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# The Wealth Tax and Entrepreneurial Activity

ASA HANSSON

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*Entrepreneurship is often credited with generating important positive economic externalities, such as promoting innovation, discovering new markets and serving as a mechanism for knowledge spill-over. Governments increasingly view encouragement of entrepreneurship as an important policy objective. Economists have found taxation as an important determinant of entrepreneurship, particularly income tax and capital gains tax. One form of taxation that has not been considered so far is the wealth tax. The wealth tax is likely to influence entrepreneurship negatively by affecting the pool of capital available for start-up businesses as well as reducing the net return to successful entrepreneurs. This article illustrates the impact of wealth tax on entrepreneurship using a simple model of the choice between becoming an entrepreneur or an employee. Actual data are then used to investigate whether the wealth tax indeed has a measurable effect on self-employment in Organisation for Economic Cooperation and Development (OECD) countries. A differences-in-differences type estimator using the abolition of the wealth tax as a 'natural experiment' points to a consistent pattern of perceptible, but small impact.*

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**The importance of** entrepreneurial activity as an engine for economic growth has been recognised since Schumpeter (1934). It is widely recognised that entrepreneurial activity plays a vital role in promoting product innovation, discovering new markets and replacing inefficient incumbents in a process called creative destruction; all of which enhances economic growth. Entrepreneurship may be especially valuable in a knowledge economy, as it serves as a mechanism that facilitates spill-over of knowledge created in one organisation to commercialised products. In addition, entrepreneurship and small firm creation may be important for creating

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employment opportunities in a global world. Given its importance, governments have generally sought to promote entrepreneurship through various public policy programmes.

Social scientists have long studied the factors that are important for creating and maintaining entrepreneurial activity (e.g., Murphy et al., 1991; Schumpeter, 1934). Despite this, the profession is still far from understanding what drives individuals to start their own businesses, even though individual characteristics (such as age, education, and assets) and economic and social environments have been found to be relevant. However, one determinant that has been consistently found to be important is access to own capital.

Curiously, relatively few studies have focused on taxation. Most of these studies have found either a positive relationship between income tax rates and entrepreneurship (Blau, 1987; Cullen & Gordon, 2002; Gordon, 1998; Long, 1982; Parker, 1996; Parker & Robson, 2003; Schuetze, 2000), perhaps higher income tax rates give greater incentives to under-report or re-classify taxable income which is done more easily for entrepreneurs than employees, or a negative relationship between tax rate progressivity and entrepreneurship (Gentry & Hubbard, 2000; Gentry & Hubbard, 2004a; Keuschnigg & Nielsen, 2002; Robson & Wren, 1999), plausibly because tax progressivity reduces financial returns of successful entrepreneurship and hence, the probability of entry. In addition, capital gains taxation has been found to retard entrepreneurship (Keuschnigg & Nielsen, 2002; 2004; Poterba, 1989).

A tax, previously unstudied, that is likely to be inversely related to entrepreneurial activity is the tax on individual wealth. Indeed, numbers indicate that those OECD countries that levied a wealth tax in 2003 had 33 per cent lower self-employment rates than those that did not tax wealth. There are several reasons for wealth tax to negatively influence the probability of becoming an entrepreneur. First, because of high risk and asymmetric information it is difficult for small start-up businesses to obtain external financing, and the importance of own capital for becoming and staying successful as an entrepreneur is well known (e.g., Blanchflower & Oswald, 1998; Davidsson & Henrekson, 2002; Evans & Leighton, 1989; Evans & Jovanovic, 1989; Gentry & Hubbard, 2004b; Holtz-Eakin et al., 1994; Johansson, 2000; Lindh & Ohlsson, 1996). By negatively impacting the amount of wealth available, tax on wealth may hinder some potential entrepreneurs from starting their own business.

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Second, expected income is an important driving force for potential entrepreneurs. By decreasing the expected returns to successful entrepreneurship, the wealth tax may negatively impact the probability of seeking to become one.

In this article, a simple model is presented that illustrates how the wealth tax affects the choice between becoming self-employed or working for another. Specifically, I begin with the Blanchflower and Oswald (1998) model and extend it to incorporate a wealth tax. The model shows how a wealth tax impairs self-employment by limiting funds available and by reducing the incentives to become self-employed. The article provides some insights pertaining to the importance of financial incentives to become self-employed as well as manage the liquidity constraint.

