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The mirage of mark-to-market: distributive justice and alternatives to capital taxation

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ABSTRACT

Substantially increased wealth inequality across the developed world has prompted many philosophers, economists and legal theorists to support comprehensive taxes on all forms of wealth. Proposals include levying taxes on the basis of total wealth, or alternatively the change in the value of capital holdings measured from year-to-year. This contrasts with most existing policies that tax capital assets at the point they are transferred from one beneficiary to another through sale or gifts. Are these tax reforms likely to meet their aims of greater economic and political equality? We argue that these policies are likely to fail because, following neoclassical economic theory, they are based on a conception of capital as possessing given values in what amounts to a static equilibrium. This mischaracterizes the dynamic and subjective character of market economies and the contested value of real instantiations of capital goods. This makes them very difficult, often impossible, to value apart from at the point of voluntary transfer or profit realization. This means most taxes levied on a mark-to-market basis will be arbitrary and unfair. We propose alternative policies based on an income realization approach to taxation that are more likely to curb excessive wealth holdings. This includes introducing international treaties that prohibit preferential tax treatment for individual companies and specific sectors, and broadening the income tax base to include the imputed rent of personal housing wealth.

KEYWORDS Wealth inequality; capital taxation; tax base; distributive justice; market economy

Should capital be taxed like income? Are typical tax treatments of capital gains unjust? Our claim is that the normative consensus on taxing capital should not turn into acceptance of the mark-to-market ideal, the systematic measurement and taxation of all capital assets. Our critique of the mark-to-market approach is derived from conceptual and practical considerations: a thorough application of taxation on market values is premised on a mistaken notion of market activity, and its overall application would undermine competition that serves to generate the very information from which equitable tax liabilities can be calculated. Tax policy aiming at distributive justice in a liberal community must work with these features of a market economy.

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We develop our argument as follows. We introduce the new fiscal philosophy and conventional tax theory including the broad support for the mark-to-market approach and the parallel critique of the realization approach. We show how the ideal of taxing persons and firms on the basis of market prices is inspired by a neoclassical economic model that assumes prices reflect an objective optimal value in a competitive equilibrium. We argue for an alternative understanding of the market as procedural rather than static. On this account, markets are dynamic processes whereby entrepreneurial actions lead to improvements in the provision of goods and services. Then we show how this understanding of the market aligns with a realization account of economic profit, and leads to critical problems with assessing tax liabilities on a mark-to-market basis. We defend our account from a realistic defense that relies less on the precision of a mark-to-market tax. Finally, we return to the core challenge of taxation and pinpoint the alternative avenues that could form the basis of a redistributive tax agenda.

The redistributive case for capital taxation

A consensus is hard to come by, especially when the parties are lawyers, economists and political philosophers. Nonetheless, many members of these disciplines now seem to agree on at least one issue: the necessity of increased capital taxation. They rely on similar rationales: the urgent necessity of redistributing wealth. Driven by Piketty's *Capital in the Twenty-First Century*, and other revelations of increasing economic inequality, various theorists have developed a case for the higher taxation of capital owners (Dorling, 2014; Piketty, 2014). In philosophy, O'Neill takes an explicit cue from Rawls, to critique the distributive tendencies of free markets, and revives the idea of a 'property-owning democracy', being a society that permits private property but adjusts the underlying structure of ownership to prevent the class divisions characterizing capitalism (O'Neill, 2009, 2012, 2017; Cf. Vallier, 2015, 2019). In order to address the 'underlying patterns of ownership in society' and 'restructure the economic game from the very start', O'Neill proposes an ambitious tax agenda targeting wealth and capital gains. Robeyns' 'limitarianism' states that it is 'morally objectionable to be rich,' (2017, p. 5) and that we have a moral duty not to have 'too much', hence 'the state should tax away any excess money that people have' (2017, p. 30). Fiscal justice, for Robeyns, 'equals a top marginal taxation rate of 100%' on everything we either own or gain above a specific level (2017, p. 35). Machin (2013) agrees yet proposes to leave what he calls the super-rich with a choice: either forfeit the things that make them super-rich by paying a wealth tax above a certain level, or give up their political rights.

These political philosophers align with legal colleagues. Bankman and Shaviro (2015, p. 505–510) draw on rising wealth concentration to argue for higher taxation of capital gains and wealth taxes. Hasen (2017, p. 286) makes a case for an accretion-based progressive wealth tax, and states that 'the main attraction

of a wealth tax is that it seems to target inequality particularly effectively'. His case resonates with Repetti's (2000, 2001) earlier cases for wealth taxes, designed to protect democracy against the dangers of wealth concentration. Schenk (1999) criticizes income taxes for their 'failure because it does not reach income from capital' and proposes a shift to wealth taxation. Shakow (2016, p. 264–65) augments his earlier defense of wealth taxes (Shakow & Shuldiner, 2000), and argues from equity to plead for an annual flat tax on wealth.

Several economists have theorized about a more systematic tax on capital. To halt 'the indefinite increase of inequality of wealth' Piketty (2014, p. 518) proposes a progressive wealth tax on assets, ideally on a global scale. Other economists, including Diamond and Saez (2011), Mirrlees et al. (2011) and Wijtvet (2014) link the redistributive effects of a more ambitious capital gains tax with overall welfare gains. Stiglitz (2013, 2014, p. 27) explicates the welfare losses associated with the increasing wealth gap, and argues for higher income taxes, but also increased capital gains taxes and various forms of wealth taxation.

