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THE ECONOMIC IMPACT OF MERGER CONTROL LEGISLATION

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ABSTRACT

The Economic Impact of Merger Control Legislation*

We construct a unique dataset of legislative reforms in merger control legislation that occurred in nineteen industrial countries in the period 1987-2004, and test the economic impact of these changes on firms' stock prices. In line with the standard monopolistic hypothesis, we find that the strengthening of merger control decreases the stock prices of non-financial firms. In contrast, we find that bank stock prices increase. Cross sectional regressions show that the discretion embedded in the supervisory control of bank mergers is a major determinant of the positive bank stock returns. This suggests that merger control is anticipated to provide a 'checks and balances' mechanism that mitigates the value-destroying influence of unmediated supervisory control. We provide a case study further supporting this interpretation.

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1. Introduction

Merger control is an important regulatory component affecting the size and market power of firms. With the exception of the United States, Canada and Germany, most industrial countries have introduced or strengthened this policy over the last three decades. The reforms of merger control legislation have marked an important shift in the economic policy of the countries involved as they imply limits on industry structure and firm growth in concentration and market shares.

The importance of merger control has also increased due to the large number and the high value of the mergers and acquisitions that took place during the last three decades in the United States (Andrade, Mitchell and Stafford (2001)) and other countries (Evenett (2004)). The European Commission for example adopted final decisions in 396 cases during 2007, including many that attracted widespread media attention (e.g., Porsche / Volkswagen, Ryanair / Air Lingus, and Fortis / ABN AMRO). The UK Office of Fair Trading dealt with 98 cases in the same year.[1]

The economic impact of merger control on firms' valuation is much debated in the academic literature. Most studies focus on the effects of actual regulatory actions, such as the decision of an antitrust enforcer to investigate a merger proposal in greater detail or to impose conditions (Ellert (1976), Aktas, De Bodt and Roll (2004), Aktas, de Bodt and Roll (2007), and Duso, Neven and Röller (2007)). Not surprisingly, these studies confirm that regulatory actions affect firms' valuation, but the effects are somewhat mixed in terms of their economic relevancy and time of realization. In particular, it remains controversial

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[1] Merger notification is voluntary in the U.K.. This means that the OFT decides on cases that are either voluntarily notified by the parties or are opened on its own initiative.

whether all effects on firms' valuation are anticipated on the announcement day or realized later during the antitrust investigation.

One potential reason for the mixed findings is that these studies only look at the actual enforcement of merger policy (an exception is Brady and Feinberg (2000)), thereby ignoring the effects that the introduction or changes in the policy itself may have on investors' expectations and thus stock prices. Some studies have indeed shown that the effects at the time of regulatory reforms can be important and even larger than those at the time of the merger announcements. For example, Becher (2009) finds that this was the case with the passage of the Riegle Neal Act of interstate bank deregulation in the US in 1994, although the Act itself was the culmination of almost two decades of state-by-state reform (Kroszner and Strahan (1999)). Another potential reason for the mixed findings on the impact of merger control legislation is that the existing studies do not distinguish across different sectors. Therefore, they disregard sector specificities and the potentially important interaction between merger control and sector regulation (OECD (1999)).

In this paper we investigate further the economic impact of merger control. We depart from the existing literature in various ways. We focus our analysis on the impact on firms' valuation of the legislative changes introducing or substantially reforming merger control regulation rather than of its actual enforcement. As mentioned above, this allows us to measure investors' expectations about the potential future effects of merger control on the competitiveness of industries. To do this, we study merger control legislation in detail and we construct a unique data set covering 19 industrialized countries over the last three decades.

To capture potential differences across sectors and the interaction between merger control and sector specific regulation, we distinguish between regulated and non-regulated sectors. In particular, we analyze separately the effects of the reforms of merger control

legislation on non-financial firms and banks. Our choice is motivated by the fact that the financial sector – and in particular the banking sector – is the most regulated sector of the economy. Banking regulation is pervasive and, differently from the regulation in other industries, it includes a specific control of mergers and acquisitions among banks for reasons of financial stability. Moreover, as banking regulation dates back in all our sample countries to well before the reforms of merger control, the sector is particularly suited to analyze the interaction between merger control and sector regulations.

Our analysis is based on a stock market event study. As a first step, we construct four indices that describe the most important institutional characteristics of merger control and their variation across country and time. Then, we analyze in an event study the impact of the changes in these indices on the stock prices of non-financial firms and banks. In line with the standard monopolistic hypothesis that a properly enforced merger control prevents future concentration and thus monopolistic rents (Ellert (1976)), we find that the introduction or the strengthening of merger control lead to negative excess returns on the stocks of (non-financial) firms. In contrast to this, however, we find that bank stock returns are positive. The difference in excess returns on firm and bank stocks is both statistically significant and economically relevant, and is robust to the use of either sector price indices or firm-level data in the event study.

To exploit sector characteristics more, we then investigate the reaction of stocks of firms in other regulated industries including insurance, telecommunication, utilities and healthcare sectors. Again, we find negative excess returns in response to the changes in merger control legislation in all sectors except in the insurance sector, where excess returns are positive. This suggests that there may be something specific to the financial industry that induces investors to react differently. We conjecture that this may be related to the characteristics of financial regulation.

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We then turn again to the banking sector, and perform a cross sectional analysis to investigate what can explain the differential effects on firm and bank stocks. In particular, we regress individual firm- and bank- stock returns (measured over various event windows) on a number of variables describing the main institutional characteristics of the supervisory control of mergers and acquisitions in the banking sector. We find that the characteristics of the supervisory control matter for investors' reactions. In particular, the potential discretion embedded in the supervisory control is a key driver of the positive reaction of bank abnormal returns. The more the supervisory control can be implemented with discretion the higher is the valuation gains of banks in anticipation of changes in merger control. This suggests that investors anticipate the strengthening of the merger control in the banking sector as the introduction of a "checks and balances" mechanism to the supervisory control, which is seen as a value-decreasing mechanism due to the political discretion that it embeds. This discretionary effect of banks' supervisory control is further supported by the analysis of the well-known takeover battle that occurred in 2005 between *ABN AMRO* and *Banca Popolare Italiana* for the control of the Italian bank *Antonveneta*.

Our paper makes three distinct contributions to the literature. First, differently from existing studies, it constructs a very detailed cross-country data set capturing the main institutional characteristics of merger control legislation. The data document the existence of considerable variation in the institutional design of merger control across countries and time. Second, it studies the impact of legislative changes in merger control on firms' valuation. Third, it examines and explains how these valuation effects may differ across sectors. In particular, we focus on the difference between non-financial firms and banks, and we closely investigate the role that banking sector-specific regulation may have in explaining these differential effects. Our estimates highlight the importance of sector

characteristics and existing sector regulation for the effects of legislative changes in merger control.

The paper relates to several strands of literature. First, it fits in a vast literature that studies the role of the legal architecture for the functioning of financial systems (La Porta, et al. (1998)), including its impact on the volume of M&As and the direction of cross-border deals (Rossi and Volpin (2004)). Second, it relates to studies by Jayaratne and Strahan (1998), Demirgüç-Kunt, Laeven and Levine (2004), Guiso, Sapienza and Zingales (2006), Barth, Caprio and Levine (2006) and Donzé (2006), who provide evidence that excessively restrictive, inefficient or discretionary banking regulation weakens the banking sector and leads to substantial welfare costs. Finally, our paper is connected to the literature on the "specialness of banks" (Dewatripont and Tirole (1994), Goodhart, et al. (1998) and Herring and Litan (1995)), competition in banking (Keeley (1990), Hellman, Murdock and Stiglitz (2000), Boyd and De Nicolo (2005), Claessens and Laeven (2005) and Beck, Demirgüç-Kunt and Levine (2006); see Carletti (2008) for a survey), and the causes and consequences of banking consolidation (Berger, et al. (1998)), Boyd and Runkle (1993), Demsetz and Strahan (1997),Carletti and Hartmann (2003), and Carletti, Hartmann and Spagnolo (2007); see Berger, Demsetz and Strahan (1999) for a survey).

The rest of the paper is organized as follows. Section 2 describes briefly the history and institutional arrangements of merger control, and it describes the main economic hypothesis that we test to evaluate its economic impact. Section 3 describes the data and the methodology we use in our econometric exercise. Section 4 reports the estimated effects of the changes in merger control on firms and banks, discusses a cross sectional analysis showing the importance of the characteristics of the supervisory control in determining the stock market valuations across the sample countries, and provides a case-study further supporting our findings. Section 5 concludes.

2. Merger Control: History and Hypothesis

2.1. History

The reform of merger control legislation offers a unique opportunity to study the economic impact of regulatory reforms on firms' valuation. With the exception of the United States, where regulatory limits on industry concentration existed already in 1914 (e.g., Eckbo (1992)), Germany, where it was formalized in the "Act against Restraints on Competition" in 1973, and Canada, where the Federal Competition Act in its present form was adopted in 1986, most industrial countries introduced or reformed merger control starting in the early 1990s. Since then, merger control became an important regulatory tool for the development and functioning of industries in these countries.

