Habitual Entrepreneurs in the Making: How Labour Market Rigidity and Employment Influence Entrepreneurial Re-entry

Small Business Economics

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Appendix

Robustness Tests

We carried out several robustness checks to ensure the veracity of our findings and whether our theoretical arguments hold for other samples of entrepreneurs beyond those with prior entrepreneurial experience. First, we re-run the analyses by replacing the labour market rigidity measure based on the World Bank's Employing Workers Indicator by two measures of the strictness of employment protection based on the OECD's Employment Protection Legislation from 2006 to 2010: 'individual and collective dismissals' and 'temporary contracts' (OECD 2004). As defined by the OECD, employment protection refers to regulations about hiring (e.g., rules favouring disadvantaged groups, conditions for using temporary or fixed-term contracts, and training requirements) and firing (e.g., redundancy procedures, mandated pre-notification periods and severance payments, special requirements for collective dismissals, and short-time work schemes). EPL, in turn, refers to all types of employment protection measures, whether grounded primarily in legislation, court rulings, collectively bargained conditions of employment, or customary practice (Parker 2006). For the main effect, neither the individual and collective dismissals nor the temporary contract have any noticeable impact on habitual entrepreneurship (odds ratio: 1.059, $p>0.1$ and 0.957, $p>0.1$ respectively). Employment status is

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positively related with individuals' likelihood of entrepreneurial re-entry (odds ratio: 3,109, p<0.001). The interaction effects between the regulations on temporary contract and employment status are positive (odds ratio: 1.219, p<0.05) while the interaction effect between strictness of individual and collective dismissals and the employment status is not statistically significant. These results are somewhat different from those based on WB EWI measure. We see three main reasons for this: First, the WB EWI has a broader coverage than OECD EPL. While EWI captures rigidity of labour market regulations in three areas: *hiring, working hours* and *redundancy*, EPL measures instead capture only two areas: the procedures and costs of individual and collective *dismissals,* and *hiring* temporary workers and those on fixed-term contracts, which overlap to some extent with EWI's hiring and redundancy dimensions, but EPL does not capture the rules on working hours. Second, the country coverages in the analyses are different. We have 29 European countries in the original regressions while the robust check only includes 22 OECD countries over the same observation period. A final potential reason for the difference could be that OECD EPL measure applies different weights to the sub-dimensions of the indices, while WB EWI measure applies equal weight to the three sub-indices.

Second, instead of using World Bank's Employing Workers Indicator as a whole, we run separate regressions for three sub-indices: 'difficulty of hiring', 'rigidity of hours', and 'difficulty of firing'. Results are largely the same with those based on the aggregated measure. Employment status shows a consistently positive and statistically significant effect in three models. Difficulty of hiring and firing are positively associated with entrepreneurial re-entry (odds ratio: 1.177, p<0.05 and 1.124, p<0.05 respectively), while rigidity of working hours is not statistically significant. The interaction effects between employment status and each of these three sub-indices are all positive but the effect of difficulty of firing does not change with employment status.

In a supplementary analysis of the nascent entrepreneurship rates, Van stel et al. (2007) also used the WB variable 'Firing Costs' – defined as 'Cost of a redundant worker in terms of weeks of wages' as an alternative to the Employment Rigidity Index. However, the variable Firing Costs was positively correlated with nascent entrepreneurship rates while the Employment Rigidity Index was negatively correlated with all three measures of entrepreneurship used (necessity-driven nascent entrepreneurship rates, opportunity-driven nascent entrepreneurship rates, and small business ownership rate). Redundancy cost initially measured the redundancy cost of worker with 20 years of continuous employment. From around 2010, the average of tenures for 1 year, 5 years and 10 years were recommended in the calculation of the redundancy cost instead of the 20years. Due to the reliability of the available data on this indicator we did not include it in the analysis. As a robustness check, we found that the impact of redundancy cost of workers with 20 years continuous employment is not significant.

Third, we also split the sample into necessity and opportunity-driven habitual entrepreneurship. As before, employment status is positively related with both necessity and opportunity-driven habitual entrepreneurship (odds ratio: 2.002, $p<0.001$ and 2.903, $p<0.001$ respectively) and the main effect of labour market rigidity is positively related to both necessity-driven and opportunity-driven re-entry, but the relationship between labour market rigidity and opportunity-driven re-entry is only marginally significant (odds ratio: 1.136, $p<0.1$, compared to an odds ratio of 1.25, $p<0.01$ for necessity-driven re-entry). The interaction effect between employment status and labour market rigidity is positive and significant for both opportunity-driven (odds ratio: 1.205, $p<0.01$) and necessity-driven re-entry (odds ratio: 1.321, $p<0.01$).

Fourth, to compare the results with entrepreneurial activities by individuals without any prior start-up experience, we test the hypotheses with a sample of novice entrepreneurship in the GEM date during the same period time from 2006 to 2010. For these novice entrepreneurship, employment status is positively related to both necessity and opportunity-driven entrepreneurship (odds ratio: 2.072, $p<0.001$ and 3.417, $p<0.001$ respectively) while labour market rigidity is negatively related to opportunity-driven entrepreneurship (odds ratio: 0.919, $p<0.1$). The relationship between labour market rigidity and necessity-driven entrepreneurship is positive but not statistically significant (odds ratio: 1.078, $p>0.1$). The interaction effect between labour market rigidity and employment status is positive both necessity-driven entrepreneurship and opportunity-driven entrepreneurship (odds ratio: 1.507, $p<0.001$ and 1.524, $p<0.001$ respectively).

Finally, we sought to account for the potential that entrepreneurial re-entry is dependent on whether the entrepreneur was successful or not in prior ventures (Toft-Kehler et al. 2014) by controlling for past entrepreneurial success in a hold-out sample for the years 2007-2010 where we have access to data on self-reported reasons for discontinuing a firm.[1] Result shows *no statistically significant difference* between individuals who had experienced business failures and those with positive experiences in their entrepreneurial re-entry decision.

We also controlled for country-level insolvency regulations which did not affect the three main results (Fu et al. 2017). This variable was collinear with the control for GDP per capita and we therefore omitted it from the main analyses.

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[1] GEM data from 2007 includes coding of self-reported reasons for exit due to: (i) an opportunity to sell the business, (ii) the business was not profitable, (iii) problems getting finance, (iv) another job or business opportunity, (v) the exit was planned in advance, (vi) retirement; (vii) personal reasons, and (viii) an 'incident'. We classified these reasons into reasons due to a *business failure* (i-ii) and *strategic* reasons (iii-vii).

In analyses excluding TEA rate as a control variables, the direct effect of labour market regulations was not statistically significant (but the moderation effect was) indicating that how ex-entrepreneurs are influenced by labour market regulations may differ depending on whether entrepreneurship is a more or less common occupational activity in the economy.

These different robustness tests taken into account, our results show that habitual entrepreneurs on average respond positively to labour market stringency while novice entrepreneurs tend to respond negatively to the rigid labour market regulations, especially for the opportunity-driven entrepreneurs. Being employed (i.e. holding a wage job, be it part time or full time, upon entry into entrepreneurship) is consistently positively related with engaging in both opportunity and necessity-driven entrepreneurial activities regardless individual's past entrepreneurial experience.

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