While sympathetic to the urgency of addressing wealth inequality, we examine the practicalities of capital taxation and argue that these proposed approaches risk failing to meet their goals. Most cases for capital taxation make use of the mark-to-market approach. This is a fiscal measurement technique that defines the tax base according to market values. We show how, in the absence of market transactions, governments lack the necessary knowledge to assess the market value of capital assets. Our argument is novel in the sense that most literature on wealth taxation either assumes this problem away, or minimizes its relevance. Philosophical and economic approaches like Piketty's, O'Neill's and Robeyns' work rests on the assumption of a fixed and known market price for capital. Tax lawyers like Schenk (2004a), Shakow and Shuldiner (2000) recognize the existence of the valuation problem. They identify an administrative necessity to calculate people's holdings, but these scholars present this problem to be both limited to specific kind of assets, and surmountable.

The scholars that acknowledge the valuation challenge embedded in the mark-to-market approach qualify it as epistemic: the task for the tax administration is to find out the market price. Using insights from Austrian economics, we show that market prices are not 'out there' in the social world prior to commercial exchange, but are constituted by individual transactions. Absent exchange, we show the valuation problem is ontological: without a market transaction, there very often is no market price.

The mark-to-market consensus

The practical reasons for the mark-to-market approach

Imagine a family firm, the Cohens, own an orange grove in Orange County.¹ Selling orange juice is profitable in Orange County and due to the increased

popularity of oranges and the firms that harvest them, potential buyers are currently willing to give \$500,000 for the family's grove. Two years ago, this was only \$300,000. Three possible forms of capital taxation are possible:

- (A) A *wealth tax*: a levy on the value of one's holdings, irrespective of whether any revenue is being gained. In the absence of any transaction, a wealth tax is ideally levied on the total market value of one's assets (Meade & Institute for Fiscal Studies, 1978, p. 350). A wealth tax thus follows the mark-to-market approach, meaning the Cohens have a taxable basis of \$500,000 for their grove.
- (B) A *mark-to-market capital gains tax*. This measure will tax capital as it accrues, and accordingly targets the annual increase in market value of one's holdings. The event that constitutes taxation is thus the passing of a year and the increase in market value. This tax resembles the wealth tax in its assessment technique (i.e. mark-to-market) but it remains an income tax nonetheless; only the increments in market value get taxed, meaning the Cohens have a taxable basis of \$200,000.
- (C) A *realization-based capital gains tax*, the third form of taxation of capital. Unlike the previous form of income taxation, which simply taxes value fluctuations, this measure conditions taxation upon the occurrence of a realization event, the sale or exchange of an asset. The event that constitutes taxation is (agreement on) the receipt of a benefit (normally money) in exchange for the transfer of property. As the Cohens did not sell their assets yet, they have a taxable basis of zero. When the Cohens sell their orange grove for \$500,000, this will constitute a tax basis of \$200,000.

Proponents of capital taxation prefer either A or B to tax capital. A *wealth tax* à la Piketty, Schenk, Shakow and Repetti will tax the Cohens on the value of their holdings. Absent a market transaction, wealth taxes require a mark-to-market approach. Thus the Cohens will be taxed on the value of \$500,000. Additionally, the normative case for capital gains taxation aligns with a consensus over mark-to-market taxation.² Tax lawyers and economists focused on redistribution generally oppose the realization approach. For many economists, deferring taxation until realization is simply a mistaken understanding of price theory. Tax scholars, however, add practical reasons in favour of the mark-to-market approach, namely that it is a more effective way to catch capital (Schenk, 2004a; Schmidde, 2009; Shakow & Shuldiner, 2000). Taxing market values maximizes the opportunity for the state to raise revenue from capital, as tax is liable whether or not the tax payer takes any action with regard to their property.

Under a mark-to-market approach, all that the fisc needs in order to impose tax liability is 1) a (rise in) market value and 2) the passing of a year. The realization approach, on the other hand, creates additional barriers for the government to levy capital income: only when tax payers dispose of their capital can a levy be imposed. This requirement leaves tax payers with planning opportunities, which facilitates tax avoidance and thus hampers redistributive efforts (McCaffery, 2005, p. 888). Tax scholars argue that the requirement for capital owners to engage in a transaction before having tax liabilities opens the door for the strategic trading and timing of asset dispositions, portfolio adjustments, and debt-financed consumption (Bankman and Shaviro, 2015; Brown, 1996, p. 1559; Cunningham & Schenk, 1992; Elkins, 2010; Gergen, 1994; Halperin, 1997; Land, 1996; Schizer, 1998; Scholes, 2009; Weisbach, 1999). Hence tax lawyers often argue that the continued application of the realization principle is without normative foundation (Andrews, 1983, p. 278; Brannon, 1986; McCaffery, 2005, p. 889).

So both wealth taxes *à la* Piketty, Schenk and Repetti, and capital gains taxes *à la* Shaviro, Hasen, Stiglitz, O'Neill and Robeyns, need a mark-to-market approach to work. Overall, however, the consensus on capital taxation hinges on an agreement on the mark-to-market approach as a suitable technique to measure capital. The only difference between proponents is that some wish to tax the entire market value of one's holdings (i.e. \$500,000), and others only the increments (i.e. \$200,000).

The economic theory of mark-to-market

The normative consensus on capital taxation requires a mark-to-market approach to generate taxes on the market value of either one's holdings or its accretion. Before we explain our fundamental critique of the mark-to-market approach, we need to deal with its theoretical justification.

