Horizontal, Vertical, and Conglomerate Cross Border Acquisitions*

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Abstract

By using data on cross-border acquisitions (CBAs), this paper explores the distribution of alternative strategies pursued when multinational enterprises integrate a foreign subsidiary into their organizational structure. Based on a measure of vertical relatedness, each of the 165,000 acquisitions in our sample covering 31 source and 58 host countries can be classified as horizontal, vertical, or conglomerate. Three novel features of CBAs are highlighted. First, horizontal and vertical CBAs are relatively stable over time. Second, a considerable part of CBAs are conglomerate acquisitions whereby the financial sector is an important, though by far not the only, segment involved. Third, the wave-like growth of CBAs arises primarily from changes in conglomerate activity.

JEL classification: F15, F21, F23, F33

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1 Introduction

Economists have long been concerned with the potential benefits and costs of international financial integration. In this context, foreign direct investment (FDI) is often seen as more beneficial to other forms of international capital flows as it tends more stable and less linked to short-term fluctuations on financial markets. More specifically, trade economists often distinguish between horizontal and vertical FDI that identify different benefits of multinational enterprises (MNEs) with plants in several countries. Specifically, horizontal FDI rests on a firms' desire to access a foreign market by replicating production abroad. Vertical FDI relates to endowment seeking motives with firms breaking up the supply chain to take advantage of lower factor costs abroad. These different strategies are also thought to reflect the purported distribution of FDI between developed and developing countries.

Yet, while the distinction between different strategies pursued by MNEs is well-grounded in trade theory, there have been few attempts to directly observe the relative importance

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of horizontal and vertical FDI in the global economy. The main exception to this is Alfaro and Charlton (2009). Using firm level data from established affiliates for the year 2005, their paper is important in that it (a) developed a methodology to directly distinguish between alternative modes of FDI and (b) highlighted that, particularly between developed countries, vertical FDI is far more common than has long been thought. However, Alfaro and Charlton (2009) restrict the classification to horizontal and vertical integration in the manufacturing sector and do not explicitly highlight the changes in the composition of these strategies across time. Earlier studies relying on foreign affiliates' data of US manufacturers to analyze the role of different strategies of multinational integration are Brainard (1997) and Carr *et al.* (2002). A more recent example following this approach is Ramondo *et al.* (2014).

This paper follows a different strand of the literature that analyzes FDI through the lens of cross-border acquisitions (CBAs). Together with greenfield investment, CBAs constitute the main form of FDI and are a particularly important mode of entry into developed countries (Antràs and Yeaple, 2014, p.66). However, acquisitions abroad tend to be more volatile and can, in some years, be more or less equal to the importance of greenfield investment and during some periods (e.g. around 2007) exceed it. As with greenfield investment, CBAs involve all sectors and—reflecting the distribution of FDI in general—occur predominantly between developed countries. Yet, the share of developing countries hosting foreign acquisitions (mainly from developed countries) has recently increased markedly from around 10 per cent of total activity in 1990 to around 40 per cent in 2011.[1] The key role of CBAs has been recognized in the recent FDI-literature (both theoretical and empirical) including Di Giovanni (2005), Neary (2007), Nocke and Yeaple (2007), Head and Ries (2008), Hijzen *et al.* (2008), Coerdacier *et al.* (2009), and Erel *et al.* (2012). We contribute to this literature by uncovering the empirical importance of horizontal and vertical FDI from CBAs across 31 source and 58 host countries, but also across time with the data covering the 1990 to 2011 period. This therefore adds an important dimension to papers such as Alfaro and Charlton (2009) and Ramondo *et al.* (2014), which have analyzed horizontal and vertical FDI strategies with data confined to a cross-section, the manufacturing sector, and sometimes a single source country (typically the US). As such, our more comprehensive sample provides insights into how the different strategies that MNEs can pursue when acquiring established firms abroad vary across countries and time and what factors drive these differences.

The resulting distribution confirms some of the predictions of standard FDI theory. In particular, as expected from the discussion above, market size, but not wage (e.g. factor cost) differences matter for horizontal CBAs and vice versa for vertical CBAs. However, we also find that large parts of CBA activity do not fit into the conventional theories of multinational integration. In particular, even with a generous parametrization to determine vertical relatedness, more than 20 per cent of all deals are conglomerate, that is the acquiring and target firms neither share the same (horizontal) industry nor are they vertically

[1] Data on the composition of FDI can be found in the UN World Investment Report 2015. These data show that with greenfield investment, the sectoral split (by value and for 2014) between services and manufacturing is more or less equal. For CBAs, the UN data shows a slight dominance of services (around 53 per cent of the total by value for 2014).

linked through the supply chain (with a stricter benchmark, up to 40 per cent of CBAs are categorized as conglomerate). Since our CBA data come in form of a panel, they permit us to look at the development of the different FDI strategies across time, which gives rise to several observations that have, to our knowledge, not yet been made. Specifically, despite the pronounced wave-like fluctuations in overall FDI (and CBAs), the part attributable to horizontal and vertical strategies is less volatile than conglomerate CBAs, which seem to be driven by financial factors and react strongly to international valuation effects. Conversely, neither horizontal nor vertical CBAs appear to be significantly driven by valuation effects.

A number of new insights arise from these results. Most notably, while one of the 'attractive' features of FDI over other forms of capital flows is reportedly its lower volatility, this may be true for those parts that are associated with horizontal and vertical strategies, but less for conglomerate FDI. Furthermore, while economists have spent considerable effort in detailing the drivers (both theoretically and empirically) of horizontal and vertical FDI, more attention has to be directed at conglomerate strategies, which seem to account for a non-negligible part of global activity. The overall headline is that while it is important to understand the composition of international capital flows in gauging the effects of financial integration, it is equally important to account for the composition of different modes of FDI.

The paper is organized as follows. Section 2 reviews briefly the related literature. The method to distinguish horizontal, vertical, and conglomerate strategies from CBA data is outlined in Section 3 while Section 4 provides a descriptive overview of the resulting pattern of acquisition strategies. Section 5 outlines the empirical strategy allowing to connect the different forms of CBAs with established explanatory variables. Section 6 presents the results and explores the role of valuation effects upon conglomerate and other forms of CBAs. Section 7 summarizes and concludes.

2 CBAs as FDI: Related Literature

The literature on FDI is extensive with considerable emphasis on the distinction between horizontal and vertical strategies which relates to the potential drivers and effects of these two alternative forms of FDI. One stream of recent research has focused on CBAs as the mechanism via which firms establish control of affiliates in different locations and which is consistent with the observation that, in particular between developed countries, CBAs can account for a substantial proportion of FDI in any one year. Various theoretical and empirical contributions reflect the role of CBAs: Head and Ries (2009), Neary (2007), and Nocke and Yeaple (2007) represent theoretical contributions while empirical work includes contributions by Di Giovanni (2005), Courdacier *et al.* (2010), Hijzen *et al.* (2008), and Erel *et al.* (2012).

Reflecting the overall concern about FDI strategies, the empirical literature that employs CBA data has recognized the relevance of distinguishing between alternative forms of FDI, but the attempts to address it to date have been inadequate. In particular, studies have neither made an attempt to take directly into account the nature of vertical linkages between

acquiring and target firms nor account for the potential significance of CBAs involving conglomerate deals. Hijzen *et al.* (2008, p.851) and Courdacier *et al.* (2009, p.69) have only considered the distinction between horizontal (defined as the 'same' industry) and 'non-horizontal' CBAs; they also ignore the fact that MNEs are often highly diversified companies in the sense of operating in more than one industry. Breinlich (2008) separates horizontal CBAs (also defined as the 'same' industry) with the remainder as 'conglomerate' that goes beyond industry boundaries but makes no reference to the vertical relatedness that characterizes links between or, at a broad industry aggregate, possibly also within industries. Research in financial economics has also been guilty of this approach with diversifying CBAs accounted for by a dummy variable when involving acquisitions not in the same industry (see Erel *et al.*, 2012). We address the identification strategy below which—using near universal coverage of CBAs between 1990 and 2011—forms the basis for an assessment of the distribution of CBAs/FDI in the world economy and over time including the merger-waves that have characterized this time period.

3 Distinguishing Horizontal, Vertical, and Conglomerate CBAs

Key to uncovering the distribution of the different strategies pursued by MNEs is to develop a methodology identifying the relationship between the parent firm and the foreign subsidiary where an investment takes place. To obtain an overview of the different strategies, we have extracted all cross-border acquisitions (CBAs) from Thomson Reuter's SDC Platinum Database, which claims to have recorded virtually all mergers and acquisition deals between companies around the world since 1990.[2] SDC Platinum reports the standard industry classification (SIC) codes of the acquiring and target, denoted here by, respectively, SIC_α and SIC_τ, which provides the basis to identify the horizontal and vertical linkages between the merging firms.[3] In particular, in case $SIC_\alpha = SIC_\tau$, a deal occurs between firms sharing the same industry—a characteristic feature of a horizontal strategy were MNEs replicate production stages in several countries.

However, even a detailed industry classification remains uninformative about the extent of vertical integration. To see why, note that a scenario where an acquisition occurs across industries, that is $SIC_\alpha \neq SIC_\tau$, does not automatically imply that firms are connected through the supply chain, since such a deal could also involve an acquirer and target that have, with respect to the industries in which they operate, nothing in common. To establish whether merging firms are vertically integrated necessitates additional information on the upstream and downstream linkages across industries. For this, we draw on the results of Fan and Lang (2000) as well as Fan and Goyal (2006) who—following earlier work of

[2]SDC Platinum data has been used elsewhere in Rossi and Volpin (2004), Di Giovanni (2005), Kessing *et al.* (2007), Herger *et al.* (2008), Hijzen *et al.* (2008), Coerdacier *et al.* (2009), Erel *et al.* (2012), and Garfinkel and Hankins (2011) to study various aspects of CBAs.

[3]As with any classification system, SIC codes offer more or less aggregate levels to delimit industries ranging from a crude definition involving broad groups such as mining, manufacturing, or services at the one-digit level to a much more detailed classification encompassing around 1,500 primary economic activities at the four-digit level. To accurately identify investment strategies pursued by MNEs, we follow Alfaro and Charlton (2009) who advocate the use of a fairly disaggregated classification at the four-digit level.

McGuckin (1991) and Matsusaka (1996)—have established the vertical relatedness for a matrix containing around 500 industries based on the upstream and downstream value flows between them. In particular, from US input-output tables, they have calculated a so-called coefficient of vertical relatedness, denoted here by $V_{\alpha\tau}$, in terms of the fraction the input industry α contributes in added-value to the output of industry τ.[4] We match this coefficient of vertical relatedness with the four-digit SIC codes of the acquiring and target firm for each deal we extract from SDC Platinum. This methodology is similar to the one used in Alfaro and Charlton (2009) to classify the vertical relationship between plant level observations recorded in the WorldBase database as well as by Acemoglu *et al.* (2009) and Garfinkel and Hankins (2011) in addressing the factors that determine vertical integration. A classification of our CBA deals necessitates the specification of a cut-off value, denoted by $\overline{V}$, above which industries would be deemed vertically related. Fan and Goyal (2006, pp.882-883) consider a cut-off of 1% as well as a stricter value of 5% whilst Alfaro and Charleton (2009) and Acemoglu *et al.* (2009) use 5% and 10% to define vertical relatedness. Garfinkel and Hankins (2011) consider only the relatively low 1% cut-off level. Our baseline results will draw on the intermediate value of 5%. However, to trace out the effect on the distribution of different FDI strategies, as robustness checks, the results will be replicated with the alternative cut-off values.[5]

Another challenge in determining horizontal and vertical strategies is that firms in general, and MNEs in particular, often operate in several industries. In our sample, the acquiring firms are more diversified than the target firms in terms of reporting, on average, activity in around three and around two industries, respectively. Therefore, although the SDC database reports a primary SIC, we cannot be sure that, say, the absence of an overlap between these (primary) codes rules out a horizontal relationship, since a replication of production activities could also occur with some other industry segment of a diversified firm. To account for this, we have searched for horizontal and vertical connections between all permutations of the up to 6 different SIC codes reported for each deal by SDC Platinum.[6] Taken together, as with Alfaro and Charlton (2009), comparing the industries as well as drawing on the vertical relatedness between the acquiring and target firm provides a direct way to identify the importance of alternative strategies of multinational integration. Specifically, denoting the up to 6 industries of the acquiring firm with $\rho = \{1, 2, 3, 4, 5, 6\}$ and the industries of the target firm with $\sigma = \{1, 2, 3, 4, 5, 6\}$, gives rise to up to 36 pairs to establish a horizontal, that is $SIC_{\alpha}^{\rho} = SIC_{\tau}^{\sigma}$ or vertical relationship, that is $V_{\alpha\tau}^{\rho\sigma} > \overline{V}$. These pairs define the

[4]The US input-output tables are updated every 5 years to account for industrial and technological changes. However, Fan and Goyal (2006, p.882) find that the usage of input-output tables of different years has only a modest impact upon their results. Hence, we assume that these vertical relatedness coefficients hold over time which is consistent with the recent work of Alfaro and Chen (2012). Furthermore, using US input-output tables to define the vertical relatedness for a worldwide sample of MNEs, as is also done in Acemoglu *et al.* (2009), raises another issue whether this accurately reflects the technological conditions around the globe. To account for this, the sensitivity analysis of the results of Section 6 contains a robustness check with a sub-sample involving only US MNEs.

[5]Within a given supply chain, vertical relatedness can arise due to commodity flows with upstream $v_{\alpha\tau}^{u}$ and/or downstream $v_{\alpha\tau}^{d}$ activities. Following Fan and Goyal (2006, p.881), in our baseline scenario, no distinction will be made between these cases in the sense that the maximum value determines the coefficient of vertical relatedness, that is $V_{\alpha\tau} = max(v_{\alpha\tau}^{u}, v_{\alpha\tau}^{d})$

[6]Another possibility to avoid the pitfalls when MNEs operate in several industries is to focus on CBA deals where both the acquirer and target firm report only one SIC code. However, this sub-sample includes less than 20 per cent of all deals and will, hence, only be considered for our sensitivity analysis in Section 6.

following strategies:

- **Pure Horizontal**, that is deals where the firms share at least one pair of the same four-digit SIC code, but are never vertically related;
- **Pure Vertical**, that is deals where the acquirer and target operate in different industries, but share at least one pair of SIC codes exceeding the threshold value defining vertical relatedness;
- **Pure Conglomerate**, where, across all the 36 possible combinations of SIC codes, a deal involves firms that neither share the same industries nor are vertically-related; and a
- **Residual (Complex)**, where it is not clear whether a deal is driven by a horizontal or vertical motive (or both).