To examine whether wealth tax affects self-employment, actual data are analysed, albeit coarsely. A simple comparison of OECD countries that tax wealth and those countries that do not, suggests that there is a remarkable difference in self-employment between the two sets of countries. For instance, during the time period 1980–2003 countries that did not tax wealth had an average self-employment rate that was 24 per cent higher than in countries that taxed wealth. More careful analysis, however, reveals that much of the gap can be explained by other inter-country differences, and that the actual effect of the wealth tax is much smaller. Specifically, by performing simple differences-in-differences estimation using abolition of the wealth tax in four countries as natural experiments, it is found that abolishing wealth tax increases self-employment by 0.2 to 0.5 percentage points.

### **Why the Wealth Tax may Impact Entrepreneurial Activity**

There are two main reasons for the wealth tax to influence the chances of becoming an entrepreneur. First, wealth tax influences occupational choice directly by negatively impacting the amount of funds available and limiting wealth accumulation. This, in turn, limits the amount of funds available for start-ups. Second, wealth tax affects the proportion of individuals with entrepreneurial vision by impacting their expected net profit. A model that captures both mechanisms is developed as follows.

I start with a simple model based largely on the work of Blanchflower and Oswald (1998) wherein individuals choose to become either entrepreneurs or employees. To become an entrepreneur, one requires both

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entrepreneurial vision possessed by a certain share ( $\beta$ ) of the population, and capital. There exist a number of yet to be developed projects; each of them requiring a different amount of capital ( $k$ ). In addition to capital, each project needs one entrepreneur's labour. The profit from project  $k$  is  $\pi(k)$ , assumed to be strictly increasing. Capital endowment is distributed across the population with density function,  $f(k)$ , where  $k$  lies between zero and one (normalising the wealthiest person's capital assets at unity). Those individuals lacking the required capital can attempt to borrow with probability  $z$  of successfully obtaining a loan.<sup>1</sup> In addition it is assumed that there is no unemployment. Anyone can find work in the non-entrepreneurial sector at wage  $w$ , which equals the marginal product of labour in the non-entrepreneurial sector. The wage  $w$  is assumed to be declining in  $N$ , the number of employees. Population is normalised at unity and in equilibrium the number of entrepreneurs is  $E$ .

Utility for an entrepreneur is given by

$$u = \pi(k^*) + i, \quad (1)$$

where  $\pi(k^*)$  is profit from entrepreneurship,  $i$  is utility from being independent<sup>2</sup>, and  $k^*$  is the amount of capital needed for the marginal entrepreneurial project. For employees, the only source of income is from wage labour and utility,  $u$ , where  $u = w$ .

Individuals with entrepreneurial vision successively form their own businesses until and in equilibrium, either capital or vision constraints are binding in aggregate or the utility from running a business equals the utility from work. In the latter case,

$$w = \pi(k^*) + i.$$

The number of entrepreneurs in the economy, and by choice of units the probability of self-employment for one individual, is

$$E = \beta \int_{k^*}^1 f(k) dk + \beta z \int_0^{k^*} f(k) dk \quad (2)$$

$$= 1 - N. \quad (3)$$

The total number of entrepreneurs in the economy is, thus, equal to the product of the probability of having entrepreneurial vision, the number of individuals with required capital plus the probability of vision, the probability of successfully obtaining a loan and the number of individuals with less than required capital.

It can easily be seen that increases in the proportion of population with vision ( $\beta$ ), the utility of being independent ( $i$ ) and the probability of obtaining a loan ( $z$ ) lead to increases in the equilibrium number of entrepreneurs in the economy.

Assume now that the government taxes wealth at tax rate  $t$  and that the tax revenues obtained are used to finance public goods that neither affects the profit of entrepreneurs nor occupational choice directly.<sup>3</sup> Wealth tax can affect the number of entrepreneurs in the economy through several channels. First, it has a direct effect on the amount of capital available to finance entrepreneurial activity. Even before a wealth tax was introduced, individuals were constrained from businesses by lack of capital. By negatively impacting the amount of wealth available, the wealth tax constrains potential entrepreneurs even further. The marginal project still requires  $k^*$  but the entrepreneur now needs  $k^*/(1-t)$  pre-tax, increasing the number of potential entrepreneurs that are capital constrained.

