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The Political Importance of Financial Performance

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Abstract: *Asset mobility is thought to constrain taxation, as firms with mobile assets can avoid taxation by locating their assets in low-tax jurisdictions. Firms with immobile assets then face higher taxes. By considering the political incentives that accompany widespread financialization, we identify a new limit to the targeting of immobile firms: Publicly traded firms with immobile underlying assets lose more value in financial markets when taxes are increased, as shareholders anticipate that these underlying assets cannot be withheld from taxation. When governments care about this loss in value, their incentive to tax immobile, publicly traded firms declines. Political concern for financial performance therefore limits the extent to which immobile assets can be targeted for taxation. We argue that broad-based participation in the stock market and democratic political institutions increase political concern for financial performance. We discuss the implications of the theory and findings for policy autonomy, firm ownership, and economic voting.*

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Recent studies have documented increased financialization in many countries, as financial markets grow (Krippner 2005) and household debt and pension funds are increasingly traded on stock markets (Brooks 2007; Wolff 2017). Whereas only 3% of U.S. households owned securities in 1929, by the early 2000s over 50% owned securities (Fligstein and Goldstein 2015). Securities include stocks, bonds, and other financial instruments. Financialization has led to changes in political preferences. Citizens who own stocks and bonds are more supportive of liberalization (Kerner forthcoming) and opposed to financial regulation (Pagliari, Phillips, and Young forthcoming).

In this study, we assess the impact of financialization on policy outcomes. We argue that financialization changes how politicians are evaluated and the policies they implement. When financial markets are a substantial part of the economy, citizens become concerned about financial performance both because it affects their income and because financial performance provides a clear metric to judge politicians. Under these conditions, politicians reconsider policies that slow financial growth, including taxation. As financial transactions become an increasingly important part of the economy, politicians begin to value financial performance. They are constrained in their ability to increase corporate taxation, particularly for publicly traded firms, as stock returns are reduced by tax increases.

However, not all financial securities are equally responsive to taxation. We differentiate between securities that represent mobile and immobile underlying businesses. We follow the literature and consider mobile assets as those that may easily be moved to a low-tax jurisdiction or reinvested in an informal market (Bates and Lien 1985; Boix 2003; Jensen 2013). Underlying businesses may, for example, involve oil extraction, a capital-intensive activity that cannot be easily moved abroad or hidden from tax authorities. Capital-intensive activities are often considered immobile (Frieden 1994; Johns and Wellhausen 2016; Kerner and Lawrence 2012). Alternatively, underlying businesses may derive profits from intangible assets like branding, copyrights, or software, which have no physical presence. These assets are highly mobile and

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can be reported anywhere (Dischinger and Riedel 2011; Grubert 2003).

We argue that the value of financial securities associated with immobile underlying assets is more sensitive to tax increases than the value of securities with mobile underlying assets. When taxes are increased, investors understand that underlying businesses with large immobile assets will be unable to withhold those assets and the profits associated with those assets from taxation. Hence, when taxes are increased, investors foresee a loss of returns to taxation, and there will be an attendant decline in the value of the financial security for firms with immobile, underlying assets. Alternatively, more-mobile, underlying assets can be withheld from taxation. Investors recognize that firms with mobile underlying assets will avoid paying taxes and that their future returns are thus not threatened by taxation.

The value of firms with immobile assets is likely to suffer more from taxation whether the firm is traded on a stock exchange or not. Financial securities are central to the theory, because, under certain conditions, politicians care about the performance of financial securities, which makes the loss in value accompanying tax increases politically relevant. When politicians value financial performance, their tax policies are constrained by the fear of generating economic losses, particularly for publicly traded firms with underlying immobile assets.

We develop a game-theoretic model to derive our theoretical propositions. The model identifies two competing incentives for tax policy. On the one hand, politicians require revenue. For revenue purposes, immobile assets are more efficient targets of taxation. On the other hand, politicians may be concerned about stock market performance. For financial performance, immobile assets become less attractive targets of taxation. If stock market performance is used to judge political performance or if political supporters own stocks, then reelection-seeking politicians will be reluctant to tax publicly traded, immobile firms. We expect that politicians balance these revenue and performance incentives in most countries and that the magnitude of their importance will depend on the prominence of the financial market and whether political supporters own stocks.

Anecdotal evidence corroborates the prominence of stock market performance and its relationship with corporate taxation. South Korea increased corporate taxation three times since 2000, often followed by a reversal a few years later. Most recently, President Moon Jae-in raised rates on the highest-earning companies in 2017. Opposition leaders quickly condemned the move. Conservative Member of Parliament Kim Gwang-lim opposed the policy and referenced concerns over its effect on financial markets: "Bloomberg said that the Korean stock market was embroiled in a vortex because of the policy."[1] That democratically elected politicians point to stock market performance as evidence of the cost of taxation demonstrates the political importance of financial markets.

We draw on two firm-level data sets to assess our argument. Using data from a global sample of the subsidiary activities of the 500 largest companies, we show that subsidiary firms pay less taxes when they have more intangible or mobile assets. However, the effect of intangibility is moderated by financialization. Using each country's stock market capitalization as a measure of financialization, we show that the tax bias against immobile firms diminishes as capitalization increases. In fact, immobile firms pay lower taxes at high levels of capitalization in some models. The findings are consistent with the theory presented here. When financial markets form a substantial part of the economy, politicians care about financial performance, and they shift taxation away from firms with immobile assets. Consistent with economic voting and dispersed ownership of financial securities, the results are confined to democratic countries. The results are robust to alternative measures of taxation and of financialization, including pension fund assets, stock market turnover, and the presence of a sovereign wealth fund.

In a second analysis, we present evidence that is consistent with the theoretical mechanism. Drawing on monthly data from publicly traded firms and state corporate tax increases within the United States, we report evidence that tax increases reduce the stock market returns to firms. Consistent with the theory, the reduction is attenuated by mobility. For firms with many mobile assets, the effect of tax increases is statistically indistinguishable from zero.

The theory presented here has several implications for existing research. Scholars expect mobile firms to pay less taxes (Dischinger and Riedel 2011; Przeworski and Wallerstein 1988), to get expropriated less frequently (Moran 1974; Vernon 1971), and to receive more policy concessions (Bates and Lien 1985; Boix 2003; Nooruddin and Rudra 2014). Financial securities are thought to be some of the most mobile assets (Acemoglu and Robinson 2006; Freeman and Quinn 2012; Pond 2018). The study here shows that asset mobility has more nuanced implications for taxation than previously thought. The political value of financial performance impedes the taxation of publicly traded securities that represent immobile underlying businesses.

[1] see http://www.joseilbo.com/news/htmls/2017/10/20171020337712.html.

The shift away from the taxation of immobile assets could prevent optimal taxation. Optimal taxation relies on targeting inelastic revenue sources, as they result in smaller economic distortions (Ramsey 1927). If politicians value financial performance, immobile revenue sources, although economically attractive, become politically infeasible. This trend could compound other revenue challenges, such as the race to the bottom (Franzese and Hays 2008; Strange 1996), the unpopularity of income taxes (Flores and Nooruddin 2016), and reductions in trade taxes (Bastiaens and Rudra 2016; Queralt 2015).