The normative validity of taxing market values, rather than exchanges, is a product of neoclassical economic theory, and its focus on the market price. Rather than describing what market forces do within individual situations, this approach to economics tries to establish overarching 'laws' of an entire economy. It depicts an economy as a general equilibrium; that is a simultaneous systematic reconciliation of all individual plans for production, buying, selling and consumption in a set of overlapping fully competitive markets (Hicks, 2001, p. 60; Samuelson, 1947, p. 8). On the assumption that markets are perfectly competitive because they are populated by rationally optimizing self-interested actors with complete shared information, economists like Walras (2010), Marshall (1920), Hicks (2001), Arrow and Debreu (1954) were able to explain why demand and supply will meet each other at an optimal point (cf. Mestmäcker, 2007). Abstracting away from individual interaction, the wonder of the market, within a world of complete information, is that the impersonal

forces of supply and demand molds all those scattered data into a point mass: the price (Boudreaux, 1994, p. 54). While temporary deviations from general equilibrium are expected, they are atypical, produced by exogenous shifts (or shocks) in supply and demand. Competitive prices reflect their marginal products, perfectly adjusted to the amount of resources the marginal buyer is willing to allocate to secure a good (Gaus, 2012, p. 89).

This representation fed the idea that there is an objective price out in the external world that causes goods and services to be allocated to their most valuable use (Meade, 2013, p. 13; Rawls, 1999, p. 240). This model of the market is both optimal and static. It is optimal in the sense markets are expected to lead to results where consumer preferences are satisfied in the most efficient way possible (Mestmäcker, 2007, p. 12). It is static because markets are equilibria. In the same way one can specify a gravity point for a physical object, the economic question is to establish the steady point where all forces converge (Wagner, 2016, p. 36).

The neoclassical assumption of objective and knowable market values explains why tax lawyers looking at economies focus on the market price for any given good or service, and hence use it as the yardstick for taxation. Regarding income taxation, the market-price-focus is apparent in the foundational 'Haig-Simons' concept of income that defines income as the sum of (1) the market value of rights exercised in consumption, and (2) the change in the value of the store of property rights between the beginning and end of the period in question (See Haig, 1921, p. 27; Simons, 1938, p. 49–50). This definition of income includes increments in net value, hence logically embraces the mark-to-market approach for capital gains taxation, irrespective whether the individual capital owner engaged in any sale or exchange (Scarborough, 1994, p. 1031–49; Schenk, 1995, p. 571–642; Shoven & Taubman, 1980, p. 211–13; Shuldiner, 1992, p. 781–93). Shakow and Shuldiner (2000, p. 500) affirm that market values are separate from individual exchange: 'Income is simply the increase in value for a stock of wealth'.

Whether or not one monetizes an increased value of the orange grove by \$200,000, is of no importance to the ideal tax system. As income occurs with accretion, taxation merely demands an increase in market value, hence a wealth tax should tax the Cohen's on \$500,000 while a capital gains tax is taken on the accrued \$200,000. Since the focal point is the market value, for tax scholars deferring taxation until some exchange occurs is simply seen as a subsidy (Schizer, 1998, p. 1594). Following traditional price theory, we can conclude that scholars working in the field of income taxation embrace the mark-to-market approach as an ideal assessment method (Brown, 1996; Shakow, 1986). The neoclassical approach equally drives the wealth tax proposal, since, absent market transactions, there simply is no alternative measurement technique possible: a wealth tax is a tax on the net worth of one's assets (Shakow, 2016).

The neoclassical spillovers within tax theory are sufficiently apparent that many tax lawyers even want to apply the price not only to the valuation of economic capital but also to *biological capital*, or natural talents. Confident about the existence of some objective price, some tax lawyers see even ‘talent taxes’ rather than ‘income realized from talent’ as the ideal benchmark (Kaplow, 2011; Logue & Selmrod, 2008; Mankiw & Weinzierl, 2010; Shaviro, 2000; Stark, 2005; Zelenak, 2006). If \$20,000 a month for a particular attorney’s legal services is the objective point where everyone’s interests are served best from a welfare perspective, why should the state tax her at less once she decides to go against the equilibrium and write poetry instead? The static idea of markets explains this price fetishism, and ‘the strong consensus in the literature that a normative income tax would tax changes in wealth as they accrue rather than as realized’ (Schenk, 2004a, p. 355).

Despite the strong rejection of realization in principle, many tax scholars grant it some pragmatic support (Engler, 2003; Heen, 1994; Land, 1996). As Haig (1921, p. 65) asserts, the realization principle is ‘merely a concession made to the exigencies of a given situation’. Two reasons in support of this ‘rule of convenience’ are advanced (Schenk, 2004b, p. 358). The realization principle avoids liquidity problems for the taxpayer. Under mark-to-market, the taxable event (the passage of a year and the increase in value) does not produce cash to pay it (Kwall, 2011, p. 98). Thus taxes on accrued market values force some taxpayers to sell their assets or to borrow money (Brown, 1996, p. 1560).

We focus on a second problem with the mark-to-market approach: the requirement of an annual valuation of all personal assets. Absent any actual receipt, tax administrators need to assess – and prove – the precise net value of any gains. Whereas philosophers talk about capital taxation more generally, and economists presume capital moves around with a given price tag, tax scholars recognize some practical problems at this point (cf. Epstein & Henderson, 2011, p. 520). Schizer (1998, p. 1594) and Schenk (2004b) recognize the difficulty and cost to authorities of monitoring the market value of everyone’s assets on an annual basis. Additionally, a market assessment might be difficult for some goods and might lead to much dispute with the tax authorities (Repetti, 2000, p. 612). As described by Mirrlees et al. (2011, p. 347):

... many forms of wealth are difficult or impractical to value, from personal effects and durable goods to future pension rights – not to mention ‘human capital’. These are very serious practical difficulties.

