Self-employment and Intergenerational Transfers of Physical and Human Capital: An Empirical Analysis of French Data*

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Abstract: Using *The 1991 French Household Survey of Financial Assets*, we examine the determinants of self-employment using data on intergenerational transfers of wealth, education, informal human capital and a range of demographic variables. We find evidence of the importance played by the family in the decision to enter self-employment. Intergenerational transfers of wealth, familial transfers of human capital and the structure of the family are determining factors in the decision to move from wage work into entrepreneurship. We also find robust evidence that a person is less likely to move into self-employment if he obtains a third level education. Thus the higher education system in France appears to mitigate against the movement into self-employment from wage work.

I INTRODUCTION AND REVIEW

T he topic of self-employment has received little attention in empirical economics literature until relatively recently, despite the economic importance of this sector. The significance of self-employment is reflected in

the fact that 10.9 per cent of French households were classified as self-employed in 1991.[1] However, over the long run, the proportion of self-employed in the labour force has declined in France (Zarca, 1993). Given the present level of French unemployment, it is therefore important to understand the determinants and the economic factors that shape self-employment.

Much of the existing literature concentrates on the role of liquidity and the ability of an agent to acquire physical capital which is perceived as central to the selection into self-employment. The presence of liquidity constraints implies that either entrepreneurs are unable to establish a business in the start-up stage or that they are forced to employ suboptimal levels of capital in the running of an existing business. Thus it is widely held that the supply of entrepreneurship is constrained by the inability to access capital markets. Evans and Jovanovic (1989), using US data from the *National Longitudinal Survey of Young Men 1966-1981*, set out and estimate a model of entrepreneurial choice under liquidity constraints. They find that, on average, entrepreneurs are limited to only one and one-half times their initial wealth when starting a business. Their data points to the fact that people with more wealth have a higher probability of being selected into self-employment. This, they say, is evidence that people with insufficient funds are inclined to be excluded from starting a business. Employing US data from the *National Longitudinal Survey of Young Men for 1966-1981* and *Current Population Surveys for 1968-1987*, Evans and Leighton (1989) point to evidence that the probability of moving into self-employment increases with net worth. This again suggests that entrepreneurs face binding liquidity constraints in their choice between self-employment and wage work.

Blanchflower and Oswald (1991) side-step potential endogeneity problems of variables such as net worth by looking at inheritance and gifts. Using probit analysis of *The National Child Development Study 1958-1981*, they report that the receipt of a gift or inheritance of £5,000 approximately doubles the probability of a person setting up a business. Holtz-Eakin *et al.* (1994) suggest that the probability of becoming an entrepreneur is affected by the size of inheritance received.

In this study we concentrate on the self-employed household rather than on the individual level of previous studies. This allows us investigate the transfer of human capital, the influence of intergenerational transfers of physical capital and selected demographic aspects of the family in the decision to become your own boss. Section II describes the data base and the sample. A model is presented in Section III and the explanatory variables

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1 That is the reference person reported running his/her own business. *Source*: INSEE, Enquête sur les Actifs Financiers 1991. Population found using weights derived at INSEE (for technical details see Dumontier and Valdelièvre (1994)).

outlined in Section IV. The results of a cross-sectional probit are presented in Section V. Section VI examines the probability of transition to self-employment for non-family entrepreneurs. A conclusion is given in Section VII.

II THE DATA BASE

The data were drawn from the *1991 French Household Survey of Financial Assets (Enquête sur les Actifs Financiers)*. The data set is unique in that it provides detailed biographical information which includes family background, education, intergenerational transmissions of gifts and inheritance, household assets and household debt. Questions were framed firstly in regard to the reference person and then in terms of a spouse (if applicable). The "cleaned" data set contains responses from 9,530 households. In order to maintain a clear definition of self-employment, we classify only those households whose reference person was self-employed in his/her first job.[2] Only those 65 years of age or less were included in order to minimise the influence of retirement. Farmers were excluded as it is generally recognised that the character of intergenerational transmissions of physical and human capital in agriculture are particular to that sector.[3] Those in the liberal professions (doctors, lawyers, etc.,) were excluded as their education profile is different from other self-employed, such as managers of a small enterprise or retail outlet owners. Women were also excluded because it was difficult to distinguish whether self-employed husband and wife worked together in the same business or in separate enterprises.[4] This left 5,079 households, among whom 868 male respondents reported being self-employed in their main job. They mostly consisted of shopkeepers (230), craftsmen (528), owners of small businesses and self-employed chief executives of businesses employing more than 10 people (70).