Stock issues emerge as a way for firms, particularly those with immobile assets, to protect themselves from taxation. This perspective complements existing theories about firm ownership structure and political influence. Firms create subsidiaries to benefit from tax treaties (Arel-Bundock 2017), and they form international business relationships, through subsidiaries and securities issues, to gain coverage under investment agreements (Betz and Pond, 2019; Betz, Pond, and Yin 2018). Partnerships with local firms may grant multinationals local influence (Henisz 2000; Johns and Wellhausen 2016). However, a firm need not enter a new market or form international partnerships—by instead issuing securities on financial markets, a firm may make its performance politically relevant and deter costly policies. Understanding the political motivation for ownership structure provides a new opportunity for future research.

More broadly, political scientists often use asset ownership to explain political preferences and then draw on political institutions to explain when policy will reflect these preferences. Scholars have looked to home ownership (Ansell 2014; Ansell, Broz, and Flaherty 2018), financial ownership (Kerner forthcoming; Pagliari, Phillips, and Young forthcoming), and the employment sector (Scheve and Slaughter 2001) to explain preferences. The public is expected to gain representation under democratic political institutions (Bueno de Mesquita et al. 2003; Lake and Baum 2001; Mansfield, Milner, and Rosendorff 2000). The study here similarly draws on the widespread ownership of financial assets and political institutions to explain policy, yet it also highlights how asset ownership affects the information available to voters.

Economic voting and the particular heuristic used by voters have distributional implications. Citizens tend to support politicians when the economy is doing well (Lewis-Beck 1985; Nordhaus 1975; Tufte 1978), when attribution is clear (Powell and Whitten 1993), and when the economy outperforms benchmarks (Kayser and Peress 2012).[2] The study here implies that the heuristic matters a great deal: Even if all citizens are affected by stock market performance, the wealthiest citizens tend to own the most securities. If citizens look to stock market performance for information about the quality of politicians, voting may reinforce the economic advantage of the wealthiest citizens. This could complement other sources of disproportionality and reinforce income inequality.

Theory

Asset mobility is commonly understood as the ease with which an asset may be withheld from taxation. Existing work holds that mobile assets pay lower taxes, as mobile assets by definition may be withheld from taxation. In order to induce compliance then, politicians must select lower tax rates (Acemoglu and Robinson 2006; Boix 2003) and make policy concessions (Bates and Lien 1985) when assets are mobile.

This study considers the effect of asset mobility on the returns to stock market investments. Mobile assets will be costlessly, or with lower costs, reinvested elsewhere when taxation is increased. This means that the returns to shareholders of a publicly traded firm with more mobile underlying assets will decrease less when taxation increases. The firm will simply move its mobile investment elsewhere and enjoy the returns on that new investment. This further means that immobile firms will suffer more when taxation is increased. Political concern for shareholder returns or for overall financial performance will limit the extent to which politicians can target taxation at publicly traded firms with immobile assets.

To derive the theoretical predictions formally, we consider a game-theoretic model, played by a government and n privately owned firms. The government moves first and selects the corporate tax rate, τ_i, paid by each firm. After observing the tax rate, each firm, i, decides how to allocate its budget.

Each firm has a budget, b_i, and two investment options, κ_i and ι_i. Each option receives the same rate of return, r_i. The first, κ_i, is easily taxable; the firm receives $(1-\tau_i)r_i\kappa_i$ from investments in κ_i. The second, $\iota_i = b_i - \kappa_i$, is not taxable; investments in this asset receive a return of $r_i\iota_i$,[3] but the firm must pay a cost of moving its investment into the untaxed asset, $-\frac{1}{2}c_i\iota_i^2$.

[2] See Arel-Bundock, Blais, and Dassonneville (forthcoming) for mixed evidence.

[3] Having the same return is not necessary for the results: The firm must be willing to move at least some of its assets into ι_i; otherwise, it cannot use the threat of reinvestment to constrain taxation. In the

The term c_i represents the cost of shifting the investment into the untaxed asset—in other words, the immobility of the firm's taxable assets. When $c_i = 0$, the firm may costlessly move its investments into the untaxed asset. As c_i increases, the firm's investments become less mobile. Shifting investments into ι_i can be thought of as moving the investment out of the government's purview, for example, by investing abroad. The firm's overall profit is

$$\pi_i = (1 - \tau_i) r_i \kappa_i + r_i \iota_i - \frac{1}{2} c_i \iota_i^2 \text{ s.t. } \kappa_i + \iota_i = b_i. \quad (1)$$

The firm selects κ_i and ι_i to maximize its profits. The firm's equilibrium investments are

$$\kappa_i = b_i - \frac{\tau_i r_i}{c_i} \quad \text{and} \quad \iota_i = \frac{\tau_i r_i}{c_i}. \quad (2)$$

This simple model thus accords with central tenets in the literature. First, the equilibrium taxable investment is decreasing in the tax rate, τ_i. The cost of taxation accrues only to taxable assets, so firms invest more in untaxable assets as taxation increases. Second, the equilibrium taxable investment is increasing in the investment's immobility, c_i. Taken together, this means that equilibrium investment in the taxable asset will be higher for immobile investments, and this result is magnified by taxation.

The government derives revenue from the firms' profits in taxable assets,

$$R = \sum_{i=1}^{n} \tau_i r_i \kappa_i. \quad (3)$$

To focus on the central theoretical mechanism, the objective function abstracts away from other motivations for government policy and instead follows standard accounts of the government's role as a revenue maximizer (Levi 1988; Olson 1965). The prominence of revenue considerations is consistent with recent work documenting reductions in revenue from trade taxes (Bastiaens and Rudra 2016; Queralt 2015) and from global tax competition (Franzese and Hays 2008).

This setup assumes that the government is able to tailor tax policy and select a different tax rate for each individual firm. In reality, some aspects of corporate tax policy are shared across firms, and some are specific to individual firms. The legal corporate tax rate is applied to all firms, but through exemptions, transfers, and tax breaks, governments tailor tax rates to specific firms (Jensen and Malesky 2018). The formal insights presented here follow whether the tax rate is specific to individual firms. If the same tax rate is shared across all firms, a revenue-maximizing government would consider the effect of its policies on the behavior of all firms or, equivalently, on a representative firm. In the empirics that follow, we consider the taxes paid by individual firms, as well as corporate tax rates.

Maximization of the objective function with respect to τ_i yields the equilibrium tax rate,

$$\tau_i = \frac{c_i \kappa_i}{r_i}. \quad (4)$$

The mobility of the firm's assets affects the tax rate selected in equilibrium. As immobility increases, tax rates increase. This is consistent with studies of regime change and liberalization (Freeman and Quinn 2012; Pond 2018): Democratization is more costly to economic elites when assets are immobile, as taxation and redistribution are more effective under these conditions (Acemoglu and Robinson 2006; Boix 2003). Because investments are more mobile when markets are open, openness is associated with less taxation (Basinger and Hallerberg 2004; Franzese and Hays 2008).

Now imagine the firm issues securities on a stock exchange, and investors purchase ownership shares in the firm. Returns to investors depend on the firm's profits. Here, we consider the simple case where investment returns are equal to profits:

$$V_i = (1 - \tau_i) r_i \kappa_i + r_i \iota_i - \frac{1}{2} c_i \iota_i^2 \text{ s.t. } \kappa_i + \iota_i = b_i. \quad (5)$$

When assets are more mobile, the costs of shifting them from κ_i to ι_i are smaller. In consequence, the reduction in the returns to publicly traded firms with mobile assets will be smaller than the reduction in the returns to firms with immobile assets when taxes are increased.

