A Note on Merger and Acquisition Evaluation

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Abstract

This note proposes the continuous treatment approach as a valuable alternative to propensity score matching for evaluating economic effects of merger and acquisitions (M&As). This framework allows to consider the variation in treatment intensities explicitly, and it does not call for an arbitrary definition of cut-off values in traded ownership shares in order to construct a binary treatment indicator. We demonstrate the usefulness of this approach using data from European M&As and by relying on the example of post-M&A employment effects.The empirical exercise reveals (substantial) differences over the whole distribution of acquired ownership shares and across different types of M&As and country groups.

JEL Codes: C21, G34, L25

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1 Introduction

Empirical research on mergers and acquisitions (M&As) is inconclusive with regard to the economic effects of firm takeovers.[1] This note provides one possible explanation for this observation, pointing to the more or less arbitrary definition of cutoff-values in traded ownership shares that is typically used in empirical applications. Focusing exclusively on such cutoffs (commonly used ones are 25 or 50 percent), one might ignore that the extent to which new owners are able to influence a firm's strategic decisions varies over a wide range of ownership levels.

One important aspect that affects a new owner's ability to impose strategic changes within the newly acquired entity concerns corporate governance regulations. In theoretical terms, corporate governance constitutes a set of regulations and constraints that aim to address problems arising from the separation of ownership and control (Berle and Means 1932, Williamson 1985). Separated ownership and control paired with asymmetric information is likely to result in non-zero agency costs due to the incentives for opportunistic behavior (e.g., Jensen and Meckling 1976).

In the context of M&As, corporate governance regulations shape both the pre- and post-acquisition behavior of acquirung firms (see, e.g., Gugler and Yurtoglu 2008). With regard to the latter, new (majority) owners are, for example, limited in their strategic decision making as minority owners' interests might be protected by corporate governance regulations. Table A.1 in the Appendix provides a description of certain corporate governance regulations in selected European countries (included in our empirical exercise). To give just two examples: Ownership of 75 percent plus one vote assures to overcome blocking minorities (typically at 25 percent) in many countries. At the other end of the ownership distribution, it might be mentioned that European corporate laws typically allow shareholders with (at least) five percent ownership to call for an extraordinary general meeting. The reported regulations commonly intend to strengthen the position of minority shareholders limiting the leeway of majority owners. With regard to potential restructuring measures that a new majority owner would like to impose after a successful M&A, corporate governance regulations might, therefore, be viewed as an explicit constraint for doing so. In this regard, the share of acquired ownership (inversely) measures the constraints a new owner is facing when imposing strategic changes.

From an econometric perspective, defining a discrete treatment variable from continuous ownership information reduces data variation and, in turn, might induce inaccurate estimates of M&A effects. Alternatively, one might rely on a continuous treatment approach based on generalized propensity score matching (GPSM) (see Imbens 2000, Hirano and Imbens 2004). GPSM

[1] With regard to e.g., the employment effects of M&As and among others, Conyon, Girma, Thompson and Wright (2001, 2002), Girma and Görg (2004), Gugler and Yurtoglu (2004), Lehto and Böckerman (2008) and Siegel and Simons (2010) estimate significantly negative or insignificant effects, while McGuckin and Nguyen (2001), Bandick and Görg (2010), Stiebale and Trax (2011) and Oberhofer (2013) provide evidence in the opposite direction.

is widely applied in various fields of economics,[2] but not for M&A evaluation. Given that the strategic impact of a new shareholder on a firm's decisions is varying over the acquired ownership share, it seems particularly attractive for M&A evaluation for (at least) three compelling reasons: First, it allows to estimate heterogeneous effects of M&As over the whole ownership distribution. Second, one might aggregate M&A effects over any arbitrary subset of the distribution of traded shares. Finally, GPSM represents a straightforward generalization of the commonly applied propensity score matching (PSM) and is, therefore, easily available to the applied researcher.

One important strategic decision typically involved in a process of restructuring concerns the changes in employment after a M&A. In what follows, we thus rely on the example of post-M&A employment effects to illustrate the economic importance of explicitly accounting for variation in the treatment intensity as measured by acquired ownership shares.

