Mostly Good Robin Hood: Impact of Financial Transaction Tax on Corporate Investment

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Abstract

I exploit the 2012 French introduction of a financial transaction tax (FTT) levied on stock purchases to examine its impact on corporate investment. Investment may decrease due to the increased cost of capital. The FTT, however, may encourage investment by reducing short-termism. I find an overall positive effect of the FTT on corporate investments. I also find that the FTT causes a shift from short-term to long-term ownership, an improvement in investment sensitivity to changes in growth opportunities, and an increase in likelihood and quality of acquisitions. These results are in line with the prediction that the FTT encourages investment by inducing long-term ownership and alleviating short-termism.

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"[T]ax on all transactions might prove the most serviceable reform available with a view to mitigating the predominance of speculation over enterprise... [But] if individual purchases of investments were rendered illiquid, this might seriously impede new investment... This is the dilemma." – Keynes (1936).

1 Introduction

Since the 2008 crisis, financial transaction taxes (FTTs), also known as Robin Hood taxes, have received substantial attention, especially in the European Union (EU) and G20 countries. Under the ongoing Covid-19 crisis, several US senators have called for Congress to impose a FTT but faced oppositions from the majority of Americans.[1] FTTs, the levies on financial transactions such as trades in securities,[2] are deemed to stabilize the financial markets by curbing speculative trading (Stiglitz, 1989), lessen short-termism (Summers and Summers, 1989), and generate revenues that could be used to fund public services and compensate for the damage from the financial crisis (Hemmelgarn and Nicodeme, 2012). Opponents are, however, concerned about the adverse effects that FTTs could have on financial market quality (Kupiec, 1996; Song and Zhang, 2005) or real economic variables such as costs of capital and firm investments (Lendvai et al., 2012). These opposing views have sparked a debate within the EU and contributed to the failure to obtain a unanimous agreement on a proposal for an EU-wide FTT. Among ten supporting Member States that are continuing negotiations, France and Italy introduced their own national FTTs in 2012 and 2013, respectively. These differential policy changes provide an ideal setting to study effects of FTTs on firms and financial markets. The purpose of this paper is to investigate the impact of FTTs on corporate investment.

It is not obvious how FTTs affect corporate investment. On the one hand, FTTs can cause a reduction in corporate investments by increasing the cost of capital. The cost of capital rises because investors require higher rates of return to compensate for (1) some amount of taxes they have to pay and (2) higher implicit transaction costs such as lower liquidity (Umlauf, 1993; Lendvai et al., 2012; Fraichot, 2017). On the other hand, the FTT can help increase investments by alleviating short-termism. Literature has shown that the overemphasis on short-term earnings and stock prices causes underinvestment (e.g Stein, 1989; Graham et al., 2005; Asker et al., 2015; Edmans et al., 2017a). As FTTs penalize short-term trading and induce long-term ownership, this short-termism and the resulting underinvestment problem can be mitigated (Stiglitz, 1989; Summers and Summers, 1989; Colliard and Hoffmann, 2017).[3]

[1] See https://www.uschamber.com/series/above-the-fold/63-of-americans-oppose-financial-transaction-tax

[2] Like value-added taxes, FTTs are imposed at the time of a transaction and based on the value of transaction, i.e. market value of the securities. Schwert and Seguin (1993), Matheson (2011) and Hemmelgarn et al. (2016) provide surveys on this topic.

[3] Many financial industry professionals share this view. Warrent Buffet, for example, believes that "quarterly earnings guidance often leads to an unhealthy focus on short-term profits" and "contributes to a shift away from long-term investments". He publicly supports the FTT and other measures that encourage long-term focus among investors. See https://www.wsj.com/articles/short-termism-is-harming-the-economy-1528336801.

I test these opposing predictions using the French FTT introduction in 2012.[4] Purchases of stocks of French listed firms with capitalization above one billion EUR are subject to the FTT. Using a generalized difference-in-differences (DiD) approach, I find that compared with unaffected firms, firms with stocks subject to this tax increase their investments by 0.8-1.0 percentage points of total assets after being affected by the FTT, corresponding to 7-9% of average investments. I find a similar positive effect of the Italian FTT on corporate investments but no similar effect in other comparable Eurozone economies without FTTs. The positive aggregate effect is largely driven by financially unconstrained firms and investments do not decrease even among constrained firms. These results suggest that the negative effect of increased costs of capital is rather weak and dominated by the positive effect of allevidated short-termism.

Indeed, I find evidence supporting the alleviated short-termism channel. First of all, this mechanism relies on the assumption that the FTT can curb short-term traders, inducing long-term ownership. Therefore, I first test this assumed premise by analysing fund ownership. Consistent with investor portfolio-level evidence in Colliard and Hoffmann (2017), I find an increase in long-term ownership in treated firms after the FTT imposition compared with control firms.

Secondly, short-termism theory suggests that a myopic manager or a manager under short-termist pressure would forgo positive NPV projects, leading to lower investment levels and lower sensitivity to changes in investment opportunities (Asker et al., 2015). Therefore, if the FTT affects corporate investment behavior through alleviating short-termism, we should observe an increase not only in investment levels as documented above but also in investment sensitivity to changes in growth opportunities. I find that treated firms, particularly those with a significant increase in long-term ownership, improve their investment sensitivity.

Based on my previous findings, a natural question to ask is whether the increased investments are value-enhancing or value-destroying. If the FTT increases investments through the beneficial role of long-term investors, we should observe increases in shareholder value. However, the increased investments can be value-destroying if the FTT results in lower liquidity and higher transaction costs, which in turn harm blockholder governance and give room for managerial empire-building (Edmans, 2009; Admati and Pfleiderer, 2009). I investigate this possibility by looking at acquisition activities since managers who have empire-building preferences tend to overinvest and be attracted to acquisitions (Amihud and Lev, 1981; Stein, 2003). Acquisitions are also one of the biggest corporate investments, examining effects of the FTT on acquisition activities is thus in itself interesting. I find that treated firms are more likely to make acquisitions without detriment to the deals' quality. In particular, treated firms with a significant increase in long-term ownership even make better deals. These results are in line with the alleviated short-termism explanation rather than the empire building one.

[4] I choose the French FTT over the Italian one for main analyses because of data availability among other merits discussed in Section 3. Robustness tests using the Italian FTT are discussed in 4.2.

Finally, I look for further evidence that the FTT relieves short-termism by exploring other corporate behaviors that are linked to short-termism. The use of simple earnings matrices by financial markets, especially short-term investors, in evaluating managers' performance puts pressure on managers to manipulate earnings and meet targets. I find that treated firms reduce earnings management and are less likely to beat earnings targets by tiny margins, consistent with less earnings pressure from short-term investors.

This paper contributes to the literature on the costs and benefits of financial transaction taxes. Existing empirical work mainly focuses on the negative effects of FTTs on financial market quality (Becchetti et al., 2014; Colliard and Hoffmann, 2017) and costs of capital (Umlauf, 1993; Fraichot, 2017). I contribute by showing that the negative effect of the increased cost of capital on investment can be offset by a positive effect. Indeed, built on previous evidence that FTTs cause a shift from short-term to long-term investors (Colliard and Hoffmann, 2017) and reduce price volatility caused by noise traders (Deng et al., 2018), I document evidence that FTTs mitigate short-termism and orientate firms towards long-term value created through more and better investments. The findings are informative to the discussion in many countries on the FTT design and introduction.

I also add to the literature on short-termism. Existing studies have documented evidence on the widespread of short-termism in the US (Graham et al., 2005; Asker et al., 2015; Edmans et al., 2017a). I examine the issue from a "corrective measure" angle in EU countries. Using international data, He et al. (2020) show that rewarding longer-term ownership through lower long-term capital gains taxes results in an increase in innovation. My paper differ in that I study financial transaction taxes and their effects on corporate investments.

This paper complements the literature on the impact of investor horizon on corporate decisions. There is evidence that short-term investors are associated with pressure to cut research and development expenditures to boost earnings (Bushee, 1998) and worse merger performance (Gaspar et al., 2005; Chen et al., 2007b). Derrien et al. (2013) find that investor horizons affect investments and corporate policies due to stock mispricing. Harford et al. (2018) study the effects of long-term investors on a set of corporate decisions and address endogeneity using indexing by long-term investors. As the FTT introduction provides an exogenous shock to investor horizon, this paper adds to understanding of causal effects of investor horizon on corporate behaviors.

The rest of this paper is organized as follows. Section 2 discusses the French policy and related literature. Section 3 presents data and empirical strategy. Section 4 and 5 analyze the effect of the FTT on corporate investments and mechanism behind it. Section 6 presents additional analyses and I conclude in Section 7.

2 Institutional context and related literature

2.1 French policy

Being a proponent of imposing the FTT at EU level, France introduced a national FTT of 20 basis points on stock purchases on August 1, 2012 as a pilot program.[5] The purchases are liable for the tax if they result in an actual transfer of share ownership, which means intra-day transactions are not subject to the FTT. Listed firms that are incorporated in France with a market capitalization above one billion EUR at the end of the previous year are subject to this tax during the following year.

The tax applies to trades on all trading platforms, OTC markets, and to all investors, regardless of their country of residence. There are exemptions such as share issuance in the primary market, intra-group transactions, securities financing transactions (e.g. repurchase agreements, securities borrowing and lending agreements), and transactions carried out by market makers or clearing houses and central securities depositories.[6] These exemptions are in place to avoid double taxation or taxing transactions that are not involved in an actual transfer of share ownership.

Apart from this tax on stock purchases, French authorities also introduced two other financial taxes at the same time, namely a tax on naked CDS on bonds issued by governments of EU Member States and a tax on cancelled orders. I believe that the effect of these two taxes does not contaminate my analysis because they do not affect firms directly and their actual impact seems trivial.[7]

In March 2014, the French government passed the Florange Law that gives double voting rights to long-term shareholders unless shareholders specifically voted to opt out. It might be the case that it is this law rather than the FTT triggered changes in behaviors of investors and firms that can explain my findings. I believe that this is very unlikely for several reasons. Firstly, any French listed firm can be affected by this law, hence it fails to explain the changes in firms subject to the FTT compared with the French control group. Secondly, the facts that (i) many firms had already adopted this policy before 2014 and (ii) firms can opt out explain partly the minor change after the law came into force.

[5] On February 2, 2012, media first covered the details of the legislative bill which was approved later on February 29. The tax rate was increased to 30 bps in 2017 with the aim of raising more revenue. See https://www.euractiv.com/section/euro-finance/news/france-strengthens-financial-transaction-tax-to-fund-development/.

[6] For market makers, clearing houses and central depositories, only transactions that are in accordance with their operational functions are exempt. For instance, the exemption covers purchases of securities by a clearing house due to a failed delivery of sales or intermediate transactions in which a market maker buys from a seller and then sells to a buyer. By contrast, there is no exemption if they trade on their own accounts with the aim of seeking profits (AMAFI, 2018).

[7] The revenue from the former was 1 million EUR and the latter did not yield any revenues in 2012, whereas the tax on stock purchases brought in 198 million EUR. The tax on naked sovereign CDS obviously does not apply to firms, hence has no direct impact on them. Had it affected corporate decisions due to changes in investors' behaviors, I expect all firms, not just those whose stocks subject to the FTT, would have been affected. Therefore, changes in behaviors of firms that are subject to the stock purchase tax in relation to firms that are not, if any, are more likely due to the stock purchase tax rather than the CDS tax.

For example, according to Financial Times, among CAC 40 firms, 22 members had double-voting rights before the law, with just 4 additional firms after the law became effective.[8]

2.2 FTT and corporate investment behavior: theoretical framework

The "dilemma" that Keynes (1936) had pointed out initiated the debate over the costs and benefits of the FTT. On the one hand, the FTT may increase the cost of capital and hence impair corporate financing and investment. On the other hand, the tax is argued to curb speculative trading, helping firms focus on long-term performance instead of short-term earnings and stock appreciation.

Specifically, opponents are concerned that the introduction of the FTT can have a negative impact on corporate investments because of the increased cost of capital. Schwert and Seguin (1993) argue that a transaction tax would raise required rates of return, which in turn would have real effects on the economy such as reductions in capital investment and levels of real production. Investors require higher rates of return to compensate for the increased transaction costs including the explicit tax payment and implicit lower liquidity (higher bid-ask spread) (Amihud and Mendelson, 1986). A model by Lendvai et al. (2012) shows that the introduction of the FTT results in a decline in the price of the traded equity and a rise in stock return in the long term, which implies an increase in firms' financing costs, leading to a drop in investment. Empirically, Umlauf (1993) finds a decline in stock prices after the introduction of transaction taxes in Sweden. Fraichot (2017) finds evidence suggesting an increase in corporate cost of capital as a response to the French FTT.

Arguably, marginal investment projects, which could be accepted if their stocks were not taxed, would be turned down as a result of higher required returns that make their NPV negative. This line of argument leads to the prediction that after being affected by the FTT, affected firms invest less relative to unaffected ones.

Proponents, however, argue that FTTs can encourage corporate investments by lengthening the shareholder investment horizon and hence reducing short-termism.[9] Asset pricing models posit two mechanisms through which the FTT can extend shareholder investment horizon. First, as the FTT penalizes short-term investors with frequent trading more than long-term investors, short-term investors will sell some of their holdings in affected assets to long-term investors (Amihud and Mendelson, 1986). Second, investors reduce their trading frequency as a response to higher transaction costs (Constantinides, 1986). In the French market, blue-chip companies are very attractive to Anglo-American funds and short-term

[8] See https://www.ft.com/content/807fe086-5326-11e6-9664-e0bdc13c3bef.

[9] In a perfect world, we have shareholder unanimity, which implies investor horizon does not affect corporate investment because both short-term and long-term investors care about the present value of all future cash flows and managers choose the investment policy that maximizes firm value regardless of the ownership structure of the firm (Froot et al., 1992; Derrien et al., 2013). But when either irrational agents, informationally inefficient markets or agency problem is present, shareholder investment horizon may matter.

impatient investors (Goyer, 2003, 2011). Consistent with this fact and aforementioned theories, Colliard and Hoffmann (2017) find evidence that the French FTT shifts the investor horizon, especially among large liquid stocks. The resulting lengthened shareholder horizon can help alleviate short-termism that comes from both financial market and management as follows.