Proposition 1. *The returns to firms with immobile underlying assets are more responsive to tax increases than the returns to firms with mobile underlying assets.*[4]

Although Proposition 1 follows from the standard logic about tax rates and asset mobility, it reverses conventional ideas about asset mobility and constrained taxation. The conventional wisdom is that politicians concern themselves with the responsiveness of investment to taxation, as they must raise revenue (Levi 1988)—according to these theories, politicians target immobile assets for taxation. If citizens vote economically, politicians must

supporting information (SI; pp. 1–2), we derive the same insights from a model where we use general functions for the returns to the firms' investments.

[4]To see why, consider how the firm's profit changes as taxes are increased. The firm's profit is $V_i = (1 - \tau_i) r_i \kappa_i + r_i (b_i - \kappa_i) - \frac{1}{2} c_i (b_i - \kappa_i)^2$, and it changes with taxation in the following way: $\frac{\partial V_i}{\partial \tau_i} = -b_i r_i + \frac{\tau_i r_i^2}{c_i} < 0$, which is decreasing in immobility, c_i, $\frac{\partial^2 V_i}{\partial \tau_i \partial c_i} = \frac{-\tau_i r_i^2}{c_i^2} < 0$.

also concern themselves with economic performance. Because taxes are more easily applied to firms with immobile assets, the value of firms with immobile assets is more responsive to tax increases.

Consider how the game changes when the government values financial performance. Assume the government maximizes the following combination of revenue and financial performance:

$$G = \sum_{i=1}^{n} \tau_i r_i \kappa_i + a\left[(1-\tau_i)r_i\kappa_i + r_i(b_i-\kappa_i) - \frac{1}{2}c_i(b_i-\kappa_i)^2\right], \quad (6)$$

where a is the weight that the government places on financial performance. When a is zero, the government is solely concerned with revenue. As a increases, the government values stock market performance more. If politicians apply different tax rates at the firm level, government concern for financial performance should only apply to firms that affect stock market performance, and a could also be interpreted as an indicator for whether the firm has issued stocks.

Larger values of a would follow if citizens use financial performance as a metric for assessing overall economic performance or for assessing the quality of politicians. Although voters may infer information about the state of the economy from their personal economic situation, they also look to indicators like stock market growth, which provides a single, easy-to-interpret, and widely reported indicator of economic performance.

U.S. presidents have validated this interpretation, citing stock market growth as evidence of their political success. In 2012, President Barack Obama announced at a campaign event and then tweeted that "the stock market has nearly doubled" since he took office.[5] President Donald Trump frequently tweeted about stock market performance, including in 2017: "Stock market hit yet another all-time record high yesterday. There is great confidence in the moves that my Administration . . . is making. Working very hard on TAX CUTS for the middle class, companies and jobs!"[6] In claiming credit for economic performance, stock market growth provides a straightforward heuristic.

Financial performance is also politically important when the people who own financial assets have political power. Theories of material self-interest maintain that policy preferences come from asset ownership (Ansell 2014; Kramer 1971; Scheve and Slaughter 2001). Shareholders support policies that grow the financial market (Kerner forthcoming; Pagliari, Phillips, and Young forthcoming), and their influence is plausibly magnified under certain conditions. Politicians are more responsive to the public interest under democratic political institutions (Bueno de Mesquita et al. 2003; Lake and Baum 2001; Mansfield, Milner, and Rosendor 2000). In a democracy, then, financial actors will likely have more political influence when financial ownership is disbursed throughout the population, for example, in the form of pension ownership.

Additionally, many governments own sovereign wealth funds that are invested in financial markets. In these cases, financial performance directly affects the growth of the fund and the resources available for state objectives. Turkey's president Erdogan recently took control of the country's sovereign wealth fund, which owns assets worth over $200 billion and represents over 80% of the Turkish stock market, Borsa Istanbul.[7] Erdogan must maintain stock market growth to ensure the growth of the sovereign wealth fund.

In the following section, we turn to measures of market capitalization, stock market turnover, pension assets, and the presence of a sovereign wealth fund to assess the political importance of financial markets. Because voting and disbursed public interests are more important in democracies, we also assess whether the effects differ in democracies and autocracies.

Using the government's objective function, the equilibrium tax rate is now defined by the following equation:

$$\tau_i = \frac{c_i\kappa_i}{r_i} - \frac{ac_i(b_i-\kappa_i)}{(1-a)r_i}. \quad (7)$$

The final proposition follows.

Proposition 2. *As the weight that politicians place on the performance of the stock market increases, it reduces the tax bias against immobile assets.*[8]

Proposition 2 provides a novel insight from the model. Although politicians favor taxation of immobile

[5]See https://www.cnbc.com/2018/02/06/trump-has-tweeted-about-stock-market-63-times-since-2016-election.html.

[6]See https://twitter.com/realdonaldtrump/status/927847349648609280?lang=en.

[7]see https://www.ft.com/content/8fe07c16-b693-11e8-bbc3-ccd7de085ffe and https://www.reuters.com/article/us-borsaistanbul-nasdaq/nasdaq-no-longer-has-stake-in-borsa-istanbul-stock-exchange-website-idUSKCN1M61KC.

[8]To derive the proposition, first consider how the tax rate changes with the political importance of financial performance, $\frac{\partial \tau_i}{\partial a} = \frac{-c_i(b_i-\kappa_i)}{(1-a)^2 r_i}$, and then consider how this changes with immobility, $\frac{\partial^2 \tau_i}{\partial a \partial c_i} = \frac{-(b_i-\kappa_i)}{(1-a)^2 r_i} < 0$.

assets for revenue purposes, their targeting changes when they also value financial performance. As the weight that the government places on financial performance increases, the need to also maintain financial returns reduces the tax that the government places on firms with immobile assets. Politicians begin to shift the tax burden toward mobile assets. This is because tax increases reduce the returns to firms with immobile assets more than they reduce the returns to firms with mobile assets. Politicians thus balance the revenue and financial performance incentives. Because we make no assumptions about the size of a, it is possible that the performance incentive overwhelms the revenue incentive, and immobile assets receive lower tax rates than mobile assets in some highly financialized countries. The empirical assessment returns to this consideration below.[9]

Proposition 2 applies to publicly traded firms, which have issued stocks on a public market. The valuations of these firms directly affect financial performance. However, the theory could also apply to bond issues. Because private firms issue bonds, they may default or borrow less due to the expectation of reduced profits from taxation. This would slow financial growth. Under financialization, where the ownership and debt of firms are bought and sold on financial markets, we thus expect the theory to apply predominantly to publicly traded firms but also to some private firms, which affect financial growth.

This dynamic could encourage governments to target taxation at immobile, private firms. However, foreseeing elevated taxation, private firms with substantial immobile assets could list on the stock exchange. The downsides of listing include increased transparency and reporting requirements, as well as responsiveness to the short-term interests of shareholders (Asker, Farre-Mensa, and Ljungqvist 2015). Politicians could target taxation at private firms up until the point when the cost of taxation makes them willing to issue stocks and thus gain political influence through financial markets. Consequently, the ability of firms to list strategically could constrain government behavior and limit the taxation of private firms.