III THE MODEL

As proposed by Rees and Shah (1986), the utility received from being either self-employed (SE) or in wage work (WW) may be set out as:

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2   Our sample only includes households whose reference persons reported being in the labour force at the time of answering. Thus households whose reference persons were students, persons doing military service, retired, housewives and withdrawn from the labour force due to illness were not included in the sample (or any of the analysis which follows).

3.   Lentz and Laband (1990), for example, point out that the rate of occupational inheritance among them is five times higher than among other proprietors, even when the amount of physical capital transferred between generations is the same.

4.   Also, 38 per cent of women reported not being in either wage work or self-employment at the time of the survey.

Utility from self-employment: $U_i = \pi(k^*) + V$

Utility from wage sector: $U_w = W$

where π is the uncertain profit from engaging in enterprise, which is a function of obtaining that level of capital needed to set up in business, k^*. V is the utility gained from the application of "entrepreneurial vision" (including the utility gained from being independent). W refers to the wage level. The perceived utility from the application of entrepreneurial vision may be affected by education, informal human capital from parents, family demography and region where the person lives. $\pi(k^*)$ depends on the person's access to capital. Therefore,

$$U_i = \pi(k^*) + V = \alpha_{i0}K + \alpha_{i1} Ed + \alpha_{i2} Ihk + \alpha_{i3} Fd + \alpha_{i4} Region + \mu \qquad (1)$$

$$U_w = W = \alpha_{w1} Ed + \alpha_{w2} Ihk + \alpha_{w3} Fd + \alpha_{w4} Region + \varepsilon \qquad (2)$$

where Ed refers to level of education attained and Ihk to the receipt of informal human capital. Fd denotes family demography. (Section IV provides detailed explanation of chosen dependent variables) μ and ε are error terms. A person enters self-employment if:

$$U_i - U_w \geq \alpha_{i0}K + (\alpha_{i1} - \alpha_{w1})Ed + (\alpha_{i2} - \alpha_{w2})Ihk + (\alpha_{i3} - \alpha_{w3}) Fd$$
$$+ (\alpha_{i4} - \alpha_{w4})REGION + \xi \qquad (3)$$

We can write this in the form of a probit model. If $Z^* \geq 0$ then an individual chooses self-employment, where

$$Z^* = \gamma_0 K + \gamma_1 Ed + \gamma_2 Ihk + \gamma_3 Fd + \gamma_4 Region + \xi$$
$$\text{where } \gamma_0 = \alpha_{i0}, \ \gamma_1 = (\alpha_{i1} - \alpha_{w1}) \text{ etc.,} \qquad (4)$$

Z^* is the difference in utility between wage work, U_w, and being self employed, U_i and is known only to the individual who makes his decision. We do not observe Z^* but we observe the outcome of the decision, i.e., whether the individual is self-employed or a salaried worker. Here

Z = 1, if the person is self-employed, given that $Z^* \geq 0$

Z = 0, if the person is a wage worker, given that $Z^* < 0$.

IV EXPLANATORY VARIABLES

Physical Capital: The fact that the data are cross sectional means that we encounter endogeneity problems in regard to the use of wealth as an explanatory variable. We cannot be sure whether a person enters self-

employment because he has easier access to capital through the wealth he has accumulated or he accumulated greater wealth due to the fact that he is self-employed. In order to reduce the potential problem of endogeneity, we employ five variables to investigate the importance of liquidity constraints. Three out of the five are direct intergenerational transfers of wealth. Inheritance and gifts (excluding enterprises) may be viewed as a transfer of wealth that is unlikely to be dependent on whether or not a person is, or is to become, self-employed. We also include a variable to denote whether or not the parents of the reference person ever helped in paying his rent or provided a free place of residence. This approach has the advantage of not only examining the role of liquidity constraints, but also the importance of intergenerational transfers of wealth from the family in the decision to become your own boss. The ownership of the place of residence at the time the household was formed is also included. This can be viewed as a proxy for the ability to obtain liquid capital from a financial institution. Lastly, we use a discrete variable to denote whether or not the spouse is in the labour force. The spouse's income may provide the basis for collateral based on future income streams.