Regarding the financial market, because short-term investors prefer short-term price appreciation, they pressure managers to pursue myopic goals and forgo long-run investments. Bolton et al. (2006) model shows that speculative trading creates a distortion in CEO compensation in which some shareholders incentivize the CEO to pursue short-termist actions that increase the firm's stock price in the short term (albeit at the expense of long-run fundamental value) in the hope of selling the stock at the increased price. Stein (1989) explicitly shows that when managers act on behalf of not only long-term shareholders but also short-term investors, they put some weight on current stock prices, which creates the incentive to increase current earnings at the expense of long-term investments. According to a survey by Graham et al. (2005), managers of public firms put great emphasis on meeting or beating short-term earnings benchmarks and they are willing to forgo positive NPV projects to boost current earnings. Several empirical studies find that the short-term focus of institutional investors pressures firms to cut investments (e.g. Bushee, 1998; Agarwal et al., 2017). Stiglitz (1989) and Summers and Summers (1989) contend that when FTTs discourage short-term traders who care more about immediate price appreciation or quarterly earnings, managers will be influenced less by this short-termist pressure and focus more on investments.

Under the agency framework, long-term shareholders can play an active role in restraining managers from investing myopically and extracting private benefits at the expense of long-term shareholder value. When managers are concerned about their labor-market reputation, they have incentives to take unobservable actions such as underinvesting in intangible assets or projects that do not yield immediate results to boost short-term earnings (Narayanan, 1985; Stein, 2003). Asker et al. (2015) find that public firms, which arguably suffer more agency problems than private firms, invest substantially less due to short-termism. In early 2000s, large French firms adopted managerial performance incentives without enhancing financial transparency, which might enable managers to undertake strategies to increase short-term stock prices (Goyer, 2003). Summers and Summers (1989) argue that the FTT that ties shareholders to firms may induce them to actively monitor managers since shareholders with longer horizons have naturally lower monitoring cost functions and higher monitoring benefits (Chen et al., 2007b). Therefore, the FTT can potentially lead to more active governance, inducing mangers to behave in longer-term manner.

To summarize, short-termism, which can stem from traders on financial market or myopic managers, causes underinvestment. As the FTT can potentially alleviate short-termism from these sources by relieving some short-termist pressure from financial market and/or improving governance, underinvestment problem will be mitigated and thus investment will increase.

3 Data and empirical strategy

3.1 Data and variables

At the end of each year, French authorities publish a list of listed firms with the capitalization above 1 billion EUR whose stocks are subject to the FTT during the following year. These lists were published by The Ministry of Economy and Finance in 2012, 2013 and 2014, and then by Tax Authorities in subsequent years. There are 109, 114, 128, 134 and 136 affected firms in 2012, 2013, 2014, 2015 and 2016, respectively. This means that there are some new treated firms every year and hence the treatment varies both across firms (i.e. treated vs. untreated firms) and over time (i.e. treated firms become treated in different years).[10] The latter variation is akin to a staggered implementation and helps mitigate the confounding effect of any particular year.

I obtain accounting and financial data of French firms, and Dutch and Luxembourg firms as controls from Compustat Global over the period 2008-2017.[11] I have unbalanced panel data because for some variables there are a number of observations with missing values.

Table A1 in Appendix includes definitions of all variables. I first construct two measures of investment: *Capex* and *R&D*, computed as capital expenditures, and research and development expenses scaled by total assets at the end of the previous year, respectively. Observations with missing values in both *Capex* and *R&D* are eliminated. I also calculate an aggregate measure, *Capex+R&D*, by dividing the sum of capital expenditures and R&D expenses by lagged total assets. To avoid losing a significant amount of observations, I set missing values of R&D equal to zeros before adding to capital expenditures. Summary statistics in Table 1 shows that capital expenditures and R&D expenses account for, on average, 4.8% and 11.1% of total assets, respectively. The aggregate measure, *Capex+R&D*, has the mean of 10.1%.

Control variables include *Size, Tobin's q, Cash flow, ROA* and *Leverage*. *Size* is measured as the logarithm of total assets. *Tobin's q* is equal to the market value of equity (price times shares outstanding) plus total assets minus the book value of equity all over total assets. *Cash flow* is the ratio of earnings before extraordinary items and depreciation over total assets. I compute *ROA* by dividing operating income before depreciation over total assets. *Leverage* is the sum of debt in current liabilities and long-term debt divided by total assets. I winsorize each variable at the first and ninety-ninth percentile by setting all observations outside this range to the first and ninety-ninth percentile values, respectively. Panel A of Table 1 shows that firms in the sample are big with average total assets of around 11 billion EUR and *Tobin's q* of 1.86. They are profitable firms with the average ROA of 4.4% and cash flows of

[10] On the other hand, there are 1, 0, 5, and 8 treated firms that were excluded from the list in 2013, 2014, 2015 and 2016, respectively, as their capitalization fell below the threshold. My difference-in-difference analyses exclude observations of these firms after their switch of treatment status.

[11] I still find evidence on the effect of the FTT on corporate investments if I (i) shorten the sample period to 2009-2016 or 2010-2015, or (ii) exclude Luxembourg firms.

2.7%. Their debt on average accounts for 26.2% of total assets.

3.2 Empirical strategy

I employ a difference-in-differences design to identify the causal impact of the FTT on corporate investments. The treatment group consists of French firms that are subject to the FTT. One concern is that firms whose capitalization is slightly above 1 billion EUR may buy back a small number of shares or manipulate their stock prices at year ends to avoid the FTT.[12] Repurchasing shares (or resisting additional issuance), deliberately keeping their market capitalization below the threshold to avoid the FTT, may do more harm than good because it prevents firms from growing optimally. Becchetti et al. (2014) observe no price manipulations with stocks moving across the threshold around the introduction date to evade the tax.[13] Nevertheless, I graphically inspect the distribution of firms around the threshold to further validate my argument. If firms restrain their market capitalization systematically, we would observe an abnormally high number of firms whose capitalization is just below the threshold and an abnormally small number of firms whose capitalization is just above the threshold. Figure A2 in Appendix suggests that this is not the case. All in all, self-selection into (or out of) treatment is unlikely of concern.

Similar to Coelho (2016) and Colliard and Hoffmann (2017), I use two different control groups. The first group includes Dutch and Luxembourg listed firms with capitalization above 1 billion EUR at the end of 2011. This control group is comprised of 52 Dutch firms and 19 Luxembourg firms with available data.Using a sample of firms that are matched on market capitalization, Tobin's q, cash flow, ROA and leverage yields comparable estimates on the effect of the FTT on investments. The first reason for choosing Dutch and Luxembourg firms is that their stocks and treated firms' stocks are mainly traded in the same platform of Euronext with a similar group of participants. This fact mitigates the concern that the characteristics of financial markets may explain the differences in market efficiency and investor behaviors, which in turn may affect corporate investment behavior. Euronext's Supplemental Liquidity Provider also generates an important cross-sectional variation in investor horizons for the tests of mechanism through which the FTT affects corporate investments. Furthermore, because these three countries are members of Eurozone and have geographical proximity, I expect certain similarities

[12]For the first year of implementation, it is almost impossible for firms to manipulate their treatment status because the announcement of the policy by French government was made in February 2012 while the list of taxed stocks was made using firms' market capitalization on January 1st 2012. Therefore, the strategy that compares only these treated firms with non-French firms should address well this manipulation concern. Results are qualitatively the same when this strategy is employed.

[13]Relatedly, Coelho (2016) and Colliard and Hoffmann (2017) argue and provide evidence that significant tax *evasion* by investors seems implausible. For example, they find that American Depositary Receipts are not used to circumvent the FTT and trading in taxed French shares dropped even more substantially in foreign exchanges (such as London and Frankfurt) than in Paris, relative to Dutch control stocks.

in investment behaviors between the two groups before the FTT introduction.[14] Nonetheless, there are still differences in political and macroeconomic conditions that might confound the impact of the FTT.

Therefore, I supplement the analysis with the second strategy, in which I compare French treated firms with French control firms. I choose French control firms that have capitalization near the threshold of 1 billion EUR at the end of 2011. Specifically, I obtain 81 control firms whose capitalization is above 0.2 billion EUR at the end of 2011. The effects of the FTT on investments are similar if other cutoffs such as 0.1 or 0.3 billion EUR are used instead. Results also hold in another robustness test in which I limit the sample to those whose capitalization is slightly below and above 1 billion EUR at the end of 2011 to mitigate the concern that firm size (and other related characteristics) might be the factors behind the difference in the investment trend between the two groups after the FTT introduction.

Panel B and C of Table 1 compare control groups and the treatment group along several dimensions before the FTT was introduced in 2012. Compared with the non-French control group, the treatment group is slightly bigger in *Size* but has lower *Tobin's q, Cash low, ROA* and *Leverage*. Compared with the French control group, the treatment group has similar *Tobin's q* and *Leverage*, but has different *Size, Cash flow* and *ROA*. In order to deal with these ex ante differences, my empirical model includes control variables and their interactions with time.[15]

I estimate the following model using ordinary least squares (OLS):

$$Investment_{i,t+1} = \alpha_0 + \beta_1 Tax_{i,t} + \gamma' X + \theta'(X \times \tau_t) + \tau_t + \delta_i + \epsilon_{i,t+1} \tag{1}$$

In equation (1), $Investment$, as already defined, is the level of capital expenditures or R&D expenses or the sum of the two, scaled by lagged total assets. $Tax_{i,t}$ is a dummy variable, equal to 1 for treated firms in the years they are treated, and 0 otherwise. Firm and year-fixed effects are included.[16] Because the treated group and control groups are different in some characteristics that are known to affect investments, I control for these characteristics by adding *Size, Tobin's q, Cash flow, ROA, Leverage* and their interactions with time. The inclusion of the interactions allows for the effect of these

[14] In the context of the European debt crisis, other Eurozone countries like Germany or Spain may not offer better controls. Spain was unable to bail out its financial sector and had to apply for a rescue package in 2012. In terms of fiscal sustainability, Germany did not appear to face short-term, medium-term or long-term fiscal sustainability challenges while France, The Netherlands and Luxembourg all faced some risks in medium to long run (EC, 2012). From late 2011, French CDS spreads increased, and the divergence from the Dutch counterpart was smaller than that from the German one (Heinz and Sun, 2014). Furthermore, industry composition of the French treated firms is more comparable to that of the chosen control firms than to that of German firms. For example, two industries "Consumer Durables" and "Chemicals and Allied Products" respectively make up 4.3% and 3.5% of the treated firm sample. In the Dutch and Luxembourg control firm sample, they accounts for 3.6% and 6.2%. For German firms with capitalization above 1 billion EUR at the end of 2011, the numbers are much higher, being 9.3% and 10.4%. Nonetheless, I still find a positive effect on investments using German control firms.

[15] In robustness tests, I employ two other strategies, namely propensity score matching and subsampling that mimics a regression discontinuity design.

[16] Table A2 shows that results are similar when firm and industry-year-fixed effects are used.

characteristics on investments to be flexibly different year by year, hence controlling better for sources (other than the FTT) that cause changes in investments.[17] For inference, I use robust standard errors clustered by firm.

The difference-in-differences method relies on the parallel trend assumption that the trends in investment of the two groups would have been similar in the absence of the French FTT introduction. Though this assumption cannot be directly tested, I attempt to provide some assessment on its validity by estimating the following regression:

$$Investment_{i,t+1} = \alpha_0 + \beta_1 D_{i,t}^{-6} + \beta_2 D_{i,t}^{-5} + ... + \beta_{12} D_{i,t}^{+5} + \delta_i + \tau_t + \epsilon_{i,t+1} \tag{2}$$

In equation (2), the dummy variable $D_{i,t}^{+n}$ equals one for treated firms in n^{th} year after the treatment, $D_{i,t}^{-n}$ equals one for treated firms in the n^{th} year before the treatment, and δ_i and τ_t are firm and year fixed effects, respectively. As recommended by Baker et al. (2021), I include the full set of possible relative time indicator variables although individual estimates can be less precise. The estimated coefficients of the dummy variables are plotted, together with their corresponding 95% confidence intervals. In Figure 2, no plot exhibits a statically significant difference in the investment trend between the control group and treatment group before the treatment, though the difference is nonneglegible in a couple of years. This again highlights the importance of the inclusion of control variables that also explain variations in investments to obtain a more robust identification as discussed above. After being affected by the FTT, investment trends between the two diverge significantly, suggesting the increases in investments in the treatment group relative to the control group.

4 Main empirical results

4.1 Effects on corporate investments

Table 2 reports regression results using the non-French control group. Panel A reports the aggregate effect on investment. The coefficient of variable Tax is positive in all specifications. In columns (1) and (2), the dependent variable is $Capex+R\&D$ with the latter including control variables. The estimates on Tax in these first two specifications are positive, statistically significant at 1% and 5% level, respectively. The estimate in column (2) suggests that treated firms increase their investments

[17] I thank Todd Gormley for the idea of including interactions. Edmans et al. (2017b) and Brogaard et al. (2018) also include similar interactions in difference-in-difference regressions. They explain that these interactions control for time trends in investment sensitivity to firm characteristics. Examining European firms, Kalemli-Ozcan et al. (2018) show that their investment behavior differs before and after 2008 crisis, i.e., investment sensitivities to debt, cash flow, size, among other characteristics, change during the bust period. Alternatively, Bertrand and Mullainathan (2003) interpret that the interactions between plant size and year fixed effects in their models allow for the time shocks to differentially affect plants of different size.

on average by approximately 93 basis points of total assets after being affected by the FTT relative to control firms. This corresponds to about 9.2% of average investments.[18]

The coefficient of $Capex$ on Tax in columns (3) and (4) is positive and statistically significant regardless of whether control variables are included or not. In columns (5) and (6), the dependent variable is $R\&D$ with the latter including control variables. The coefficient of $R\&D$ on Tax is positive but not statistically significant in either column.

While the evidence indicates that the FTT has an average positive effect on corporate investments, we may observe a negative effect on investments due to increased costs of capital among firms that have difficulties in raising funds. To investigate this issue, I split the sample based on firms' ex ante financial constraints. I use the KZ index constructed by Lamont et al. (2001) based on Kaplan and Zingales (1997) as the measure of financial constraints.[19] A firm is classified as financially constrained if its KZ index value is below the median in the sample.

Panel B of Table 2 shows results for constrained and unconstrained firms. The estimates on Tax for constrained firms in columns (1), (2) and (3) are not statistically significant. It can be that the FTT does not affect investments of financially constrained firms or that the negative effect of increased costs of capital is cancelled out by the positive effect of alleviated short-termism. Results in columns (4), (5) and (6) suggest that the FTT has a positive effect on capital expenditures and R&D spending in unconstrained firms. The evidence suggests that firms that have available funds or easy access to financing still underinvest ex ante due to short-termism, and as the FTT can mitigate this short-termism problem, we observe increases in investment ex post.

Table 3 reports regression results using the French control group in the same manner as the Table 2. In the first specification of Panel A, the coefficient of $Capex$ on Tax is positive and statistically significant at 1%. In the second specification in which control variables are included, the coefficient is still positive and statistically significant at 5% level. The point estimate of the effect of the FTT is an increase in investments by 113 basis points of total assets, corresponding to 11.2% of average investments. The estimate is comparable with that obtained using non-French controls. The coefficient of $Capex$ on Tax in columns (3) and (4) is positive and significant at 5% level. Column (5) and (6) shows that the coefficient of $R\&D$ on Tax is also positive and significant at 1% and 5% levels, respectively.

