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The Impact of Merger Legislation on Bank Mergers

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THE IMPACT OF MERGER LEGISLATION ON BANK MERGERS

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ABSTRACT. We study the impact on bank merger activity of the strengthening in merger control legislation introduced in Europe between 1989 and 2004. We find that strengthening merger control increases the abnormal returns on bank target stocks in the days around the merger announcement by 7 percentage points relative to before the new legislation. We discuss several potential explanations for this effect of the change in legislation by studying changes in merger characteristics. We find a weak increase in the pre-merger profitability of target banks, a decrease in the size of acquirers and a decrease in the share of transactions in which banks are acquired by other banks. Other merger properties, including the size and risk profile of targets, the geographic overlap of merging banks and the stock market response of rival banks in the country appear unaffected. The evidence is consistent with legislation changes leading to transactions being undertaken that are more profitable and more pro-competitive.

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1. INTRODUCTION

Over the last three decades most industrial countries introduced or strengthened their competition policy legislation. Competition policy is applied to most, but not all sectors of the economy. Banking is one of the most regulated sectors in the economy, and until a couple of decades ago competitive issues were dealt with by their specific regulator. Indeed, in most countries banking regulation dates back to well before the introduction of competition policy. Banking supervision entails a specific control of mergers and acquisitions for stability purposes, which interacts directly with competition-oriented merger control when it is introduced. It is also well known that the relationship between market structure and competition common to many industries on which merger control relies does not hold for the banking industry. The effect of introducing merger control by a competition authority in addition to financial regulation of bank mergers is therefore not at all obvious. In this paper we empirically study the impact of introducing merger control on the valuation and other characteristics of bank mergers and acquisitions.

We study a dataset of announced mergers and acquisitions involving banks as targets between 1986 and 2007 in European countries experiencing merger legislation changes. We construct a comparison between transactions before and after the change in legislation, and measure differences in a number of characteristics of the transaction as a whole as well as the merging parties. Our main finding uncovers a statistically significant and economically meaningful increase in the market premium that target stocks experience around the announcement of a merger. Looking for the reasons behind this main result, we find that the average and relative size of the acquirer fell significantly with the introduction of merger control, and that the share of bank acquisitions by non-banks increased suggesting a pro-competitive change in merger activity. Other characteristics we study, including the profitability and risk-profile of targets as well as the market response of rival banks, appear unaffected.

Our results contribute to the literature on the effect of merger control on the market for corporate control that includes for example Eckbo (1983), Seldeslachts et al. (2009) and Duso et al. (2011). In addition, our results provide insights relating to recent theoretical efforts to capture explicitly the effects that merger policy has on the set of mergers that firms bring forward. These include in particular Nocke and Whinston (2010) and Nocke and Whinston (2013) that analyze merger selection dynamics from an optimal policy perspective.

In Section 2 we briefly place the paper in the context of the existing literature on merger control and merger activity in the banking sector. Section 3 describes our dataset of merger control legislation changes and bank merger activity. Section 4 introduces merger announcement effects in our dataset. Our main analysis is presented in Section 5 which studies the impact that the introduction of new merger control legislation has on bank merger activity. Section 6 concludes.

2. Literature Context

Our study relates to previous research in two main areas: (i) theoretical and empirical research on merger control policy and (ii) studies of merger activity in the banking industry.

Williamson (1968) describes the basic trade-off of merger control policy as one between efficiency gains from mergers and increased market power. A transaction should be cleared if the efficiency gains of a transaction outweigh the harm from market power. Farrell and Shapiro (1990) study this trade-off in a Cournot setting and establish conditions for the sign of the welfare effect of a merger between firms. More recently, other aspects of the design of merger control policy have been studied for example in Nocke and Whinston (2010) and Nocke and Whinston (2013) that consider, respectively, the dynamic aspects of industry evolution and the selection of transactions by firms in a given regulatory environment.

In addition to this theoretical research on merger control policy, a strand of literature has sought to investigate its impact empirically. In a series of papers Eckbo studies the effectiveness of merger control policy from a variety of perspectives (Eckbo, 1985; Eckbo and Wier, 1985; Eckbo, 1992). These studies draw a picture that suggests a limited impact of merger control policy in terms of preventing or deterring anticompetitive mergers. More recently, Seldeslachts et al. (2009) have studied the effect of enforcement decisions on merger activity. They report that decisions to block a merger significantly decrease subsequent merger activity, suggesting a positive deterrence effect, whilst decisions to settle lead to no such effect. Similarly studying the impact of enforcement decisions, Duso et al. (2011) analyze a dataset of mergers notified to the European Commission and find that merger announcement gains are reversed if a merger is prohibited, but only partially so if it is cleared with remedies, suggesting a connection between decisions of the merger control regulator and stock market valuations. Duso et al. (2013) explicitly study how a single legislation change – the adoption of the modernization of EU merger regulation in 2004 – influences the effectiveness of enforcement decisions. They find evidence for only

a modest improvement through the legislation. We differ from these papers in that we study the relationship between merger policy and merger activity more generally, rather than restricting attention to those transactions that end up in front of the regulator.

A closely related paper to ours is Carletti et al. (2015). We draw upon the same set of changes in national merger control legislation as used in that paper. Carletti et al. (2015) use these data to analyze the impact of the merger control legislation changes on the stock market valuations of firms and banks at the time of the legal change. In contrast, in this paper we study a sample of bank mergers and analyze the effect of legislation changes on these transactions themselves.