Human Capital: The role of formal education is examined using discrete variables for primary level, second level general, technical baccalaureate, baccalaureate and third level. We use "no education" as control group for any probit which follows. In France, the wage level is very much related to the level of qualification attained (see Goux and Maurin, 1994). So those with higher educational qualifications may have less of an incentive to become self-employed given the high returns to education in the wage sector. Age may affect the selection into entrepreneurship in that young people may be more likely to take risks.[5] It could also be argued that people with longer wage experience may feel more confident about taking on the responsibilities of self-employment than a younger person with little wage experience. Here, where we interpret age as a proxy for wage experience, there should be a positive relationship between age and the probability of selection into self-employment. A spline function in age is used since some previous studies found the selection into self-employment increases up to middle age, usually 40, and decreases or stays constant thereafter (see Evans and Leighton, 1989). The influence of unemployment on self-employment is not straight-forward. Human Capital Theory indicates that unemployment may be viewed as a negative human capital variable in that a person is not gaining wage experience in these unemployed periods. But the "Disadvantage Theory", referred to by Evans and Leighton (1989), says that it may be that people who

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5.   For example, see Rees and Shah (1986).

move in and out of unemployment may be poor wage workers. Since they are unable to obtain a steady position in the wage sector, it is more likely that they will be selected into self-employment.

Informal Human Capital: While most of the literature has laid emphasis on the role of access to capital and liquidity constraints, we broaden our study to examine the role of human capital at a deeper level, emphasising the issue of intergenerational transfers of human capital. The reasoning behind the inclusion of "father self-employed" and "mother self-employed" is that if a parent were self-employed, the son may have gained practical business experience by working in the business. He may be more open to the idea of self-employment in later life by observing his parents running their own business. The young person may also gain access to the business and financial network which his parent is involved in. Likewise, the fact that a parent-in-law was self-employed may again be indicative of a transfer of expertise or access to an established business network.

Demographic (family): A quadratic term is included to capture any non-linear effects that occur with having children as regards the selection into self-employment. A continuous variable is included to denote the length of time since the formation of the households at the time of the survey. A household that is in existence longer may be indicative of familial stability which may increase the probability of selection into self-employment. However, it may also be the case that the importance of family duty may decrease the willingness to take risks.

Region: We include seven regional variables to pick up any variations in the pattern of self-employment that exist across selected areas in France.

V A CROSS-SECTIONAL ANALYSIS OF SELF-EMPLOYMENT FOR 1991

We employ a probit analysis of Equation (4) in order to describe the characeristics of all self-employed compared to wage workers. The results are presented in Table 1. (For definition of variables see Appendix 1.)

If we look at liquidity constraints using the physical capital variables, it is clear that the likelihood of being self-employed is higher if a person has received intergenerational transfers of wealth. Although inheritance and gift are not significant, parental help in the form of lending a home or paying the rent (Accommodation aid) is highly significant. This points to the role of the family in helping to provide access to physical capital and relaxing liquidity constraints. The parameter estimate of owning one's home at the time of formation of the household is positive and significant at the 5 per cent critical level. The fact that the spouse is working appears to have a positive effect on

Table 1: *Probit Estimates of the Probability of being Self Employed in 1991*
Dependent variable: Self-employed = 1 {No. Obs. 868}
Wage worker = 0 {No. Obs. 4,211}

Variable	Parameter Estimate	Wald χ^2
Constant	−3.16	123.3
Physical Capital:		
Inheritance	−0.02	0.21
Gift	0.09	1.94
House Owner	0.24	8.49
Accommodation aid	0.23	12.12
Spouse in labour force	0.10	4.73
Formal Human Capital		
Primary	0.26	13.64
2nd level	−0.02	0.08
Technical Baccalaureate	0.02	0.03
Baccalaureate	−0.25	4.74
Third level	−0.38	17.98
Age(<40)	0.05	47.60
Age(≥40)	0.04	95.70
Unemployed	−0.25	15.90
Informal Human Capital		
Father	0.61	115.40
Mother	0.13	1.35
Father-in-law	0.23	13.30
Mother-in-law	0.17	1.60
Demographic / other		
Married	−0.09	1.54
Children	0.04	0.73
Children^2	−0.02	4.60
Age household	−0.02	15.90
Regions:		
Paris Basin	−0.01	0.01
North and East	0.03	0.09
West	0.02	5.33
South West	0.15	2.90
Centre East	0.03	0.09
Mediterranean	0.24	7.30
Rural	0.40	64.20
−2 Log likelihood	4,645.30	
No. Observations	5,079	

Note: χ^2 critical values; 3.841 (5 per cent); 2.706 (10 per cent).