Panel B summarizes the heterogeneous effect. Similar to the results using non-French control, I find

[18] To put it in context, Asker et al. (2015) provide statistics on severe underinvestment by US public firms due to short-termism. Specifically, public firms at 70th percentile and 80th percentile (whose investment levels are comparable to firms in my sample) invest 20.0% less than private firms. Cremers et al. (2020) find that the inclusion to the Russell 2000 leads to an increase of 1.9 percentage points in (short-term) transient ownership and firms with a relatively large increase cut R&D by 1.3 percentage points (or 130 basis points) of total assets.

[19] Some observations have missing values for KZ index, which is why the sum of observations in constrained and unconstrained groups is slightly lower than the number of observations shown in the aggregate tests.

no significant effect of the FTT on investment among firms with the ex ante financial constraint. The positive aggregate effect is mainly driven by unconstrained firms as all estimates of $Capex+R\&D$, $Capex$ and $R\&D$ on Tax for these firms are large and statistically significant at 5% level or lower.

In general, I find evidence suggesting that firms subject to the FTT increase capital expenditures and R&D expenses compared with unaffected firms after the tax imposition on purchases of their stocks. These results suggest that the negative effect of increased costs of capital seems rather weak and dominated by the positive effect of alleviated short-termism.

4.2 Robustness

4.2.1 Other control groups

In the first set robustness tests, I use propensity score matching to form the control group. Instead of choosing non-French firms with capitalization above 1 billion EUR at the end of 2011, I match each treated firm with a control firm that has the closest propensity score of being treated. Propensity scores are predicted using a set of covariates, namely logarithm of market capitalization, Tobin's q, cash flow, ROA and leverage, in the year before the treatment. I obtain 74 matches of 58 unique firms because I allow for replacement, i.e. one control firm can be matched with more than one treated firm. Panel A of Table A3 in Appendix shows that treated firms and matched firms are similar in covariates that are used for matching. Therefore, in regressions using the matched sample, I do not include their interactions with time. From Panel B, we can see that the coefficient of $Capex+R\&D$ and $Capex$ on Tax is positive, statistically significant at 5% level and of similar magnitude with the ones in regressions using non-French firms with 2011-year-end capitalizations above 1 billion EUR (Panel A of Table 2). The coefficient of Tax in the remaining column is also positive, though not statistically significant.

Second, I use cutoffs other than 0.2 billion EUR to choose French control group. Columns (1), (2) and (3) of Table A4 in Appendix summarize regression results using the cutoffs of 0.1 billion EUR, columns (4), (5) and (6) for 0.3 billion EUR. Again, I find evidence suggesting positive effect of the FTT on capital expenditures and R&D expenses. Columns (7), (8) and (9) present estimates when I limit the sample of treated and control firms to those whose market capitalization is around the threshold of 1 billion EUR, borrowing the idea of a regression discontinuity design. Using the range from 0.3 to 3.0 billion EUR, I obtain the estimate of $Capex+R\&D$ on Tax equal to 94 basis points which is significant at 10% level and of similar magnitude to those derived from main specifications.[20] The estimates of $Capex$ and $R\&D$ on Tax are marginally significant and significant at 5% level, respectively.

[20] I obtain qualitatively the same results when I use more narrow ranges such as 0.4-3.0 billion EUR or 0.5-2.0 billion EUR. Of course, there is a trade-off between precision and unbiasedness of the estimates when the sample is narrowed down.

4.2.2 Other measure of investment

One concern is that a firm may increase its investment in capital expenditures and R&D but reduce investment in other items, resulting in a negative effect on total investment. I check if the positive effect of the FTT on corporate investment holds when I use a more comprehensive measure of investment that reflects acquisition activities as well. Specifically, I use the change in total assets, computed as the difference between total assets in year *t+1* and year *t* over the total assets in year *t*. Regression results in Table A5 in Appendix show that coefficient of Tax is positive in all columns and statistically significant in 5 out of 6 specifications, confirming the previous results.

4.2.3 Placebo tests

One may argue that the above findings can be explained by the possibility that a few years after the financial crisis, big firms were able to recover better and invested more than small firms. Though the analyses employing non-French firms have resolved in part this concern, I conduct two placebo tests. Specifically, the first test uses the sample of treated firms and a pseudo FTT. This pseudo FTT is imposed on firms with market capitalization above an arbitrary threshold of 5 billion EUR since 2012. The second test uses the sample of non-French firms (Dutch and Luxembourg firms with capitalization above 0.2 billion EUR at the end of 2011) and a pseudo FTT mimicking the French FTT.

Table 4 summarizes the results. Columns (1), (2) and (3) report results of the first test and columns (4), (5) and (6) the second test. The estimates on *Pseudo-Tax* in all columns are statistically insignificant. In other words, I do not observe a similar difference in investment behavior between pseudo treatment (relatively big) and control (relatively small) groups.

4.2.4 The Italian FTT

In previous subsection, I show that there are no parallel changes in corporate investment in the countries without a FTT. On the other hand, if the increase in investment in French treated firms is indeed due to the FTT, I expect to see a similar effect in other countries when they introduced their FTTs, though the magnitude of the effect may differ as a result of some variations in tax designs. The Italian FTT introduction in March 2013 provides a suitable setting for this test. Specifically, transactions of shares issued by Italian resident companies with a capitalization equal to or higher than 500 million EUR are to be taxed at a rate of 0.12% in 2013 (0.1% in subsequent years) if executed on regulated markets and on multilateral trading facilities and 0.22% in 2013 (0.2% in subsequent years) if executed over the counter.

Panel A of Table A6 reports regression results using different samples of Italian firms with capitalizations

around the threshold of 500 million EUR.[21] Columns (1) and (2) use all treated firms and firms with a capitalization above 100 million EUR at the end of 2012 as controls. Columns (3) and (4) use treated firms with a capitalization below 2,000 million EUR and firms with a capitalization above 100 million EUR at the end of 2012 as controls. Similarly, (5) and (6) use the range from 50-1,500 million EUR, and (7) and (8) 50-1,000 million EUR.[22] All the estimates of $Capex$ or $R\&D$ on Tax are positive. The estimates of $Capex$ on Tax are statistically insignificant. The estimates of $R\&D$ on Tax in columns (4), (6) and (8) are statistically significant at 10% level or lower, depending on the range used. These results suggest that the Italian FTT has a similar positive effect on corporate investment, particularly R&D, to the French FTT, though the magnitude of the effect of the former seems smaller than that of the latter.

5 Mechanism

5.1 Does the FTT induce long-term ownership?

The increases in investments seem to be in line with the prediction of short-termism theory. This mechanism relies on the assumption that the FTT can curb short-term traders, inducing long-term ownership. Therefore, I first test this assumed premise to provide support for alleviated short-termism channel.

I do so by using Factset's fund ownership data from 2009-2017.[23] Because funds may report monthly or quarterly and on different dates, I only keep the last report in a given calendar quarter. I make use of the classification of funds by Factset based on their portfolio turnover. Funds are classified into five groups: Very Low, Low, Medium, High, and Very High (turnover). Very Low funds have portfolios with less than 25% annual turnover or 4-year holding period or more. Low and Medium funds have holding periods of 2-4 years and 1-2 years, respectively while High and Very High funds have holding periods of less than one year. For each firm, the ownership ratio owned by each type of funds is computed and long-term ownership is defined as the total ownership by Very Low, Low and Medium (turnover) funds. Panel A of Table 5 summarizes statistics on ownership by funds (in %) with different portfolio turnovers computed using the sample of all treated firms, non-French and French control firms. I then

[21] While Panel A examines the effect on corporate investment, Panel B looks at the effect on long-term ownership. Results in Panel B suggest that the Italian FTT induces long-term ownership, consistent with analysis I will show later in Section 5.1 for the French FTT.

[22] Although using a narrower range might seem desirable, it would unavoidably result in smaller samples. For example, in specification (3) and (4) that use the range of 100-2,000 million EUR, the sample consists of only 42 firms, of which 24 are treated and 18 are control firms.

[23] The data hence do not include ownership by individual and other types of institutional investors. Therefore, while the tests are informative about the economic channel and behaviors of representative investors, i.e. funds, statistics and estimates should be interpreted within the context and in relative rather than absolute sense.

examine the change in long-term ownership of treated firms after the FTT imposition compared with the corresponding change in control firms. Regressions include firm control variables, quarter and firm fixed effects.

Panel B of Table 5 summarizes the regression results with dependent variable being the total ownership by funds with very low, low and medium turnovers.The coefficient of Tax in column (1) is positive and statistically significant at 5% level, suggesting an overall increase in long-term ownership in treated firms after the FTT imposition compared with control firms. The estimate indicates that long-term ownership increases by approximately 13%.[24] As the theory (Amihud and Mendelson, 1986) and evidence (Goyer, 2011, p.2) suggest that short-term investors are heavily concentrated in more liquid stocks, we may expect a stronger effect among firms with ex ante higher liquidity. To check if this is the case, I make use of a natural partitioning that a group of stocks are included in Euronext's Supplementary Liquidity Provider (SLP) program, and hence more liquid than those that are not in the program. Columns (2) compares treated SLP firms to control SLP firms and (3) compares treated non-SLP firms to control non-SLP firms. This effect, indeed, seems stronger among SLP firms both in terms of economic and statistical magnitudes. Meanwhile, the coefficient of Tax is statistically insignificant, though still positive, among non-SLP firms. These results are consistent with implications from Amihud and Mendelson (1986) and portfolio-level evidence in Colliard and Hoffmann (2017). The intuition is that because the holdings of SLP stocks by short-term investors before the FTT introduction are much higher than those of non-SLP stocks, and as the FTT curbs short-term trading, it causes a more substantial and visible shift in holdings of SLP stocks from short-term investors to long-term investors.[25]

Regression results using French control firms are shown in two last columns: (4) compares all treated firms to all control firms, and (5) compares treated non-SLP firms to control non-SLP firms. Because no French control firms are in SLP program, it is not possible to make a similar comparison between treated SLP firms and control SLP firms as in non-French control case. The difference between columns (4) and (5) in this case is that the former includes treated SLP firms while the latter does not. Though none of the estimates on Tax is statistically significant, the fact that the estimate becomes smaller once treated SLP firms are removed also suggests the increase in long-term ownership is concentrated in SLP firms.

Therefore, if the FTT indeed affects investment via the lessened short-termism channel, it is more likely to find supporting evidence among SLP firms that experience a significant increase in long-term ownership. I make use of the heterogeneity and discuss results for SLP vs. non-SLP firms in the subsequent analysis in this section.

[24]This significant economic effect is consistent with large portfolio changes documented in Colliard and Hoffmann (2017). They estimate that one quarter after the FTT introduction, short-term investors with "very high turnover" sold 8.5% of their holdings of affected stocks, and "high turnover" sold 4.7%.

[25]The t-tests indeed confirm that average holdings in SLP firms during period 2008-2011 by short-term funds (with very high turnover and high turnover) were larger than those in non-SLP firms.

5.2 Effects on investment sensitivity

I have documented the increases in investments and long-term ownership in treated firms after the FTT compared with control firms. This evidence, however, does not necessarily mean that the increased long-term ownership helps alleviate short-termism and induce investments. To provide more concrete evidence on alleviated short-termism channel, I test another prediction regarding investment sensitivity under short-termism theory. According to neoclassical q theory, firms should invest more as their investment opportunities improve, up to the point at which their marginal q equals one. A myopic manager or a manager under short-termist pressure would forgo positive NPV projects, leading to lower investment levels and lower sensitivity to changes in investment opportunities (Asker et al., 2015). As the FTT can potentially alleviate short-termism from these sources, I predict that affected firms would increase not only their investment level but also investment sensitivity to changes in investment opportunities.

I test these predictions by employing the following model:

$$\begin{aligned} Investment_{i,t+1} = \alpha_0 + \beta_1 Tax_{i,t} + \beta_2 Tax_{i,t} \times InvOp_{j,t} + \beta_3 InvOp_{j,t} \\ + \beta_4 InvOp_{j,t} \times Treated_i + \beta_5 InvOp_{j,t} \times \tau_t + \gamma' X + \theta'(X \times \tau_t) + \tau_t + \delta_i + \epsilon_{i,t+1} \end{aligned} \quad (3)$$

In equation (3), $Investment$ and Tax are as previously defined. Following Badertscher et al. (2013) and Asker et al. (2015), I use $InvOp$, which is the size-weighted average q of all firms in each four-digit SIC industry, as a proxy for the investment opportunities available to each firm in the industry. For robustness, I also use the industry average sales growth as an alternative measure of investment opportunities. The coefficient of interest is that of the interaction between the difference-in-differences term Tax and $InvOp$, i.e. β_2. A negative coefficient implies a decrease in investment sensitivity to changes in growth opportunities in treated firms after the FTT compared with control firms. Conversely, a positive coefficient implies an improvement in investment sensitivity.

Table 6 reports regression results. For the sake of brevity, I report only estimates for β_1 and β_2. Panel A uses the industry q and panel B uses industry sales growth. For SLP firms, the coefficient of $Capex+R\&D$ on the interaction term, β_2, in column (1) is positive and significant. When the two types of investments are investigated separately in columns (2) and (3), the coefficient of interest is positive and significant at 5% level for $R\&D$ and marginally significant for $Capex$. These results suggest that investments of treated SLP firms become more sensitive to changes in investment opportunities after the FTT imposition compared with control SLP firms. Meanwhile, I find little evidence of a similar positive effect on investment sensitivity among non-SLP firms as shown in columns (4), (5) and (6).

In general, the evidence suggests that the FTT affects investment sensitivity positively among SLP firms - those that have a significant increase in long-term ownership - is in line with the alleviated short-termism mechanism. As I do not find a significant increase in long-term ownership in non-SLP

firms, this mechanism may be weak among these firms. This can explain why I find little evidence of a similar positive effect on investment sensitivity among non-SLP firms.[26]

5.3 Effect on acquisition activities

Based on my previous findings, a natural question to ask is whether the increased investments are value-enhancing or value-destroying. If the FTT increases investments through the beneficial role of long-term investors, we should observe increases in shareholder value. However, the increased investments can be value-destroying if the FTT results in lower liquidity and higher transaction costs, which in turn harm blockholder governance via exit and give room for managerial empire-building (Edmans, 2009; Admati and Pfleiderer, 2009). I investigate this possibility by looking at acquisition activities since managers who have empire-building preferences tend to overinvest and be attracted to acquisitions (Amihud and Lev, 1981; Stein, 2003). Acquisitions are also one of the biggest corporate investments, examining effects of the FTT on acquisition activities is thus in itself interesting.