As a regulation limiting the degree of concentration, merger control is a tool of competition policy. However, in most countries it was introduced later than legislation covering antitrust practices through a separate law or it was the most significant change in subsequent modifications of an already existing antitrust act. For example, the European Union introduced merger control explicitly only in 1989, whereas the regulation on anticompetitive behavior and abuse of dominant position dates back to the Treaty of Rome of 1957. Similarly, Austria and Portugal introduced merger control in 1993 and 2003, whereas the competition acts date back to 1988 and 1983, respectively. In Denmark merger control was introduced *de facto* in 2000 as part of a law modifying the competition act of 1989. In Finland the chapter on merger control was written into the competition act of 1992 only in 1998.

This history makes it possible to isolate the specific effects of reforms in merger control from those of other antitrust regulation. Moreover, the reforms of merger control seem to be well defined also in terms of identification of the relevant events. Most of the countries in

our study did not experience other industry or country specific events in the same time period when the reform of merger control legislation occurred. This allows us to identify the reforms of merger control legislation as the relevant events driving the results of our study. Finally, as a general regulation affecting all sectors, the reforms of merger control in our sample countries were most likely exogenous to existing regulations or occurrences in any particular industry.[2] Thus, they are well suited to examine how a general policy change may have different effects across sectors depending on their characteristics and regulation.

2.2. Economic Hypothesis

There is a long standing debate about the objective of merger control and its effectiveness. The debate centers on the objectives of antitrust regulation and the reasons why companies find it profitable to merge (e.g., Ellert (1976), Eckbo (1983), Eckbo (1992), Brady and Feinberg (2000), Aktas, De Bodt and Roll (2004)).

The prevailing view is that mergers involving large companies are likely to be motivated by considerations of monopoly power or other anticompetitive advantages associated with increases in size, i.e., the so-called "monopolistic hypothesis" (Ellert (1976)). In this view merger policy is seen as preventing excessive market concentration and monopoly power.[3] The concern is that excessive concentration may cause a substantial lessening of competition or the creation of a dominant position, which may increase prices and reduce consumer welfare.

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[2] It is likely that no sector can decisively lobby and induce a change of merger control that is applicable to all sectors. Lobbying could occur, for example, in expectation of positive valuation effects. In terms of the results that we present later, it is important that the reforms of merger controls are not induced by lobbying by the banking sector. It is possible to show that the results do not differ between countries with large versus small banking sectors (proxied by total bank credit / GDP, with a cutoff of 150 %). Interpreting the size of the banking sector as a possible measure of lobbying power, we conclude that the reforms of merger control are not induced by the lobbying in this sector.

[3] Another view is that mergers are motivated by efficiencies (the so-called "benign merger" hypothesis) and thus merger control represents only a regulatory tax on wealth accumulation. This hypothesis finds, however, little empirical support (Ellert (1976)).

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If effectively enforced, merger control should therefore affect industry structure by imposing limits on firms' external growth and profit possibilities. This implies that firms, at least those most likely to be involved in (large) mergers, should experience a decline in stock value at the time of the introduction of merger control or of reforms strengthening it as investors anticipate the reduction in firms' future valuations (see also Brady and Feinberg (2000)).[4]

3. Data and Methodology

3.1. Data Collection

We use an event study approach to analyze the effects of the introduction or modifications in merger control in numerous industrial countries over the period January 1, 1987 to July 1, 2004. In order to identify the events, we collect detailed information on the legislative changes affecting the institutional design of merger policy in the European Union (EU) and 18 individual countries: the United States and Canada, 14 EU countries, including Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, and the United Kingdom, and two non-EU countries, Switzerland and Norway.[5]

In the collection of the institutional data, we relied on multiple sources. In a first step, we analyzed the text of all relevant legislation and regulation to identify the legal arrangements of the merger control in each country and the changes that took place over time. In a second step, we examined the many publicly available reports on merger control to check our

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[4] An alternative possibility is that the anticipation of stringent merger control enforcement induces companies to become more efficient, thus potentially increasing their stock value. However, there is evidence that antitrust policy does not produce efficiency gains (Bittlingmayer and Hazlett (2000)).

[5] In European Union countries a two-layer regime is in place for the competition review of concentrations. All mergers with a 'community dimension' are examined by the European Commission, whereas transactions without 'community dimension' are left to the competent national authorities. The dividing line between the two cases is drawn on the basis of the size and geographical dispersion of turnovers.

interpretation of the events (Appendix 1 contains a comprehensive list). Finally, we contacted experts of the various institutions dealing with merger control across all countries (Appendix 2 contains the list of agencies we contacted). We communicated extensively with them to confirm our understanding and "coding" of the data, to seek clarifications and corrections, and to identify the most important aspects of merger control in practice. Our efforts resulted in a unique data set covering a wide range of information about merger control and documenting important cross-country and time-wise variation.

3.2. Institutional Variables

A key contribution of the paper is to aggregate and code the institutional information we collected. We capture the main features of the design of merger control through four variables that vary across country and time: *Criteria*, *Enforcer*, *Overturning*, and *Mandatory Notification*. These variables are formulated as the answers to four questions:

1. What assessment criteria are used in merger control?

2. Who is (are) the decision-making agency(ies) for merger control?

3. Can a third agency intervene in the process to replace / overturn the decision-making agency(ies)?

4. Is merger notification mandatory above (statutory) thresholds?

The variable Criteria measures whether criteria other than competition are considered in the review of M&As. Examples are general or public interests, preservation of employment or international competitiveness of the national industry. The idea is that when these other objectives are taken into account (e.g., Austria, Ireland, Spain, Sweden and UK till 2002), the enforcement of merger control is likely to be weakened in the sense of being less competition oriented.

The second variable, defined as Enforcer, captures the identity of the authority in charge of merger control. In most jurisdictions (e.g., Austria, Belgium, EU, Germany, Greece,

Ireland since 2002, Netherlands, Norway, Portugal since 2003, Switzerland) an independent antitrust authority or a court is in charge of merger control. In others (e.g., Canada, Denmark, Finland, Sweden, UK and US), the decision-making power is shared among several authorities. Yet in some other countries (e.g., France and Spain), a political body enforces merger control. The idea is that merger control is more likely to be effectively implemented when the enforcer is an independent antitrust authority or a court rather than a political body.

The variable Overturning measures whether another authority can intervene, take over the review process or overturn the decisions of the agency enforcing merger control for reasons other than competition. This is the case for example in Germany, where the Ministry of Economics may clear a concentration prohibited by the competition authority if the restraint of competition is outweighed by public interest or advantages to the economy as a whole. Similar procedures exist in Belgium, the EU, Greece, the Netherlands, Norway, Portugal, Switzerland and the UK since 2002. The potential interference of another authority is likely to weaken the enforcement of merger control, similarly to when criteria other than competition are taken into account in merger decisions.

The last variable, defined as Mandatory Notification, measures whether a merger must be notified to the competent authority (if above a certain size) or whether notification is voluntary, as is the case in the UK and in Norway till 2004. The idea is that mandatory notification is associated with a stricter enforcement of merger control.

All variables range between 0 and 1, with higher values corresponding to a more competition-oriented design and enforcement of merger control. Changes in any of the four institutional variables during the sample period define our set of events. These are shown in Table 1 for the countries we analyze. As the values in the table shows, in most instances the event consists in the introduction of merger control in a country and as such it affects all the

variables describing merger control (e.g., Austria, Belgium, Denmark, EU, Finland, Greece, Italy, Netherlands, Norway in 1993, Spain in 1989, Sweden in 1992 and Switzerland). In a few other cases, the event captures a reform changing the existing merger regulation, thus affecting only some of the variables (e.g., France, Ireland, Norway in 2004, Portugal, Spain in 1999, Sweden in 2000, and the UK). This underlines the importance of carefully analyzing the institutional details of merger control and their variation over time.[6]

3.3. Dating

The precise dating of the change in investors' expectations in legislative event studies is of paramount importance (Schwert (1981), Binder (1985)). To tackle this issue, we study the legislative process in detail. We first divide it into two phases: approval and publication, as described in Figure 1. *Approval* refers to the date of approval by either the Parliament or the Head of State. When available, we collect this as the earliest date in the official approval process. In a bi-cameral parliamentary system, for example, we use the date when the first chamber approves the law. *Publication* refers to the date when the legislation is published in the country's official journal.

Second, to capture the earliest time when investors can reasonably be expected to infer reforms in the merger control legislation, we study the stock price reaction around the *earliest official date* that we collect. This coincided with the approval date (typically by the Head of State) in some countries, and with the publication date in others. As shown in Figure 1, we then obtain 20 *Event* dates as deriving from 16 approval dates and 4 publication dates. This methodology allows us to take account of the heterogeneity in the codification of the legislative process across countries and harmonize the information

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[6] Note that there were no changes in merger control during the sample period and hence there are no events for Germany, Canada and the US.

investors have about its outcome. Neglecting these differences across countries entails the risk of analyzing investors' reactions to widely divergent information sets.

3.4. Event Windows and Confounding Effects

We analyze the impact of the introduction or modifications of merger control on the stocks of the firms around the event dates identified above. In particular, we analyze investors' reactions during an adequate period preceding them, i.e., we study event windows that commence 120, 60, and 20 days prior to the event (and also include the event). Using large windows allows us to capture investors' potential reactions during the whole parliamentary process. Major legislative changes such as the reform of merger control legislation involve indeed long and partially public discussions during which there may be significant information leakages to the market.

