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# Financial Development, Entrepreneurship, and Job Satisfaction\*

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## Abstract

This paper shows that utility differences between the self-employed and the employees increase with financial development. This effect is not explained by increased profits but by an increased value of non-monetary benefits, in particular job independence. We interpret these findings by building a simple occupational choice model in which financial constraints may impede firms' creation and depress labor demand, thereby pushing some individuals into self-employment for lack of salaried jobs. In this setting, financial development favors a better matching between individual motivation and occupation, thereby increasing entrepreneurial utility despite increasing competition and so reducing profits.

**Keywords:** Financial development; entrepreneurship; job satisfaction.

**JEL codes:** L26, J20, G20.

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# 1 Introduction

From a standard economic viewpoint, the choice of becoming an entrepreneur displays some puzzling features. First, it is on average unprofitable: returns to capital are too low and risk too high (Hamilton, 2000; Moskowitz and Vissing-Jorgensen, 2002). Second, it seems to deliver high utility: entrepreneurs often report higher levels of job satisfaction than employees with similar characteristics (Blanchflower and Oswald, 1998; Hundley, 2001; Benz and Frey, 2004). A popular explanation to these puzzles posits that being an entrepreneur gives substantial non-monetary benefits and that, due to financial barriers to entry, entrepreneurs can enjoy utility above market clearing (Blanchflower and Oswald, 1998).

In this paper, we examine the above argument by exploring both theoretically and empirically how utility differences between entrepreneurs and employees respond to financial development. In this way, our analysis may contribute to a better understanding of occupational choices, as driven by these utility differences, in relation in particular to market conditions.

More specifically, we first build an occupational choice model in which individuals can choose between becoming an entrepreneur, which requires investing capital and hiring workers, or look for a job as an employee. The model builds on two main ingredients. First, in addition to profits and wages, individuals value also non-monetary dimensions of their job. For example, entrepreneurs may derive utility from being their own boss.<sup>1</sup> In line with the evidence in Fuchs-Schündeln (2008), we assume that individuals may differ in how much they like (or dislike) not having a boss, and so more generally in their (intrinsic) motivation for becoming an entrepreneur.

The second key ingredient is that labor demand is bound by the amount of individuals who become entrepreneurs. If entrepreneurs are a few, labor demand is low and so is the probability of finding a salaried job. This may push some individuals to become entrepreneurs by lack of better opportunities.<sup>2</sup> In this way, we incorporate the view that individuals may start their businesses with very different motivations. On the one hand, they may choose to be entrepreneurs, as it is typically the case in more developed countries.<sup>3</sup> On the other, they may become entrepreneurs by necessity. A substantial fraction of entrepreneurs in developing countries falls into this category (Reynolds, Bygrave, Autio, Cox and Hay, 2002), and these indi-

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<sup>1</sup>See for example Taylor (1996), Blanchflower and Oswald (1998), Hamilton (2000), Benz and Frey (2004).

<sup>2</sup>In most existing occupational choice models, instead, entrepreneurs have chosen to be so and they could have become employees, while employees for some reason could not become entrepreneurs. However, if this were the case, entrepreneurs would always be better off than employees, which seems at odds with the evidence mentioned next and it will not be true in our data.

<sup>3</sup>See for example Parker (2004) and Bianchi and Henrekson (2005) for a review of such class of models of entrepreneurship.

viduals may be very happy to leave their businesses for a salaried job.<sup>4</sup>

We then explore the effects of financial development in such setting. While the relation between financial constraints and occupational choices has received significant attention (see Banerjee and Duflo, 2005 and Levine, 2005 for recent surveys), we here focus on the rather unexplored aspect of how financial development may affect individual utility, and in particular the non-monetary returns from entrepreneurship. As mentioned above, and as confirmed also in our analysis, such returns seem a crucial component of entrepreneurial choices.

In our model, financial development allows some poor to access credit and set up a firm, which in turn increases competition and the demand for labor. In this way, the poor and more motivated individuals can become entrepreneurs, while the rich and less motivated individuals are induced to look for a salaried job. It follows that higher levels of financial development are associated with more satisfied entrepreneurs, and this is the case even if financial development increases competition and so reduces profits. In fact, in more financially developed countries, individuals tend to have chosen to be entrepreneurs because of their particular motivation rather than for lack of a better job.

These predictions are tested by using individual data on job satisfaction taken from the World Value Surveys, which provide comprehensive household surveys for a large set of countries over two decades. We focus on self-reported levels of job satisfaction in order to account both for monetary and non-monetary returns from a job, which is crucial in our framework since profits and utility need not move in the same direction. Furthermore, in addition to standard demographic variables, these data provide information on beliefs, personality and different dimensions of individual jobs, which permits to test whether financial development works through these channels. Finally, while most of the evidence on entrepreneurs' job satisfaction comes from OECD countries, these data cover a wide sample of developing and developed country. This allows drawing a broader picture of whether entrepreneurship has different meanings, and financial development has different effects, according to a country's stage of development.

Our main findings lend support to the predictions of the model. First, descriptive statistics show that entrepreneurs report higher levels of job satisfaction than employees only in *more* financially developed countries and

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<sup>4</sup>See Banerjee and Duflo (2008) for a detailed account of this view in developing countries and Reynolds, Bygrave, Autio, Cox and Hay (2002) for comprehensive surveys on necessity vs. opportunity entrepreneurs. Relatedly, see the literature on formality vs. informality (Harris and Todaro, 1970; Loayza, 1994; Schneider and Enste, 2000) and survival vs. growth enterprises (Berner, Gomez and Knorringa, 2008). On developed countries, see the literature on self-employment as a way out unemployment (e.g. Evans and Leighton, 1989; Glocker and Steiner, 2007; Andersson and Wadensjö, 2007), and as a response to labor market discrimination (Borjas, 1986).

that, in these countries, entrepreneurs tend to report *lower* income than employees. These patterns are confirmed in a more structured analysis in which we control for a set of individual variables and for country-year fixed effects. It emerges that entrepreneurial utility, relative to the one of employees, *increases* with financial development. This result is robust to the inclusion of additional macroeconomic variables, accounting for example for better institutions or economic perspectives, as well as to the use of alternative measures of financial development. Moreover, this effect appears stronger in less financially developed countries, where many individuals become entrepreneurs by necessity and so many would be happy to switch to a salaried employment.

Finally, we explore which mechanisms may underlie such relation. We first notice that adding income among the explanatory variables does not change our results. Income appears (as expected) a strong determinant of job satisfaction, but higher financial development does not increase entrepreneurs' utility by making them richer. On the other hand, the effect of financial development becomes insignificant once we control for the degree of independence enjoyed in the job. This suggests that higher financial development allows entrepreneurs to enjoy higher non-monetary benefits, and in particular higher freedom in taking decisions in their job.

We present our model and theoretical analysis in Sections 2 and 3, respectively; Section 4 describes our data and Section 5 reports the empirical results; Section 6 concludes by discussing some policy implications. Omitted proofs and tables are reported in the Appendix.

## 2 The Model

Consider an economy populated by a unitary mass of risk-neutral individuals. Each individual is characterized by a type  $(a, b)$ , where  $a$  describes his initial wealth and  $b$  his taste for being an entrepreneur (which for now we simply call motivation). Wealth is drawn from a smooth cumulative distribution function  $F$  with density  $f$ ; motivation from a smooth cumulative distribution function  $G$  with density  $g$ . These draws are assumed to be statistically independent. In addition, each individual is endowed with one unit of labor, which he may employ either for setting up a firm or to work as an employee. We now describe these options in further detail.

