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The impact of the EU takeover directive on takeover performance and empire building ☆

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ABSTRACT

This paper uses the EU takeover directive as a natural experiment to test when legal harmonization creates value, and to examine the impact of increased entrenchment on investment decisions. The EU promulgated the takeover directive in April 2004. The implementation deadline was May 2006. The goal was to encourage value-creating takeovers by harmonizing takeover laws across the EU. However, the takeover directive has received criticism for being vague and discretionary, and for entrenching managers. I hypothesize that because the directive hinders takeovers, it might increase managerial entrenchment and enable managers of EU-companies to make agency-motivated investments (or simply exercise less discipline). I find supportive evidence: after the directive, EU-companies make investments that are less profitable (as proxied by takeover returns) and that take longer to compete. Further, asset growth increased in treated companies following the takeover directive, suggesting that the additional entrenchment facilitates empire building.

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1. Introduction

This article uses the EU takeover directive as a natural experiment to examine the impact of 'harmonizing' takeover laws, and of increasing managerial entrenchment. The EU promulgated the takeover directive on 21 April 2004. The implementation deadline was 20 May 2006. The directive has received criticism for failing to achieve effective harmonization, for being vague and discretionary, and for entrenching managers. No prior study has examined whether this important reform has created value. Thus, this paper uses a difference-in-difference (DD) methodology to examine whether the takeover directive encouraged managers of companies in the EU ('treated companies') to undertake value-creating investments. The results suggest that after the directive, the 'treated companies' undertake worse investments (as proxied by the takeovers that companies make), do so less efficiently, and are less likely to pay with cash (as opposed to stock). Further, asset growth increased following the takeover directive, suggesting that additional entrenchment enabled managerial empire building.

The theoretical motivation for this paper derives from two main sources. First, I am interested in the impact of the takeover directive on corporate behavior. This can illustrate the need for further reform in the EU and can provide lessons on regulatory

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harmonization in general. Second, as I illustrate in Section 2, the directive may have entrenched managers in the EU. This enables me to use the directive as a natural experiment to examine the impact of increased entrenchment while mitigating the causation concerns that exist in the corporate governance literature.[1]

The directive itself is an attempt to harmonize takeover laws in the EU.[2] The EU has responded to the argued regulatory competition between member-states by creating an integrated economic environment (European Commission, 2003; Kalemli-Ozcan et al., 2010). An aspect of this is an integrated system of takeover regulation (The High Level Group of Company Law Experts, 2002). This is part of the evidenced trend of convergence in corporate law in Europe (see e.g. Martynova and Renneboog, 2011). One aim is to increase the efficiency of takeover bids; and thus, to encourage value-creation and takeover activity (see McCahery and Renneboog, 2003). Subsequently, moves towards a harmonized takeover regime commenced in the 1970s. However, the European Parliament only reached a consensus in 2004, passing the directive on 21 April 2004 and requiring implementation in the member states by 20 May 2006.

The form and content of the takeover directive have received criticism on several grounds. The key theme is that the directive may have entrenched mangers in the EU. Key criticism includes: (1) the directive does not harmonize laws; (2) the directive may make targets harder and more expensive to acquire and might increase access to anti-takeover provisions; (3) the combination of a mandatory bid rule with a minimum price rule[3] increases managerial entrenchment and the cost of takeovers; (4) the regulatory framework remains unclear; and, (5) the directive is vague and creates commercial uncertainty. A sixth issue is that Articles 5 and 7 of the takeover directive may discourage cash-financed deals by increasing deal-price risk and by discouraging cash-financed toeholds.[4] The overarching theme in these criticisms is that if a company is listed in the EU, then it will be more costly, difficult, and time consuming to acquire it. Thus, the directive may entrench managers in the EU.

The empirical prediction is that because the directive may entrench EU-managers, it enables managers in the EU to undertake investments that create less shareholder wealth. That is, if a company is in the EU, then the impact of the directive might be four-fold. (1) It might facilitate worse investments. One type of investment involves acquiring another firm. Thus, the directive might reduce acquirer returns in a similar way to ATPs in Masulis et al. (2007) and Harford et al. (forthcoming). (2) It might increase the time that the acquirer takes to complete the deal due to the lower level of managerial discipline. (3) It might discourage cash-financing as these entrenched managers avoid reducing cash holdings (following Harford et al., 2008), and/or prefer to avoid financing deals with debt lest it impose additional capital constraints and monitoring. (4) It might entrench managers and enable empire building in the form of increased growth in assets, cash holdings, and fixed property.

This paper uses a straight difference methodology and a difference-in-difference (DD) methodology to assess the impact of the directive. I undertake two analyses. First, I analyze acquisitions by acquirers listed in the EU. I focus on acquirers rather than targets because I expect the takeover directive to influence firms' investment decisions. That is, I expect it to influence the decision to acquire and the nature of the acquisition. This is because I hypothesize that the takeover directive induces managerial entrenchment. Managerial entrenchment can induce worse takeover decisions (Harford et al., forthcoming; Humphery-Jenner and Powell, 2011; Masulis et al., 2007, 2009). Thus, my main hypotheses relate to acquirers listed in the EU. Second, I analyze the growth in cash, assets, and property for companies listed in the EU.

The takeover-based analysis examines 18,869 takeovers announced between 1996 and 2008. This comprises a 'treatment' sample of 4748 acquisitions by acquirers listed in the EU. They are exposed to the 'treatment' (the takeover directive). The 'control' sample comprises 14,121 acquisitions by acquirers that are not listed in the EU. This is similar to the approach that Cumming et al. (2011) use to examine the impact of MIFID on stock market liquidity. I also use a sample of 143,848 firm-year observations to examine the impact of the takeover directive on corporate asset growth.[5] The models use country-level variables, country-governance variables, and year effects to ameliorate potential violations of the parallel trend assumption in the DD model.[6]

Several important results emerge from the analysis.[7]

1. Acquirer returns, as proxied by the market's reaction to the takeover, significantly fell for EU-acquirers after the takeover directive. This is economically significant, with announcement CARs reducing by 1.127 points after controlling for other factors.[8]

[1] A detailed discussion of these papers is beyond the scope of this paper. However, prior studies have debated the causal relationship between corporate governance and corporate investment decisions (see Core et al., 2006; Lehn et al., 2007).

[2] The precise terms of the directive are not a matter in issue. Broadly speaking: the takeover directive requires member states to adopt a baseline minimum set of takeover standards. It grants flexibility and discretion in implementing those standards. Article 3(2) allows member-states to adopt rules that are more onerous than are those in the directive. Key provisions within the directive partially harmonize the mandatory bid rule (Article 5), disclosure of takeover related information (Article 6 and Article 8), the obligations of the target board (Article 9), and compulsory acquisitions and breaking through takeover stalemates (Article 11). Not all provisions are compulsory, and Article 12 explicitly allows member-states to exempt some companies from compliance. Further, the precise content of the rules requires interpretation.

[3] The minimum price rule is in Article 5(3). It stipulates that the minimum price that a bidder must pay. The general rule is that the bidder must pay all shareholders the highest price paid for the target's shares during the 6–12 months prior to the official bid; and, if the bidder subsequently pays an even higher price it must extent the higher price to all target-firm shareholders. The directive leaves member states some discretion to adjust the general rule.

[4] The literature review summarizes these in further detail.

[5] The firms in this sample need not be acquirers.

[6] This assumption is that the time trend is the same in both the control and the treatment group. Such a group cannot exist in the context of takeovers due to the importance of country-level and country-governance variables (see Bruno and Claessens, 2010). Thus, it is necessary to address violations by (a) using both a DD approach and a straight difference approach, and (b) using region dummies, country variables, (c) using country-governance variables and country level variables, (d) ensuring that the results hold in samples that exclude particular countries, and (e) using a propensity score radius matching approach.

[7] I acknowledge that a caveat on the results is that the directive has only existed for a limited period of time.

[8] This is in 'percentage points' that is. The return is 1.127 points after the directive than before the directive. I calculate this using the results in Table 7, Column 2. The economic significance is $[\beta(EU)+\beta(Directive)+\beta(EU\times Directive)]-\beta(EU)=[0.131-0.178-0.949]-[0.131]=-1.127$.

2. The takeover directive increased the time required to complete takeovers in the UK (but did not significantly influence the time to completion outside the UK). This result is an economically significant increase of 6.927 days after controlling for other characteristics.[9]
3. The directive reduced the likelihood of a cash-financed deal. This is a problem because cash-financed deals typically earn higher takeover returns (Chang, 1998; Fuller et al., 2002). These changes may partially account for the reduction in takeover returns.
4. The directive appears to have facilitated asset growth, indicating that the directive may entrench managers and facilitate empire-building. The directive is associated with a 9%[10] increase in asset growth and a 14.5% increase in the growth rate of cash holdings.[11]

The results have policy implications for both for the EU and for other countries.[12] For the EU, the policy implication is that the takeover directive has not succeeded in its goal of promoting value-creating takeovers. Further reforms are necessary to promote value-creating takeovers. These reforms could focus on reducing managerial entrenchment and facilitating a liquid takeover market. Outside of the EU, the results can inform the way in which countries should (not) harmonize takeover laws. This is especially important for countries, such as the US, where takeover laws differ between states. The main lessons are to avoid laws that are vague and that vest residual discretion in individual states, and to avoid adopting the laws of the most manager-friendly state. To my knowledge, this is the first paper to examine the impact of the EU takeover directive on takeover value.

The balance of the paper proceeds as follows. Section 2 presents the hypotheses and prior literature. Section 3 analyzes how the directive impacts on takeover returns, the method of payment, and the time needed to complete a deal. Section 4 assesses the relationship between the directive and asset growth. Section 5 presents other robustness tests, and Section 6 concludes.

2. Hypotheses: The directive, entrenchment, and investment behavior

This section contains the hypotheses. The overarching hypothesis is that the takeover directive amplified managerial entrenchment in the EU. The empirical prediction is that this increased entrenchment worsened agency conflicts at companies listed on a market in the EU (who are therefore subject to the takeover directive). I predict that these increased agency conflicts enable managers to make self-interested investments and to exert less discipline in the deal process. This section proceeds by first outlining why the directive might increase managerial entrenchment and second discussing the empirical implications of this increased entrenchment.

2.1. The takeover directive and managerial entrenchment

I expect that the EU takeover directive has entrenched managers of companies listed in the EU. I expect this for at least three reasons.

2.1.1. Reason 1: the directive creates legal uncertainty

The takeover directive is patchwork and risks amplifying legal uncertainty. Krishnan et al. (2011) show that litigation can delay or prevent takeovers. Legal uncertainty enables litigation. The directive appears to have increased legal uncertainty for at least three reasons.