Under empire-building explanation, managers are more likely to make acquisitions after the FTT and these acquisitions are undesirable from shareholders' perspective. We may also observe a higher likelihood of making acquisitions under alleviated short-termism channel. As acquisitions are a form of investment that is normally risky with deferred and hard-to-measure results, alleviated short-termism could encourage mangers to make strategic acquisitions even though they may lead to reductions in short-term performance.[27] However, these acquisitions should be value-enhancing, or at least not value-destroying. The same or better performance of acquisition deals depends on to what extent long-term shareholders help prevent bad deals from being carried out (Gaspar et al., 2005).

5.3.1 Probability of making acquisitions

I first investigate how the FTT affects the likelihood that firms make acquisitions. I use SDC Mergers and Acquisitions database to extract deals announced between 2008 to 2017. Following Gaspar et al. (2005) and Huang et al. (2014), I keep only deals with known outcome, i.e. either completed or withdrawn, and exclude all transactions labeled as spinoffs, self-tender offers, repurchases, or privatizations. To examine the likelihood of making acquisitions, I use the linear probability model.[28] The binary dependent variable *AcqDummy* is equal to 1 if a firm completed at least one acquisition that year and

[26] Furthermore, as non-SLP firms suffer from a substantial reduction in stock liquidity and price efficiency (Colliard and Hoffmann, 2017), useful information about investment opportunities from financial market to corporate decision makers can be hindered (e.g. Dow and Gorton, 1997; Chen et al., 2007a), offsetting the positive effect.

[27] Firms may make acquisitions to gain market power, improve efficiency, obtain complementary resources or boost innovation (Haleblian et al., 2009).

[28] I use the linear probability model simply for the ease of computation and interpretation. Employing a probit model yields qualitatively the same results.

0 otherwise. After matching with accounting data from Compustat Global, there are 2,046 firm-year observations with about 46% having at least one acquisition (Panel A, Table 7).[29] I include the same set of control variables as before, their interactions with time, industry and year-fixed effects.[30]

Panel B of Table 7 reports regression results for the likelihood of making acquisitions. Columns (1) and (2) summarizes results of regressions for SLP firms that exclude and include control variables, respectively. The estimates on Tax in both columns are positive, significant and of similar magnitude. The coefficient of interest in column (2) is equal to 0.1601 and statistically significant at 5%, implying that the likelihood of making acquisitions by treated SLP firms increases by 16.01 percentage points after the FTT imposition compared with control firms. Regarding non-SLP firms, results in columns (3) and (4) show that the estimates on Tax are much smaller and statistically insignificant. The evidence points towards the argument that among firms that undergo a significant increase in long-term ownership after the FTT, underinvestment problem due to short-termism is alleviated and managers are more likely to make long-term investments like acquisitions. To see if these acquisitions are indeed value-enhancing, I next analyze market reactions upon their announcements.

5.3.2 Acquisition performance

To evaluate the quality of acquisition investments, I use cumulative abnormal returns (CARs). Abnormal returns are computed as the residuals from a market model, with the estimation window being (-210, -11) and the market return being Stoxx Europe 600 index.[31] Using the estimated parameters, I then calculate the cumulative abnormal returns over the five-day (-2,+2) event window centered on the announcement date. Panel A of Table 7 shows that there are 775 deals completed with estimated CARs and other deal information available, and the average CAR is 0.3%. Similar to Roosenboom et al. (2014), I include controls that are acquirer characteristics (size, Tobin's q, cash flow, leverage, ROA) and deal characteristics (deal value, and binary variables for target firm public status, target subsidiary status, tender offer, cash payment, equity payment).

Panel C of Table 7 reports the regression results. Regression results for SLP firms are summarized in columns (1) and (2). The coefficient of Tax is positive and statistically in both columns. These results suggest the positive impact of long-term shareholders on acquisition performance rather than

[29] The frequency of making acquisitions seems high because the sample firms are among the largest firms and I do not put any lower bound in terms of deal value as in some studies using US data (as doing so would reduce the sample that is already small).

[30] I use industry fixed effects instead of firm fixed effects because there are few variations in the dependent variable within firm. With firm fixed effects being excluded and industry fixed effects being added, the indicator variable Treated is restored in the model as in the traditional Dif-in-Dif model. The indicator Post, however, disappears because year fixed effects are included. Results are qualitatively the same when (1) firm fixed effects are used and/or (2) more controls, such as for firm *Cash holding, Non-cash working capital, P/E ratio*, are included.

[31] Stoxx Europe 600 index consists of 600 components representing large, mid and small capitalization companies among 17 European countries.

the negative effect under empire building explanation. The estimate in column (2) indicates that 5-day CAR of treated SLP firms increased by 1.4% after the FTT compared with control SLP firms. Results in columns (3) and (4) show that the estimates on Tax are positive but not significant for non-SLP firms.

I repeat analyses using a binary dependent variable, equal to 1 if CAR is positive and 0 otherwise. Regression results are reported in Table A7. Results are qualitatively similar with and without firm controls. The coefficient for SLP firms is largely positive and statistically significant at 1% level, implying that treated SLP firms are more likely to make value-added acquisitions after the FTT imposition compared with control SLP firms. Meanwhile, I do not observe a similar effect in non-SLP firms.

Combined with the evidence from section 5.3.1, I find that affected firms, especially SLP firms, are more likely to make acquisition investments after the FTT imposition without detriment to the deals' quality. These results seem consistent with the effect of alleviated short-termism and inconsistent with managerial empire building.

All in all, the fact that I find positive effect on investment sensitivity and acquisition activities, especially among firms in which I expect to observe the stronger impact of long-term ownership, lends support for the existence of the short-termism mechanism and that this mechanism prevails in a predictable group of firms.

6 Additional analyses

6.1 Earnings pressure

To provide further evidence for alleviated short-termism channel, I investigate earnings pressure which goes hand in hand with underinvestment under short-termism theory. Specifically, the emphasis on short-term earnings by short-term investors is likely to induce mangers to manage earnings and beat targets. Myopic managers also have incentives to manage earnings and beat targets to benefit from higher monetary bonuses or job security. Therefore, a shift from short-term investors to long-term investors because of the FTT is likely to have an impact on earnings pressure. Firstly, longer shareholder horizons reduce the emphasis on short-term earnings and pressure on managers, and hence decrease motives for them to manage earnings and beat targets. Secondly, long-term investors can improve governance, disincentivizing managers from distorting reported earnings. Therefore, I expect earnings management and target beating behavior to decrease.

6.1.1 Earnings pressure proxies

The use of simple earnings matrices by financial markets and short-term investors in evaluating managers' performance puts pressure on managers to meet or beat earnings targets.[32] Therefore, it is tempting for managers to use different tools at their disposal such as cutting R&D or managing accounting numbers when they miss targets by tiny margins. For example, firms with small (unmanaged) losses and small (unmanaged) earnings decreases tend to manage earnings to report small profits and small earnings increases (Dechow et al., 2010).[33] Based on previous studies (e.g. Frankel et al., 2002; Leuz et al., 2003), I construct a binary variable to capture pressure to avoid losses or earnings decreases. I first define firms with small profits if their earnings before extraordinary items scaled by lagged total assets are positive and below 0.5%. Firms are with small profits increases if the change in earnings before extraordinary items scaled by lagged total assets is positive and below 0.1%.[34] The variable *Small Profits or Increases* is equal to 1 if a firm has either small profits or small profits increases, and 0 otherwise. In my sample of all treated and control firms, there are 5.9% of firm-years with small profits, 4.5% of firm-years with small increases in earnings, and 9.5% of firm-years with either small profits or small increases in earnings.

I also employ a proxy for earnings management which is discretionary accruals estimated from a modified version of Jones (1991) model.[35] I gather the pool of French, Dutch and Luxembourg accounting data from Compustat Global over the period 2008-2017 and estimate the following model using OLS for each year and each two-digit SIC industry:

$$\frac{TACC_{i,t}}{AT_{i,t-1}} = \beta_1 \frac{1}{AT_{i,t-1}} + \beta_2 \frac{\triangle Sale_{i,t}}{AT_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{AT_{i,t-1}} + \epsilon_{i,t} \tag{4}$$

In equation (4), $TACC$ is the computed by subtracting cash flow from operations from income before extraordinary items, AT is total assets, $\triangle Sale$ is the change in net sales from year *t-1* to year *t*, PPE is gross property, plant and equipment.

For each year-industry, I require at least 15 observations when running regressions. I use the absolute value of estimated residuals, i.e. discretionary accruals, as a proxy for earnings management because it

[32] Investors with high monitoring and information processing costs, e.g. small and/or short-term investors, rely on low-cost earnings benchmarks to make decisions (Beatty et al., 2002). DeAngelo et al. (1996) document that firms experience negative abnormal returns in years they report an earnings decline after reporting earnings increases for several years.

[33] Burgstahler and Dichev (1997) document a statistically small number of firms with small losses and small earnings decreases and unusually high frequencies of small profits and small increases in earnings.

[34] Results are robust to alternative thresholds, e.g. 1% for small profits and 0.2% for small increases in profits. The thresholds are chosen based on Freedman-Diaconis rule as in prior studies, i.e. interval width $= 2 \times IQR/n^{1/3}$ where IQR is the interquartile range of the variable and n is the sample size.

[35] Though it is desirable to examine real earnings management through overproduction or cutting costs as in Roychowdhury (2006), data in Compustat Global do not contain Advertising expenses item, hence hinder me from constructing real earnings management proxy. If I proceed the analysis without this item, I find negative, though not significant, effect of the FTT on real earnings management among SLP firms.

is not necessarily the case that mangers always manage earnings upward. They may manage up in one year and down in others to smooth earnings, meeting the targets and expectations every year.

6.1.2 Effects on earnings pressure

I use the following models to investigate the effect of the FTT on earnings pressure:

$$SmallProfitsorIncreases_{i,t+1} = \alpha_0 + \beta_1 Tax_{i,t} + \beta_2 Treated_{i,t} + \gamma' X + \theta'(X \times \tau_t) + \tau_t + \lambda_j + \epsilon_{i,t+1} \quad (5)$$

$$DiscretionaryAccruals_{i,t+1} = \alpha_0 + \beta_1 Tax_{i,t} + \beta_2 Treated_{i,t} + \gamma' X + \theta'(X \times \tau_t) + \tau_t + \lambda_j + \epsilon_{i,t+1} \quad (6)$$

In equation (5), the dependent variable is *Small Profits or Increases*, and hence regressions are conducted using linear probability model. In equation (6), the dependent variable *Discretionary Accruals* is a continuous measure of earnings management. Following earnings management literature, I control for *ROA, Size, Tobin's q*, year and industry fixed effects in both models. I expect β_1 to be negative, i.e. earnings management and target beating behavior decrease in treated firms after the FTT imposition compared with control firms.

Table 8 summarizes regression results with the first two columns using non-French control and the last two ones using French control. Regressions using non-French control yield similar estimates to those using French control. Coefficient of Tax is negative in all specifications as expected. In columns (1) and (3), the coefficient of *Small Profits or Increases* on Tax is negative and statistically significant at 1% and 5% levels, respectively. I estimate that the FTT reduces the likelihood of having small profits or small increases in earnings by 7 percentage points.[36] These results suggest that treated firms experience less pressure to beat short-term earnings targets.

In columns (2) and (4), the coefficient of *Discretionary Accruals* on Tax is negative, significant at 5% level in the former column and marginally significant in the latter. I estimate that the absolute level of discretional accruals on average decreases by 0.0191, equivalent to 17.21% of the standard deviation. In sum, these results for earnings pressure are in line with argument that the FTT induces long-term ownership and mitigates short-termism.

6.2 Financing and performance

In this part, I look at how affected firms finance their increased investments and the implication of the increased investments for performance. Changes in financing policies are in and of themselves interesting because the FTT might increase cost of equity and direct firms toward debt financing or

[36] I also examine whether firms have small profits or small profits increases separately. Results suggest that the change in loss avoidance behavior is predominant.

other alternatives. Coelho (2016) argue that the FTT makes equity become relatively more expensive to debt, incentivizing firms to leverage if the cost of debt remains unchanged. In the case of the French FTT, bank savings which are not subject to the tax can be lent to firms at a nontaxed rate (Kiefer, 1990). Corporate bonds are also exempted from the FTT, hence firms may issue debt instead of equity for new projects. However, Lendvai et al. (2012) note that a lower firm value due to the FTT may hinder firms from borrowing by tightening financial constraints and/or raising the risk premium that lenders require to compensate for the drop in the collateral value. An alternative is to build up internal fund by restricting dividends, which is probably prioritized as suggested by Myers and Majluf (1984).

Table A8 reports regression results. I examine three variables: *Debt Issuance*, measured as the percentage change in long-term debt, *Equity Issuance*, computed as the sale of common and preferred stocks over total assets, and *Dividend Payout*, the ratio of cash dividend over total assets.[37] Using either of the two control groups yields positive estimate of *Debt Issuance* on Tax but negative estimate of *Equity Issuance* on Tax. Although none of those estimates are statistically significant, their consistent signs might hint at a shift from issuing equity to issuing debt. These results suggest that equity might become more expensive, but the increase is probably not significant enough to alter financial structure or hamper investments.

Regarding internal fund, the coefficient of *Dividend Payout* on Tax is negative and significant at 10% in the specification using non-French control but it is not statistically different from zero in the specification using French control. With caution, I interpret the result as FTT-affected firms reduce their dividend payout and finance (part of) their investments with retained earnings. It seems that long-term shareholders are willing to delay the cash receipt and put it into investment opportunities.

I next examine firm performance, which can also help distinguish between myopia and empire-building stories. If managers overinvest after the FTT imposition, the overinvestment would likely manifest in a deterioration in performance (over a relatively long period) due to the inefficient use of assets. Meanwhile, the increased investments due to reduced short-termism would not result in deteriating performance. From columns (4) and (8), we can see that the estimates of *Return on Assets* on Tax are positive and marginally significant. This suggests that performance of affected firms is not deteriorating, inconsistent with the overinvestment concern. If anything, the evidence seems to support the reduced short-termism effect.

[37] The item with information on debt issuance consists of mostly missing values, hence I am unable to use the direct measure of debt issuance. The same issue happens with share repurchase, so I am not able to provide a complete picture of changes in financing and payout policies.

7 Conclusions

I use the French introduction of a financial transaction tax on stock purchases in 2012 to evaluate its impact on corporate investment behavior. I employ a difference-in-differences approach using several control groups. I find no evidence on the FTT's most concerning drawback which is the decrease in investment due to the higher cost of capital. Rather, the evidence suggests that the negative effect of higher cost of capital is dominated by an alternative effect of alleviated corporate short-termism. Specifically, by inducing long-term ownership, the FTT orientates firms towards long-term value created through more and better investments.