Table 1 summarizes the definition of the various FDI strategies that can be identified by means of our CBA data.

Table 1: Strategies of Cross-Border Acquisition

Strategy	***Horizontal Relatedness***	***Vertical Relatedness***	***Description***
Pure Horizontal	$\exists \rho, \sigma \vert SIC_{\alpha}^{\rho} = SIC_{\tau}^{\sigma}$	$V_{\alpha\tau}^{\rho\sigma} < \overline{V} \; \forall \; \rho, \sigma$	Replication of production by acquiring a foreign facility in the same industry and on the same stage of the supply-chain.
Pure Vertical	$SIC_{\alpha}^{\rho} \neq SIC_{\tau}^{\sigma} \; \forall \; \rho, \sigma$	$\exists \rho, \sigma \vert V_{\alpha\tau}^{\rho\sigma} > \overline{V}$	Fragmentation of production by acquiring a foreign facility in a different industry and production stage but located within the same value-chain.
Pure Conglomerate	$SIC_{\alpha}^{\rho} \neq SIC_{\tau}^{\sigma} \; \forall \; \rho, \sigma$	$V_{\alpha\tau}^{\rho\sigma} < \overline{V} \; \forall \; \rho, \sigma$	The merging firms are neither horizontally related through sharing the same industry nor are they vertically connected through the supply-chain.
Residual (Complex)	$\exists \rho, \sigma \vert SIC_{\alpha}^{\rho} = SIC_{\tau}^{\sigma}$	$\exists \rho, \sigma \vert V_{\alpha\tau}^{\rho\sigma} > \overline{V}$	Cases where either the classification is unclear (or the MNE pursues a complex strategy).

Inevitably, the definition of horizontal and vertical strategies is not always unambiguous as the classification depends on the cut-off value of vertical relatedness or the level of detail of the SIC codes as discussed above. Furthermore, aside from the established pure horizontal and vertical group, two additional cases arise. The first is pure conglomerate acquisitions in which, across the potential 36 combinations of four-digit SICs, no horizontal or vertical relationship is found. While this strategy has been noticed in the finance literature, it has by and large been ignored in the economic analysis of FDI and, as mentioned above, never been characterized beyond the crude criterion of firms operating outside the same industry. Secondly, since our classification method looks for industrial connections across

multiple combinations of SIC codes reported by the acquiring and target firm, deals can also exhibit both, a horizontal and a vertical relationship. This 'non-pure' case does not lend itself to a straightforward interpretation. In particular, though Yeaple (2003) has developed a theory of so-called 'complex FDI', where MNEs are thought to pursue a combination of horizontal and vertical strategies, other interpretations where overlaps reflect e.g. a classification issue are also conceivable. To indicate that we remain agnostic about the exact interpretation of 'non-pure' CBAs, we prefer to refer to this group as a 'residual'. In any case, our residual (complex) group is less of a concern since the results below focus on the 'pure' horizontal, vertical, and conglomerate strategies that lend themselves to a relatively clear interpretation.[7]

4 An Overview of CBAs between 1990 and 2011

For the 1990 to 2011 period, this section provides a descriptive overview of our sample with 165,106 CBAs reported by SDC Platinum during that period. The descriptive overview, as well as the econometric analysis of Sections 5 and 6, focus on the number of observed deals rather than their value. This is because in more than half of the cases, the deal value has not been disclosed by the merging companies[8], so the coverage of the number of observed deals is much more complete. However, the number of deals follows by and large the observed pattern of the value data (Hijzen *et al.*, 2008, pp.852ff; Erel *et al.*, 2012, pp.1053ff.).

Our sample includes all deals by MNEs headquartered in one of the 31 source countries[9] listed in the data appendix. These source countries account for more than 95 per cent of all deals reported in SDC during the period under consideration. The left column of the top panel of Table 2 reports the top-ten source countries for CBAs. A handful of large and developed source countries including the United States, the United Kingdom, Canada, Germany, and France account already for more than 50 per cent of all deals. Furthermore, the Netherlands, Sweden, and Switzerland, which belong to the economically and financially most developed countries, are also important sources of international merger activity. Comparing the top-ten source with the largest host countries at the bottom left of Table 2 reveals a similar degree of concentration and a noteworthy overlap that has also been documented with other FDI data (see e.g. Brainard, 1997, pp.525-526). The main difference between the most important source and host countries is that emerging markets such as China and some large southern European countries such as Spain and Italy replace the above mentioned small developed countries when reporting the main recipients of CBAs.

The bottom panel of Table 2 provides a breakdown of the CBA deals between high income (or developed) countries as defined by the World Bank and middle as well as low income (or developing) countries. In line with the distribution of FDI in general, deals between developed countries dominate by accounting for almost 75 per cent of all CBAs. Acquisitions by

[7] Considering deals between single business firms discussed in footnote 6 eliminates again the contingency of finding acquisitions meeting both criteria defining horizontal and vertical integration.

[8] See also Di Giovanni (2005, p.134).

[9] The country where a MNE is headquartered is here considered to be the *ultimate* source country reported in SDC. This might matter when acquisitions occur through complex ownership chains. However, in around 80 per cent of the deals in our sample, the immediate and ultimate source country are identical.

Table 2: Overview of the geographic Distribution of CBA Deals (1990-2011)

Source countries

Rank	# All CBAs		# Horizontal CBAs		#Vertical CBAs		#Conglomerate CBAs		#Residual (Complex) CBAs	
1.	United States	40,209	United States	6,548	United States	11,944	United States	15,124	United States	6,593
2.	United Kingdom	20,973	United Kingdom	4,367	United Kingdom	5,416	United Kingdom	8,125	United Kingdom	3,065
3.	Canada	13,053	France	2,902	Canada	4,339	Canada	3,917	Canada	2,773
4.	Germany	11,520	Germany	2,347	Germany	3,309	Germany	3,867	Germany	1,997
5.	France	11,111	Canada	2,024	France	2,929	France	3,306	France	1,974
6.	Netherlands	7,452	Netherlands	1,562	Japan	2,237	Netherlands	2,586	Japan	1,224
7.	Japan	6,690	Sweden	1,424	Netherlands	2,162	Japan	2,411	Netherlands	1,124
8.	Sweden	5,931	Switzerland	1,165	Switzerland	1,596	Hong Kong	2,346	Australia	1,096
9.	Switzerland	5,757	Italy	895	Sweden	1,583	Switzerland	2,010	Sweden	1,053
10.	Australia	5,117	Australia	842	Australia	1,485	Sweden	1,871	Switzerland	986
	...	...	...	...	...	...	...	...	...	...
	Total	165,106	Total	31,772	Total	46,664	Total	58,816	Total	27,854

Host countries

Rank	# All CBAs		# Horizontal CBAs		#Vertical CBAs		#Conglomerate CBAs		#Residual (Complex) CBAs	
1.	United States	26,100	United States	4,746	United States	7,968	United States	8,899	United States	4,487
2.	United Kingdom	15,695	United Kingdom	3,038	United Kingdom	4,726	United Kingdom	5,331	United Kingdom	2,600
3.	Germany	12,144	Germany	2,246	Germany	3,514	Germany	4,485	Germany	1,899
4.	Canada	9,342	France	1,687	Canada	2,611	Canada	3,521	Canada	1,599
5.	France	8,639	Canada	1,611	France	2,372	France	3,217	France	1,363
6.	China	5,923	Spain	1,228	China	1,662	China	2,575	China	993
7.	Australia	4,925	Italy	992	Australia	1,472	Australia	1,972	Italy	803
8.	Spain	4,924	Sweden	897	Netherlands	1,334	Italy	1,766	Spain	758
9.	Italy	4,838	Netherlands	861	Italy	1,277	Spain	1,724	Australia	737
10.	Netherlands	4519	Australia	744	Sweden	1,237	Netherlands	1,591	Netherlands	733
	...	...	...	...	...	...	...	...	...	...
	Total	165,106	Total	31,772	Total	46,664	Total	58,816	Total	27,854

Distinguishing between high income (developed) countries and middle and low income (developing) countries

	# All CBAs	# Horizontal CBAs	#Vertical CBAs	#Conglomerate CBAs	#Residual (Complex) CBAs
Developed to developed country	121,559	23,256	35,067	43,144	19,792
Developed to developing country	37,038	6,983	10,143	13,104	6,853
Developing to developed country	4,470	935	945	1,835	759
Developing to developing country	2,295	598	509	733	450
Total	165,106	31,772	46,664	58,816	34,425

Table 3: Proportion of CBA Strategies across different Values of $\overline{V}$

Cut-off ($\overline{V}$)	Pure Horizontal	Pure Vertical	Conglomerate	Residual (Complex)
1%	8%	55%	20%	17%
5%	19%	28%	36%	17%
10%	35%	11%	44%	10%

developed countries in the developing world make up another 20 per cent or so. Acquisitions by developing countries are only a small fraction of the entire sample.

Following the classification procedure outlined in Section 3, Table 3 shows the distribution of CBA deals in our sample across the different FDI strategies. Our sample suggests that the proportion of horizontal and vertical motives when MNEs integrate foreign affiliates depends crucially on the cut-off value $\overline{V}$ defining vertical relatedness. In particular, with a relatively strict value of 10%, horizontal deals dominate. The opposite result arises when considering a cut-off of 1%, where 55 per cent of all deals are considered to be vertical, which coincides with the proportion reported by Garfinkel and Hankins (2011, p.520) for a sample with US multinationals. The shifts in the empirical importance of strategies across different values of $\overline{V}$ underscores the need to consider, as a sensitivity check, alternatives to the 5% cut-off value.

Regardless of the criterion to define vertical relatedness, Table 3 shows that horizontal and vertical strategies account only for roughly one half of the deals in our sample of CBAs. In particular, even when using a lenient 1% cut-off for $\overline{V}$, about one fifth of the deals are still considered to be conglomerate with much higher proportions arising with stricter values: with the 10% cut-off, the proportion of vertical deals falls while conglomerate deals account for over 40 per cent of the total sample of CBAs. To our knowledge, the FDI literature has by and large ignored the possibility that a considerable proportion of MNEs could pursue conglomerate strategies when investing abroad.

Figure 1 summarizes the distribution of CBAs across industries. In particular, the y-axis relates to the two-digit primary SIC code of the acquiring firm plotted against the two-digit primary SIC code for the target firm on the x-axis. The surface of the marker represents the proportional weight of the number of CBAs in a given combination of industries relative to the total number of CBAs. Intra-industry deals, defined as those that do not cross the two-digit SIC code between acquiring and target firm, are located on the main diagonal and are marked with boldface circles. Off-diagonal markers, with normal circles, indicate the importance of inter-industry deals occurring between broadly defined activities or even across sectors. The industries are arranged according to their SIC code meaning that the primary sector—that is agriculture, mining, and construction—appears on the bottom left followed by the manufacturing sector, transportation, wholesaling and retailing (distribution), financial services, and other services at the top right. Note that with the exception of financial firms and parts of the wholesaling and retailing sector, most of these acquisitions are intra-industry in nature.

Figure 1: Industrial Composition of CBAs, All Deals (165,106 Deals)

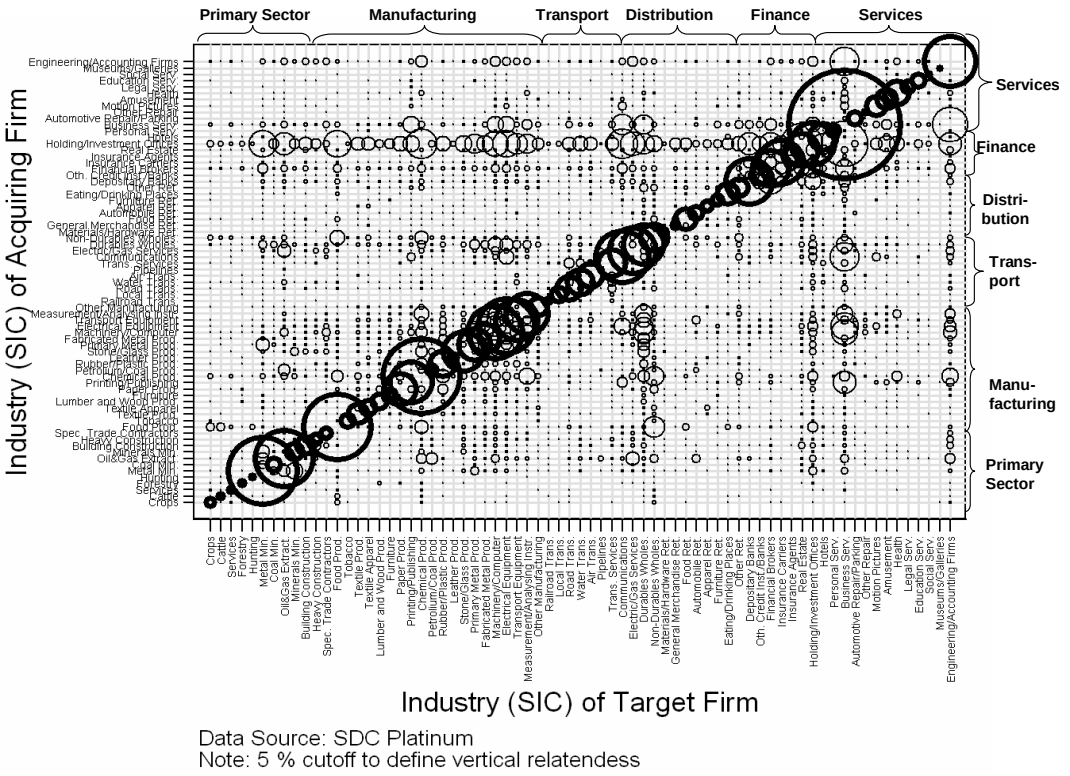


Table 4: CBA deals within the Manufacturing Sector (SIC 2000-3999)

	#All CBAs	#Horizontal CBAs	#Vertical CBAs	#Conglomerate CBA	#Residual CBAs
CBAs within manufacturing	42,030	8,219	12,679	7,689	13,443
Other CBAs	123,076	23,553	33,985	51,1127	10,982
Total	165,106	31,772	46,664	58,816	34,425

As shown in Figure 1, our sample covers all sectors. However, since important parts of the literature on FDI have only looked at manufacturing, it is worthwhile to report how our CBAs, and the resulting characterization of alternative strategies (defined here with $\overline{V} = 5\%$), are distributed within this specific sector. In particular, for the 1990 to 2011 period, Table 4 separates out CBAs within the manufacturing sector, defined as deals where the acquiring and target firms' primary SIC code are between 2000 and 3999. Of note, though manufacturing has been the focus of some empirical studies into FDI strategies (e.g. Carr *et al.*, 2001; Alfaro and Charlton, 2009), it accounts only for around one fourth of all CBA deals. Based on the definitions of Section 3, the following discussion compares the geographica and sectoral distribution of the pure strategies encapsulated in the full sample of CBAs.