The number of entrepreneurs in the economy is now given by

$$E = \beta \int_{k^*/(1-t)}^1 f(k)dk + \beta z \int_0^{k^*/(1-t)} f(k)dk. \quad (2')$$

To identify how the probability of entrepreneurship is affected by the wealth tax, equation (2') is differentiated with respect to  $t$ , which gives:<sup>4</sup>

$$\frac{dE}{dt} = \frac{\partial \beta}{\partial t} \int_{k^*/(1-t)}^1 f(k)dk + \frac{\partial \beta}{\partial t} z \int_0^{k^*/(1-t)} f(k)dk + \frac{\beta k}{(1-t)^2} f\left(\frac{k}{1-t}\right)(z-1). \quad (3')$$

The sign of expression (3') determines how the wealth tax affects the number obtaining a loan. This is always less than 1. Hence, the sign is determined by  $d\beta/dt$ .

*Proposition 1.* The wealth tax affects the probability of becoming an entrepreneur negatively if and only if  $d\beta/dt < 0$ .

Second, wealth tax influences the proportion of the population with entrepreneurial vision by reducing the returns to successful entrepreneurship. The proportion of individuals with entrepreneurial vision can be expressed as,

$$\beta = \beta(E(\pi)), \quad (4)$$

where expected profit increases the proportion of entrepreneurial vision and  $\beta$  is monotonically positive in  $E(\pi)$ .

Wealth tax reduces the returns of successful entrepreneurship. Specifically, since potential profit is assumed to increase the individual's wealth, the net profit is reduced by the wealth tax to  $(1-t)E(\pi(k))$ . This, in turn, suppresses the proportion of the population interested in starting their own business. Wealth tax thus negatively influences entrepreneurial vision,  $\beta$ .<sup>5</sup>

*Proposition 2.*  $d\beta/dt$  is negative since the wealth tax negatively affects net expected profit and therefore, the incentives to become an entrepreneur.

## Empirical Analysis

### Data

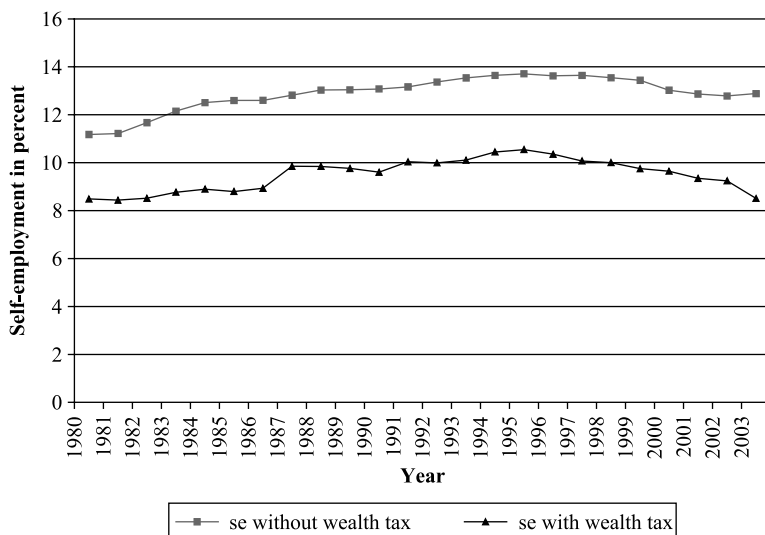
The impact of the wealth tax on entrepreneurship was studied using data for a large sample of OECD countries. This sample constitutes both wealth tax and non-wealth tax countries. Unfortunately, data on entrepreneurial activity are not readily available. The last term in expression (3') is negative since the  $z$  value is used. Specifically, data from 22 OECD countries on the share of self-employed (excluding farmers) was used.

### Simple Estimates

In 2003 eight OECD countries (Finland, France, Iceland, Luxembourg, Norway, Spain, Sweden and Switzerland) taxed individual wealth. In 2007, this number has declined to four, namely France, Norway, Spain

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**FIGURE 1**  
*Average Self-employment Rates in Wealth and Non-wealth Tax Countries, Respectively, over 1980 to 2003*



Source: Author's estimations.