### 2.1 Options

First, an individual can set up a firm. We assume that each firm produces the same homogeneous good and it has the same size: it employs  $k$  units of capital,  $l$  workers, and it produces  $q$  units of output. The profit is then

$$\pi = pq - wl - rk, \tag{1}$$

where  $p$  denotes the price of the good,  $w$  denotes workers' wage, and  $r$  is the market interest rate. In addition, managing a firm gives utility  $b$ . Hence, an individual who sets up a firm enjoys utility

$$U_1 = \pi + b. \quad (2)$$

These individuals are called *entrepreneurs*, and we denote their population share with  $x_1$ . As a second option, an individual can look for a job in one of these firms. If he is hired, he enjoys utility

$$U_2 = w.$$

The population share of *workers* is denoted with  $x_2$ . If he is not hired, he remains idle and enjoys some utility which we normalize to zero.

## 2.2 Markets

There are three markets in our economy: a labor market, a product market and a credit market. In the labor market, the wage  $w$  is bounded below by  $\underline{w}$ , which implies that such market may display excess supply. In such case, each applicant has the same probability of getting a job.<sup>5</sup> The number of workers equals firms' demand, so we have

$$x_2 = lx_1. \quad (3)$$

The product market is described by a decreasing inverse demand function

$$p = P(Q), \quad (4)$$

where  $Q = x_1q$  denotes the total output produced in the economy. Entrepreneurs take the price  $p$  as given, and inelastically supply their output.

The financial market is competitive, the interest rate  $r$  is fixed and exogenous, and we normalize it to one. An individual with wealth  $a$  can ask for a loan  $(k - a)$  in order to set up a firm. However, ex-post moral hazard limits the maximum size of such loan. Since, at cost  $c$ , such individual can renege on his loan contract and run away with the money, the required repayment  $(k - a)$  cannot exceed  $c$ . Hence, only individuals with enough wealth can set up a firm, and we define such lower bound on wealth as

$$a^* \equiv k - c. \quad (5)$$

The threshold  $a^*$  decreases with  $c$ , which measures how easy it is to enforce loan contracts and so it is an indicator of financial development.<sup>6</sup>

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<sup>5</sup>More sophisticated reasons for non-market clearing wages are for example in Weiss (1980) and Shapiro and Stiglitz (1984).

<sup>6</sup>Our formalization of financial market imperfections is very similar to the one in Baner-

### 2.3 Equilibrium

In equilibrium, each individual, given his type, chooses an option in order to maximize his expected utility and the markets function according to equations (3), (4) and (5). In such equilibrium, there is no option for an individual with wealth lower than  $a^*$  than to look for a job as worker. An individual with wealth greater than  $a^*$  and motivation  $b$  instead prefers to set up a firm if and only if

$$pq - wl - rk + b \geq \frac{lx_1}{1 - x_1}w, \quad (6)$$

which implicitly defines a lower bound on  $b$  as

$$b^* \equiv \frac{wl}{1 - x_1} + rk - pq. \quad (7)$$

Provided that an equilibrium exists, the share of entrepreneurs  $x_1$  is implicitly defined by

$$x_1 = [1 - F(a^*)][1 - G(b^*)]. \quad (8)$$

This equation also characterizes labor supply  $(1 - x_1)$  and, by equation (3), the share of workers  $x_2 = lx_1$ . We are then interested in identifying the conditions for the existence and uniqueness of an equilibrium in our economy.

## 3 Analysis

To show that an equilibrium exists and it is unique, we first notice that the right hand side of equation (7) decreases in  $b^*$ . In fact, an higher  $b^*$  leads to a lower share of entrepreneurs  $x_1$  and so to an higher labor supply  $(1 - x_1)$  and to an higher price  $p$  (since total output  $Q$  increases in  $x_1$ ). This implies that equation (7) uniquely defines  $b^*$ .

Moreover, the minimal motivation of those who prefer running a firm increases with the share of entrepreneurs  $x_1$ . In fact, an higher  $x_1$  reduces the incentive to set up a firm both because it reduces the price  $p$  and because it increases the demand for workers and so the probability of being hired.<sup>7</sup> This is expressed in the next Lemma.

**Lemma 1** *The minimal entrepreneurial motivation  $b^*$  is increasing in the share of entrepreneurs  $x_1$ .*

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jee and Newman (1993). The fact that only sufficiently wealthy individuals get loans is a very common feature in financial markets and it can be also derived in a model of moral hazard à la Holmstrom and Tirole (1997) or costly screening.

<sup>7</sup>While one may think also to positive externalities among firms, we show that, even abstracting from them, entrepreneurs may report higher payoffs when more firms are created.



It follows from Lemma 1 that the right hand side of equation (8) decreases in  $x_1$ , and thus equation (8) uniquely defines the share of entrepreneurs  $x_1$ . We summarize with the following Proposition.

**Proposition 1** *An equilibrium exists and it is unique. It is defined by equations (3) and (8).*

### 3.1 Financial Development, Profits and Job Satisfaction

We are then interested in analyzing how financial development affects utility differences between entrepreneurs and workers. In particular, we consider how these effects may depend on a country's stage of development and how they may differ along monetary and non-monetary dimensions of individual utility.<sup>8</sup> The average utility of an entrepreneur can be decomposed as the sum of profit

$$\pi = pq - wl - rk,$$

and average non-monetary benefit

$$\bar{b} = \frac{1}{1 - G(b^*)} \int_{b \geq b^*} bg(b)db. \quad (9)$$

Utility differences are defined as

$$D = \pi + \bar{b} - w. \quad (10)$$

Differentiating equation (10) with respect to  $c$ , we write the effects of financial development on utility differences  $D$  as

$$\frac{\partial D}{\partial c} = \frac{\partial p}{\partial c}q - \frac{\partial w}{\partial c}(1 + l) + \frac{\partial \bar{b}}{\partial c}. \quad (11)$$

In order to interpret equation (11), we first notice that, by relaxing wealth constraints, financial development allows a higher fraction of individuals to pay the cost of setting up a firm. The share of entrepreneurs then increases in financial development, up to the point at which everyone is employed either as a worker or as an entrepreneur, i.e.  $x_1 + lx_1 = 1$ . We show this in the following Lemma.

**Lemma 2** *There exists a level of financial development  $c^*$  such that the share of entrepreneurs  $x_1$  increases in  $c$  for  $c < c^*$  and it is  $x_1 = 1/(1 + l)$  for all  $c \geq c^*$ .*

It follows that utility differences between entrepreneurs and workers tend to be higher in more financially developed countries. By equation (6) it must

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<sup>8</sup>Obviously, we are only considering the case in which  $c < k$ , so indeed financial development has an effect.

be that, for all those who become entrepreneurs,

$$U_1 \geq \frac{lx_1}{(1-x_1)}U_2. \quad (12)$$

Given Lemma 1, the share of entrepreneurs is low when financial development is low. In this case, many individuals choose to be entrepreneurs even if they would prefer to be workers, since labor demand is low and so the probability of being hired is small. Hence, in countries with low financial development, entrepreneurship may come from the necessity of finding a job rather than from the choice of highly motivated individuals. In these countries, then, entrepreneurs need not be more satisfied with their job than employees. When financial development is high, instead,  $x_1 = 1/(1+l)$  and so  $U_1 \geq U_2$  for all those who become entrepreneurs. This implies that utility differences between entrepreneurs and workers are positive.