As regards the group of pure horizontal deals, Table 2 reports the corresponding top-ten source and host countries. Compared with the full sample, the ranking changes barely with pure horizontal CBAs involving again mainly large developed countries. The main exceptions

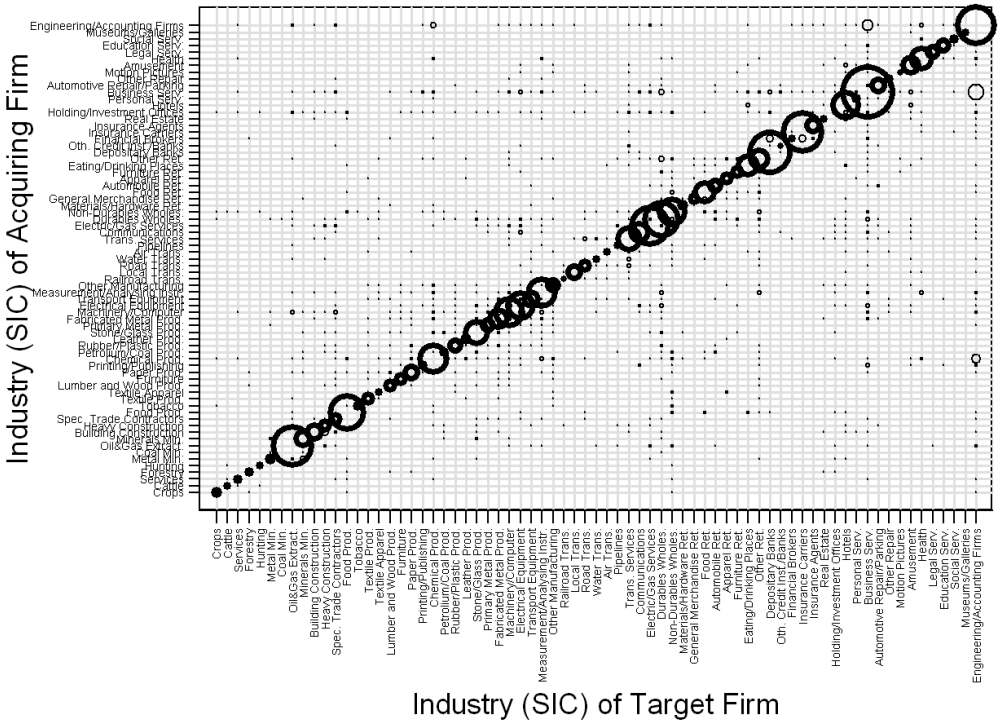
are that Japan is replaced by Italy and China by Sweden in the list of, respectively, the 10 most important source and host countries. Within the context of the theoretical literature on the MNE, this dominance of large and developed countries is perhaps not surprising since horizontal strategies are primarily thought to be market-access seeking meaning that countries with similar factor endowments and large domestic markets ought to be the main target for multinational integration.

With the surface of the markers representing again the weight relative to the total number of deals, Figure 2 displays the industrial composition of CBAs classified according to the method of Section 3 as 'pure horizontal'. Intuitively, almost all of these deals lie on the diagonal; that is they are intra-industry in terms of occurring between firms sharing the same two-digit primary SIC code. Though horizontal deals off the main diagonal can arise since the overlapping industries could also involve business segments that are not the primary activity of an acquiring or target firm, within the current sample, this scenario is empirically unimportant. In manufacturing, horizontal deals within food production (SIC 20), chemical products (SIC 28), measurement and precision instruments (SIC 38), commercial machinery (SIC 35), and electrical equipment (SIC 36) are the most important. Though the manufacturing sector accounts for around 25 per cent of horizontal CBAs (see Table 4), this strategy is also pursued elsewhere. In particular, a substantial amount of acquisitions, where firms replicate activities abroad, arises also with business services (SIC 73), engineering and accounting firms (SIC 87), and hotels (SIC 70) in the services sector, depository banks (SIC 60) and insurance carriers (SIC 63) in finance, wholesaling (SIC 50, 51) in the distribution sector, electric, gas and sanitary services (SIC 49) in the transportation and public utilities sector, or oil and gas extraction (SIC 13) in the primary sector.

Less consistent with conventional theories of the MNE is that, as shown in Table 2, economically developed source *and* host countries dominate in CBAs involving acquiring and target firms that operate on different stages of the same supply chain. In contrast to this, theories about vertical integration such as that of Helpman (1984) suggest such CBAs to be driven by the desire to exploit relative endowment differences and, hence, should mainly involve host countries with different factor endowments and lower wage cost. By and large, the top-ten hosts for vertical deals reported in Table 2 do not fall into the group of low-wage countries. The only exception is China that might attract deals motivated by the desire to outsource labor intensive production stages. Furthermore, similar to the overall sample, the breakdown in the bottom panel of Table 2 reveals that regardless the development stage of the involved countries, around one fourth of all deals are classified as vertical (defined with $\overline{V} = 5\%$). This confirms the observation of Alfaro and Charlton (2009) that substantial parts of FDI between developed countries are driven by a vertical strategy. Finally, Table 4 shows that, similar to the overall sample, around one fourth of vertical CBAs occurred in the manufacturing sector.

Figure 3 depicts the industrial composition of the deals classified as pure vertical using again the 5% cut-off level. Though, compared with horizontal CBAs, the markers are slightly more dispersed, the bulk of deals involving firms that operate on different stages of the same supply chain still lies on the main diagonal marked by the bold circles representing

Figure 2: Industrial Composition of Horizontal CBAs (31,771 Deals)

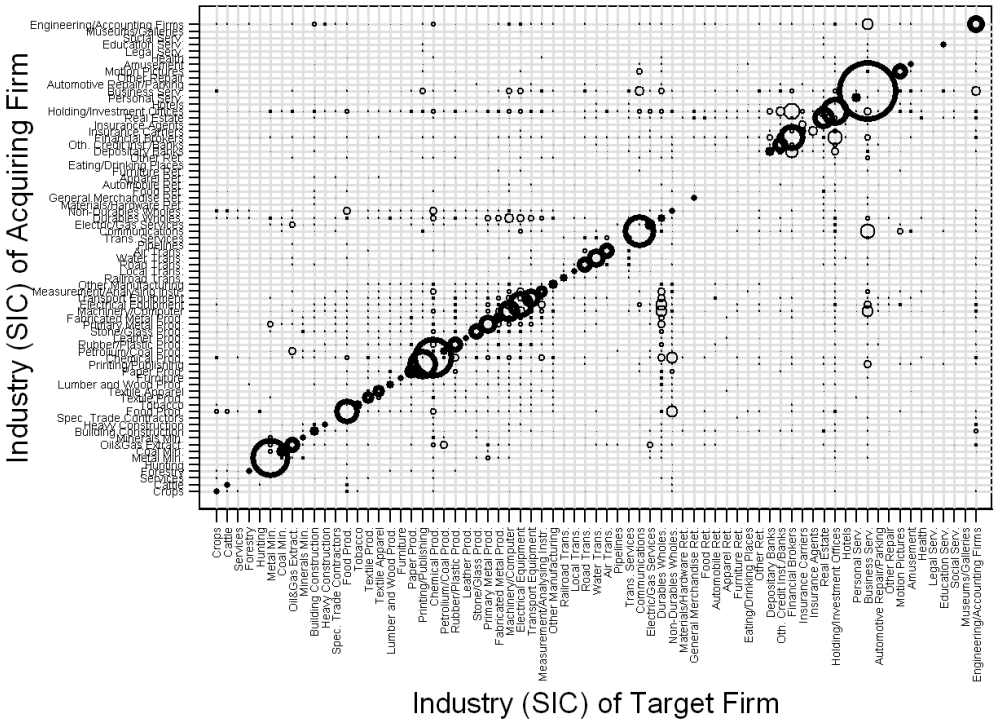


intra-industry activity. For the case of vertical acquisitions, these are firms that operate on slightly different production stages within the same two-digit SIC code. The empirical dominance of "intra-industry" vertical integration was first observed by Alfaro and Charlton (2009) by looking at the manufacturing sector. However, in our more comprehensive sample, intra-industry CBAs do not only arise in large numbers in the manufacturing sector—mainly within chemical products (SIC 28), electrical equipment (SIC 36), printing and publishing (SIC 27), or food production (SIC 20)—but also elsewhere, including in business services (SIC 73), communications (SIC 49), metal mining (SIC 10), or financial brokers (SIC 62) and holding companies (SIC 67) in the finance industry.[10]

As noted above, most of the FDI literature has focused on the distinction between horizontal and vertical FDI whereas conglomerate strategies rarely draw attention. In contrast, against the background of an alleged conglomerate domestic merger wave in the US during the 1960s and 1970s (see e.g. Matsusaka, 1996), the possibility of diversifying mergers and acquisitions

[10]CBAs involving the distribution and retailing sector are relatively rare, which manifests itself in a gap in the markers along the diagonal of Figure 3. Referring back to the observation of footnote 6 that a vertical relationship can arise with the upstream and the downstream activities, this may matter: Conventional theories of the MNE connect the motives for vertical integration with endowment-seeking. However, the (forward) integration of a distribution network might be driven by market access considerations that have more in common with motives that are usually attributed to horizontal strategies. Though such cases are empirically unimportant, a robustness check will be carried out in Section 6 distinguishing between cases where the vertical relationship arises only with, respectively, the upstream and downstream stages of the supply chain.

Figure 3: Industrial Composition of Vertical CBAs (46,664 Deals)

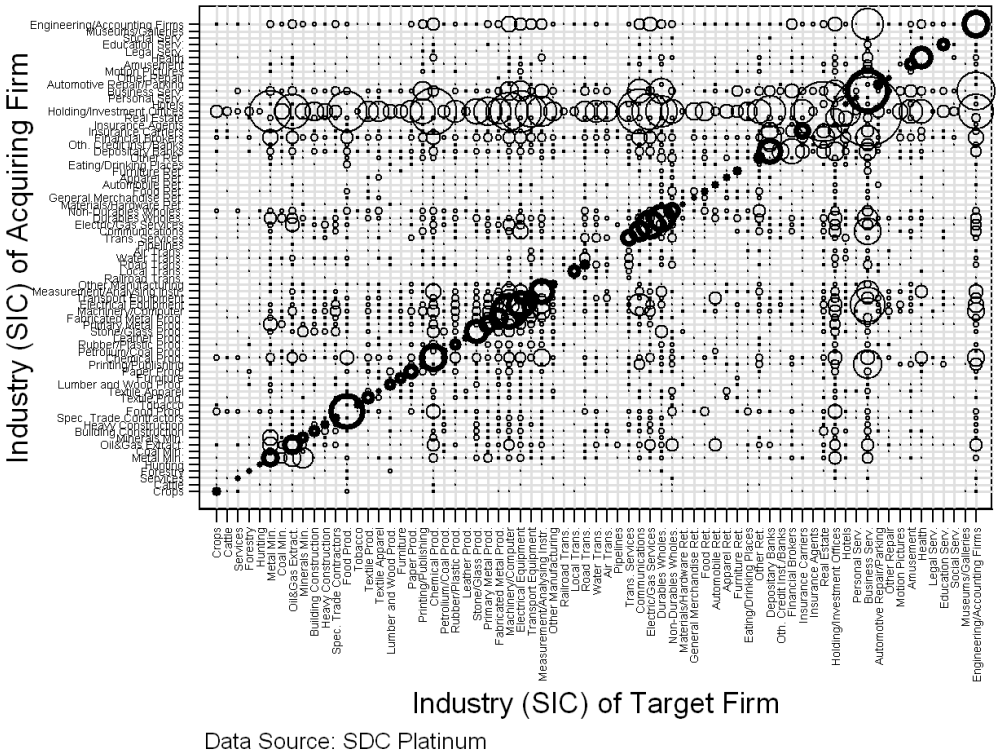


has received more attention in the finance and industrial organization literature. Instead of exploiting synergies between industries when replicating production processes in several locations or outsourcing production stages to low wage countries, financial frictions (e.g. Williamson, 1970) or corporate governance problems manifesting themselves in principal-agent issues between shareholders and management (e.g. Amihud and Lev, 1981; Williamson 1981, pp.1557ff.; Mueller, 1969) provide, arguably, motives for conglomerate mergers and acquisitions. When analyzing the empirical distribution of CBAs, as far as we are aware, financial and corporate governance motives have by and large been neglected. Exceptions to this include Rossi and Volpin (2004), who suggest that acquisitions involve often host countries with poorer shareholder protection than the source country and, hence provide a vehicle to export high corporate governance standards. Furthermore, Erel *et al.* (2012) suggest that CBAs can be a reflection of financial arbitrage arising in incompletely integrated capital markets (see also Baker *et al.*, 2008). However, neither of these papers suggest that corporate governance or valuation effects could be particularly relevant to explain conglomerate CBAs.