the probability of a husband to be self-employed. The estimates on bac-
calauréate, and third level are all negative and highly significant. Thus a
person has a lower likelihood of being an entrepreneur if he has obtained a
baccalaureate or higher education. However, there is positive estimate for
"primary education". The result on higher education is contrary to Evans and
Leighton (1989) who reported, using a cross sectional analysis of 2,045 men,
that the probability of being self-employed increases for more highly educated
individuals.[6] One interpretation for the positive estimates for age is that self-
employed are likely to be significantly older than wage workers. Given that
his father was self-employed, there is a greater chance that the reference
person is also running his own business. The effect is similar in the case of a
father-in-law being independent, but the estimate on the coefficient is
smaller. The self-employed are less likely to have been unemployed than
wage workers. Also, the estimate on the age of the reference person is
negative and significant. Looking at the regional estimates at the 5 per cent
critical level, only the West and Mediterranean regions are significant, as is
the estimate on rural areas and towns with less than 20,000 inhabitants.

VI NON-FAMILY ENTREPRENEURS AND THE TRANSITION FROM WAGE WORK TO SELF- EMPLOYMENT

Despite the fact that the survey takes place in a single year, 1991, we are
fortunate in that one section contains questions concerning the transition
from the wage sector to self-employment: 905 men answered a section
concerning those who started their working life as wage workers but who
became self-employed later;[7] 779 of them classified themselves as non-family
entrepreneurs and the remaining 126 as partially or wholly taking over a
family business. We compare these non-family entrepreneurs (779) who made
the transition into self-employment to wage workers who started their
working lives in the wage sector and remained there (3,939). We isolated non-
family entrepreneurs since they are, by definition, less likely to inherit or
receive a gift of a family firm. This reduces any element of pre-selection into
self-employment that may be associated with taking over a family business.
The results are set out in Table 2.

Examining Table 2, we can see that the receipt of an inheritance does not
appear to significantly increase the probability of transition into self-
employment from wage work for non-family entrepreneurs. This is contrary
to the findings of Blanchflower and Oswald (1991) and Holtz-Eakin *et al.*

6. It should be noted, however, that Evans and Leighton (1989) include those in the liberal
professions in their sample.
7. Among them, 25 per cent had gone back to wage work at the time of the survey.

Table 2: *Parameter Estimates of the Probability of Entering Self-Employment for Non-Family Entrepreneurs*

Dependent variables:
Non-Family entrepreneur (who started in wage sector
but became self-employed later) = 1 {No. obs. 779},
Wage worker = 0 {No. obs. 3,939}.

Variable	Parameter Estimate	Wald χ^2
Constant	–3.84	159.27
Physical Capital:		
Inheritance	0.03	0.52
Gift	0.12	2.79
House Owner	0.27	9.84
Accommodation aid	0.21	9.54
Spouse Active	0.14	7.53
Formal Human Capital		
Primary	0.30	17.76
2nd level	–0.02	0.04
Technical Baccalaureate	–0.03	0.08
Baccalaureate	–0.37	8.52
Third level	–0.41	20.20
Age<40	0.07	66.70
Age≥40	0.03	46.70
Unemployed	0.04	0.49
Informal Human Capital		
Father	0.18	7.73
Mother	0.16	1.73
Father-in-law	0.27	13.30
Mother-in-law	0.04	0.07
Demographic / other		
Married	–0.10	1.74
Children	0.11	5.26
Children^2	–0.02	6.94
Age household	–0.01	6.01
Regions:		
Paris Basin	–0.05	0.39
North and East	–0.17	3.57
West	0.11	1.60
South West	0.12	1.59
Centre East	0.01	0.05
Mediterranean	0.30	11.20
Rural	0.34	45.34
–2 Log likelihood	4,231.40	
No. Observations	4,718	

Note: χ^2 critical values; 3.841 (5 per cent); 2.706 (10 per cent).