Other research on mergers in the banking sector has considered the consequences of bank mergers, focusing on implications for shareholders as well as customers. For example, Becher (2000) studies the valuation effects of bank mergers during the 1990s and observes strong gains for target shareholders as well as gains for the combined entity. He concludes that this evidence of value creation suggests that mergers take place for synergistic reasons, rather than empire building. Panetta et al. (2009) focus on the activities of banks involved in a merger, in particular practices of customer screening. They make use of detailed credit data from Italy and show that mergers improve the extent to which banks are able to recognize high risk borrowers by documenting an increase in the relationship between default risk and interest rates after a bank merger. These papers consider the implications of mergers for shareholders and those for bank customers only indirectly, for example by observing the share of loans to small firms. In contrast, customer implications are the focus of Erel (2011) and Sapienza (2002) who analyze how loan contracts in the US and Italy, respectively, are affected by bank mergers. Erel (2011) finds that bank mergers during the 1990s on average lead to an improvement of loan conditions for customers reflected in tighter spreads. Sapienza (2002) shows that acquisitions of small banks by larger banks tend to benefit the customers of the target bank through lower interest rates, whilst customers of a large acquisition target tend to lose. [1]

Contrary to this established literature on the effects of bank mergers, we focus in our paper on the way different legislation regimes affect the mergers themselves. Our study is the first to analyze the effect of changes in merger control legislation on the characteristics of bank mergers using a large sample of concluded transactions in different European countries. Our contribution is thus to offer the first analysis of the effect that the new

[1] Other papers studying the impact of bank mergers on loans to firms include Berger et al. (1998), Scott and Dunkelberg (2003), Karceski et al. (2005), Bonaccorsi Di Patti and Gobbi (2007) and Degryse et al. (2010).

merger legislation has on bank merger activity, complementing the existing literature on the consequences of bank mergers.

3. DATA

We analyze the impact of merger control on merger activity using a dataset assembled from three sources. First, information on bank mergers is extracted from the SDC Platinum Mergers and Acquisitions database. Second, the targets and acquirers in these transactions are matched with Datastream to extract stock market returns. Third, data on merger legislation changes are taken from Carletti et al. (2015). Table 1 presents an overview of the data sources, variables and definitions.

SDC Platinum Mergers and Acquisitions provides data for more than 900,000 transactions worldwide starting since the 1970s. The database lists the identity of merging parties and financial information as well as characteristics of the transaction itself. We work with a sample of transactions announced between 1 January 1986 and 31 December 2007 and involving a European bank as target.[2] We then match merging parties listed in SDC with Datastream identifiers to Datastream and extract returns and other financial data for the period around the relevant merger announcement. We use the returns data to compute merger announcement effects for targets and acquirers in the form of cumulative average abnormal returns as detailed in Section 4.

The final key element of our dataset is the set of new merger legislation introduced in European countries during the period of our sample and recorded in Carletti et al. (2015). In most instances in our sample the legislation introduced establishes the first explicit merger control regime in the countries under consideration and brings national legislation in line with the EU merger control regulation of 1989. In others, the legislation change modifies and strengthens an existing regime. We group all 18 legislation changes as instances of a tighter and more explicit merger control.

We map the sample of bank mergers from the SDC database into our legislation events based on the country to which SDC assigns the merger target based on its country of incorporation. This mapping is likely to be imperfect as for competition policy purposes the relevant legislation is determined by the location of a company's economic activity. However, if a bank is incorporated in a given country it can be expected to have a significant share of its business in that country and thus to be affected by applicable national

[2]We identify banks by NAIC 3-digit industry code 522 corresponding to "Credit Intermediation and Related Activities". This includes savings and industrial banks but excludes investment banks, brokers and insurance companies. We truncate the sample before 2008 to avoid including transactions that stem from rescue or other mergers during the financial crisis.

legislation. For Norway, Spain and Sweden, we observe two distinct legislation changes over the sample period. As the two events in each country are several years apart (7 years for Sweden; 10 years for Norway and Spain), we treat them each as independent changes. In these countries, a given merger can thus be classified as before the legislation change with respect to one event and after the legislation change with respect to the other.

Summary statistics for the dataset are provided in Table 2. For our main analysis we focus on the 380 transactions (mapped to legislation changes) for which we observe a sufficiently long time series of daily returns for the target bank around the merger announcement to estimate merger announcement effects starting 30 days before merger announcement.

4. Merger Announcement Effects

Significant gains in the stock prices of merger targets around the announcement of an acquisition are commonly observed in corporate takeovers (Jensen and Ruback, 1983). Becher (2000) and others document similar effects for mergers in the banking industry. The gains take the form of significantly positive cumulative abnormal returns (CARs), reported to be around 10-30 percent on average.

We compute CARs for targets and acquirers in our sample using a standard market model. We regress daily returns of a merger party r_{it} on returns for a national market index r_{mt} and a dummy for the relevant event window δ_{it}. For our main analysis we use the following specification:

$$r_{it} = \alpha_i + \beta_i r_{mt} + \gamma_i^{event} \delta_{it}^{event} + \epsilon_{it} \tag{1}$$

We estimate this model for different event window sizes parameterized by τ with $\delta_{it}^{event} = 1$ if $t \in [-\tau, 5]$ relative to the announcement date $t = 0$. The model is estimated by OLS for each merging party using an estimation window that includes an additional 250 days before the event window (see Figure 1 for an illustration). The CAR corresponding to an individual stock i for a given event window is computed by multiplying the estimate $\hat{\gamma}_i$ with the corresponding number of days in the event window. The results for the whole sample are shown in Table 3 for acquirers and targets for a variety of event windows.

The pattern of the estimates in our data is consistent with observations from the literature: target CARs are large and positive at around 11 to 16 percent. Acquirer CARs are close to zero. Statistical tests reject the null hypothesis that the mean target CAR is equal to zero at the one percent level, whilst for acquirers the null hypothesis of no effect cannot be rejected at the five percent level for any event window size. We construct joint

entity CARs as the weighted average between target and acquirer and find that these are positive but small around 1 to 2 percent.

5. Multivariate Analysis of the Impact of Merger Legislation Changes

We analyze the impact of changes in merger legislation on the characteristics of mergers in our dataset. These include properties of the transaction as a whole as well as properties of the individual firms involved.

5.1. **Specification.** For this analysis we regress a given merger characteristic on a dummy variable indicating whether the transaction was announced before or after the entry into force of the relevant legislation. We include in different specifications a variety of controls including a quadratic time trend as well as fixed effects for countries and years to control for possible selection issues based on geography and time.[3] The basic model is displayed in Equation 2 where y_i is the characteristic under investigation, X_i are controls including fixed effects and δ_i^{AFTER} is the dummy capturing whether the transaction took place after the change in merger control legislation. Thus, γ represents the coefficient of interest that captures the effect of the legislation changes.

$$y_i = \alpha + \beta X_i + \gamma \delta_i^{AFTER} + \epsilon_i \tag{2}$$

The main variable we consider in this specification is the merger announcement effect on targets. This is the analysis illustrated in Figure 2. In addition, we consider merger completion rates, the size, profitability and risk profile of merging parties as well as the geographic and industry overlap between target and acquirer. Finally, we study the announcement effects of rivals to the merging parties as a proxy for the competitive impact of the mergers in our sample.

