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Filoso, Valerio

University of Naples "Federico II" - Department of Economic Theory
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THE CORPORATE INCOME TAX: AN ENTREPRENEURIAL PERSPECTIVE

VALERIO FILOSO

ABSTRACT: While corporate income taxation is a major issue in the debate over international finance, economic theory has no clear stance on who bears its burden. On balance, economists seem still more prone to accept that taxing profits does not affect corporations' outcomes. This paper makes three cases for non-neutrality. First, since corporate income taxation is asymmetric between profit and loss, the tax rate may change the ranking of alternative investments. Secondly, the imperfect observability of the use of internal resources makes pure economic profits very difficult to detect. Thirdly, when the pervasive role of entrepreneurship is fully taken into account, corporate income taxation appears clearly as a direct tax on market adjustments and successful speculation.

Valerio Filoso, Ph.D. (filoso@unina.it) is assistant professor in public economics at the University of Naples "Federico II," Italy; and is a research fellow at the Centre for Household, Income, Labour, and Demographic Economics (CHILD), at the University of Turin.

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1. INTRODUCTION

In 2007, top marginal corporate income tax rates among the member countries of the European Union ranged from a low of 10 percent (Bulgaria and Cyprus) to a high of 38.36 percent (Germany), with Italy closely following with a rate of 37.25 percent. In the world list of top corporate taxing countries, Japan scores first with a rate of 40.7 percent, followed by US and Germany, with the average level of corporate taxes in the EU declining from 38 percent in 1993 to 24.2 percent in 2007 (KPMG, 2007). This trend toward decrease,¹ which is not limited to the EU, is mainly due to the competition between countries to attract and keep foreign investment: as of 2007, Moldova has set to zero the tax rate on corporate income.² With regard to the US, in 2007 corporate tax revenues represented approximately 14 percent of federal government revenues,³ or 3.9 percent of gross domestic product. The total value of the corporate income tax amounted to \$53,378,874.

Table 1. Corporate Income Tax Rates (1987–2007), OECD Countries

	1987	1997	2007
Australia	49.0	36.0	30.0
Austria	55.0	34.0	25.0
Belgium	43.0	40.2	34.0
Canada	51.6	44.6	33.5
Czech Republic	-	39.0	21.0
Denmark	50.0	34.0	25.0
Finland	51.5	28.0	26.0
France	45.0	41.7	34.4
Germany	60.0	56.8	30.2

¹ See Table 1 for an international comparison.

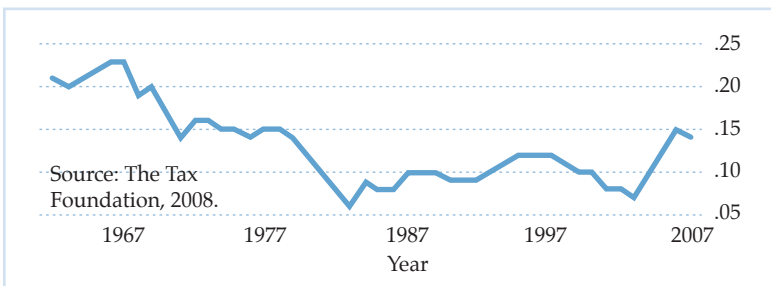
² Fiscal competition seems to be a source of concern for scholars at the IMF, which invokes fiscal coordination to stop corporate income taxes from falling further (Piatkowski and Jarmuzek 2008).

³ See Figure 1 for more data on US revenues from corporate income taxation.

	1987	1997	2007
Greece	49.0	35.0	25.0
Hungary	n.a.	18.0	20.0
Iceland	n.a.	n.a.	15.0
Ireland	50.0	36.0	12.5
Italy	46.4	53.2	27.5
Japan	n.a.	50.0	39.5
Korea	n.a.	n.a.	27.5
Luxembourg	n.a.	n.a.	30.4
Mexico	40.6	34.0	28.0
Netherlands	42.0	35.0	25.5
New Zealand	48.0	33.0	30.0
Norway	50.8	28.0	28.0
Poland	n.a.	38.0	19.0
Portugal	48.1	37.4	26.5
Slovak Republic	-	40.0	19.0
Spain	35.0	35.0	30.0
Sweden	56.6	28.0	28.0
Switzerland	31.7	28.5	21.2
Turkey	n.a.	n.a.	20.0
United Kingdom	35.0	31.0	28.0
United States	44.2	39.5	39.3

Source: The Tax Foundation, 2008.