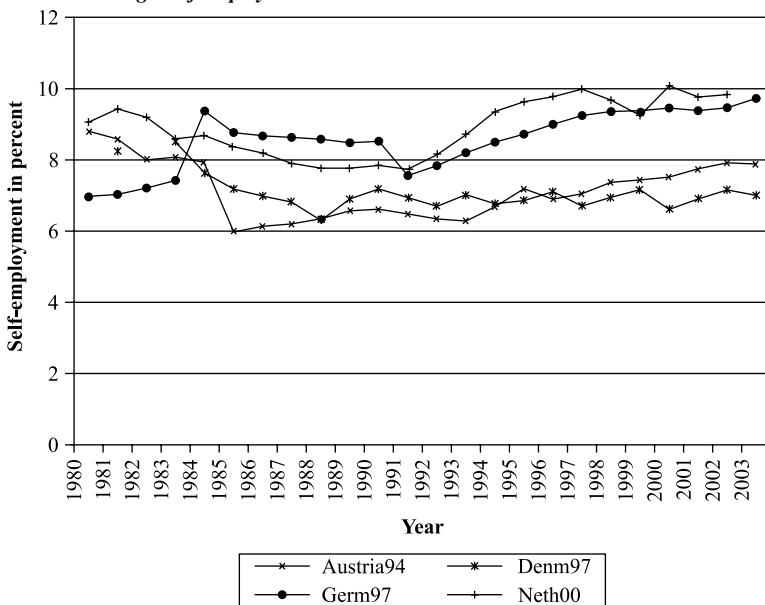
and Switzerland. Figure 1 plots the average fraction of self-employment (in non-agricultural sectors) between 1980 and 2003 separately, for the above-mentioned eight countries that had a wealth tax regime for the entire period and countries that did not tax wealth for the same period (Australia, Belgium, Canada, Ireland, Japan, New Zealand, Portugal, Turkey, UK and the US).<sup>6</sup>

As is evident from Figure 1, the difference in self-employment between the two groups is sizable. The average self-employment rate during this period was 11.9 per cent in the non-wealth tax countries compared to 9.6 per cent in the wealth tax countries, a difference of 2.3 percentage points (19 per cent). Not only does the level of self-employment differ between wealth and non-wealth tax countries, but the change in self-employment differs as well. For instance, the average yearly growth in self-employment was 0.63 per cent in non-wealth tax countries compared to 0.39 per cent in the wealth tax countries. Figure 1 also suggests that

self-employment declined since the mid-1990s both in non-wealth tax and wealth tax countries, with larger decline in wealth tax countries (2.6 percentage points) than non-wealth tax countries (0.8 percentage points).

Whether these differences are truly due to the wealth tax or caused by other confounding factors is impossible to disentangle from Figure 1. However, additional information can be discerned by looking at the pattern of self-employment in the four countries that abolished the wealth tax during this period (Austria, Denmark, Germany and the Netherlands). Figure 2 graphs self-employment in Austria (abolished 1994), Denmark (abolished 1997), Germany (abolished 1997) and the Netherlands (abolished 2000), respectively.

**FIGURE 2**  
*Average Self-employment in Countries that Abolished the Wealth Tax*



Source: Author's estimations.

All four countries had average self-employment rates well below the average for the non-wealth tax countries (11.9 per cent). Indeed, the average self-employment rate in these four countries was fully

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4 percentage points (34 per cent) lower than the non-wealth tax countries. Interestingly, however, the downward trend in self-employment seen generally in Figure 1 is not evident here. Instead, self-employment seems to be increasing. Austria, for example, witnessed an average yearly growth in self-employment of 2.3 per cent after the wealth tax was removed in 1993 in contrast to an average decline of 1.5 and 0.6 per cent, respectively, in wealth and non-wealth tax countries. In Denmark and Germany, the average growth rate in self-employment was 0.1 and 0.8 per cent, respectively, after their wealth taxes were eliminated in 1997 compared to -2.8 and -0.8 per cent for the wealth and non-wealth tax countries. Similarly, self-employment increased an average of 2.2 per cent after the removal of the wealth tax in 2000 in the Netherlands compared to decline of 3.4 per cent and 1.0 per cent in wealth and non-wealth tax countries during the same period, respectively.

### *Differences-in-differences Estimation*

Even the before–after comparisons of countries that abolished wealth taxes during the studied period are at best indicative and may be confounded by secular trends. Therefore, I constructed estimates based on the formal differences-in-differences approach. Since the data are necessarily limited, the results must be interpreted cautiously. Specifically, I compared the change in self-employment before and after the removal of wealth tax between countries that abolished the wealth tax (the treatment group) and countries that either taxed wealth the whole period or never taxed wealth (the control group). This strategy ensures that any secular trends that are correlated with the wealth tax and self-employment do not bias the coefficient estimate.