First, the level and nature of harmonization are unclear. The lack of harmonization occurs at three levels: (1) Countries can opt out of particular rules.[13] Further, different rules apply differently in different countries. For example, different countries can define the percentage of voting rights that constitutes 'control' (Article 5(3)). (2) Countries can exempt particular companies from particular rules (Article 12).[14] (3) Where rules do apply, companies can avoid some of them. For example, Article 11(3) deems multi-vote shares to have only one vote when determining a vote on defensive measures. However, entities can avoid this by furnishing single-vote shareholders with (unspecified) pecuniary advantages. Thus, harmonization appears ad hoc (see also the critique in Clarke, 2009).

Second, the nature of the proposed regulator is unclear. A key example is the requirement that the member state create a 'supervisory authority' (Article 4). This has two layers of discretion. Both are problematic. (1) It vests discretion both in the member state to determine what constitutes a 'supervisory authority'. This authority could resemble the CSRC in China, the SEC in the United States, or ASIC in Australia. The directive does not mandate any one form. (2) It leaves a residual discretion in the authority to interpret the directive. Given that the many provisions are vague, this discretion is significant. This could be problematic

[9] I calculate this using the results in Table 9, Column 2. The economic significance is $[\beta(EU)+\beta(Directive)+\beta(EU\times Directive)]-\beta(EU)=[-19.197-5.962+12.889]-[-19.197]=6.927$.

[10] This is from Table 13, Column 1. The calculation is: $[\beta(EU)+\beta(Directive)+\beta(EU\times Directive)]-\beta(EU)=[-0.086-0.096+0.159]-[--0.086]=0.09$. This is a decimal number so equates with a 9% increase in the rate of asset growth.

[11] This is from Table 13, Column 2. The calculation is: $[\beta(EU)+\beta(Directive)+\beta(EU\times Directive)]-\beta(EU)=[-0.061+0.071+0.074]-[-0.061]=0.145$. This is a 'decimal' number that equates with a 14.5% increase in the rate of cash growth.

[12] I acknowledge that this is not the first paper to examine legal-economic harmonization. However, much prior work has focused on taxation systems (Conconi et al., 2008; Lahiri and Raimondos-Moller, 1998). To my knowledge, it is the first paper to empirically examine takeover law harmonization.

[13] For example, France opted out of Article 11.

[14] While regulation exemptions can sometimes be beneficial, the directive does not require countries to use exemptions productively and does not uphold the conditions for regulation exemptions to be value creating (on which, see Mungan, 2011).

because administrators or 'authorities' can impose sub-optimal interpretations, and different countries have different methods for judicial review (see Fritzsche, 2010). This discretion, and the risk of commercial uncertainty, could hinder economic development, and deter takeover activity. This deterrence provides some indirect entrenchment to managers.

Third, the directive is 'vague', which may induce additional uncertainty. All statutes require interpretation and have some degree of vagueness (see Humphery-Jenner, 2009). Many provisions in the directive are vague. For example, the bidder must disclose to the offeree's shareholders the offer document in 'good time' (Article 6(2)). The directive does not define this provision. Further, the directive does not define the precise form and content requirements of the offeree's response document (mentioned in Article 9(5)). This vagueness can be beneficial because it allows member states to adjust their interpretations of the directive over time in order to meet contemporary circumstances (Eskridge, 1987; Graham, 2000, 2002; Humphery-Jenner, 2009). However, it can create commercial uncertainty because the content and ambit of some key provisions are unclear (Brown, 2004; Hadfield, 1994). In a field such as M&A, which involves significant amounts of money, this commercial uncertainty could deter value-creating investments and indirectly entrench managers.

2.1.2. Reason 2: Increased direct managerial entrenchment and ATPs

Some provisions entrench managers, increase the availability of anti-takeover provisions (ATPs), and make ATPs differently available in different countries. This could be a problem because acquisitions are an important mechanism of managerial discipline (Humphery-Jenner, 2012; Martin and McConnell, 1991; Offenberg, 2009). Masulis et al. (2007) show that managerial entrenchment allows managers to make value-destroying acquisitions because they induce agency conflicts of managerial entrenchment. The takeover directive increases managerial entrenchment. Four examples suffice. (1) While Article 11(3) reduces multi-vote shares to one vote in decisions over takeover defenses, these multi-vote shareholders can exchange money for the right to retain their multi-vote status in decisions over takeover provisions. (2) Article 5(6) allows countries to facilitate anti-takeover provisions that they deem fit so long as they are broadly consistent with the Takeover directive. (3) Article 9(3) actually allows shareholders to adopt poison pill type provisions even after the target company knows of the takeover bid. This tacitly allows frustrating behavior. The increased availability of ATPs might reduce takeover returns.

2.1.3. Reason 3: Mandatory bid rules and minimum price rules and managerial entrenchment

The mandatory bid rule and minimum price rule might increase entrenchment and discourage profitable takeovers. Article 5 imposes a mandatory bid rule coupled with a minimum price rule. The mandatory bid rule holds that an entity must launch a full takeover after it acquires 'control'. The directive does not define what constitutes 'control'. Member states define 'control'. The minimum price rule sets the minimum bid price. The default rule, which member states can adjust within limits, holds that the minimum price is the highest price paid for the target's shares over the preceding 12 months. The combined impact is (1) different rules apply in different states; (2) the new rules are sometimes more generous to target shareholders than the previous rules in some states (DTI, 2005). Some literature has argued that this increases the cost of takeovers, discourages value-creating bids, and reduces economic value (Burkart and Panunzi, 2004; McCahery and Vermeulen, 2010). Aside from rendering takeovers less profitable, this will also entrench managers and facilitate agency motivated investments.

2.2. Empirical predictions

The empirical predictions focus on the impact of the takeover directive on corporate behavior. I am interested in examining how being subject to the directive; and thus, becoming more entrenched, influences both (a) the profitability of investments that a company makes and (b) the way a firm finances those investments, (c) the efficiency with which it pursues investments, and (d) the way in which managers grow fixed assets and cash holdings. This background motivates four main predictions, which I summarize in Table 1, and discuss in detail below.

2.2.1. Investment (acquisition) profitability

The first prediction is that because the directive entrenches managers, it reduces the amount of discipline imposed on managers, and facilitates worse investments. This could be because the directive enables managers to exercise less discipline when

Table 1
Hypotheses.

Hypothesis	Prediction	Rationale
Hypothesis 1	The takeover directive caused a reduction in takeover returns	Increased managerial entrenchment reduces managerial discipline and allows managers to make worse investments, such as takeovers (Harford et al., forthcoming; Masulis et al., 2007, 2009).
Hypothesis 2	The takeover directive increased the time required to complete an acquisition.	Increased entrenchment reduces managerial discipline, thereby reducing the need to limit acquisition costs.
Hypothesis 3	Acquirers are less likely to pay with cash (as opposed to stock) following the takeover directive.	Entrenched managers might prefer to not use cash as this would increase the need to raise debt (creating exposure to a monitoring lender and imposing cash constraints), and/or reduce cash holdings (see Harford et al., 2008).
Hypothesis 4	The EU takeover directive induced an increase in corporate assets and cash holdings.	Entrenched managers might undertake self-interested investments, which could include increasing corporate size (and thus pay/prestige), and increasing cash holdings.

selecting investments. Alternatively, it could be because the directive enables managers to pursue self-interested investments that are designed to increase managerial status, corporate size, or managerial compensation. This is similar to argued impact of ATPs on investment profitability in the United States (Bebchuk et al., 2009; Gompers et al., 2003; Humphery-Jenner and Powell, 2011; Masulis et al., 2007). I note that some other studies are that entrenchment might not cause managers to make worse investments (Lehn et al., 2007). The use of the directive as a natural experiment enables me to control for this causal issue, and I predict that after doing so, I will find that entrenchment causes managers to make investments that are less profitable.

2.2.2. Investment method of payment

I predict that the directive deters managers from using cash (as opposed to equity) to finance takeovers. This is for two reasons. First, the entrenchment-based reason is that entrenched managers seem to prefer large cash holdings (Harford et al., 2008), and to avoid external monitoring (Harford et al., forthcoming). Using cash to pay for takeovers risks either (a) reducing latent cash holdings and/or (b) necessitating the raising of debt which both invites scrutiny from rating agencies and/or lenders.

Second, other provisions in the directive deter the use of cash. Article 5(5) contains provisions on the method of payment. It holds that acquirers can pay with cash or with liquid securities. However, it also says that the bidder must offer cash consideration as an alternative to stock consideration if the bidder paid cash for 5% (or more) of the shares over the price-determination period (the period used to determine the minimum bid price). Further, under Article 7, member states can give the target firm up to 10 weeks to accept a takeover offer. This (potentially) long period can expose acquirers to the risk of fluctuations in the target firm's share price. This is especially problematic for a cash financed deal (compared with a fixed-ratio script deal). Together, these imply that cash deals are relatively less attractive following the takeover directive.

2.2.3. Deal efficiency

I hypothesize that managers of companies that are subject to the directive execute deals less efficiency. Specifically, I argue that if a manager's firm is subject to the directive, then the increased entrenchment enables to managers to act with less discipline (about deal expenses) and to take longer to complete a deal.

2.2.4. The directive, and growth in assets and cash holdings

The takeover directive could also influence corporate behavior and facilitate asset growth. Bertrand and Mullainathan (2003) and Giroud and Mueller (2010) argue that takeover protection (i.e. ATPs) insulates managers from external discipline, and this enables managers to reduce the amount of effort they devote towards creating corporate value. They assess this using fine level corporate data (to which I do not have access).

A closely related implication is that if managers are protected from takeovers, they might pursue the self-interested objective of increasing cash holdings and assets. There is some corroborative evidence in the literature. First, firms with more ATPs have higher cash holdings (Harford et al., 2008). The second set of evidence comes from the 'size effect' in takeovers. The 'size effect' refers to the negative relationship between takeover returns and acquirer size. Before ATPs became wide-spread in the US, US acquirers earned significantly positive dollar returns from takeovers, whereas after ATPS became wide-spread, US acquirers earned significantly negative dollar returns from takeovers (Bradley et al., 1988, Table 2). Supporting this, after ATPs increased, a strongly negative relation between corporate size and takeover returns emerged (see Moeller et al., 2004). Similarly, there is some evidence that the size effect is less severe in countries that lack ATPs (Humphery-Jenner and Powell, 2011). The nature of this literature suggests that takeover protection might encourage asset growth.

3. Investment returns, investment efficiency, and the method of payment

The first set of hypotheses relates to the profitability and efficiency of takeovers. I hypothesize that the directive worsens corporate governance and enables managers of EU-firms to make investments that create less value. Here, I examine one type of investment: an acquisition. The treatment sample is the set of acquisitions made by EU acquirers, and the control sample is the set of acquisitions made by non-EU acquirers. The EU-acquirers are the treatment sample because I hypothesize that the directive has a similar impact to ATPs in entrenching managers. I examine the impact of the directive on acquirer returns, time-to-completion, and method of payment. In this section, I first discuss the methods and sample, and then discuss the results.