Fig 1. U.S. Corporate Income Tax Revenues / Total Tax Revenues (1967–2007)



Corporate income taxes are levied on the net income earned by corporate firms, i.e., on profit. Since profit is calculated subtracting the sum of all costs from the sum of all revenues, it is not clear what effect this tax exerts on a firm's factor and product markets. Which stakeholders does the tax impact more heavily? Workers? Stockholders? Customers? It comes as no surprise that economic literature has not delivered any neat result about who pays corporate taxes, yet. In the standard textbook exposition, the incidence of this kind of taxes is rarely explored in detail and the most common result reported is that taxing profits does not change the production choices, independently of market structure. In the stream of more technically oriented literature, Krzyzaniak and Musgrave (1963) maintain that corporate taxation can be shifted backward or forward, due to market structure. Using a competitive general equilibrium model, Harberger (1962) proves that the tax is fully passed backward to capital owners. Feldstein, Green, and Sheshinski (1979) demonstrate that backward shifting is impossible in the case of a perfectly elastic capital supply. The implications of corporate taxation for the allocation of financial resources are somewhat clearer. In the effort to reduce their tax obligations, corporations generally are induced to use debt rather than equity finance, for interest payments to bondholders are deductible from taxable income, while dividend payments to corporate shareholders are not: in this perspective, Auerbach (2005) provides evidence that this substitution results in significantly higher debt/equity ratios. Furthermore, distributed dividends are often taxed twice: the first time as net income produced by the firm, the second time as part of personal income.

The aim of this paper is to show that the case for corporate tax neutrality does not hold as a general rule. To prove this result, section 2 reviews the traditional neoclassical model used to demonstrate that corporate taxes do not impact a firm's decisions. This result holds true only to a very limited extent, since it ignores risk and alternative investment choices. Section 3 reviews three main reasons why the effects of taxing profits may be far from neutral. First, under very general conditions, corporate taxes may change the ranking of alternative investment choices, even though the distribution of stochastic outcomes is fully known to the entrepreneur. Secondly, since current taxation procedures rely

on objective book values, pure entrepreneurial activities, which cannot readily be assessed from those sources, become depressed in favor of deductible monetary costs. Thirdly, the Austrian approach marks a drastic departure from the neoclassical paradigm, for it assumes entrepreneurship as the essence of firm's activities: in this framework of intrinsically uncertain knowledge, taxing corporations reduces market efficiency, equilibrium adjustment, and long-run growth of wages.

2. THE CASE OF NEUTRALITY

The standard public finance literature (Ulbrich 2003; Cullis and Jones 1998; Musgrave and Musgrave 1989) treats the problem of corporate taxation focusing exclusively on the highly stylized model of the neoclassical firm, whose only control variable is the size of production.⁴ For a neoclassical firm, the objective function is:

$$\max_q \pi(q) = p(q)q - c(q)$$

where $q \in \mathfrak{R}_0^+$ is the size of production, $\pi \in \mathfrak{R}$ is profit, $p(q) \in \mathfrak{R}_0^+$ is the inverse demand curve, and $c(q) \in \mathfrak{R}_0^+$ is the total cost function, including wages, other variable costs, interest paid, and capital depreciation. Under the assumption of differentiability with regard to c and p , maximization of π requires

$$(1) \quad \frac{\partial p(q)}{\partial q} q + p(q) = \frac{\partial c(q)}{\partial q}$$

at the optimal size q^* , the marginal revenue from selling q^* units of product must equal the marginal cost needed to produce them.

⁴ An exception to this way of presenting corporate taxation is provided by Holcombe (2005) and Stiglitz (2000). Holcombe states clearly that

Strictly speaking, corporations do not pay income tax. The corporate income tax is ultimately borne by individuals, and saying the corporation pays the tax amounts to saying that the corporation's stockholders bear the burden of taxation (Holcombe 2005, p. 313).

Salin (1985) also elaborates on this point.

In this context, corporate income taxation turns the profit function into

$$\pi_{\theta}(q) = (1 - \theta)[p(q)q - c(q)]$$

where $\theta \in [0, 1]$ is the tax rate. No matter what the value of θ , optimality condition (1) continues to hold, since both sides of the equation are affected by the tax rate in the same proportion. Economically relevant resources are not diverted away from their current uses: simply, government collects revenues equal to $\theta \pi_{\theta}(q^*)$. The incidence analysis is straightforward: What is changing here is just income distribution—a net transfer from stockholders to government bureaucrats—but the total wealth available to society is unaffected, since q^* does not depend on θ .

To investigate whether the tax impacts the long-run equilibrium of a given sector, we must make further assumptions on market structure. This is what we assume: (1) all sectors are taxed at the same rate and (2) the sector under study is perfectly competitive. It follows that in the long run the following relation must hold also:

$$\frac{\partial p(q)}{\partial q} q + p(q) = p^* = \frac{\partial c(q)}{\partial q} = \frac{c(q^*)}{q^*};$$

In other words, the long-run price, endogenously determined by exits and entries of firms, would be large enough to just cover average costs, thus driving profits to zero, as well as revenues from corporate taxes. This result corroborates what was previously obtained in the case of short run: corporate tax is completely neutral with regard to quantity determination *and* also to the number of firms operating in a given sector. Even though the total collected revenues for the government grow linearly with the firm's total profit, the effect of corporate taxation is exactly the same as a lump-sum tax.