We then turn to the effect of financial development on profits and wages. For  $c < c^*$ , higher financial development increases labor demand, but the wage remains at its minimum  $\underline{w}$  as there is still excess labor supply. Total production also increases (as less individuals end up idle), and this reduces the price  $p$  and so the profit. For  $c \geq c^*$ , the share of entrepreneurs is constant, and so is the price, while the wage increases as more people compete for attracting workers. This is shown more formally in the next Lemma.

**Lemma 3** *For  $c < c^*$ , the price  $p$  decreases with  $c$  and the wage  $w$  is constant at  $\underline{w}$ ; for  $c \geq c^*$ , the price  $p$  is constant and the wage  $w$  increases with  $c$ .*

Last, we look at the effects of financial development on  $\bar{b}$ , which describes the non-monetary dimensions of individual utility. These effects depend on how the minimal motivation  $b^*$  varies with  $c$ . For  $c < c^*$ ,  $b^*$  increases both as profits decrease (via product market competition) and as the probability of being hired increases. For  $c \geq c^*$ ,  $b^*$  still increases (though possibly less than for  $c < c^*$ ) since labor market competition increases the wage. Hence, financial development allows the poor with high motivation to become entrepreneurs and induces those with low motivation to exit and look for a job as employees. The following Proposition summarizes these predictions, which we test in the next Section.

**Proposition 2**

- a. Entrepreneurs enjoy higher utility than employees only in more financially developed countries.*
- b. Entrepreneurial profits  $\pi$  decrease with financial development.*
- c. Entrepreneurial non-monetary benefits  $\bar{b}$  increase with financial development, and this effect may be stronger when financial development is low.*

## 4 Testing the Model

We are interested in exploring the effects of financial development on the utility of entrepreneurs relative to workers. In particular, in line with the interpretation suggested by the previous model, we look at the effects of financial development both on income and on non-monetary components of individual utility, and we test whether these effects depend on the country's stage of development.

It should already be noticed, however, that we are going to estimate the changes in utility within the group of entrepreneurs relative to the group of workers, but indeed the composition of these groups may change with financial development. In other words, we do not estimate the effects on the same individuals, but rather the effects on a representative individual within a group over time and across countries.

### 4.1 Data

In most of our analysis, the dependent variable is the self-reported level of job satisfaction. While money need not be the only argument of individual utility, job satisfaction should provide a broader indicator of both monetary and non-monetary returns from a job.<sup>9</sup> Specifically, we consider a 1 to 10 index based on the answer to the question: "Overall, how satisfied or dissatisfied are you with your job?" Such variable is taken from the World Value Surveys (WVS), and it is available for 46 countries over the period 1981 – 2001. In total, we have 50978 individual observations for full time employees and 7010 for self-employed, divided into 88 country-year groups.<sup>10</sup> In addition, for each individual, information are provided on demographic characteristics, income, employment status, and several variables describing beliefs, personality and different dimensions of his or her job.

As indicator of financial development in a given country and year, we use the level of domestic credit to the private sector, as percentage of GDP. The variable is taken from the World Development Indicators, published by the World Bank. This is the most commonly used indicator in the literature on finance and growth (see Levine, 2005), and it seems well suited for our purposes as well. It reflects the availability of bank credit, which is a fundamental ingredient to ease the creation of new enterprises. In our sample, financial development displays a considerable variation both within and across countries, ranging from 1.68 (Poland, 1989) to 195.98 (Japan, 1990).

In addition, we use other macroeconomic variables such as per capita GDP, GDP growth, unemployment, regulation and bank ownership. A more

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<sup>9</sup>This assumption will be validated empirically. We will see that income is a major determinant, but not the only determinant, of job satisfaction.

<sup>10</sup>The surveys were conducted in four waves (in the early 80s, early 90s, late 90s, and early 2000s) and not all countries were included in all waves.

detailed description and summary statistics of all our variables can be found in the Appendix.

## 5 Empirical Evidence

### 5.1 Descriptive Evidence

As suggested by our model, the self-employed need not enjoy greater utility than employees: in less financially developed countries, self-employment can be a way to avoid unemployment. To get a first picture of where the status of self-employed is a significant determinant of one's job satisfaction, we estimate the following equation separately for each country and year:

$$U_i = \alpha + \beta X_i + \gamma SE_i + \varepsilon_i. \quad (13)$$

The dependent variable  $U_i$  denotes the individual job satisfaction,  $X_i$  is a set of individual variables including gender, age, age-squared, education, marital status, and  $SE_i$  is a dummy equal to one if  $i$  is self-employed. If in a given country in a given year the self-employed enjoy higher utility, then the coefficient  $\gamma$  should be positive.

Table 2 reports the estimates of the coefficient  $\gamma$  for each country and year. It is clear that the self-employed are not always more satisfied than the employees, but this tends to be the case only in more developed countries. Moreover, the results remain basically unchanged if income is included in the set of controls  $X_i$  (columns 4-6). In fact, the set of countries and years in which the self-employed enjoy higher utility becomes slightly larger, which already suggests that income differentials are not the explanation behind differences in job satisfaction.

In order to highlight these relationships, we construct the following variables. The variable *HAPPY* is a dummy equal to one if  $\gamma$  is positive and significant at the 5% level. We also run a similar regression with income as dependent variable in equation (13). Given this regression, we construct the dummy *RICH* which equals one if  $\gamma$  is positive and significant at the 5% level, and the dummy *POOR* which equals one if  $\gamma$  is negative and significant at the 5% level.

As shown in Table 3, the variable *HAPPY* is positively correlated with financial development, GDP per capita and *POOR* and it is negatively correlated with *RICH*. In accordance with our model, the self-employed enjoy higher utility than the employees in countries with high GDP per capita and high financial development. Moreover, in these countries, the self-employed tend to have a lower income than the employees.

## 5.2 Job Satisfaction and Financial Development

The previous results suggest that utility differences are *not* due to financial market imperfections. We now explore this argument more systematically. We first estimate the equation

$$U_{i,c,t} = \alpha + \beta X_{i,c,t} + \gamma I_{c,t} + \delta FD_{c,t} * SE_{i,c,t} + \varepsilon_{i,c,t}, \quad (14)$$

where  $U_{i,c,t}$  denotes the reported job satisfaction for an individual  $i$  in country  $c$  and year  $t$ ;  $X_{i,c,t}$  is a set of individual variables including gender, age, age-squared, education, marital status and employment status;  $I_{c,t}$  is a country-year dummy,  $FD_{c,t}$  is the level financial development and  $SE_{i,c,t}$  is a dummy equal to one if  $i$  is self-employed; finally,  $\varepsilon_{i,c,t}$  is the error term.<sup>11</sup>

Equation (14) follows the spirit of Rajan and Zingales (1998), and it allows to estimate the effect of financial development on a particular set of individuals, the self-employed, after having controlled for the effect on the whole population and for country-year fixed effects. Our main interest is in the coefficient  $\delta$ , which describes how financial development affects the job satisfaction of the self-employed relative to (full-time) employees.<sup>12</sup> When  $\delta$  is positive, we say that financial development is positively correlated with *entrepreneurial utility*.

Table 4 reports our estimates on the full sample. The first column includes only the controls  $X_{i,c,t}$ . Self-employed, old, married and well-educated individuals tend to be more satisfied with their job. The second column describes our most basic specification, as reported in equation (14). The coefficient  $\delta$  is positive and statistically significant. Financial development benefits the self-employed more than the employees.

In order to check the robustness of this result, we first try to identify whether financial development is capturing any effect of better macroeconomic conditions, like better institutions or economic perspectives, which may have a differential impact on the self-employed. When we include GDP per capita, interacted with the employment status dummy, the effect of financial development becomes slightly weaker, but still highly significant (column 3). Adding other macroeconomic variables like GDP growth (column 4), unemployment (column 5), and an index of regulatory pressure (column 6), always interacted with the self-employment dummy, does not change the estimate of  $\delta$ . Hence, our preferred specification, which serves as the baseline for the next analysis, is the one in column (3).