2 A continuous treatment approach for M&A evaluation

In the program literature, it is of particular interest to evaluate of the economic consequences of a specific program, such as job-training or school vouchers. Based on a counterfactual framework developed in the seminal contribution of Rubin (1974), several scholars have proposed alternative econometric (statistical) approaches for the identification of causal program effects. Among these methods is the so-called PSM approach pioneered by Rosenbaum and Rubin (1983). For discrete treatment information (i.e., the observational unit received a treatment or not), this approach proposes to estimate a model for the probability to receive treatment with the resulting model prediction, known as the propensity score. Further, PSM assumes that, given this propensity score, selection into the treatment is unconfounded. In other words, the treatment is independent from the potential outcomes with or without treatment. Accordingly, conditioning on the propensity score is sufficient to accurately estimate the causal treatment effect. For practical purposes, PSM methods typically involve the comparison of outcomes of a treated unit with an untreated control unit with the most similar propensity score. GPSM, as proposed by Imbens (2000) and Hirano and Imbens (2004) extends this reasoning to treatment information that is measured in a continuous fashion.

In M&A evaluation, the treatment is typically based on the relative ownership shares involved in transactions. By definition, this measure can be continuously distributed within the [0,1] interval. In contrast to PSM which is based on a (arbitrarily defined) binary M&A indicator, GPSM explicitly takes advantage of the variation in treatment intensities (see Imbens and Wooldridge 2009, for an overview). Accordingly, this approach allows to estimate the impact of M&As on acquired firms at any level of acquired ownership shares and thus allows to more

[2] For instance, GPSM is applied to evaluate returns to schooling (see, e.g., Behrman, Cheng and Todd 2004), unemployment programmes (e.g., Lalive, Van Ours and Zweimüller 2007) and instruments of regional policies (e.g., Becker, Egger and von Ehrlich 2012).

directly assess the impact of corporate governance regulation for M&A induced economic effects.

GPSM is implemented in three steps (see, e.g., Fryges and Wagner 2008, Appendix I): In the first step, one has to estimate the conditional distribution of the treatment variable given a set of observable characteristics, which in our case reads as

$$E(D_i|X_i) = \Lambda(X_i\beta), \tag{1}$$

where X_i denotes a vector of covariates observed for each firm i. D_i is the treatment intensity, measured as the traded ownership shares ranging from zero to one. β represents the parameter vector to be estimated, and $\Lambda(\cdot)$ is the cdf of the logistic distribution (see Papke and Wooldridge 1996) which guarantees that $0 < \lambda(X_i\beta) < 1$ for all $X_i\beta \in \mathbb{R}$. The conditional distribution of the treatment given the covariates thus is given by $\frac{exp(X_i\beta)}{1+exp(X_i\beta)}$. For fractional response data, that are bounded by the [0,1] intveral, Papke and Wooldridge (1996) propose a quasi-maximum likelihood estimator (QMLE) of β based on the Bernoulli log-likelihood function which is defined as

$$l_i(\beta) \equiv D_i \log[\Lambda(X_i\beta)] + (1 - D_i)[1 - \Lambda(X_i\beta)]. \tag{2}$$

Equipped with consistent estimates for β from maximizing the sum of $l_i(\beta)$ over all observations, the estimated generalized propensity score, $\widehat{R}_i$, can be expressed as

$$\hat{R}_i = [\Lambda(X_i\widehat{\beta})].^{3} \tag{3}$$

The second step involves to estimate the conditional expectation of ΔY_i (e.g., post-M&A employment growth) given the treatment variable D_i and the estimated propensity score $\widehat{R}_i$. Following Hirano and Imbens (2004), we chose a quadratic approximation for the conditional expectation of ΔY_i, given by

$$E[\Delta Y_i|D_i, \widehat{R}_i] = \alpha_0 + \alpha_1 D_i + \alpha_2 D_i^2 + \alpha_3 \widehat{R}_i + \alpha_4 \widehat{R}_i^2 + \alpha_5 D_i \widehat{R}_i. \tag{4}$$

Equation (4) is estimated by OLS. The third step comprises to calculate the average treatment effect for any intensity interval d (in our case 10 percent traded ownership), making use of the obtained parameter estimates from the second step

$$\hat{E}[\Delta Y(d)] = \frac{1}{N}\sum_{i=1}^{N}(\widehat{\alpha}_0 + \widehat{\alpha}_1 d + \widehat{\alpha}_2 d^2 + \widehat{\alpha}_3 \widehat{r}(d, X_i) + \widehat{\alpha}_4 \widehat{r}(d, X_i)^2 + \widehat{\alpha}_5 d\widehat{r}(d, X_i). \tag{5}$$