While considering large event windows is essential in an event study looking at the impact of legislative reforms, it may, however, cast doubt on the absence of confounding effects and hence the interpretation of the estimated excess returns. To address this issue, we investigate the presence of confounding effects from other events that may take place during the studied event windows (McWilliams and Siegel (1997)). In particular, we check whether any confounding events such as macroeconomic shocks, introduction of sector specific regulations and large privations occurred in our sample countries in the same time period when the reforms of merger control legislation took place. We then assess the importance of these confounding events for our events.

The result of our assessment process for each of the exact event dates is reported in Table 2. The vast majority of countries did not experience any major confounding event. In only three countries (Greece, Portugal and Spain) potentially important confounding events in the form of privatization programs took place during our sample period (but results are unaffected by their exclusion). We conclude that the reforms in merger control legislation

are well defined events and can be interpreted as the driving force behind the changes in firms' stock prices.

3.5. Event Study Methodology

We base our analysis of the impact of the reforms in merger control legislation on a stock market event study. We start by examining separately the impact on the stock prices of non-financial firms and banks. Then, we examine the reaction of other regulated industries. The aim is to examine whether merger control may have different effects in industries that are also subject to sector specific regulation. In all the event studies that we conduct, we analyze the effects of our relevant events on daily sector price indices as well as on firm-level stock prices. All series are from Datastream.[7] The sector indices capture all listed firms in the respective category and are value-weighted.

We estimate daily abnormal returns using standard market model regressions. We regress the daily returns for index or stock j, r_{jt}, on a measure of the market return, r_{mt}, and two event dummies, δ_t^{before} and δ_t^{after}, that take the value of one when day t is inside the event windows $[-\tau, 0]$ and $[1, \tau]$ respectively, and zero otherwise:

$$r_{jt} = \alpha_j + \beta_j r_{mt} + \gamma_j^{before} \delta_t^{before} + \gamma_j^{after} \delta_t^{after} + \varepsilon_{jt}, \qquad (1)$$

$t = -250-\tau, -249-\tau, ..., 249+\tau, 250+\tau.$

We analyze τ equal to 20, 60 and 120. The coefficients γ_j^{before} and γ_j^{after} measure daily abnormal returns during the event periods before and after the event. The market model is estimated over a period starting $(-250-\tau)$ days before the event and ending $(250+\tau)$ days

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after the event.[8] The value-weighted index of all stocks in the country is used as a proxy for the market return.[9] For each event the cumulative abnormal returns (CARs) are the estimated coefficients $\hat{\gamma}_j^{before}$ and $\hat{\gamma}_j^{after}$.

For each event we estimate daily abnormal returns for both indices and stocks. We calculate the mean and standard deviations of the CARs across the set of events and perform a standard t-test to assess statistical significance. We also report the number of positives and negatives and perform a standard non-parametric sign test assuming an equal binomial probability of occurrence for the number of positives versus negatives. This test does not require the abnormal returns to have the same variance or to be normally distributed and is unaffected by outliers. In a second step (and as recommended by McWilliams and Siegel (1997) for example), we regress the daily abnormal returns of the firm and bank stocks cross-sectional on measures capturing the potential discretion embedded in the supervisory control in each country.

To start with, we assess the (null) hypothesis that the exact event dates are randomly distributed across the entire sample period to address the potential concern of the independence of the events (which could give rise to clustering in time). We cannot reject the random distribution of the events across the sample period. For the EU countries we further check the distribution across the period starting on December 21, 1989, of the approval date for EU competition legislation, but again we cannot reject the null

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[8] We *a priori* choose for a long estimation window around the event, as we are concerned about the impact of the changes in regulation on market risk (Grout and Zalewska (2006)). We check the robustness of the results to alternative estimation windows, the (-250-τ, τ) window for example, and time-varying market betas. In particular we estimate the beta coefficients using only pre-event stock returns. Again, results are unaffected and we choose not to report these findings.

[9] For the EU we employ the EU-15 Market Index. In unreported robustness we replace the country index with this EU-15 Market Index, and/or the Morgan Stanley All Country World Index. Results are unaffected. We also conduct the event study using reasonable combinations of the domestic, EU-15, and world indices with the MS All Country Non Financial Index and the MS All Country Bank Index. Results are again almost unaffected.

hypothesis. Finally, we regress the CARs in various specifications on a time trend, to see if investor expectations are affected by the relative time of the introduction of merger control in each country (which could be indicative of the lack of independence of the events). Again we cannot reject the null hypothesis that the coefficients on the trend variables are equal to zero. To conclude, events seem independent.

4. The Impact of Changes in Merger Control

4.1. Univariate Analysis

The results of the event study for both the stock indices and the individual stock prices of non-financial firms and banks assessed across events are reported in Table 3. Indices differ from individual stocks in terms of coverage, selection, and relevant value weighting. Analyzing both is therefore informative. For brevity, we report only selected windows around the legislative changes as identified by the event dates. We assess the results broadly across all events, time windows, and estimates.

We note two important results. First, most of the statistically significant results lie in the windows before (and including) the event date. As described before, we select the earliest available date of the legislative process as the event date and we expect the most significant reaction to occur before this date. The results are broadly consistent with this and thus confirm the accurateness of the dates we use (Schwert (1981), Binder (1985)). There are sporadically some significant reactions in the windows following the event dates. This may reflect the fact that in some cases the formal end of the legislative process may remove remaining uncertainties about the actual modus operandi of the new legislation.

Second, moving to the analysis of the results, Table 3 shows that the reforms of merger control legislation have important economic effects that differ between the non-financial and the banking sector. Changes in merger control lead on average to a *decrease* in firms'

stock prices but to an *increase* in banks' stock prices. This result holds when we conduct the event study using the industry as unit of observation as well as when we employ firm-level data. The negative effect on firms is in line with our hypothesis as described in Section 2.2, but the positive effect on banks is not.

The difference between the reactions of bank and firm stock prices is positive and statistically significant. We assess this key difference in three different ways. First, we perform a t-test assuming unequal variances on the difference in mean CARs on bank and firm indices or individual bank and firm stocks. Second, we calculate the Mann Whitney Wilcoxon test to assess the difference in median CARs on individual bank and firm stocks. Third, we report the Pearson value of the Chi-Square test for the number of bank positives and negatives versus firm positives and negatives (in terms of CARs), for either the bank and firm indices or individual bank and firm stocks.

The difference between the reactions of banks and firms is also economically relevant. For example, in the 20, 60 and 120-day windows before and including the event date the difference in mean CARs equal 3.3%**, 7.6%*** and 11.1%* for the indices, and -0.8, 2.2** and 7.8*** for the individual stocks.[10] Firm and bank stocks differ significantly also in the direction of their reaction. For the [-120, 0] window for example 13 bank index CARs are positive and 7 are negative, while 14 firm index CARs are negative and 6 are positive. Similarly, 76 individual bank stock CARs are positive and 55 are negative, while 964 individual firm stock CARs are negative and 771 are positive. Similar results hold for the other event windows.

In Table 3 we also investigate the difference in reactions for large and small banks and firms (the median size by total assets in each group is the cut-off). Large and small firm

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[10] *** Significant at 1 percent, ** significant at 5 percent, and * significant at 10 percent. For convenience we will also indicate the significance levels of the estimates that are mentioned further in the text.

stocks react very similarly, while small bank stocks react more positively than large bank stocks. Consequently, the difference in CARs between small banks and firms is somewhat larger than between large banks and firms. This finding suggests that the legislative reforms of merger control boost in particular the stocks of small banks. One possible reason for this result is that those banks are more likely to be take-over targets or, if involved in mergers with other small banks, are less likely to fall within the concentration limits imposed by merger control. However, this argument should also hold for small firms, which instead react similarly to large firms. Something seems to be left unexplained in the banking sector. We will return to this result further below in the cross-sectional analysis.

To investigate further the impact of merger control reforms across different industries, in Table 4 we investigate the reaction of firms' stocks in other regulated sectors, i.e., the insurance, telecommunication, utilities and healthcare sector. We study again returns on both the indices and the individual stocks (though the indices are not consistently defined and available across countries and time). The results are interesting. Excess returns are positive and significant in the insurance sector, which is the sector closest in activity and regulation to banking, while they are mostly negative in the other three sectors.[11] The different reaction of stocks in the banking and insurance sectors suggest that there may be something specific to the financial industry that may interfere with merger control. We now turn to analyze the specificity of the financial industry more in depth. In particular, we examine whether banking regulation may explain the positive impact of the reforms of merger control legislation on banks' stock prices.

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[11] The lack of significance in a few cases is possibly partly caused by the lower number of events and the higher volatility of these sector indices due to the limited number of stocks that are included. We also study large and small firms in each sector (and many other sectors) but find no immediate differences. To conserve space these results are left unreported.

4.2. Cross-Sectional Analysis

Why do banks react differently to the reforms of merger control legislation? As in the other sectors, also in the banking industry, the introduction or the strengthening of merger control should prevent excessive market power, thus reducing future monopoly profits and stock prices. Why don't we see this reflected in bank investors' reactions?