<sup>11</sup>Since these errors may reflect common components within countries and employment status groups, we cluster standard errors at the country/employment status level.

<sup>12</sup>To ease the interpretation of our coefficients, part-time employees and farmers are excluded from the analysis. These exclusions do not change our results. For the same reason, in what follows, we report the estimates from OLS regressions. The results using ordered probit are qualitatively the same. (see Ferrer-i Carbonell and Frijters, 2004 for a methodological discussion.)

We then check whether this pattern is confirmed when using an alternative measure of the development of the banking sector, which is a condition for bank credit availability. As in Aghion, Fally and Scarpetta (2007), we employ a variable based on the percentage of bank deposits held in privately owned banks (BANK). The results in column 7 show that also this measure of financial development is positively correlated with entrepreneurial utility.

Our second set of regressions estimates whether the effect of financial development depends on the country's stage of development. We divide the sample into countries-years with high and with low financial development, where such threshold is determined by the median value in our sample.<sup>13</sup> The results are in columns (1)-(2) of Table 5: the effects of financial development on entrepreneurial utility are positive and significant only in less developed countries.

Our model suggests a possible explanation for this result. In less developed countries, individuals become self-employed either because of their motivation or for lack of salaried jobs. As these countries develop their financial system, more jobs are created so only those who value it the most remain self-employed. This composition effect is weaker in more developed countries, where labor demand is higher and so most individuals become self-employed by choice. Indeed, we get similar findings if we split the sample according to GDP per capita (columns 3-4) or to unemployment (columns 5-6). The effect of financial development on entrepreneurial utility is stronger in countries where GDP per capita is low and unemployment is high. Finally, in order to better highlight the nonlinearity in the effects of financial development, column (7) includes the level of financial development squared and cube. The first appears to be negative, the second positive, and both are significant.

From these results, it is evident that the self-employed enjoy higher utility than the employees only in countries with high financial development; in less developed countries, entrepreneurial utility increase with financial development. In highly developed countries, approximately those above the sample median, the effect of financial development is U-shaped, and it appears not statistically significant if one applies a linear model.

### 5.3 Mechanisms

We now explore the mechanisms underlying the relation between financial development and entrepreneurial utility. As stressed in our model, these mechanisms should not be evaluated only in monetary terms.

We start by enriching the set of regressors in equation (14). First, we control for income, both in the full sample and separating countries-years according to their level of financial development. As shown in columns (1)-

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<sup>13</sup>Splitting the sample according to the mean gives the same qualitative results.

(3) of Table 6, if anything, the results are even stronger. Income appears to be a major determinant of job satisfaction; but, as documented also in Benz and Frey (2004), higher income does not explain entrepreneurial utility. In addition to the existing literature, we document that the effects of financial development on entrepreneurial utility are not only monetary.<sup>14</sup>

Indeed, by estimating equation (14) with income as dependent variable, we notice that the self-employed are richer than the employees in less developed countries, while this is not the case in more developed countries (columns 1-2 of Table 7). Moreover, financial development decreases the income of the self-employed, relative to employees (column 3), and this effect tends to be stronger in less developed countries (columns 4-5). The fact that financial development reduces profits is consistent with our model in that financial development increases competition, either in the product or in the labor market.

The results in columns (4)-(5) of Table 7 and those in columns (1)-(2) of Table 5 are used to draw Figure 1, which summarizes our main results so far. It clearly emerges that the effects of financial development on entrepreneurial utility may differ from those on profit; actually, in our case, these effects go exactly in the opposite direction. Entrepreneurial utility increases while profit decreases with financial development, and both effects tend to be stronger in less developed countries.

The above results suggest that financial development works through non-monetary aspects of job satisfaction. In the attempt to better identify these mechanisms, we include in our regressions variables like the degree of pride in the work, the satisfaction with job security, the degree of independence enjoyed in the job. We also control for work-related beliefs like how much work is important in life, the main reason why one works, and so on. None of these variables significantly affects our results, with the exception of independence, that is an indicator derived from the question: "How free are you to make decisions in your job?" The importance of this variable in explaining entrepreneurial utility was already pointed out in Benz and Frey (2004), and indeed, also in our sample, being self-employed becomes negatively related to job satisfaction once one adds this control (Table 6, column 4).

We notice that, once controlling for independence, the effect of financial development becomes almost half in magnitude and not statistically significant (column 5). Hence, our results add to the existing evidence by documenting that most of the effects of financial development seems to work through this channel. According to the model, this is the case since financial development offers to the most motivated individuals the opportunity to become entrepreneurs. Indeed, these results suggest that what we have

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<sup>14</sup>Notice that while income underreporting may be more of an issue for the self-employed, this may explain our results only if underreporting was higher in more financially developed countries.

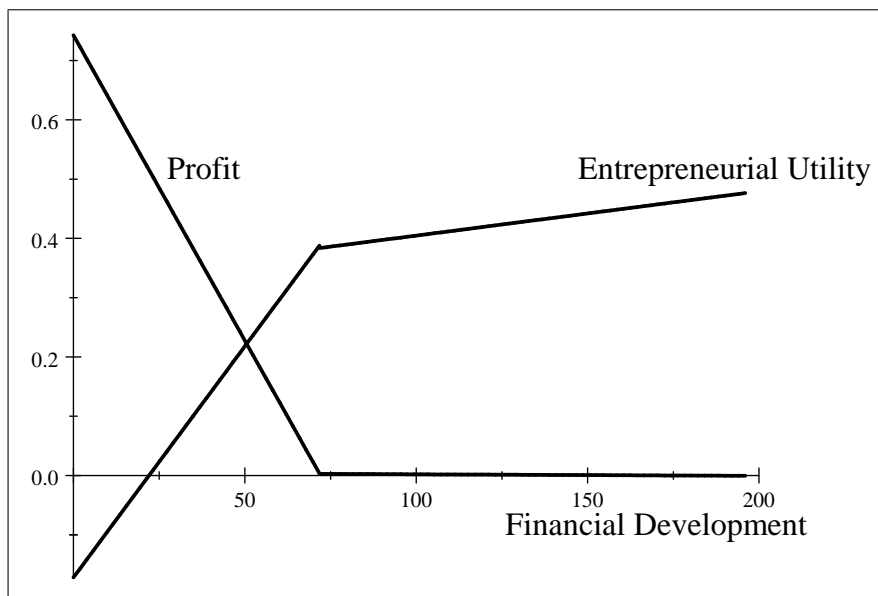


Figure 1: Entrepreneurial Profit, Utility and Financial Development.  
 Estimates from Table 5, Columns (1)-(2) and Table 7, Columns (4)-(5).

so far called motivation may be (broadly) defined in terms of taste for independence at work. Moreover, notice that the coefficient on independence in less developed countries is lower than in more developed countries (columns 5 and 6).<sup>15</sup> This suggests that, as in our model, in more developed country independence is given to those who value it the most.

## 6 Conclusion and Policy Implications

This paper shows that financial development increases utility differences between the self-employed and the employees. This effect is not explained by increased profits; rather, it seems to work through non-monetary dimensions of job satisfaction, and in particular independence. We have interpreted these findings by building a simple occupational choice model in which financial development favors both job creation and a better matching between individual motivation and occupation.