In sum, financial securities associated with immobile underlying assets lose more value from increases in taxation than financial securities associated with mobile underlying assets. This reduction in valuation provides a constraint on policy, tilting taxation toward firms with mobile assets and away from firms with immobile assets, when politicians value financial performance.

[9]Developed financial markets also enable politicians to fill fiscal gaps with borrowing, intensifying the relative importance of the performance incentive.

Cross-National Evidence

In this section, we leverage firm-level data on asset mobility and taxes paid and country-level data on financial capitalization to evaluate Proposition 2: As the weight that politicians place on stock market performance increases, it reduces the tax bias against immobile assets. This is because firms with immobile assets would lose more value on financial markets.

To assess the argument, our dependent variable must measure taxation. We draw on a new data set collected by Betz, Pond, and Yin (2018) from Bureau van Dijk's Orbis on the subsidiary firms of the 500 largest companies from 2007 to 2016. The data come from firm reports of their balance sheets. Once merged with financial data, we have 37,683 firms in 73 countries; the countries are listed in the SI (p. 3). We expect that these subsidiary firms are comparable, with similar levels of sophistication in negotiating with politicians, as their parent companies are large and well financed. These are also overwhelmingly publicly traded firms, where the theory is particularly likely to apply.[10] To measure taxation, we use the log total tax revenue paid by each subsidiary firm in its country of operation.[11]

Effective taxation is useful here because firms often pay taxes that are substantially lower than declared rates, and tax incentives are targeted at specific firms. The theory predicts that the size of the tax burden will depend on the mobility of the firm's assets. The data capture overall tax policy toward specific firms, with varying levels of mobility, within countries. In the SI (pp. 12–13), we corroborate the firm-level evidence using country-level measures of taxation, including legal corporate tax rates and effective tax rates.

Our independent variables measure asset mobility, the degree to which politicians value stock market performance, and the interaction between the two. As anticipated by extant literature, we expect that intangibility (mobility) reduces taxation. However, this relationship is moderated as capitalization increases. This is because the value of intangible assets is less responsive to tax increases, as the owners of intangible assets can hide these assets from tax officials, and capitalization forces politicians to internalize the financial cost of taxation. A higher value on financial

[10]For example, "listed firms are 62 times larger than private ones" (Dinlersoz et al. 2018, 21), and almost 70% of the 500 largest firms are corporations; the entity type is reported in the SI (p. 4).

[11]We log the variable because one-unit differences between small values may be more meaningful than one-unit differences in large values. Logging the data also helps with concerns about outliers.

performance thus reduces the tax bias against immobile firms.

To measure asset mobility, we again draw on the firm-level data from Betz, Pond, and Yin (2018); we use the total amount of intangible assets controlled by each subsidiary firm, logged. Firms report intangible assets on their balance sheets. Intangibles have no physical presence, but they represent rights to enjoy some privilege. They refer to human capital, brands, marketing, copyrights, patents, trademarks, software, customer relationships, databases, and distribution systems. Compared to physical or tangible assets (e.g., property, plants, and equipment), intangible assets tend to be more difficult to identify, separate, utilize, and value. Their value is more sensitive to who owns and employs them. Intangibles have become increasingly important determinants of firm value in recent years (Hall 2001).

Because intangible assets lack physical characteristics, they are easily manipulated by firms and reported in locations with low tax rates. Existing cross-national research validates intangibles as a measure of mobility: Dischinger and Riedel (2011) and Grubert (2003) show that multinational firms use transfer pricing to locate intangible property in countries with low corporate tax rates. This reporting of assets in low-tax countries has prompted concerns about the erosion of national tax bases (Arel-Bundock 2017; Desai, Foley, and Hines 2006).

To capture the importance that politicians attach to financial performance, we first use log financial capitalization of listed domestic companies from the World Bank World Federation of Exchanges (WFE) database.[12] When capitalization increases, financial performance has a larger impact on the economy, securities are owned by more people, and stock market performance is more likely to be used as an indicator of political performance. We corroborate our main results below using pension fund assets, stock market turnover, and the presence of a sovereign wealth fund. We also assess whether the effects differ in democracies, where theories of economic voting and dispersed political influence apply.

To evaluate the theory, we estimate linear regression models. We employ robust standard errors, clustered by subsidiary firm.[13] All models include year fixed effects to control for time trends and shared annual shocks. We introduce firm-level controls for the value of each firm's total assets and the number of employees (both log; also from Betz, Pond, and Yin 2018). We also control for the country's Polity score (Marshall, Jaggers, and Gurr 2017), log gross domestic product (GDP), log GDP per capita, and GDP growth (World Bank national accounts data).

We cannot rule out that firms report their intangible assets in low-tax countries. Indeed, it is plausible that firms locate in jurisdictions with low tax rates and with access to a substantial financial market, allowing them to more easily borrow. However, the theory predicts the opposite association: In countries with developed financial markets, we expect to observe higher taxation of firms with more mobile or intangible assets. There is also evidence from the United States that firms seldom move their assets to escape state tax increases (Asker, Farre-Mensa, and Ljungqvist 2015; Heider and Ljungqvist 2015).

Nevertheless, we are concerned about alternative motivations for asset location. Following Jensen, Quinn, and Weymouth (2015), we include a dummy variable for the tax haven and banking center countries identified by Gravelle (2015). We also discuss results below when instrumenting for capitalization (reported in the SI, p. 14), which is itself endogenous to the quality of institutions and thus related to tax policy and state capacity.

Descriptive statistics for the variables are reported in the SI (p. 3). Table 1 reports the main regression results. The dependent variable is log taxes paid. Column 2 adds the set of controls discussed above. Column 3 adds industry fixed effects at the four-digit level to account for industry-specific attributes.[14] Column 4 includes country fixed effects to account for time-invariant country effects, which also helps alleviate concerns about the importance of tax havens. Column 5 includes both country and industry fixed effects. Column 6 adds a lagged dependent variable to account for time dependence.[15]

Intangible assets are negatively correlated with tax revenue in all models when financial capitalization is low. As capitalization increases, however, the results become weaker and the effects are reversed at very high levels of capitalization. Intangibles (mobile assets) are associated with a reduction in taxes paid, until capitalization reaches

[12]The WFE generally excludes foreign companies, but they may be included if they list on only one exchange (regardless of national origin).

[13]Clustering standard errors by country does not alter significance (not reported).

[14]Industry codes are listed in the SI (pp. 4–5). The fixed effects are NACE four-digit Rev. 2 company codes. This level of disaggregation identifies items like "Manufacture of Motor Vehicles" (2910, the category for many General Motors Company subsidiaries) and "Retail sale in non-specialised stores with food, beverages or tobacco predominating" (4719, the category for many Walmart subsidiaries).

[15]The panel is somewhat short (2007 to 2016), so the inclusion of country fixed effects and the lagged dependent variable raises concerns about Nickell bias. The results in column 6 remain similar when the fixed effects are excluded.