3.1. The sample

The sample comprises 18,869 takeovers that the acquirer announced between 1996 and 2008 and that the acquirer subsequently completed. The takeover announcement data is from SDC platinum. The sample only includes deals that the acquirer completed and that were for 100% control. The sample excludes takeovers where the acquirer had over 50% control of the target before the announcement date. This quadrates with the approach in prior literature (for example Harford et al., forthcoming; Masulis et al., 2007). I then collect firm-level characteristics from Datastream/Worldscope and further deal characteristics from SDC. Country-level characteristics are from the World Bank. I also use country-governance characteristics from the World Bank, and uses the anti-director rights indexes used in La Porta et al. (1997, 2008) and in Spamann (2010). Table 2 contains the data sources and calculations for all variables. The following sub-sections describe the variables.

The sample contains two sub-samples and two time-periods. The first time period is before the implementation deadline for the takeover directive (20 May 2006), the second time period is after the implementation deadline. The treatment sample contains acquirers

Table 2
Variable definitions.

Variable	Definition
Panel A: Takeover specific variables	
CAR	The five-day cumulative abnormal return. The abnormal return on day t for firm i is the actual return (denoted, r_{it}) less the return that an appropriate model predicts (denoted, $\hat{r}_{it}$). Here, the predicted return is the return earned on an equally weighted index of all stocks trading in the acquirer's home market. The cumulative abnormal return sums the abnormal returns over the event period. Here, the event period spans the period from two days before the takeover announcement to two days after the announcement
MOP	A categorical dependent variable that contains categories for the method of payment. The categories are (1) cash only payment, (2) stock only payment, and (3) mixed cash and stock payment.
Days to Completion	The number of days between (a) the announcement date and (b) the completion date.
I(Directive)	An indicator that equals one if the takeover announcement post-dates 20 May 2006 (the implementation deadline for the takeover directive)
I(EU)	An indicator that equals one if the acquirer is in the European Union.
ln(Assets)	The natural log of the acquirer's total assets as recorded in Worldscope for the prior year
RelSize	The relative deal size. This is the transaction value (reported in SDC) divided by the acquirers assets (reported in Worldscope)
High-Tech	An indicator that equals one if both the bidder and the target are high-tech firms as defined in Loughran and Ritter (2002)
EBITDA/Assets	The acquirer's EBITDA (from Worldscope) divided by its assets (from Worldscope)
Debt/Assets	The acquirer's long term debt (from Worldscope) divided by its assets (from Worldscope)
Diversifying	A dummy that equals one if the bidder and target have different four-digit SIC codes
Competed	A dummy that equals one if there was more than one bidder for the target
Tender Offer	A dummy that equals one if SDC recorded the takeover as being a tender offer
Friendly Deal	A dummy that equals one if SDC does not record the takeover as unsolicited or hostile
Cash	A dummy that equals one if the acquirer only used cash to pay for the deal
Stock	A dummy that equals one if the acquire only used stock to pay for the deal
Public Target	A dummy that equals one if the target is listed on the stock market
Unlisted Target	A dummy that equals one if the target is unlisted (and is not a subsidiary of another firm)
Cross-border	A dummy that equals one if the bidder and target are headquartered in different countries
Takeover Activity	The natural log of the value of all corporate control transactions in the targets 2-digit SIC industry in that year and in the target's country
Panel B: Asset growth model variables	
Asset Growth	The growth in assets: $\ln(\text{Assets}(t+1)/\text{Assets}(t))$, where assets is the Compustat variable 'at'.
Cash Growth	The growth in assets: $\ln(\text{Cash}(t+1)/\text{Cash}(t))$, where assets is the Compustat variable 'ch'.
CAPEX Growth	The growth in assets: $\ln(\text{CAPEX}(t+1)/\text{CAPEX}(t))$, where assets is the Compustat variable 'capx'.
Property Growth	The growth in assets: $\ln(\text{Property}(t+1)/\text{Property}(t))$, where assets is the Compustat variable 'ppegt'.
I(EU)	An indicator that equals one if the company is headquartered in a country in the EU (as defined in Compustat's 'loc' variable).
I(Directive)	An indicator that equals one if the observation is from 2006 or later.
EBIT/Assets	The firm's EBIT/Assets in year t (in Compustat codes: ebit/at)
Current Assets/Current Liabilities	The firm's current assets over current liabilities in year t (in Compustat codes: act/lct)
Cash/Assets	The firm's Cash/Assets in year t (in Compustat codes: ch/at)
Debt/Assets	The firm's Debt/Assets in year t (in Compustat codes: dltt/at)
CAPEX/Sales	The firm's CAPEX/Sales in year t (in Compustat codes: capx/sale)
Property/Assets	The firm's Property/Assets in year t (in Compustat codes: ppegt/at)
R&D/Sales	The firm's R&D/Sales in year t (in Compustat codes: xrd/sale)
ln(Employees)	The natural log of the number of employees (in Compustat codes: ln(emp))
Panel C: Country specific variables	
Home MarketCap/GDP	The market capitalization of all firms in the home stock market divided by the GDP of the home country. The source is the World Bank
Home Market Turnover	The average turnover of all stocks in the home stock market. The source is the World Bank
FDI/GDP	The amount of foreign direct investment scaled by the home country's GDP. The source is the World Bank
Unemployment (%)	The percentage unemployment rate reported by the World Bank
Trade Imbalance	The trade imbalance. This is the amount of imports less the amount of exports divided by the sum of the imports and exports. The data is from the World Bank
Governance Index (WB)	This is a calculated index of six key governance measures from the World Bank. The World Bank provides a percentage rank on six governance characteristics: government effectiveness, regulation, the rule of law, political stability, corruption, and accountability. The study converts these to a decimal by dividing by 100 and then computes an equally weighted index of the six provisions
ADRI (LLSV)	The anti-director rights index used in La Porta et al. (1997, 2008)
ADRI (Spamann)	The anti-director rights index used in Spamann (2010)

listed in the EU. They receive the treatment (the takeover directive) after the implementation deadline but not before. The control sample comprises acquirers listed outside the EU. They are not directly subject to the takeover directive in either time period.

The total sample contains 18,869 takeover observations observed over the two time periods. This comprises 4748 takeovers by acquirers listed in the EU, and 14,121 takeovers by acquirers listed outside the EU. For the EU sample, 1243 occur after the takeover directive and 3505 occur before. For the non-EU observations, 2921 observations occur after the takeover directive, and 11,200 occur before. The sample size decreases when governance and country-level data is required because not all countries have the requisite data.[15]

[15] For example, there is no ADRI for China.

3.2. Methodology

I use a both a 'straight difference' model and a 'difference in difference' model. The treatment group is the set of takeovers made by companies in the EU.[16] The control group is the set of takeovers made by companies outside the EU.[17]

3.2.1. Dependent variables and treatment variables

The dependent variables variously the 5-day market adjusted CAR,[18] an indicator that equals one if the CAR is positive (I(CAR>0)), an indicator that equals one if the bidder pays for the deal using cash only (I(Cashonly)), or the number of days required to complete the takeover (Days to Completion). The 'treatment' based variables are (a) an indicator if the acquirer is listed in the EU (I(EU)) and (b) an indicator that equals one if the acquisition occurs after the implementation deadline for the takeover directive of 20 May 2006 (I(Directive)).

3.2.2. Estimation technique

The dependent variable determines the estimation technique and the precise set of controls. Models that examine CARs as a continuous variable use OLS, models that examine I(CAR>0) and I(Cashonly) use logit, models that examine the days to completion use Tobit with a lower bound of zero. All models include year dummies and cluster standard errors by four-digit SIC code (Johnson et al., 2009; Petersen, 2009). The results are robust to clustering around 2-digit and 3-digit codes and to omitting year dummies. Models that analyze the days to completion and the method of payment exclude some control variables that are clearly endogenous.

3.2.3. Parallel trend assumption issues

In the present context, the assumption is that takeovers follow the same trend except for the imposition of the takeover directive. I take several measures to mitigate concerns about the parallel trend assumption.

1. The models include region dummies (to indicate if the acquirer is listed in the United States, Asia, or Latin America), year dummies, country-level variables, and country-governance variables, and cluster standard errors by 4-digit SIC industry. This controls for some region-specific factors that might drive differing trends.
2. I ensure that the results hold in models that exclude one of United States, the United Kingdom (which is part of the EU), Australia, or Canada. Excluding the United Kingdom from the treatment sample is particularly important due to the differences documented here and elsewhere (e.g. Arcot et al., 2010) between UK takeovers and continental European takeovers.
3. I examine models where the control sample only comprises countries from 'developed'[19] markets on grounds that the EU comprises mainly 'developed' countries.
4. I use a propensity-score type approach. The methodology is as follows. First, a probit model predicts the likelihood that a firm receives the treatment (i.e. is an EU firm). I estimate this separately for samples before and after the takeover directive deadline (20 May 2006). The goal is to model the probability of being an EU firm as a function of key acquisition characteristics. The key acquisition characteristics are size (ln(Assets)), pre-performance (EBITDA/Assets), leverage (Debt/Assets), and relative deal size (RelSize). Second, I use this to compute a propensity score. Third, I exclude observations whose propensity score is in the bottom or top 5% of the sample. This helps to ensure that the control sample and the treatment sample are similar. This approach is similar in nature to radius matching (see Becker and Ichino, 2002; Glick et al., 2006; Hale and Santos, 2009; Volpe Martincus and Carballo, 2008). This reduces the sample to 16,768 observations.

3.2.4. Control variables

The control variables are relatively standard in the literature. The precise computations are in Table 2. At the acquirer level, controls include acquirer size (Humphery-Jenner and Powell, 2011; Moeller et al., 2004), leverage (Maloney et al., 1993), and the acquirer's EBITDA scaled by its assets.

At the deal level, I control for whether the deal diversifies the acquirer across industry or country (Moeller and Schlingemann, 2005), whether the deal is friendly or hostile (Schwert, 2000), the method of payment (Chang, 1998; de La Bruslerie, 2011; Fuller et al., 2002), the size of the target relative to the bidder, whether the target is 'high tech' as defined in Loughran and Ritter (2002, 2004), and the level of takeover activity in the target's 2-digit SIC industry, year, and country.

At the country level, I include set of three region variables: I(USA), I(Latin America), and I(Asia), which are indicators that equal one if the company is listed in the United States, in Latin America, or in Asia, respectively. The models use 'region' dummies rather than 'country' dummies because country dummies are collinear with the 'EU' dummy. I also control for other country-level

[16] I also report results for models that exclude the UK from the treatment group on grounds that the UK typically features takeover deals in general, and more hostile deals in particular. It also had the least legal and regulatory change following the takeover directive (Freshfields Bruckhaus Deringer, 2005).