We wish to conclude by suggesting some possible policy implications of our analysis. We started by presenting the argument that entrepreneurs enjoy higher utility than employees due to a lack of financial development, and showed that such argument is not supported by the data. According to our results, the existence of such utility differences is not due to some market

<sup>15</sup>This difference is significant at the 5% level.



imperfection, and as such it does not in itself call for policy intervention.

Second, our analysis of utility differences has allowed to formalize the view that self-employment is a rather heterogeneous concept, which individuals may access with very different motivations. Exploring these motivations may be important to understand market behaviors. For example, many self-employed in less financially developed countries may view their occupation as temporary, and as such they may be reluctant to invest in long term projects, however efficient these projects may be. Such understanding seems then crucial for assessing entrepreneurs' potential for job creation and growth, and so ultimately for guiding policy interventions.

Finally, we have shown that financial development affects also non-monetary dimensions of entrepreneurial utility. This insight suggests that recognizing the importance of entrepreneurs' intrinsic motivation does not imply that external conditions do not matter. On the contrary, this paper shows how intrinsic motivation is affected by market conditions. A broader investigation on how different markets and institutions affect non-monetary returns from a job appears a very interesting and highly unexplored avenue for future research.

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## 7 Appendix

### 7.1 Omitted Proofs

**Lemma 1** *The minimal entrepreneurial motivation  $b^*$  is increasing in the share of entrepreneurs  $x_1$ .*

**Proof.** With simple algebra, differentiating equation (7), one can write

$$\frac{\partial b^*}{\partial x_1} = \frac{wl}{(1-x_1)^2} - \frac{\partial p}{\partial x_1} q.$$

This expression is positive since the first term is positive (notice that  $x_1$  may increase only if  $lx_1 + x_1 < 1$ , i.e. there is excess labor supply and  $w = \underline{w}$ , which implies that  $w$  does not depend directly on  $x_1$ ) and the second term is negative ( $Q$  increases in  $x_1$  and so  $p$  decreases in  $x_1$ ). ■

**Lemma 2** *There exists a level of financial development  $c^*$  such that the share of entrepreneurs  $x_1$  increases in  $c$  for  $c < c^*$  and it is  $x_1 = 1/(1+l)$  for all  $c \geq c^*$ .*

**Proof.** Suppose first that  $lx_1 + x_1 < 1$ , i.e. there is excess labor supply and  $w = \underline{w}$ . Implicitly differentiating equation (8), we have

$$\frac{\partial x_1}{\partial c} = \frac{f(a^*)[1 - G(b^*)]}{1 + [1 - F(a^*)]g(b^*)\frac{\partial b^*}{\partial x_1}}.$$

The numerator measures the increment in individuals who can afford to become entrepreneurs. The denominator tells how the mass of individuals who are sufficiently motivated and so willing to be entrepreneurs changes as entry increases. Given Lemma 1,  $\partial b^*/\partial x_1$  is positive and hence  $\partial x_1/\partial c$  is also positive. Hence,  $x_1$  is strictly increasing in  $c$  for  $lx_1 + x_1 < 1$ . Let  $c^*$  be the minimal  $c$  such that  $x_1 = 1/(1+l)$ . Beyond  $c^*$ ,  $x_1$  cannot increase any further since everyone is employed either as a worker or as an entrepreneur. ■

**Lemma 3** *For  $c < c^*$ , the price  $p$  decreases with  $c$  and the wage  $w$  is constant at  $\underline{w}$ ; for  $c \geq c^*$ , the price  $p$  is constant and the wage  $w$  increases with  $c$ .*

**Proof.** Given Lemma 2,  $x_1$  is strictly increasing in  $c$  for  $c < c^*$ . The total output produced  $Q = x_1 q$  depends positively on  $x_1$  hence for equation (4) the price  $p$  decreases with  $x_1$ . The wage  $w$  instead does not depend on  $x_1$ , since  $x_1$  can increase only if there is excess labor supply and so  $w = \underline{w}$ . For  $c \geq c^*$ ,  $x_1$  is fixed and so  $p$  is fixed;  $w$  instead is such that demand equals

supply of labor, i.e.  $L = 1 - x_1 - lx_1 \equiv 0$ . Implicitly differentiating  $L$ , we have

$$\frac{\partial w}{\partial c} = -\frac{\partial L}{\partial c} / \frac{\partial L}{\partial w} = \frac{f(a^*)[1 - G(b^*)]}{[1 - F(a^*)]g(b^*)(1 + l)} > 0.$$

■

**Proposition 2**

- a. *Entrepreneurs enjoy higher utility than employees only in more financially developed countries.*
- b. *Entrepreneurial profits  $\pi$  decrease with financial development.*
- c. *Entrepreneurial non-monetary benefits  $\bar{b}$  increase with financial development, and this effect may be stronger when financial development is low.*

**Proof.** Recall from equation (12) that

$$U_1 \geq \frac{lx_1}{1 - x_1} U_2.$$

If  $c$  is low, then  $x_1$  is low and so there are many entrepreneurs for which  $U_1 < U_2$ . These are the individuals with motivation  $b \in [b^*, b^{**}]$ , where  $b^{**}$  is such that  $\pi + b^{**} = w$ . If  $c \geq c^*$ , then  $lx_1 = 1 - x_1$  and  $U_1 \geq U_2$  for all entrepreneurs. Part b. of the Proposition follows from Lemma 3: as  $c$  increases, either  $p$  decreases or  $w$  increases, hence the profit  $\pi = pq - wl - k$  decreases with  $c$ . Finally, from equation (9), we have

$$\frac{\partial \bar{b}}{\partial c} = \frac{g(b^*)}{1 - G(b^*)} (\bar{b} - b^*) \frac{\partial b^*}{\partial c}.$$

From equation (7), we see that  $b^*$  increases in  $x_1$  and  $p$  and it decreases in  $w$  so, given Lemmas 1, 2 and 3,  $\partial b^*/\partial c > 0$ . This implies that  $\bar{b}$  increases in  $c$ . Notice also that this effect may be stronger for  $c < c^*$ , when  $b^*$  increases in  $c$  both as the result of reduced profit and of an higher probability of being hired (an higher  $lx_1/(1 - x_1)$ ). For  $c \geq c^*$ , instead, only the first effect is at play. ■

## 7.2 Description of variables

### Individual-level variables:

Job Satisfaction: 1-10 index based on the answer to "*Overall, how satisfied or dissatisfied are you with your job?*" 10 indicates "satisfied", 1 indicates "dissatisfied". Source: WVS, variable c033.

SE: Dummy equal 1 if the individual is self-employed. Source: WVS, variable x028.

Female: Dummy equal 1 if the individual is a female. Source: WVS, variable x001.

Age: Age of the individual. Source: WVS, variable x003.

Married: Dummy equal 1 if the individual is married or living together as married. Source: WVS, variable x007.

Education: 1-10 index for the age at which the individual completed education. 1 indicates the individual was less than 13 years old, 10 indicates the individual was more than 20 years old. Source: WVS, variable x023r.

Income: 1-11 index of the individual income scale. Source: WVS, variable x047.

Independence in job: 1-10 index based on the answer to "*How free are you to make decisions in your job?*" 10 indicates "a great deal", 1 indicates "none at all". Source: WVS, variable c034.

### Macro-level variables:

FD: Financial Development, measured by the level of domestic credit to the private sector (% of GDP). Source: World Development Indicators. (available at [www.worldbank.org/data](http://www.worldbank.org/data))

GDP: GDP per capita (at constant 2000 US\$). Source: World Development Indicators. (available at [www.worldbank.org/data](http://www.worldbank.org/data))

UNEMPL: Total unemployment (% of total labor force). Source: World Development Indicators. (available at [www.worldbank.org/data](http://www.worldbank.org/data))

REGULAT: 0-10 variable rating the regulation of credit markets, labor markets and businesses. 0 corresponds to stronger state intervention.