It is important to note the heterogeneous effects of the FTT on different types of firms. In particular, financially constrained firms or firms with relatively low stock liquidity are not benefited. Therefore, the policy debate on the FTT introduction and design should take into account the costs and benefits on firm investment and shareholder value as well as the differences among firms.

The evidence on the effect of the FTT on corporate investments indicates the real and strong impact of this tax on the economy. As I find an increase in R&D investment in the treated firms after the FTT imposition, examining innovation outcomes such as patents and citations can provide interesting evidence on how beneficial the FTT is for corporate long-term value. Relatedly, the evidence that treated firms are more likely to make acquisitions after the FTT can be also related to innovation reasons.[38]

[38] See Bena and Li (2014), Guo et al. (2019)

References

Admati, A. R. and Pfleiderer, P. (2009). The "wall street walk" and shareholder activism: Exit as a form of voice. *The Review of Financial Studies*, 22(7):2645–2685.

Agarwal, V., Vashishtha, R., and Venkatachalam, M. (2017). Mutual fund transparency and corporate myopia. *The Review of Financial Studies*, 31(5):1966–2003.

AMAFI (2018). French financial transaction tax - fftt guidlines.

Amihud, Y. and Lev, B. (1981). Risk reduction as a managerial motive for conglomerate mergers. *The Bell Journal of Economics*, 12:605–617.

Amihud, Y. and Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics*, 17(2):223–249.

Asker, J., Farre-Mensa, J., and Ljungqvist, A. (2015). Corporate investment and stock market listing: A puzzle? *The Review of Financial Studies*, 28(2):342–390.

Badertscher, B., Shroff, N., and White, H. D. (2013). Externalities of public firm presence: Evidence from private firms' investment decisions. *Journal of Financial Economics*, 109(3):682–706.

Baker, A., Larcker, D. F., and Wang, C. C. (2021). How much should we trust staggered difference-in-differences estimates? *Available at SSRN 3794018*.

Beatty, A. L., Ke, B., and Petroni, K. R. (2002). Earnings management to avoid earnings declines across publicly and privately held banks. *The accounting review*, 77(3):547–570.

Becchetti, L., Ferrari, M., and Trenta, U. (2014). The impact of the french tobin tax. *Journal of Financial Stability*, 15:127–148.

Bena, J. and Li, K. (2014). Corporate innovations and mergers and acquisitions. *The Journal of Finance*, 69(5):1923–1960.

Bertrand, M. and Mullainathan, S. (2003). Enjoying the quiet life? corporate governance and managerial preferences. *Journal of political Economy*, 111(5):1043–1075.

Bolton, P., Scheinkman, J., and Xiong, W. (2006). Executive compensation and short-termist behaviour in speculative markets. *The Review of Economic Studies*, 73(3):577–610.

Brogaard, J., Ringgenberg, M., and Sovich, D. (2018). The economic impact of index investing. *Review of Financial Studies*, Forthcoming.

Burgstahler, D. and Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of accounting and economics*, 24(1):99–126.

Bushee, B. J. (1998). The influence of institutional investors on myopic r&d investment behavior. *Accounting Review*, 73:305–333.

Chen, Q., Goldstein, I., and Jiang, W. (2007a). Price informativeness and investment sensitivity to stock price. *The Review of Financial Studies*, 20(3):619–650.

Chen, X., Harford, J., and Li, K. (2007b). Monitoring: Which institutions matter? *Journal of Financial Economics*, 86(2):279–305.

Coelho, M. (2016). Dodging robin hood: Responses to france and italy's financial transaction taxes. *Working Paper*, University of California Berkeley.

Colliard, J.-E. and Hoffmann, P. (2017). Financial transaction taxes, market composition, and liquidity. *The Journal of Finance*, 72(6):2685–2716.

Constantinides, G. M. (1986). Capital market equilibrium with transaction costs. *Journal of Political Economy*, 94(4):842–862.

Cremers, M., Pareek, A., and Sautner, Z. (2020). Short-term investors, long-term investments, and firm value: Evidence from russell 2000 index inclusions. *Management Science*, 66(10):4535–4551.

DeAngelo, H., DeAngelo, L., and Skinner, D. J. (1996). Reversal of fortune dividend signaling and the disappearance of sustained earnings growth. *Journal of financial Economics*, 40(3):341–371.

Dechow, P., Ge, W., and Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of accounting and economics*, 50(2-3):344–401.

Deng, Y., Liu, X., and Wei, S.-J. (2018). One fundamental and two taxes: When does a tobin tax reduce financial price volatility? *Journal of Financial Economics*, 130(3):663–692.

Derrien, F., Kecskés, A., and Thesmar, D. (2013). Investor horizons and corporate policies. *Journal of Financial and Quantitative Analysis*, 48(6):1755–1780.

Dow, J. and Gorton, G. (1997). Stock market efficiency and economic efficiency: is there a connection? *The Journal of Finance*, 52(3):1087–1129.

EC (2012). Fiscal sustainability report. *European Economy*, 8—2012.

Edmans, A. (2009). Blockholder trading, market efficiency, and managerial myopia. *The Journal of Finance*, 64(6):2481–2513.

Edmans, A., Fang, V. W., and Lewellen, K. A. (2017a). Equity vesting and investment. *The Review of Financial Studies*, 30(7):2229–2271.

Edmans, A., Jayaraman, S., and Schneemeier, J. (2017b). The source of information in prices and investment-price sensitivity. *Journal of Financial Economics*, 126(1):74–96.

Fraichot, J. P. (2017). Study of the effect of a financial transaction tax on the corporate cost of capital. *Applied Economics*, 49(60):5951–5961.

Frankel, R. M., Johnson, M. F., and Nelson, K. K. (2002). The relation between auditors' fees for nonaudit services and earnings management. *The accounting review*, 77(s-1):71–105.

Froot, K. A., Perold, A. F., and Stein, J. C. (1992). Shareholder trading practices and corporate investment horizons. *Journal of Applied Corporate Finance*, 5(2):42–58.

Gaspar, J.-M., Massa, M., and Matos, P. (2005). Shareholder investment horizons and the market for corporate control. *Journal of Financial Economics*, 76(1):135–165.

Goyer, M. (2003). *The transformation of corporate governance in France*. The Brookings Institute.

Goyer, M. (2011). *Contingent capital: Short-term investors and the evolution of corporate governance in France and Germany*. Oxford University Press.

Graham, J. R., Harvey, C. R., and Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40(1-3):3–73.

Guo, B., Pérez-Castrillo, D., and Toldrà-Simats, A. (2019). Firms' innovation strategy under the shadow of analyst coverage. *Journal of Financial Economics*, 131(2):456–483.

Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., and Davison, R. B. (2009). Taking stock of what we know about mergers and acquisitions: A review and research agenda. *Journal of Management*, 35(3):469–502.

Harford, J., Kecskes, A., and Mansi, S. (2018). Do long-term investors improve corporate decision making? *Journal of Corporate Finance*, 50:424–452.

He, E., Jacob, M., Vashishtha, R., and Venkatachalam, M. (2020). Does differential taxation of short-term relative to long-term capital gains affect long-term investment? *Available at SSRN 3383649*.

Heinz, M. F. F. and Sun, M. Y. (2014). *Sovereign CDS spreads in Europe: The role of global risk aversion, economic fundamentals, liquidity, and spillovers*. International Monetary Fund.

Hemmelgarn, T. and Nicodeme, G. (2012). *Can tax policy help to prevent financial crisis?*, volume 5. Oxford University Press, New York.

Hemmelgarn, T., Nicodème, G., Tasnadi, B., and Vermote, P. (2016). Financial transaction taxes in the european union. *National Tax Journal*, 69(1):217.

Huang, Q., Jiang, F., Lie, E., and Yang, K. (2014). The role of investment banker directors in m&a. *Journal of Financial Economics*, 112(2):269–286.

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29:193–228.

Kalemli-Ozcan, S., Laeven, L., and Moreno, D. (2018). Debt overhang, rollover risk, and corporate investment: Evidence from the european crisis. Technical report, National Bureau of Economic Research.

Kaplan, S. N. and Zingales, L. (1997). Do investment-cash flow sensitivities provide useful measures of financing constraints? *The quarterly journal of economics*, 112(1):169–215.

Keynes, J. M. (1936). *The general theory of employment, interest, and money*. Macmillan St. Martin's Press, London.

Kiefer, D. W. (1990). The securities transactions tax: An overview of the issues. Congressional Research Service, Library of Congress.

Kupiec, P. H. (1996). Noise traders, excess volatility, and a securities transactions tax. *Journal of Financial Services Research*, 10(2):115–129.

Lamont, O., Polk, C., and Saaá-Requejo, J. (2001). Financial constraints and stock returns. *The review of financial studies*, 14(2):529–554.

Lendvai, J., Raciborski, R., and Vogel, L. (2012). Securities transaction taxes: Macroeconomic implications in a general-equilibrium model. ecfin. *European Economy - Economic Papers*, pages 1–49.

Leuz, C., Nanda, D., and Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of financial economics*, 69(3):505–527.

Matheson, M. T. (2011). *Taxing financial transactions: Issues and evidence*. Number 11-54. International Monetary Fund.

Myers, S. C. and Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2):187–221.

Narayanan, M. (1985). Managerial incentives for short-term results. *The Journal of Finance*, 40(5):1469–1484.

Roosenboom, P., Schlingemann, F. P., and Vasconcelos, M. (2014). Does stock liquidity affect incentives to monitor? evidence from corporate takeovers. *The Review of Financial Studies*, 27(8):2392–2433.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of accounting and economics*, 42(3):335–370.

Schwert, G. W. and Seguin, P. J. (1993). Securities transaction taxes: an overview of costs, benefits and unresolved questions. *Financial Analysts Journal*, 49(5):27–35.

Song, F. M. and Zhang, J. (2005). Securities transaction tax and market volatility. *The Economic Journal*, 115(506):1103–1120.

Stein, J. C. (1989). Efficient capital markets, inefficient firms: A model of myopic corporate behavior. *The Quarterly Journal of Economics*, 104(4):655–669.

Stein, J. C. (2003). Agency, information and corporate investment. In *Handbook of the Economics of Finance*, volume 1, pages 111–165. Elsevier.

Stiglitz, J. E. (1989). Using tax policy to curb speculative short-term trading. *Journal of Financial Services Research*, 3(2-3):101–115.

Summers, L. H. and Summers, V. P. (1989). When financial markets work too well: a cautious case for a securities transactions tax. *Journal of Financial Services Research*, 3(2-3):261–286.

Umlauf, S. R. (1993). Transaction taxes and the behavior of the swedish stock market. *Journal of Financial Economics*, 33(2):227–240.

Cases

- **Suez Environnement**

Suez Environnement, a French waste and water group, has followed a stable dividend policy. Instead of adopting the residual dividend policy in which companies pay out dividends from funds left after making desirable investments, Suez would do all it could to keep its dividend unchanged, including cutting investments and other costs. Its capital expenditures have followed a downward trend, from 5.5% of total assets in 2009 to 4.5% in 2012. Its spending on R&D, which was already modest at 0.3% in 2009, was further cut and became immaterial in 2012. Meanwhile, it kept payout stable at 0.65 euros per shares, with 2012 payouts even exceeding earnings.

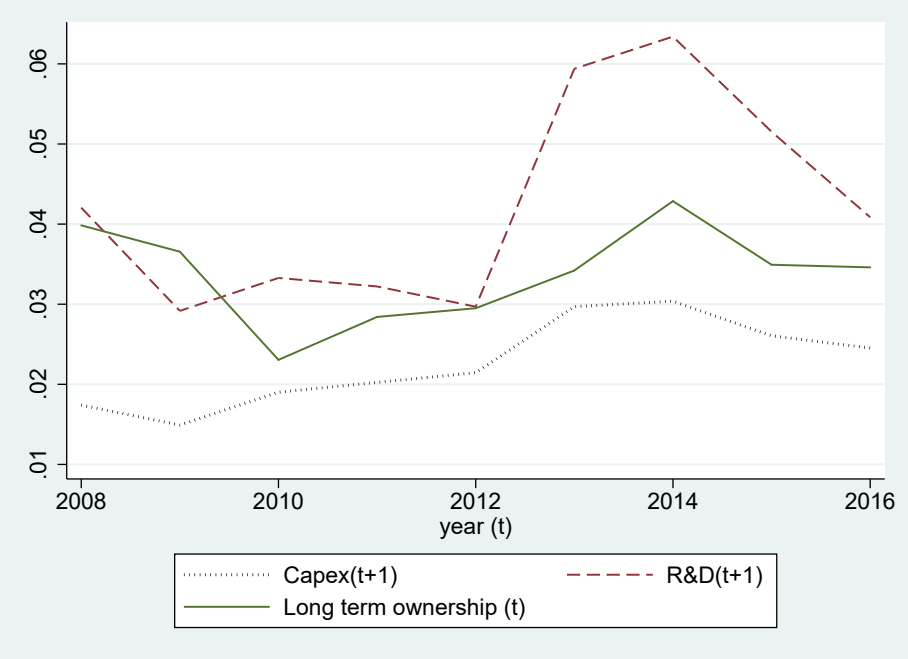
The CFO of the firm Jean-Marc Boursier said:"If we unfortunately got hit a third time by economic crisis like in 2008-2009 and in 2012-2013, we would do exactly the same thing: we would cut our investments and protect our balance sheet, but we would leave our dividend policy unchanged."[39]

- **Safran**

Safran, a French multinational high-technology group, has been subject to the FTT since late 2012. Figure 1 indicates that there was a significant increase in long-term ownership after the FTT introduction. Investments, both in terms of capital expenditures and R&D spending, have followed suit.