[17] I ensure that the results are robust to the definition of control group by reporting models that exclude acquisitions that occur in the US, Canada, or Australia. I also use a control sample that only contains acquisitions by acquirers listed in 'developed' countries.

[18] The use of announcement CARs is relatively standard in the literature (Harford et al., forthcoming; Humphery-Jenner and Powell, 2011; Masulis et al., 2007; Moeller and Schlingemann, 2005; Moeller et al., 2004, 2005). I use market adjusted returns due to the possibility of thin trading in some markets, which would otherwise bias market model based returns.

[19] I define the non-EU developed countries as the United States, Canada, Japan, Singapore, Australia, New Zealand, Switzerland, Hong Kong, South Korea, Norway and Israel.

characteristics that might influence investment profitability. These include the total market capitalization of all firms in the acquirer's home country, the turnover (or liquidity) of the firm's home region, the level of FDI in the home-country, unemployment in the home country, and the trade account balance of the home country.

The regulation and governance of the home market might influence the returns of firms that list in that market (Feito-Ruiz and Menendez-Requejo, 2011). I use two variables to capture sovereign governance characteristics. First, the Spamann (2010) anti-director rights index (ADRI), which updates and modifies the La Porta et al. (1997) ADRI.[20] Second, the models control for sovereign regulation using the World Bank measures of sovereign stability.[21] The World Bank ranks countries, on a scale of 0 to 100, on accountability, corruption, government effectiveness, regulation, the rule of law, and political stability. I convert the ranks to a decimal score by dividing by 100, and then creates an equally weighted index of the governance measures. The World Bank does not report governance measures for all years. For the missing years, I use the most recent prior score (consistent with the approach to corporate governance in Masulis et al., 2007).

3.3. Results

This section contains the results. In short, the results show that takeover returns significantly decreased following the takeover directive. This holds in the difference and difference-in-difference model. The result is robust to model specification issues.

3.3.1. Univariate analysis

The sample composition by year is in Table 3. Consistent with prior literature, the sample reveals clustering over time (see Powell and Yawson, 2005, 2007). This implies that multivariate models should include year fixed effects.

The univariate statistics are in Table 4. The key results in Panel A are: (1) for EU-acquirers, CARs were significantly higher before the takeover directive than after the takeover directive. (2) For non-EU acquirers, CARs were weakly significantly higher before the takeover directive date. (3) Before the takeover directive, EU acquirers earned significantly higher CARs than did non-EU acquirers. After the directive, EU acquirers earned insignificantly lower CARs. Overall, this suggests that the takeover directive reduced acquirer CARs for acquirers listed in the EU and that multivariate analysis is necessary.

Table 4 Panel B examines the method of payment and focuses on the use of cash to acquire companies. The results show that (a) non-EU acquirers significantly increased their use of cash whereas (b) EU acquirers insignificantly decreased their use of cash. Thus, (c) after the takeover directive, EU acquirers used significantly less cash than non-EU acquirers whereas before the takeover directive there was no significant difference.

Table 4 Panel C examines the time required to complete a deal. The time to complete significantly increased for EU acquirers but insignificantly decreased for non-EU acquirers. Thus, compared with non-EU acquirers, before the directive, EU acquirers took significantly less time to complete a deal, but after the directive EU acquirers take insignificantly less time to complete.

Table 5 contains the CARs and number of deals by country. The results in Table 5 echo the results in Table 4 and suggest that the reduction in CARs following the implementation deadline is consistent across countries in the EU.[22]

Fig. 1 plots the average CAR by acquirer location. The figure supports the univariate results. The main result is that EU-acquirers have substantially lower takeovers after 2006. The graph suggests that there may be some violation of the parallel trend assumption. Thus, it is necessary to control for this in multivariate tests. An interesting result is that after 2006, the slope of the 'EU' like is steeper than the slope of the 'UK' like. This implies that the post-Directive value-reduction might be lower in the UK than in other EU countries. This partially supports the hypothesis that countries who avoided the Directive had less of a reduction in takeover returns.

The sample description is in Table 6. The statistics reveal some differences between EU and non-EU acquirers and some differences before and after the takeover directive.[23] These differences do not appear marked. Nonetheless, it is important to control for them in a multivariate context.

3.3.2. Takeover returns

The straight difference results are in Table 7. The 'straight difference' results are in Column 1. The key result is that the coefficient on 'I(Directive)' is negative and significant (at 10% significance) in all models. This implies that the takeover directive reduced the market's reaction to takeovers by acquirers in the EU zone. The R-squared values are low; however, they are largely consistent with those reported in prior takeover studies (see for example Moeller et al., 2004).

The DD are in Table 7, Columns 2–8. Columns 2–8 examine the continuous variable CAR. Column 8 examines the indicator that equals one if the CAR is positive, I(CAR>0). The key result is that I(EU) I(Directive) is negative and significant in all models. This suggests that takeovers create less value on average after the implementation of the takeover directive.

The independent variables yield some interesting results. Consistent with prior studies, large firms earn lower takeover returns (Masulis et al., 2007; Moeller et al., 2004, 2005, Table VI); strong pre-acquisition performance improves acquisition

[20] The results are robust to replacing the Spamann (2010) index with the La Porta et al. (1997) index.

[21] These have received some prior use in the literature (Apodaca, 2004; Braun and Di Tella, 2004; Dollar and Kraay, 2003; Neumayer, 2002; Thomas, 2010).

[22] Note that Table 5 reports more observations than appear in the regressions. This is because the table includes some countries, such as China, that do not have an anti-director rights index; and thus, do not appear in the regressions.

[23] Note that the ADRI statistics change before and after the takeover directive. The ADRI values for each country do not change over time. Thus, the changes in the statistics suggest a change in the country-of-origin.

Table 3
This table contains the number of observations by year.

Year	All	EU	Non-EU	All	EU	Non-EU
Variable	Number of observations			CARs		
Column	[1]	[2]	[3]	[4]	[5]	[6]
1996	1083	137	946	1.659	2.715	2.715
1997	1620	327	1293	1.286	1.503	1.503
1998	1997	433	1564	1.029	2.205	2.205
1999	1577	355	1222	1.146	2.726	2.726
2000	1669	424	1245	0.110	−0.251	−0.251
2001	987	248	739	−0.038	0.065	0.065
2002	1011	306	705	0.233	0.594	0.594
2003	1053	322	731	1.978	3.083	3.083
2004	1450	397	1053	1.670	2.169	2.169
2005	1677	482	1195	2.000	3.091	3.091
2006	1770	518	1252	1.950	2.660	2.660
2007	1794	509	1285	1.599	1.345	1.345
2008	1181	290	891	0.721	−0.040	−0.040
Overall	18,869	4748	14,121	1.227	1.742	1.742

returns. Further, anti-director rights index (ADRI) influences takeover returns, supporting findings that the ADRI indexes do not influence company-level returns in general (supporting Cumming et al., 2010).

3.3.3. Method of payment

The method of payment results are in Table 8. The main coefficient of interest is the coefficient on 'I(EU)\times I(Directive)'. After the takeover directive, bidders are significantly less likely to pay with cash, and are more likely to pay with stock. Prior literature reports that stock deals are more likely to reduce acquirer wealth, on average (Chang, 199×8; Fuller et al., 2002). Further, Harford et al. (forthcoming) show that stock-financed acquisitions are a key source of value destruction by entrenched acquirers. Thus, the shift away from cash payment, and towards stock payment, might explain why the takeover directive has reduced takeover returns.

Key control-variable results are: (1) larger firms are more likely to pay with cash, likely reflecting their greater financial reserves; (2) tender offers are significantly more likely to be cash deals, possibly due to underlying deal-hostility; (3) cross-border acquisitions are more likely to be cash deals; this may be because information asymmetry between countries reduces the perceived value of a stock-financed deal. Further, home-country characteristics influence the method of payment, possibly reflecting their development of the home market and perceived value of stock as an acquisition currency.

3.3.4. Days to completion

The days-to-completion results are in Table 9. For the straight difference model in Column 1, the coefficient on I(Directive) is insignificant and negative, suggesting that the takeover directive had no significant impact on the time required to complete a

Table 4
The table contains univariate results for CARs, paying with cash, and the days to complete the deal. The figures are sample means. Superscripts ***, ** and * denote significance using a *t* test of difference in means test (as appropriate).

	All	EU	Non-EU	EU–Non-EU
Panel A: CARs				
All	1.226***	1.742***	1.053***	0.690***
Before	1.188***	1.951***	0.949***	1.002***
After	1.361***	1.153***	1.450***	−0.297
Before–after	−0.173	0.798***	−0.501***	
Panel B: Cash payment				
All	0.255***	0.304***	0.238***	0.066***
Before	0.241***	0.307***	0.220***	0.087
After	0.305***	0.294***	0.309***	−0.014***
Before–after	−0.064***	0.013	−0.089***	
Panel C: Days to completion				
All	59.667***	35.502***	67.793***	−32.291***
Before	59.876***	33.679***	68.075***	−34.396***
After	58.932***	40.644***	66.713***	−26.069
Before–after	0.944	−6.966***	1.361	

Table 5
CARs and deals by country. The table contains the number of deals and equally weighted CAR by country for both before the directive-implementation deadline (20 May2006) and after the deadline. The CAR figures are averages and they are percentage scores.