3. THE CASE OF NON-NEUTRALITY

The previous model of fiscal incidence leaves no room for allocational effects of corporate taxation. This extreme result was

obtained under the assumptions of perfect knowledge of selling price, and no risk over costs and revenues. As soon as we depart from this scenario, tax neutrality invariably disappears. Whether we introduce risk, imperfect observation of profits, or actual entrepreneurship made possible by genuine uncertainty, market distortions invariably arise.

RISK

Consider the following scenario. A risk-neutral entrepreneur can choose between two alternative risky investments, namely a and b , which assume values $x^i \in \mathfrak{R}$, with $i \in \{a, b\}$ and a known cumulative distribution function of probability $F(x^i) = \Pr\{t \leq x^i\}$, with $t \in (-\infty, \infty)$. The expected value of both investments is assumed to be strictly greater than zero. To simplify matters, assume that no variable production cost is involved by any project.

Given all this, the expected return of the i -th investment is

$$E(x^i) = \int_{-\infty}^{+\infty} x^i dF(x^i)$$

Provided entrepreneur's neutrality toward risk, we have

$$a \geq b \Rightarrow E(x^a) \geq E(x^b)$$

i.e., only expected returns matter to him. Now, assume that profits are taxed with a constant rate $\theta \in [0, 1]$ if and only if their realized value is greater than zero. In this case the expected return of the i^{th} investment becomes

$$E(x^i|\theta) = \int_{-\infty}^0 x^i dF(x^i) + (1-\theta) \int_0^{+\infty} x^i dF(x^i).$$

Other things being equal, then, the introduction of corporate tax decreases the expected return in the case of success. We are ready to demonstrate the following:

Theorem 1: *When positive profits are taxed, the value of θ changes the relative profitability of mutually exclusive investments.*

Proof: Since positive profits are taxed, investment a is chosen in place of b when

$$(2) \quad (1-\theta) \left[\int_0^{+\infty} x^a dF(x^a) - \int_0^{+\infty} x^b dF(x^b) \right] \geq \int_{-\infty}^0 x^b dF(x^b) - \int_{-\infty}^0 x^a dF(x^a)$$

Without loss of generality, assume that the difference on left side of the inequality is strictly greater than zero. That is to say that

$$(3) \quad \int_0^{+\infty} x^a dF(x^a) \geq \int_0^{+\infty} x^b dF(x^b):$$

as long as the term on the right side is negative, the inequality is preserved no matter what the value of θ . On the contrary, when the term on the right side is positive, the inequality holds as long as

$$(4) \quad \theta \leq 1 - \frac{\int_0^0 x^b dF(x^b) - \int_{-\infty}^0 x^a dF(x^a)}{\int_{+\infty}^0 x^a dF(x^a) - \int_0^{+\infty} x^b dF(x^b)}$$

Naming $\bar{\theta}$ the value of θ for which the previous inequality holds as an equality, it follows immediately that when $\theta \geq \bar{\theta}$ then the b investment shows a higher expected value than a , even though the expected value without taxes of a is higher than b 's. The ranking of profits from alternative investments is thus affected by θ .

Example 1: *Consider two investment projects such that their probabilities of success are $p_a = 0.5$ e $p_b = 0.64$ with returns equal to $x_a^1 = 200$ and $x_a^2 = -10$ for the a project and $x_b^1 = 180$ and $x_b^2 = -50$ for the b project. The expected return of the a project is 95, whereas the expected return of the b project is 97.2. It follows that b should be the chosen one. However, when the corporate tax rate is $\theta > 0.14$, then the a project is chosen instead.*

From the previous theorem it is straightforward to prove the following:

Corollary 1: *Assume that the entrepreneur must pay a fraction θ of the profits in case of success, while receiving a unitary subsidy equal to ϕ in case of failure. Then, the choice between mutually exclusive investments does not depend on the values of θ or ϕ only when $\theta = \phi$.*

Proof: Introducing loss subsidy, condition (2) becomes

$$(5) \quad (1-\theta) \left[\int_0^{+\infty} x^a dF(x^a) - \int_0^{+\infty} x^b dF(x^b) \right] \geq (1-\phi) \left[\int_{-\infty}^0 x^b dF(x^b) - \int_{-\infty}^0 x^a dF(x^a) \right]$$

because of the linear property of the expected value. This expression is independent of tax and subsidy rates only when $\theta = \phi$. In this case, the comparison between the profitability of alternative investment projects is restored to the case of no taxation and the ranking between them is unaffected. Now, the fiscal policy of the government is completely neutral with regard to the investment choice.