A simple estimate was made where the change in the self-employment rates from the year before to one year after the wealth tax was abolished was compared to the same difference for the control countries individually. Specifically, for each of countries that abolished the wealth tax, the change after the wealth tax was abolished is compared to the change over the same time period for the control countries. I also estimated the differences-in-differences by comparing the change two years after the wealth tax was removed and the year before, to allow more time for individuals to respond to the change. In addition, I used different control groups to see how sensitive the results were to the choice of control group.

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The results are reported in Table 1. In the first column, both wealth and non-wealth tax countries are included in the control group. Self-employment increased after the wealth tax was abolished in each country, but the increase is much smaller than Figure 1 suggests, after secular trends were removed by the differences-in-differences estimation. On average, removing the wealth tax increased self-employment by 0.5 and 0.7 percentage points at one year and two years after the wealth tax was removed, although there is variation across the four countries. In the Netherlands, self-employment grew substantially by one percentage point, whereas the increase in Denmark was much smaller.

**TABLE 1**  
*Differences-in-differences Estimates of the Effect of Wealth Tax*  
*Eliminations on Self-employment (in Percentage Points)*  
*in Four Countries That Abolished the Wealth Tax*

| <i>Country—Before,<br/>After</i> | <i>Wealth and<br/>Non-wealth<br/>Tax Countries</i> | <i>Non-<br/>wealthTax<br/>Countries</i> | <i>High Tax<br/>Countries</i> | <i>High Tax<br/>Countries<br/>with Wealth<br/>Tax</i> | <i>Neighbouring<br/>and Similar<br/>Countries</i> |
|----------------------------------|--|---|-------------------------------|---|---|
| Austria                          |  |   |                               |   |   |
| –1993, 1995                      | 0.61   | 0.80                                    | 0.45                          | 0.40  | 0.88  |
| –1993, 1996                      | 0.46   | 0.63                                    | 0.34                          | 0.36  | 0.55  |
| Denmark                          |  |   |                               |   |   |
| –1996, 1998                      | 0.02   | –0.087                                  | 0.07                          | 0.07  | 0.07  |
| –1996, 1999                      | 0.42   | 0.26                                    | 0.41                          | 0.41  | 0.45  |
| Germany                          |  |   |                               |   |   |
| –1996, 1998                      | 0.54   | 0.43                                    | 0.59                          | 0.59  | 0.31  |
| –1996, 1999                      | 0.76   | 0.59                                    | 0.74                          | 0.74  | 0.36  |
| Netherlands                      |  |   |                               |   |   |
| –1999, 2001                      | 1.01   | 1.07                                    | 1.02                          | 0.99  | 0.61  |
| –1999, 2002                      | 1.14   | 1.17                                    | 1.14                          | 1.12  | 0.79  |
| Average                          |  |   |                               |   |   |
| –One year after                  | 0.54   | 0.55                                    | 0.53                          | 0.51  | 0.47  |
| –Two years after                 | 0.69   | 0.66                                    | 0.65                          | 0.66  | 0.54  |

**Source:** Author's estimations.

However, the estimates are potentially contaminated, because the control countries included wealth tax countries. While these countries did not abolish the wealth tax, they might have made other substantial changes in the tax rates and allowances making them poor control candidates. To

avoid this problem, I also present estimates (see column 2, Table 1) for countries that never taxed wealth as the control group. While this did not change the average results appreciably (0.55 and 0.66, respectively), the effect for Denmark declined substantially (indeed negative for two years after removal) and the estimates for Austria increased.

The four countries that abolished the wealth tax may differ systematically from the other countries. For instance, they are high-tax countries and their low self-employment rates may be a result of being high-tax countries (Fölster, 2002). To mitigate this problem, I also estimated the differences-in-differences using only high-tax countries in the control group (Belgium, Finland, France, Iceland, Norway and Sweden) in column 3 of Table 1.<sup>7</sup> Again, the results were generally unaffected.

Finally, using the model, I estimated the effects of wealth tax in neighbouring countries vis-a-vis countries with similar economic conditions as controls (see columns 4 and 5 of Table 1, respectively). Specifically, France and Germany were Austria's controls; Finland and Norway were Denmark's controls; Austria and France were Germany's controls; and France and Luxembourg were the Netherlands' controls. Again, the results were robust and the average effect of removing the wealth tax was still approximately a 0.5 percentage point increase in self-employment.