5.2. **Merger Announcement Effects on Targets.** Our key findings relate to the announcement CARs for targets. We document a statistically significant and economically meaningful increase in CARs for transactions following the introduction of merger control legislation. The increase in CARs around the announcement is estimated to be around 6-7

[3] As further robustness checks we analyze specifications including an interaction term between the legislation dummy to capture the notion that the impact of the legislation may be phased in over time. In addition, we test for the effect of other events during our sample period which might lead to a systematic reassessment of banking mergers. For example, we introduce a dummy variable capturing the effect of the Barings collapse in February 1995. These additions turn out to have very little explanatory power and do not affect our main results.

percentage points for the $[-30, 5]$ day interval relative to a benchmark level of 11 percent for the sample as a whole. The regression results are summarized in Table 4.

Our preferred specification (Column (3)) includes country fixed effects and a linear and quadratic time trend. The effect we measure, however, is of similar size when the time trend is replaced by year fixed effects (Column (4)) or when controls about the transaction such as a cross-border dummy, the deal value and the deal attitude are included (Columns (6) and (7)).[4]

We find the pattern of increased announcement robust to changes in the size of the event window. The results are also robust to changes in the method of classifying mergers as before or after the new legislation. We take a transaction to take place under the old legislation if it was announced prior to the announcement date of the legislation change. Other approaches, for example, taking the date on which the legislation was implemented to be the relevant cutoff, do not affect our results. Furthermore, the date of a merger can be measured as the date it becomes effective rather than being announced. We run our analysis under different specifications and find our results to be robust as only a very small share of transactions is affected by these variations in classification rules. Out of the 380 targets with CAR data, only 5 transactions are classified differently by the choice between announcement and implementation date, be it for the change in the legislation or the merger transaction itself.

In addition, we consider the robustness of our CAR findings to the introduction of controls for sources of financing of the mergers in our sample. The corporate finance literature has established a positive relationship between cash financing and merger announcement CARs for targets. SDC provides data on sources of financing that distinguish cash from equity and "other" financing. In our sample 145 transactions are fully cash financed whilst an addition 82 are fully equity financed. However, only 261 transactions in our sample have data on financing that is not reported as "unknown". Table 5 presents the results on the impact of controlling for sources of financing using this data. Using the full sample (including those transactions with unknown funding) adding a dummy for all cash financed transactions to our list of controls (Column (2)) has the effect of marginally increasing the coefficient on the impact of the legislation relative to the benchmark (Column (1)). Adding a dummy for all equity financed transactions leads to a significant increase in the standard error on the legislation dummy leading to a drop

[4]We also run specifications in which we allow for the effect of the legal change to be learned in over time. For this we interact the dummy for transactions under new legislation with the time passed since its introduction. In this approach learning component acts similar to the time trend in other specifications and our main results are not qualitatively affected.

in statistical significance. In the reduced sample of 261 transactions with valid financing source data, we find that the dummies on cash and equity financing are statistically significant and show the expected signs. The coefficient on the effect of the legislation remains largely unchained and significant at the 10 per cent level even in the smaller sample. The reduced statistical significance is unsurprising given the loss of about 30 per cent of observations in our sample.

An increase in the merger announcement CARs after the introduction of new merger control legislation can be seen to reflect a greater expectation by the markets regarding the value created by the transaction. There are various plausible explanations for such an increase, which relate to the properties of the mergers happening as well as to the economic and regulatory environment. These include:

i. Attention to risk/stability considerations, which are typically the main concern for prudential regulators, may be reduced in favor of competition concerns when merger control by the competition authority is extended to the banking industry; this may change the type of mergers that are undertaken.
ii. Planned mergers may become more uncertain in terms of whether they will go through because they also need to be approved by the competition authority. Banks may therefore choose to keep the mergers much more confidential until they are sure that it will be accepted. This may imply a bigger surprise at the announcement.
iii. Merger control also requires more analysis to persuade an additional authority, so that more and more precise information may reach the market. Stock prices may then increase more as a reaction to the improved information.
iv. Banks can increase profits through a merger in two main ways: through an increase in market power or through efficiency gains. The latter requires more effort/screening cost (the benefit of a "quiet life"). In the absence of competition control, banks prefer to "shirk" and increase profits through increased market power. With competition control, the market power option disappears (or becomes more difficult) and it becomes worthwhile (or banks are forced) to exert effort and search for efficiency enhancing mergers.

To shed light on which of these possible and non-exclusive interpretations is more likely to be relevant, we explore the impact of the new legislation on various other characteristics of the merging parties as well as of the mergers themselves such as the market capitalization of merging parties, completion rates, bank risk profiles and proxies for competitive effect such as rival response and market overlap of the merging parties.

5.3. **Market Capitalization of Merging Parties.** Merger control legislation is aimed at limiting anticompetitive mergers. The size of parties involved offers a useful indicator of whether a transaction is anticompetitive. We study the implications of legislation changes for the size of firms involved using the market capitalization of merging parties. For our analysis we use the logarithm of market capitalization 30 days before the merger announcement and study the impact of new legislation on the absolute as well as relative size of parties.

We find that the acquirers are significantly smaller under the new legislation (Table 6 shows a decrease of about 50 percent), whilst targets remain unaffected (Table 7). This change in the relative position of targets and acquirers is confirmed when we study as dependent variable the log ratio of acquirer over target: Table 8 suggests a decline of about 45 percent in this ratio. [5]

5.4. **Merger Completion Rate.** The stock market response on announcement of a merger can be understood as the market's joint expectation of the value created by the transaction and its likelihood of completion. As the likelihood of completion changes, the valuation effect should adapt, a point made recently in Giglio and Shue (2013). The increase in target CARs we observe as a consequence of legislation changes could thus be connected to a greater likelihood that a transaction is completed. We thus analyze the consummation ratios, that is the probability that an announced merger is completed, in our sample and whether this is changing under the new legislation in merger control.

