corresponding variable of Bruce and Schuetze (2004) – major dissimilarities are documented in a note attached to the variable name; (d) the problem of unavailable tenure information (7.9% of the individuals) is circumvented by replacing missing values of *Tenure* and *Tenure*^{2} by zero and coding the *Tenure unavail.* dummy indicating when such replacements have been made; (e) ECHP does not record respondents union membership used in Bruce and Schuetze (2004) – while the 'replacement' variable employed here is believed to be correlated union membership, it is dissimilar (see footnote 14); (f) ECHP does not record respondents race, which is used in Bruce and Schuetze (2004) – while the replacement is correlated with non-white race, it is dissimilar; (g) Capital income is missing for 0.09% of the individuals – missing values are replaced by zero; (h) in order to avoid the problem of missing values, the dummy is coded as follows: set to 1 for households located in a 'densely-populated area' (code 1) in terms of 'degree of urbanisation' (HG016) and to 0 for other non-missing values; for the still missing observations set to 1 for households whose 'village or town' (HG017) is 'larger town' (code 3) and to 0 for other non-missing values; for the still missing values REGIO's population density is used to construct a regional (NUTS aggregates, HG015) densely-populated dummy (with the cut-off of at least 500 inhabitants per km^{2,} as suggested by Eurostat); (i) REGIO's regional unemployment rate; if unavailable, the national unemployment rate is used instead.

Table A2: Descriptive Statistics.

Variable	Males					Females				
	Obs.	Mean	S. dev.	Min.	Max.	Obs.	Mean	S. dev.	Min.	Max.
Wage, net, end	14979	2.178	0.562	-2.318	5.438	10259	2.062	0.543	-2.260	4.895
Wage, gr., end	14153	2.462	0.630	-1.789	6.071	9871	2.352	0.605	-1.682	5.395
Wage, net, start	14979	1.927	0.588	-2.630	4.944	10259	1.795	0.556	-2.995	4.791
Wage, gross, st.	14153	2.199	0.658	-2.147	5.658	9871	2.078	0.632	-2.974	5.338
Self-empl. years	14979	0.026	0.233	0	4	10259	0.011	0.151	0	4
Unempl. years	14979	0.057	0.309	0	4	10259	0.056	0.305	0	4
Age	14979	38.052	9.361	18	60	10259	37.575	9.344	18	60
Age^2	14979	1.536	0.724	0.324	3.600	10259	1.499	0.712	0.324	3.600
Tenure	14979	8.094	6.571	0	18	10259	7.469	6.315	0	18
$Tenure^2$	14979	0.109	0.119	0.000	0.324	10259	0.096	0.113	0.000	0.324
Tenure unavail.	14979	0.083	0.277	0	1	10259	0.073	0.260	0	1
Club member	14979	0.428	0.495	0	1	10259	0.339	0.473	0	1
Born abroad	14979	0.023	0.151	0	1	10259	0.028	0.165	0	1
Education, med.	14979	0.397	0.489	0	1	10259	0.374	0.484	0	1
Education, high	14979	0.245	0.430	0	1	10259	0.299	0.458	0	1
Married	14979	0.701	0.458	0	1	10259	0.626	0.484	0	1
Number of kids	14979	0.948	1.068	0	9	10259	0.794	0.956	0	8
Capital income	14979	0.442	2.388	0	169.663	10259	0.468	2.459	0	169.663
Densely pop.	14979	0.342	0.474	0	1	10259	0.388	0.487	0	1
Unemployment	14979	10.102	5.802	3.2	31.2	10259	9.963	5.156	3.2	31.2

Notes: Exchange rates as provided in ECHP. As the Italian figures are in 1,000 of liras, the exchange rate is divided by 1,000.
Source: The authors' calculations using ECHP.

Table A3: Non-Wage Outcomes of Self- and Unemployment Experience.

Reg.: Year	Males				Females		
	All (obs.)	Ever Self-Employed	Ever Un-employed		All (obs.)	Ever Self-Employed	Ever Un-employed
In part-time (PE005C = 2) employment at the end of the period [a]							
EU-14: 2001	1.07% (15,056)	2.90% *	1.53%		13.42% (9,912)	21.43%	16.32% *
US: 1990	7.35% (n/a)	9.43% [n/a]	21.67% [n/a]		25.68% (n/a)	44.44% [n/a]	35.00% [n/a]
Unemployed (PE001 = 7) at the end of the period [b]							
EU-14: 2001	2.92% (15,865)	6.92% **	40.76% ***		3.78% (11,200)	7.23%	47.16% ***
US: 1990	1.93% (n/a)	5.36% [n/a]	7.69% [n/a]		2.06% (n/a)	0.00% [n/a]	9.09% [n/a]
Satisfied with present job in terms of job security (PE032 = 4, 5, 6) [c]							
EU-14: 2001	81.99% (12,314)	68.10% ***	62.37% ***		84.96% (8,765)	73.91% **	69.32% ***
Finance: satisfied with financial situation (PK002 = 4, 5, 6) [c]							
EU-14: 2001	68.84% (12,325)	54.98% ***	49.49% ***		71.37% (8,754)	62.32%	57.10% ***
Finance: The household is able to make ends meet (HF002 = 4, 5, 6) [c]							
EU-14: 2001	60.14% (13,363)	44.24% ***	38.05% ***		65.05% (9,200)	50.72% **	49.20% ***
Finance: There is normally money to save in the worker's household (HF013 = 1) [c]							
EU-14: 2001	55.65% (15,212)	37.29% ***	41.88% ***		58.51% (10,491)	46.67% **	47.47% ***

Notes: Entries are percentages of individuals with the condition specified in the subheadings appearing in *italics*. The figures in the table are calculated using the non-missing observations of the specified variable. The figures are end-year values as specified in the first column. (a) Refers to those in paid-employment (not self-employed or unemployed, here also including those working under 15 hours a week) at the end of the window – otherwise the sample is constructed as discussed in the text. (b) Refers to those in or seeking paid-employment (not self-employed, here also including unemployed and those working under 15 hours a week) at the end of the window – otherwise the sample is constructed as discussed in the text. (c) The sample discussed in the text is employed. The samples used in the table do not impose the condition of non-missing wage information (which is necessary in the regressions). In the first column "obs." refers to the total number of observations used in calculations. ***, **, and * respectively indicate a statistically significant difference at 1, 5, and 10 per cent levels (n/a = not available) of the group specified in the column heading to the remainder of the sample (an univariate two-sided t-test without assuming equal variances in the two groups).

Source: The authors' calculations based on ECHP.

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