*Differences-in-differences Estimation after Controlling for other Covariates*

These simple differences-in-differences estimates are problematic in several respects. First, they rest on a key assumption that the average change in outcome would have been the same for the treatment and the control group had the wealth tax not been abolished. That is, other factors, such as economic conditions, affect the treatment and the control group similarly. If that is not the case, additional explanatory variables must be included. Second, if the treatment group is not truly randomly assigned, the differences-in-differences estimates may be biased. This could happen if the removal of the wealth tax was instituted to improve the entrepreneurial climate. While it is hard to deal with the latter problem, performing regression analysis that allows for other control variables can potentially mitigate the former problem.

Performing a standard differences-in-differences estimation with covariates are problematic in this setting not only because the countries

abolishing the wealth tax were few but also as the removal of the wealth tax occurred in different years for various countries. One way to deal with this is to rinse out the effect of other potentially important explanatory variables before performing the differences-in-differences estimation. Specifically, I rinsed out real GDP per capita, unemployment, transfer as share of GDP, variables that have been found to explain self-employment in other studies (e.g., Fölster, 2002; Parker & Robson, 2003), and computed the differences-in-differences estimates on the resulting residuals using the same control groups as in Table 1.

Table 2 reports on these results. In general, the estimates presented in Table 2 are considerably smaller than those presented in Table 1, suggesting that other factors explained part of the difference in self-employment between those that abolished the wealth tax and the controls. In particular, real GDP per capita, unemployment, transfers, time and country fixed effects were found to impact self-employment in the treatment

**TABLE 2**  
*Differences-in-differences Estimates on the Effect of Wealth Tax Eliminations on Self-employment (in Percentage Points) After Controlling for Real GDP Per Capita, Unemployment, Transfer, Time and Country-specific Effects*

| <i>Country—Before,<br/>After</i> | <i>Wealth and<br/>Non-wealth<br/>Tax<br/>Countries</i> | <i>Non-wealth<br/>Tax<br/>Countries</i> | <i>High Tax<br/>Countries</i> | <i>High Tax<br/>Countries<br/>with Wealth<br/>Tax</i> | <i>Neighbouring<br/>and Similar<br/>Countries</i> |
|----------------------------------|--|---|-------------------------------|---|---|
| <i>Austria</i>                   |  |   |                               |   |   |
| –1993, 1995                      | 0.04   | 0.04                                    | 0.04                          | 0.05  | –0.06   |
| –1993, 1996                      | 0.03   | 0.02                                    | 0.03                          | 0.05  | –0.15   |
| <i>Denmark</i>                   |  |   |                               |   |   |
| –1996, 1998                      | 0.19   | 0.11                                    | 0.15                          | 0.17  | 0.25  |
| –1996, 1999                      | 0.30   | 0.20                                    | 0.19                          | 0.22  | 0.26  |
| <i>Germany</i>                   |  |   |                               |   |   |
| –1996, 1998                      | 0.26   | 0.17                                    | 0.21                          | 0.23  | 0.10  |
| –1996, 1999                      | 0.37   | 0.27                                    | 0.27                          | 0.29  | 0.17  |
| <i>Netherlands</i>               |  |   |                               |   |   |
| –1999, 2001                      | 0.16   | 0.12                                    | 0.10                          | 0.11  | 0.44  |
| –1999, 2002                      | 0.28   | 0.23                                    | 0.18                          | 0.20  | 0.60  |
| <i>Average</i>                   |  |   |                               |   |   |
| –One year after                  | 0.19   | 0.11                                    | 0.13                          | 0.14  | 0.18  |
| –Two years after                 | 0.25   | 0.18                                    | 0.17                          | 0.19  | 0.22  |

Source: Author's estimations.

and control countries differently. Self-employment increased on average (0.2 percentage points) when the wealth tax was abolished using wealth and non-wealth tax countries as controls. When different control groups were used, the increase is similar; although smaller when non-wealth and high-tax countries are used as controls. For the individual countries the differences-in-differences estimates for Austria and the Netherlands were especially lower compared to those in Table 1, suggesting that the increase found for Austria and the Netherlands in Table 1 are largely driven by other factors.