We find that in our sample on average the consummated ratio increases from 72.4 percent for transactions before legislation changes to 78.4 percent after the legislation changes. However, the difference is not statistically different from zero. This result is confirmed in our regression with fixed effects and controls (see Table 9).

5.5. **Profitability and Risk.** The increase in CARs we observe after the introduction of new legislation may be related to the selection of targets for acquisition as well as of the acquirers themselves. We test for the statistical impact of the new legislation using the same specification as for the CARs. As dependent variables we employ here a set of profitability measures including return on assets (ROA) and return on invested capital (ROIC) from Worldscope. In addition, we study a set of risk ratios from Worldscope including the ratio of capital to total assets (Cap/Assets), total debt to equity (Debt/Equity) and

[5] We take the logarithm of the size variables because of the heavy upper tail of the size distribution. As a robustness check we run the specifications also in levels. These leave the qualitative results unchanged.

total debt to capital (Debt/Cap). Finally, as an additional measure of bank risk in particular we construct z-scores that measure the distance from bankruptcy (Roy, 1952).[6] We take all these measures for merging parties one year prior to the announcement of the transaction.[7]

For acquirers we do not find systematic changes in profitability or risk profile prior to a merger. Only one specification for risk variables shows a statistically significant effect, but this is not robust in other specifications or supported by equivalent patterns in other variables. See Tables 10, 11 and 12.

For targets we find weak evidence for selection by profitability or risk profile. The results are collected in Tables 13, 14 and 15. The data suggest that targets have a pre-merger ROA that is slightly higher after the new change in legislation, although this effect is not robust to the introduction of year fixed effects. In addition, there is no comparable effect for ROIC with no specification showing a significant effect of the legislation and point estimates turning negative. For risk measures we find only very weak evidence at the 10 percent significant level for targets to be slightly better capitalized after the legislation in terms of z-score and capital/asset ratios. Again the effect is not robust to year fixed effects and is not consistent across the other two risk measures we employ.

5.6. **Merger Effect on Competition.** The higher CARs we observe for mergers under new legislation can be interpreted as capturing an expectation of more profitable mergers, which may be for pro-competitive (efficiency) or anti-competitive (market power) reasons. We study the relevance of these two channels in our data by considering the stock price response of rivals to the merging parties and the geographic and industry overlap of the merging parties.

5.6.1. *Rival Firm Stock Price Response.* Standard models of oligopoly predict that whether a merger is pro- or anti-competitive affects the direction of its impact on the rivals of the mering parties: a merger which makes the merging parties more competitive, e.g. through greater efficiency from synergies, has a harmful effect on rival firms in the same market, whereas a merger which primarily increases concentration and market power in the industry has a positive effect on rivals. As a consequence, as first argued by Eckbo

[6]The z-score measure was introduced by Roy (1952) and employed in Laeven and Levine (2009) and Houston et al. (2010). We follow the latter two studies in computing z-scores from our data.

[7]We repeat as robustness checks the analysis with data from two years before the announcement and relative to implementation dates. An analysis of post-merger measures of risk and profitability did not yield any additional insights.

(1985) the stock market response of such rival firms to the announcement of a merger may give an indication of its competitive effect.[8]

We conduct an analysis of rival market responses that mirrors that of our main CAR analysis for targets and acquirers. Equity data are collected from Datastream which also provides the sector lists of firms in the banking sectors. As rivals for any given transaction we consider other banks within the sector list of the same country as the merger target. Whilst this group of national rivals may not represent the relevant competitors for antitrust purposes for any given merger transaction, we think it offers a valid proxy for an analysis across many transactions given that banking markets in many countries have in the past been defined as national in geographic size. [9] For each listed bank stock we then collect equity data on prices and market capitalization for the entire merger sample period (Jan 1985 to Dec 2008) and compute CARs for the $[-30, 5]$ day window for all those bank stocks within the same country as the target bank of the merger. For each merger we then compute a single market capitalization-weighted average rival CAR that presents an estimate of the effect of the transaction on rival profits and thus market competition.

Table 16 presents a simple univariate analysis of these rival CARs across transactions. The first row shows that on average across the full sample of mergers rival CARs tend to be small and negative at -0.445 percent, suggesting that on average the transactions in our sample have a neutral or slightly pro-competitive effect. Splitting transactions by whether they took place before or after the introduction of new legislation suggests that the pro-competitive tendency derives from those mergers that took place under the new environment (Columns (2) and (3)). However, a two-sided t-test suggests that the data cannot reject the null hypothesis that rival responses remain unchanged by the introduction of the law (Column (4)). The second row in Table 16 presents an analysis of the proportion of pro-competitive transactions, where we have classified as pro-competitive transactions with a negative weighted average rival CAR. The data suggest that slightly more than half of all transactions (54.1 percent) are pro-competitive, with no statistically significant change in that proportion across the legislation regimes we study.

[8] More recently, Duso et al. (2007) and Duso et al. (2013) employ the same approach in an assessment of EU merger control policy. Note, however, that the classic interpretation of the sign of rivals' stock price reaction has been questioned by Fridolfsson and Stennek (2010) on the ground that it does not take properly into account the market's anticipation that a merger would take place.

[9] See for example the decision of the European Commission in the merger case Case No COMP/M.4844 - FORTIS / ABN AMRO ASSETS where it found geographic markets that were national in scope in many product areas including corporate banking and private individual retail banking.

Our conclusion is further confirmed by the results of the regression analysis presented in Table 17. The specifications shown mirror those of our target CAR analysis in Section 5 and include country and year fixed effects. The point estimates on the legislation dummy suggest that the average rival CARs of transactions declined somewhat with the introduction of the new merger control legislation, suggesting a mild pro-competitive effect, but the coefficient is not statistically significant.

These findings are robust to changes to our sample, including a focus on those transactions that might be most likely to raise competition concerns, namely mergers between banks in the same country and in settings where the merging parties control a large share of the total assets recorded by all banks in our sample.