To tackle this question, we test several economic hypotheses which may explain the positive reaction in banks' stock prices. Our focus is on a unique feature of the banking sector, namely the existence of a prudential control of M&As among banks. Whilst such a regulation is (at least partly) present in the insurance sector, it is absent in other, non-financial sectors, even if those are otherwise regulated. The regulation of telecommunications or utilities concerns in fact more general aspects of firm behavior, product standards, access to networks or pricing, but it does not have any role in the approval of M&As in these sectors. Similar considerations hold for the health care industry.

We discuss below our economic hypotheses and the variables we use to test them in the cross-sectional exercise. Table 5 describes all the variables and their summary statistics, showing a high variability of the variables across countries.

4.2.1. Supervisory Control of M&As in the Banking Sector

A striking feature of the banking sector is the existence of a very specific and pervasive sector regulation and supervision having as its main goal the stability of the system. In particular for the purpose of our study, bank M&As are subject to a supervisory control that aims to ensure the soundness and stability of the newly created entities. Such control

requires that the new entity is well capitalized, has a good quality of assets, a good earnings performance, suitable shareholders, etc.[12]

The supervisory control of bank M&As dates back to well before the relevant legislative events in our sample countries. This means that the legislative reforms in merger control introduced (or strengthened) a second form of control in the banking sector. In contrast to any other non-financial sector, M&As among banks had to be cleared both from a competition and a supervisory perspective. For this double control to explain the positive change in banks' stock prices in our event study, it must be that investors anticipate that the reforms of the merger control will improve the way the supervisory control is enforced and thus the overall efficiency of the banking sector. To test for this hypothesis, we first describe briefly the relationship between the two forms of control and we then look at institutional characteristics of the supervisory control that can explain potential inefficiency in its enforcement.

The relationship between the merger and the supervisory controls varies across jurisdictions. In most countries, the responsible agencies share the control in that each of them has to approve the transaction according to its respective mandate. In others (e.g., the Netherlands), a third body, typically a minister or the government, decides upon any conflicts between the two responsible authorities. Yet, in some others (e.g., Canada and Switzerland), the supervisory control may prevail, particularly when the merger helps protect the interests of creditors or the general interests of the domestic financial sector.

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[12] For example, the Core Principles 4 and 5 for Effective Banking Supervision issued by the Basel Committee on Banking Supervision (1997) state that supervisors must establish criteria for reviewing, and eventually reject, changes in ownerships and major acquisitions by banks. The goal is to ensure that the new structure does not lead to undue risks or hinder effective supervision. Factors that are considered include ownership structures, operating plan, systems of control and internal organization, fit and proper tests of directors and senior managers, and financial projections including capital. For more details on the supervisory control of bank M&As in the U.S. see the Bank Merger Act, §128 and the Bank Holding Company Act, §1842, and European Council (1989), article 5, for Europe.

Finally, in countries like Italy and the US the supervisory agency is also responsible for the merger control of bank M&As.[13]

In all these circumstances − possibly to a different extent depending on the precise institutional design − the presence of an agency responsible for merger control is likely to affect the way in which the review of bank M&As is conducted. Thus, to the extent that investors perceive the supervisory control as a value-decreasing mechanism, the strengthening of merger control may be seen in the banking sector as the introduction of "checks and balances" to banks' supervisory control and thus as a way to increase the likelihood of more value-enhancing bank M&As in the future. The idea is similar to that in political constituencies (e.g., Persson, Roland and Tabellini (1997)). In a context where contracts are incomplete − as is the case in the implementation of the supervisory control of bank M&As − there is scope for abuse of power. Creating a separation of power between two institutions that take separate decisions but that have to agree on the final outcome − in our case, whether to approve the merger − introduces a form of discipline which may benefit bank shareholders.

To see why investors may perceive the supervisory control as a value-decreasing mechanism, we now analyze its institutional design more in detail. We notice that various institutional elements are not well specified so that there is potential scope for discretion in the implementation of the supervisory control. For example, the criteria for evaluating bank M&As are often left unspecified so that they can be interpreted widely, in particular when the supervisory control pursues objectives other than the stability of the new entity. This problem is exacerbated by the fact that in most jurisdictions decisions adopted in the

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[13]In the U.S. the Department of Justice may challenge the decision of the central bank in court, while in Italy the competition authority is only requested to issue an opinion on the transaction. The institutional arrangement in Italy was reformed in 2005 after the *ABN AMRO-Antonveneta* case. See Section 4.3 for a detailed analysis of this case.

supervisory review of bank M&As are not made public. This reduces the accountability of prudential authorities and leaves room for abuses or misuses of supervisory control.

We measure the potential discretion embedded in a given supervisory control system through various variables – each ranging from 0 and 1 – that capture its main institutional features. We then consolidate these measures into an index representing the average degree of potential discretion of the supervisory control. The first two variables, denoted as *Supervisory Criteria* and *Supervisory Enforcer*, measure the strength of the stability objective in the supervisory control of bank M&As. The former takes higher values when the supervisory review takes into account also criteria other than ensuring stability such as the "convenience and needs of the community to be served" in the US. The latter captures the identity of the authority in charge of the prudential control. The idea is that a ministry, a central bank (having also other objectives), or a combination of them, may be less focused on stability considerations than an independent supervisor. Thus, higher values of both variables may indicate a greater potential for discretion in the enforcement of the supervisory control of bank M&As.

To next two variables capture the degree of transparency of supervisory control. The first one, denoted as *Supervisory Formal Decision Not Public*, measures the extent to which the decisions taken by the responsible agencies have to be made public. The second variable, i.e., *Supervisory Informal Notification*, measures whether either by regulation or imposed *de facto* banks planning to merge have to notify the supervisor informally of their intentions before starting the formal procedure. Higher values of both of these variables correspond to greater opaqueness in the prudential control and thus to potentially more discretion in its implementation.

To the extent that the reforms of merger control legislation help reduce the political discretion embedded in the supervisory control and implement more value-enhancing

mergers, we expect the coefficients of all the four supervisory variables to be positive in our regressions. To sidestep possible problems of multicollinearity in our estimations, we further aggregate these variables in one index denoted as *Mean of Supervisory Strength Indices*. Again we expect its sign to be positive in the regressions.

4.2.2. Merger Control

Some characteristics of merger control may also help explain the positive reaction in bank CARs in our event study. In particular, in some countries the merging parties can use the creation of efficiencies as an attenuating factor to the increase in their market power. When this is the case, merger control becomes less stringent.

The empirical evidence on the ability of banks to generate efficiencies through mergers is mixed. However, some studies find that banks are able to generate scale efficiencies even at larger sizes (e.g., Berger and Mester (1997) and Hughes, Mester and Moon (2001)) and as result of mergers (Focarelli and Panetta (2003)). Thus, to the extent then that banks can claim more than non-financial firms that the merger leads to important efficiency gains, they may be subject to a less stringent merger control than other industries and thus benefit more (or be hurt less) from the reform of merger control.

To control for this, we construct the variable defined as *Efficiency Defense* that equals one if efficiency gains are explicitly considered in the merger review as a factor mitigating anticompetitive effects, and equals zero otherwise.[14] We include the change in this variable (Δ) as a result of the changes in merger control in our regressions. The hypothesis is that of a positive correlation between this variable and the bank stock returns.

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[14] This variable captures only the situation where the efficiency defense is explicitly incorporated in the merger regulation. The case where the efficiency defense is only implicitly and informally used (as documented so far only for the US by DeYoung (1991)) is not captured by our variable.

Table 6 reports the results of the various specifications. The dependent variable in the linear models is the percentage cumulative abnormal returns (CARs) for exchange-listed banks in Panel A and for exchange-listed banks and firms in Panel B within an event window that starts 20, 60 or 120 days prior to the event day and runs until (and includes) the event day. All errors are clustered at the event level.

The results are consistent with our hypotheses. The characteristics of the supervisory control matter for investors' reactions and bank CARs. Investors seem to anticipate the strengthening of the merger control in the banking sector as the introduction of a mechanism of "checks and balances" to the supervisory control. The positive coefficients on the supervisory variables suggest that this effect is more pronounced the greater the potential discretion embedded in the enforcement of the supervisory control. The finding is robust across every individual measure of supervisory strength, holds for the 20 and 60 day windows, and is independent of the inclusion of firm returns.

The estimated coefficients also indicate the economic relevance of the results. For example, an increase of a standard deviation in the mean of the supervisory indices increases the bank CARs by 291 basis points more than firm CARs in the 60 day window (=10.81 * 0.27). Note also that this result is in line with the result in the event study that small banks react more positively than large banks to the reforms of merger control legislation. To the extent that larger banks may exert more pressure and lobbying and thus benefit more from the discretionary enforcement of the supervisory control, small banks should indeed benefit more from the "checks and balances" mechanism of the merger control.

Finally, changes in the implementation of the efficiency defense in merger control affect bank stocks differently from firm stocks, such that the differential effect of the

strengthening of competition control on bank stocks is mitigated by a concurrent strengthening of the efficiency defense. This finding may suggest that investors assess bank M&As to be able to generate fewer efficiencies than M&As among firms.