[3] This expression for $\widehat{R}_i$ follows Guardabascio and Ventura (2014) who show that, whenever a Bernoulli QMLE is applied, the conditional density corresponds to the generalized propensity score. For all other cases, $\widehat{R}_i$ is given by the likelihood function evaluated at $\widehat{\beta}$. Fryges and Wagner (2008), in contrast, apply the latter approach to the Bernoulli QMLE resulting in $\hat{R}_i = [\Lambda(X_i\widehat{\beta})]^{D_i}[1 - \Lambda(X_i\widehat{\beta})]^{(1-D_i)}$.

Standard errors for the conditional expectations are calculated via bootstrapping methods. In the empirical exercise discussed below, we report 95 percent confidence intervals based on 500 bootstrap replications.

3 Empirical application: Employment effects of M&As

3.1 Data description and descriptives

Our sample combines information on European M&As (collected in Bureau van Dijk's Zephyr database) with firm-level balance sheet information and profit and loss accounts (taken from the Amadeus database) between 2003 and 2010.[4] When constructing the M&A data we impose some exclusion and aggregation restrictions: First, we exclude all firms that have been targets of multiple acquisitions by different acquiring firms. For such firms it would be difficult to assess the the separate employment effect of each takeover (see Oberhofer 2013). Second, in case the acquiring firm bought smaller shares of the target firm within one year and by multiple transactions, we aggregate the individual transactions to one overall acquired ownership share. This should reflect the true extend of intended ownership control by the acquiring firm. The resulting sample at hand contains 1,350 M&As, of which 999 cases represent 100 percent takeovers.[5]

Applying the GPSM, we employ an additional control group drawn from a random sample, containing 25 percent of all non-acquired firms in the Amadeus database with non-missing data (i.e., 161,389 firms). The outcome variable is defined as the average post-M&A employment growth rate over a two year time window. The choice of observable characteristics collected in X is mainly based on the selection equation reported in Oberhofer (2013). Furthermore, we include three additional variables that capture alternative dimensions of the ownership structure relevant for corporate governance issues. Among these are an indicator variable of whether a firm is publicly quoted and the number of subsidiaries controlled by and shareholders of each respective firm.

In the empirical exercise, we concentrate on five different samples including (a) all M&As, (b) only domestic M&As, (c) only cross-border M&As and only firms located in either EU-15 economies (d) or in Non-EU-15 countries (e). The latter group of countries includes Bosnia and Herzegovina, Bulgaria, Czech Republic, Hungary, Latvia, Norway, Poland, Romania, Serbia, Slovakia, Slovenia, Switzerland and Ukraine. The selection of these five different samples is based on findings in the previous literature which highlight differing economic effects induced by domestic and foreign M&As (see, e.g., Bandick and Görg 2010, Stiebale and Trax 2011) and

[4] Similar data have been applied among others, in the applications of Stiebale and Trax (2011) and Oberhofer (2013).

[5] In contrast to Oberhofer (2013), this application considers a more recent time period with a better coverage of European M&A transactions in the Zephyr database. This, together with the additional inclusion of minority acquisitions, explains the difference in the number of observed M&A cases.

across groups of countries (see, e.g., Oberhofer, Stöckl, Winner 2012).

Table 1 provides some summary statistics on our dataset. The first column in Table 1 reveals that the acquired ownership share in our sample is relatively large. This is mainly driven by the relative large number of 100% acquisitions. The minimum value, however, indicates that also very small shares are traded. Focusing on the outcome of interest, the average employment growth rate over a two-year post-acquisition window amounts to 1.5 percent across all acquired firms (see the top of Table 1). In the random control group reported at the bottom of the Table, average employment growth is 1 percentage points lower. Furthermore, acquisition targets are, on average, more profitable (measured in terms of returns on assets), four times larger, six and a half years older, more capital intense (total assets per employee) and more productive (value added per employee).

A comparison of minority and majority acquired targets also reveals some interesting differences. Minority M&A targets (with a maximum of 50 percent ownership acquisition) grow faster, are almost ten times larger, ten years older, more capital intense, more productive but less profitable then majority acquired targets. Most strinkingly, 42 percent of all minority M&A targets are publicly quoted and these firms control a large number of subsidiaries (i.e, 23.8 on average) and are themselves controlled by an average of 16.5 shareholders.