5.6.2. *Geographic and Industry Overlap.* Our final analysis concerns the extent to which targets and acquirers overlap in terms of geography and economic activity. Both types of overlap are suggestive of market power. Thus, we expect that after the strengthening of merger control firms choose to pursue transactions with a lower level of overlap than before.

We study geographic overlap by considering the probability that a transaction involves firms from different countries. As before, we note that whilst the national level is not necessarily the correct geographic market definition for antitrust purposes for every transaction, antitrust authorities in several of the countries we consider have indeed used it in this function. Results in Table 18 suggest no systematic change in the share of cross-border transactions after the introduction of the new legislation.

For industry overlap we consider the probability of a transaction involving two banks, defined according to 3-digit NAIC code "522". Thus we distinguish between transactions where the target banks in our sample are acquired by another bank from those where the acquirer is not a bank. Again, this distinction can only act as proxy as it may not necessarily be the appropriate antitrust dimension in every case. The results in Table 19 suggest that the share of bank acquisitions by other banks decreased by around 10-12 percent after the introduction of the legislation. This result is consistent with the interpretation that mergers become more competitive after the strengthening of merger control in terms of lower product market overlap.[10]

In summary, our analysis of rival CARs and overlap statistics of mergers in our sample provides some evidence to support the argument that the new merger control legislation

[10]We also analyze overlaps at lower industry code levels. However, this does not reveal any additional insights.

has had a pro-competitive effect on bank mergers, reflected in a decrease in industry overlap.

6. Conclusion

We study the impact of merger control as implemented by competition authorities on bank mergers. To this aim, we exploit a wave of legislation changes introduced in Europe between 1989 and 2004 that extends merger control to the banking industry. We find that the introduction of merger control by competition authorities increases the abnormal returns of bank mergers' targets in the days around the merger announcement by about 7 percentage points. To distinguish between several and non-exclusive potential explanations for this effect, we study the effects of these legislative changes on other characteristics of bank mergers.

We find some (weak) evidence that the pre-merger profitability of target banks increased, and more robust evidence of (a) a decrease in the size of acquirers, in absolute terms and relative to the size of the target, (b) a decrease in the share of transactions in which banks are acquired by other banks. Other merger characteristics, including the size and risk profile of targets, the stock market response of rivals and the geographic overlap of merging parties, appear unaffected. Findings (a) and (b), together with our analysis of rival CARs above are consistent with a pro-competitive interpretation of new merger control legislation in the banking industry. In the absence of competition control, banks – and their national regulators – may have preferred more anti-competitive mergers. In particular, large, dominant banks acquiring much smaller rivals may have been a common pattern. With new competition control laws this option may have disappeared or may have become more difficult. This left more room for more efficiency-enhancing acquisitions by smaller banks and by non-bank firms entering the banking market.

Appendix A. Figures

Figure 1. Illustration of CAR $[-30, 5]$ Estimation

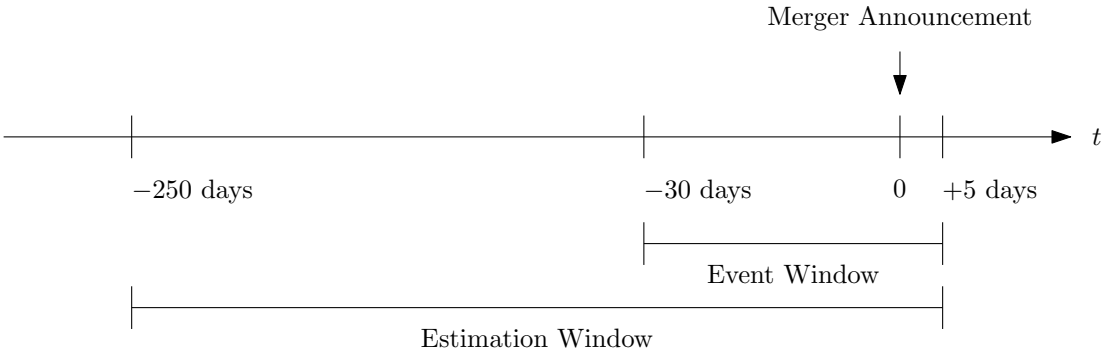
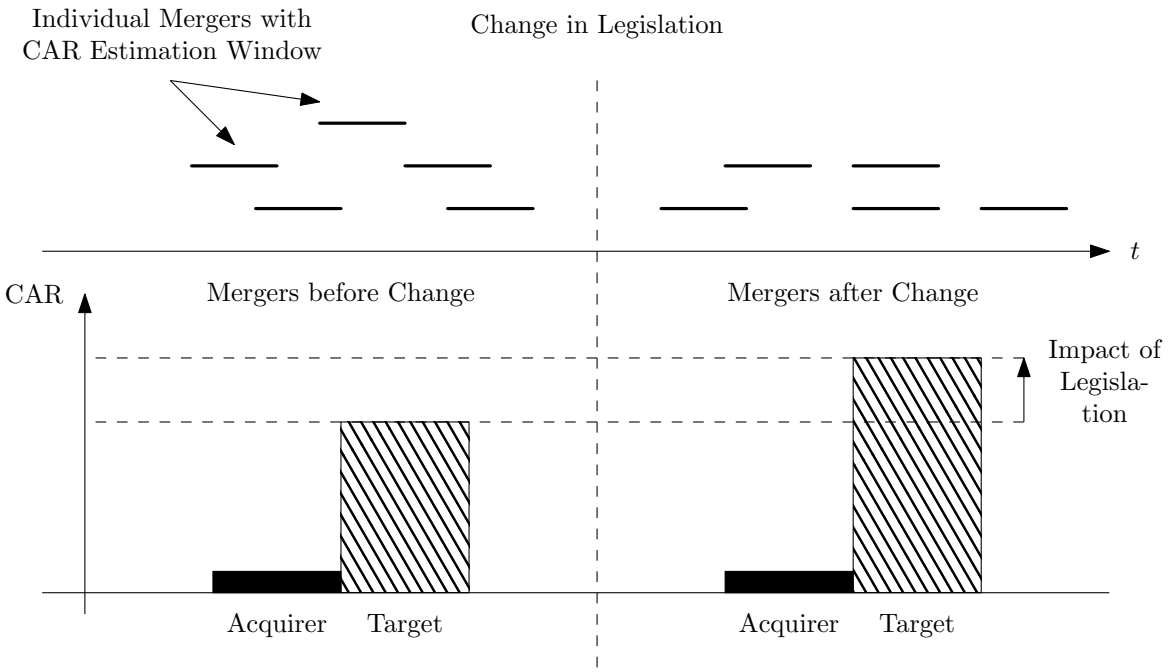