Source: Economic Freedom of the World: 2007 Annual Report. (available at [www.freetheworld.com](http://www.freetheworld.com))

GROWTH: GDP per capita growth (annual %). Source: World Development Indicators. (available at [www.worldbank.org/data](http://www.worldbank.org/data))

BANK: 0-10 variable based on the percentage of bank deposits held in privately owned banks. Countries with larger shares of privately held deposits received higher ratings. Source: Economic Freedom of the World: 2007 Annual Report. (available at [www.freetheworld.com](http://www.freetheworld.com))

### 7.3 Tables

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
Job Satisfaction	67348	7.297039	2.182215	1	10
SE	65999	.1062137	.3081133	0	1
Female	67288	.4372399	.4960492	0	1
Age	67193	38.48615	12.25545	16	100
Married	67100	.6798361	.4665429	0	1
Education	60816	6.730318	2.719934	1	10
Income	57479	5.53122	2.410663	1	11
Independence	66691	6.571516	2.68442	1	10
FD	62248	66.83599	38.53845	1.68	195.98
GDP	65197	13311.15	9797.721	317	43267
UNEMPL	43829	8.398348	4.252513	.6	16.4
REGULAT	62491	5.326551	1.204252	2.5	8.3
GROWTH	64627	1.231817	4.798632	-14.57	12.67
BANK	62021	5.678464	3.725851	0	10

NOTE: The table reports summary statistics for all variables used in the regressions. A definition of these variables can be found in Section 7.2.

Table 2: Job Satisfaction across countries

Country	Year	(1) SE	(2) SE	(3) Obs	(4) Self-Empl	(5) Std Error	(6) Obs
Argentina	1991	0,218	0,118	356	0,270	0,140	276
Austria	1990	0,021	0,112	689	0,049	0,116	663
Austria	1999	0,139	0,117	762	0,182	0,144	623
Belarus	2000	-0,232	0,204	636	<b>-0,451</b>	<b>0,208</b>	<b>630</b>
Belgium	1981	0,189	0,159	503	0,104	0,185	429
Belgium	1990	0,145	0,080	1282	0,099	0,107	825
Belgium	1999	0,183	0,129	836	<b>0,318</b>	<b>0,146</b>	<b>711</b>
Brazil	1991	0,073	0,097	797	0,092	0,100	764
Bulgaria	1990	0,080	0,186	414	-0,019	0,256	650
Bulgaria	1999	0,078	0,244	693	-0,024	0,199	397
Canada	1982	<b>0,537</b>	<b>0,249</b>	<b>657</b>	<b>0,669</b>	<b>0,277</b>	<b>573</b>
Canada	1990	<b>0,363</b>	<b>0,129</b>	<b>1004</b>	<b>0,482</b>	<b>0,143</b>	<b>876</b>
Chile	1990	-0,025	0,109	520	0,012	0,110	518
China	1990	-0,001	0,097	567	-0,024	0,098	560
Croatia	1999	-0,249	0,180	474	-0,362	0,193	459
Czech Republic	1990	0,192	0,269	610	0,158	0,270	607
Czech Republic	1991	<b>0,287</b>	<b>0,142</b>	<b>1371</b>	<b>0,296</b>	<b>0,148</b>	<b>1322</b>
Czech Republic	1999	<b>0,409</b>	<b>0,114</b>	<b>981</b>	<b>0,379</b>	<b>0,121</b>	<b>891</b>
Denmark	1981	<b>0,338</b>	<b>0,168</b>	<b>674</b>	0,299	0,179	622
Denmark	1990	<b>0,280</b>	<b>0,140</b>	<b>639</b>	<b>0,564</b>	<b>0,180</b>	<b>571</b>
Denmark	1999	<b>0,914</b>	<b>0,207</b>	<b>627</b>	<b>0,768</b>	<b>0,218</b>	<b>578</b>
Estonia	1990	0,073	0,296	768	0,061	0,297	767
Estonia	1999	0,293	0,167	575	0,313	0,218	494
Finland	1990	0,197	0,151	424	-0,022	0,031	424
Finland	2000	0,163	0,148	490	0,222	0,153	449
France	1981	<b>0,500</b>	<b>0,149</b>	<b>588</b>	<b>0,712</b>	<b>0,198</b>	<b>465</b>
France	1990	0,228	0,237	453	0,176	0,338	389
France	1999	0,224	0,227	736	0,166	0,278	610
Germany	1990	<b>0,476</b>	<b>0,119</b>	<b>2124</b>	<b>0,479</b>	<b>0,125</b>	<b>2045</b>
Germany	1999	0,055	0,117	862	0,106	0,173	607
Greece	1999	0,136	0,122	644	0,046	0,134	563
Hungary	1991	0,063	0,283	552	0,059	0,283	544
Hungary	1999	0,012	0,287	420	-0,118	0,301	409
Iceland	1984	0,168	0,107	679	0,175	0,112	642
Iceland	1990	0,201	0,107	559	<b>0,046</b>	<b>0,022</b>	<b>434</b>
Iceland	1999	<b>0,273</b>	<b>0,100</b>	<b>732</b>	<b>0,294</b>	<b>0,105</b>	<b>695</b>
India	1990	0,064	0,096	580	0,004	0,097	573
Ireland	1981	0,198	0,139	598	0,027	0,269	222
Ireland	1990	0,078	0,135	549	0,162	0,148	486
Ireland	1999	0,086	0,127	519	0,124	0,138	461
Italy	1981	<b>0,522</b>	<b>0,092</b>	<b>699</b>	<b>0,464</b>	<b>0,108</b>	<b>541</b>
Italy	1990	<b>0,292</b>	<b>0,092</b>	<b>1030</b>	<b>0,268</b>	<b>0,114</b>	<b>782</b>
Italy	1999	0,092	0,082	1031	0,102	0,093	795
Japan	1990	<b>0,322</b>	<b>0,127</b>	<b>469</b>	0,237	0,133	429