These substantial differences across minority and majority acquisition target support the inclusion of a large control group containing of non-acquired firms. Any propensity score based approach crucially relies on the balancing property assumptions which states that firms with alike propensity scores are also not systematically different in their observable characteristics. Focusing on the minimum and maximum values reported for the M&A targets and the non-acquired control firms one observes a reasonable overlap in the realisations of all covariates of interest. This should allow to find proper control firms for the GPSM approach to work well.

Table 1: Summary statistics for M&A transactions and the random control group

Variable	Obs.	Mean	Std.Dev.	Min.	Max.
M&A targets (Full sample)					
Employment growth	1,039	0.016	0.126	-0.601	0.770
Ownership shares	1,350	0.870	0.269	0.010	1
Employees	1,350	529.323	2,425.608	1	42,375
Firm age	1,350	29.850	24.680	3	204
Capital intensity	1,350	437.928	5,062.970	3.723	170,615
Return on assets	1,350	0.121	0.102	0.001	0.699
Labor productivity	1,350	101.427	592.559	1.272	18,068
Publicly quoted	1,350	0.071	0.257	0	1
Subsidiaries	1,350	4.801	23.729	0	496
Shareholders	1,350	3.524	10.610	0	126
M&A targets (Minority M&As only)					
Employment growth	126	0.035	0.144	-0.435	0.518
Ownership shares	166	0.223	0.163	0.010	0.5
Employees	166	2,237.964	6,412.054	1	42,375
Firm age	166	38.801	34.290	3	204
Capital intensity	166	912.619	5,652.798	3.723	59,551
Return on assets	166	0.080	0.059	0.002	0.362
Labor productivity	166	172.006	924.126	2.084	10,410
Publicly quoted	166	0.422	0.495	0	1
Subsidiaries	166	23.789	62.875	0	496
Shareholders	166	16.572	26.224	0	126
M&A targets (Majority M&As only)					
Employment growth	913	0.013	0.123	-0.601	0.770
Ownership shares	1,184	0.960	0.108	0.5003	1
Employees	1,184	289.767	712.457	1	10,828
Firm age	1,184	28.595	22.754	4	189
Capital intensity	1,184	371.375	4,973.704	5.028	170,615
Return on assets	1,184	0.126	0.106	0.001	0.699
Labor productivity	1,184	91.531	529.610	1.272	18,068
Publicly quoted	1,184	0.022	0.147	0	1
Subsidiaries	1,184	2.139	5.743	0	85
Shareholders	1,184	1.694	2.284	0	48
Control firms					
Employment growth	92,479	0.006	0.157	-0.996	1.151
Ownership shares	161,389	0	0	0	0
Employees	161,389	140.127	1,329.914	1	103,569
Firm age	161,389	23.145	17.040	1	302
Capital intensity	161,389	294.554	3,559.554	0.123	578,820
Return on assets	161,389	0.096	0.105	0	15.052
Labor productivity	161,389	65.642	503.290	0.160	91,646
Publicly quoted	161,389	0.009	0.097	0	1
Subsidiaries	161,389	1.162	11.463	0	1,219
Shareholders	161,389	2.597	9.737	0	1,380

3.2 Estimation results

Table 2 summarizes our empirical results regarding step 1 from above for all five different samples considered. We find that the extent of acquired ownership shares is higher for larger targets (in terms of employment) and ones that are older (with the exception of M&As in non-EU-15 economies), less capital intense, more productive and more profitable. In non-EU-15 countries, however, less profitable targets are acquired more intense. This might reflect differences in the M&A motives across EU-15 and non-EU-15 economies. The interaction term between age and size is (significantly) negative, suggesting that the extent of traded ownership shares is reduced for larger and older takeover targets. Conditional on all other covariates the acquired ownership shares are larger for publicly quoted firms and decrease with the number of controlling shareholder and controlled subsidiaries. For purely domestic M&As, where both involved firms are located in the same country, the latter effect turns out to be statistically insignificant. However, the estimated effects for public quotation and the numbers of subsidiaries and shareholders suggest that corporate governance indicators are important determinates for the extend of acquired ownership shares in M&A transactions.