Two other countries, France and Italy, abolished and reintroduced wealth taxes during the study period and can provide additional information about the effect a wealth tax has on self-employment. As the changes were temporary, the information that can be drawn from the experience in these countries is limited. Taxpayers in France were given a temporary relief from the wealth tax between 1986 and 1988. Italy, on the other hand, introduced a wealth tax in 1993 and abolished the same tax in 1998. Table 3 reports on differences-in-differences estimates on the changes in

**TABLE 3**  
*Differences-in-differences Estimates on the Effect of Wealth Tax Introduction and Abolishment on Self-employment in Italy and France (in Percentage Points) After Controlling for Real GDP Per Capita, Unemployment, Transfer, Time and Country-specific Effects*

| <i>Country—Before, After</i> | <i>Wealth and Non-wealth Tax Countries</i> | <i>Non-wealth Tax Countries</i> | <i>High Tax Countries</i> | <i>High Tax Countries with Wealth Tax</i> | <i>Neighbouring and Similar Country</i> |
|------------------------------|--|---------------------------------|---------------------------|---|---|
| France Abolishing            |  |                                 |                           |   |   |
| –1985, 1987                  | 0.13                                       | 0.09                            | 0.19                      | 0.24                                      | 0.13                                    |
| –1985, 1988                  | 0.06                                       | 0.04                            | 0.12                      | 0.15                                      | 0.06                                    |
| France Reintroducing         |  |                                 |                           |   |   |
| –1988, 1990                  | 0.15                                       | –0.05                           | –0.10                     | –0.12                                     | –0.35                                   |
| –1988, 1991                  | 0.17                                       | –0.07                           | –0.13                     | –0.16                                     | –0.14                                   |
| Italy Introducing            |  |                                 |                           |   |   |
| –1992, 1994                  | 0.14                                       | 0.13                            | 0.09                      | 0.11                                      | –0.27                                   |
| –1992, 1995                  | 0.12                                       | 0.12                            | 0.06                      | 0.07                                      | –0.14                                   |
| Italy Abolishing             |  |                                 |                           |   |   |
| –1997, 1999                  | 0.24                                       | 0.18                            | 0.17                      | 0.19                                      | 1.45                                    |
| –1997, 2000                  | 0.36                                       | 0.25                            | 0.24                      | 0.26                                      | 2.07                                    |

**Source:** Author’s estimations.

the wealth tax in France and Italy using the same control groups as in previous tables when controlling for real GDP, unemployment, transfers, time- and country-specific effects. The control country in the last row in the upper and lower part of Table 3 is Italy for France and Spain for Italy.

The effect on self-employment from the wealth tax removal in France was positive, albeit small. Reintroducing the tax a few years later had a negative (also small) effect on self-employment. For Italy, the effect of introducing the wealth tax actually had a positive, but small effect on self-employment, in all rows but the last (see Table 3). Abolishing the wealth tax a few years later had a positive and large effect, when compared to Spain.

A potential problem with these estimates is that the elimination of wealth tax was in many cases, part of larger reforms that included other tax changes that could affect self-employment. The wealth tax reform in the Netherlands, for instance, was part of a general tax reform that removed the wealth tax but replaced it with a 30 per cent tax on theoretical revenue from capital (assumed to equal 4 per cent of net assets) while exempting actual capital income from taxation. In Austria, wealth tax removal was also part of a larger tax reform that increased general tax credits for all taxpayers and to compensate for the revenue loss, increased the corporate tax rate. To remove the effect of other simultaneous tax changes that took place, I controlled for various tax rates (the tax gap between labour and capital income taxation, the marginal tax rate on labour and capital and the corporate tax rate) in addition to already included covariates before performing the differences-in-differences estimation. When the tax gap and corporate tax rates were controlled, the effect of the wealth tax removal in the Netherlands reduced dramatically to around 0.10 percentage points. For the three other countries the changes are much smaller. Controlling for the corporate tax rate increased the estimate for Austria from roughly zero to about 0.25 percentage points. For the other countries the estimates were generally lower but less sensitive to the inclusion of the corporate tax rate. Moreover, the estimates for Italy presented in Table 3 were sensitive to the inclusion of the corporate tax rate as well as capital gains taxes. In contrast to Table 3, the introduction of a wealth tax in Italy had a negative effect on self-employment when corporate tax rates were controlled for and a near zero effect when capital gains taxes were included.

### **Discussion**

Empirically, there are consistent indications of a perceptible, but small, negative impact of a wealth tax on self-employment as predicted by the model. Other factors such as attitudes toward risk, overall business friendliness and labour market institutions that vary across countries are likely to be more important than the wealth tax.