*Continues on next page*



Table 2 continued

Country	Year	(1) SE	(2) Std Error	(3) Obs	(4) SE	(5) Std Error	(6) Obs
Latvia	1990	0,099	0,224	697	0,113	0,224	685
Latvia	1999	-0,327	0,298	455	-0,462	0,316	430
Lithuania	1990	<b>0,552</b>	<b>0,265</b>	<b>677</b>	<b>0,588</b>	<b>0,285</b>	<b>650</b>
Lithuania	1999	<b>-0,583</b>	<b>0,244</b>	<b>513</b>	<b>-0,663</b>	<b>0,291</b>	<b>447</b>
Luxembourg	1999	0,363	0,220	589	0,469	0,285	342
Malta	1983	0,520	0,301	205	<b>1,023</b>	<b>0,471</b>	<b>147</b>
Malta	1999	-0,029	0,182	464	-0,145	0,206	352
Mexico	1990	-0,170	0,106	563	-0,172	0,107	541
Netherlands	1981	0,267	0,211	480	0,089	0,261	350
Netherlands	1990	0,445	0,305	432	0,389	0,334	358
Netherlands	1999	<b>0,489</b>	<b>0,130</b>	<b>631</b>	<b>0,495</b>	<b>0,138</b>	<b>597</b>
Nigeria	1990	0,063	0,149	226	-0,029	0,156	203
North Ireland	1981	0,670	0,371	165	-0,300	0,163	36
North Ireland	1990	<b>1,242</b>	<b>0,495</b>	<b>156</b>	0,945	0,674	122
North Ireland	1999	0,130	0,141	464	0,142	0,173	340
Norway	1982	<b>0,263</b>	<b>0,119</b>	<b>713</b>	<b>0,300</b>	<b>0,127</b>	<b>684</b>
Norway	1990	<b>0,215</b>	<b>0,108</b>	<b>845</b>	<b>0,314</b>	<b>0,118</b>	<b>741</b>
Poland	1989	-0,173	0,122	477	-0,232	0,123	474
Poland	1990	-0,075	0,116	567	-0,144	0,120	548
Poland	1999	<b>-0,463</b>	<b>0,143</b>	<b>506</b>	<b>-0,475</b>	<b>0,144</b>	<b>495</b>
Portugal	1990	0,224	0,129	611	0,188	0,132	585
Portugal	1999	0,237	0,141	442	NA	NA	NA
Romania	1993	0,055	0,179	551	-0,019	0,179	551
Romania	1999	0,296	0,227	416	0,285	0,238	388
Russia	1999	0,113	0,164	1310	0,091	0,176	1235
Slovakia	1990	0,109	0,515	321	0,067	0,516	320
Slovakia	1991	0,267	0,224	708	0,166	0,234	672
Slovakia	1999	0,244	0,165	754	-0,021	0,182	707
Slovenia	1992	0,270	0,202	567	0,192	0,204	561
Slovenia	1999	-0,085	0,208	527	0,080	0,332	366
South Africa	1990	0,192	0,099	1056	<b>0,206</b>	<b>0,104</b>	<b>927</b>
Spain	1981	<b>0,277</b>	<b>0,074</b>	<b>984</b>	<b>0,271</b>	<b>0,077</b>	<b>897</b>
Spain	1990	<b>0,293</b>	<b>0,067</b>	<b>1624</b>	<b>0,276</b>	<b>0,074</b>	<b>1375</b>
Spain	1999	<b>0,299</b>	<b>0,131</b>	<b>478</b>	0,092	0,175	319
Sweden	1982	<b>0,327</b>	<b>0,150</b>	<b>651</b>	<b>0,338</b>	<b>0,160</b>	<b>619</b>
Sweden	1990	<b>0,408</b>	<b>0,133</b>	<b>770</b>	NA	NA	NA
Sweden	1999	<b>0,709</b>	<b>0,233</b>	<b>634</b>	<b>0,626</b>	<b>0,240</b>	<b>621</b>
Turkey	2001	-0,078	0,118	369	-0,058	0,119	369
UK	1981	<b>0,737</b>	<b>0,224</b>	<b>678</b>	<b>0,590</b>	<b>0,262</b>	<b>509</b>
UK	1990	<b>0,592</b>	<b>0,129</b>	<b>838</b>	<b>0,593</b>	<b>0,153</b>	<b>657</b>
UK	1999	0,312	0,210	434	0,146	0,244	318
Ukraine	1999	-0,097	0,330	585	-0,129	0,332	571
US	1982	<b>0,506</b>	<b>0,230</b>	<b>1317</b>	<b>0,577</b>	<b>0,238</b>	<b>1262</b>
US	1990	<b>0,359</b>	<b>0,161</b>	<b>1082</b>	0,321	0,168	1016

NOTE: This table reports the results of ordered probit regressions of job satisfaction on a dummy equal 1 if the individual is self-employed. Columns (1) and (4) report the estimated coefficients. In columns (1)-(3), the controls are gender, age, age squared, education, marital status. In columns (4)-(6), income is also included in the controls. NA indicates that no observation on income is available for that country in that year. Coefficients significant at the 5% level are reported in bold.

Table 3: Partial Correlations

	HAPPY	RICH	POOR	FD	GDP
HAPPY	1				
RICH	-0.0275*	1			
POOR	0.0867*	-0.1671*	1		
FD	0.3296*	-0.1122*	0.0608*	1	
GDP	0.2983*	-0.1913*	0.0255*	0.6476*	1

NOTE: The table reports partial correlation coefficients. The star indicates significance at the 1% level. HAPPY is a dummy equal 1 if the coefficient on self-employment is positive and significant at the 5% level in a ordered probit regression with job satisfaction as dependent variable. RICH is a dummy equal 1 if the coefficient on self-employment is positive and significant at the 5% level in a ordered probit regression with income as dependent variable. POOR is a dummy equal 1 if the coefficient on self-employment is negative and significant at the 5% level in a ordered probit regression with income as dependent variable. All regressions include gender, age, age squared, education, marital status as controls.

Table 4: Financial Development and Job Satisfaction: Basic results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FD*SE		0.4932*** (0.1074)	0.3091** (0.1390)	0.4535*** (0.1109)	0.4391*** (0.1310)	0.3829*** (0.1308)	
BANK*SE							0.0278** (0.0141)
GDP*SE			0.0101** (0.0047)				0.0103*** (0.0035)
GROWTH*SE				-0.0112 (0.0082)			
UNEMP*SE					0.0048 (0.0087)		
REGULAT*SE						0.0657 (0.0402)	
SE	0.3679*** (0.0478)	0.0496 (0.0910)	0.0426 (0.0916)	0.1095 (0.1015)	0.0625 (0.1519)	-0.2306 (0.1984)	0.0823 (0.0900)
Female	0.0004 (0.0233)	0.0028 (0.0253)	0.0077 (0.0258)	0.0057 (0.0261)	-0.0089 (0.0295)	0.0063 (0.0253)	0.0050 (0.0250)
Age	0.0040 (0.0043)	0.0036 (0.0045)	0.0026 (0.0044)	0.0032 (0.0044)	0.0021 (0.0063)	0.0036 (0.0046)	0.0031 (0.0043)
(Age) <sup>2</sup>	0.0001*** (0.0000)	0.0001*** (0.0000)	0.0002*** (0.0000)	0.0001*** (0.0000)	0.0002** (0.0001)	0.0001*** (0.0001)	0.0002*** (0.0000)
Married	0.1870*** (0.0257)	0.1904*** (0.0281)	0.1905*** (0.0283)	0.1905*** (0.0285)	0.1817*** (0.0311)	0.1884*** (0.0285)	0.1854*** (0.0278)
Education	0.0305*** (0.0067)	0.0309*** (0.0071)	0.0312*** (0.0072)	0.0323*** (0.0073)	0.0302*** (0.0080)	0.0306*** (0.0073)	0.0307*** (0.0071)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES
Observations	50510	46873	45996	45550	34836	45855	46353
R-squared	0.08	0.08	0.08	0.08	0.08	0.07	0.08

NOTE: This table reports the results of OLS regressions with job satisfaction as dependent variable. All regressions include country-year dummies. The coefficient estimates and the standard errors for FD\*SE are multiplied by 100. The coefficient estimates and the standard errors for GDP\*SE are multiplied by 1000. Robust standard errors, clustered at the country-employment status level, are in brackets. \*, \*\* and \*\*\* denote rejection of the null hypothesis of the coefficient being equal to 0 at 10%, 5% and 1% significance level, respectively.