4.3. Case Study

We now analyze in detail the takeover battle that took place in 2005 between the Dutch bank ABN AMRO and the Italian Banca Popolare Italiana (BPI) for the control of the Banca Antoniana Popolare Veneta (Antonveneta). This case study provides a unique opportunity to assess the effects of the discretion embedded in the supervisory control of bank mergers on bank stock prices.[15]

The proposed takeover was subject to the competitive control of the European Commission as well as the supervisory control of the Bank of Italy. Whereas the Commission cleared the proposal takeover by ABN AMRO, the Bank of Italy tried repeatedly to wield its supervisory power to favor BPI. The case attracted substantial media attention, as many political and regulatory bodies intervened to limit the power and the decisions of the Bank of Italy. The battle led to a profound reform of the governance of the Bank of Italy and of the control of bank M&As in Italy.

Figure 2 plots the cumulative abnormal returns on the Italian bank stock index in the year 2005. The vertical arrows in the figure point to key dates representing crucial events during the takeover battle (Appendix 3 describes all the events). As the figure shows, the Italian bank stock index started increasing after February 8, when the EU Commissioner for the Internal Market, Mr. McCreevy, publicly warned the Governor of the Bank of Italy, Mr. Fazio, not to block foreign bank takeovers. The index continued increasing after any other

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[15] Another example of the discretion embedded in the supervisory control and of how merger control can help reducing the abuse of the prudential controls is the Champalimaud-Santander case in 1999 (e.g., Veron (2008)).

intervention, such as the intervention of the Italian Prime Minister on September 23, aimed at limiting the power and the decisions of the Bank of Italy. The run-up of bank stock prices terminated with the resignation of Mr. Fazio on December 19, and the passage two days later of a law that reformed the organization of the Bank of Italy and transferred the responsibility for the competition reviews of bank mergers from the supervisor to the Italian antitrust authority.

To analyze the reaction of the Italian bank stock prices to the events during the Antonveneta case, we perform an event study around them and we report the results in the table placed below Figure 2. In particular, we regress daily bank stock index returns on a constant, daily national market index returns, and event period dummies for a three-year estimation period between March 16, 2002 and March 15, 2006. As the event study shows, bank stock prices reacted positively during the takeover battle after the Commissioner's call in early February 2005 which presumably represented a signal for investors of a future change in the supervisory control in Italy. Such a change was effectively implemented in December 2005, and in anticipation of this, the increase in bank stock prices became more pronounced.

In sum, the Antonveneta case provides further support for our results that bank investors' regard the potential discretion embedded in the supervisory control of bank mergers as not being value-enhancing. And investors react positively to events – such as legislative changes – that limit it.

5. Conclusion

In the last three decades merger control has been introduced or substantially strengthened in many developed countries. In this paper we construct an event study around the announcements of the legislative reforms of merger control in a sample of nineteen

industrial countries over the period 1987-2004. The results confirm that such reforms have a significant economic impact on firms' valuation. In line with the standard monopolistic hypothesis, stock prices of (non-financial) firms react negatively to the announcement of pro-competitive changes in merger control. However, in contrast to non-financials, bank stock prices react positively.

The cross-sectional exercises suggest that the different responses of banks can be explained, at least partly, by key characteristics of the supervisory control of bank M&A activity. In particular, bank stock prices react more positively upon legislative changes in merger control when more discretion is embedded in the enforcement of the supervisory control. This result suggests that bank investors see the potential for discretion in the supervisory control of bank M&As as value-decreasing and anticipate the strengthening of the merger control as a "checks and balances" mechanism to the supervisory control.

Our results suggest also that any attempt to increase the transparency and thus the accountability of the supervisory control of bank M&As should improve the efficiency and the profitability of the banking system. This is in line with the results of a survey conducted by the European Commission that the "misuse of supervisory power" is an important obstacle to cross-border consolidation. This has led the Commission to revise the Banking Directive governing the supervisory control of M&As, in order to make supervisory control more uniform and more transparent across Europe (e.g., European Commission (2007)).

Our results should not be interpreted as meaning that the supervisory control is problematic *per se* or that it is generally badly implemented. Neither can one infer from our results that competition policy is always and everywhere "wholesome" and never swayed by institutional or political agendas (Aktas, De Bodt and Roll (2004), Aktas, de Bodt and Roll (2007), Duso, Neven and Röller (2007)). Rather, our results suggest that the discretion

which can be pursued under the objective of "sound and prudent management" of the supervisory control may hurt investor expectations and thus valuations of banks.

An important area for future research is to assess the stability implications of the more competition oriented reviews in the banking sector. This extension would allow for an overall welfare evaluation of the observed policy changes. It would also add to the active debate about whether there is a trade-off or complementarity between competition and stability in banking.

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TABLE 1

CHANGES IN KEY MERGER CONTROL VARIABLES DEFINING THE EVENTS

| Country | Event Date | Changes in Competition Control | | | Δ Mandatory Notification |
		Δ Criteria	Δ Enforcer	Δ Overturning	
Austria	January 1, 1993	0.5	1	1	1
Belgium	August 5, 1991	1	1	0.66	1
Denmark	May 26, 2000	1	0.8	1	1
EU	December 21, 1989	1	1	0.8	1
Finland	April 30, 1998	1	0.8	1	1
France	May 15, 2001	0	0	0	0.5
France	August 1, 2003	0	0	0	0.5
Greece	March 8, 1991	1	1	0.66	1
Ireland	April 10, 2002	0.25	0.6	0.34	0
Italy	October 10, 1990	1	1	1	1
Netherlands	March 20, 1997	1	1	0.66	1
Norway	June 9, 1993	1	1	1	0.5
Norway	March 2, 2004	0	0	-0.34	0.5
Portugal	April 10, 2003	0	0.6	-0.34	0
Spain	July 17, 1989	0.5	0.4	1	0.5
Spain	April 16, 1999	0	0	0	0.5
Sweden	December 17, 1992	0.5	0.8	1	1
Sweden	April 1, 2000	0.25	0	0	0
Switzerland	October 6, 1995	1	1	0.66	1
UK	November 5, 2002	0.5	0.4	-0.5	0

NOTE. -- *Criteria* is based on the question: *What assessment criteria are used in merger control?* 1=only competition criteria; ½=also other criteria; 0=none, no merger control. *Enforcer* is based on: *Who is (are) the decision-making agency(ies) for merger control?* 1=antitrust authority or court; 4/5=multiple antitrust agencies; 3/5=antitrust and other agencies (e.g., minister); 2/5=only other agencies (e.g., minister); 1/5=sector regulator; 0= none, no merger control. *Overturning* on: *Can a third agency intervene in the process and replace / overturn the decision-making agency(ies)?* 1=not possible; 2/3=public (ex-post) overturning of case-specific decisions; 1/3 =appropriation of decision-making power; 0= none, no merger control. *Mandatory Notification* on: *Is merger notification mandatory above (statutory) thresholds?* 1=yes; 1/2=no; 0=none, no merger control.

TABLE 2
IMPORTANT CHANGES IN THE COUNTRY IN THE 120-DAY PERIOD PRIOR TO THE EVENT DAY

Country	Event Date	Source Database	Hits	Importance	Changes in the 120-Day Period prior to the Event Date
Austria	January 1, 1993	LexisNexis	139	Low	
Belgium	August 5, 1991	Le Soir	136	Low	
Denmark	May 26, 2000	LexisNexis	181	Low	
EU	December 21, 1989	European Commission	355	Low	
Finland	April 30, 1998	LexisNexis	112	Medium	Signing up for EMU
France	May 15, 2001	Les Echos	469	Low	
France	August 1, 2003	LexisNexis	274	Low	
Greece	March 8, 1991	LexisNexis	110	High	Privatisations
Ireland	April 10, 2002	The Irish Times	146	Low	
Italy	October 10, 1990	La Repubblica	965	Low	
Netherlands	March 20, 1997	LexisNexis	120	Low	
Norway	June 9, 1993	LexisNexis	106	Low	
Norway	March 2, 2004	LexisNexis	106	Low	
Portugal	April 10, 2003	LexisNexis	119	High	Privatisations; new FDI agency; corporate tax reform; labour reform
Spain	July 17, 1989	LexisNexis	126	Medium	Major stockmarket reform; announcement to join EMS
Spain	April 16, 1999	LexisNexis	150	High	Privatisations, exchange rates with Euro are fixed
Sweden	December 17, 1992	LexisNexis	125	Low	
Sweden	April 1, 2000	LexisNexis	66	Low	
Switzerland	October 6, 1995	LexisNexis	143	Low	
UK	November 5, 2002	Financial Times	213	Low	

NOTE. -- The table reports the number of hits, our assessment of importance and the relevant content when searching in the reported source databases for the country name and one of the words "shock", privatisation", or "regulation" (or equivalent word in the foreign language) appearing in articles published in the 120-day period prior to the event date.