Country	Code	Overall		Before		After	
		Deals	CAR	Deals	CAR	Deals	CAR
European Union countries							
Austria	AUT	30	0.381	12	1.713	18	−0.507
Belgium	BEL	63	2.564	35	2.628	28	2.484
Czech Republic	CZE	1	19.134			1	19.134
Germany	DEU	169	0.246			169	0.246
Denmark	DNK	64	3.168	42	2.827	22	3.817
Span	ESP	91	1.570	48	0.873	43	2.348
Finland	FIN	119	1.484	84	2.265	35	−0.393
France	FRA	278	1.466	181	2.350	97	−0.184
United Kingdom	GBR	3231	1.840	2666	1.890	565	1.609
Greece	GRC	17	1.655	7	0.312	10	2.595
Hungary	HUN	3	−1.209	1	−4.462	2	0.417
Ireland	IRL	142	0.678	104	0.913	38	0.036
Italy	ITA	106	1.403	67	2.755	39	−0.922
Lithuania	LTU	1	17.883			1	17.883
Luxembourg	LUX	6	4.045	6	4.045		
Netherlands	NLD	141	1.470	91	1.545	50	1.334
Poland	POL	20	−1.264	3	2.706	17	−1.965
Portugal	PRT	16	3.702	8	6.317	8	1.088
Sweden	SWE	250	2.436	150	2.742	100	1.977
Overall		4748	1.742	3505	1.951	1243	1.153
Non-EU countries							
Argentina	ARG	8	2.853	1	6.439	7	2.340
Australia	AUS	1443	3.370	797	3.967	646	2.634
Brazil	BRA	73	0.163	11	−0.967	62	0.363
Canada	CAN	1288	−1.408	983	−1.908	305	0.205
Switzerland	CHE	87	2.809	70	2.951	17	2.223
Chile	CHL	13	4.879	9	6.489	4	1.257
China	CHN	96	4.948	21	4.447	75	5.089
Colombia	COL	3	0.543	3	0.543		
Egypt	EGY	2	1.509	1	1.218	1	1.800
Hong Kong	HKG	180	1.178	120	0.932	60	1.671
Indonesia	IDN	7	8.962	3	6.330	4	10.937
India	IND	190	1.441	107	1.405	83	1.487
Iceland	ISL	13	0.970	10	1.747	3	−1.618
Israel	ISR	66	1.042	47	1.825	19	−0.895
Japan	JPN	622	1.762	461	1.606	161	2.211
Korea	KOR	101	3.420	45	1.653	56	4.840
Mexico	MEX	28	0.007	16	−3.205	12	4.290
Malaysia	MYS	199	1.407	143	2.245	56	−0.731
Norway	NOR	134	3.509	86	4.009	48	2.613
New Zealand	NZL	70	1.753	47	2.483	23	0.261
Peru	PER	6	3.574	4	1.445	2	7.831
Philippines	PHL	40	1.208	28	1.853	12	−0.299
Russia	RUS	28	−2.611			28	−2.611
Singapore	SGP	161	2.195	116	1.395	45	4.256
Thailand	THA	32	1.063	23	0.725	9	1.928
Turkey	TUR	4	−11.293	1	−11.512	3	−11.219
United States	USA	9147	0.818	7994	0.823	1153	0.784
South Africa	ZAF	80	3.108	53	5.211	27	−1.021
Overall non EU		11,108	1.053	9304	0.949	1804	1.450

deal. For the difference in difference models, the coefficient on I(EU)×I(Directive) is significant and positive in Columns 2–3, and 5–8. However, when the treatment sample excludes the UK, the coefficient is insignificantly negative. This implies that the takeover directive may have increased the time required to complete a takeover in the UK, but had no significant impact outside of the UK.

3.4. Summary

The conclusion from this section is that the directive has significantly influenced takeover activity. The evidence suggests that the directive has reduced takeover returns, increased the time to complete a takeover, and reduced the likelihood of using cash to pay for a takeover. Overall, this suggests that the directive has not been entirely effective at stimulating value-creating takeovers.

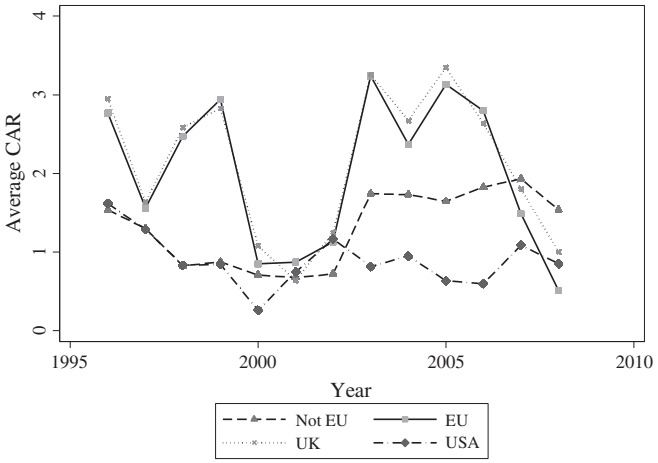


Fig. 1. The figure plots the average CAR by year and by location.

4. Growth in assets and cash holdings

The second set of hypotheses relates to managerial empire building. This section outlines the analysis of the impact of the directive on general corporate behavior. The hypothesis follows the Bertrand and Mullainathan (2003) quiet life hypothesis. I outline the methods and sample and then I discuss the results.

4.1. Methods and sample

The sample comprises all firms that have the relevant control variable. The sample is an international sample and is from Compustat Global and from Compustat. I create three sub-samples: EU, developed non-EU, and other. This creates a firm-year panel of

Table 6
This table contains descriptive statistics for the sample. Column 1 includes all takeovers in the sample. Column 2 examines takeovers by acquirers listed in the EU that they made before the implementation deadline for the takeover directive. Column 3 examines EU-acquirers after the takeover directive deadline. Columns 4 and 5 examine takeovers by acquirers listed outside the EU both before and after the takeover directive deadline.

	All takeovers	EU acquirers		Non-EU acquirers	
		Before	After	Before	After
	(1)	(2)	(3)	(4)	(5)
CAR	1.226	1.951	1.153	0.949	1.450
ln(Assets)	13.217	12.242	13.175	13.367	13.829
EBITDA/Assets	0.035	0.069	0.092	0.014	0.051
Debt/Assets	0.246	0.000	0.001	0.003	0.001
RelSize	0.002	0.220	0.248	0.256	0.239
High-Tech	0.254	0.233	0.232	0.277	0.203
Diversifying	0.670	0.702	0.675	0.666	0.645
Competed	0.008	0.007	0.003	0.008	0.007
Tender Offer	0.043	0.067	0.049	0.037	0.037
Friendly Deal	0.984	0.984	0.980	0.988	0.971
Cash	0.255	0.307	0.294	0.220	0.309
Stock	0.155	0.077	0.059	0.198	0.122
Public Target	0.145	0.099	0.088	0.168	0.137
Unlisted Target	0.519	0.573	0.547	0.499	0.518
Crossborder	0.256	0.422	0.526	0.175	0.253
Takeover Activity	4.714	4.488	4.560	4.803	4.714
Home MarketCap/GDP	0.013	0.013	0.011	0.013	0.014
Home Market Turnover	1.065	0.811	1.440	1.054	1.250
FDI/GDP	0.000	0.000	0.001	0.000	0.000
Unemployment (%)	5.650	6.458	6.554	5.429	5.115
Trade Imbalance	0.054	0.010	0.014	0.069	0.066
Governance Index (WB)	0.883	0.908	0.892	0.889	0.830
ADRI (LLSV)	4.597	4.457	3.500	4.792	4.473
ADRI (Spamann)	3.056	4.003	3.990	2.607	3.254

Table 7
Takeover reaction results. The table contains takeover reaction results. Column 1 contains a straight difference result (i.e. only contains the treatment sample and uses the dummy variable I(Directive)). Columns 2–5 contain difference in difference results. The dependent variable is the 5-day market adjusted cumulative abnormal return. The key dependent variable of interest is the interaction term I(EU) × I(Directive). The models contain year dummies (suppressed) and cluster standard errors by four-digit SIC code. Brackets contain p-values. Superscripts ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Dependent variable	CAR								I(CAR>0)
Sample	EU	ALL	Not USA	Not UK	Not AUS	Not CAN	EU and developed	Propensity score based	All
	(1)	(2)	(3)	(4)	(4)	(6)	(7)	(8)	(9)
I(EU)		0.131	0.477	1.455***	1.727***	−1.556***	0.333	0.692	0.092
		[0.764]	[0.284]	[0.008]	[0.000]	[0.000]	[0.444]	[0.114]	[0.245]
I(EU) × I(Directive)		−0.949**	−1.164**	−1.661***	−1.409***	−0.803**	−0.912**	−0.143	−0.187**
		[0.010]	[0.015]	[0.001]	[0.000]	[0.028]	[0.016]	[0.719]	[0.044]
I(Directive)	−1.199*	−0.178	−0.054	−0.312	−0.051	−0.563	−0.016	−0.864**	0.081
	[0.054]	[0.608]	[0.909]	[0.421]	[0.895]	[0.109]	[0.964]	[0.016]	[0.334]
ln(Assets)	−0.178*	−0.243***	−0.148**	−0.287***	−0.169***	−0.279***	−0.288***	−0.282***	−0.033***
	[0.060]	[0.000]	[0.041]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]
EBITDA/Assets	0.533***	0.159**	0.144*	0.114	0.261***	0.194	0.167**	0.635***	0.05
	[0.000]	[0.049]	[0.066]	[0.120]	[0.002]	[0.256]	[0.042]	[0.002]	[0.307]
Debt/Assets	0.029	−0.203	−0.717*	−0.214	−0.112	−0.182	0.057	0.333	−0.057
	[0.975]	[0.588]	[0.092]	[0.597]	[0.816]	[0.632]	[0.861]	[0.435]	[0.408]
RelSize	12.567**	3.518*	3.213*	2.475	5.882***	4.298	3.710**	3.861	3.867
	[0.012]	[0.055]	[0.072]	[0.140]	[0.002]	[0.269]	[0.046]	[0.515]	[0.659]
High-Tech	−0.846**	−0.361*	−0.777***	−0.373	−0.236	−0.402**	−0.377*	−0.443**	−0.058
	[0.019]	[0.077]	[0.004]	[0.113]	[0.195]	[0.021]	[0.070]	[0.019]	[0.173]
High-Tech × RelSize	−149.171	−38.363	−39.474	91.602	−88.905	−54.482	−45.876	14.993	−7.781
	[0.223]	[0.602]	[0.622]	[0.315]	[0.275]	[0.449]	[0.536]	[0.810]	[0.623]
Diversifying	−0.082	−0.005	0.165	0.06	−0.03	−0.13	−0.032	−0.014	0.002
	[0.764]	[0.982]	[0.543]	[0.799]	[0.873]	[0.460]	[0.876]	[0.945]	[0.962]
Competed	0.307	0.125	−0.312	0.185	0.362	0.004	0.017	0.364	0.096
	[0.849]	[0.848]	[0.762]	[0.779]	[0.621]	[0.995]	[0.980]	[0.607]	[0.603]
Tender Offer	0.508	0.744	−0.075	0.748	0.792*	1.011***	0.808	1.009**	0.311***
	[0.503]	[0.135]	[0.920]	[0.178]	[0.084]	[0.008]	[0.102]	[0.046]	[0.005]
Friendly Deal	0.584	−0.727	−0.691	−1.080*	−0.634	−0.518	−0.75	−0.662	−0.029
	[0.547]	[0.182]	[0.304]	[0.065]	[0.269]	[0.350]	[0.236]	[0.277]	[0.809]
Cash	−0.155	−0.052	−0.236	−0.062	−0.024	0.067	−0.014	−0.058	0.03
	[0.536]	[0.723]	[0.250]	[0.740]	[0.864]	[0.624]	[0.922]	[0.699]	[0.447]
Stock	−1.659**	−0.344*	−0.041	−0.333	−0.357*	−0.397*	−0.385*	−0.35	−0.066
	[0.014]	[0.095]	[0.912]	[0.126]	[0.087]	[0.074]	[0.058]	[0.126]	[0.144]
Public Target	−2.084***	−2.720***	−2.587***	−2.737***	−2.755***	−2.505***	−2.686***	−2.857***	−0.624***
	[0.003]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Unlisted Target	−0.563**	−0.599***	−0.582***	−0.632***	−0.582***	−0.440***	−0.654***	−0.697***	−0.084**
	[0.038]	[0.000]	[0.009]	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.020]
Crossborder	−0.123	−0.129	−0.059	−0.365	−0.026	−0.14	−0.029	−0.009	−0.021
	[0.671]	[0.524]	[0.834]	[0.127]	[0.889]	[0.441]	[0.882]	[0.966]	[0.599]
Takeover Activity	−0.086	−0.103*	−0.179**	−0.088	−0.067	0.053	−0.095	−0.148**	−0.026**
	[0.355]	[0.083]	[0.024]	[0.170]	[0.234]	[0.297]	[0.105]	[0.029]	[0.038]
I(USA)		−0.886		−1.877**	1.789**	−2.832***	−1.272	−0.438	0.019
		[0.235]		[0.014]	[0.030]	[0.000]	[0.105]	[0.561]	[0.910]
I(Latin America)		0.411	0.259	0.369	−0.668	0.242		−0.328	−0.165
		[0.738]	[0.835]	[0.770]	[0.603]	[0.839]		[0.824]	[0.476]
I(Asia)		0.4	0.555	−0.534	0.181	0.472	1.184*	0.105	−0.031
		[0.568]	[0.455]	[0.484]	[0.807]	[0.473]	[0.084]	[0.898]	[0.830]
Home MarketCap/ GDP	−12.94	5.054	−4.735	66.279*	37.769	−55.011**	−34.472	46.608	−0.013
	[0.842]	[0.865]	[0.876]	[0.065]	[0.211]	[0.048]	[0.251]	[0.112]	[0.998]
Home Market Turnover	0.295	0.915***	0.261	1.140***	1.172***	0.985***	0.652**	0.880***	0.199***
	[0.516]	[0.001]	[0.446]	[0.001]	[0.000]	[0.000]	[0.025]	[0.004]	[0.001]
FDI/GDP	413.157	−457.684	−387.587	−648.732*	−240.426	−127.212	−556.803*	−576.849*	−1.457
	[0.159]	[0.116]	[0.169]	[0.052]	[0.421]	[0.639]	[0.074]	[0.051]	[0.982]
Unemployment (%)	0.056	−0.079	−0.04	−0.167***	−0.079	0.088*	−0.358***	−0.044	−0.016
	[0.552]	[0.137]	[0.440]	[0.008]	[0.122]	[0.051]	[0.000]	[0.432]	[0.137]
Trade Imbalance	−0.21	0.817	5.022**	3.644*	−7.484***	−0.724	0.698	−0.89	−0.215
	[0.960]	[0.650]	[0.011]	[0.057]	[0.000]	[0.704]	[0.741]	[0.610]	[0.603]
Governance Index (WB)	2.098	−0.927	−0.06	−3.631	−5.746**	4.242**	−4.024	−1.991	−0.402
	[0.650]	[0.667]	[0.978]	[0.132]	[0.017]	[0.034]	[0.132]	[0.374]	[0.332]
ADRI (Spamann)	−0.268	0.21	0.112	0.298	0.405*	−0.216	0.064	0.035	0.054
	[0.333]	[0.390]	[0.636]	[0.234]	[0.090]	[0.377]	[0.805]	[0.895]	[0.330]
Constant	4.007	7.632***	5.807**	11.346***	7.784***	3.518*	13.986***	6.805***	0.747*
	[0.318]	[0.001]	[0.022]	[0.000]	[0.001]	[0.071]	[0.000]	[0.000]	[0.093]
Observations	4703	18,500	9353	15,269	17,057	17,212	17,972	16,768	18,500
R−squared	3.40%	3.00%	2.90%	3.40%	3.20%	3.30%	3.40%	3.20%	1.31%
F stat	5.81	13.12	6.38	11.38	14.18	12.50	14.88	15.54	