TABLE 1 Cross-National Results, Log Taxes Paid

	(1)	(2)	(3)	(4)	(5)	(6)
log Intangible Assets	−0.121***	−0.207***	−0.154***	−0.220***	−0.193***	−0.056***
	(0.014)	(0.024)	(0.023)	(0.026)	(0.025)	(0.011)
log Intangible Assets	0.013***	0.014***	0.008***	0.016***	0.012***	0.003***
× log Capitalization	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)
log Capitalization	−0.113***	−0.146***	−0.113***	−0.201***	−0.169***	−0.053***
	(0.011)	(0.025)	(0.024)	(0.032)	(0.032)	(0.020)
log Total Assets	0.871***	0.695***	0.850***	0.676***	0.828***	0.275***
	(0.006)	(0.007)	(0.008)	(0.007)	(0.009)	(0.005)
log Number of Employees		0.322***	0.201***	0.321***	0.207***	0.062***
		(0.006)	(0.007)	(0.006)	(0.007)	(0.003)
Tax Haven		0.011	0.035	−2.280***	−1.555***	−1.549***
		(0.037)	(0.037)	(0.474)	(0.471)	(0.369)
Polity		0.040***	0.036***	0.066***	0.065***	0.060***
		(0.003)	(0.003)	(0.008)	(0.008)	(0.007)
log GDP		0.033	0.075***	−0.530**	−0.403	−0.686***
		(0.021)	(0.020)	(0.264)	(0.261)	(0.206)
log GDP per Capita		−0.098***	−0.081***	0.432	0.327	0.690***
		(0.015)	(0.013)	(0.276)	(0.272)	(0.218)
GDP Growth		−0.011***	−0.003	0.004**	0.006***	0.013***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Lag log Income Taxes						0.661***
						(0.004)
Constant	−1.345***	0.013	−1.451***	4.418***	2.456**	2.387***
	(0.179)	(0.318)	(0.311)	(0.993)	(0.980)	(0.727)
Observations	259,387	221,870	221,868	221,870	221,868	180,095
Adjusted R^2	0.630	0.675	0.731	0.680	0.734	0.861
Year Fixed Effects	yes	yes	yes	yes	yes	yes
Industry Fixed Effects	no	no	yes	no	yes	yes
Country Fixed Effects	no	no	no	yes	yes	yes
Lagged Dependent Variable	no	no	no	no	no	yes

Note: Robust standard errors are in parentheses, clustered by subsidiary company.
* $p < .10$; ** $p < .05$; *** $p < .01$.

14.4 (achieving significance at 15.0).[16] More precisely, a 10% increase in intangibles is associated with an almost 2% reduction (1.94% reduction) in taxes paid when log financial capitalization is 0.14, which is its minimum value in the sample. At high levels of capitalization, the effect of intangibles becomes positive. A 10% increase in intangibles is associated with a three-tenths of 1% increase (0.31% increase) in taxation when log capitalization is held at its maximum of 17.1.[17]

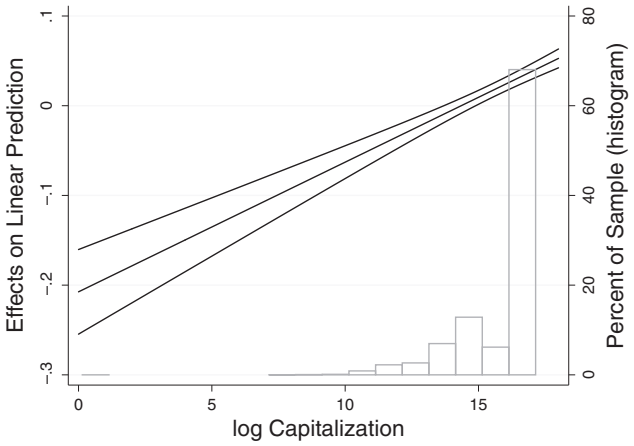
[16]China and the United Kingdom are just above 15, whereas Canada, France, Germany, and Hong Kong are just below 15. Japan begins with capitalization above 15, drops below 15 in 2008, and again rises above 15.

[17]This value appears regularly in the sample, as many subsidiary firms are located in the United States.

Figure 1 displays the marginal effect of intangibility at different values of capitalization (reported on the left axis), and the density of capitalization (right axis).[18] Note that the distribution of firms is concentrated in high-capitalization countries, although there are observations from the full range depicted in the figure. Firms often create subsidiaries to meet demand in large markets (horizontal integration) or to benefit from low-cost financing. In the SI (pp. 6–8), we report that the results are robust to dropping observations with log capitalization less than 5, which occur infrequently, and to measuring capitalization as capitalization divided by GDP.

[18]The marginal effects plot of capitalization at different values of intangibility is in the SI (p. 6).

FIGURE 1 Marginal Effect of Intangible Assets in the Cross-National Sample



Note: The figure is calculated from column 2 of Table 1.

The results are consistent with the theory presented here. More intangible or mobile assets typically reduce taxes; however, when capitalization increases, this relationship changes, as politicians must concern themselves with the reduction in financial performance when taxes are imposed on firms with immobile assets. This reduces the tax bias against immobile firms.

In Table 2, we add a set of additional controls to account for alternative explanations. Countries differ in their reliance on domestic financial markets to raise financing. Firms may borrow from banks (Gourevitch and Shinn 2005) or seek foreign partners for financing. We control for the share of bank deposits to GDP (from the Global Financial Development Database [GFDD]) and for log foreign direct investment (from the balance of payment statistics and the World Bank's World Development Indicators [WDI]). Because countries may substitute corporate tax revenue for income tax revenue, we also control for the highest marginal individual income tax rate (from the Organisation for Economic Co-operation and Development). The results are robust to the inclusion of these control variables.

To alleviate concern about the effects of extreme values, we also apply the Winsor method to the log Taxes Paid, log Intangible Assets, and log Capitalization variables, replacing the highest and lowest 2% of the observations with the next value counting inward from the extremes. We additionally drop observations where the subsidiary is engaged in financial or insurance activities (based on the NACE section code). We also limit the sample to OECD countries, as some non-OECD countries lack meaningful financial markets. As reported in the SI (p. 9), the results are robust to the Winsorization of the variables, the elimination of financial service companies, and the sample restriction to OECD countries.

Alternative Measures of Political Importance

In the main analysis, we used capitalization as a proxy for the political importance of financial performance. However, countries may have substantial capitalization if foreign investors enter to take advantage of domestic financing or to benefit from the legitimacy and transparency afforded by listing on a foreign exchange (Coffee 2002). Politicians may not be concerned about the performance of these foreign firms and may not be able to tax their underlying businesses. In these cases, capitalization is an inappropriate measure of the political importance of financial performance.

In this section, we draw on pension fund assets, stock market turnover, and the presence of a sovereign wealth fund as alternative measures of the political importance of the financial market.[19] We also consider whether the results differ under democratic and nondemocratic institutions. We expect financial performance to be politically relevant when the financial market has broad-based public participation and institutions are responsive to public interests (e.g., under democratic institutions). Pension fund assets as a share of GDP (from GFDD)[20] capture the relevance of financial performance to the public. When pensions are traded on stock markets, pensioners may punish politicians for financial contractions. Stock market turnover provides another measure of financial development and economic importance (from the GFDD).