Recall from Table 3 that a substantial number of our CBA deals appear to be conglomerate in nature. Furthermore, the breakdown in Table 2 suggests that acquiring and target firms in developed countries account again for around 75 per cent of all conglomerate deals. Using the method of Section 3 with the 5 % value for $\overline{V}$, Figure 4 displays the industrial composition

of the more than 58,000 deals classified as pure conglomerate. In general, compared with horizontal and vertical CBAs, the resulting pattern exhibits more dispersion across different sectors and industries and involves substantial inter-industry activity. This is perhaps not surprising since the distinctive feature of conglomerate strategies is diversification in terms of combining firms that operate in entirely different industries. Compared with the previous figures, another obvious difference is that many conglomerate deals involve the finance sector. Specifically, more than 40 per cent of the firms making a conglomerate acquisition affiliated themselves primarily to this sector. With a corresponding fraction of 20 per cent, particularly dominant are holdings and investment offices (SIC 67) as an acquirer with targets located across all sectors. These deals are undertaken by private equity firms, investor groups, asset management firms, etc. Berkshire Hathaway would be a well-known example for this case with ownership (or part ownership) in a broad range of activities including confectionary, clothing, transport, retail, the food industry, gas and electrical utilities among many others. With a fraction of slightly more than 10 per cent, conglomerate deals occur less commonly within manufacturing (see Table 4). However, conglomerate deals with an acquiring firm that is primarily affiliated to the manufacturing sector can, for example, be found in substantial numbers with highly diversified industrial conglomerates such as Siemens, Mitsubishi, or General Electric (GE). The latter operates e.g. across activities as diverse as aircraft, oil and gas, household appliances, and healthcare.

Figure 4: Industrial Composition of Conglomerate CBAs (58,816 Deals)



One advantage of our panel data on CBAs is that, in contrast to the cross section employed by Alfaro and Charlton (2009), the evolution of the different strategies pursued by MNEs can be traced over time. Figure 5 depicts this development for the 1990-2011 period. One of the features of globalization in recent decades has been the wave-like growth of international mergers and acquisitions. Note that the merger-waves peaked in the year 2000 around the bursting of the Dotcom bubble and again in 2007 with the beginning of the global financial crisis. Within the present context, it is perhaps worth noting that the observed international merger waves are unlikely to be driven by the determinants commonly associated with horizontal or vertical strategies. The reason is that variables such as market size or differences in factor cost change gradually rather than exhibiting dramatic upsurges that come to an abrupt end.

Figure 5: CBAs Over Time and Their Composition: 1990-2011

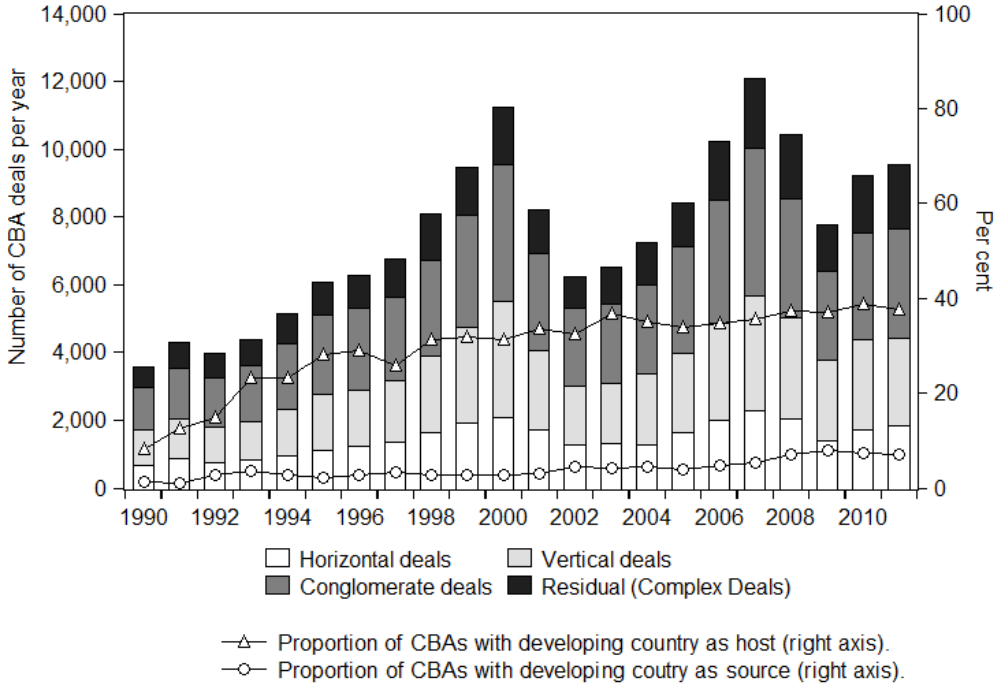


Figure 5 shows that horizontal and vertical FDI have been relatively constant over the whole period. There were less than 1000 horizontal deals per year at the beginning of the 1990s and the corresponding number stood at around 1500 deals at the end of the sample period. Vertical deals grew from around 1000 per year to around 2500 during the period under consideration. Conversely, conglomerate acquisitions tripled from around 1000 deals to around 3000 deals. Also, conglomerate CBAs contributed more to each merger wave. In particular, at the end of the 1990s, they increased to more than 4000 deals per year and reached an even higher peak in 2007 with almost 4500 deals. An equivalent growth and subsequent collapse did not arise with horizontal and vertical acquisitions. Finally, during the period under consideration, the importance of the developing world within the international market for corporate control has increased noticeably. In particular, Figure

5 shows a clear upward trend in the percentage of CBAs where the host was a developing country.

5 Econometric Strategy: Location Choice and the International Market for Corporate Control

5.1 Background

As discussed above, in particular between developed countries, CBAs are by far the most common form of FDI and the data on the corresponding deals—that are henceforth indexed with $i = 1, \ldots, N$—are available on an almost universal basis. Also, the acquisition of a foreign firm can be seen as an event uncovering a location choice. To formalize such choices, Head and Ries (2008) model FDI as an outcome of the (international) market for corporate control. Specifically, to be able to outpay potential rivals during a bidding contest in year t, an acquiring MNE headquartered in source country s should derive the highest value $\nu^i_{sh,t}$ from taking over a target firm in host country h. This implies that the probability of a CBA deal between a given source and host country follows an extreme value distribution, such as the multinomial logit distribution used in Head and Ries (2008), to identify the MNE with the highest ability to pay (see also Hijzen *et al.*, 2008, p.857). Hence, as shown in this section, modelling FDI as an outcome of the market for corporate control connects naturally with the conditional logit framework that is commonly used to empirically study the firms' location choice problem (see e.g. Guimarães *et al.*, 2003).

Assume that the value $v^i_{sh,t}$ that an MNE headquartered in source country s can obtain from a CBA deal i in year t with a target firm located in host country h depends, among other things, on a set of variables $x_{sh,t}$ according to the equation

$$\nu^i_{sh,t} = x'_{sh,t}\beta + \delta_s + \delta_h + \delta_t + \delta_i + \epsilon^i_{sh,t} \quad \text{with} \quad \begin{array}{l} i = 1, \ldots, N; \\ s = 1, \ldots, S; \\ h = 1, \ldots, H; \\ t = 1, \ldots, T \end{array} \tag{1}$$

where β are coefficients measuring the direction and magnitude of the impact. Here, $\epsilon^i_{sh,t}$ is a deal specific error term, to be specified below, that accounts for the stochastic uncertainty when an MNE gauges the future value of acquiring a foreign firm. To accommodate for panel data, (1) includes a full set of constants pertaining to the firms involved in a given deal δ_i, source country δ_s, host country δ_h, and year δ_t.

To reflect the differences between investment strategies, $x_{sh,t}$ includes variables associated with the motives for horizontal and vertical integration. Here, the real GDP of the host country is used to capture the market access motive. For CBAs driven by a horizontal strategy, GDP is expected to produce a positive sign.[11] Conversely, differences in the cost

[11] Carr *et al.* (2001) use the sum of the GDP between of the source and host country to capture the joint

and endowment of production factors such as labor provide the determinant associated with vertical strategies. To capture this, Carr *et al.* (2001) employ international skill differences measured by an index of occupational categories. Arguably, this approach suffers from several caveats. Firstly, the sign reversals between cases where the source or host country is skill abundant make it difficult to interpret the coefficient of international skill differences (Blonigen *et al.*, 2003). Secondly, national idiosyncrasies in labor market regulations, taxation, or social security contributions could drive a wedge between factor endowments and the factor costs that, ultimately, affect an MNEs decision to relocate a production stage. Based on this observation, Braconier *et al.* (2005, pp.451ff.) connect vertical FDI directly with international wage differences between skilled and unskilled labor. Thereto, they draw on the Prices and Earnings data of UBS (various years) which provides a unique survey of the salaries of various professions in the capital city or the financial center of a large number of countries. Following Braconier *et al.* (2005, pp.451ff.), for each host country, we have calculated the skilled wage premium SWP by taking the ratio between the wage of a skilled profession—taken to be engineers—and an unskilled profession—taken to be a toolmaker in the metal industry. A high value of SWP indicates that skilled labor is relatively scarce and, in turn, expensive compared with unskilled labor. For vertical deals, SWP is expected to have a positive effect indicating that countries with relatively cheap unskilled labor lend themselves to hosting labor intensive stages of the supply chain.[12]

The following variables are conventionally used to control for other determinants affecting a MNEs' desire to acquire a foreign subsidiary. Since it is arguably less costly to monitor affiliates in nearby countries (Head and Ries, 2008), geographic proximity, measured by the $DISTANCE$ between capital cities, and cultural proximity, measured by common $LANGUAGE$ dummy variable, are thought to foster CBAs. Furthermore, trade cost and regional economic integration also matter though the corresponding effect is ambiguous. In particular, a reduction in trade barriers increases the scope to serve a market by exports instead of local production, and hence undermines (horizontal) CBAs, whilst economic integration facilitates the fragmentation of a production process and ship intermediate goods across the border, which would foster (vertical) CBAs (see Hijzen *et al.*, 2008). We control for such effects by introducing a dummy variable for country-pairs located within the same customs union (CU) as well as a measure of $TRADE\ FREEDOM$ within a given host country to proxy for the existence of formal and informal trade barriers. The political and legal environment matters in the sense that MNEs are probably reluctant to invest in countries with weak property rights for foreign investors, which is measured by an index on $INVESTMENT\ FREEDOM$. Aside from the quality of formal rules protecting foreign investors, their enforcement might also matter. Wei (2000) finds indeed evidence that endemic $CORRUPTION$ deters FDI.[13] High $CORPORATE\ TAXES$ in the host country

market size. However, since our specification includes a source country dummy variable δ_s absorbing the effect of the home market size, employing the sum of the GDP between of the source and host country yields an identical coefficient estimate.

[12]UBS (various years) also reports an index summarizing the labor cost across all 13 surveyed professions. This $WAGE\ INDEX$ will be used as robustness check when testing the nexus between labor cost and vertical CBAs in Section 6.

[13]In general, the empirical literature has related FDI to a large number of so-called institutional quality variables. However, most of these dimensions are closely correlated (Daude and Stein, 2007, pp.321ff.) and seem to measure similar effects of whether or not a country has put in place economic, legal, or political

relative to the source country could deter CBAs. The real $EXCHANGE\ RATE$ affects the relative price of a foreign acquisition (Froot and Stein, 1991). In particular, the cost of a CBA increase with the relative value of the host country currency meaning that the expected effect is negative. Finally, the period under consideration has witnessed the creation of the *EURO* zone, for which we control with a dummy variable (compare Coerdacier *et al.*, 2009). The data appendix contains an overview and a detailed description of all variables.

Since the possibility of diversification is largely ignored in the international economics literature, we are more agnostic about the theoretical priors for the determinants when considering their impact on conglomerate acquisitions. For example, economic integration or improving institutional quality could facilitate the acquisition of foreign subsidiaries, but also eliminate some of the frictions creating arbitrage opportunities for MNEs. Likewise, economically large countries have more firms providing cross-border arbitrage opportunities, but also imply that MNEs making an acquisition must compete with more domestic firms with better access to information about the local economic and political conditions. Furthermore, as noted in Section 4, financial firms that are often located in financial centers with an abundant supply of skilled labor are dominant acquirers in conglomerate CBAs. However, to uncover evidence on the conjecture that financial arbitrage is a particularly important motive for conglomerate CBAs, we will follow the work of Erel *et al.* (2012) in the finance literature, which employs the difference of the country-level market-equity-to-book-equity value ratio—or in short market-to-book ratio (MtB)—between source and host country. The expectation is that this yields a positive effect on CBAs, since a higher valuation of the source country companies puts them into the position to outpay foreign rivals when bidding for a target firm abroad. Differences in valuation can arguably arise from two sources. A first component, denoted by MtB^m, reflects mis-pricing arising from errors in the valuation as suggested by Shleifer and Vishny (2003). A second unexpected component, denoted by MtB^w, reflects surprising developments that should come from real wealth effects featuring in Froot and Stein (1991). To calculate these different components, we follow the method of Baker *et al.* (2008) who regress the current MtB onto the future stock market returns (see also Erel *et al.*, 2012).[14] The corresponding fitted value determines MtB^m whilst the residual determines MtB^w. Finally, to uncover the empirical role of corporate governance, Erel *et al.* (2012) and Rossi and Volpin (2004) use the difference of a $SHAREHOLDER\ RIGHTS$ index between the source and host country. The effect is positive when CBAs tend to involve source countries with better corporate governance standards than the host country.

5.2 Location Choices in a Conditional Logit Framework

Equation (1) forms the basis for our empirical strategy. However, only scant data is available on the expected value $\nu^i_{sh,t}$ of an acquisition. Though the price paid for a target firm could provide a proxy for $\nu^i_{sh,t}$, in more than half of the deals, such information has not been

mechanisms protecting investors.