Figure 2. Illustration of Legislation Impact



APPENDIX B. TABLES

TABLE 1. Overview of Data Sources

Data Source	Variables	Definition / Notes
SDC Platinum M&A	Announcement date	Date of announcement of merger
	Crossborder	Indicates acquirer in different country from target
	Friendly	Offer not a hostile approach
	Rumor	Existence of rumors prior to transaction announcement
	Deal Value	Valuation of transaction
	All Cash	Fully cash financed
	All Equity	Fully equity financed
Datastream	Returns	For target, acquirer and other banks in target country
	Market Capitalization	Measured 30 days before merger announcement
Worldscope	Return on Assets	Year before merger announcement
	Return on Invested Capital	Year before merger announcement
	Capital / Asset Ratio	Year before merger announcement
	Debt / Equity Ratio	Year before merger announcement
	Debt / Capital Ratio	Year before merger announcement
Carletti et al. (2015)	Legislation changes	Announcement and implementation dates of changes in merger control legislation

Notes: Worldscope data retrieved via Datastream.

TABLE 2. Summary statistics - Full Sample

Variable	Unit	Unit	Mean	Std Dev	Min	Max
After the Change in Legislation	Dummy	1,421	.536	.499	0	1
Cross-border	Dummy	1,421	.312	.463	0	1
Friendly	Dummy	1,421	.937	.242	0	1
Rumor Before Announcement	Dummy	1,421	.034	.183	0	1
All Cash Financed	Dummy	1,421	.293	.456	0	1
All Equity Financed	Dummy	1,421	.108	.311	0	1
Within Industry	Dummy	1,421	.673	.469	0	1
Consummated Merger	Dummy	1,421	.813	.39	0	1
Deal Value	million USD	1,421	956.40	4,550.26	5.01	98,189.19
Log Deal Value	log million USD	1,421	4.817	1.866	1.611	11.495
Market Capitalization						
Acquirer	log million USD	627	7.838	2.057	-.139	12.576
Target	log million USD	375	6.086	1.993	-.693	11.345
Joint Entity	log million USD	223	8.516	1.736	3.06	12.528
Ratio Acquirer over Target		223	1.793	1.77	-4.457	6.868
Acquirer Financials						
Return on Assets		553	.023	.044	-.266	.363
Return on Invested Capital		604	.05	.077	-.327	.973
Log z-Score		536	3.608	1.053	-1.598	6.401
Capital / Asset Ratio		587	.24	.208	-.892	.988
Debt / Equity Ratio		622	8.371	8.811	-4.635	97.63
Debt / Capital Ratio		622	.744	.262	-1.116	.989
Target Financials						
Return on Assets		264	.016	.034	-.193	.149
Return on Invested Capital		287	.032	.081	-.452	.804
Log z-Score		150	3.825	1.284	.751	8.428
Capital / Asset Ratio		267	.284	.257	.008	.972
Debt / Equity Ratio		291	9.572	18.365	-123.016	131.452
Debt / Capital Ratio		290	.764	.248	0	1.052

TABLE 3. Mean Announcement CARs by Role (Full Sample)

	(1) Acquirers	(2) Targets	(3) Joint Entity
CAR [-5, 5]	-0.0000939	0.112***	0.0137***
	(0.973)	(0.000)	(0.008)
CAR [-10, 5]	-0.00106	0.118***	0.0163***
	(0.737)	(0.000)	(0.005)
CAR [-20, 5]	-0.00121	0.122***	0.0148**
	(0.745)	(0.000)	(0.024)
CAR [-30, 5]	-0.00374	0.129***	0.00934
	(0.386)	(0.000)	(0.191)
CAR [-50, 5]	-0.00434	0.160***	0.0172*
	(0.448)	(0.000)	(0.078)
Observations	600	380	205

p-values in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 4. Effect of Change in Legislation on Target CARs ($[-30, 5]$ Window)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
After the Change in Legislation	-0.0156	0.0184	0.0556**	0.0649**	0.0141	0.0611**	0.0728**
	(0.605)	(0.557)	(0.044)	(0.047)	(0.651)	(0.033)	(0.029)
Cross-border					0.0296	0.0435	0.0422
					(0.574)	(0.416)	(0.440)
Friendly					0.0171	0.00575	-0.0164
					(0.689)	(0.879)	(0.624)
Rumor Before Announcement					0.00124	0.0295	0.0374
					(0.988)	(0.723)	(0.608)
Log Deal Value					0.00304	0.00595	0.00803
					(0.653)	(0.397)	(0.355)
Constant	0.137***						
	(0.000)						
Obs	380	380	380	380	380	380	380
Adj R-squared	-0.00193	0.192	0.200	0.183	0.185	0.195	0.179
Fixed effects	None	Country	Country	Country / Year	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 5. Sources of Funding as Additional Controls