Table 2: Estimation of traded ownership shares (QMLE)

Variable	Full Sample	Domestic M&As	Cross-Border M&As	EU-15	Non-EU-15
Firm size (employees)	0.0051***	0.0016***	0.0034***	0.0057***	0.0029***
	(0.0004)	(0.0003)	(0.0003)	(0.0005)	(0.0008)
Firm age	0.0026***	0.0011**	0.0014**	0.0030***	0.0017
	(0.0008)	(0.0005)	(0.0006)	(0.0009)	(0.0017)
Firm age × firm size	−0.0004***	−0.0001	−0.0003***	−0.0005***	−0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0003)
Capital intensity	−0.0021***	−0.0012***	−0.0009***	−0.0022***	−0.0016**
	(0.0004)	(0.0002)	(0.0003)	(0.0005)	(0.0008)
Return on assets	0.0010***	0.0003*	0.0007***	0.0016***	−0.0011***
	(0.0003)	(0.0002)	(0.0002)	(0.0003)	(0.0004)
Labor productivity	0.0062***	0.0032***	0.0030***	0.0060***	0.0061***
	(0.0006)	(0.0004)	(0.0004)	(0.0008)	(0.0012)
Publicly quoted	0.0079***	0.0048***	0.0028**	0.0074***	0.0041**
	(0.0013)	(0.0008)	(0.0011)	(0.0019)	(0.0017)
Subsidiaries	−0.0001**	0.0000	−0.0001***	−0.0001**	0.0001**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Shareholders	−0.0008***	−0.0003***	−0.0005***	−0.0009***	−0.0006**
	(0.0002)	(0.0001)	(0.0001)	(0.0002)	(0.0003)
Time effects: $\chi^2[6]$	123.411***	61.027***	76.045***	109.416***	21.610***
Industry effects: $\chi^2[2]$	2.890	1.961	11.922***	2.134	5.056*
McFadden-R^2	0.1040	0.0823	0.1095	0.1000	0.1493
Observations	162,739	161,976	162,152	133,565	29,174

Notes: Marginal effects reported. Robust Standard errors in parentheses. *,**,*** Significant at 10-, 5- and 1- percent level.

Furthermore, due to the inclusion of a large control group it seems that general equilibrium effects of M&A's are less of importance, which in turn is an important assumption underlying

most treatment estimation approaches (see, e.g., Heckman, Lochner and Taber 1998).[6] Moreover, the (Pseudo-)R^2 measures are around 10 percent, suggesting that the included covariates are suitable to explain some variation in our treatment intensity, which in turn indicates that GPSM works well. This is also confirmed by a series of balancing property tests based on Hirano and Imbens (2004).[7] Accordingly, the inclusion of a control group containing non-acquired firms allows to identify appropriate matches for the evaluation of the M&A induced employment effects and any value of acquired ownership shares.

Figure 1 displays the estimated (average) employment effects of M&As and the corresponding 95 percent confidence intervals. Panel (a) focuses on the full sample contaning all M&As, whereas Panels (b) to (e) report the results for the above mentioned sub-samples containing either only domestic or cross-border M&As or for separated country groups containing either EU-15 economies or all other countries.

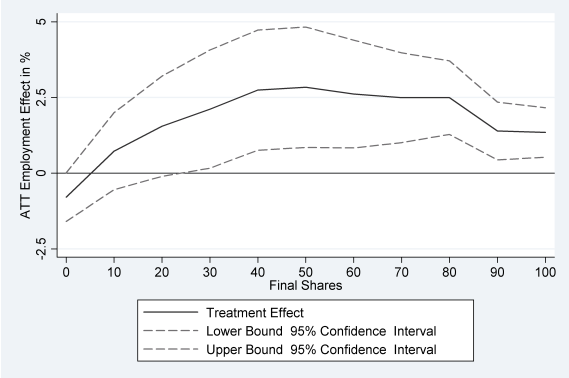
The figures in all panels indicate serious heterogeneity with regard to employment effects of M&As over the whole distribution of M&A intensities. Panels (a) to (d) report rather similar effects while there seem to be no statistically significant employment effects within the group of non-EU-15 countries. The full sample based estimates reported in Panel (a) show a slightly statistically significant negative employment effect for very small amounts of acquired shares. The employment effect increases with the extend of acquired ownership and becomes significantly positive when trespassing the 25 percent cut-off value. This effect remains positive for all other acquired shares above this value. In quantitative terms, however, the effect is halved for transactions above 90 percent of all outstanding shares.