observations. The treatment sample comprises firms from the EU. Most observations are from the EU or from developed non-EU markets. Table 10 contains the sample composition by country.

I use a difference-in-difference test where the dependent variables are measures of asset or cash growth and the independent variables are other corporate-level and country-level factors that might influence this growth. In unreported models, I also examine models similar to those suggested in Bertrand et al. (2004).[24] They suggest that in a sample such as this there can be auto-correlation in the firm-level observations. They argue that one way to avoid this is to collapse the sample into pre-treatment and post-treatment periods. This collapses each firm into two observations: pre and post. I retain only firms that feature in both periods.

The dependent variables measure various types of asset growth. First, I analyze straight growth in book assets. Second, I assess the growth in cash holdings. I do this because Harford et al. (2008) indicate a relationship between poor governance and cash holdings, and I hypothesize that the takeover directive worsened governance. Third, I examine the growth in CAPEX, which is an antecedent to asset growth. Fourth, I examine growth in property, plant and equipment (PPE). I examine PPE because such assets require comparatively less managerial effort than do intangibles; and thus, might be favored in poor governance situations (see Hirshleifer and Suh, 1992).

The independent variables are factors that are relatively standard in the corporate operating characteristics/performance literature.[25] Note that all independent variables pre-date the dependent variables. That is, where the dependent variable is the growth between year t and $t+1$, the independent variables date from year $t-1$. I also ensure the results are robust to endogeneity concerns by examining models that either (a) omit the control variables, or (b) replace them with the average value of all firms in the subject-company's SIC 2, 3, or 4-digit industry. The results vis-à-vis the directive are qualitatively the same in these robustness tests. Table 2 Panel B summarizes these variables and Table 11 contains the summary statistics.

4.2. Results

The results indicate that the takeover directive encouraged asset growth. The univariate results are in Table 12. The main finding is that following the takeover directive, growth in assets, cash holdings, CAPEX, and property increased in the EU whereas they decreased outside of the EU. That is, the takeover directive is likely to have increased asset growth in the EU region.

The multivariate regression results support the univariate results. The regression results are in Table 13. The first four columns compare the EU with the sample of non-EU firms. The second four columns restrict the control sample to comprise only firms that are in developed markets.[26] I restrict the control sample to comprise developed countries because these countries are the most similar to the EU-zone countries. The main finding is that the coefficient on the interaction term 'I(EU)×I(Directive)' is positive and significant in all models. This implies that the takeover directive induced an increase in asset growth. This is consistent with the quiet life hypothesis (in Bertrand and Mullainathan, 2003). This also provides some support for the proposition that entrenching managers enables them to act on latent agency conflicts and pursue empire building programs. These results are robust to controlling for auto-correlation in the dependent variable by using techniques suggested in Bertrand et al. (2004).

Overall, these results indicate that the takeover directive induced asset growth in EU-zone countries. A possible explanation is that this additional entrenchment enables empire-building. This is also consistent with the reduction in takeover returns following the implementation of the takeover directive.

5. Other robustness tests

5.1. Collinearity

The results are robust to collinearity. The VIF statistic never exceeds two for any control variable. Nonetheless, the results hold in PCA analysis that condenses the controls into components representing acquirer, deal, country, and country-governance factors. The results vis-à-vis the impact of the takeover directive are qualitatively the same in these models.

5.1.1. Variable definitions

The results vis-à-vis the takeover directive are robust to variable definitions. They hold when replacing the firm's assets (in 'ln(Assets)', 'Debt/Assets', and 'EBITDA/Assets') with the firm's market capitalization and the end of the prior fiscal year. They also hold when replacing the World Bank governance index with individual components of the index.

5.1.2. CAR definition and computation

The results are robust to the calculation of cumulative abnormal returns. The baseline models use the market-adjusted return from 2 days before to 2 days after the acquisition announcement. The rationale is that market adjusted returns avoid biases that arise due to thin trading and non-synchronous trading when estimating market model CARs. Nonetheless, the results hold for CARs based on an OLS estimation of the market model over the period 11 days to 210 days before the takeover announcement (as in Masulis et al., 2007; Moeller et al., 2005). The results also hold when using abnormal returns based on a Scholes and

[24] This approach would not be useful or relevant for the models in Section 3 because the approach is designed for situations where an individual/firm features repeated in the sample.

[25] See for example: Harford et al. (2008); Harford et al. (forthcoming); Humphery-Jenner and Powell (2011).

[26] The developed countries are the United States, Canada, Japan, Singapore, Australia, New Zealand, Switzerland, Hong Kong, South Korea, Norway and Israel.