While the realization principle lingers on in most parts of our income tax systems, many tax lawyers are convinced the above mentioned challenges are surmountable. Despite the above ‘concessions’ to the reality of capital taxation, researchers plead for a shift towards market assessment. Scholars try to convince policymakers that the taxation of value fluctuations would

disturb taxpayers' affairs less than the liquidity argument assumes (Schenk, 2004a). Driven by equilibrium theory, tax scholars believe that for most assets a stable, established market price can be detected, and the issue is less insurmountable than previously assumed (Institute for Fiscal Studies, 1978, p. 355–357; Schenk, 2004a, p. 365–370; Schmidde, 2009). Shakow and Shuldiner (2000, p. 529) estimated that valuation problems would only arise for 7.5% of capital assets due to the increased competitiveness and stability of contemporary market conditions.

We can perceive cases where prices are fixed and stable. On the other hand, our critique of mark-to-market valuation is not limited to those areas where theorists acknowledge problems. It is rather, a fundamental objection regarding the ontological status of market values conceived apart from the process of market interaction, and so constitutes an argument against mark-to-market altogether as a baseline for equitable tax assessments.

The market as a discovery process

The neoclassical model has its strengths both in an explanatory sense (why are markets efficient), and an educative sense (how to give an initial frame that scholars and students understand). That said, all models have limits (Boudreaux, 2017, p. 282). Different models highlight different things. Markets lead to static, optimal states from one external view. But the market is only a metaphor.

What is conceived as impersonal is ultimately constituted by individual action. Behind the impersonal forces, we find millions of persons with bounded rationality pursuing their ends in the face of uncertainty and ignorance (O'Driscoll & Rizzo, 2015). These persons have heterogeneous, unpredictable preferences. On this account, the market economy is not best represented as a single agent allocating resources to various ends but as a spontaneous order made up by millions of individuals pursuing their own ends within a framework of rules and rights. While acting separately, these agents collectively produce aggregate social outcomes that could not be predicted in advance by any one of the participants (D'Amico, 2015; Menger, 1985). Hence, the process is one of discovering new, effective ways of cooperating at scale.

One way of understanding the neoclassical view in a more realistic way is to suggest that it models the idealized 'end-states' of markets. Because of this purpose, it abstracts away the actual processes that drive market results. When discussing neoclassical models, Hayek argues:

In the usual presentations of equilibrium analysis it is generally made to appear as if these questions of *how the equilibrium comes about* were solved. But, if we look closer, it soon becomes evident that these apparent demonstrations amount to no more than the apparent proof of *what is already assumed* (Hayek, 1948, p. 45).

The neoclassic model commences the economic exercise at a point where the economic process has already been completed. Within an equilibrium model:

... the outcome is confused with *the process* that leads to the outcome. Human action and choices are squeezed from the model, and hence, from the economist notion of price competition (Boudreaux, 1994, p. 54).

Tax lawyers, economists and philosophers look for the market price when taxing capital goods and services but they do not come to this world with a known utility tag. A procedural understanding of the market adds some additional description, capturing the circumstances where millions of persons with limited knowledge engage in millions of interpersonal exchanges to produce generally beneficial outcomes.

Our account posits a particular role for entrepreneurship in explaining market outcomes. In the neoclassical view, entrepreneurs vanish in the model and function as pure 'price-takers'. Within our account, entrepreneurial actions and choices are quintessential drivers of the discovery process. The emergence and alteration of prices and products can only be traced back to entrepreneurial actions and choices. Under competitive conditions, entrepreneurs are incentivized to be alert to *unseized opportunities*. Entrepreneurial initiative can take various forms, and it very often comes from people who do not necessarily think of themselves as entrepreneurs or label themselves as such. Such initiative arises from anyone trying out a new practice in a business environment in an attempt to be more competitive, whether that person is self-employed, an employee or an executive. Entrepreneurs can act as price breakers, trying to find ways of closing a gap between a given price for a particular good and the underlying cost, as they see it, of providing it (Kirzner, 1997, 2013). For instance, they might discover a given resource can be purchased more cheaply elsewhere, or they can decide to employ specialized workers who are more productive. Entrepreneurs take on this role of acting against, or in disagreement with, the publicized market price of a particular good or service, and the given practices in the sector in which they are working (Kirzner, 1978, p. 11).

Entrepreneurs can contest the market, not only by reducing the price but by improving the product. They can bring modified or new products to the market that turn out to serve consumer preferences more effectively. They may enhance the quality by modifying the composition of the product (consider, for example, the improved albeit more expensive coffee machines now popular in homes and offices). The dynamic view of markets, where entrepreneurs are active disruptors and discoverers rather than passive recipients of existing practices, becomes more apparent once we drop the assumption of perfectly informed agents. It is precisely because economic knowledge (e.g. regarding specific resource shortages or supply gluts, or regarding the existence of a precious mineral on land previously considered

empty of resources) is unequally spread that competition takes place. Entrepreneurs employ this kind of know-how, expertise and incidental facts that their competitors do not have, to produce new or cheaper goods and services.

Taxation within the market process

We have argued that markets are not accurately conceived as static 'end-states' that we can capture through a fixed market price. Markets permit experimental interactions between individuals that can generally (but not always) lead to the discovery of better products and services. This spontaneous process is driven not by universal forces but rather by the experiments and personal knowledge of entrepreneurs and the subjective judgements of consumers. The remaining question, then, is whether the mark-to-market account engendered by neo-classical price theory can survive once the pillars on which it rests, are removed. Now that we have proposed a more realistic economic model, does this require a more realistic tax proposal?