TABLE 3

CUMULATIVE ABNORMAL RETURNS IN PERCENT FOR ANNOUNCEMENTS OF MERGER CONTROL LEGISLATION FOR BANKS AND FIRMS

Event Windows	[-120, 0]	[-60, 0]	[-20, 0]	[1, 20]	[1, 60]
Firm indices — Mean	-2.8 *	-2.5 ***	-1.0 ***	-0.2	-0.9
{(≥0)-(<0)}	{6-14} *	{6-14} *	{6-14} *	{9-11}	{10-10}
Bank indices — Mean	8.3	5.0 *	2.3 *	-0.7	1.7
{(≥0)-(<0)}	{13-7}	{13-7}	{14-6} *	{11-9}	{10-10}
Bank-Firm indices — Mean	11.1 *	7.6 ***	3.3 **	-0.5	2.6
{(≥0)-(<0)}{(≥0)-(<0)}	{13-7}{6-14} **	{13-7}{6-14} **	{14-6}{6-14} **	{11-9}{9-11}	{10-10}{10-10}
Firm stocks — Mean	-4.1 ***	-2.2 ***	0.7 ***	0.8 ***	-1.1 **
Median	-3.1 ***	-2.1 ***	0.2	0	-1.6 ***
{(≥0)-(<0)}	{771-964} ***	{771-1,012} ***	{916-886}	{899-903}	{783-1,001} ***
Bank stocks — Mean	3.7 **	0.1	-0.2	0.5	0.8
Median	2.3 *	-0.4	0.1	0.0	0.1
{(≥0)-(<0)}	{76-55} *	{62-71}	{68-65}	{65-68}	{68-65}
Bank-Firm stocks — Mean	7.8 ***	2.2 **	-0.8	-0.3	1.8
Median	5.4 ***	1.7	-0.1	0.0	1.7
{(≥0)-(<0)}{(≥0)-(<0)}	{76-55}{771-964} ***	{62-71}{772-1,012}	{68-65}{916-886}	{65-68}{899-903}	{68-65}{783-1,001}
Large Bank-Large Firm stocks — Mean	6.0 **	1.8	-1.0	0.5	2.1
Median	3.6 **	0.7	-0.4	0.8	2.9
{(≥0)-(<0)}{(≥0)-(<0)}	{380-484}{36-31}	{401-490}{32-36}	{474-425}{35-33}	{426-473}{34-34}	{376-515}{37-31} *
Small Bank-Small Firm stocks — Mean	9.7 ***	2.6 *	-0.6	-1.0	1.6
Median	7.0 ***	3.1 *	0.2	-0.4	0.8
{(≥0)-(<0)}{(≥0)-(<0)}	{391-480}{40-24} ***	{371-522}{30-35}	{442-461}{33-32}	{473-430}{31-34}	{407-486}{31-34}

NOTE. -- Percentage cumulative abnormal returns (CARs) for exchange-listed banks and firms are estimated around the announcement of changes in merger control using the value-weighted country index in the market model. The first rows in each cell lists the Mean and median CAR across events while the last row reports the number of positive minus the number of negative CARs between parentheses. The reported significance levels are based on standard t-tests for the Means and medians, binomial probabilities assuming equal probability of occurrence for the number of positives versus negatives, the Mann Whitney Wilcoxon test for the difference in medians, and the Pearson value of the Chi-Square test for the number of bank positives and negatives versus firm positives and negatives. Banks and firms are grouped in large and small size categories acoording to market capitalization.

TABLE 4

CUMULATIVE ABNORMAL RETURNS IN PERCENT FOR ANNOUNCEMENTS OF MERGER CONTROL LEGISLATION ACROSS INDUSTRIES

Event Windows		[-120, 0]	[-60, 0]	[-20, 0]	[1, 20]	[1, 60]
Insurance indices	Mean	5.5	9.4 ***	3.9 *	1.7	4.8
	{(≥0)-(<0)}	{11-5}	{10-6}	{13-3} ***	{10-6}	{8-8}
Telecom indices	Mean	-2.8	2.2	-0.5	-0.3	-3.1
	{(≥0)-(<0)}	{2-9} ***	{5-6}	{6-5}	{4-7}	{4-7}
Utilities indices	Mean	-12.2 **	-6.0 *	-3.2 **	-1.2	2.7
	{(≥0)-(<0)}	{4-10} **	{5-9} *	{2-12} ***	{7-7}	{7-7}
Healthcare indices	Mean	0.6	-5.3	0.2	-2.3 **	-4
	{(≥0)-(<0)}	{6-10}	{5-11} **	{7-9}	{5-11} **	{5-11} **
Insurance stocks	Mean	6.0 **	2.0	2.4 **	2.2 *	1.9
	Median	4.3 **	-1.4	1.6 **	1.4	-2.8
	{(≥0)-(<0)}	{36-22} **	{30-31}	{38-24} **	{34-28}	{25-36}
Telecom stocks	Mean	1.2	-1.4	-0.5	-1.4	-0.9
	Median	0.2	-3.5	-0.6	-1.2	-0.8
	{(≥0)-(<0)}	{9-9}	{8-10}	{8-10}	{7-11}	{8-10}
Utilities stocks	Mean	-2.6	-3.4	-0.8	-0.3	0.6
	Median	-2.5	-4.2 **	-2.0 **	-1.3 *	0.3
	{(≥0)-(<0)}	{23-28}	{16-38} **	{19-38} **	{22-35} *	{28-26}
Healthcare stocks	Mean	-0.6	-4.9 *	-1.5	-0.4	-9.7 ***
	Median	-1.1	-1.7	-1.2	-1.3 **	-4.1 ***
	{(≥0)-(<0)}	{36-39}	{36-43}	{35-44}	{30-49} **	{26-53} ***

NOTE. -- Percentage cumulative abnormal returns (CARs) for exchange-listed firms in the indicated industry are estimated around the announcement of changes in merger control using the value-weighted country index in the market model. The first rows in each cell lists the Mean and median CAR across events while the last row reports the number of positive minus the number of negative CARs between parentheses. The reported significance levels are based on standard t-tests for the Means and medians, binomial probabilities assuming equal probability of occurence for the number of positives versus negatives, and the Mann Whitney Wilcoxon test for the difference in medians.

TABLE 5
INDEPENDENT VARIABLE NAMES, DEFINITION AND DESCRIPTIVE STATISTICS

		Mean	StDev	Min	Max
Supervisory Criteria	What assessment criteria are used in supervisory merger/acquisition control?	0.42	0.26	0	1
	1=not only supervisory criteria (i.e., stability, soundness, prudency) but also other criteria; ½=only supervisory criteria; 0=none, no supervisory merger/acquisition control in banking				
Supervisory Enforcer	Who is (are) the decision-making agency(ies) for supervisory merger/acquisition control?	0.32	0.26	0	1
	1=minister; 4/5=central bank and minister; 3/5= independent supervisor and minister; 2/5=central bank; 1/5= independent supervisor; 0=none, no supervisory merger/acquisition control in banking				
Supervisory Formal Decisions Not Public	Are supervisory decisions following formal notification public?	0.68	0.39	0	1
	1=no; 1/2=yes; 0=no supervisory control				
Supervisory Informal Notification	Is there any informal communication and/or notification between the supervisory agency(ies) and the parties before formal notification?	0.56	0.36	0	1
	1=yes, formally in the law and mandatory; 2/3=yes, but only as common practise; 1/3=no notification; 0=no supervisory control				
Mean of Supervisory Strength Indices	= (Supervisory Criteria + Supervisory Enforcer + Supervisory Formal Decisions Not Public + Supervisory Informal Notification)/4	0.50	0.27	0	0.87
Δ Efficiency Defense	Are efficiency gains explicitly considered as a factor mitigating anticompetitive effects?	0.29	0.45	0	1
	1=yes; 0=no				

NOTE. -- The number of observations equals 1,935.

TABLE 6
CROSS-SECTIONAL REGRESSIONS

Panel A Model	I	II	III	IV	V	VI	VII
Dependent Variable: CAR	**(-20,0)**	**(-20,0)**	**(-20,0)**	**(-20,0)**	**(-20,0)**	**(-60,0)**	**(-120,0)**
Supervisory Criteria	14.24 ***						
	(3.67)						
Supervisory Enforcer		9.86 ***					
		(2.92)					
Supervisory Formal Decisions Not Public			9.00 ***				
			(2.12)				
Supervisory Informal Notification				12.00 ***			
				(2.58)			
Mean of Supervisory Indices					12.90 ***	15.13 ***	-6.95
					(2.95)	(3.75)	(6.14)
ΔEfficiency Defense	0.65	3.07	-1.02	0.25	0.20	-2.44	-6.44 **
	(1.93)	(1.94)	(2.01)	(1.87)	(1.88)	(2.13)	(3.03)
Constant	-5.54 ***	-4.34 ***	-5.83 ***	-5.67 ***	-6.02 ***	-5.84 ***	9.18 ***
	(1.76)	(1.55)	(1.75)	(1.63)	(1.76)	(1.80)	(3.46)
Number of Observations	133	133	133	133	133	133	131
Adjusted R-squared	0.10	0.07	0.11	0.11	0.11	0.11	0.04

Panel B Model	VIII	IX	X	XI	XII	XIII	XIV
Dependent Variable: CAR	**(-20,0)**	**(-20,0)**	**(-20,0)**	**(-20,0)**	**(-20,0)**	**(-60,0)**	**(-120,0)**
Supervisory Criteria * d(Bank)	11.91 ***						
	(3.79)						
Supervisory Enforcer * d(Bank)		9.38 ***					
		(3.06)					
Supervisory Formal Decisions Not Public * d(Bank)			5.88 ***				
			(2.21)				
Supervisory Informal Notification * d(Bank)				8.62 ***			
				(2.68)			
Mean of Supervisory Strength Indices * d(Bank)					9.08 ***	10.81 ***	10.38
					(3.08)	(4.03)	(6.62)
ΔEfficiency Defense * d(Bank)	1.08	3.10	0.12	0.72	1.03	-9.95 ***	-28.23 ***
	(2.00)	(2.01)	(2.09)	(1.94)	(1.97)	(2.35)	(3.41)
Constant	-0.20	0.51	-1.14 ***	-1.14 ***	-1.00 **	-6.51 ***	-1.71
	(0.41)	(0.39)	(0.43)	(0.40)	(0.43)	(0.68)	(1.19)
d(Bank) and Variables Not Interacted with d(Bank)	Included	Included	Included	Included	Included	Included	Included
Number of Observations	1,935	1,935	1,935	1,935	1,935	1,917	1,866
Adjusted R-squared	0.01	0.11	0.10	0.11	0.10	-0.01	0.04

NOTE. -- The dependent variable in the linear models is the percentage cumulative abnormal returns (CARs) for exchange-listed banks in Panel A and for exchange-listed banks and firms in Panel B within an event window that starts 20, 60 or 120 days prior to the event day and runs until (and includes) the event day. All errors are clustered at the event level.