[14]The resulting regression equation equals $MtB_t = 2.194 - 0.048FR_{t+1}(R^2 = 0.42)$ where FR denotes the future stock market return. With t-values of, respectively, 11.66 and 2.71 both coefficients are significant at any conventionally used level of rejection. Estimation occurred with panel data and fixed effects for 18 countries. Extending the future stock returns to $t+1$ and $t+2$ leaves the results largely unchanged.

reported to SDC Platinum (Di Giovanni, 2005, p.134). Instead, the observation of Head and Ries (2008) that acquisitions encapsulate a location choice within the market for corporate control can be used to avoid this missing data problem. Indeed, insofar as a CBA deal identifies the MNE of source country s deriving the highest expected value ν^i_{sht} of investing in host country h in year t, this implies that

$$d^i_{sh,t} = \begin{cases} 1 & \nu^i_{sh,t} > \nu^i_{s'h',t'} \\ 0 & \text{otherwise,} \end{cases} \tag{2}$$

where s', h', t' denote the choice set of, respectively, alternative source countries, host countries, or years to invest. Hence, location choices $d_{sh,t}$ constitute an almost universally observed variable to uncover the impact of the set of explanatory variables $x_{sh,t}$ upon CBAs. Econometric models that are capable to handle discrete choices include the conditional logit model, where $d^i_{sh,t}$ of (2) is the dependent variable (see e.g. Guimarães *et al.*, 2003). Consistent with the theoretical framework of Head and Ries (2008), conditional logit models draw on the notion that a CBA identifies the MNE with the highest bid ν^i_{sht} implying that the stochastic component $\epsilon_{sh,t}$ of (1) follows a (type I) extreme value distribution. Within the present context, the probability $P_{sh,t}$ of an acquisition involving source country s and host country h during year t is then of the multinomial logit form, that is

$$P^i_{sh,t} = \frac{\exp(x'_{sh,t}\beta + \delta_h)}{\sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T}\exp\left(x'_{sh,t}\beta + \delta_h)\right)}. \tag{3}$$

Owing to the exponential form of (3), all components δ_i, δ_s and δ_t that are specific to, respectively, a deal i, source country s, or year t drop out. Thus, only variables enter $x_{sh,t}$ that differ across alternative host countries h. The joint distribution over all deals i, source countries s, host countries h, and years t under consideration defines the log likelihood function $\ln L_{cl} = \sum_{i=1}^{N}\sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T}\ln(P^i_{sh,t})$. A symmetric treatment of deals implies that $P^i_{sh,t} = P_{sh,t}$, such that $n_{sh,t}$ can be factored out, that is $\ln L_{cl} = \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T} n_{sh,t}\ln(P_{sh,t})$. Inserting (3) yields

$$\begin{aligned} \ln L_{cl} \quad = \quad & \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T} n_{sh,t}(x'_{sh,t}\beta + \delta_h) \\ & - \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T}\left[n_{sh,t}\ln\left(\sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T}\exp(x'_{sh,t}\beta + \delta_h)\right)\right], \end{aligned} \tag{4}$$

from which the coefficients β can be estimated.

According to Guimarães *et al.* (2003), a drawback of the conditional logit model is that the estimation of (4) is unpractical when a large number of firms can choose to locate activities in a large number of countries. Indeed, since our sample contains tens of thousands of CBA deals which uncover the discrete choice from dozens of potential host countries, the estimation of a conditional logit model would be burdensome, since it requires the handling of a dataset with millions of observations.[15]

[15]Specifically, the number of observations is given by the product between the total number of deals N

5.3 Empirical Implementation via the Poisson Regression

To avoid the caveats of the conditional logit model, the count variable $n_{sh,t}$ containing the number of deals between source s and host country h during year t can be used as the dependent variable instead of the discrete choice indicator $d^i_{sh,t}$ per CBA deal i (Guimarães *et al.*, 2003). Basic count regressions impose a Poisson distribution on $n_{sh,t}$, that is

$$Prob[n = n_{sh,t}] = \frac{\exp(-\lambda_{sh,t})\lambda_{sh,t}^{n_{sh,t}}}{n_{sh,t}!}, \tag{5}$$

where $\lambda_{sh,t}$ is the Poisson parameter. Count distributions give rise to a preponderance of zero-valued observations that account naturally for the fact that more than 50 per cent of source-host country pairs in our sample did not witness a CBA deal during a given year. Furthermore, since a number $n_{sh,t}$ of acquisition events cannot adopt a negative value, Poisson regressions employ an exponential mean transformation to connect the Poisson parameter with the explanatory variables. For the present case with panel data containing $x_{sh,t}$ as explanatory variables and the source country δ_s, host country δ_h, and year δ_t specific constants, this yields

$$E[n_{sh,t}] = \lambda_{sh,t} = \exp(x'_{sh,t}\beta + \delta_s + \delta_h + \delta_t) = \alpha_{s,t}\exp(x'_{sh,t}\beta + \delta_h). \tag{6}$$

Here, $\alpha_{s,t} = \exp(\delta_s + \delta_t)$ absorbs the heterogeneity between pairs of source countries s and years t. As shown by Guimarães *et al.* (2003), specifying $\alpha_{s,t}$ as fixed effect and conditioning this out of the joint distribution of (6) and (5) over all source countries s, host countries h, and years t yields the (concentrated) log likelihood function

$$\begin{aligned} \ln L_{pc} \quad = \quad & \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T} n_{sh,t}(x'_{sh,t}\beta + \delta_h) \\ & - \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T}\left[n_{sh,t}\ln\left(\sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T}\exp(x'_{sh,t}\beta + \delta_h)\right)\right] + C. \end{aligned} \tag{7}$$

Since this differs from (4) only as regards the constant C, the estimates of the coefficients β of such a panel Poisson regression are identical to those of the conditional logit model (Guimarães *et al.*, 2003).[16] Aside from controlling for unobserved heterogeneity, employing a fixed effects Poisson regression produces, here, the desired equivalence with the coefficient estimates of the conditional logit model (4). Crucially, the source country and year-specific constants contained in $\alpha_{s,t}$ have to be treated as fixed effects in (6) and conditioned out to produce the overlap between (4) and (7). Conversely, the constant δ_h pertaining to the specific conditions in the host country appear as dummy variables in the fixed effects Poisson regression. Reiterating the point made at the end of Section 5.2, the key advantage of using a Poisson regression rather than the conditional logit model to estimate β is that the aggregation of CBA deals into a count variable $n_{sh,t}$ results in a dramatic reduction of the number of observations required for estimation.

and the set of host countries H.

[16] A derivation of this result is made available on request.

Owing to different asymptotic assumptions, the overlap between the conditional logit model and the Poisson count regression does not extend to the estimated standard deviations of β. A discussion of this can be found in Schmidheiny and Brülhart (2011, p.219). They show that clustering at the group level produces identical standard errors that can be estimated by block-wise bootstrapping, that is taking draws from blocks defined by α_{st}.

It is well known that the coefficients β of a (nonlinear) Poisson regression are not an estimate for the marginal effect. Rather, uncovering the marginal effect of a given variable $\widetilde{x}^k_{sh,t}$ upon the expected number $E[n_{sh,t}]$ of CBAs warrants the calculation the elasticity $\eta_{sh,t}$. In general, for the Poisson regression, the elasticity equals $\eta_{sh,t} = \beta \widetilde{x}^k_{sh,t}$, which differs across observations of $\widetilde{x}^k_{sh,t}$. To facilitate the interpretation of our coefficients, all variables will be transformed into deviations from their average values, that is $x_{sh,t} = \widetilde{x}_{sh,t}/\overline{x}_{sh,t}$ such that the value of β reports directly the elasticity of the Poisson regression calculated at the average conditions where $x^k_{sh,t} = 1$.

6 Results

Based on the empirical strategy of Section 5, columns (1) to (4) of Table 5 report the results of Poisson regressions upon the number $n_{sh,t}$ of CBAs between pairs of source and host countries during a given year. Column (1) uses the full sample of CBAs whilst, for the 5% value of $\overline{V}$, columns (2) to (4) contain only the number of deals associated with, respectively, the pure horizontal, vertical, and conglomerate acquisition strategies defined in Section 3. The common sample covers the 1995 to 2010 period (mainly since the variables $INVESTMENT\ FREEDOM$, $TRADE\ FREEDOM$, and $CORRUPTION$ only date back to 1995) and involves an unbalanced panel with 25,446 observations across the 31 source s and 58 host h countries listed in the data appendix. All specifications include the fixed effects $\alpha_{s,t}$ and a full set of host-country dummy variables δ_h. Note that with these, the interpretation of the coefficients relate to the importance of the variables beyond what is captured by the conditions that are specific to countries or certain years. This mitigates against finding spurious connections related e.g. to the observation of Table 2 that CBAs are concentrated in large and developed countries. Hence, without dummy variables, a close correlation between CBAs and economic size (GDP) might just indicate that large countries have, of course, a large number of potential acquiring and target firms.

Column (1) of Table 5 contains the results using all CBAs as the dependent variable. In total, across all sectors, the common sample includes 126,481 deals. Recall that the interpretation of the coefficients is not straightforward when their theoretical effect changes within a sample where CBAs are driven by various investment strategies. For example, SKP, but not GDP, has a significant effect which would be consistent with vertical rather than horizontal motives for multinational integration. Likewise, the significantly positive impact of customs unions (CU) suggest that, across all deals, economic integration leads to more foreign acquisitions, which is again consistent with a vertical strategy where the MNE exploits the possibility to ship goods between the different plants of a geographically fragmented supply chain. Aside from $TRADE\ FREEDOM$ and $INVESTMENT\ COST$, the other variables are

Table 5: Determinants of CBAs

Sectors:	All (primary, manufacturing, transport, distribution, finance, services)				CBAs by US MNEs within the manufacturing sector (SIC 2000-3999)			
Type of Deals:	All	Horizontal	Vertical	Conglomerate	All	Horizontal	Vertical	Conglomerate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP	0.011	0.075***	0.009	-0.029	0.277**	0.361***	0.227	0.223
	(0.018)	(0.024)	(0.023)	(0.021)	(0.118)	(0.081)	(0.139)	(0.169)
SWP	0.781***	0.283	1.030***	0.820***	0.906***	0.241	1.566***	0.260
	(0.156)	(0.193)	(0.209)	(0.185)	(0.337)	(0.626)	(0.474)	(0.672)
Distance	-1.101***	-1.253***	-1.035***	-1.114**	-1.706***	-1.495***	-2.310***	-1.838
	(0.033)	(0.036)	(0.035)	(0.041)	(0.355)	(0.433)	(0.465)	(1.733)
Language	0.092***	0.104***	0.086***	0.094**	0.180***	0.169***	0.153***	0.269
	(0.003)	(0.004)	(0.004)	(0.003)	(0.033)	(0.048)	(0.039)	(0.404)
CU	0.056***	0.008	0.052***	0.088***				
	(0.009)	(0.012)	(0.009)	(0.011)				
Trade Freedom	0.034	0.014	0.068	0.007	0.081	0.264**	0.065	0.038
	(0.043)	(0.053)	(0.074)	(0.053)	(0.067)	(0.113)	(0.095)	(0.156)
Investment Fd.	0.008	-0.069	0.011	-0.040	-0.011	-0.012	0.033	-0.091
	(0.080)	(0.087)	(0.107)	(0.108)	(0.106)	(0.240)	(0.146)	(0.347)
Corruption	-0.156**	-0.105	-0.099	-0.172**	-0.220*	-0.235	0.045	-0.260
	(0.063)	(0.070)	(0.076)	(0.086)	(0.117)	(0.312)	(0.224)	(0.175)
Corporate Tax	-0.329***	-0.209**	-0.315***	-0.412**	0.137	0.600*	0.160	-0.031
	(0.085)	(0.097)	(0.096)	(0.104)	(0.231)	(0.303)	(0.248)	(0.321)
Exchange Rate	-0.438***	-0.511***	-0.455***	-0.427**	-0.292***	-0.263	-0.345	0.396
	(0.067)	(0.075)	(0.077)	(0.076)	(0.093)	(0.217)	(0.248)	(0.257)
Euro	0.006**	0.009***	0.010***	-0.001				
	(0.002)	(0.003)	(0.003)	(0.003)				
$\alpha_{s,t}$	yes	yes	yes	yes	yes	yes	yes	yes
δ_h	yes	yes	yes	yes	yes	yes	yes	yes
#cba	126,481	24,133	36,334	45,251	7,803	1,359	2,587	1,517
#obs	25,446	25,446	25,446	25,446	826	826	826	826
$\ln L$	-49,116	-19,107	-22,967	-26,40	-1,674	-837.0	-1,103	-836.1

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$. Estimation of the panel Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010 period and include observations from 31 source and 58 host countries. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Block bootstrapped robust standard errors are reported in parantheses; 100 replications (blocks defined by α_{st}). * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

significant with plausible effects in the sense that an MNE is more likely to acquire a firm in nearby host countries, that share a common language and currency, have low levels of corporate taxation and corruption, and a cheap currency.

The differences in significance of the explanatory variables provide us with a "plausibility check" of our method to disentangle the various acquisition strategies from CBA deals. In particular, the theoretical literature ties horizontal strategies with the MNEs' desire to access markets whilst vertical strategies are thought to encapsulate the desire to outsource production stages to low wage countries. This divergent effect lies clearly in evidence when comparing the results of columns (2) and (3) of Table 5. In particular, column (2) with horizontal CBAs gives rise to a highly significant entry of GDP, but an insignificant entry of SWP, whilst, as expected, the converse situation arises in column (3) with vertical deals. The coefficients of Table 5 provide direct evidence that the differences between horizontal and vertical CBAs stipulated by established theories of the MNE manifest themselves in the data.

While not central to our focus here, we briefly note that some of the other variables vary across different categories. For example, conglomerate acquisitions are relatively sensitive to corporate taxes; customs and currency unions appear to have a differential effect depending on the acquisition strategy.

The differential impact of market size and the factor endowment difference variable on horizontal and vertical CBAs turns out to be robust to several modifications of the results of columns (2) and (3) of Table 5. Firstly, though Table 3 of Section 4 gave rise to a substantial shift in the proportion of horizontal and vertical deals when lowering the cut-off value $\overline{V}$ to 1%, this yields again coefficients that are consistent with the theoretical priors. Conversely, with the 10% cut-off for $\overline{V}$, SWP also significantly affects deals classified to be horizontal. This could suggest that the 10% cut-off to define vertical relatedness is too strict implying that some deals are classified as horizontal even though the acquiring and target firm are connected through the supply chain. Secondly, as mentioned in Section 3, deals between firms operating only in one industry, where ambiguities of finding multiple horizontal or vertical overlaps cannot arise, account only for a small fraction of the sample. In particular, in the 4,349 horizontal deals involving single industry firms, the market size effect is again significantly positive whilst the effect of the skilled wage premium (SWP) is insignificant. Conversely, both effects are insignificant for the case of vertical deals between single industry firms. The reason might be that this group only contains 1,462 deals or less than 5 per cent of all vertical deals included in column (3) of Table 5. Thirdly, further to the discussion of Section 3, we have also distinguished between cases where vertical integration arises with the upstream and downstream stages of the supply chain. Again, a significantly negative effect on the SKP but not on the market size variable arises regardless whether a forward or backward vertical integration is considered. Fourthly, the key distinction between horizontal and vertical CBAs holds also when we consider the somewhat broader defined $WAGE\ INDEX$ to reflect international differences in labor cost. For the sake of brevity, the results of these sensitivity checks are not reported here, but are available on request.[17]

[17]In view of the caveats noted in Section 4, we do not report the detailed results for the residual (complex)

As discussed above, the empirical literature on FDI has primarily focused on US MNEs and/or the manufacturing sector, which provides, arguably, the background for theories on horizontal and vertical FDI. Although a smaller sample inevitably ignores a large number of deals and reduces the heterogeneity[18] in the data, columns (5) to (8) of Table 5 follow this literature by replicating our results for US acquisitions and target and acquiring firms in the manufacturing sector (defined as primary SIC code = 2000 - 3999). This confirms our key finding.[19] In particular, market size (GDP) impacts exclusively upon horizontal deals, whilst international wage differences (SKP) matter only for vertical deals. For column (5) covering all strategies of multinational integration, a crucial difference to column (1) is that both GDP and SWP are significant. It is perhaps not surprising that the industrial motives embodied in market size and factor cost considerations apply more prominently to the manufacturing sector.