Example 2: *Consider the former example: the expected return before taxes for the a project was 95, while for the b project was 97.2. With $\theta = 0.2$ the expected return after taxes of the a project is 75, the return of the b project is 74.16, so that a is chosen. With a unitary loss subsidy $\phi = 0.2$, the return of the a project becomes 76 and the return of the b project becomes 77.76, so that b is chosen: the original ranking of profitability is then restored.*

In very general terms, corporate taxes do modify entrepreneurial choices,⁵ unless the government subsidizes losses using a unitary

⁵ Assuming that the utility function defined over the set of returns is decreasing in the risk and that the same function has the expected utility property, i.e.,

$$u(p \circ x^1 \oplus (1-p) \circ x^2) = pu(x^1) + (1-p)u(x^2)$$

where p is the probability of success, with $x^1 > 0$ and $x^2 < 0$, the same results obtained in the case of linearity also hold true.

rate of the same value. Only in this case, therefore, corporate tax is made neutral. When $\theta < \phi$ the loss subsidy functions like an insurance. When $\phi = 1$ the insurance is complete, with the risk being completely transferred to the government (Domar and Musgrave, 1944). Also, the result that corporate income taxation can reduce the demand for risky assets is robust to alternative scenarios. Adding the assumption of risk aversion, Stiglitz (1969) obtains a critical θ which induces the entrepreneur to change his decisions.⁶

EARNINGS AND PROFIT

A more realistic perspective on the incidence of corporate tax must necessarily take into account how the tax is determined and administered. Following Longobardi (2005) we make a distinction between earnings and economic profit.

Definition 1 (Earnings): *Earnings are the difference between revenues and costs defined on the fiscal year. It is equal to*

$$(6) \quad u = R - w_e L_e - r_e K_e - C - A$$

where R are total revenues, $w_e L_e$ are total paid wages, $r_e K_e$ is the rental cost of capital, C is the value of intermediate goods, and A is capital depreciation.

Definition 2 (Profit): *Profit is what the entrepreneur receives once all factors of production are paid at the opportunity cost. It is equal to*

$$(7) \quad \pi = u - w_p L_p - r_p K_p$$

where $w_p L_p$ is the implicit salary obtained by the entrepreneur and $r_p K_p$ is the opportunity cost of the capital owned by the firm.

It is a matter of fact that corporate taxes are almost universally based on earnings because the economic costs $w_p L_p + r_p K_p$ cannot be readily obtained by standard bookkeeping procedures. Provided

⁶ For an extensive account of the dynamic incidence of corporate income taxation, see Panteghini (2007).

that $u \geq \pi$, it follows that the usual techniques of corporate taxation based on observation of earnings systematically overestimate the economic profit obtained by the entrepreneurs. Furthermore, this kind of taxation creates a distortion in the use of resources. To see why, consider the case of a firm operating in a perfectly competitive market in which earnings are taxed. The profit function of this firm is

$$\pi(\theta) = (1-\theta)[pf(K_e, K_p, L_e, L_p) - wL_e - rK_e + F] - wL_p - rK_p$$

where we have made the following substitutions: $w = w_e = w_p$, $r = r_e = r_p$, $F = C + A$. From the inspection of first order conditions for the maximization of π with regard to internal resources we have

$$\frac{\partial f}{\partial K_p} = \frac{r}{p(1-\theta)} \quad \frac{\partial f}{\partial L_p} = \frac{w}{p(1-\theta)}$$

under the assumption of decreasing returns to internal capital and entrepreneurial work, the optimal employment of these two factors must decline in response to corporate taxation based on earnings.⁷ Also in this case, taxing profits is far from neutral, since it implies the substitution of internal capital with external capital and substitution of entrepreneurial activities with labor.

THE AUSTRIAN APPROACH

Why do standard neoclassical economics textbooks keep repeating the irrelevant case of neutrality of the corporate income taxation? This kind of error is anything but accidental and dates back to the *Ricardian vice*, which is the intellectual attitude to build economic models based on peculiar circumstances and then improperly extending their implications to contexts in which the same circumstances are not assured to hold, then resulting in false predictions. Austrian economic theory, on the contrary, is consistently grounded in the philosophy of human action immersed in a world of subjective value, imperfect knowledge, and genuine uncertainty. Its results are assured to be valid, independent of any

⁷ This result is consistent with the ones obtained by Harberger (1964).

empirical testing. The implications of praxeology for the theory of taxation are far-reaching and overturn many of the neoclassical conclusions, including those on corporate income taxation.

WHAT'S WRONG WITH TAXATION

Jean Baptiste de Say, the most prominent antecedent of the Austrian school (Say 2001 [1803], book III, chap. VIII), was the first economist to recognize that taxation can never be considered as a part of an implicitly *voluntary* exchange between citizens and government, since it is always based on coercion. This implies diversion of resources from productive uses, often resulting in wasteful bureaucratic expenditures (Brandly, 2007).

While there is virtually no elaboration on the issue of taxation in Carl Menger's *Principles*, in Mises's *Human Action* the whole issue is given an exceptionally brief treatment (Mises, 1998 [1949], pp. 730–35) in the chapter *Interference by Taxation*. He recognizes that the case of neutral taxation is a chimera in real economic life and adds that, in practice, politicians try to *minimize* neutrality since they do want to interfere with individual choices to achieve income redistribution. The chapter offers little but a warning that excessive taxation can undermine the functioning of the market mechanism. Nowhere it can be found the basic praxeological deduction that any coerced transaction must always involve a decrease in the utility of at least one participant of the trade. In Mises, as in the old Austrian tradition,⁸ taxation is not a subject of analysis in itself since it is always analyzed in close connection with the issue of public expenditure: the main concern of the Austrian scholars seemed to be the burden of the public sector, which must be kept at a minimum, with taxation following passively.⁹

⁸ In his *Social Economics*, Wieser (1927 [1914]) treats the State as an exception to the general laws of voluntary trade and marginal utility. He makes the assumption of a benevolent utilitarian State which maximizes collective utility; nonetheless, Wieser warns the public sector against progressive taxation, since it can alter the historically sanctioned equilibrium of society. The same view is also expressed in *Natural Value* (Wieser, 1893).