Table 5: Financial Development and Job Satisfaction: Non-linear effects

Sample	Low FD (1)	High FD (2)	Low GDP (3)	High GDP (4)	Low EMPL (5)	High EMPL (6)	Full (7)
FD*SE	0.8217** (0.3476)	0.0747 (0.2238)	0.3759* (0.2124)	0.2557 (0.1896)	0.5120** (0.2546)	0.1477 (0.1779)	2.4467*** (0.8745)
GDP*SE	0.0120 (0.0074)	0.0063 (0.0056)	0.0387*** (0.0100)	-0.0127 (0.0130)	0.0052 (0.0055)	0.0129* (0.0067)	0.0084* (0.0047)
(FD*SE) <sup>2</sup>							-2.5535** (1.0127)
(FD*SE) <sup>3</sup>							0.8337** (0.3308)
SE	-0.1703 (0.1370)	0.3164 (0.2067)	-0.1517 (0.1173)	0.5758* (0.2989)	-0.0362 (0.1392)	0.1401 (0.1628)	-0.3846* (0.2025)
Female	0.0262 (0.0389)	-0.0126 (0.0293)	0.0148 (0.0468)	-0.0013 (0.0273)	0.0030 (0.0360)	0.0140 (0.0352)	0.0072 (0.0260)
Age	0.0080 (0.0072)	-0.0026 (0.0061)	-0.0031 (0.0079)	0.0067 (0.0050)	-0.0003 (0.0055)	0.0064 (0.0085)	0.0025 (0.0044)
(Age) <sup>2</sup>	0.0001 (0.0001)	0.0002*** (0.0001)	0.0002** (0.0001)	0.0001* (0.0001)	0.0002*** (0.0001)	0.0001 (0.0001)	0.0002*** (0.0000)
Married	0.1951*** (0.0383)	0.1848*** (0.0371)	0.2095*** (0.0460)	0.1744*** (0.0354)	0.2255*** (0.0370)	0.1332*** (0.0404)	0.1902*** (0.0283)
Education	0.0392*** (0.0106)	0.0238** (0.0104)	0.0563*** (0.0129)	0.0114* (0.0061)	0.0474*** (0.0095)	0.0048 (0.0076)	0.0313*** (0.0072)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES
Observations	23359	22637	20989	25007	28737	17259	45996
R-squared	0.09	0.07	0.06	0.07	0.08	0.07	0.08

NOTE: This table reports the results of OLS regressions with job satisfaction as dependent variable. All regressions include country-year dummies. In columns (1)-(2), Low FD and High FD indicate that the sample is restricted to countries respectively below and above the median value of FD in our sample (equal to 71.78). Similarly, in columns (3)-(4), Low GDP and High GDP indicate that the sample is restricted to countries respectively below and above the median value of GDP in our sample (equal to 11,346); and in columns (5)-(6), Low EMPL and High EMPL indicate that the sample is restricted to countries respectively above and below the median value of UNEMPL in our sample (equal to 8.2). The coefficient estimates and the standard errors for FD\*SE are multiplied by 100. The coefficient estimates and the standard errors for GDP\*SE are multiplied by 1000. Robust standard errors, clustered at the country-employment status level, are in brackets. \*, \*\* and \*\*\* denote rejection of the null hypothesis of the coefficient being equal to 0 at 10%, 5% and 1% significance level, respectively.

Table 6: Financial Development and Job Satisfaction: Mechanisms

Sample	Full (1)	Low FD (2)	High FD (3)	Full (4)	Low FD (5)	High FD (6)
FD*SE		0.9113** (0.3576)	-0.0249 (0.2366)		0.4510 (0.3431)	0.1818 (0.2117)
GDP*SE		0.0153* (0.0079)	0.0090 (0.0058)		0.0136 (0.0087)	0.0124*** (0.0045)
Income	0.1037*** (0.0097)	0.1142*** (0.0135)	0.0944*** (0.0145)			
Independence				0.3418*** (0.0089)	0.3287*** (0.0123)	0.3513*** (0.0124)
SE	0.3259*** (0.0506)	-0.2866** (0.1347)	0.3645* (0.1858)	-0.3372*** (0.0471)	-0.7240*** (0.1442)	-0.6136*** (0.1873)
Female	0.0001 (0.0250)	0.0325 (0.0433)	-0.0170 (0.0292)	0.1067*** (0.0216)	0.1444*** (0.0336)	0.0772** (0.0308)
Age	0.0031 (0.0045)	0.0056 (0.0082)	-0.0037 (0.0061)	-0.0181*** (0.0042)	-0.0155** (0.0062)	-0.0241*** (0.0067)
(Age) <sup>2</sup>	0.0002*** (0.0001)	0.0001 (0.0001)	0.0002*** (0.0001)	0.0003*** (0.0000)	0.0003*** (0.0001)	0.0004*** (0.0001)
Married	0.1111*** (0.0292)	0.1175** (0.0454)	0.1012** (0.0414)	0.1186*** (0.0239)	0.1409*** (0.0331)	0.1070*** (0.0360)
Education	0.0114* (0.0058)	0.0198* (0.0099)	0.0036 (0.0083)	-0.0197*** (0.0055)	-0.0179** (0.0087)	-0.0181** (0.0079)
Fixed Effects	YES	YES	YES	YES	YES	YES
Observations	43873	20526	18976	50049	23107	22519
R-squared	0.09	0.10	0.08	0.23	0.23	0.24

NOTE: This table reports the results of OLS regressions with job satisfaction as dependent variable. All regressions include country-year dummies. Low FD and High FD indicate that the sample is restricted to countries respectively below and above the median value of FD in our sample (equal to 71.78). The coefficient estimates and the standard errors for FD\*SE are multiplied by 100. The coefficient estimates and the standard errors for GDP\*SE are multiplied by 1000. Robust standard errors, clustered at the country-employment status level, are in brackets. \*, \*\* and \*\*\* denote rejection of the null hypothesis of the coefficient being equal to 0 at 10%, 5% and 1% significance level, respectively.

Table 7: Financial Development and Income

Sample	Low FD (1)	High FD (2)	Full (3)	Low FD (4)	High FD (5)
FD*SE			-0.4107** (0.1956)	-1.3760*** (0.3989)	-0.0027 (0.4473)
GDP*SE			0.0027 (0.0059)	0.0087 (0.0084)	0.0022 (0.0094)
SE	0.2935*** (0.0728)	0.1183 (0.0823)	0.4228*** (0.1082)	0.7426*** (0.1273)	0.0473 (0.3842)
Female	-0.1175*** (0.0360)	-0.0391 (0.0567)	-0.0625 (0.0395)	-0.1222*** (0.0369)	0.0063 (0.0642)
Age	-0.0042 (0.0161)	0.0094 (0.0164)	0.0071 (0.0139)	-0.0046 (0.0163)	0.0202 (0.0193)
(Age) <sup>2</sup>	0.0000 (0.0002)	-0.0000 (0.0002)	-0.0001 (0.0002)	0.0000 (0.0002)	-0.0002 (0.0002)
Married	0.7280*** (0.1318)	0.9110*** (0.1231)	0.8770*** (0.0960)	0.7369*** (0.1312)	1.0272*** (0.1270)
Education	0.2202*** (0.0136)	0.2172*** (0.0185)	0.2289*** (0.0110)	0.2214*** (0.0137)	0.2373*** (0.0199)
Fixed Effects	YES	YES	YES	YES	YES
Observations	20976	22897	39502	20526	18976
R-squared	0.35	0.31	0.32	0.35	0.29

NOTE: This table reports the results of OLS regressions with income as dependent variable. All regressions include country-year dummies. Low FD and High FD indicate that the sample is restricted to countries respectively below and above the median value of FD in our sample (equal to 71.78). The coefficient estimates and the standard errors for FD\*SE are multiplied by 100. The coefficient estimates and the standard errors for GDP\*SE are multiplied by 1000. Robust standard errors, clustered at the country-employment status level, are in brackets. \*, \*\* and \*\*\* denote rejection of the null hypothesis of the coefficient being equal to 0 at 10%, 5% and 1% significance level, respectively.