FIGURE 1

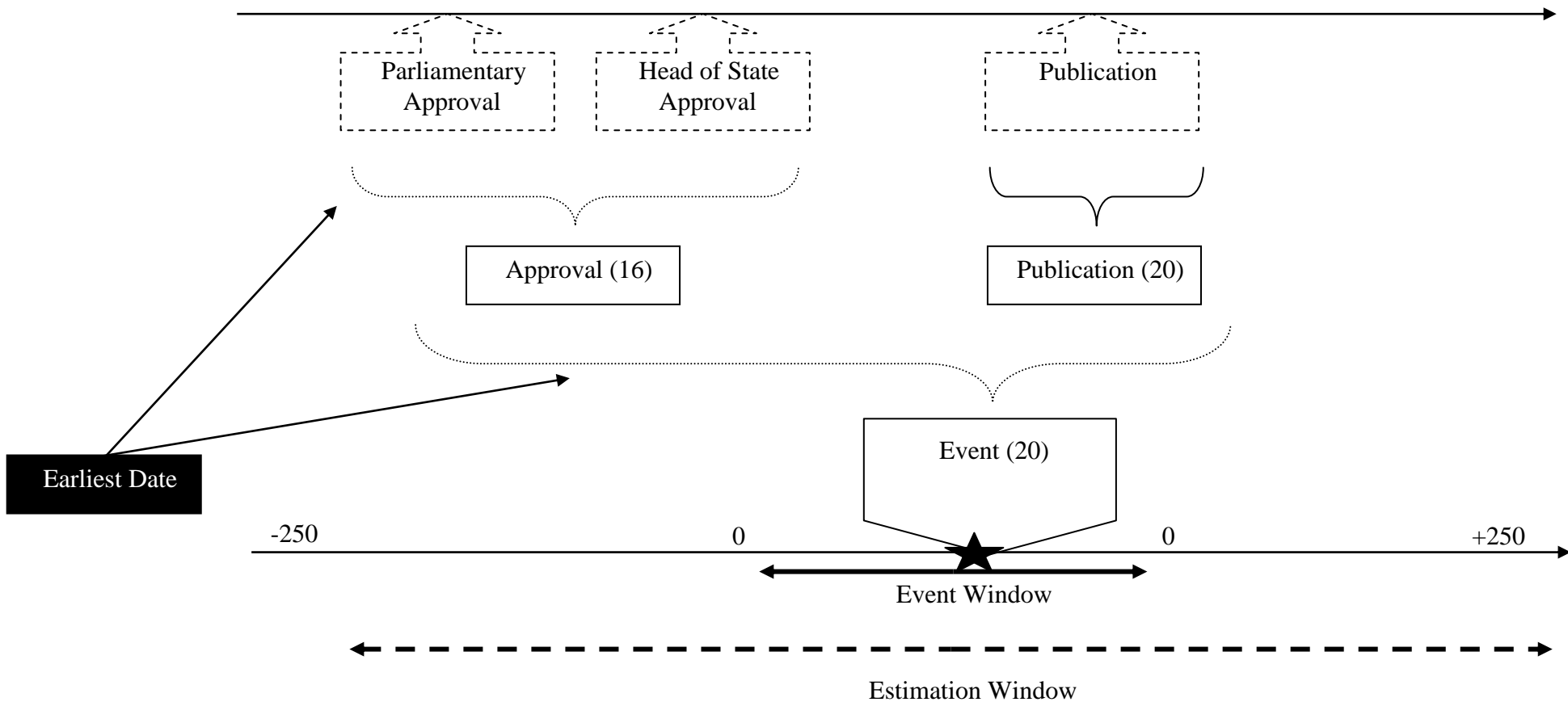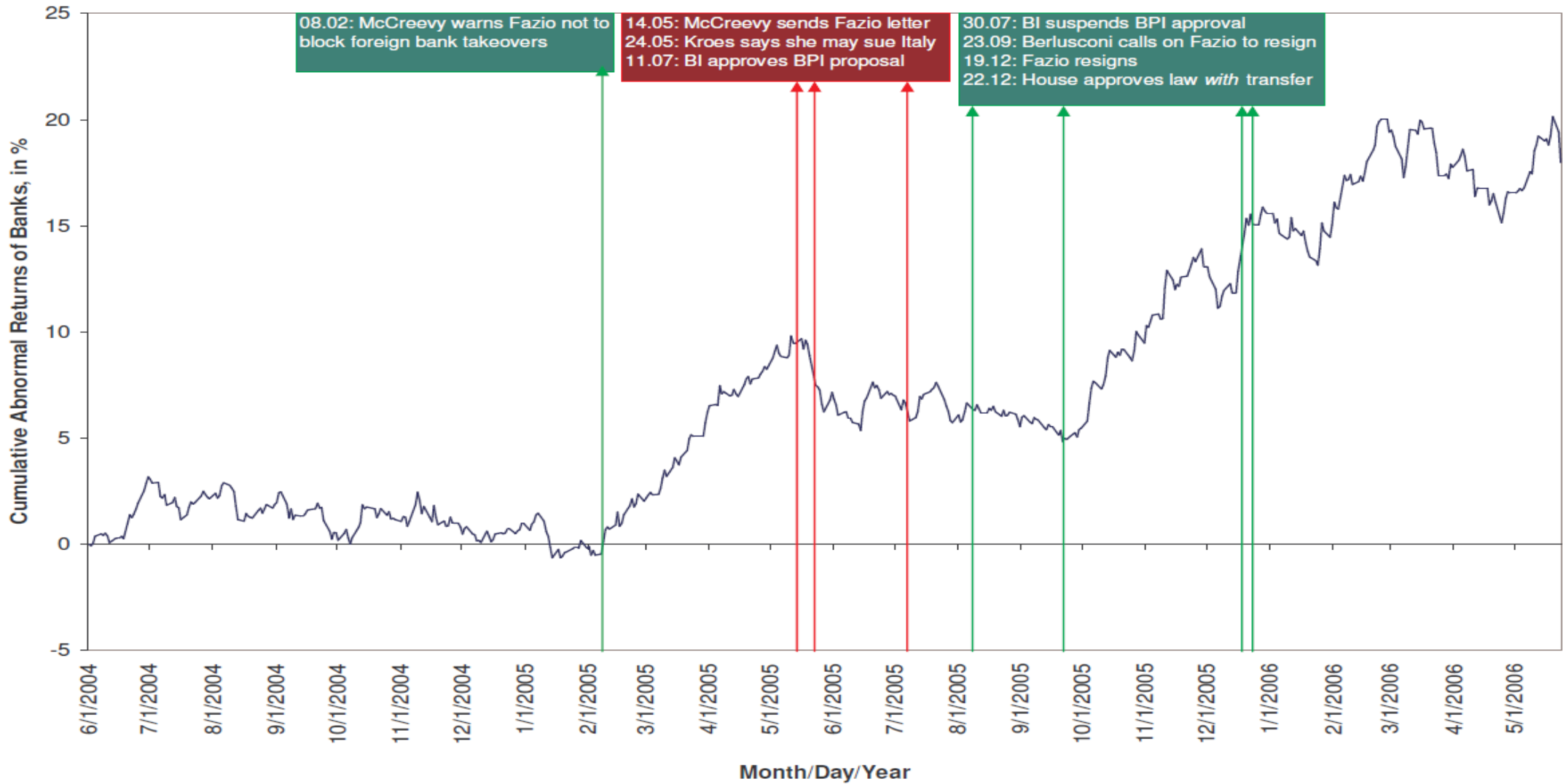TIME LINE OF THE LEGISLATIVE PROCEDURE AND NUMBER OF EVENTS