Considering different samples did not overturn the essence of our results. In particular, the further robustness checks pertain to a sample containing only deals with US firms as acquirer or target, to reflect that the technology inherent in the input-output tables defining vertical relatedness in Section 3 refers to the US. As regards the distinction between developed (high income) and developing (low and middle income) countries mentioned in Section 3, intuitive differences arise. Specifically, with deals within the developed world, which account for around 75 per cent of all activity, there is no longer a significant impact of international wage differences upon vertical CBAs. This is perhaps not surprising since outsourcing labor intensive production stages typically involves developing countries and emerging markets where wages are low. Contemplating deals from developed to developing countries confirmed this. Finally, as regards foreign acquisitions, China might be special case in the sense that a joint venture component is traditionally required in foreign investment. However, excluding the corresponding observations from the sample barely changed the coefficient estimates. For the sake of brevity, the results of these sensitivity checks are not reported here, but are available on request.

Table 6 adds explanatory variables measuring the differences in market-to-book (MtB) ratios between source and host country to reflect the possibility of financial arbitrage considered by Erel *et al.* (2012), and the differences in $SHAREHOLDER\ RIGHTS$ to reflect the governance motive of CBAs considered by Rossi and Volpin (2004). Recall that the market-to-book ratio was split into a component measuring mis-valuation (MtB^m) and a component measuring a relative wealth effect (MtB^w). The corresponding data are only available for 18 countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Italy, Japan, Netherlands, Norway, Singapore, Spain, Sweden, United Kingdom, United States). Hence, the sample with which we can test the financial arbitrage and governance motive contains only about one fifth of the observations used to calculate

group. However, in case of considering the 5 per cent value for $\overline{V}$, the impact of GDP was insignificant whilst SWP gave rise to a significant coefficient. However, this result was not robust to considering different cut-off values ($\overline{V}$), which, perhaps, underscores the non-pure nature of these deals combining horizontal and/or vertical elements.

[18] In particular, due to the lack of heterogeneity, the variables CU and $EURO$ drop out.

[19] The same can also be said when contemplating the results for the manufacturing sector across all source countries in our sample.

the results of Table 5 above. Nevertheless, aside from the lower significance of some coefficients that can be attributed to the reduced heterogeneity within a sample containing only developed countries, the impact of the common variables between the Table 5 and Table 6 is by and large similar. One notable difference is that a slightly significant effect arises with the SWP with horizontal CBAs in column 2 of Table 5. However, when considering the 1% benchmark for $\overline{V}$, which is a stricter criterion to identify horizontal deals, the significant effect of GDP and insignificant effect of SWP arises concurring with the theoretical prior.

The results of column (1) of Table 6 suggest that mis-valuation (MtB^w) impacts significantly upon the number of CBAs. Within the spirit of finance driven acquisitions proposed by Shleifer and Vishny (1993), aside from the conventional economic and geographical variables introduced above, CBAs can apparently also reflect the desire to exploit the relative undervaluation of target firms abroad. Contemplating the differences between columns (2) to (4), it is perhaps not surprising that a statistically significant effect of MtB^m arises only with conglomerate deals, where the coefficient, with an elasticity above one, is also economically large.[20][21] Furthermore, recall from Figure 4 that large parts of diversifying CBAs involve financial sector acquirers which, apparently, target undervalued firms to make arbitrage profits by exploiting international valuation differences. The effect of MtB^m is also consistent with the discussion around Figure 5, according to which merger waves manifest themselves primarily in the changes of conglomerate CBA activity. Through the mis-pricing effect, the burgeoning financial market at the end of the 1990s and before the global financial may have transmitted into the international market for corporate control. Conversely, the relative wealth effects inherent in MtB^w are neither significant nor are they economically important. Maybe, relative wealth effects are more important for specific firms or industries, but average out across aggregated counts of CBAs used here as the dependent variable. Finally, the corporate governance motive suggested by Rossi and Volpin (2004) matters regardless the pursued acquisition strategy in the sense that CBAs are likely to involve source countries offering relatively higher investor protection than the host country.

[20]To analyze the effect of financial variables on CBAs, Di Giovanni (2005) has looked at the impact of financial market size, measured by the capitalization of the domestic stock market relative to GDP. Crucially, his specification focuses on the degree of financial deepening in the source country emphasizing 'the importance of domestic financial conditions in stimulating international investment' (p.127). However, as discussed in Section 5, our location choice approach absorbs source country-specific variables such as the size of the domestic stock market in the fixed effect $\alpha_{s,t}$. One way to relax this would be to drop fixed effects and introduce financial deepening as an additional variable in a random effects Poisson regression. The corresponding results are consistent with the picture of Table 6. Crucially, financial deepening in the source country drives CBAs in general. However, this effect arises principally through the conglomerate part. For the sake of brevity, we do not report the detailed results, which are, however, available on request.

[21]Instead of following Baker *et al.* (2009) and Erel *et al.* (2012) and calculate the mis-pricing regression of footnote 15 with country-level MtBs, it would in principle also be possible to construct aggregate MtBs from the firms involved in CBA deals. As emphasized in Erel *et al.* (2012, pp. 1060ff.), the downside of this is that MtBs are available for publicly traded firms, which represent only a small part of the full sample. For our case, in around three quarters of the deals, detailed financial information is not available for both the acquirer and the target firm. Calculating nevertheless an aggregate MtB from the quarter of deals where we have the corresponding information and rerunning the regression of footnote 15 yields $MtB_t = 4.5310.01FR_{t+1}$ (R^2=0.31) with t-values of 25.5 and 1.21, respectively. Proceeding by calculating the mis-pricing and wealth components and plugging them into the regressions of Table 6 gave rise to a positive and significant effect for MtB^m (with a coefficient of around 1.5) and an insignificant effect for MtB^w. Yet, the different effect across FDI strategies disappeared. Perhaps, this suggests that financial arbitrage opportunities exploited via conglomerate CBAs arise mainly via the acquisition of non-public (or non-listed) firms.

Table 6: Adding Financial Arbitrage and Governance Motives

	All CBA	Horizontal CBA	Vertical CBA	Conglomerate CBA
	(1)	(2)	(3)	(4)
GDP	-0.005	0.130**	0.031	-0.138**
	(0.045)	(0.061)	(0.055)	(0.051)
SWP	0.201***	0.176*	0.284***	0.165*
	(0.060)	(0.090)	(0.080)	(0.085)
Distance	-0.883***	-0.964***	-0.858***	-0.904***
	(0.037)	(0.048)	(0.036)	(0.041)
Language	0.160***	0.179***	0.157***	0.157***
	(0.005)	(0.007)	(0.006)	(0.006)
CU	0.127***	0.069*	0.086***	0.190***
	(0.028)	(0.027)	(0.030)	(0.030)
Trade Freedom	-0.496	0.543	-0.571	-0.955*
	(0.550)	(0.714)	(0.649)	(0.525)
Investment Fd.	0.040	-0.232	0.113	0.078
	(0.148)	(0.185)	(0.154)	(0.174)
Corruption	0.057	0.096	0.132	-0.012
	(0.102)	(0.137)	(0.109)	(0.104)
Corporate Tax	-0.273*	-0.145	-0.131	-0.381**
	(0.141)	(0.155)	(0.135)	(0.156)
Exchange Rate	-0.626***	-0.725***	-0.841***	-0.512**
	(0.178)	(0.184)	(0.213)	(0.217)
Euro	0.026***	0.039***	0.036***	0.011
	(0.007)	(0.008)	(0.009)	(0.009)
MtB^m	0.929*	0.769	0.533	1.318**
	(0.496)	(0.537)	(0.457)	(0.647)
MtB^w	0.0001	0.0005	-0.0001	0.00002
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Shareh. Rights	0.138***	0.115**	0.176***	0.135**
	(0.045)	(0.053)	(0.056)	(0.056)
$\alpha_{s,t}$	yes	yes	yes	yes
δ_h	yes	yes	yes	yes
#cba	81,121	15,329	23,859	29,092
$\#\text{obs}_{pc}$	4,896	4,896	4,896	4,896
$\ln L_{pc}$	-16,851	-7,018	-8,697	-9,811

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$. Estimation of the panel Poisson regression with fixed effect α_{st} is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010 period and include observations from 18 (source and host) countries. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Block bootstrapped robust standard errors are reported in parantheses; 100 replications (blocks defined by $\alpha_{s,t}$). * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

7 Summary and Conclusion

This paper has employed a large panel encompassing a near-universal coverage of cross-border acquisitions (CBAs) relating to 31 source and 58 host countries across the 1990 to 2011 period to address the alternative forms CBAs may take. For our dataset, using detailed information on all the industrial affiliations of the acquiring and target firm, we can directly identify horizontal and vertical linkages for each CBA deal. Consistent with the priors of the literature on the MNE, we find that the number of horizontal CBAs, where target and acquiring firm operate within identical industries that are unrelated through the supply chain, tends to increase with the market size of the involved countries. Conversely, international differences in labor cost affect vertical CBAs, where the acquiring and target firms operate in different industries that are connected through the supply chain. Strategies that neither involve horizontal nor vertical motives have, by and large, been ignored in the literature or, at least, inadequately accounted for. However, we find that such conglomerate strategies are far from uncommon and, even with generous definitions for horizontal and vertical relatedness, account for more than one fifth of the CBA deals in our sample. We find such conglomerate CBAs to be strongly driven by financial arbitrage opportunities when MNEs invest in countries where firms are undervalued.

Moving beyond the conventional distinction between horizontal and vertical strategies opens, in our view, several avenues to reappraise the role of MNEs in the global economy. In particular, since the established theories of the MNE draw primarily on motives associated with the proximity concentration trade-off arising with horizontal, and factor cost savings arising with vertical strategies, research giving more prominence to financial and other non-industrial motives might be warranted. Related to this, given that FDI is associated with potential advantages to the host country, it would be important to identify the potential benefits (if any) resulting from conglomerate strategies. Furthermore, though a substantial part of CBAs does reflect horizontal and vertical strategies, they seem to be ill-equipped to explain the marked surges in international merger activity since key variables such as market size or relative wages change only gradually. Conversely, the financial variables that can be tied with the considerable number of deals underpinned by conglomerate strategies exhibit the wave-like behavior to sustain the volatility in the international market for corporate control. Hence, they might be important to better explain the time profile of FDI. Future empirical research could try to further analyze these and other issues e.g. by exploiting detailed firm-level data that might be available for certain countries and/or sectors or studying the spillover effects of various FDI strategies. Finally, to the extent that the 'pecking order' of international financial flows rests, among other things, on the alleged more stable behavior of FDI, acknowledging that conglomerate strategies might drive a substantial part of CBAs questions, maybe, some of the alleged advantages of FDI over portfolio investment.

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Country Coverage

The common sample covers the following countries. Wage data of UBS (various years) refer to the cities in parentheses:

As source: Australia (Sydney), Austria (Vienna), Belgium (Brussels), Brazil (Sao Paulo), Canada (Toronto), China (Shanghai), Czech Republic (Prague), Denmark (Copenhagen), Finland (Helsinki), France (Paris), Germany (Frankfurt), Greece (Athens), Hongkong (Hongkong), Hungary (Budapest), Indonesia (Djakarta), Ireland (Dublin), Italy (Milan), Japan (Tokyo), Mexico (Mexico City), Netherlands (Amsterdam), Norway (Oslo), Poland (Warsaw), Portugal (Lisbon), Russia (Moscow), Singapore (Singapore), South Africa (Johannesburg), Spain (Madrid), Sweden (Stockholm), Switzerland (Zurich), United Kingdom (London), United States (Washington).

The common sample covers the following host countries. Wage data of UBS (various years) refer to the cities in parentheses:

As host: Argentina (Buenos Aires), Australia (Sydney), Austria (Vienna), Bahrain (Manama), Belgium (Brussels), Brazil (Sao Paulo), Bulgaria (Sofia), Canada (Toronto), Chile (Santiago de Chile), China (Shanghai), Colombia (Bogota), Czech Republic (Prague), Cyprus (Nikosia), Denmark (Copenhagen), Estonia (Tallinn), Finland (Helsinki), France (Paris), Germany (Frankfurt), Greece (Athens), Hongkong(Hongkong), Hungary (Budapest), India (Mumbai), Indonesia (Djakarta), Ireland (Dublin), Israel (Tel Aviv), Italy (Milan), Japan (Tokyo), Kenya (Nairobi), Korea (Seoul), Latvia (Riga), Lithuania (Vilnius), Luxembourg (Luxembour), Malaysia (Kuala Lumpur), Mexico (Mexico City), Netherlands (Amsterdam), New Zealand (Auckland), Norway (Oslo), Panama (Panama), Peru (Lima), Philippines (Manila), Poland (Warsaw), Portugal (Lisbon), Romania (Bucharest), Russia (Moscow), Singapore (Singapore), Slovak Republic (Bratislava), Slovenia (Ljubliana), South Africa (Johannesburg), Spain (Madrid), Sweden (Stockholm), Switzerland (Zurich), Thailand (Bangkok), Turkey (Istanbul), Ukraine (Kiev), United Arab Emirates (Dubai), United Kingdom (London), United States (Washington), Venezuela (Caracas).