It might be interesting to contrast these results with the ones of standard PSM methods using pre-defined ownership shares as treatment variable. Here, we estimate two alternatives: In the first (second) one, the treatment indicator takes on a value of one only for majority (minority) acquisitions above (below or equal) 50 percent of all shares. In both cases, the propensity score is based on the same covariates as in our GPS methodology and the other M&A transactions (either minority or majority) are excluded. We estimate positive and significant employment effects under both alternatives, which also confirms the findings reported in Oberhofer (2013) for similar data. The average employment effect if minority M&As amounts to 3.84 percent thus exceeding the one for majority takeovers (i.e, 2.24 percent). The reason for this becomes obvious form Panel (a) in Figure 1. The positive employment effect is lowest for 100 percent takeovers. Furthermore, full acquisitions constitute the vast majority of all cases. The PSM based estimate is given by a weighted average of all treatment effects which is dominated by

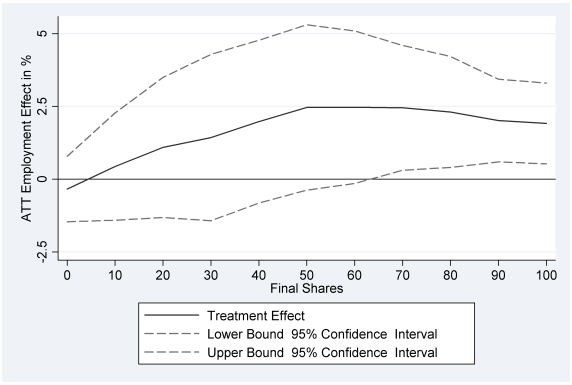
[6] General equilibrium effects of M&As might be present when the merging firms (representing the treatment group) affect the market situation of their non-merging competitors (the control group). So far, this issue has not been addressed in the empirical M&A literature.

[7] These are not reported in the Table but available from the authors upon request.

the 100 percent M&As when focussing on majority takeovers only.



(a)



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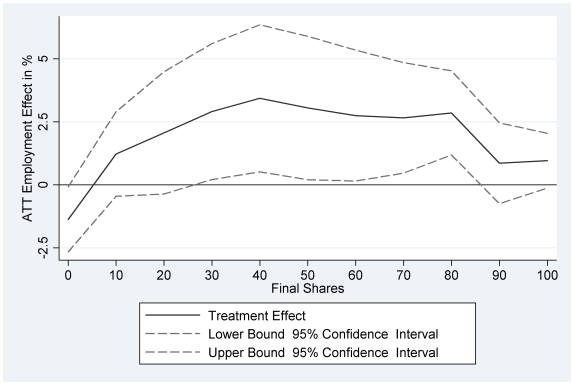

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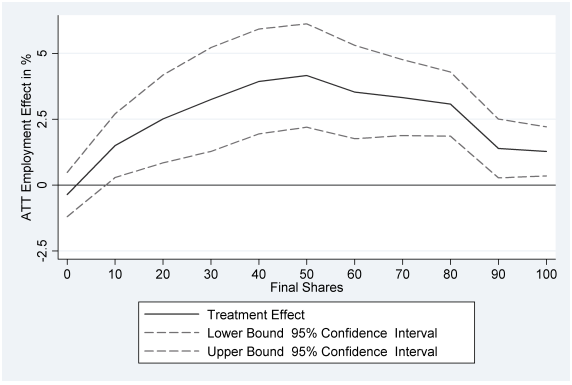

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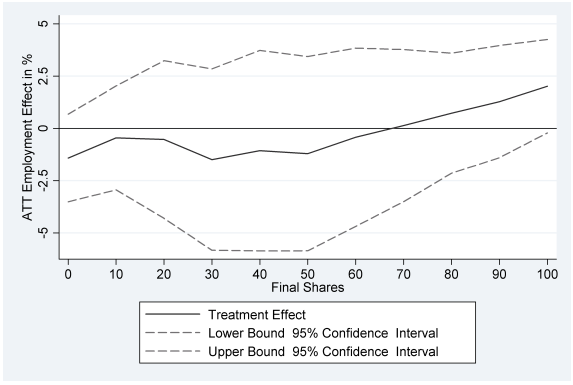

(e)

Figure 1: Estimated employment effects of M&As for samples containing (a) all M&As, (b) only domestic M&As, (c) only cross-border M&As, (d) firms in EU-15 economies M&As and (e) in Non-EU-15 economies. Confidence intervals are based on 500 bootstrap replications.