⁹ Friedrich von Hayek, also formerly a student of Wieser, did not tackle directly the analysis of taxation in his technical papers and books. In an imaginative article,

Contrary to his Austrian antecedents, Murray N. Rothbard wrote extensively on taxation both at the academic¹⁰ and at the non-technical level.¹¹ To date, the most comprehensive technical treatise on public finance in the Austrian tradition endorsing consistently the praxeological methodology¹² is his *Power and Market* (Rothbard, 2004b), originally an outgrowth of the final chapter of his *magnum opus Man, Economy, and State* about non-voluntary exchange. Rothbard's contribution encompasses and extends previous Austrian insights on the nature of taxation, framing them in the context of binary intervention—namely, the direct coercion of the State against the individual. These arguments debunk the neoclassical wisdom on taxation and build upon two basic principles worth a systematic presentation.

Principle 1 *Every tax worsens consumers' satisfaction.*

The basic premise of praxeology is that human beings decide to trade with each other when the subjective-discounted-expected value of what they get is higher than the forgone value of what they agree to give up in exchange. When these human beings are not coerced by physical violence or by its threat, the trade benefits all the participants involved. Conversely, any coerced trade must result in a loss to at least one participant. Taxation is the prototypical case in which this violation occurs, since it is the ultimate threat of imprisonment which convinces citizens not to resist tax collectors. It follows that taxation must benefit the tax consumer and penalize the tax payer.

Spicer (1995) tries to figure out what kind of taxation would fit the Hayekian vision of the State. He maintains that neutrality, predictability, and nondiscrimination would be desirable features of an optimal Hayekian tax system. Spicer also maintains that *Hayek's writings may be interpreted as providing a warning against radical changes in taxation policy, whatever the objectives of such radical changes might be* (p. 106). Needless to say, the classical liberal view on the subject is diametrically opposed to this kind of arguments which praise the status quo for its own sake, no matter how wrong it may be.

¹⁰ See Rothbard (1981). The discussion that follows is broadly based on this fundamental contribution.

¹¹ For example, see the chapter *Fiscal Mysteries Revealed* in Rothbard (1995).

¹² In the Austrian tradition, Walter Block (1989) has provided solid confutations to the more up-to-date apologetics toward taxation and State intervention.

In the current literature on public finance, this first principle is hidden behind the supposedly voluntary theory of the State (Buchanan 1973). In their standard presentation of public finance textbooks, neoclassical economists first start arguing that the market cannot provide public goods because of nonrivalrous consumption and non-excludability, then demonstrate that financing their production is subject to the inescapable problem of free riding, and finally maintain that taxation is the natural way to have these public goods come into being. Even though the concept of deadweight loss—the aggregate value of the trade which does not take place because of taxation—has become a key ingredient in the economic analysis of taxation (Musgrave and Musgrave 1989), neoclassical utilitarian economists never compare the potential gain provided by the provision of public goods against the deadweight loss that comes from financing them through taxation. In practice, compulsory taxation is a *non sequitur* from the theory of public goods, even from a utilitarian perspective.

Austrians advance two objections to the above paradigm. First, the governmental cost-benefit analysis contradicts the basic truth that value is a subjective phenomenon: Individual utilities cannot be observed from an external point of view, so it is pointless to use any aggregate measure of them. Secondly, it is inconsistent to maintain that a free market is permanently incapable of providing goods for which the demand is higher than supply. Entrepreneurs are a vital part of any market: they are the agents who coordinate its functioning, reduce disequilibrium, and discover new ways to overcome technological difficulties like non-excludability or non-rivalrous consumption, for by acting in this way they can collect profits. Substituting private activity with government intervention implies the breakup of the process of entrepreneurial discovery, resulting in the destruction of potential markets.

Principle 2 *There is no independence between production and distribution, viz., there cannot be such a thing as a neutral tax.*

John Stuart Mill (1909 [1887]) neatly distinguished between the problem of production and the problem of distribution, the former solved by the market, the latter to be solved by the State. In Mill's work there was no relation between them, since he envisioned

a world with flexible property rights¹³ and no forward-looking behavior. Mill's socialist world is made up of rational agents who do not pay attention to the income collected through mutual trade and voluntarily give up to the State—through taxation—the power to distribute it according to some ethical rule. This confusion continued with neoclassical economics: within the boundaries of an artificial economy, it is possible to design neutral taxes, i.e., taxes which purely transfer resources from the private sector to the government, without changing the relative prices of goods. This merely intellectual experiment is no problem *per se*, but becomes highly misleading when its implications are applied to the real world or enforced by law.