Table 8
Method of payment analysis. This table analyzes the method of payment in takeovers. For both models, the dependent variable is a categorical variable representing payment with (1) cash only, (2) stock only, or (3) a mix of cash and stock. Model 1 contains the baseline small set of control variables. Model 2 expands the set of control variables. All models include year dummies (suppressed) and cluster standard errors by 4-digit SIC code. Brackets contain p values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Dependent variable	I(Cash Payment)							
Sample	EU	ALL	Not USA	Not UK	Not AUS	Not CAN	EU and developed	Propensity score based
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I(EU)		0.781***	0.860***	0.400***	0.388***	0.982***	0.737***	0.721***
		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
I(EU) × I(Directive)		−0.624***	−0.441***	−0.465***	−0.611***	−0.604***	−0.602***	0.269***
		[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]
I(Directive)	−0.183**	0.403***	0.279***	0.446***	0.470***	0.430***	0.350***	−0.547***
	[0.049]	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ln(Assets)	0.093***	0.093***	0.079***	0.093***	0.072***	0.081***	0.100***	0.070***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]
EBITDA/Assets	1.985***	0.345	0.037	0.106	0.597	1.558***	0.387	1.909***
	[0.000]	[0.661]	[0.421]	[0.863]	[0.604]	[0.000]	[0.652]	[0.000]
Debt/Assets	0.112	−0.257**	−0.064	−0.423***	−0.278**	−0.185*	−0.258**	−0.161
	[0.567]	[0.018]	[0.543]	[0.000]	[0.017]	[0.057]	[0.022]	[0.116]
High-Tech	0.08	0.129***	0.059	0.147***	0.083	0.154***	0.142***	0.196***
	[0.332]	[0.008]	[0.338]	[0.006]	[0.114]	[0.000]	[0.004]	[0.000]
Diversifying	0.07	0.055	0.092*	0.05	0.066*	0.05	0.038	0.061
	[0.338]	[0.148]	[0.089]	[0.237]	[0.092]	[0.207]	[0.326]	[0.124]
Competed	0	−0.308	0.034	−0.339	−0.29	−0.343	−0.375*	−0.343
	[0.999]	[0.126]	[0.907]	[0.123]	[0.161]	[0.107]	[0.072]	[0.122]
Tender Offer	0.588***	1.547***	0.980***	1.778***	1.557***	1.539***	1.543***	1.556***
	[0.003]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Public Target	−0.320*	−0.920***	−0.520***	−0.915***	−0.940***	−0.898***	−0.939***	−0.885***
	[0.069]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Unlisted Target	−0.736***	−0.612***	−0.592***	−0.560***	−0.633***	−0.629***	−0.627***	−0.625***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Crossborder	0.404***	0.301***	0.371***	0.310***	0.292***	0.283***	0.311***	0.307***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Takeover Activity	−0.038	−0.026*	−0.042**	−0.009	−0.027*	−0.035**	−0.027*	−0.006
	[0.103]	[0.074]	[0.013]	[0.557]	[0.067]	[0.014]	[0.071]	[0.683]
I(USA)		0.134		0.260*	−0.300*	0.407***	0.014	0.042
		[0.330]		[0.072]	[0.055]	[0.007]	[0.924]	[0.776]
I(Latin America)		−0.970***	−1.004***	−1.123***	−0.933***	−1.025***		−0.812**
		[0.003]	[0.002]	[0.001]	[0.003]	[0.002]		[0.027]
I(Asia)		0.176	−0.077	0.203	−0.049	0.198	−0.285	0.32
		[0.268]	[0.643]	[0.215]	[0.757]	[0.251]	[0.125]	[0.103]
Home MarketCap/GDP	39.466***	15.023***	37.121***	11.782**	16.128***	26.106***	24.038***	18.648***
	[0.001]	[0.005]	[0.000]	[0.050]	[0.003]	[0.000]	[0.000]	[0.002]
Home Market Turnover	0.129	0.067	0.091	0.105	−0.015	0.076	0.115**	0.158***
	[0.120]	[0.250]	[0.158]	[0.159]	[0.805]	[0.146]	[0.049]	[0.005]
FDI/GDP	−107.55	−1.646	−178.119**	−46.773	−2.318	−149.543*	−0.441	−146.314*
	[0.241]	[0.979]	[0.011]	[0.515]	[0.973]	[0.051]	[0.995]	[0.065]
Unemployment (%)	−0.060**	−0.038***	−0.068***	−0.023*	−0.053***	−0.065***	−0.021	−0.056***
	[0.012]	[0.003]	[0.000]	[0.073]	[0.000]	[0.000]	[0.246]	[0.000]
Trade Imbalance	3.134***	2.168***	−1.218**	1.304***	3.293***	1.979***	2.343***	2.216***
	[0.007]	[0.000]	[0.018]	[0.003]	[0.000]	[0.000]	[0.000]	[0.000]
Governance Index (WB)	1.373	−1.228***	−1.665***	−1.519***	−0.649	−2.069***	−1.671**	−1.732***
	[0.268]	[0.009]	[0.000]	[0.001]	[0.207]	[0.000]	[0.017]	[0.001]
ADRI (Spamann)	−0.114	−0.031	−0.037	−0.038	−0.02	0.031	−0.056	0.002
	[0.165]	[0.590]	[0.486]	[0.522]	[0.738]	[0.587]	[0.352]	[0.969]
Constant	−2.917***	−1.269**	−0.759	−1.149**	−1.067**	−0.822	−1.066	−0.831
	[0.009]	[0.016]	[0.140]	[0.034]	[0.047]	[0.111]	[0.165]	[0.125]
Observations	4703	18,500	9353	15,269	17,057	17,212	17,972	16,768
Pseudo R-squared	6.37%	6.13%	5.93%	5.95%	6.29%	7.02%	6.37%	6.97%

Williams (1977) approach, which controls for non-synchronous trading, and when examining the event windows (−1,1), (−2,2), and (−3,3).

5.1.3. Sample composition

One concern is that there are more observations from before the directive than from after it and that the unbalanced sample size might bias the results. Thus, I use weighted least squares (WLS) to ensure that the results do not merely reflect the size of the

Table 9
Days to completion analysis. This table analyzes the days to completion for the takeover bid. The dependent variable is the number of days between (a) the announcement of the takeover and (b) the completion of the takeover bid. The model uses a Tobit regression (with a lower limit of zero). The models include year dummies (suppressed) and cluster standard errors by four-digit SIC codes. Brackets contain p values. Superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Dependent variable	Days to completion							
Sample	EU	All	Not USA	Not UK	Not AUS	Not CAN	EU and developed	Propensity score based
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I(EU)		−19.197***	−20.731***	13.068***	−1.507	−26.140***	−24.366***	−12.607***
		[0.000]	[0.000]	[0.007]	[0.722]	[0.000]	[0.000]	[0.001]
I(EU) × I(Directive)		12.889***	13.960***	−3.207	10.711***	11.499***	8.245***	−3.096
		[0.000]	[0.001]	[0.466]	[0.001]	[0.000]	[0.006]	[0.437]
I(Directive)	−4.676	−5.962	−14.125***	−3.107	−6.733	−5.188	−4.478	9.805***
	[0.490]	[0.125]	[0.006]	[0.456]	[0.109]	[0.181]	[0.241]	[0.003]
ln(Assets)	2.695***	0.702	−1.249	0.189	2.196***	0.51	1.303*	1.979**
	[0.001]	[0.304]	[0.109]	[0.804]	[0.000]	[0.450]	[0.064]	[0.020]
EBITDA/Assets	−2.391*	−0.384***	−0.325***	−0.339***	−0.328***	−0.446***	−0.422***	−5.84
	[0.097]	[0.001]	[0.001]	[0.002]	[0.002]	[0.001]	[0.000]	[0.162]
Debt/Assets	−4.66	1.37	4.166	0.149	0.106	2.175	−2.158	−4.645
	[0.436]	[0.828]	[0.327]	[0.983]	[0.990]	[0.732]	[0.745]	[0.592]
High-Tech	−0.814	−8.173**	−4.667	−9.045**	−7.824**	−8.282**	−8.492**	−9.016**
	[0.758]	[0.023]	[0.119]	[0.031]	[0.029]	[0.022]	[0.016]	[0.016]
Diversifying	−3.539	−5.088*	−2.237	−5.778	−5.137*	−6.037**	−5.914*	−5.432*
	[0.186]	[0.096]	[0.391]	[0.108]	[0.096]	[0.034]	[0.060]	[0.078]
Competed	48.177**	37.973***	34.325***	37.233***	38.465***	39.331***	37.704***	46.409***
	[0.027]	[0.000]	[0.006]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Tender Offer	−30.959**	−41.439***	−21.737***	−46.562***	−45.127***	−43.274***	−42.362***	−41.646***
	[0.024]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Public Target	81.013***	76.769***	64.307***	75.964***	77.312***	81.640***	77.045***	76.204***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Unlisted Target	−16.368***	−15.140***	−21.980***	−14.315***	−14.204***	−13.776***	−14.619***	−13.768***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Crossborder	3.604*	−2.59	−0.301	−8.590***	−0.899	−4.508**	−2.092	−2.682
	[0.090]	[0.210]	[0.908]	[0.000]	[0.660]	[0.023]	[0.327]	[0.195]
Takeover Activity	3.533***	4.625***	3.455***	5.330***	5.195***	5.709***	4.200***	4.791***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
I(USA)		19.266***		3.27	45.729***	11.816*	13.026*	16.754**
		[0.003]		[0.624]	[0.000]	[0.080]	[0.056]	[0.012]
I(Latin America)		−52.768***	−57.303***	−55.135***	−59.386***	−58.588***		−42.705***
		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]		[0.000]
I(Asia)		52.938***	47.887***	35.288***	58.060***	51.536***	32.477***	85.033***
		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Home MarketCap/GDP	−403.176	366.3	292.064	1717.986***	495.207*	173.819	343.021	−66.78
	[0.552]	[0.204]	[0.332]	[0.000]	[0.085]	[0.556]	[0.185]	[0.821]
Home Market Turnover	0.368	−15.828***	−16.554***	−20.067***	−15.691***	−17.668***	−6.073***	−11.179***
	[0.933]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.010]	[0.000]
FDI/GDP	−2634.95	−5129.529*	−3802.89	−10,835.335***	−5441.505*	−4013.55	2289.21	−8829.789***
	[0.276]	[0.085]	[0.198]	[0.001]	[0.096]	[0.174]	[0.389]	[0.007]
Unemployment (%)	4.316***	−2.333***	−2.398***	−4.657***	−1.889***	−1.425***	−0.147	−1.483***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.006]	[0.877]	[0.009]
Trade Imbalance	−42.918	−115.286***	−126.670***	−49.828**	−188.105***	−146.582***	−82.554***	−104.947***
	[0.360]	[0.000]	[0.000]	[0.013]	[0.000]	[0.000]	[0.000]	[0.000]
Governance Index (WB)	−26.748	−92.161***	−118.773***	−140.401***	−120.508***	−64.118***	−75.707***	−58.074**
	[0.621]	[0.000]	[0.000]	[0.000]	[0.000]	[0.008]	[0.008]	[0.020]
ADRI (Spamann)	−3.278	4.156*	6.009**	6.168***	5.140**	1.217	5.661**	1.005
	[0.283]	[0.061]	[0.012]	[0.002]	[0.016]	[0.566]	[0.023]	[0.634]
Constant	21.032	145.110***	202.896***	184.715***	125.692***	138.956***	92.035***	100.085***
	[0.663]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.005]	[0.001]
Observations	4534	18,330	9183	15,099	16,887	17,043	17,802	16,610
Pseudo R-squared	2.59%	2.43%	2.36%	2.21%	2.71%	2.61%	2.30%	2.58%

sample before and after the directive. I do this as follows: First, I create four sorts: EU, non-EU, pre-directive, post-directive. Second, I assign each takeover, *i*, to a sort and I create weighting for observation *i* as the inverse of the number of observations in that sort. That is, I down-weight takeovers from a sort that has many observations. I omit the results for brevity, but the results are consistent with the results reported previously in the paper, with the takeover directive reducing takeover returns, lowering the likelihood of using cash, and increasing the time to complete the deal.

Table 10
Asset growth/quiet life sample by country. This table contains summary statistics by country for the 'quiet life/asset growth' sample.