Panels (b) and (c) indicate that for cross-border M&As the positive employment effect is slightly more pronounced and statistically more significant than for purely domestic ones. For domestic M&As, employment only significantly increase above the 70 percent threshold of acquired ownership. Finally, for M&As carried out within the EU-15 economies, we estimate significant

and positive employment effects already above the 10 percent level of acquired shares. Overall, our findings clearly show that the empirical results regarding employments effects of M&As are not insensitive to the choice of ownership cut-off values. The quantitative magnitude and its statistical significance vary considerable over the whole range of possible M&A intensities.

4 Conclusion

This note proposes the application of a continuous treatment approach to analyze the economic effects of M&As. Rather than reducing variation in the treatment variable via the choice of more or less arbitrary cutoff-values in traded ownership shares, this framework allows to evaluate the impact of M&As over the whole distribution of treatment intensities. Furthermore, such an approach allows to more explicitly acknowledge the literature on the economics of corporate governance which identifies crucial constraints for the strategic decision making within firms. Using a sample of European M&As and relying on the example of post-M&A employment effects, we observe that the impact of M&As varies considerably over the traded ownership distribution. At least, our suggestion for applied work in M&A evaluation would be to provide comprehensive sensitivity analysis at different cutoff-values in traded ownership shares. The recent contribution of Guardabascio and Ventura (2014) makes GPSM methodes more easily applicable in standard econometric software. This, together with an increasing availability of M&A data that are coupled with ownership structure information, could foster a broader discussion on corporate governance issues for M&A evaluation.

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Table A. 1: Main corporate governance regulations in selected European countries

Austria	10 percent holders can demand a special audit, supervisory board can be dismissed (GmbH) 5 percent can force convening of an EGM (AG) 10 percent can call for special audit (AG)
Belgium	20 percent can requisite an EGM, 1 percent can ask for special audit of the company's books 30 percent holders can apply to have other shareholders transfer their shares
Denmark	10 percent can force EGM, special audit or commence a derivative action. 25 percent are needed for an inspection
Finland	10 percent can force EGM, 90 percent can seek buyout of a minority (private)
France	5 percent have resolutions before general meeting 10 percent can demand information from company and/or apply court for investigation, 95 percent can squeeze out a minority 10 percent can bring a derivative action, 25 percent can request EGM, amendments to constitution need 75 percent
Germany	10 percent can force special audit; 5 percent are required for an EGM 75 percent members of supervisory board can be removed, 10 percent action against wrongdoers
Greece	5 percent can force EGM, require information from directors, seek an investigation (public)
Ireland	based on UK law
Italy	10 percent can get court to investigate affairs, 10 percent can ask for EGM 20 percent can force an EGM; 2 percent can require investigations, 5 percent to challenge balance sheet 20 percent can force EGM, 95 percent compulsorily acquire the remaining 5 percent of members who refuse a bid (private)
Luxembourg	restrictions on share transfer: only permitted if approved by 75 percent of the other shareholders (private)
Netherlands	10 percent can force EGM or petition the court for an investigation. 95 percent can buy out a minority (private)
Norway	10 percent can request EGM or special audit (private) 5 percent an convene EGM, 10 percent is needed for special audit (public)
Portugal	5 percent can trigger an EGM, 10 percent can demand written answers from directors 1 percent can inspect books of the company, 10 percent can secure new appointments to the audit committee (public)
Spain	5 percent can call EGM, challenge resolutions. 5 percent can prevent the majority of shareholders ratifying a breach of duty
Sweden	10 percent can compel company to bring action against directors, can compel directors to declare a dividend equal to half of year's net profit, 10 percent < /span>can ask for special examiner or for special audit (private & public)
Switzerland	minority shareholders can request special audit, if denied 10 percent can apply court for special audit, force EGM
UK	5 percent of a company has the right item placed on the Agenda at a General Meeting. 10 percen t right to force an audit