A defense of the realization approach

Let's go back to Orange County. The Cohens act according to the dominant business model and grow oranges which they then sell to juice producers. They realize the income they are expected to according to the neoclassical model. However, they have neighbors who also own an orange grove: the Coopers. The Coopers decide to engage in a novel form of orange-juice production. Introducing what they expect to be a more efficient procedure, the Coopers hire engineers to design a system whereby roving machines harvest the oranges while simultaneously extracting their juice. They thereby generate the end-product immediately which promises an orange juice with greatly improved taste. For one year, 2017, the family has no harvest as they invest their resources in transforming the grove so that the machines can work in it. The Coopers are price-breakers: they try to minimize costs to create a specific product.

But will this unlikely experiment survive, and will the Coopers alter the market for other juice providers? There is only one way to know: year by year the Coopers find out whether consumers are satisfied with the new product. The Coopers remind us again that the market is a discovery procedure. Whether the Coopers' experiment was successful will reveal itself through the specific exchanges where consumers decide to buy the juice, perhaps to buy at a premium if it tastes fresher than the alternatives, or to stick to the conventional juice if they prefer that taste. The only way for entrepreneurs, and everyone else, to know whether they have 'beaten' the market is through the realization of profits as a result of their venture:

the price system is not “automatic”; it functions only as the expression of human actions. In particular the price system is an expression of entrepreneurial decisions consciously planned and executed. Entrepreneurial decisions are made with the purpose of winning profits. (Kirzner, 2011, p. 44)

Through this procedural lens, effective exchanges are more important than general market prices. As the individual entrepreneurial efforts (e.g. to ‘beat’ the market) enter the model, the relevant ‘ball’ to follow is not a general price but the effective success of individual entrepreneurial efforts. The extent of success can only be observed within the exchange of the commercial good or service, i.e. ‘realization’. This event signals whether the new or cheaper orange juice is preferred by customers or whether alternative activities (for instance, selling harvested oranges in bulk as the Cohens still do) are more commercially viable. The importance of realization is that it reveals whether a firm succeeds with a more beneficial technique, product or service within the market. The value of the realization principle is it serves as the litmus test of the discovery process. Just as one does not tax product developers on the average income of all product developers, one cannot tax firms on the general market price for assets that are being put to particular use.

On a discovery account, measures of income and profit only emerge from separate entrepreneurial efforts. Their content does not exist prior to the market process but gets revealed via entrepreneurial competition for consumer consent (Kirzner, 1996, p. 12). These rewards are only distributed at the end of the race when consumers decide whether to buy a product or not. Hence income embodies the unpredictable outcome of the discovery procedure established by the decisions of consumers to exchange a product for money. So the realization event as the contractual confirmation of a certain monetary benefit is more significant than the point in time when one ‘effectuates one’s prior economic income’ (i.e. when an asset merely increases in value) (Brown, 1996; Kwall, 2011, p. 80; Shakow, 1986). It is the economically decisive finishing line, where consumers gauge whether individual entrepreneurial actually discovered something worthwhile.

Mark-to-market hampers the discovery process

The realization account of income is more compelling than normally recognized. However, this remains a positive argument, establishing a conceptual alignment between the realization approach and a realistic model of markets. To be complete, we need to know what problems arise if governments nevertheless actually tax according to the supposed market value. Theorists, after all, are aware of valuation problems, yet, as they claim, for most markets fixed prices can be observed. Our argument is oriented not only towards the situation where the market price cannot be observed, but rather to situations where

there is a market price that is subject to change and uncertainty. So what kind of practical problems are there for using what one generally could get paid for an asset as a basis for tax liability? In other words: what problems would emerge if fiscal policy-makers ignored the role of entrepreneurs and imposed a mark-to-market approach within real-world markets?

Imagine Orange County's Cooper family does get taxed on the basis of the mark-to-market approach. Given the profitable activity of selling orange juice, the market value of their firm rises to \$500,000 in two years. A mark-to-market approach taxes the accretion of the value of capital, hence, this would assume a profit of \$100,000 in 2017. Two specific problems can be identified. First, while in 2017 the Coopers experiment with new technology, the farm does not realize any profit. This means that, while the firm is on its way to beating the market, it gets taxed in conformity with it. Second, suppose that in 2018, the expected profits do not materialize as expected because the different taste generated by the new technique fails to satisfy consumers. This means that, while the firm has no income, because the experiment did not work, it still has to pay taxes as if it did. While the firm lost the competition in the market, it gets taxed as if it won the race. On the other hand, if the firm does win the race, then it will alter the market for other participants. The Cohens' conservative strategy of harvesting oranges for sale in the traditional way could lose market share to the superior juice from the Coopers. Their unimproved grove, currently unsuitable for mechanization, will lose value even though they have up until this point been taxed on the basis of that assured stream of income.

Thus a triple problem emerges. First, periods of transition and investment are assumed to have already generated profits. Second, failed experiments are treated as successes. When discovery attempts turn out badly, firms are penalized for their experiments by being liable for general market profits. Third, when the market changes due to the successful experiments of others, the more conservative firms are over-taxed because their assets turn out to be worth less than anticipated under the newly competitive conditions. The possession of a set of capital assets that is apparently profitable neither practically nor legally guarantees any profits in the future under changing conditions (Brennan, 2018, p. 62–63).