	Full Sample			Subsample with Valid Funding Data	
	(1)	(2)	(3)	(4)	(5)
After the Change in Legislation	0.0728**	0.0749**	0.0578*	0.0842*	0.0740*
	(0.029)	(0.028)	(0.085)	(0.055)	(0.100)
All Cash Financed		0.0276		0.127**	
		(0.415)		(0.015)	
All Equity Financed			-0.181***		-0.158***
			(0.000)		(0.001)
Cross-border	0.0422	0.0349	0.000420	-0.0591	-0.0644
	(0.440)	(0.515)	(0.993)	(0.197)	(0.131)
Friendly	-0.0164	-0.0140	0.0146	-0.000401	0.00944
	(0.624)	(0.674)	(0.720)	(0.993)	(0.816)
Rumor Before Announcement	0.0374	0.0403	0.0496	0.127**	0.120**
	(0.608)	(0.580)	(0.319)	(0.043)	(0.044)
Log Deal Value	0.00803	0.00915	0.0169**	-0.00395	-0.00873
	(0.355)	(0.265)	(0.029)	(0.706)	(0.316)
Obs	380	380	380	261	261
Adj R-squared	0.179	0.178	0.221	0.241	0.263
Fixed effects	Country / Year	Country / Year	Country / Year	Country / Year	Country / Year
Linear and Quadratic Trend	No	No	No	No	No
Clustered SE	Yes	Yes	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 6. Effect of Change in Legislation on Acquirer Market Capitalization (log)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
After the Change in Legislation	0.560**	0.200	-0.684**	-0.610**	-0.0989	-0.462**	-0.425*
	(0.023)	(0.318)	(0.015)	(0.048)	(0.490)	(0.027)	(0.058)
Cross-border					1.338***	1.227***	1.476***
					(0.000)	(0.002)	(0.000)
Friendly					0.180	0.0740	-0.275
					(0.652)	(0.850)	(0.436)
Rumor Before Announcement					0.761	0.510	0.411
					(0.124)	(0.204)	(0.308)
Log Deal Value					0.382***	0.353***	0.367***
					(0.000)	(0.000)	(0.000)
Constant	7.838***						
	(0.000)						
Obs	224	224	224	224	224	224	224
Adj R-squared	0.0188	0.958	0.963	0.963	0.971	0.972	0.973
Fixed effects	None	Country	Country	Country / Year	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 7. Effect of Change in Legislation on Target Market Capitalization (log)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
After the Change in Legislation	1.283***	0.729***	-0.175	-0.243	0.295**	-0.0364	-0.139
	(0.000)	(0.002)	(0.314)	(0.197)	(0.035)	(0.711)	(0.185)
Cross-border					-0.0182	-0.125	-0.186
					(0.927)	(0.552)	(0.345)
Friendly					0.0905	0.113	0.141
					(0.275)	(0.227)	(0.219)
Rumor Before Announcement					0.309	0.128	0.0545
					(0.177)	(0.463)	(0.758)
Log Deal Value					0.737***	0.715***	0.710***
					(0.000)	(0.000)	(0.000)
Constant	5.412***						
	(0.000)						
Obs	367	367	367	367	367	367	367
Adj R-squared	0.102	0.918	0.925	0.930	0.970	0.971	0.972
Fixed effects	None	Country	Country	Country / Year	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 8. Effect of Change in Legislation on Ratio of Acquirer and Target Market Capitalization (log)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
After the Change in Legislation	-0.819***	-0.539***	-0.465**	-0.450*	-0.579***	-0.517**	-0.415*
	(0.001)	(0.002)	(0.030)	(0.076)	(0.002)	(0.023)	(0.074)
Cross-border					1.527***	1.646***	1.960***
					(0.000)	(0.000)	(0.000)
Friendly					-0.0373	-0.143	-0.462
					(0.915)	(0.674)	(0.136)
Rumor Before Announcement					0.567	0.605	0.801*
					(0.249)	(0.146)	(0.086)
Log Deal Value					-0.325***	-0.323***	-0.328***
					(0.000)	(0.000)	(0.000)
Constant	2.256***						
	(0.000)						
Obs	216	216	216	216	216	216	216
Adj R-squared	0.0487	0.525	0.523	0.523	0.649	0.654	0.661
Fixed effects	None	Country	Country	Country / Year	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 9. Effect of Change in Legislation on Probability of Merger Consummation (linear model)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
After the Change in Legislation	0.0602	0.0250	-0.0368	-0.0259	0.0168	-0.0369	-0.0329
	(0.174)	(0.489)	(0.476)	(0.591)	(0.727)	(0.463)	(0.512)
Cross-border					0.146***	0.129**	0.129**
					(0.005)	(0.013)	(0.010)
Friendly					0.358***	0.353***	0.325***
					(0.002)	(0.002)	(0.005)
Rumor Before Announcement					0.0245	0.00185	-0.0144
					(0.789)	(0.983)	(0.864)
Log Deal Value					-0.00251	-0.00626	0.00199
					(0.853)	(0.666)	(0.899)
Constant	0.724***						
	(0.000)						
Obs	380	380	380	380	380	380	380
Adj R-squared	0.00225	0.757	0.759	0.760	0.777	0.777	0.774
Fixed effects	None	Country	Country	Country / Year	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 10. Effect of Change in Legislation on Acquirer Pre-Merger Profitability

	Return on Assets				Return on Invested Capital			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
After the Change in Legislation	-0.00171	0.000366	0.00188	-0.00184	-0.00368	0.00264	0.00352	0.00177
	(0.520)	(0.878)	(0.537)	(0.217)	(0.390)	(0.382)	(0.300)	(0.627)
Constant	0.0186***	0.0110***	0.0316***	0.0566***	0.0420***	0.0159***	0.0424**	0.0656***
	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.022)	(0.000)
Obs	188	188	188	188	205	205	205	205
Adj R-squared	-0.00313	0.283	0.306	0.568	-0.00126	0.264	0.275	0.290
Fixed effects	None	Country	Country	Country / Year	None	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	No	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 11. Effect of Change in Legislation on Acquirer Pre-Merger Risk Position

	log z-score				Capital / Assets			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
After the Change in Legislation	0.0499	0.00114	-0.0694	0.0358	0.0445**	0.0493**	0.0198	-0.00409
	(0.710)	(0.992)	(0.655)	(0.839)	(0.015)	(0.012)	(0.295)	(0.786)
Constant	3.642***	4.043***	2.523***	1.920***	0.162***	0.236***	0.301***	0.435***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Obs	177	177	177	177	197	197	197	197
Adj R-squared	-0.00492	0.219	0.270	0.398	0.0250	0.309	0.376	0.599
Fixed effects	None	Country	Country	Country / Year	None	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	No	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 12. Effect of Change in Legislation on Acquirer Pre-Merger Leverage