Praxeology, on the contrary, is based on the *a priori* statement that the mechanics of human action is based on the comparison between expected benefits and expected costs, all of them lying in an uncertain future. The legal system determines to a large extent what can be included in these sets, so it is senseless to include a future discounted stream of income if this is going to be taxed away. Taken to the extreme, only very myopic individuals would indulge in any work when their wage is completely absorbed by tax collectors. Moreover, the problem of distribution is not inherent to the free-market, rather being an outcome of State coercion that creates a separate distribution process not depending on the voluntary exchange of property rights.¹⁴

The former two basic principles are applied to the analytical study of taxation. The main finding of Rothbard's analysis about fiscal incidence is that *taxes cannot be shifted forward*. The question of incidence is about who really pays taxes: even though the law is clear on which subjects a tax is levied upon, these subjects adjust their behavior, spreading the effect of the tax over a variety of goods and services. Praxeology explicitly acknowledges that

¹³ John Stuart Mill viewed property rights, no less than political institutions, as creatures of "time, place and circumstance," to be assessed and altered to harmonize with "the permanent interests of man as a progressive being" (Gray, 1979).

¹⁴ Economists have long tried to design a neutral tax in a way that resembles a market price (Rothbard 2004a, pp. 919–27) in order to minimize its distortive effects, but the general principles of taxing according to the benefit received or to equal sacrifice can never produce a compulsory trade which is economically equivalent to a voluntary one. The very concept of *voluntary taxation* is an oxymoron.

economic action never happens in a vacuum and that margins of substitution are everywhere. However, some kinds of adjustments are plausible, whereas others are not. One fallacy of the standard neoclassical theory of incidence is the *shifting* of taxation. According to this view, a sales tax, but also a corporate income tax, can be shifted onto customers simply increasing selling prices, resulting in an adjustment that leaves the seller's situation unaltered.

The Austrian theory of value is based solely on marginal utility, so production costs cannot directly push market prices.¹⁵ If the seller had margins before taxes to raise selling prices, he would have surely done that before the tax is levied: a tax cannot provide the incentive to find a new optimum. Nonetheless, the tax does affect the firm's budget: while inframarginal firms can afford to pay it, some marginal firms which just break even before the tax will be driven out of the market. This results in a decrease of the supply of the taxed good: if the demand schedules have remained unaltered throughout the whole process of adjustment, the selling price must go up. In sum, the shift in the market supply is not due to a change in the structure of marginal costs, but to the departure of firms from the market. In the long run, the decreased number of firms impacts on the demand for productive factors, resulting in diminished prices. Ultimately, *backward* shifting is the only kind of indirect incidence which is consistent with the Austrian view.

WHAT'S WRONG WITH CORPORATE INCOME TAXATION

The most radical critique of the supposed neutrality of corporate income taxation comes from the Austrian school of economics. Compared to its neoclassical opponent, Austrian economics endorses a different view on the nature and the role of economic profit: this view encompasses a fully entrepreneurial concept of the firm. The idea of entrepreneurship is all but new in the history of economic theory: since the very beginning of the economic science,¹⁶ economists have realized that entrepreneurship is not an accidental qualification of a firm's life, rather lying at its very

¹⁵ The same objection can be put forward regarding theories of cost-push inflation based on the mark-up theory of price formation.

¹⁶ The two classical references are Cantillon (1755) and Say (2001 [1803]).

core. Unfortunately, no economist from the classical school ever focused on the entrepreneurial function (Blaug 1997, p. 442) and the whole stream of classical economics virtually omits the analysis of dynamic action taken by real individuals. Furthermore, neoclassical economics, with its strong emphasis on perfect knowledge and mathematical maximization procedures, leaves no room for entrepreneurial activities which, by their own nature, rely more on creating *new* knowledge rather than using *existing* knowledge. True, a world without entrepreneurship would look like the idealized Walrasian prototype, and no action would ever be taken.

As pertains to this paper, one of the key differences between the neoclassicals and the Austrians is the concept of profit. In the neoclassical model of perfect competition, pure economic profits can exist only in the short run because of a small number of firms operating in a given sector. In the long run, the flow of new firms into the sector increases aggregate supply, driving down market prices and profits. Neoclassical entrepreneurs simply coordinate productive factors according to a fully known array of technologies and market prices of productive factors and final products. Genuine uncertainty plays no role whatsoever.

The Austrian entrepreneur is radically different. The real world studied by economics is made of entrepreneurs who freely decide whether and how to trade, comparing expected discounted benefits to costs. These values are subjectively perceived and naturally give rise to different opinions and evaluations. It is precisely this variety of opinions regarding the future that makes some individuals succeed and others fail. Those who anticipate future prices correctly earn positive profits. They speculated that some productive factors are underpriced when compared to the potential products they can contribute to: *ex post*, these entrepreneurs find they were right because they find themselves in the position of collecting income from customers in the form of positive profits.