Ownership of a sovereign wealth fund that is invested on financial markets would also increase the government's attentiveness to financial performance. We code a dummy variable, 1 for countries that have a sovereign wealth fund invested in financial markets and 0 otherwise; we use the list from the Sovereign Wealth Center.[21] Because the management of sovereign wealth funds differs across countries and may be associated with governance, we introduce controls for rule of law (from Freedom House), property rights (from the Heritage Foundation), and quality of governance (from the International Country Risk Guide)

[19]The results are similar when using log Total Household Financial Assets from the OECD Household Financial Assets Database (reported in the SI, p. 12).

[20]Results are similar using data from the OECD, but the GFDD coverage is slightly better.

[21]The list is available here: https://www.sovereignwealthcenter.com/fund-profiles.html.

TABLE 2 Cross-National Results, Controlling for Financing and Personal Income Tax

	(1)	(2)	(3)	(4)	(5)	(6)
log Intangible Assets	−0.208***	−0.056***	−0.188***	−0.058***	−0.207***	−0.066***
	(0.025)	(0.011)	(0.026)	(0.011)	(0.027)	(0.012)
log Intangible Assets	0.013***	0.003***	0.012***	0.003***	0.013***	0.004***
× log Capitalization	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
log Capitalization	−0.196***	−0.064***	−0.161***	−0.041**	−0.181***	−0.104***
	(0.032)	(0.021)	(0.033)	(0.020)	(0.035)	(0.022)
log Total Assets	0.829***	0.275***	0.830***	0.280***	0.828***	0.275***
	(0.009)	(0.005)	(0.009)	(0.005)	(0.009)	(0.005)
log Number of Employees	0.209***	0.063***	0.200***	0.059***	0.209***	0.064***
	(0.007)	(0.003)	(0.007)	(0.003)	(0.007)	(0.003)
log FDI	0.014***	0.020***				
	(0.004)	(0.004)				
Bank Deposits to GDP			0.005***	0.003***		
			(0.000)	(0.000)		
Top Personal Income Tax Rate					−0.001	−0.002**
					(0.001)	(0.001)
Tax Haven	−1.561***	−1.991***	−0.064	−0.890**	−0.650**	−1.296***
	(0.487)	(0.383)	(0.508)	(0.405)	(0.311)	(0.247)
Polity	0.062***	0.057***	0.056***	0.057***	0.052***	0.058***
	(0.008)	(0.007)	(0.008)	(0.007)	(0.009)	(0.007)
log GDP	−0.451*	−0.947***	0.675**	−0.116	−0.272	−1.106***
	(0.268)	(0.213)	(0.287)	(0.227)	(0.288)	(0.231)
log GDP per capita	0.375	0.957***	−0.907***	0.061	−0.005	1.103***
	(0.281)	(0.227)	(0.303)	(0.245)	(0.303)	(0.252)
GDP growth	0.007***	0.014***	0.014***	0.016***	0.009***	0.009***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Lag log Income Taxes		0.661***		0.659***		0.659***
		(0.004)		(0.004)		(0.004)
Constant	2.646***	2.966***	−0.101	0.627	3.894***	3.896***
	(0.989)	(0.745)	(1.040)	(0.767)	(0.967)	(0.634)
Observations	218,450	176,895	212,842	174,502	214,396	173,689
Adjusted R^2	0.734	0.861	0.734	0.861	0.736	0.862
Year Fixed Effects	yes	yes	yes	yes	yes	yes
Industry Fixed Effects	yes	yes	yes	yes	yes	yes
Country Fixed Effects	yes	yes	yes	yes	yes	yes
Lagged Dependent Variable	no	yes	no	yes	no	yes

Note: Robust standard errors are in parentheses, clustered by subsidiary company.
*p< .10; **p< .05; ***p< .01.

in the SI (p. 10) with the data available through Dahlberg et al. (2019). The controls do not alter the baseline results.

We also assess whether the effect of each financial indicator—capitalization, pension assets, turnover, and sovereign wealth funds—differs in democracies and autocracies. We interact our variables of interest with a dummy variable for democracy to assess whether these effects are conditional on political institutions. For ease of interpreting the triple interaction term and following the extant literature, democracy is coded 1 when the country has a Polity score of 7 or above and coded 0 otherwise.

Table 3 reports regression results using these alternative measures of the political importance of the financial market. The triple interaction results are reported in the SI (p. 11). Figure 2 presents the marginal effects of intangibles in democracies and nondemocracies. The figure

TABLE 3 Alternative Measures of the Political Importance of Financial Performance

	(1)	(2)	(3)	(4)	(5)	(6)
log Intangible Assets	−0.042***	−0.014***	−0.047***	−0.015***	−0.043***	−0.014***
	(0.006)	(0.002)	(0.006)	(0.003)	(0.006)	(0.002)
log Intangible Assets	0.038***	0.012***				
× Pension Fund Assets to GDP	(0.005)	(0.002)				
Pension Fund Assets to GDP	−0.889***	−0.506***				
	(0.072)	(0.043)				
log Intangible Assets			0.021***	0.006***		
× Stock Market Turnover to GDP			(0.003)	(0.001)		
Stock Market Turnover to GDP			−0.199***	−0.045***		
			(0.034)	(0.017)		
log Intangible Assets					0.046***	0.014***
× Sovereign Wealth Fund					(0.005)	(0.002)
Sovereign Wealth Fund					0.021	0.973**
					(0.510)	(0.385)
log Total Assets	0.814***	0.271***	0.830***	0.277***	0.817***	0.272***
	(0.008)	(0.005)	(0.009)	(0.005)	(0.008)	(0.005)
log Number of Employees	0.217***	0.063***	0.210***	0.061***	0.215***	0.062***
	(0.007)	(0.003)	(0.007)	(0.003)	(0.007)	(0.003)
Tax Haven	−0.497*	0.188	−1.827***	−1.329***	−2.421***	−1.557***
	(0.291)	(0.256)	(0.449)	(0.361)	(0.448)	(0.352)
Polity	0.052***	0.042***	0.065***	0.060***	0.054***	0.046***
	(0.007)	(0.006)	(0.009)	(0.007)	(0.007)	(0.006)
log GDP	−0.120	0.232	−0.377	−0.545***	−0.743***	−0.704***
	(0.270)	(0.239)	(0.256)	(0.204)	(0.256)	(0.198)
log GDP per Capita	0.081	−0.262	0.339	0.524**	0.715***	0.677***
	(0.280)	(0.249)	(0.266)	(0.214)	(0.265)	(0.208)
GDP Growth	0.006***	0.011***	0.008***	0.013***	0.005***	0.011***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Lag log Income Taxes		0.663***		0.662***		0.662***
		(0.004)		(0.004)		(0.004)
Constant	−1.203	−1.051	−0.085	1.385*	1.337	2.197***
	(0.813)	(0.680)	(0.930)	(0.710)	(0.932)	(0.679)
Observations	249,454	204,157	233,570	189,889	250,107	204,677
Adjusted R^2	0.740	0.865	0.739	0.864	0.740	0.865
Year Fixed Effects	yes	yes	yes	yes	yes	yes
Industry Fixed Effects	yes	yes	yes	yes	yes	yes
Country Fixed Effects	yes	yes	yes	yes	yes	yes
Lagged Dependent Variable	no	yes	no	yes	no	yes