Accordingly, the employment of an incorrect model is consequential. Once policy proposals start to build upon that model, they are inclined to generate unsound prescriptions. The neoclassical tendency to ignore the role of entrepreneurship in altering the price or establishing new products leads to a tax proposal that deters entrepreneurial experiments which are conducive to bringing the market closer to the theorized equilibrium; indeed the very equilibrium on which relatively accurate market prices are premised to exist. Taxing entrepreneurs based on general market values *en gros* motivates them to follow the given production processes and techniques. On a neoclassical

account, this is not a problem; markets are assumed to be in equilibrium before taxation kicks in. On the dynamic account expressed here, this policy will prevent the occurrence of yet unknown voluntary exchanges, conducive for societies to discover movements towards an equilibrium. The irony is that by treating the market as a perfect equilibrium, the mark-to-market approach hinders the kind of innovation and disruption that is conducive to securing an outcome that at least tends in the direction of equilibrium in the first place.

Wealth taxes and the extent of the mirage of mark-to-market

We have argued that markets are dynamic processes with unknown results. Measuring capital gains according to general market values is antithetical to the nature of the discovery process. This analysis is not only applicable to the taxation of corporate profit; neither is it confined to entrepreneurial experiments, like that in which the Coopers engage. The universal problem of taxing market values becomes apparent when we move to *wealth taxes*, and how they would play out in practice.

Consider three other families in Orange County: the Atwoods, the Townsends and the Wards. Together they can illustrate problems of subjectivity and uncertainty in various kinds of businesses. The Atwoods own some land on which they run a restaurant. The Townsends have shares in an innovative local construction project of an ecologically sustainable housing estate. The Wards own the royalties to a graphic novel which has just been published. The reason a wealth tax on these families is infeasible is because there is no accurate way for a tax administrator to find out the net worth of these families' assets. In fact, even under oath, these families could only guess at what their own tax liabilities might turn out to be.

Because of the influx of orange farmers, the land in the county increases in market value. This means that the neoclassical lens observes a rise in the market value of the land underneath the Atwood's premises. The Atwoods, however, do not respond to the market price, and do not monetize the increased value of their property. The reason is because they have other plans (such as keeping their restaurant open), and are attached emotionally and socially to their current project. The sale has subjective costs that outweigh the monetary benefit. As a matter of fact, the sale has such subjective costs that this exchange for these entrepreneurs is not profitable as they see it. Taxing them on the action they did *not* undertake, fails to take the subjective costs of such a decision seriously.

The Townsends' stake in the construction project is also challenging. Just like the restaurant for the Atwoods, there is a personal endeavor that inspires their decisions: it is a project in sustainable energy, and the investment is driven by both financial and non-financial *in casu* ecological aims. Future profits depend on actions that have not yet occurred. Engineers must

build a solar panel system that may turn out not to be viable with current technology. Families still have to purchase the houses that live on the generated energy and the rent to be paid on all the loans will be calculated on the future value of the project. Tax administrators cannot elicit from the Townsends what the market value is. Part of the reason they jumped into the venture is to discover what the value is for themselves because of their commitment to ecological goals.

The Wards at least have full legal possession over a completed product: a copyright-protected graphic novel. Nevertheless, they still face a great of uncertainty over whether their property will be profitable. For example, the value of the royalties depends on work that other people still have to deliver, and decisions that future consumers make. The promotion of the book has not started yet, and the potential revenue will depend on how popular the book is, and how the various collaborators execute their jobs. This means there is no straightforward way for an external observer to estimate the value of the royalties. This is not because the value is simply hard to assess, but rather because, for the moment, there is no real market value there to be found.

One could object that in our argument we have picked market phenomena, such as innovation through experiment or creative inspiration, where the mark-to-market approach is hostile to the spontaneous actions that make up the motivation for many market participants. It could be argued that in many economic areas, the equilibrium price is, in fact, a feasible proxy for individual behavior. But even if, generally there are public estimated prices for many assets, that does not define individual situations of wealth. As we see with the Atwoods, the Wards and the Townsends, it is very difficult to value capital, not just for the Coopers who launch new products, but also for any collection of assets. Part of the reason is that value and cost are also subjective concepts. When it comes to employment of an asset or not, goods and services have subjective costs associated with their creation alongside objective factors such as physical resources that must be expended as part of the process of production. They include extra-economic costs related to production such as the discomfort and unease associated with work and risk, as well as things like the experience of travel to and from work. It also includes the opportunity costs of foregoing alternative courses of action such as employment in some other form, leisure or domestic production. Before any realization-event, the net worth is not known because these costs are still being balanced. Another reason is that even market-conforming projects are acting in an insecure world. Success relies not only on entrepreneurial action but also on future choices by workers (and how they will execute the task), consumers (to buy the product) and politicians (to facilitate the required legal decisions). Until the moment they have done so, imputing the market value makes little sense. Entrepreneurs

estimate the eventual outcome to be at least positive, but the essence of markets is that no one can be sure.

So focusing on the supposed market price for establishing wealth taxation obscures important parts of the picture. Various subjective assessments and decisions are still ongoing and rarely align with the type of behavior expressed in a price. While a market price is a useful economic aggregate for assessing the strength of various parts of the economy, it does not serve to describe and predict individual activity, which is the real locus of tax liability. Once the role of individuals has been rescued as part of the market process, capital valuation according to general market values becomes shaky. Individuals are not puppets that follow universal laws, but complicated, independently acting subjects, with assessments and reasons that are not readily accessible (O'Driscoll & Rizzo, 2015). Before they have acted, for example, in terms of books bought, solar panels attached to roofs and permits granted, market values are theoretical phantoms, not secure information to determine one's tax liability. Within our view, the valuation problem is not of an epistemic nature. Future decisions of entrepreneurs, consumers and politicians are constitutive of the price, and absent their action, and thus transaction, there is no market price.