Net economic profit is not the payment for any productive factor. Factors of production are always paid in advance: their monetary payment is exchanged for the use of scarce resources and is never conditional upon the success of the firm. Provided that capital is a factor of production, it follows that profit cannot be considered as a return on invested capital. Profit is a different source of income, since the kind of uncertainty faced by the entrepreneur

is intrinsically unpredictable and no probability function can be used to describe the problem, for the space of possible events is only partially known. If the average return of an entrepreneurial activity were stable and known in advance, then that activity would soon become a part of the management routine and others entrepreneurs would follow in pursuing the same strategy. As soon as a profitable idea becomes common knowledge, it does not bring profitable results any longer. Profit is simply the result of speculation, which can turn out to be positive or negative. A positive profit indicates a disequilibrium in expectations—*maladjustment*, in Mises's terminology—which is in the process of being corrected: once the adjustment has taken place completely, profits disappear. Entrepreneurship is not a kind of systematic search for profit, since any systematic pattern of behavior is predictable and leads ultimately to zero profits. In a free market, positive profit means that entrepreneurs are taking advantage of the possibility of serving customers' wants. Without this fundamental signal, the free market would collapse immediately because the entrepreneurs' choices could not be matched with significant real data.

Austrians agree that markets adjust continuously to modifications in preferences, technologies, and resource availabilities: it is the very function of prices to move so to reflect the underlying pattern of individual heterogeneity (Hayek 1980 [1948]). This process of constant change creates new profit opportunities which can be grasped only by active entrepreneurs, not by passive neoclassical technocrats. Nevertheless, some additional features of entrepreneurship are debated among the Austrians. The presentation of entrepreneurship given in the former paragraphs dates back to Mises (1962) and is endorsed by Rothbard. Kirzner (1997) takes the issue of individual *alertness* to the extreme, deriving a theory in which entrepreneurial activity is not related to uncertainty. The Kirznerian entrepreneur grabs profit opportunities which are completely certain (Rothbard 1997). According to this definition, an entrepreneur cannot ever be observed in the making: only *ex post*, given the positive result of the action, we can be certain that the individual was acting entrepreneurially. Otherwise, if we could observe the entrepreneurial action at work, we should always concede that every action faces uncertainty and there is no guarantee that any individual will actually attain his objectives.

The standard marginal analysis cannot be properly applied in the Kirznerian framework and entrepreneurship cannot be considered a scarce resource (Kirzner 1991, p. 316). Put in these terms, economic analysis is almost useless in exploring how incentives may affect entrepreneurship.¹⁷

What is the role played by corporate taxation in the Austrian context of uncertainty? Answering to this question requires a clear stand on the nature of entrepreneurship. If one embraces Kirzner's radical approach, no incentive scheme can be applied: profit taxation simply decreases the return from alertness, but since alertness is an effortless activity, the tax cannot modify its level. Only a 100 percent corporate income tax could make an entrepreneur indifferent between being alert or not. Surely, Kirzner recognizes that price ceilings and regulations do hamper the functioning of entrepreneurship since they lower the value of potential profit opportunities, but his argument cannot be validly extended to the issue of corporate income taxation, because the profit tax is levied on the outcome of successful speculation, independently of the source of the same profit. Paradoxically, the Kirznerian entrepreneur would be unaffected by a profit tax, just like in the extreme neoclassical case: he would continue to be alert toward profitable opportunities, even though he would collect less income from them than otherwise. This would happen since the entrepreneur does not face an opportunity cost for his action, so that profit taxation cannot induce any substitution toward alternative actions: corporate income tax would work as a lump-sum tax on entrepreneurs.¹⁸

¹⁷ In a somewhat obscure paragraph promisingly titled *The Incentive for Entrepreneurial Discovery*, Kirzner (1997, pp. 316–19) states that *in order to "switch on" the alertness of a potential discoverer to socially significant opportunities, they must offer gain to the potential discoverer himself*. This hint, however, does not go beyond an alternative verbal formulation of the concept of profit opportunity and is useless to characterize incentives to entrepreneurship in the real world.

¹⁸ In his contribution specifically focused on corporate income taxation, Kirzner (1976) seems to suggest that taxing pure profits may induce entrepreneurs to leave some profit opportunities unexploited. This happens because taxation reduces the private gain from alertness. This line of reasoning does not fit the paradigm of Kirznerian entrepreneurship, since it implies a conscious decision on whether to use the mental faculty of alertness, a decision based on a balance between its expected returns and an opportunity cost which must be greater than zero. This

A workable alternative in the Austrian framework is the classical Misesian-Rothbardian vision, previously described.¹⁹ There the entrepreneur faces the uncertainty that is inherent to the whole set of contracts that constitute a firm, bearing the cost and the benefit of his choice. He receives a positive profit that is the payoff from serving at t_1 a potential consumer demand that was not certain at t_0 . In this context, taxing corporations' profit has two main effects: (1) it decreases the incentive to engage in entrepreneurship and (2) changes the way entrepreneurs deal with profits and losses.