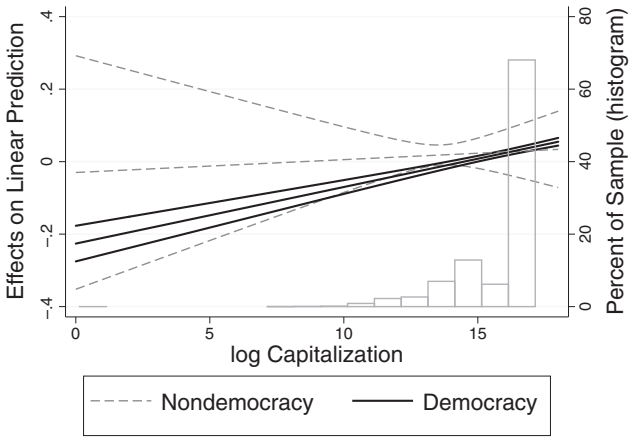
Note: Robust standard errors are in parentheses, clustered by subsidiary company.
*p< .10; **p< .05; ***p< .01.

demonstrates that the evidence is much stronger under democratic institutions; in nondemocracies, the relationship between intangibility and taxation is statistically indistinguishable from zero for all values of capitalization. The results are similar, holding only in democracy, for all measures of the political importance of the financial market. This is plausibly because economic voting and citizen influence apply more directly under democratic institutions.

Alternative Measures of Taxation

In the main models, we measure taxation at the firm level. This measurement strategy captures firm-specific

FIGURE 2 Marginal Effect of Intangible Assets by Political Institutions



tax incentives, which likely reflect bargaining power. In the SI, we confirm the main results drawing on legal corporate tax rates (from KPMG)[22] and on effective tax rates at the country-year level (from WDI; SI, p. 13). The magnitude of the results is much smaller, most likely because these measures capture the aggregate effects of all firms, but the sign is consistent with the theory.

Endogenous Capitalization

In the main models, we draw on capitalization to measure the political importance of financial performance. However, capitalization is likely endogenous to some of the same factors that cause taxation, in particular state capacity and democratic institutions, which often guarantee property rights and encourage market competition (Gourevitch and Shinn 2005; La Porta et al. 2000; North 1990; Rajan and Zingales 2003; Roe 1996; Pagano and Volpin 2005). In an attempt to account for these factors, we control for GDP per capita and the Polity score in the empirical models. In this section, we instrument for capitalization using the U.S. federal funds rate.

U.S. interest rates affect the availability of capital across countries (Ballard-Rosa, Mosley, and Wellhausen forthcoming; Betz and Kerner 2016). When U.S. interest rates are high, investors purchase more U.S. treasury bonds, and less capital is available for private firms. We expect U.S. interest rates to be negatively associated with capitalization, as lower interest rates facilitate the growth of financial markets. For interest rates to be an appropriate instrument, they must be associated with taxation *only* through their impact on capitalization. This restriction is violated if the U.S. interest rate and each country's taxation are set to respond to the same economic conditions. This concern is alleviated somewhat, as tax policies change infrequently. We also control for the growth rate, and we introduce a linear time trend into the instrumental variables specification to account for economic fundamentals.[23]

In the instrumental variable specification, we use the U.S. Federal Funds Rate and the Federal Funds Rate × log Intangibles as instruments for log Capitalization and log Capitalization × log Intangibles. All models from Table 1 are reported using the instrumental variables specification in the SI (p. 14). The results are consistent with the theory in most specifications.[24]

Causal Mechanism

We here corroborate the mechanism identified in Proposition 1: The returns to firms with immobile underlying assets are more responsive to tax increases than the returns to firms with mobile underlying assets. This is because the profits to firms with immobile underlying assets cannot easily be withheld from taxation.

We draw on data from the United States. The United States is an attractive market for our analysis because it is the deepest financial market in the world; it has substantial private citizen ownership of securities and democratic institutions. Extant studies have also demonstrated the effect of financialization on citizen preferences and on regulation in the United States, which is perceived to be "the archetypal financialized economy" (Pagliari, Phillips, and Young forthcoming, 7; Witko 2016, 349).

We use variation in state corporate tax policies within the United States to estimate the impact of tax increases on stock market returns. Because state tax laws are numerous and affect a subset of companies at a time, they allow us to compare the contemporaneous performance of companies affected by a tax increase to those not affected by a tax increase—for firms with differing levels of mobility. Research has demonstrated the economic effects of state taxation, for example, on business location (Bartik 1985), borrowing decisions (Heider and Ljungqvist 2015), and labor markets (Serrato and Zidar 2016), but it has not

[22] See https://home.kpmg/vg/en/home/services/tax1/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html.

[23] Because the interest rate variable is shared across countries and is recorded on a yearly basis, year fixed effects must be dropped from the model.

[24] In the lagged dependent variable specification, the results flip signs. This specification may be inappropriate, as the federal funds rate remains low between 2007 and 2016.

to our knowledge assessed differential impacts on returns depending on asset mobility.

The data for this study are taken from two primary sources; the University of Chicago's Center for Research in Security Prices (CRSP) monthly file of all U.S. companies traded on the NYSE, AMEX, or Nasdaq between 1989 and 2011, and Standard & Poor's COMPUSTAT quarterly and annual file. We include only common stocks and exclude financial firms, public sector entities, and non-U.S. firms. We use monthly stock returns, excluding dividends to measure the performance of a company before and after a tax change. Returns are calculated as deviations from the stock price in the previous month: (Stock Price$_t$ − Stock Price$_{t-1}$)/Stock Price$_{t-1}$. As before, logged intangible assets from balance sheets measure mobility. We control for firm size (proxied by total assets and market capitalization: Shares Outstanding × Stock Price); and we employ state, year, and industry fixed effects. Our standard errors are clustered by firm.

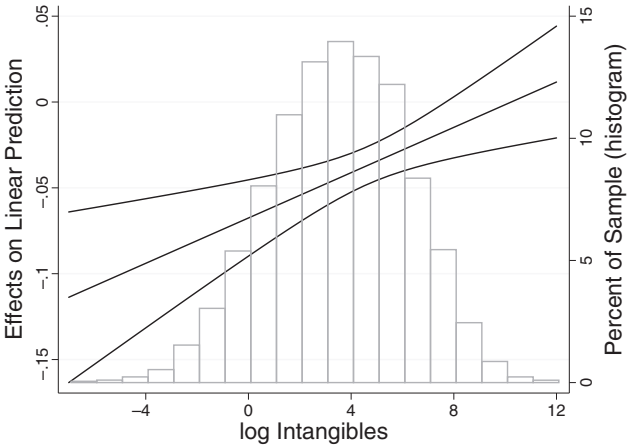
We identify state tax increases using the data set of 43 annual state tax increases between 1989 and 2011 compiled by Heider and Ljungqvist (2015).[25] We complement their data collection by hand-coding the month that the tax increase became law—typically the month that the state governor signed the bill into law. The law often does not go into effect until the subsequent year, but we expect financial markets to respond to new information quickly. We create a dummy variable equal to 1 for firms located in a state with a tax increase.[26] We use the firm's headquarter location to determine which firms are affected by tax increases.[27] Our results are based on a subsample of 28 state tax increases, which affect 2,150 companies.[28] There is no significant clustering of tax changes by periods or states. We report all tax increases in the SI (p. 17).