These estimates made here should be interpreted with care since the study has several shortcomings. First, the number of OECD countries that abolished wealth tax is admittedly small, severely limiting the econometric techniques applicable. Moreover, the removal took place at different times, requiring somewhat spacious assumptions to pool the four treatment countries and the control countries. Second, elimination of the wealth taxes may not have been random. If the wealth tax reforms sought to boost self-employment, they may be unfit for use as 'natural experiments'. Even if the reforms were not designed to boost self-employment but to enhance efficiency and improve economic performance that may indirectly affect self-employment as well. Unfortunately, this problem is hard to overcome with currently available data and methods.

Third, the wealth tax may have offsetting positive effects on self-employment making the overall effect small. In many countries, the wealth tax has been criticised for exempting the very wealthy from the tax. One reason for this is that working capital held in businesses is exempt.<sup>8</sup> This provides incentives for wealthy individuals to become self-employed to escape taxation more easily. If many individuals become self-employed to hide wealth, this effect can outweigh the potential negative effects a wealth tax may have.<sup>9</sup> Unfortunately, I am unable to disentangle this effect from the total effect.

Nevertheless, the results point to a consistent, albeit small positive impact of the wealth tax abolishment on self-employment. This impact was found in a wide range of specifications lending some credibility to the results. Unfortunately, it is not possible to disentangle whether the wealth tax impairs self-employment by reducing the net return of being successful or by negatively affecting access to capital, or perhaps more likely through both channels.

## Conclusion

Promoting entrepreneurship is widely recognised as an important policy objective. In general, income taxation has been found to have a positive impact on self-employment while the progressivity of the income tax as well as capital gains taxation have been found to affect self-employment negatively. One form of taxation that has so far not been considered, but likely to affect self-employment, is the wealth tax.

This article develops a simple model illustrating how the wealth tax can impede self-employment by reducing the amount of capital available and by reducing the pay-off to successful entrepreneurship.

Data from twenty-two OECD countries indicates that countries that do not tax wealth have systematically higher self-employment than countries that do tax individual wealth. Average self-employment, indeed, was 2.3 percentage points (24 per cent) higher in countries without a wealth tax than in countries that taxed wealth over the time period 1980 to 2003. Differences-in-differences estimation using the elimination of wealth taxes as a natural experiment, however, indicates that the boost in self-employment due to the removal of the tax is likely to be much smaller, some 0.2 to 0.5 percentage points, suggesting that the systematically higher self-employment in countries without taxes on wealth is likely to be an artefact of other factors correlated mutually with the wealth tax—perhaps overall business-friendliness, attitudes toward risks, or social norms.

Nevertheless, it must be cautioned that these estimates suffer from a number of serious limitations. For instance, the data available are limited and the abolishment of the wealth tax took place in different years in the various OECD countries making it difficult to construct control groups. The main strength of the results, however, lies in the consistency across a wide number of different specifications.

This article should be seen as a first attempt to study the effect of wealth tax on entrepreneurship and a trigger for future research, preferably using micro-level data to address the issues discussed here as well as to disentangle how the wealth tax affects self-employment by limiting available capital, reducing the net return, or by impacting risk-taking and effort.

### Notes

1. Venture capital is ignored here. The venture capital market is underdeveloped, especially in Europe, making it unrealistic for many potential entrepreneurs to receive outside financing (Keuschnigg & Nielsen, 2004).
2. Several studies have found that self-employed individuals enjoy higher utility than employees (e.g., Blanchflower & Oswald, 1998).
3. The government can also redistribute the revenues back to the individuals in the form of lump sum transfers.
4. The distribution of capital endowments is assumed to be unaffected by the wealth tax.
5. Even if many countries that tax wealth exempt wealth held in firms from taxation. More consumable wealth, for instance property, is generally subject to wealth tax which negatively affects the returns of successful entrepreneurship. In France and Sweden for instance, a shareholder holding more than 25 per cent of the shares in a company is exempt from paying wealth taxes on the holding. In Spain, only 15 per cent is required to be exempt.
6. France taxes wealth as well. However, the tax was lifted between 1987 and 1988. Italy instituted a temporary wealth tax that was in effect between 1993 and 1997. Note that Turkey is not included in Figure 1.
7. Note that Belgium is the only country that did not tax wealth. However, excluding Belgium does not change the results noticeably.
8. See Note 5.
9. Note that self-employment driven by tax incentives is undesirable from a social perspective. Those becoming self-employed for tax reasons may do so only part-time, however, reducing the problem.

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