	Debt / Equity				Debt / Capital			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
After the Change in Legislation	-0.932	-1.364	-0.945	-0.458	0.0323	-0.0180	-0.0577**	-0.0271
	(0.388)	(0.373)	(0.504)	(0.685)	(0.224)	(0.529)	(0.029)	(0.159)
Constant	9.468***	20.49***	23.76**	8.960**	0.772***	0.942***	0.749***	0.464***
	(0.000)	(0.000)	(0.039)	(0.032)	(0.000)	(0.000)	(0.000)	(0.000)
Obs	215	215	215	215	214	214	214	214
Adj R-squared	-0.00118	0.175	0.170	0.239	0.00229	0.232	0.260	0.398
Fixed effects	None	Country	Country	Country / Year	None	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	No	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 13. Effect of Change in Legislation on Target Pre-Merger Profitability

	Return on Assets				Return on Invested Capital			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
After the Change in Legislation	-0.00627**	0.00486*	0.00411**	0.00266	-0.0143***	-0.00149	-0.000370	-0.000887
	(0.040)	(0.052)	(0.045)	(0.134)	(0.006)	(0.589)	(0.948)	(0.803)
Constant	0.0205***	0.0105***	0.00727	-0.0158***	0.0425***	0.0230***	0.0694**	0.0370***
	(0.000)	(0.000)	(0.528)	(0.002)	(0.000)	(0.000)	(0.016)	(0.000)
Obs	239	239	239	239	262	262	262	262
Adj R-squared	0.0135	0.156	0.150	0.196	0.0249	0.0957	0.121	0.201
Fixed effects	None	Country	Country	Country / Year	None	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	No	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 14. Effect of Change in Legislation on Target Pre-Merger Risk Position

	log z-score				Capital / Assets			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
After the Change in Legislation	0.257	0.689***	0.176	0.196*	0.0220	0.0995***	0.0535*	0.0361
	(0.214)	(0.000)	(0.204)	(0.061)	(0.504)	(0.004)	(0.057)	(0.170)
Constant	3.626***	4.346***	4.091***	5.033***	0.263***	0.451***	0.286**	0.0950**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.021)	(0.017)
Obs	138	138	138	138	247	247	247	247
Adj R-squared	0.00408	0.224	0.307	0.331	-0.00225	0.152	0.169	0.192
Fixed effects	None	Country	Country	Country / Year	None	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	No	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 15. Effect of Change in Legislation on Target Pre-Merger Leverage

	Debt / Equity				Debt / Capital			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
After the Change in Legislation	0.520	1.619*	0.909	0.407	0.0280	0.0164	-0.00190	-0.00652
	(0.697)	(0.063)	(0.551)	(0.750)	(0.313)	(0.631)	(0.943)	(0.738)
Constant	8.298***	18.07***	10.42**	6.807***	0.761***	0.898***	0.737***	0.704***
	(0.000)	(0.000)	(0.014)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Obs	263	263	263	263	266	266	266	266
Adj R-squared	-0.00325	0.111	0.118	0.139	0.0000901	0.0433	0.0494	0.0997
Fixed effects	None	Country	Country	Country / Year	None	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	No	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 16. Rival CARs – Simple Means

	Full Sample	By Legislation Change		
	(1)	(2) Before	(3) After	(4) Difference
Weighted Mean Rival CAR [-30, 5]	-0.00445*	-0.00169	-0.00698*	0.00529
	(0.094)	(0.660)	(0.059)	(0.320)
Procompetitive Mergers (%)	0.541***	0.541***	0.540***	0.00103
	(0.000)	(0.000)	(0.000)	(0.984)
Observations	379	181	198	379

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 17. Effect of Legislation Change on Value Weighted Mean Rival CARs

	(1)	(2)
After the Change in Legislation	-0.00423	-0.00335
	(0.173)	(0.309)
Cross-border		0.00980
		(0.271)
Friendly		0.00691
		(0.355)
Rumor Before Announcement		0.00444
		(0.564)
Log Deal Value		0.00107
		(0.443)
Obs	379	379
Adj R-squared	0.0556	0.0529
Fixed effects	Country / Year	Country / Year
Linear and Quadratic Trend	No	No
Clustered SE	Yes	Yes

p-values in parentheses
Standard errors clustered at the level of country and before / after the change in legislation.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 18. Effect of Change in Legislation on Probability of Cross-Border Transaction (linear model)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
After the Change in Legislation	0.0157	0.0937	-0.0369	-0.0576	0.107	-0.0518	-0.0702
	(0.734)	(0.144)	(0.601)	(0.460)	(0.104)	(0.448)	(0.351)
Friendly					-0.0713	-0.0692	-0.0477
					(0.409)	(0.396)	(0.489)
Rumor Before Announcement					-0.0213	-0.0920	-0.0896
					(0.835)	(0.394)	(0.354)
Log Deal Value					-0.0251**	-0.0343**	-0.0387***
					(0.047)	(0.010)	(0.003)
Constant	0.271***						
	(0.000)						
Obs	380	380	380	380	380	380	380
Adj R-squared	-0.00234	0.335	0.352	0.375	0.339	0.366	0.391
Fixed effects	None	Country	Country	Country / Year	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 19. Effect of Change in Legislation on Probability of Within Industry Merger (linear model)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
After the Change in Legislation	0.0466	-0.0764*	-0.122**	-0.102*	-0.0955*	-0.123**	-0.0976*
	(0.307)	(0.071)	(0.021)	(0.051)	(0.052)	(0.021)	(0.056)
Cross-border					-0.0134	-0.0219	-0.00516
					(0.824)	(0.758)	(0.940)
Friendly					0.101	0.0940	0.0589
					(0.184)	(0.185)	(0.470)
Rumor Before Announcement					-0.0707	-0.0795	-0.00249
					(0.378)	(0.320)	(0.971)
Log Deal Value					0.0400***	0.0380***	0.0476***
					(0.001)	(0.003)	(0.001)
Constant	0.707***						
	(0.000)						
Obs	380	380	380	380	380	380	380
Adj R-squared	0.000119	0.775	0.776	0.781	0.781	0.781	0.789
Fixed effects	None	Country	Country	Country / Year	Country	Country	Country / Year
Linear and Quadratic Trend	No	No	Yes	No	No	Yes	No
Clustered SE	No	Yes	Yes	Yes	Yes	Yes	Yes

p-values in parentheses

Standard errors clustered at the level of country and before / after the change in legislation.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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