Using a difference-in-differences approach, we compare the performance of companies in states that increased the corporate tax rate before and after the tax increase to the performance of companies in states that did not increase the corporate tax rate over the same time period. This research design allows us to treat companies within states that are not affected by tax increases as a set of counterfactuals. We also allow for heterogeneous treatment effects depending on each firm's level of asset mobility, as we expect the performance of firms with immobile assets to suffer more when taxes are increased.

There are two identifying assumptions in the difference-in-differences setup. Companies in states that are and are not affected by tax increases should have parallel trends prior to and after the tax increase. Our tests show that in the month prior to a tax increase, the monthly returns to companies headquartered in states with an upcoming tax change are statistically indistinguishable from the returns to companies headquartered in non-tax-affected states (SI, pp. 19–20).

Table 4 reports the estimates from the analysis: Companies affected by a tax increase have lower returns relative to those not affected. Specifically, the monthly stock returns to companies affected by a tax increase are 5.6% lower when log intangibles is held at its mean. This is both statistically and economically a significant decrease. Consistent with Proposition 1, the effect of the tax increase is moderated by the presence of intangible assets: A 1% increase in capital mobility (as measured by intangible assets), improves monthly returns by about 0.6%. For firms with many intangible assets, there is no statistically significant negative effect of a tax increase. Figure 3 displays the marginal effect of a tax increase at different values of log intangibles (left axis), as well as the distribution of log intangibility (right axis).

FIGURE 3 Marginal Effect of a Tax Increase on Returns in U.S. States



Note: The figure is calculated from column 4 of Table 4.

[25]Although Heider and Ljungqvist (2015) code both increases and decreases, we do not have strong theoretical expectations for decreases. Decreases might be associated with higher returns, but managers might also fear future increases (if the other political party is elected or revenue concerns dominate).

[26]We cannot use a continuous measure of tax increases, as the magnitudes are not comparable. Although many increase the top corporate rate (e.g., in Maryland in 2008), others introduce the corporate tax (Michigan 2008) or alter the surcharge on tax liabilities (North Carolina 2009).

[27]COMPUSTAT's headquarter location data are inaccurate; we extract the historic headquarter state from regulatory filings following guidance from Heider and Ljungqvist (2015).

[28]We were unable to locate legal dates for Rhode Island, Connecticut, Oklahoma, Missouri, Kansas, and Washington, DC, during the early years of the sample.

TABLE 4 Baseline Tax Effect on Monthly Stock Returns in U.S. Sample

	(1)	(2)	(3)	(4)	(5)
Post Tax × Tax Increase	−0.075***	−0.074***	−0.071***	−0.068***	−0.066***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Post Tax × Tax Increase × log Intangibles	0.006***	0.006***	0.007***	0.007***	0.006***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Post Tax	0.001	0.001	0.004**	−0.001	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Tax Increase	−0.011	−0.011	0.034***	0.034***	0.033***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
log Intangibles	0.002***	−0.005***	−0.005***	−0.006***	−0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Post Tax × log Intangibles	−0.003***	−0.003***	−0.002***	−0.002***	−0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tax Increase × log Intangibles	0.000	0.000	−0.004***	−0.004***	−0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
log Size		0.011***	0.011***	0.011***	0.011***
		(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.010***	−0.101***	−0.107***	−0.105***	−0.104**
	(0.001)	(0.004)	(0.005)	(0.013)	(0.041)
Observations	108,422	108,422	108,422	76,159	74,834
Adjusted R^2	0.004	0.014	0.086	0.103	0.103
Year Fixed Effects	no	no	yes	yes	yes
Industry Fixed Effects	no	no	no	yes	yes
State Fixed Effects	no	no	no	no	yes

Note: Robust standard errors are in parentheses, clustered by firm. Columns 3, 4, and 5 include year fixed effects; columns 4 and 5 include industry fixed effects; column 5 includes state fixed effects.
*p < .10; **p < .05; ***p < .01.

One challenge with this research design is that financial markets move when it becomes clear that the tax law will change. Although we hand-collected the exact month that the tax increase was signed into law, we cannot ascertain exactly when the increase became known to the market. Our pretax increase months may not actually capture periods prior to a market reaction, and the overall results plausibly underestimate the impact of the tax increase. To check the robustness of our results to this issue, we confirm our results using annual data (reported in the SI, p. 18). We consider the year prior to a tax increase as the preperiod and the year of the tax increase as the treatment period; this analysis utilizes the full set of 43 tax increases from Heider and Ljungqvist (2015).

Conclusion

We argue here that firms with more immobile assets lose more value from tax increases than firms with more mobile assets. This is because the cost of hiding immobile assets from tax authorities is higher than the cost of hiding mobile assets. When politicians care about the value of financial securities, they are constrained to select lower tax rates, particularly on publicly traded firms with immobile assets.

We present evidence that is consistent with both facets of the theory. Drawing on two firm-level data sets and using intangibility as a measure of asset mobility, we show that firms with more intangible assets pay less taxes. A country's financial capitalization, however, moderates this effect. In other words, intangibility reduces taxes cross-nationally, but the effect decreases in magnitude and is eventually reversed in some models as capitalization increases. We also present evidence that publicly traded U.S. firms with more intangible assets lose less value from corporate tax increases in U.S. states.

These results are consistent with the idea that the returns to firms with more immobile assets are more responsive to tax increases. This responsiveness constrains

politicians, encouraging them to levy more moderate taxes, particularly on publicly traded firms with immobile assets, but only when they value the performance of stock markets. Stock markets achieve national significance when citizens own financial securities and political institutions are democratic.

The findings have broad implications across numerous areas of research. Scholars have begun theorizing about the implications of financial markets for democratization; they largely maintain that financial development makes assets more mobile, reducing tax rates and similarly reducing the cost of democratization for the authoritarian elite (Acemoglu and Robinson 2006; Freeman and Quinn 2012; Pond 2018). We show here that financial development ameliorates taxation of firms with immobile assets and may encourage politicians to shift taxation toward mobile assets.

The study also highlights that financial performance may provide a useful heuristic for economic voting. The use of financial performance as a heuristic however is not without consequence: If financial performance is used to assess overall economic performance, then politicians are likely to implement policies that foster financial growth. Because the largest shareholders also tend to be wealthy individuals, economic voting based on financial performance may exacerbate wealth inequality. This is perhaps an unintended consequence of the growing emphasis on financial indicators in political campaigns.

There is a further distributional consequence of financial development; if valuations are more responsive to taxation of immobile assets and mobile assets may be moved abroad or simply reported elsewhere, financial development could undermine key parts of the tax base. This could redirect revenue generation toward wage taxation or complicate attempts at progressive taxation.

The article also points to a new incentive for firms to go public: If the owners of a firm are concerned about government taxation, particularly when the firm owns substantial immobile assets, they may issue stocks. Going public allows firm owners to diversify their investments and to generate a group of dispersed political allies. Shareholders will concern themselves with the firm's performance and discourage the government from implementing costly policies, such as applying high taxes to their underlying business. If politicians value financial performance, they will defer from implementing costly policies, especially on publicly traded firms with immobile assets.

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Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Model Appendix
Appendix: Cross-National Results
Appendix: U.S. Results