Table 7: Description of the Data Set

Variable	*Description*	*Source*
Dependent Variables:		
CBA	Number of international merger deals between the source country s and host countries h during year t. The horizontal, vertical, and conglomerate modes defined in this are described in the text.	Compiled from SDC Platinum of Thomson Financial.
Covariates:		
CORPORATE TAXES	Statutory tax rate on corporate income in country h during year t.	KPMG, Corporate and Indirect Tax Rate Survey (various years).
CORRUPTION	Corruption index on a scale from 10 to 90. Original values have been reversed such that higher values mean more corruption. For the year 1995 the values for Belgium, Finland, Netherlands and Norway are not available and the values of 1996 have been used.	Heritage Foundation.
CU	Nominal variable for source and host countries that are member of a customs union.	World Trade Organization: Regional Trade Agreements (RTA) Database.
DISTANCE	Great circular distance between Washington DC and the capital city of the host country in terms of logarithmically transformed thousand Km.	Compiled from www.chemical-ecology.net/java/capitals.htm.
EURO	Nominal variable for source and host countries sharing the Euro as common currency.	
EXCHANGE RATE	Real exchange rate (an increase is an appreciation of the source country currency). Calculated from by dividing the nominal exchange rate with with the PPP factor over GDP.	Penn World Tables.
GDP	Market size of the source and host country as measured by the real Gross Domestic Product denominated in US$ with base year 2000.	World Development Indicators (WDI) of the World Bank.
INVESTMENT FREEDOM	Index of freedom of investment referring to whether there is a foreign investment code that defines the country's investment laws and procedures; whether the government encourages foreign investment through fair and equitable treatment of investors; whether there are restrictions on access to foreign exchange; whether foreign firms are treated the same as domestic firms under the law whether the government imposes restrictions on payments, transfers, and capital transactions; and whether specific industries are closed to foreign investment. For the year 1995 the values for Belgium, Finland, Netherlands and Norway are not available and the values of 1996 have been used. Higher values mean more freedom.	Heritage Foundation.

Further Covariates:		
LANGUAGE	Countries sharing a common official language.	Compiled from CIA World Factbook.
MtB^m	Difference in the mis-valuation component of market to book ration between source and host country. Mis-valuation is calculated by regressing the future stock market return on current values of the MtB and calculating the fitted values. See Baker *et al.* (2008) for the details of this method	Compiled from Datastream.
MtB^w	Difference in the wealth component of market to book ration between source and host country. The wealth component is calculated by regressing the future stock market return on current values of the MtB and calculating the residual. See Baker *et al.* (2008) for the details of this method	Compiled from Datastream.
SHAREHOLDER RIGHTS	Difference in shareholder rights between the source and host country. Shareholder rights are measured by an anti-directors rights index reflecting (i) the possibility of shareholders to mail their proxy vote, (ii) whether shareholders are required to deposit their shares prior to the General Shareholders Meeting (iii) whether cumulative voting is allowed (iv) an oppressed minorities mechanism exists (5) whether the minimum stake allowing shareholders to call for an extraordinary shareholders meeting is more or less than 10%. Higher values mean more power for shareholders.	La Porta *et al.* (1998)
SWP	Skilled wage premium in host host country. Wages of skilled and unskilled labor refer to the hourly salaries of, respectively, department heads and factory workers as paid in the capital city or the financial center of a country. Data are published on a tri-annual basis (1994, 1997, 2000, 2003, 2006, 2009). Values of missing years have been filled with the closest observation.	Braconier *et al.* (2005), UBS Prices and Earnings (various years).
TRADE FREEDOM	Index of freedom of international trade (tariff and non-tariff barriers) on a scale from 10 to 90. For the year 1995 the values for Belgium, Finland, Netherlands and Norway are not available and the values of 1996 have been used. Higher values mean more freedom.	Heritage Foundation.
WAGE INDEX	Wage in the host country net of compulsory social security contributions. Wages are measured by an index referring to the hourly income of 13 comparable professions (product managers, department heads, engineers, primary school teachers, bus drivers, car mechanics, building laborers, industrial workers, cooks, bank credit officers, personal assistants, sales assistants, factory workers) as paid in the capital city or the financial center of a country. Data are published on a tri-annual basis. Values of the missing years have been filled with the closest observation available.	UBS, Prices and Earnings.

A Reviewers' Appendix

A.1 Derivations: Log-Likelihood of Fixed Effects Poisson Count Regression

To derive the fixed effects estimator for Poisson regressions, Guimaraes *et al.* (2003) use a maximum likelihood approach estimating the coefficients (β) simultaneously with the fixed effects α_{st}. Using (5) to calculate the likelihood function yields

$$\ln L(\alpha_{st}, \beta) = \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T} \ln\left[\frac{\exp(-\lambda_{sh,t})\lambda_{sh,t}^{n_{sh,t}}}{n_{sh,t}!}\right]. \tag{8}$$

Inserting (6) gives

$$\ln L(\alpha_{st}, \beta) = \sum_{s=1}^{S}\sum_{t=1}^{T}\left[-\alpha_{st}\sum_{h=1}^{H}\exp(x'_{sh,t}\beta+\delta_h)+\ln\alpha_{st}\sum_{h=1}^{H}n_{sh,t}+\sum_{h=1}^{H}n_{sh,t}(x'_{sh,t}\beta+\delta_h)-\sum_{h=1}^{H}n_{sh,t}!\right]. \tag{9}$$

Differentiating this with respect to α_{st} and setting to 0 yields

$$\widehat{\alpha}_{st} = \frac{\sum_h n_{sh,t}}{\sum_h \exp\left(x'_{sh,t}\beta + \delta_h\right)}. \tag{10}$$

Substituting this back into (9) yields the concentrated likelihood function of (7), that is

$$\ln L(\beta, \tau) = \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T} n_{sh,t}(x'_{sh,t}\beta+\delta_h)-\sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T}\left[n_{sh,t}\ln\left(\sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T}\exp(x'_{sh,t}\beta+\delta_h)\right)\right]+C,$$

where $C = \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T} n_{sh,t} + \sum_{s=1}^{S}\sum_{h=1}^{H}\sum_{t=1}^{T} n_{sh,t}!$.

A.2 *Details on classification of CBAs*

This appendix clarifies the method to classify each CBA deal according to the underlying strategy (horizontal, vertical, conglomerate, or residual (complex)). As mentioned in Section 3, the stepping stone for this classification is the industrial affiliation reported in SDC Platinum by the acquiring firm and target firm in terms of SIC codes denoted by, respectively, SIC_{α}^{ρ} and SIC_{τ}^{σ}. Reflecting the potential for multi-business activity, SDC reports up to 6 different SIC codes, that is $\rho = \{1, 2, 3, 4, 5, 6\}$ and $\sigma = \{1, 2, 3, 4, 5, 6\}$. Hence, there are up to $6 \times 6 = 36$ pairs of SIC codes that might exhibit industrial linkages.

As explained in detail in Section 3, industrial linkages can arise horizontally and vertically. Specifically, horizontal linkages arise when two SIC codes are identical (at the 4-digit level), that is $SIC_{\alpha}^{\rho} = SIC_{\tau}^{\sigma}$, whilst a vertical relationship arises when industries differ ($SIC_{\alpha}^{\rho} \neq SIC_{\tau}^{\sigma}$), but are connected through the supply chain in the sense that the vertical relatedness coefficient $V_{\alpha\tau}^{\rho\sigma}$ between a pair of industries exceeds the value of given cut-off level, that is $V_{\alpha\tau}^{\rho\sigma} > \overline{V}$. Given these definitions, it is impossible that a specific pair of SIC codes exhibits both horizontal and vertical relationships. However, a pair can neither be horizontally, nor vertically related when $SIC_{\alpha}^{\rho} \neq SIC_{\tau}^{\sigma}$ and $V_{\alpha\tau}^{\rho\sigma} < \overline{V}$.

Against this background, we classify a CBA as 'purely horizontal' when there is at least one horizontal linkage, but no vertical linkage across all paired combinations of SIC codes reported by the acquiring and target firm. We classify a CBA as 'purely vertical' when there is at least one vertical linkage, but no horizontal linkage across all combinations of SIC codes. We classify a CBA as 'purely conglomerate' when there are neither horizontal nor vertical linkages across all combinations of SIC codes. All other cases (where there are both horizontal and vertical connections in a deal) are assigned to the residual (complex) group. Table 1 of the paper provides a more formal definition of the strategies of CBAs.

The following illustrates our classification method with some examples. Consider first the case of single-business firms that report only one SIC code. Following the definition of industrial relationships above, suppose that the combination of these SIC codes exhibit either a horizontal (denoted by H), vertical (denoted by V), or none of these connections (denoted by 0). Reporting the SIC code of the acquirer in the raw and the SIC code of the target firm in the column of a 1×1 matrix gives rise to the following potential cases (or CBA strategies):

	Horizontal	**Vertical**	**Conglomerate**	**Residual (complex)**
	SIC target			With single-business firms the residual (complex) case cannot arise. No 'non-pure' combination of horizontal and vertical relationships is possible when there is only one pair of SICs.
SIC acquirer	(H)	(V)	(0)	

Things get more complicated when we allow for multi-business activity, where the acquirer and target report several SIC codes. In particular, there can be 'non-pure' residual (or complex) deals where both horizontal and vertical connections arise. However, considering for

the sake of simplicity a scenario with 2 different SIC codes (extensions to more combinations are straightforward) and reporting, again, the SIC codes of the acquirer in the raw and the SIC codes of the target firm in the column of a 2×2 matrix gives rise to the following non-exhaustive list of examples of CBA strategies:

		Horizontal	**Vertical**	**Conglomerate**	**Residual (complex)**
		SIC codes of target firm in columns			
SIC codes acquirer firm in rows	Example 1	$\begin{pmatrix} H & 0 \\ 0 & 0 \end{pmatrix}$	$\begin{pmatrix} V & 0 \\ 0 & 0 \end{pmatrix}$	$\begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$	$\begin{pmatrix} V & 0 \\ 0 & H \end{pmatrix}$
	Example 2	$\begin{pmatrix} 0 & H \\ H & 0 \end{pmatrix}$	$\begin{pmatrix} 0 & 0 \\ 0 & V \end{pmatrix}$		$\begin{pmatrix} 0 & V \\ H & H \end{pmatrix}$
	Example 3	$\begin{pmatrix} H & H \\ 0 & 0 \end{pmatrix}$	$\begin{pmatrix} V & 0 \\ V & 0 \end{pmatrix}$		$\begin{pmatrix} H & H \\ V & H \end{pmatrix}$
	Example 4	$\begin{pmatrix} H & H \\ H & H \end{pmatrix}$	$\begin{pmatrix} 0 & V \\ V & V \end{pmatrix}$		$\begin{pmatrix} H & V \\ 0 & H \end{pmatrix}$

A.3 Robustness Checks mentioned in the Paper

Table 8: Robustness Checks I: Different cut-off Levels for Vertical Relatedness

	1 % for $\overline{V}$		10 % for $\overline{V}$	
	Horizontal CBAs	Vertical CBAs	Horizontal CBAs	Vertical CBAs
	(1)	(2)	(3)	(4)
GDP	0.117***	0.005	0.058***	-0.001
	(0.038)	(0.020)	(0.019)	(0.031)
SWP	0.290	0.915**	0.629***	1.054***
	(0.320)	(0.207)	(0.189)	(0.298)
Distance	-1.347***	-1.073***	-1.203***	-0.949***
	(0.054)	(0.037)	(0.038)	(0.045)
Language	0.104***	0.090***	0.102***	0.066***
	(0.005)	(0.003)	(0.003)	(0.005)
CU	0.015	0.059***	0.015	0.053***
	(0.013)	(0.009)	(0.010)	(0.011)
Trade Freedom	-0.004	0.031	0.051	0.055
	(0.072)	(0.046)	(0.040)	(0.117)
Investment Fd.	-0.102	0.051	-0.0002	0.088
	(0.134)	(0.088)	(0.091)	(0.170)
Corruption	-0.093	-0.132**	-0.153**	-0.105
	(0.088)	(0.068)	(0.065)	(0.097)
Corporate Tax.	-0.511***	-0.354***	-0.347***	-0.130
	(0.122)	(0.087)	(0.088)	(0.134)
Exchange Rate	-0.501***	-0.453***	-0.543***	-0.388***
	(0.103)	(0.068)	(0.066)	(0.084)
Euro	0.013***	0.005*	0.007**	0.014***
	(0.004)	(0.003)	(0.00*)	(0.004)
$\alpha_{s,t}$	yes	yes	yes	yes
δ_h	yes	yes	yes	yes
#cba	9,778	71,219	44,911	14,178
#obs	25,446	25,446	25,446	25,446
$\ln L$	-10,745	-34,706	-26,412	-14,455

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$. Estimation of the panel Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The data cover a common sample of CBAs for the 1995 to 2010 period and include observations from 31 source and 58 host countries. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Bootstrapped standard errors (clustered by α_{st}) are reported in parantheses. * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Table 9: Robustness Checks II: Different Samples and Variables