The first effect depends on the margins of substitution between entrepreneurial action and other kinds of action. When these margins do exist, corporate taxation changes the marginal rate of substitution between them. Plausible candidates for non-entrepreneurial action are routine tasks and subordinate jobs, which imply a lower degree of risk-taking. Contrary to the Shackle-Lachmann vision of price formation, the Mises-Rothbard approach emphasizes the possibility of individual rational calculation and the existence of a well-defined array of equilibrium prices, notwithstanding the impossibility of attaining or observing them in the real world. Equilibrating forces tend to drive market prices toward equilibrium, with entrepreneurship being the most important of these forces. When the profit tax rate is large enough, individuals find it convenient to engage more in routine tasks and less in innovation, speculation, forecasting: accordingly, the economy's growth rate and capital accumulation decline.

The second effect depends on the margins of substitution between the ways in which entrepreneurial action takes place. When the black box of entrepreneurship is open to investigation, it is found that the set of actions aimed at reducing losses does not overlap completely with set of actions aimed at gaining positive profits. Given the asymmetric fiscal treatment of profits and losses,

possibility is explicitly ruled out by his concept of entrepreneurship as expressed in his classical exposition (Kirzner, 1973).

¹⁹ Schumpeter (1982 [1911]) also advanced a theory of entrepreneurship which is consistent with some of the main features of the Mises-Rothbard view. Even though he decidedly departed from the Austrian paradigm of subjectivism, endorsing a Walrasian view of the economy, he described the entrepreneur as the economic agent who continuously plays a *destabilizing* role in the price system, for the benefit of introducing technical and commercial innovations.

the corporate income tax induces entrepreneurs to focus more on finding ways to escape losses than on ways to collect profits.

Both effects impact negatively on consumers' utility. Market adjustment requires time to take place completely, since entrepreneurs create new knowledge in the process. With corporate income taxation, market prices adjust to equilibrium values more slowly, because some individuals tend to engage less in entrepreneurial activities, and entrepreneurs tend to act more to protect themselves from losses than to look for new opportunities. As a result, the economy becomes less flexible, increasingly static, and more sensitive to external shocks. The incidence of the tax is on the entrepreneur and the final customer: the former cannot collect money from his speculation about the future, the latter is deprived of new consumption opportunities. Moreover, in a dynamic setting, if the potential entrepreneurial act calls for expanding the use of paid work and capital, then the prospective worker and the seller of capital goods are also penalized by the tax.

To sum up, since profit taxation operates only when profits are positive, talented entrepreneurs are discouraged from engaging in satisfying consumers' wants. This kind of taxation, working as a penalty on successful entrepreneurial action, bears a strong resemblance to antitrust policies aimed at *picking the winners* of the competitive process, like those preventing and punishing mergers and acquisitions. Corporate income taxation and antitrust policies share the common static view of profits as depending solely on market structure. They systematically downplay the role of uncertainty and the unpredictability of market evolution. Furthermore, both taxation and antitrust law provide asymmetrical incentives. Taxation is levied on realized profits, but does not subsidize losses. In the same fashion, antitrust law imposes direct monetary costs on the temporary winners of the market process, but does not provide direct monetary benefits to the temporary losers of the same process. The effect of both interventions, however, is aimed at inverting the order of the market process.²⁰

²⁰ Antitrust law and corporate taxation have a common inspiration in anti-market ethics. In particular, taxing profits is supposed to *equilibrate* income distribution toward paid work. Mises (1998) contends that taxing profits can permanently shift the balance between capital and labor. Since, in the long run, corporate taxation decreases the level of capital accumulation in the economy, the marginal

4. CONCLUSION

The growing awareness that low corporate tax rates are crucial to attract foreign investments has not been translated in a consistent set of analytical results, yet. Most of the literature on the incidence of corporate tax either relies on patently unrealistic assumptions about investment possibilities or neglects the key role played by entrepreneurs. Likely, the apparent lack of well-established results in this field is mainly due to the missing link of entrepreneurship, an issue which is almost absent or downplayed in the neoclassical theory of the firm. However, the Austrian paradigm can be fruitfully applied to the analysis of corporate income taxation because it includes a more realistic account of the causal connection between uncertainty and profit. The addition of the entrepreneurial element suggests that the distortions induced by taxing corporations may be countless and the dynamic effects on capital formation, wages, and market adjustments may impose severe costs. Despite the efforts of governments to introduce harmonization among national fiscal legislation,²¹ competition is (luckily) constantly improving the world economy.

productivity of labor cannot grow, and so cannot wages. Consequently, the only real source for the enrichment of the labor class is severely damaged. This perverse effect works against the intention of the political parties which support corporate taxation on the ground that capitalists and workers fight over the distribution of a cake of given size. This unintentional effect on salaries and wages is less apparent than other distortions, but probably lies among the most severe ones.

²¹ For a clear assessment of the irrationality of fiscal harmonization, see Salin (1988).

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