Country	Observations	Asset growth	Cash growth	CAPEX growth	Property growth
ARG	12	0.059	0.393	0.309	0.028
AUS	2483	0.118	0.105	0.125	0.181
AUT	322	−0.131	−0.167	−0.166	−0.114
BEL	552	−0.181	−0.102	−0.254	−0.167
BRA	266	0.114	0.584	0.180	0.135
CAN	4841	0.103	0.081	−0.012	0.157
CHE	1760	0.042	0.072	0.010	0.034
CHL	75	0.061	0.204	−0.079	0.075
COL	11	0.131	0.377	0.052	0.082
DEU	4471	0.011	0.017	−0.095	0.023
DNK	913	0.040	0.043	−0.012	0.027
EGY	5	0.224	−1.092	0.806	0.277
ESP	449	−0.297	−0.190	−0.277	−0.300
FIN	1063	−0.068	−0.071	−0.177	−0.058
FRA	3869	−0.126	−0.074	−0.179	−0.110
GBR	11,689	0.101	0.088	0.018	0.100
GRC	341	−0.299	−0.130	−0.402	−0.258
HKG	4364	0.136	0.187	0.031	0.099
IND	461	0.309	0.427	0.557	0.268
IRL	560	0.138	0.093	0.069	0.115
ISR	408	0.108	0.149	−0.019	0.078
ITA	1097	−0.795	−0.247	−0.836	−0.774
JPN	26,099	0.005	0.010	−0.026	0.027
KOR	41	0.060	0.131	0.107	0.130
MEX	315	0.125	0.113	0.073	0.126
MYS	3650	0.060	0.159	0.039	0.058
NLD	1438	0.011	0.007	−0.065	−0.001
NOR	1276	0.107	0.032	0.052	0.138
NZL	145	0.047	0.093	0.047	0.064
PER	35	0.074	0.336	−0.057	0.107
PHL	571	0.060	0.165	0.000	0.045
PRT	71	0.045	0.636	−0.065	0.084
SGP	1832	0.062	0.148	−0.012	0.038
SWE	2200	0.117	0.092	0.018	0.118
THA	1623	0.052	0.094	0.026	0.073
TUR	164	−0.023	−0.348	−0.309	−0.020
USA	63,460	0.080	0.072	0.008	0.113
ZAF	916	0.131	0.138	0.089	0.135
Full Sample	143,848	0.052	0.061	−0.012	0.073

Table 11
Summary statistics for the asset growth sample. This table contains summary statistics for the 'asset growth' sample. The figures are sample means.

Variable	Full sample	EU pre	EU post	Non-EU pre	Non-EU post
Asset Growth	0.052	−0.030	0.076	0.078	0.033
Cash Growth	0.061	0.008	0.064	0.071	0.072
CAPEX Growth	−0.012	−0.098	−0.044	0.041	−0.092
Property Growth	0.073	−0.035	0.113	0.095	0.082
EBIT/Assets	−0.025	0.036	0.016	−0.044	−0.028
Current Assets/Current Liabilities	2.553	2.038	2.409	2.628	2.762
Cash/Assets	0.133	0.099	0.150	0.133	0.158
Debt/Assets	0.151	0.127	0.134	0.163	0.139
CAPEX/Sales	0.135	0.109	0.155	0.130	0.163
Property/Assets	0.555	0.554	0.432	0.568	0.545
R&D/Sales	0.130	0.025	0.043	0.161	0.138
ln(Employees)	0.986	1.153	1.127	0.934	0.977
Home MarketCap/GDP	0.013	0.010	0.011	0.012	0.015
Home Market Turnover	1.107	0.863	1.522	1.068	1.321
FDI/GDP	0.000	0.000	0.001	0.000	0.000
Unemployment (%)	5.612	7.849	6.328	5.194	4.947
Trade Imbalance	0.039	−0.019	0.017	0.049	0.058
Governance Index (WB)	0.868	0.906	0.896	0.864	0.844
ADRI (Spamann)	3.294	4.047	3.931	2.985	3.478
Observations	143,848	22,605	6430	85,734	29,079

Table 12
Asset growth univariate statistics. This table contains univariate statistics to examine asset and cash growth in EU and non-EU firms both before and after the directive. The figures are sample means (or difference in means). Superscripts ***, **, and * denote significance at 1%, 5%, or 10%, respectively using: a *t* test (for plain sample means) a two-sample *t* ttest (for difference in means), or the significance of the interaction term (θ) in a regression of the form $Dependent = \alpha + \beta I(EU) + \delta I(Directive) + \theta I(EU) \times I(Directive) + \varepsilon$.

Row	Sample	Asset growth	Cash growth	CAPEX growth	Property growth	Observations
[1]	EU post	0.076***	0.064***	−0.044***	0.113***	6430
[2]	Non-EU post	0.033***	0.072***	−0.092***	0.082***	29,079
[3] = [1] − [2]	Difference	0.043***	−0.008	0.048***	0.031***	
[4]	EU pre	−0.030***	0.008***	−0.098***	−0.035***	22,605
[5]	Non-EU pre	0.078***	0.071	0.041***	0.095***	85,734
[6] = [4] − [5]	Difference	−0.108***	−0.063***	−0.139***	−0.130***	
[7] = [1] − [4]	EU pre–EU post	0.106***	0.056***	0.054***	0.148***	
[8] = [2] − [5]	Non-EU pre–non-EU post	−0.045***	0.001	−0.133***	−0.013***	
[9] = [7] − [8]	Difference	0.151***	0.055***	0.187***	0.161***	

5.1.4. Clustering

The main models use region dummies, year dummies, and cluster standard errors by 4-digit SIC code. The results are also robust to including country dummies, clustering by 2-digit, 3-digit SIC industry, and/or including SIC industry dummies.

Table 13
Asset growth/quiet life. This section contains the asset growth/quiet life models. The goal is to analyze whether companies in the EU engaged in asset growth programs after the takeover directive. Columns 1–4 analyze companies in the EU versus companies in all other countries. Columns 5–8 analyze companies in the EU versus companies in other developed markets. All models include year dummies, and cluster standard errors by year. Brackets contain p-values and superscripts ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Dependent variables	Asset growth	Cash growth	CAPEX growth	Property growth	Asset growth	Cash growth	CAPEX growth	Property growth
Sample	Full				EU and developed			
Column	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
I(EU)	−0.086***	−0.061***	−0.116***	−0.108***	−0.083***	−0.007	−0.118***	−0.106***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.599]	[0.000]	[0.000]
I(Directive)	−0.096***	0.071***	−0.012	−0.082***	−0.051***	0.003	−0.071***	−0.045***
	[0.000]	[0.000]	[0.488]	[0.000]	[0.000]	[0.848]	[0.000]	[0.000]
I(EU) × I(Directive)	0.159***	0.074***	0.198***	0.151***	0.150***	0.060***	0.184***	0.139***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
EBIT/Assets	−0.056***	−0.146***	0.147***	0.009	−0.059***	−0.150***	0.141***	0.005
	[0.000]	[0.000]	[0.000]	[0.235]	[0.000]	[0.000]	[0.000]	[0.471]
Current Assets/Current Liabilities	−0.004***	0.004***	0.012***	0.010***	−0.005***	0.004***	0.011***	0.010***
	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.002]	[0.000]	[0.000]
Cash/Assets	0.163***	−1.658***	0.459***	0.237***	0.155***	−1.644***	0.446***	0.226***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Debt/Assets	−0.008	−0.169***	0.066***	0.042***	−0.014	−0.173***	0.053***	0.035***
	[0.383]	[0.000]	[0.000]	[0.000]	[0.101]	[0.000]	[0.000]	[0.000]
CAPEX/Sales	0.049***	−0.033***	−0.221***	0.093***	0.044***	−0.034***	−0.211***	0.085***
	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]
Property/Assets	−0.009**	−0.067***	−0.003	−0.133***	−0.008**	−0.065***	−0.001	−0.133***
	[0.014]	[0.000]	[0.690]	[0.000]	[0.023]	[0.000]	[0.857]	[0.000]
R&D/Sales	−0.039***	0.031***	0.01	−0.036***	−0.037***	0.030***	0.008	−0.034***
	[0.000]	[0.000]	[0.103]	[0.000]	[0.000]	[0.000]	[0.176]	[0.000]
ln(Employees)	−0.004***	−0.027***	0.002	−0.002	−0.004***	−0.029***	0.002	−0.002*
	[0.000]	[0.000]	[0.180]	[0.115]	[0.000]	[0.000]	[0.237]	[0.082]
Home MarketCap/GDP	4.469***	6.349***	3.136***	1.786***	3.043***	6.077***	1.540**	0.071
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.011]	[0.877]
Home Market Turnover	−0.024***	0.022**	−0.050***	−0.029***	−0.017***	0.031***	−0.039***	−0.026***
	[0.000]	[0.026]	[0.000]	[0.000]	[0.001]	[0.002]	[0.000]	[0.000]
FDI/GDP	12.984**	−1.21	4.261	9.209	23.725***	0.227	21.628**	22.354***
	[0.021]	[0.887]	[0.609]	[0.132]	[0.000]	[0.981]	[0.020]	[0.001]
Unemployment (%)	−0.011***	−0.009***	−0.011***	−0.012***	−0.025***	−0.034***	−0.022***	−0.025***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Trade Imbalance	0.482***	0.171***	0.590***	0.476***	0.888***	0.244***	0.979***	0.879***
	[0.000]	[0.009]	[0.000]	[0.000]	[0.000]	[0.005]	[0.000]	[0.000]
Governance Index (WB)	0.087***	0.077*	0.052	0.108***	1.320***	0.506***	1.237***	1.321***
	[0.000]	[0.057]	[0.148]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ADRI (Spamann)	0.039***	0.019***	0.051***	0.039***	0.075***	0.029***	0.086***	0.073***
	[0.000]	[0.002]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Constant	−0.021	0.195***	−0.151***	−0.001	−1.218***	−0.054	−1.205***	−1.160***
	[0.387]	[0.000]	[0.000]	[0.969]	[0.000]	[0.676]	[0.000]	[0.000]
Observations	143,848	143,848	143,848	143,848	133,504	133,504	133,504	133,504
R-Squared	5.30%	4.80%	5.20%	5.70%	6.80%	5.00%	5.70%	7.00%

6. Conclusion

The EU and the US are federal type systems in which member states have historically had different corporate laws. Commentators have argued that this induces a race to the bottom in which member-states compete to have laws that are the most manager-friendly. The EU has attempted to address this by passing the Takeover Directive. The goal was to balance (a) the desire for harmonization with (b) the argued need for flexibility across member states. However, the takeover directive has received criticism for being vague and discretionary and for increasing managerial entrenchment.

This paper hypothesizes that the directive has worsened the investments made by companies in the EU. I argue that the mechanism of action is increased managerial entrenchment. I show that for companies listed in the EU, the directive reduced investment profitability (as proxied by the market's reaction to a takeover), made takeovers less efficient, and induced a shift away from cash payment in some countries. The directive also encouraged increased growth in assets and cash holdings, suggesting an increase in managerial empire building.

There are some possible limitations to these results. Arguably, there may be violations of the parallel trend assumption. However, the robustness of main CARs-based results to different control and treatment samples suggests that such violations do not drive the key result that the takeover directive reduced takeover returns. Further, there is heterogeneity in the implementation of the takeover directive. However, this heterogeneity is part of the reason that the takeover directive reduces returns. That is, the legal uncertainty that arises due to heterogeneous laws discourages some value creating investments. I also acknowledge that the directive has been around for a limited period of time (coming into force in 2006). Thus, further studies could chart the evolution of the directive, and its implications, over time.

These findings have significant implications for the EU and for other countries. The implication for the EU is that further reform is necessary in order to produce value-creating legal harmonization. The implication for other federal blocks, such as the US, is that legal harmonization should avoid vague or discretionary laws, and should avoid reforms that may actually increase managerial power in some member states. Further research could investigate precisely which Articles of the Takeover Directive drive value creation (or destruction) in the takeover directive.

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