A realistic defense of mark-to-market and a realistic response

A possible response to our argument could be that the case for mark-to-market does not rest on the level of epistemic precision that we seem to require. Idealized economic models present mark-to-market as systematic and neutral: it can treat all increases in economic value as equivalent. But setting aside that feature as impossible, the direct taxation of wealth still has attractions in terms of visibly and immediately addressing distributive injustices in society. Indeed, various scholars underline that mark-to-market taxation is an execution of fairness, as it successfully identifies and taxes rich individuals on their ownership of profitable businesses and financial instruments, items that would remain untaxed under a realization approach (Hurley, 2008). So even if there is some vagueness with respect to the total amount that they should pay, mark-to-market still delivers us a rough tool to reach the 'propertied classes' (McCaffery, 2005, p. 888).

This response has some validity. From this perspective, we only show that valuation errors will be endemic for mark-to-market taxation, but not that there are no benefits at all. Balancing the costs and benefits of policy instruments, we could simply add that a cost of mark-to-market has been forgotten or minimized. However, our critique can respond to this more realistic defense as well. The valuation problem on the side of government can plausibly weaken the redistributive effectiveness of mark-to-market. In

other words: the downsides of mark-to-market will undermine the advantages even in a realistic scenario.

Unlike under a realization approach, the tax base under a mark-to-market tax is constituted by an *estimation* by tax administrators. The epistemic ambiguity revolving around the question of market value creates 'a strong economic incentive to contest valuations' (Repetti, 2000, p. 610). The question is whether this new fiscal lacuna – the proper market value of one's holdings – would not benefit the rich. As Cunningham and Schenk (1992, p. 743) realize 'any system requiring appraisals is likely to be a loss for the government because it does not have the resources to win.' The more resources a taxpayer has, the more means that can be invested to win the reformed valuation procedure against the fiscal authorities. We can reasonably predict that this lack of clarity will encourage accounting firms to offer various legal services for companies and individuals contesting their tax liability (Shay, Fleming, & Peroni, 2016, p. 443). Given the pay-rates demanded by the top accounting firms, the effects of this fiscal loophole could well be regressive. The rich are also more geographically mobile and so can select jurisdictions in which their litigations are likely to yield better results.

These problems might be exacerbated by the fact that the very rich have much greater choice of assets than typical wealth holders. Some assets are harder to value, or have a higher chance of being undervalued. Thus lack of clarity revolving around a mark-to-market approach may well intensify the relevance of tax planning and strategic investment (Repetti, 2000). Ordinary savers and investors will be constrained in their options, and have a significant portion of their assets heavily invested in specific projects (whether buying a house or establishing or expanding a business). The very rich do not face these constraints in the same way and can strategically manipulate their tax burden by purchasing more of the hard or undervalued assets (Faig & Shum, 2002). Middle-class taxpayers are more likely to hold standard financial products with broad exposure so as to reduce risk (whether through bank savings, shares or pension products) and will place a greater premium on liquidity in case of unexpected financial hardship. In each situation, they will not have much capacity to shift their wealth between investments. Once a predictable policy of wealth taxation were introduced, the very rich would have much greater capacity to shift into specialized, illiquid, risky assets that are much harder to identify and value with the effect of hampering the market process as we have argued above.

Thus we anticipate that the epistemic problems of a mark-to-market tax could equally undermine its redistributive function. Discretionary taxation may well end up being relatively lax on the very rich at the expense of the merely well-off while at the same time reducing the quality of information available to participants in the market economy. This raises a question as to what policy alternatives there are to mark-to-market taxation to address the outstanding inequality we face, which we tentatively investigate in the next section.

Redistribution via broadening the tax base and international cooperation

While the mark-to-market taxation of capital (gains) is driven by legitimate normative purposes, it stands on a flawed economic conception that supposes information that is not actually there. But that does not solve the problem of rising wealth inequality. Are there more feasible fiscal instruments that can be used to minimize the growing wealth gap?

Many forms of capital income, including from dividends, real estate, capital interest or royalties, are currently either exempted from taxation or treated beneficially, compared to labor income (Dietsch & Rixen, 2014; Mirrlees et al., 2011; Wijnvliet, 2014). While Piketty proposes a global wealth tax on the rich – measured through mark-to-market – he equally criticizes the beneficial fiscal treatment of capital income (Piketty, 2014, p. 518; 2014, p. 630–636). Given the insurmountable problems of a wealth tax, a more realistic option is a more uniform realization-based income tax set by an extensive tax base that includes all forms of income. Such a measure would increase the taxation of ‘capital’, albeit by introducing a general rule on income rather than a different tax. If all income – labor and capital – would be taxed in a similar manner, this would logically entail a tax cut for labor income, currently often taxed at higher rates. Hence a uniform tax base combined with one universal rate structure, and the abolition of the many tax exemptions for capital income, would decrease the fiscal burden on labor (Surrey & McDaniel, 1985).