In 2017, Safran proposed to buy Zodiac Aerospace, a listed aerospace company. TCI Fund Management, a long-term shareholder of Safran since 2012,[40] claimed that the merger was significantly overpriced. TCI also questioned synergies, deal structure and its fairness to shareholders. Safran adjusted the share ratio and reduced the headline price which resulted in an aggregate price reduction of approximately 26%.[41]

Figure 1: Safran's long-term ownership and investments

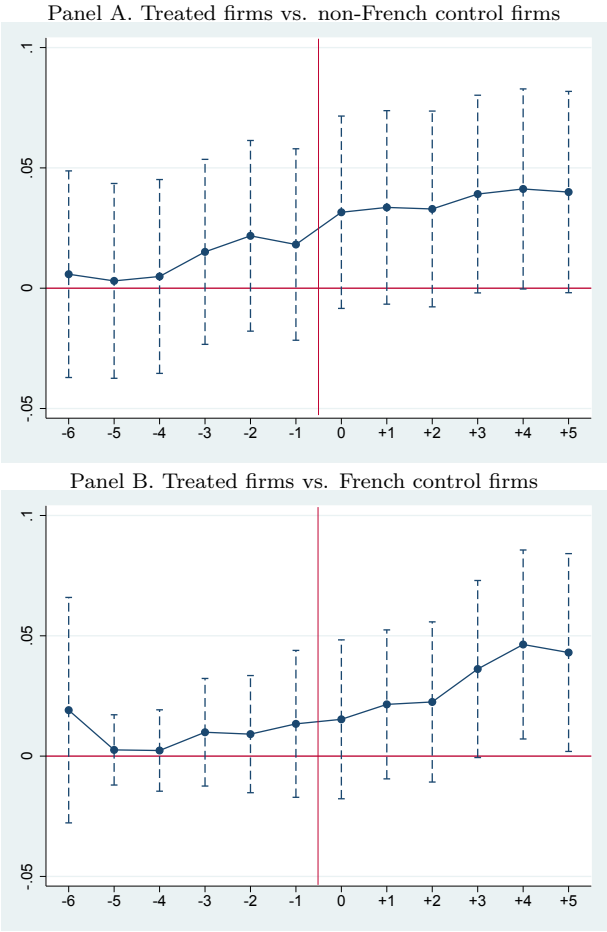


[39] See https://www.reuters.com/article/suezenvironnement-results-dividend-idUSL6N0LP2V520140220.

[40] According to Safran 2012 Registration Document, The Children's Investment Fund Management (UK) LLP, by letter of October 5, 2012, reported that it had exceeded the statutory threshold of 2%.

[41] See https://droitetcroissance.fr/wp-content/uploads/2019/03/Shareholder-activivism_Kevin-Romanteau_DC-vF_edited2.pdf.

Figure 2: The evolution of the difference in corporate investment trend



This figure plots the difference in investment trend between treated firms and control firms. Control firms in Panel A are non-French control firms and in Panel B French control firms. The dots and dash lines are estimates and their corresponding 95% confidence intervals from the following regression: $Investment_{i,t+1} = \alpha_0 + \beta_1 D_{i,t}^{-6} + \beta_2 D_{i,t}^{-5} + ... + \beta_{12} D_{i,t}^{+5} + \delta_i + \tau_t + \epsilon_{i,t+1}$. The dummy variable $D_{i,t}^{+n}$ equals one for treated firms in n^{th} year after the treatment, $D_{i,t}^{-n}$ equals one for treated firms in the n^{th} year before the treatment, and δ_i and τ_t are firm and year fixed effects, respectively.

Table 1: Summary statistics

Panel A. Full sample

	N	Mean	S.D	Q1	Median	Q3
Capex+R&D	2619	0.101	0.158	0.030	0.053	0.098
Capex	2619	0.048	0.052	0.018	0.035	0.058
R&D	1297	0.111	0.204	0.008	0.030	0.105
Size	2643	7.141	2.681	5.689	7.526	9.011
Tobin's q	2156	1.864	1.989	1.043	1.270	1.731
Cash flow	2551	0.027	0.168	0.026	0.062	0.095
ROA	2642	0.044	0.204	0.053	0.092	0.132
Leverage	2638	0.262	0.196	0.114	0.239	0.369

Panel B. Treated firms vs non-French control firms

	Control firms		Treated firms			
	N	Mean	N	Mean	Difference	T-statistic
Capex+R&D	254	0.085	450	0.068	0.017	2.792
Capex	254	0.069	450	0.044	0.025	5.529
R&D	108	0.038	260	0.042	-0.004	-0.544
Size	254	8.113	452	8.697	-0.584	-4.033
Tobin's q	172	2.454	428	1.365	1.089	4.521
Cash flow	250	0.095	448	0.070	0.025	3.438
ROA	254	0.135	452	0.106	0.029	4.516
Leverage	254	0.300	452	0.251	0.049	3.556

Panel C. Treated firms vs French control firms

	Control firms		Treated firms			
	N	Mean	N	Mean	Difference	T-statistic
Capex+R&D	391	0.103	450	0.068	0.034	3.608
Capex	391	0.048	450	0.044	0.004	1.072
R&D	116	0.206	260	0.042	0.164	6.172
Size	398	5.463	452	8.697	-3.233	-24.799
Tobin's q	278	1.446	428	1.365	0.081	0.938
Cash flow	389	-0.007	448	0.070	-0.077	-7.183
ROA	398	0.012	452	0.106	-0.094	-7.609
Leverage	398	0.255	452	0.251	0.004	0.262

This table presents summary statistics. Panel A uses the full sample consisting of all treated firms and control firms of both control groups, non-French firms with capitalization above 1 billion EUR and French firms with capitalization above 0.2 billion EUR at the end of 2011, over the period 2008-2017. Panel B and C compare characteristics of treated firms and control firms over the period 2008-2011, i.e. before the introduction of the FTT with the former comparing treated firms to non-French control firms and the latter comparing treated firms to French control firms with capitalization above 0.2 billion EUR. *Size*, *Tobin's q*, *Cash flow*, *ROA* and *Leverage* are computed at t while *Capex*, *R&D* and *Capex+R&D* are computed at *t+1*. *Capex* and *R&D* are computed as capital expenditures and research and development expenses scaled by total assets at the end of the previous year, respectively. *Capex+R&D* is the sum of capital expenditures and R&D expenses over lagged total assets with missing values of R&D being replaced with zeros. *Size* is measured as the logarithm of total assets. *Tobin's q* is equal to the market value of equity (price times shares outstanding) plus total assets minus the book value of equity all over total assets. *Cash flow* is the ratio of earnings before extraordinary items and depreciation over total assets. *ROA* equals operating income before depreciation divided by total assets. *Leverage* is the sum of debt in current liabilities and long-term debt divided by total assets.

Table 2: Impact of the FTT on corporate investment: *non-French control*

Panel A. Aggregate effect

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Capex+R&D	Capex+R&D	Capex	Capex	R&D	R&D
Tax	0.0130***	0.0093**	0.0128***	0.0088**	0.0013	0.0025
	(0.0044)	(0.0040)	(0.0039)	(0.0037)	(0.0039)	(0.0019)
Size		-0.0113		-0.0067		-0.0137***
		(0.0092)		(0.0080)		(0.0041)
Tobin's q		0.0096**		0.0076**		0.0094**
		(0.0043)		(0.0034)		(0.0044)
Cash flow		0.1937**		0.1691*		0.0293
		(0.0857)		(0.0906)		(0.0187)
ROA		-0.0005		0.0346		-0.0675
		(0.0860)		(0.0801)		(0.0446)
Leverage		-0.0141		-0.0112		0.0083
		(0.0258)		(0.0249)		(0.0115)
Constant	0.0640***	0.1228	0.0434***	0.0681	0.0389***	0.1495***
	(0.0013)	(0.0880)	(0.0012)	(0.0758)	(0.0014)	(0.0378)
Observations	1,596	1,396	1,596	1,396	839	771
Adjusted R-squared	0.8127	0.8058	0.6345	0.6961	0.9567	0.9673
Controls x Year	no	yes	no	yes	no	yes
Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

Panel B. Financially constrained vs. unconstrained firms

	Constrained			Unconstrained		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Capex+R&D	Capex	R&D	Capex+R&D	Capex	R&D
Tax	0.0072	0.0082	-0.0020	0.0110**	0.0056*	0.0074**
	(0.0052)	(0.0051)	(0.0018)	(0.0043)	(0.0029)	(0.0031)
Constant	0.2972***	0.2748***	0.0806**	0.1991***	0.0420	0.1923***
	(0.0738)	(0.0698)	(0.0376)	(0.0742)	(0.0524)	(0.0394)
Observations	578	578	312	594	594	357
Adjusted R-squared	0.7715	0.7405	0.9452	0.8818	0.6940	0.9568
Controls	yes	yes	yes	yes	yes	yes
Controls x Year	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

This table presents regression results for the models examining the impact of the FTT on corporate investment. The regressions compare French treated firms to non-French control firms. Panel A reports the aggregate effect. Specifications (1), (3) and (5) exclude control variables; remaining specifications include control variables. In columns (1) and (2), the dependent variable is *Capex+R&D*, columns (3) and (4) *Capex*, columns (5) and (6) *R&D*. Panel B summarizes results when the sample is split based on the ex ante financial constraint measured by KZ index as in Lamont et al. (2001). Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table 3: Impact of the FTT on corporate investment: *French control*

Panel A. Aggregate effect

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Capex+R&D	Capex+R&D	Capex	Capex	R&D	R&D
Tax	0.0187***	0.0113**	0.0083**	0.0071**	0.0361***	0.0196**
	(0.0063)	(0.0050)	(0.0034)	(0.0033)	(0.0135)	(0.0077)
Size		-0.0341***		-0.0146***		-0.0406***
		(0.0091)		(0.0044)		(0.0118)
Tobin's q		0.0193*		0.0073		0.0267*
		(0.0102)		(0.0045)		(0.0138)
Cash flow		0.0504		0.0477		-0.0422
		(0.0532)		(0.0491)		(0.0450)
ROA		-0.0575		-0.0527		-0.0558
		(0.0536)		(0.0463)		(0.0689)
Leverage		-0.0119		-0.0384**		0.0056
		(0.0241)		(0.0170)		(0.0231)
Constant	0.1034***	0.3209***	0.0435***	0.1585***	0.1172***	0.3844***
	(0.0015)	(0.0710)	(0.0008)	(0.0334)	(0.0039)	(0.0999)
Observations	2,015	1,632	2,015	1,632	1,025	800
Adjusted R-squared	0.8030	0.8838	0.6158	0.7218	0.8136	0.9375
Controls x Year	no	yes	no	yes	no	yes
Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

Panel B. Financially constrained vs. unconstrained firms

	Constrained			Unconstrained		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Capex+R&D	Capex	R&D	Capex+R&D	Capex	R&D
Tax	-0.0016	0.0002	-0.0030	0.0205***	0.0124**	0.0203**
	(0.0037)	(0.0037)	(0.0025)	(0.0068)	(0.0057)	(0.0077)
Constant	0.2073***	0.1736***	0.1285**	0.2502***	0.0090	0.3212***
	(0.0503)	(0.0490)	(0.0484)	(0.0875)	(0.0529)	(0.0693)
Observations	740	740	344	650	650	329
Adjusted R-squared	0.7886	0.7386	0.9513	0.9717	0.6295	0.9847
Controls	yes	yes	yes	yes	yes	yes
Controls x Year	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

This table presents regression results for the models examining the impact of the FTT on corporate investment. The regressions compare French treated firms to French control firms whose capitalizations are above 0.2 billion EUR at the end of 2011. Specifications (1), (3) and (5) exclude control variables; remaining specifications include control variables. In columns (1) and (2), the dependent variable is *Capex+R&D*, columns (3) and (4) *Capex*, columns (5) and (6) *R&D*. Panel B summarizes results when the sample is split based on the ex ante financial constraint measured by KZ index as in Lamont et al. (2001). Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table 4: Impact of the FTT on corporate investment: *Placebo tests*

	French sample			Non-French sample		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Capex+R&D	Capex	R&D	Capex+R&D	Capex	R&D
Pseudo-Tax	0.0016	0.0016	-0.0001	-0.0118	-0.0105	0.0007
	(0.0026)	(0.0024)	(0.0019)	(0.0085)	(0.0081)	(0.0041)
Size	-0.0132**	-0.0067	-0.0147***	-0.0209**	-0.0161*	-0.0189***
	(0.0060)	(0.0057)	(0.0046)	(0.0103)	(0.0088)	(0.0068)
Tobin's q	0.0169***	0.0126**	0.0079*	0.0085**	0.0075**	0.0098
	(0.0050)	(0.0050)	(0.0046)	(0.0037)	(0.0031)	(0.0064)
Cash flow	0.0566	0.0223	0.0289	0.1328	0.1069	0.0737***
	(0.0673)	(0.0627)	(0.0207)	(0.0802)	(0.0848)	(0.0183)
ROA	0.0150	0.0625	-0.0628*	0.0370	0.0737	-0.0883
	(0.0634)	(0.0633)	(0.0349)	(0.1001)	(0.0939)	(0.0660)
Leverage	-0.0368	-0.0327	0.0047	-0.0471	-0.0311	0.0067
	(0.0288)	(0.0281)	(0.0120)	(0.0321)	(0.0309)	(0.0217)
Constant	0.1513***	0.0762	0.1564***	0.2113**	0.1542**	0.1805***
	(0.0540)	(0.0505)	(0.0397)	(0.0872)	(0.0747)	(0.0600)
Observations	965	965	569	631	631	285
Adjusted R-squared	0.8334	0.7499	0.9567	0.7169	0.6548	0.9649
Controls x Year	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

This table presents placebo tests. Columns (1), (2) and (3) summarizes the regression results using the sample of treated firms and a pseduo FTT imposed on firms with market capitalization above 5 billion EUR. Columns (4), (5) and (6) summarizes the regression results using the sample of non-French firms and a pseudo FTT mimicking the French FTT. Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table 5: Effects of the FTT on ownership structure

Panel A. Summary statistics

	N	Mean	S.D	Min	Median	Max
Very low turnover	9411	1.722	2.363	0.000	1.204	50.474
Low turnover	9411	1.353	2.147	0.000	0.800	75.711
Medium turnover	9411	0.601	1.029	0.000	0.343	43.595
High turnover	9411	0.164	0.320	0.000	0.069	6.965
Very high turnover	9411	0.123	0.275	0.000	0.029	11.495

Panel B. Regression results

	Non-French control			French control	
	(1)	(2)	(3)	(4)	(5)
VARIABLES	All firms	SLP firms	Non-SLP firms	All firms	Non-SLP firms
Tax	0.5583**	0.8945***	0.4364	0.2569	0.1943
	(0.2609)	(0.2612)	(0.3740)	(0.2523)	(0.2688)
Constant	1.0194	0.4450	2.2871	-4.3183	-5.2896
	(2.5635)	(4.5656)	(2.9841)	(2.9663)	(3.2681)
Observations	5,504	2,152	3,352	6,355	4,827
Adjusted R-squared	0.5233	0.7872	0.4545	0.4966	0.4471
Controls	yes	yes	yes	yes	yes
Controls x Year	yes	yes	yes	yes	yes
Quarter FE	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes

This table presents analysis on the impact of the FTT on ownership by long-term investors. Panel A summarizes statistics on ownership by funds (in %) with different portfolio turnovers in the whole sample of treated firms, non-French and French control firms. In Factset ownership database, funds are classified into five groups, Very Low, Low, Medium, High, Very High (turnover). Very Low funds have portfolios with less than 25% annual turnover or 4-year holding period or more. Low and Medium funds have holding periods of 2-4 years and 1-2 years, respectively while High and Very High funds have holding periods of less than one year. For each firm, long-term ownership is defined as the total ownership by Very Low and Low and Medium (turnover) funds. Panel B summarizes the regressions with dependent variable being the total ownership by funds with very low, low and medium turnovers. The first three columns use non-French control: (1) compares all treated firms to all control firms, (2) treated SLP firms to control SLP firms, (3) treated non-SLP firms to control non-SLP firms. The last two columns use French control: (4) compares all treated firms to all control firms, (5) treated non-SLP firms to control non-SLP firms. Robust standard errors clustered by firm are in parentheses. Control variables include size, Tobin's q, cashflow, ROA and leverage. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table 6: Effects of the FTT on investment sensitivity

Panel A. Tobin's q

	SLP firms			Non-SLP firms		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Capex+R&D	Capex	R&D	Capex+R&D	Capex	R&D
Tax	-0.0280**	-0.0140	-0.0126**	-0.0024	0.0020	-0.0072
	(0.0123)	(0.0154)	(0.0061)	(0.0082)	(0.0081)	(0.0051)
Tax*Tobin's q	0.0298***	0.0185	0.0114**	0.0097*	0.0069	0.0048
	(0.0078)	(0.0113)	(0.0056)	(0.0055)	(0.0049)	(0.0036)
Constant	0.2253**	0.1815**	0.0775*	0.0988	0.0423	0.1965***
	(0.0860)	(0.0801)	(0.0434)	(0.0938)	(0.0838)	(0.0466)
Observations	598	598	390	798	798	381
Adjusted R-squared	0.8836	0.8291	0.9707	0.7627	0.6070	0.9702
Controls	yes	yes	yes	yes	yes	yes
Controls x Year	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

Panel B. Sales growth

	SLP firms			Non-SLP firms		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Capex+R&D	Capex	R&D	Capex+R&D	Capex	R&D
Tax	0.0092	0.0099*	0.0001	0.0080*	0.0084*	-0.0002
	(0.0057)	(0.0053)	(0.0026)	(0.0044)	(0.0043)	(0.0018)
Tax*Sales growth	0.0565**	0.0304	0.0313**	-0.0066	-0.0030	-0.0097
	(0.0228)	(0.0214)	(0.0127)	(0.0267)	(0.0256)	(0.0126)
Constant	0.2871***	0.2095***	0.1140**	0.0990	0.0485	0.1925***
	(0.0879)	(0.0743)	(0.0510)	(0.0912)	(0.0818)	(0.0442)
Observations	598	598	390	798	798	381
Adjusted R-squared	0.8835	0.8356	0.9712	0.7868	0.6499	0.9711
Controls	yes	yes	yes	yes	yes	yes
Controls x Year	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

This table presents analyses of the impact of the FTT on investment sensitivity to changes in investment opportunities using model 3. Panel A uses the industry Tobin's q as a proxy for investment opportunities available to firms in the industry. Panel B uses the average industry sales growth as a proxy for investment opportunities. The estimates on controls and other interaction terms in model 3 are not reported for brevity. Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table 7: Effects of the FTT on acquisition activities

Panel A. Summary statistics

	N	Mean	S.D	Min	Median	Max
AcqDummy	2,046	0.461	0.499	0	0	1
CAR(-2,+2)	775	0.003	0.038	-0.110	0.002	0.120
Deal value	775	0.048	0.097	0.000	0.012	0.580
Tender offer	775	0.115	0.319	0	0	1
Public	775	0.258	0.438	0	0	1
Subsidiary	775	0.445	0.497	0	0	1
Cash	775	0.095	0.294	0	0	1
Equity	775	0.013	0.113	0	0	1

Panel B. Likelihood of making acquisition

	SLP firms		Non-SLP firms	
	(1)	(2)	(3)	(4)
VARIABLES	AcqDummy	AcqDummy	AcqDummy	AcqDummy
Tax	0.1736***	0.1601**	0.0682	0.0375
	(0.0630)	(0.0624)	(0.0506)	(0.0619)
Treated	0.1151	0.0669	0.1853***	0.0899
	(0.0699)	(0.0698)	(0.0520)	(0.0718)
Constant	0.5371***	-0.3088	0.2271***	-0.1759
	(0.0456)	(0.3101)	(0.0347)	(0.1754)
Observations	670	667	1,376	1,040
Adjusted R-squared	0.1706	0.1777	0.1600	0.1529
Controls	no	yes	no	yes
Controls x Year	no	yes	no	yes
Year FE	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes

Panel C. Acquisition performance

	SLP firms		Non-SLP firms	
	(1)	(2)	(3)	(4)
VARIABLES	CAR(-2,+2)	CAR(-2,+2)	CAR(-2,+2)	CAR(-2,+2)
Tax	0.0195**	0.0140*	0.0041	0.0051
	(0.0095)	(0.0083)	(0.0098)	(0.0139)
Treated	-0.0084	-0.0042	-0.0014	-0.0028
	(0.0079)	(0.0068)	(0.0096)	(0.0144)
Constant	0.0023	0.1931***	-0.0137	0.0896
	(0.0067)	(0.0518)	(0.0112)	(0.0702)
Observations	488	488	287	280
Adjusted R-squared	0.0419	0.0698	0.0912	0.1085
Deal Controls	yes	yes	yes	yes
Firm Controls	no	yes	no	yes
Firm Controls x Year	no	yes	no	yes
Year FE	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes

This table presents analyses of effects of FTT on acquisition activities. *AcqDummy* is an indicator, equal to 1 if firm makes at least one acquisition in a given year, 0 otherwise. CAR is the cumulative abnormal returns over the 5-day (-2, +2) event window centered on the announcement date, where abnormal returns are computed using the market model. Other variables are binary variables for whether the deal is a tender offer, target firm is public, target firm is a subsidiary, the deal is financed by cash, and the deal is financed by equity. Columns (1) and (2) of Panel B and C use SLP firms while columns (3) and (4) non-SLP firms. Firm control variables include size, Tobin's q, cash flow, leverage and ROA. Deal control variables include relative deal value, and binary variables for target firm public status, target subsidiary status, tender offer, cash payment, equity payment. The estimates of control variables are not reported for brevity. Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table 8: Impact of the FTT on earnings pressure

	Non-French control		French control	
	(1)	(2)	(3)	(4)
	Small Profits	Discretionary	Small Profits	Discretionary
VARIABLES	or Increases	Accrual	or Increases	Accrual
Tax	-0.0659***	-0.0191**	-0.0726**	-0.0156
	(0.0246)	(0.0085)	(0.0292)	(0.0103)
Treated	0.0644***	-0.0016	-0.0093	0.0102
	(0.0218)	(0.0086)	(0.0285)	(0.0123)
Constant	-0.0825	0.1251***	-0.0920*	0.0913***
	(0.0693)	(0.0264)	(0.0538)	(0.0156)
Observations	1,797	763	2,127	801
Adjusted R-squared	0.2744	0.0865	0.2320	0.0957
Control	yes	yes	yes	yes
Control x Year	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes

This table presents the regression results for models examining the impact of the FTT on earnings pressue. Dependent variables are *Small Profits or Increases* or *Discretionary Accruals*. *Small Profits or Increases* is equal to 1 if a firm has either small profits or a small increase in profits, and 0 otherwise. *Discretionary Accruals* is the absolute value of discretionary accruals estimated from a modified version of Jones (1991) model. Columns (1) and (2) use non-French control, and columns (3) and (4) French control. Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

A Appendix

Figure A1: Capitalization distribution of French firms

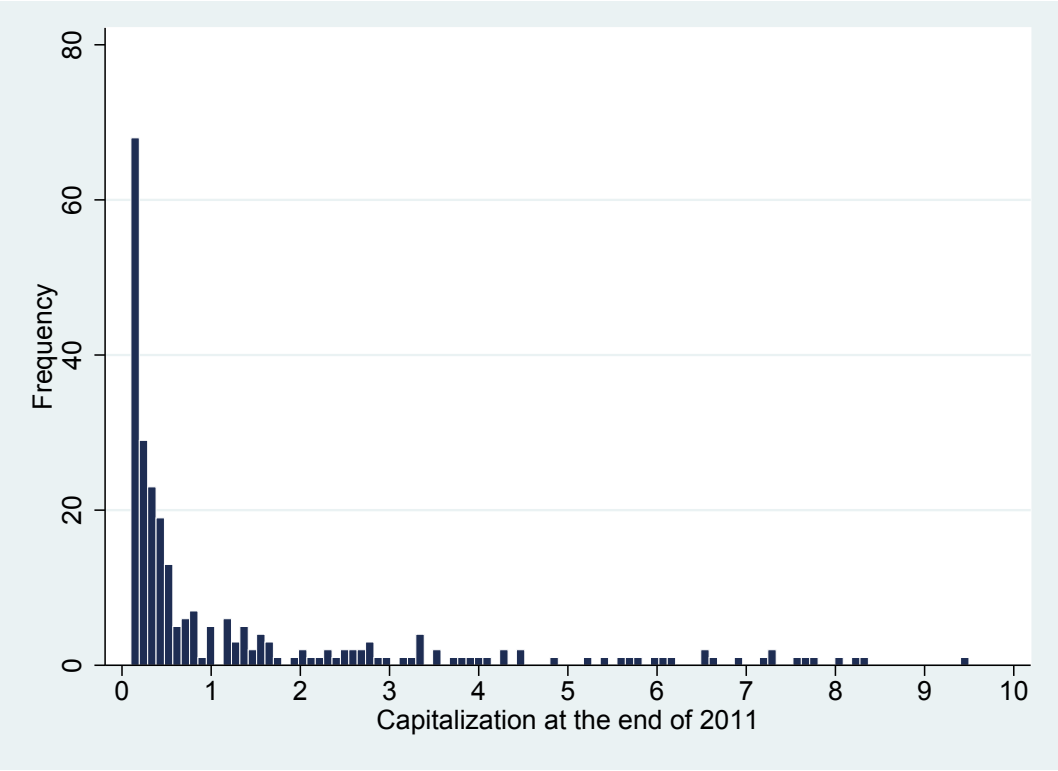


Figure A2: Capital distribution of French firms with capitalization around 1 billion EUR

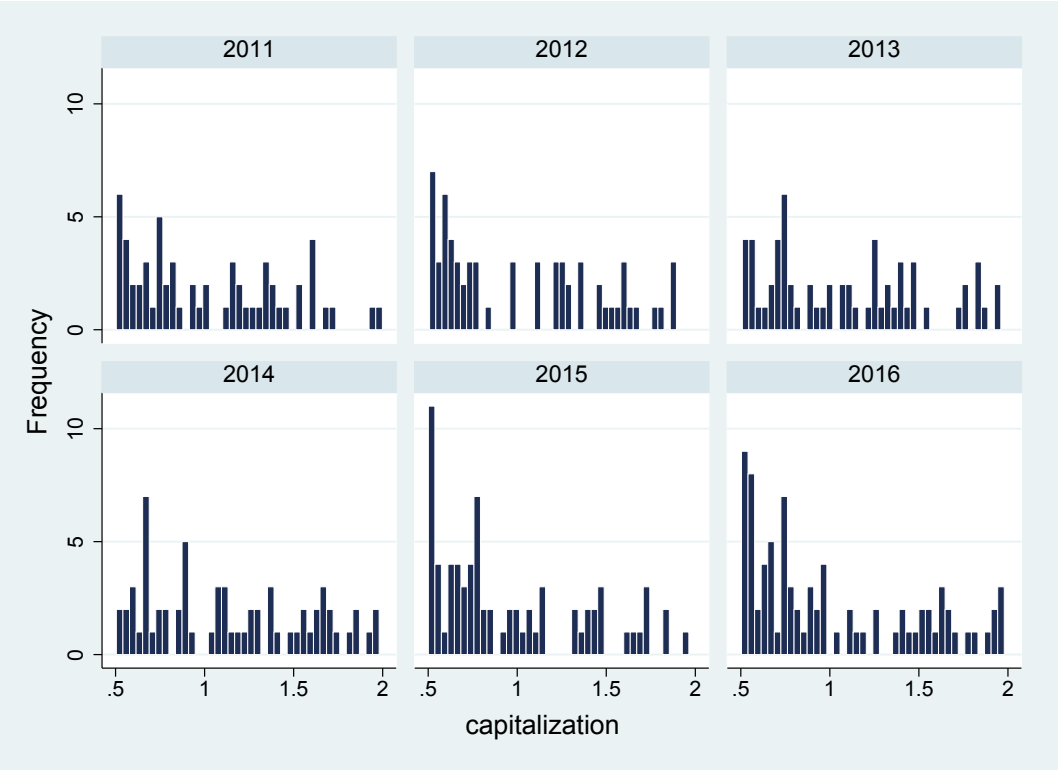


Table A1: Variable definitions

Name	Definition	Source
Tax	Indicator equal to 1 if a firm is treated in that year and 0 otherwise.	The French Ministry of Economy and Finance, and Tax Authorities
Treated	Indicator equal to 1 if a firm is subject to FTT and 0 otherwise.	The French Ministry of Economy and Finance, and Tax Authorities
Capex	$CAPX_{t+1}/AT_t$	Compustat Global
R&D	XRD_{t+1}/AT_t	Compustat Global
Size	$Ln(AT_t)$	Compustat Global
Tobin's q	$(CSHOI * PRCCD + AT - CEQ)/AT$. If CSHOI is not available, CSHOC is used instead.	Compustat Global
Cash flow	$(IB + DP)/AT$	Compustat Global
ROA	$OIBDP/AT$	Compustat Global
Leverage	$(DLC + DLTT)/AT$	Compustat Global
Debt Issuance	$(DLTT_{t+1}–DLTT_t)/AT_t$	Compustat Global
Equity Issuance	$SSTK_{t+1}/AT_t$	Compustat Global
Dividend Payout	DV_{t+1}/AT_t	Compustat Global
Financial Constraint	KZ index constructed by Lamont et al. (2001) based on Kaplan and Zingales (1997).	Compustat Global
Discretionary Accruals	Absolute value of discretionary accruals estimated by a cross sectional Jones (1991) model.	Compustat Gobal
Small Profits or Increases	Indicator equal to 1 if a firm has small profits, i.e. earnings before extraordinary items scaled by lagged total assets are positive and below 0.5%, or small profits increases, i.e., earnings before extraordinary items scaled by lagged total assets is positive and below 0.1%, and 0 otherwise.	Compustat Gobal
Long-term ownership	Funds are classified into five groups, Very Low, Low, Medium, High, Very High (turnover). For each firm, the ownership ratio owned by each type of funds is computed and long-termownership is equal to the total ownership by Very Low and Low and Medium (turnover) funds.	Factset Ownership
AcqDummy	Indicator equal to 1 if firm makes at least one acquisition in a given year, 0 otherwise.	SDC Platinum
CAR	Cumulative abnormal return over the 5-day (-2, +2) event window centered on the announcement date, where abnormal returns are computed using the market model, with the estimation window being (-210, -11) and the market return being Stoxx Europe 600 index.	Compustat Gobal and SDC Platinum
Deal value	Value of the deal divided by lagged market value of equity.	Compustat and SDC Platinum
Tender offer	Indicator equal to 1 if the deal is a tender offer, 0 otherwise.	SDC Platinum
Public	Indicator equal to 1 if the target firm is a public firm, 0 otherwise.	SDC Platinum
Subsidiary	Indicator equal to 1 if the target firm is a subsidiary, 0 otherwise.	SDC Platinum
Cash	Indicator equal to 1 if the deal is financed by cash, 0 otherwise.	SDC Platinum
Equity	Indicator equal to 1 if the deal is financed by equity, 0 otherwise.	SDC Platinum