FIGURE 2

CUMULATIVE ABNORMAL RETURNS OF ITALIAN BANK STOCKS DURING THE TAKEOVER BATTLE FOR THE CONTROL OF ANTONVENETA

	Event	Date	CAR(0, 2)			CAR(0, 20)			CAR(0, 60)		
			All Banks	BPI	BAPV	All Banks	BPI	BAPV	All Banks	BPI	BAPV
1	McCreevy warns Fazio not to block foreign takeovers	8-Feb-05	1.21	0.54	0.79	3.23	-1.53	10.47 *	10.62 **	-5.38	25.54 ***
2	Banca d' Italia aproves proposal of BPI to acquire control of BAPV	July 11, 2005	0.92	4.23	-0.77	-0.04	2.58	-8.18	-5.40	47.93 **	-27.57 *
3	Banca d' Italia suspends proposal given to BPI	July 30, 2005	0.03	-3.11	-0.45	0.59	-7.51	3.87	5.87	-58.15 ***	28.29 *
4	Berlusconi calls on Fazio to resign	September 23, 2005	0.05	-1.27	-0.94	4.89 *	-25.73 ***	4.04	6.59	-3.23	-8.12
5	Fazio resigns / House approves law with transfer	December 19-22, 2005	1.67 *	11.02 ***	-0.92	0.31	17.17 **	-1.65	5.03	28.64 **	-7.37

NOTE. -- The figure reports the cumulative abnormal returns of Italian bank stocks while the panel below reports the percentage cumulative abnormal returns (CARs) for all exchange-listed banks in Italy (All Banks), *Banca Popolare Italiana* (BPI), and the *Antonveneta* Bank (*Banca Antoniana Populare Veneta*, BAPV). Excess returns are estimated using the value-weighted Italian country index in the market model around the announcement of the indicated events. The first cell lists the CAR, the second the significance levels. The reported significance levels are based on standard t-tests. *** Significant at the 1% level, ** significant at the 5% level, and * significant at the 10% level.

Country	Source	Www
All	Getting the Deal Through, Merger Control	http://www.gettingthedealthrough.com/main_fs.cfm?book=MergerControl
	International Competition Network, Merger Review Laws, Related Materials, and Templates.	http://www.internationalcompetitionnetwork.org/mergercontrollaws.html
	OECD, Competition.	http://www.oecd.org/infobycountry/0,2646,en_2649_37463_1_1_1_1_37463,00.html
	OECD, Competition Law and Policy.	http://www.oecd.org/infobycountry/0,2646,en_2649_34685_1_1_1_1_1,00.html
	OECD, 1996, Failing Firm Defence, CLP Report, (96)23, Paris.	
	OECD, 1998, Enhancing the Role of Competition in Bank Regulation, DAFFE/CLP Report, (98)16, Paris.	
	OECD, 1999, Relationship between Regulators and Competition Authorities, DAFFE/CLP Report, (99)8, Paris.	
	OECD, 2000, Mergers in Financial Services, DAFFE/CLP Report, (2000)17, Paris.	
	OECD, 2002, The Role of Competition Policy in Regulatory Reform, DAFEE/CLP Report, (2002), Paris.	
	World Bank and International Monetary Fund, Global Banking Law Database.	http://www.gbld.org/
Austria	Global Competition Review, Austria	http://www.globalcompetitionreview.com/ear/eur_atr.cfm
Denmark	Global Competition Review, Denmark.	http://www.globalcompetitionreview.com/ear/eur_atr.cfm
EU	Ghezzi F. and P. Magnani, 1998, L´applicazione della disciplina antitrust comunitaria al settore bancario, in M. Polo (ed.), *Industria Bancaria e Concorrenza*, Il Mulino, 143-259.	
Finland	Finnish Competition Authority, Annual Reports, 2001, 2002, 2003.	
	Global Competition Review, Finland.	http://www.globalcompetitionreview.com/ear/eur_atr.cfm
France	Fried Frank, Client Memoranda, 2002, The New Features of French Antitrust Law by Eric Cafritz and Omer Tene.	http://www.ffhsj.com/cmemos/021102_newfeat.htm
	Global Competition Review, France: Merger Control.	http://www.globalcompetitionreview.com/ear/eur_atr.cfm

	Jurismag, 2001, Le magazine rédigé par des professionnels du droit, The New French Rules for Merger Control, by A. Condomines, Avocat à la Cour.	http://www.jurismag.net/articles/artiGB-concent.htm
	Practical Law Company, Global Council Web, Merger Control – France.	http://global.practicallaw.com/jsp/article.jsp?item=:1138832
	Olcay Miller, P., 20004, Authorisation of Bank Mergers—Recent French Experience, mimeo, Queen Mary and Westfield College.	
Germany	Global Competition Review, Germany.	http://www.globalcompetitionreview.com/ear/eur_atr.cfm
Ireland	Global Competition Review, Ireland.	http://www.globalcompetitionreview.com/ear/eur_atr.cfm
Italy	Bianco, M., F. Ghezzi, W. Negrini and P. Signorini (1998b), 'Applicazioni della disciplina antitrust al settore bancario in Italia', in M. Polo (ed), *Industria Bancaria e Concorrenza*, Bologna: Il Mulino, 329-374.	
Norway	Global Competition Review, Norwegian competition law: overview and recent developments.	http://www.globalcompetitionreview.com/ear/eur_atr.cfm
	International Law Office (ILO), Competition - Norway 1998, 1999, 2001, 2004.	http://www.internationallawoffice.com/lettersresults.cfm?Newsletters__WorkAreas=Competition
Portugal	Global Competition Review, Portugal.	http://www.globalcompetitionreview.com/ear/eur_atr.cfm
Spain	Banco de Espana, 2001, "Basic Regulatory Structure of the Spanish Banking System", Annex I to Annual Report.	
Sweden	Global Competition Review, Sweden.	http://www.globalcompetitionreview.com/ear/eur_atr.cfm
	International Law Office (ILO), "Competition – Sweden".	http://www.internationallawoffice.com/lettersresults.cfm?Newsletters__WorkAreas=Competition
US	Bianco, M., F. Ghezzi and P. Magnani, 1998a, "L'applicazione della disciplina antitrust nel settore bancario statunitense", in M. Polo (ed), Industria Bancaria e Concorrenza, Bologna: Il Mulino, 143-258.	

NOTE. -- The table reports the sources we have used to collect the legal and institutional country characteristics on merger and supervisory control. We report only documents and sources other than the laws.

CONTACTED AGENCIES DEALING WITH MERGER AND SUPERVISORY CONTROL

Country	Agency
Austria	Cartel Court
	Federal Competition Authority (of Austria)
	Austrian Financial Market Authority (FMA)
	European Central Bank
Belgium	Federal Public Service Economy
	European Central Bank
Canada	Competition Bureau
Denmark	Danish Competition Authority
	Danish Financial Supervisory Authority
Finland	Finnish Competition Authority
	European Central Bank
France	Queen Mary and Westfield College
	European Central Bank
Germany	German Competition Authority
	Deutsche *Bundesbank*
	European Central Bank
Greece	Hellenic Competition Authority
	Bank of Greece
	European Central Bank
Ireland	Department of Enterprise, Trade and Employment
	Irish Competition Authority
Italy	Italian Competition Authority
	Bank of Italy
Netherlands	Netherlands Competition Authority
	Nederlandsche Bank
Norway	Norwegian Competition Authority
	Ministry of Finance
	Norges Bank
Portugal	Portuguese Competition Authority
	European Central Bank
Spain	Banco de Espana
	European Central Bank
Sweden	Swedish Competition Authority
	Finansinspektionen
UK	Office of Fair Trading
	Financial Service Authority
	European Central Bank
US	Federal Reserve Board

NOTE. -- The table reports the agencies we would like to thank for helping us with the collection of the legal and institutional country characteristics on merger and supervisory control. It is not our intention to implicate these agencies or their affiliated institutions and we consider all the remaining errors in the reporting as ours. For each country we order the contacts we had as follows: (1) the competition authorities, (2) the national supervisors and/or central banks, and if applicable (3) the European Central Bank.

APPENDIX 3. LEGAL AND OTHER DEVELOPMENTS IN ITALY AND EUROPE IN 2005

BAPV: Antoveneta Bank (Banca Antoniana Populare Veneta), Berlusconi: prime minister of Italy; BI: Banca d' Italia, BPI: Banca Popolare Italiana; CONSOB: the stock market regulator; EC: European Commission; Fazio: former governor of the Banca d' Italia; Govt: Government; McCreevy is the European Internal Market Commissioner; Kroes is the European Competition Commissioner.

Law Transfer Competition Control

14.01: Govt proposes law WITHOUT transfer, but Parliamentary Committee will add it
03.03: Lower House votes NOT to transfer

03.09: Govt proposes law WITHOUT transfer, but Press expects Senate to add it
11.10: Senate approves law WITHOUT transfer

ABN AMRO versus BPI for BAPV

12.01: ABN Amro seeks new shareholder pact to control BAPV
21.01: BPI seeks to split BAPV to acquire control

11.07: BI approves proposal BPI to acquire BAPV

25.07: Court confiscates shares of BPI & allies CONSOB suspends BPI's bid
30.07: BI suspends BPI approval
01.08: House arrest for BPI top management

23.09: Berlusconi calls on Fazio to resign
15.10: BI cancels BPI approval
19.10: ABN Amro wins bid

19.12: Fazio resigns

European Commission

08.02: McCreevy warns Fazio against blocking foreign bank takeovers
12.02: Fazio says cross-border banking mergers can be "difficult"

14.05: McCreevy sends letter with concerns
24.05: Kroes says she may sue Italy

22.12: Lower House approves law WITH transfer
23.12: Senate approves law WITH transfer
28.12: President approves law (published 12.01.06)