It is hard to ignore the international dimension when dealing with the under-taxation of capital income (Cf. Vallier, 2019, p. 151). International companies shift accounting profits according to prevailing tax rules in terms of net assets vs. borrowed capital, tax arbitrage and transfer pricing (Dietsch, 2018; Dietsch & Rixen, 2014, p. 154–155; Ring, 2002; Sikka & Willmott, 2010). The erosion of the fiscal base could equally be remedied by closing up the loopholes that arise from mismatches between different tax systems. The OECD’s *BEPS* (Base Erosion and Profit Shifting) project contains 15 action plans that include minimum standards and common approaches between the member states, intended to halt the systematic advantage of multinationals. Wollner (2014), Dietsch (2015), Rixen (Dietsch & Rixen, 2014) and van Apeldoorn (2018) illustrate how philosophers can employ theories of justice and empirical reasoning to pinpoint the content of a global tax justice.

The battle against international tax evasion is related to the importance of developing a more uniform national tax code. Tax evasion arises when specific industries and large companies have the political opportunity to lobby for tailored benefits (so called ‘tax expenditures’ or sometimes ‘tax preferences’). Indeed, nation states will deliver fiscal favors to geographically mobile companies in the form of tax expenditures, not through rules that apply to all individuals or companies equally. To the extent that national tax

systems, on the constitutional level enforced through international treaties, ban tax exemptions as such with a requirement for uniform rates applied to a broad base, they would foreclose the opportunity for beneficial treatment for multinationals that is one of the drivers of tax competition (Buchanan & Congleton, 1998; Surrey & McDaniel, 1985). International tax organizations should thus be oriented by treaties where nation states agree to apply internally a more uniform tax law. By this, we do not mean that countries would lose the liberty to choose their tax rate. Rather the aim is to broaden the income tax base and abolish preferences in the applicable rates to generate a tax code of general rules.

A better understanding of the realization approach can also facilitate the broadening of the tax base. One frequently overlooked form of realization is the imputed rent that homeowners derive from living in their own house. While no exchange takes place here, the homeowner realizes a stream of benefits that renters would have to pay for. Such rent differs from mark-to-market conceptions by conceptualizing only the service that a durable good yields to an individual who is both the owner of the asset and its consumer or user in a given year. It is backward-looking: it measures the value that someone derives from the choice to use a property for themselves rather than rent or lease it over a specific time-horizon. It applies only to the final consumer of the asset who happens also to be the owner.

Although calculating imputed rent is not without some difficulties, it has the advantage of not pretending to estimate the whole value of the asset indefinitely into the future. While not identical and fungible, as with bonds and shares, there are often enough real comparable contracts to rent or lease similar property in a given area so as to credibly estimate what the cost would have been to the homeowner if required to rent it on the open market. The key advantage of treating imputed rent as part of annual income is that, unlike other property taxes, it can be more easily included as income tax liabilities. This means that the usual progressivity of income taxes can be applied to the realized benefit that people generally draw from their single largest capital asset. For example, owners of a single-family home but on an otherwise low-income will pay a small sum at a small marginal rate (or in some cases may be exempted entirely under ordinary tax allowances). By contrast, high earners, living in large or luxury properties that they also own, will pay a proportionately higher sum at a higher marginal rate on their imputed rent as it is added to their labor income. Compared to other taxes on real estate, imputed rent is more systematically progressive and has significant support among economists especially in the United Kingdom (where imputed rent used to be part of the income tax framework) (Booth, 2016, p. 20–21; Callan, 1992; Meade, 1984; Institute for Fiscal Studies, 1978).

This approach to tax reform is particularly apt because a range of international evidence suggests that the majority of contemporary observed increases

in wealth inequality in developed economies, at least between the upper middle class and the new precariat, can be explained by changes in real estate asset values (Bonnet et al., 2014; La Cava, 2016; Rognlie, 2016). Taxes on imputed rent can play an important role addressing this by ensuring that the presently quasi-monopolistic benefits of homeownership are better reflected in the tax base and, as a result, marginally discouraging support for policies that artificially raise rents through housing scarcity (Brueckner, 2016; Cheshire, 2009). Under this proposal, homeowners will feel the cost of rent rises in a way that to some extent parallels actual renters.

Conclusion

Neoclassical economic models are premised on the existence of fixed, knowable market prices for goods, services and the capital used to produce them. In the real world these things do not come with a value tag attached. Entrepreneurial experiments and consumer choices generate aggregate social outcomes which single individuals cannot predict, as well as disseminating the resulting information on which tax liabilities can be assessed. The market is more accurately understood as a discovery process where, prior to effective exchanges, no one can predict outcomes with any certainty. Capital taxation's practical corollary, the mark-to-market approach is premised on information which is not available to market participants or tax officials. The future popularity of a book, the economic success of a sustainable energy-project and the net worth of a construction project depend on subjective states and individual actions not yet taken. As subjective states can only be revealed through exchange, market values do not exist prior to the individual decisions people make. The consequence of this reasoning is that, absent exchanges, there is no value to impose levies on. Taxation through mark-to-market is taxation without a tax base.

If this argument is accepted, it suggests that we should explore other avenues when attempting to redistribute wealth. Complementing the emergent literature on tax justice, we pinpoint some alternatives to the increased taxation of capital, measures which are more feasibly able to cope with the epistemic challenge of valuing capital. We propose broadening the income tax base, and the abolition of tax expenditures (often for capital gains) as a more feasible idea. Furthermore, broadening capital-owners' tax base, through an extensive interpretation of 'realization', including imputed rent, and international cooperation for a uniform tax base, would increase the progressive nature of our tax systems.

Notes

1. This example is thematically inspired by (Kirzner, 1978, p. 18).

2. The difference between a wealth tax and a capital gains tax is thus one of time: the first taxes all current holdings, the second levies only the extra value it got within a specific time frame, typically a year.

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