Table A2: Effects of the FTT on corporate investment: *Industry-Year FE*

	Non-French control			French control		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Capex+R&D	Capex	R&D	Capex+R&D	Capex	R&D
Tax	0.0080**	0.0076**	0.0026	0.0108**	0.0054**	0.0194**
	(0.0036)	(0.0033)	(0.0020)	(0.0048)	(0.0027)	(0.0081)
Size	-0.0142	-0.0093	-0.0156***	-0.0357***	-0.0172***	-0.0457***
	(0.0096)	(0.0083)	(0.0045)	(0.0091)	(0.0044)	(0.0131)
Tobin's q	0.0073*	0.0057*	0.0095*	0.0164*	0.0056	0.0294*
	(0.0039)	(0.0031)	(0.0049)	(0.0088)	(0.0046)	(0.0151)
Cash flow	0.1819**	0.1570*	0.0294	0.0297	0.0320	-0.0273
	(0.0846)	(0.0889)	(0.0187)	(0.0506)	(0.0480)	(0.0539)
ROA	-0.0054	0.0334	-0.0701	-0.0388	-0.0435	-0.0636
	(0.0904)	(0.0852)	(0.0500)	(0.0555)	(0.0441)	(0.0837)
Leverage	-0.0011	-0.0006	0.0093	0.0081	-0.0250	-0.0025
	(0.0259)	(0.0254)	(0.0139)	(0.0239)	(0.0169)	(0.0259)
Constant	0.1433	0.0831	0.1703***	0.3240***	0.1685***	0.4138***
	(0.0903)	(0.0772)	(0.0426)	(0.0710)	(0.0326)	(0.1103)
Observations	1,396	1,396	767	1,623	1,623	793
Adjusted R-squared	0.8102	0.7036	0.9657	0.8815	0.7229	0.9329
Controls x Year	yes	yes	yes	yes	yes	yes
Industry-Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

This table presents the analysis of the impact of the FTT on investment with firm and industry-year fixed effects. Columns (1), (2) and (3) use non-French control firms. Columns (4), (5) and (6) use French control firms. In parentheses are robust standard errors clustered by firm. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table A3: Effects of the FTT on corporate investment: *Matched control*

Panel A. Treated firms vs. matched firms

	Matched firms		Treated firms			
	N	Mean	N	Mean	Difference	T-statistic
Size	74	8.790	143	9.045	-0.255	-1.075
Tobin's q	74	1.913	143	1.396	0.517	1.439
Cash flow	74	0.075	143	0.063	0.012	1.180
ROA	74	0.113	143	0.097	0.016	1.573
Leverage	74	0.257	143	0.254	0.003	0.152

Panel B. Regression results

	(1)	(2)	(3)
VARIABLES	Capex+R&D	Capex	R&D
Tax	0.0091**	0.0098**	0.0005
	(0.0045)	(0.0042)	(0.0020)
Size	-0.0118	-0.0071	-0.0149***
	(0.0110)	(0.0095)	(0.0038)
Tobin's q	0.0044	0.0046*	-0.0003
	(0.0027)	(0.0026)	(0.0009)
Cash flow	0.1002***	0.0942***	0.0210
	(0.0294)	(0.0283)	(0.0149)
ROA	0.0950*	0.0906*	-0.0006
	(0.0506)	(0.0494)	(0.0256)
Leverage	-0.0564***	-0.0505**	0.0007
	(0.0206)	(0.0210)	(0.0079)
Constant	0.1513	0.0920	0.1630***
	(0.0970)	(0.0843)	(0.0342)
Observations	1,347	1,347	750
Adjusted R-squared	0.7987	0.6984	0.9616
Year FE	yes	yes	yes
Firm FE	yes	yes	yes

This table presents the analysis of the impact of the FTT on investment with control firms being selected from matching. I match treated firms with non-French control firms on logarithm of market capitalization, Tobin's q, cash flow to assets, leverage and ROA in the year before treatment using propensity score matching. Each treated firm is matched with one nearest-neighbor match with replacement. Panel A compares characteristics of treated firms and matched firms in the year before treatment. Panel B summarizes the regression results using the matched sample. In parentheses are robust standard errors clustered by firm. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table A4: Impact of the FTT on corporate investment: *French control with alternative cutoffs*

	>0.1 billion EUR			>0.3 billion EUR			0.3-3.0 billion EUR		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Capex+R&D	Capex	R&D	Capex+R&D	Capex	R&D	Capex+R&D	Capex	R&D
Tax	0.0106**	0.0048	0.0196***	0.0134**	0.0078**	0.0228**	0.0094*	0.0063	0.0171**
	(0.0048)	(0.0032)	(0.0067)	(0.0056)	(0.0038)	(0.0091)	(0.0048)	(0.0042)	(0.0072)
Size	-0.0339***	-0.0141***	-0.0444***	-0.0357***	-0.0162***	-0.0409***	-0.0316***	-0.0074	-0.0343***
	(0.0079)	(0.0040)	(0.0103)	(0.0099)	(0.0049)	(0.0133)	(0.0082)	(0.0056)	(0.0079)
Tobin's q	0.0184*	0.0089**	0.0224	0.0184*	0.0061	0.0321**	0.0304	0.0069	0.0455***
	(0.0099)	(0.0041)	(0.0143)	(0.0110)	(0.0051)	(0.0161)	(0.0186)	(0.0074)	(0.0161)
Cash flow	-0.0036	0.0309	-0.0383	0.1500**	0.1171**	-0.0036	0.1443**	0.1356**	0.0330
	(0.0439)	(0.0356)	(0.0413)	(0.0650)	(0.0582)	(0.0604)	(0.0688)	(0.0672)	(0.0902)
ROA	-0.0598	-0.0753**	-0.0735	-0.1239**	-0.0999*	-0.1252	-0.1674**	-0.1364*	-0.0817
	(0.0549)	(0.0362)	(0.0603)	(0.0593)	(0.0521)	(0.0769)	(0.0728)	(0.0697)	(0.1189)
Leverage	-0.0134	-0.0388***	0.0049	-0.0084	-0.0385**	-0.0003	-0.0903***	-0.0831***	0.0082
	(0.0190)	(0.0132)	(0.0221)	(0.0272)	(0.0193)	(0.0275)	(0.0312)	(0.0267)	(0.0282)
Constant	0.3106***	0.1452***	0.3947***	0.3370***	0.1732***	0.3863***	0.3013***	0.1088***	0.3612***
	(0.0587)	(0.0282)	(0.0809)	(0.0778)	(0.0373)	(0.1124)	(0.0590)	(0.0402)	(0.0666)
Observations	2,057	2,057	966	1,442	1,442	739	750	750	309
Adjusted R-squared	0.8661	0.6808	0.9218	0.8825	0.7206	0.9395	0.9500	0.5973	0.9853
Controls x Year	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes	yes

This table presents regression results for the models examining the impact of the FTT on corporate investment using various samples with different cutoffs. All regressions compare French treated firms with French control firms. Columns (1), (2) and (3) use a sample of firms with capitalization above 0.1 billion EUR at the end of 2011; columns (4), (5) and (6) use those above 0.3 billion EUR; and columns (7), (8) and (9) use those above 0.3 and below 3.0 billion EUR. In parentheses are robust standard errors clustered by firm. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table A5: Effects of the FTT on corporate investment: *Asset Growth*

	Non-French control		French control		Matched control	
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Tax	0.0480**	0.0107	0.0410*	0.0754***	0.0465**	0.0333*
	(0.0230)	(0.0214)	(0.0237)	(0.0286)	(0.0182)	(0.0184)
Size		-0.1555***		-0.3084***		-0.1194***
		(0.0441)		(0.0510)		(0.0323)
Tobin's q		0.0404**		0.0506**		0.0386**
		(0.0164)		(0.0237)		(0.0157)
Cash flow		0.6225*		0.2395		0.5737**
		(0.3388)		(0.2438)		(0.2217)
ROA		0.0245		-0.5815**		0.1015
		(0.2866)		(0.2888)		(0.2616)
Leverage		-0.1902*		-0.2328**		-0.2142**
		(0.1005)		(0.1093)		(0.0869)
Constant	0.0706***	1.5549***	0.1129***	2.5496***	0.0533***	1.0808***
	(0.0066)	(0.4176)	(0.0056)	(0.4043)	(0.0062)	(0.2947)
Observations	2,107	1,709	2,555	1,981	1,775	1,640
Adjusted R-squared	0.1744	0.2360	0.1373	0.2957	0.1663	0.2595
Controls x Year	no	yes	no	yes	no	no
Year FE	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes

This table presents regression results for the models examining the impact of the FTT on corporate investment using Asset Growth as an alternative measure of investment. Asset Growth in year t is the difference between total assets in year t+1 and year t scaled by total assets in year t. Specifications (1) and (2) use non-French control group without and with control variables, respectively; (3) and (4) French control group; (4) and (5) matched control group. Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table A6: The Impact of FTT on long-term ownership and corporate investment: *The Italian FTT*

Panel A. Corporate investment								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	>100 million EUR		100-2,000 million EUR		50-1,500 million EUR		50-1,000 million EUR	
VARIABLES	Capex	R&D	Capex	R&D	Capex	R&D	Capex	R&D
Tax	0.0042	0.0024	0.0014	0.0043*	0.0011	0.0058**	0.0000	0.0069***
	(0.0046)	(0.0028)	(0.0049)	(0.0023)	(0.0051)	(0.0026)	(0.0052)	(0.0024)
Constant	0.1207***	0.1846***	0.0083	0.0350	0.0434	0.0861***	0.0402	0.0747***
	(0.0435)	(0.0461)	(0.0368)	(0.0355)	(0.0413)	(0.0251)	(0.0418)	(0.0260)
Observations	935	375	594	239	823	328	769	310
Adjusted R-squared	0.6825	0.8580	0.5813	0.9421	0.5634	0.9543	0.5582	0.9565
Controls	yes	yes	yes	yes	yes	yes	yes	yes
Controls x Year	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes

Panel B. Long-term ownership				
	(1)	(2)	(3)	(4)
VARIABLES	>100 million EUR	100-2,000 million EUR	50-1,500 million EUR	50-1,000 million EUR
Tax	0.4399*	0.3865	0.5157*	0.7389**
	(0.2375)	(0.2883)	(0.2820)	(0.2883)
Constant	-0.2555	-2.2061	-1.1452	-1.7851
	(1.4768)	(2.0844)	(1.7691)	(1.4946)
Observations	5,318	3,283	4,094	3,662
Adjusted R-squared	0.6192	0.6357	0.6542	0.6639
Controls	yes	yes	yes	yes
Controls x Year	yes	yes	yes	yes
Quarter FE	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes

This table reports regression results for models evaluating the impact of the Italian FTT levied on the purchases of stocks with capitalization above 500 million EUR. Panel A summarizes results for corporate investment using different samples of firms with capitalization around the threshold of 500 million EUR. Panel B for long-term ownership. Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table A7: The Impact of FTT on Likelihood of Positive CAR

	SLP firms		Non-SLP firms	
	(1)	(2)	(3)	(4)
VARIABLES	CAR>0	CAR>0	CAR>0	CAR>0
Tax	0.3496***	0.3895***	-0.0327	-0.1017
	(0.1082)	(0.1236)	(0.1156)	(0.1574)
Treated	-0.1466*	-0.1337	0.1395	0.2524
	(0.0765)	(0.0843)	(0.1449)	(0.1623)
Constant	0.5392***	2.0815***	0.2197	1.4921*
	(0.0760)	(0.5223)	(0.1536)	(0.7863)
Observations	488	488	287	280
R-squared	0.1076	0.1786	0.2211	0.4107
Deal Control	yes	yes	yes	yes
Firm Control	no	yes	no	yes
Firm Control x Year	no	yes	no	yes
Year FE	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes

This table reports regression results for models evaluating the impact of FTT on the performance of acquisition activities. The dependent variable is binary, equal to 1 if CAR(-2,+2) is positive and 0 otherwise. Deal control variables include deal value, and binary variables for target firm public status, target subsidiary status, tender offer, cash payment, equity payment. Firm control variables include size, Tobin's q, cash flow, leverage, ROA. The estimates of control variables are not reported for brevity. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.

Table A8: Financing and performance

	Non-French control				French control			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Debt Issuance	Equity Issuance	Dividend Payout	Return on Assets	Debt Issuance	Equity Issuance	Dividend Payout	Return on Assets
Tax	0.0015	-0.0167	-0.0031*	0.0060	0.0149	-0.0042	0.0026	0.0053
	(0.0073)	(0.0157)	(0.0016)	(0.0037)	(0.0100)	(0.0350)	(0.0016)	(0.0043)
Constant	0.3635***	0.4667	0.0494*	0.1154***	0.4355***	1.1917***	0.0171	0.0571
	(0.0969)	(0.3535)	(0.0259)	(0.0317)	(0.1349)	(0.3813)	(0.0259)	(0.0485)
Observations	1,702	851	1,181	1,733	2,017	1,060	1,100	2,115
Adjusted R-squared	0.1158	0.4776	0.8338	0.8761	0.1756	0.6193	0.8847	0.9539
Controls	yes	yes	yes	yes	yes	yes	yes	yes
Controls x Year	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes
Firm FE	yes	yes	yes	yes	yes	yes	yes	yes

This table presents regression results for the models examining the impact of the FTT on financing, payout, and performance. *Debt Issuance* is equal to the percentage change in long-term debt, *Equity Issuance* is computed as the sale of common and preferred stocks over total assets, and *Dividend Payout* is the ratio of cash dividend over total assets, and *Return on Assets* is the ratio of operating income before depreciation over total assets. The first four columns use non-French control and the last four columns use French control. Robust standard errors clustered by firm are in parentheses. ***, **, and * denote statistical significance at 1%, 5% and 10% level, respectively.