(1994), both of whom find that inheritance is significant in an individual's decision to become an entrepreneur.[8] The estimate for owning a house at the time the household was formed is significant at the 5 per cent critical level. Also, a gift from parents (defined to exclude the gift of business) is significant, this time at the 10 per cent level. A person is more likely to have switched into self-employment if his parents helped in paying for rented accommodation or provided free lodgement. The intergenerational transfer of wealth and thus the issue of access to capital does appear to be an important deciding factor in the decision to enter self-employment. Also, the estimate on spouse in the labour force is positive and significant at the 5 per cent critical level. The profile of education is interesting in that the dummy for the lower level qualification, primary level, is significant and its sign is positive. In contrast, the estimates for baccalaureate and third level education are negative. Thus, a man is more likely to remain in wage work if he has a higher educational qualification. The probability of switching into self-employment increases with age up to 40, then increases with a lower likelihood after 40. If either the father or, more interestingly, the father-in-law is self-employed then the likelihood of movement into self-employment is increased. The role played by the father supports the hypothesis that the transfer of entrepreneurial human capital has a positive effect on the selection into self-employment. It may be that a father-in-law provides an informal training role.[9] The structure of one's family appears to impact on the probability of setting up in business. While the effect of marriage is insignificant, the effect of having children is significant and positive as regards the movement into self-employment. The significantly negative estimate on the quadratic term on children points to a decrease in likelihood of having moved to self-employment when you have more than two children. Regional variations in the likelihood of transition are also evident.

VII CONCLUSION

This study points to the role of intergenerational transfers of wealth relaxing liquidity constraints in the decision to become self-employed. According to the data, a man is more likely to be self-employed if he received transfers from his family. This may take the form of a gift *inter vivos* or help

8.   However, in the case of Blanchflower and Oswald it should be noted that gifts are included with inheritance.

9.   It may be argued that this variable is being influenced by the fact that the spouse has inherited a business from her father. In this case, the reference person may have moved from wage work into this business inherited, or received as a gift, by his spouse. However, in this sub-sample, only 1.2 per cent of the spouses who reported having a self-employed father received a gift of a business. Also, none of the spouses reported having inherited a business.

with the paying of rent or lending of a home. The transfer of human capital within the family is also important. A person is more likely to make the transition into entrepreneurship if he has a father or a father- in-law who runs his own business. The role of the spouse also appears to be significant as a person is also more likely to set up in business if she is in the labour force. Marriage and the number of children a person has also affects the decision to switch from self-employment to wage work. Thus, the role of the family in the decision to become self-employed appears to operate between and within generations through wealth, human capital and various demographic variables. A robust result is that a person is less likely to switch into self-employment from wage work if he obtained a third level education. Also, the probability of being self-employed is higher for individuals with only a primary education. This appears to provide evidence of the limited, and possibly adverse, role played by academic education in the selection into self-employment.

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Appendix 1: *Definition of Explanatory Variables*

Physical Capital:

Inheritance	equals one if inherited assets after parents' death excluding inheritance of a business; zero otherwise.
Gift	equals one if received a gift from parent, excluding the gift of a business; zero otherwise.
House Owner	equals one if owned the house of residence at time household was formed; zero otherwise.
Accommodation aid	equals one if the parents ever helped in the payment of rent or provided a free place of residence; zero otherwise.

Formal Human Capital:

Primary level	equals one if educated to primary level; zero otherwise.
2nd level	equals one if educated to second level general or second level technical (without Baccalaureate); zero otherwise.
Technical Baccalaureate	equals one if educated to technical Baccalaureate; zero otherwise.
Baccalaureate	equals one if educated to the Baccalaureate; zero otherwise.
Third level	equals one if educated to third level (university degree); zero otherwise.

Informal Human Capital

Father	equals one if father non farming self-employed; zero otherwise.
Mother	equals one if mother non farming self-employed; zero otherwise.
Father-in-law	equals one if father-in-law non farming self-employed; zero otherwise.
Mother-in-law	equals one if mother-in-law non farming self-employed; zero otherwise.
Age	age of the reference person in 1991.

Demographic (family) / other

Married	equals one if married; zero otherwise.
Children	number of children inside and outside the household.
No. Brothers/Sisters	number of brothers and sisters of the reference person.
Spouse in work force	equals one if spouse works outside or inside the business of the reference person; zero otherwise.
Age Household	how many years the household was in existence (as at time of 1991).

Regions:

Ile de France	equals one if lived in the Ile de France; zero otherwise.
Paris Basin	equals one if lived in the Paris Basin (outside Ile de France); zero otherwise.
North	equals one if lived in northern France; zero otherwise.
East	equals one if lived in eastern France; zero otherwise.
West	equals one if lived in western France; zero otherwise.
South West	equals one if lived in south western France; zero otherwise.
Centre East	equals one if lived in centre east France; zero otherwise.
Mediterranean	equals one if lived in the Mediterranean regions; zero otherwise.
Rural	equals one if lived in a rural area / town with less than 20,000 inhabitants; zero otherwise.