	Single Industry Firms		US Firms		Backward Ver	Forward Ver	Wage Index	
	Horizontal CBAs	Vertical CBAs	Horizontal CBAs	Vertical CBAs	Vertical CBAs	Vertical CBAs	Horizontal CBAs	Vertical CBAs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP	0.093***	0.010	0.424***	0.193	0.034	-0.001	0.075***	0.015
	(0.033)	(0.042)	(0.116)	(0.130)	(0.024)	(0.029)	(0.023)	(0.021)
SWP (Wage)	0.055	-0.056	-0.247	1.593***	1.189***	1.205***	0.061*	-0.134***
	(0.346)	(0.688)	(0.439)	(0.353)	(0.352)	(0.338)	(0.035)	(0.036)
Distance	-1.307***	-1.226***	-1.944***	-2.362***	-1.048***	-1.050***	-1.249***	-1.027***
	(0.064)	(0.078)	(0.336)	(0.359)	(0.041)	(0.055)	(0.047)	(0.034)
Language	0.114***	0.099***	0.167***	0.174***	0.037***	0.082***	0.009	0.085***
	(0.006)	(0.008)	(0.036)	(0.034)	(0.006)	(0.006)	(0.012)	(0.003)
CU	-0.023	0.030			0.079***	0.041**	0.006	0.055***
	(0.018)	(0.024)			(0.016)	(0.016)	(0.047)	(0.010)
Trade Freedom	0.106	0.073	-0.051	0.046	0.024	0.127	0.006	0.025
	(0.075)	(0.134)	(0.086)	(0.058)	(0.085)	(0.083)	(0.047)	(0.071)
Investment Fd.	-0.225	-0.193	-0.010	0.211*	0.096	0.113	-0.080	-0.071
	(0.167)	(0.206)	(0.153)	(0.120)	(0.178)	(0.157)	(0.112)	(0.106)
Corruption	-0.137	-0.319**	-0.081	-0.105	0.100	-0.171	-0.111	-0.330***
	(0.131)	(0.144)	(0.141)	(0.123)	(0.119)	(0.137)	(0.065)	(0.087)
Corporate Tax.	-0.558***	-0.647***	0.343*	-0.015	-0.318**	-0.065	-0.214**	-0.502***
	(0.123)	(0.220)	(0.200)	(0.225)	(0.132)	(0.136)	(0.094)	(0.068)
Exchange Rate	-0.666***	-0.793***	-0.510***	-0.157*	-0.282**	-0.723***	-0.509***	-0.871***
	(0.128)	(0.218)	(0.141)	(0.094)	(0.139)	(0.132)	(0.080)	(0.183)
Euro	0.009*	0.010			0.002	0.0001	0.009***	0.009***
	(0.005)	(0.009)			(0.005)	(0.006)	(0.003)	(0.003)
$\alpha_{s,t}$	yes	yes	yes	yes	yes	yes	yes	yes
δ_h	yes	yes	yes	yes	yes	yes	yes	yes
#cba	4,349	1,462	8,885	15,789	5,099	4,596	24,133	36,334
#obs	25,446	25,446	1,302	1,302	25,446	25,446	25,446	25,446
$\ln L$	-7,551	-3,493	-1,477	-1,840	-6,833	-6,470	-19,089	-22,977

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$. Estimation of the panel Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Bootstrapped standard errors (clustered by α_{st}) are reported in parantheses. * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Table 10: Robustness Checks III: Residual (complex) Deals

	1 % for $\overline{V}$	5 % for $\overline{V}$	10 % for $\overline{V}$
	(1)	(2)	(3)
GDP	0.037*	0.027	0.031
	(0.021)	(0.021)	(0.027)
SWP (Wage)	0.598***	0.809***	0.525**
	(0.163)	(0.183)	(0.267)
Distance	-1.090***	-1.032***	-0.977***
	(0.031)	(0.030)	(0.036)
Language	0.088***	0.080***	0.073***
	(0.004)	(0.003)	(0.005)
CU	0.025**	0.047***	0.069***
	(0.011)	(0.011)	(0.013)
Trade Freedom	0.035	0.046	-0.016
	(0.045)	(0.056)	(0.086)
Investment Fd.	-0.085	0.026	-0.095
	(0.115)	(0.119)	(0.139)
Corruption	-0.194**	-0.265***	-0.212**
	(0.079)	(0.088)	(0.107)
Corporate Tax.	-0.217	-0.332***	-0.201**
	(0.136)	(0.124)	(0.140)
Exchange Rate	-0.452***	-0.363***	-0.168**
	(0.065)	(0.070)	(0.091)
Euro	0.010***	0.010***	0.016***
	(0.003)	(0.003)	(0.004)
$\alpha_{s,t}$	yes	yes	yes
δ_h	yes	yes	yes
#cba	20,835	20,763	11,393
#obs	25,446	25,446	25,446
$\ln L$	-17,301	-7,714	-12,961

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$ within the manufacturing sector (SIC 2000-3999). Estimation of the panel Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Bootstrapped standard errors (clustered by α_{st}) are reported in parantheses. * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Table 11: Robustness Checks IV: Manufacturing Sector

	All CBAs	Hor. CBAs	Vertical CBAs	Conglom. CBA
	(1)	(2)	(3)	(4)
GDP	0.083***	0.097***	0.009	0.041*
	(0.017)	(0.028)	(0.022)	(0.023)
SWP (Wage)	0.983***	0.405	1.367***	1.005***
	(0.162)	(0.346)	(0.248)	(0.299)
Distance	-1.009***	-1.081***	-0.992***	-1.026***
	(0.031)	(0.060)	(0.039)	(0.046)
Language	0.079***	0.079***	0.079***	0.082***
	(0.003)	(0.004)	(0.004)	(0.004)
CU	0.026**	-0.003	0.038***	0.019
	(0.010)	(0.015)	(0.012)	(0.015)
Trade Freedom	0.052	0.098	0.118*	0.079
	(0.031)	(0.075)	(0.061)	(0.082)
Investment Fd.	-0.061	-0.146	-0.103	-0.044
	(0.073)	(0.161)	(0.104)	(0.173)
Corruption	-0.215***	-0.178	-0.045	-0.268**
	(0.062)	(0.112)	(0.089)	(0.112)
Corporate Tax.	-0.155	0.156	-0.278**	-0.031
	(0.099)	(0.135)	(0.112)	(0.135)
Exchange Rate	-0.212***	-0.108	-0.209**	-0.278**
	(0.075)	(0.089)	(0.103)	(0.142)
Euro	0.004	0.004	0.011***	0.002
	(0.003)	(0.005)	(0.004)	(0.005)
$\alpha_{s,t}$	yes	yes	yes	yes
δ_h	yes	yes	yes	yes
#cba	31,076	6,042	9,542	5,555
#obs	25,446	25,446	25,446	25,446
$\ln L$	-20,174	-7,714	-9,980	-6,355

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$ within the manufacturing sector (SIC 2000-3999). Estimation of the panel Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Bootstrapped standard errors (clustered by α_{st}) are reported in parantheses. * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Table 12: Robustness Checks V: Developed and Developing Counties

	North-North CBAs (Deals between Developed Countries)				North-South CBAs (Deals from Developed to Developing Countries)			
	All CBAs	Horizontal CBAs	Vertical CBAs	Conglomerate CBAs	All CBAs	Horizontal CBAs	Vertical CBAs	Conglomerate CBAs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP	-0.002	0.059**	0.015	-0.061***	0.199***	0.346***	0.136*	0.181***
	(0.019)	(0.027)	(0.022)	(0.017)	(0.053)	(0.088)	(0.067)	(0.058)
SWP (Wage)	-0.239	0.424	-0.197	-0.637	0.311	-0.207	0.593*	0.376
	(0.374)	(0.525)	(0.488)	(0.472)	(0.200)	(0.273)	(0.336)	(0.241)
Distance	-0.989***	-1.050***	-0.953***	-1.014***	-1.441***	-1.653***	-1.435***	-1.365***
	(0.030)	(0.043)	(0.029)	(0.032)	(0.075)	(0.095)	(0.114)	(0.078)
Language	0.086***	0.098***	0.082***	0.087***	0.127***	0.134***	0.117***	0.141***
	(0.003)	(0.004)	(0.004)	(0.003)	(0.007)	(0.008)	(0.007)	(0.010)
CU	0.091***	0.072***	0.073***	0.117***	0.006	-0.037*	0.023	0.021
	(0.009)	(0.012)	(0.012)	(0.013)	(0.016)	(0.021)	(0.022)	(0.018)
Trade Freedom	0.143**	0.088	0.207***	0.129*	-0.058	-0.098*	-0.046	0.101
	(0.068)	(0.072)	(0.063)	(0.069)	(0.066)	(0.054)	(0.100)	(0.072)
Investment Fd.	0.143*	-0.067	0.156	0.216*	0.105	-0.015	0.256	-0.007
	(0.083)	(0.132)	(0.123)	(0.130)	(0.156)	(0.166)	(0.243)	(0.211)
Corruption	-0.061	0.016	-0.009	-0.110	-0.380***	-0.309**	-0.417***	-0.270***
	(0.069)	(0.097)	(0.100)	(0.104)	(0.104)	(0.127)	(0.129)	(0.107)
Corporate Tax.	-0.289***	-0.248**	-0.184*	-0.362***	-0.429***	-0.269	-0.729***	-0.476***
	(0.078)	(0.103)	(0.097)	(0.104)	(0.127)	(0.202)	(0.158)	(0.139)
Exchange Rate	-0.657***	-0.958***	-0.811***	-0.507**	-0.275***	-0.436***	-0.136***	-0.337***
	(0.201)	(0.262)	(0.223)	(0.242)	(0.064)	(0.085)	(0.096)	(0.080)
Euro	0.008**	0.015***	0.013***	0.001	-0.039	-0.020**	-0.022	-0.050**
	(0.003)	(0.004)	(0.003)	(0.003)	(0.341)	(0.008)	(0.407)	(0.459)
$\alpha_{s,t}$	yes	yes	yes	yes	yes	yes	yes	yes
δ_h	yes	yes	yes	yes	yes	yes	yes	yes
#cba	96,220	18,390	28,132	34,291	15,614	4,704	7,192	9,199
#obs	10,665	10,665	10,665	10,665	8,083	8,083	8,083	8,083
$\ln L$	-26,039	-10,699	-13,013	-14,650	-13,602	-5,167	-6,181	-7,023

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$. Estimation of the panel Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Bootstrapped standard errors (clustered by α_{st}) are reported in parantheses. * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Table 13: Robustness Checks VI: Exclude China as a Host Country

	All CBAs	Horizontal CBAs	Vertical CBAs	Conglomerate CBA
	(1)	(2)	(3)	(4)
GDP	-0.007	0.058**	-0.002	-0.049**
	(0.018)	(0.026)	(0.027)	(0.020)
SWP	0.211	-0.277	0.606***	0.177
	(0.158)	(0.278)	(0.229)	(0.201)
Distance	-1.077***	-1.245***	-1.010***	-1.085***
	(0.029)	(0.047)	(0.034)	(0.038)
Language	0.088***	0.103***	0.082***	0.089***
	(0.003)	(0.004)	(0.004)	(0.003)
CU	0.051***	0.006	0.046***	0.082***
	(0.008)	(0.011)	(0.011)	(0.012)
Trade Freedom	0.061	0.046	0.101	0.032
	(0.042)	(0.048)	(0.079)	(0.044)
Investment Fd.	0.132	0.039	0.121	0.186*
	(0.092)	(0.104)	(0.115)	(0.100)
Corruption	-0.121**	-0.067	-0.077	-0.134**
	(0.063)	(0.059)	(0.074)	(0.091)
Corporate Taxes	-0.315***	-0.222**	-0.301***	-0.397***
	(0.083)	(0.095)	(0.100)	(0.112)
Exchange Rate	-0.465***	-0.546***	-0.490***	-0.446***
	(0.062)	(0.084)	(0.074)	(0.064)
Euro	0.005**	0.008***	0.010***	-0.001
	(0.002)	(0.003)	(0.003)	(0.003)
$\alpha_{s,t}$	yes	yes	yes	yes
δ_h	yes	yes	yes	yes
#cba	121,344	23,529	34,891	43,028
#obs	24,996	24,996	24,996	24,996
$\ln L$	-46,683	-18,520	-22,019	-25,110

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$. Estimation of the panel Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010 period and include observations from 31 source and 58 host countries. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Block bootstrapped robust standard errors are reported in parantheses; 100 replications (blocks defined by α_{st}). * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Table 14: Robustness Checks VII: Adding Financial Deepening

	All CBA	Horizontal CBA	Vertical CBA	Conglomerate CBA
	(1)	(2)	(3)	(4)
GDP	0.006	0.177***	0.066	-0.109*
	(0.045)	(0.055)	(0.054)	(0.055)
SWP	0.197***	0.151*	0.267***	0.155**
	(0.062)	(0.086)	(0.078)	(0.072)
Distance	-0.882***	-0.953***	-0.853***	-0.898***
	(0.037)	(0.046)	(0.036)	(0.043)
Language	0.161***	0.183***	0.160***	0.160***
	(0.005)	(0.006)	(0.006)	(0.007)
CU	0.124***	0.059**	0.077***	0.181***
	(0.024)	(0.024)	(0.025)	(0.033)
Trade Freedom	-0.447	0.695	-0.413	-0.833
	(0.483)	(0.608)	(0.664)	(0.592)
Investment Fd.	0.028	-0.304	0.073	0.049
	(0.134)	(0.193)	(0.164)	(0.207)
Corruption	0.058	0.099	0.133	-0.010
	(0.078)	(0.141)	(0.126)	(0.099)
Corporate Taxes	-0.347**	-0.505***	-0.372**	-0.563***
	(0.137)	(0.171)	(0.164)	(0.187)
Exchange Rate	-0.611***	-0.625***	-0.779***	-0.475**
	(0.176)	(0.178)	(0.180)	(0.189)
Euro	0.026***	0.037***	0.036***	0.011
	(0.007)	(0.009)	(0.009)	(0.008)
MtB^m	0.954*	0.853	0.637	1.368**
	(0.492)	(0.550)	(0.519)	(0.583)
MtB^w	0.0001	0.0006	-0.0001	0.00004
	(0.0003)	(0.0005)	(0.0004)	(0.0003)
Stock Market	0.581**	0.371	0.477*	0.780***
Cap/GDP	(0.247)	(0.259)	(0.244)	(0.274)
Shareh. Rights	0.153***	0.176***	0.222***	0.177***
	(0.047)	(0.056)	(0.057)	(0.055)
$\alpha_{s,t}$	yes	yes	yes	yes
δ_h	yes	yes	yes	yes
#cba	81,121	15,329	23,859	29,092
$\#\text{obs}_{pc}$	4,896	4,896	4,896	4,896
$\ln L_{pc}$	-18,775	-8,450	-10,271	-11,440

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$. Estimation of the panel Poisson regression with random effect α_{st} is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010 period and include observations from 18 (source and host) countries. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Block bootstrapped robust standard errors are reported in parantheses; 100 replications (blocks defined by $\alpha_{s,t}$). * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

A.4 Further Robustness Checks requested by Reviewer#2

Table 15: Robustness Checks VIII: Alfaro and Charlton Specification (Manufacturing Sector, Year 2005)

	All CBAs	Hor. CBAs	Vertical CBAs	Conglom. CBA
	(1)	(2)	(3)	(4)
GDP	0.443*	-1.714	0.344	0.734
	(0.230)	(114.0)	(1.220)	(0.557)
SWP (Wage)	8.418	159.2	9.402	-2.374
	(5.883)	(9090)	(31.70)	(11.50)
Distance	-1.295***	-1.269***	-1.398***	-1.092***
	(0.211)	(0.136)	(0.344)	(0.239)
$\alpha_{s,t}$	yes	yes	yes	yes
δ_h	yes	yes	yes	yes
#cba	8,068	3,043	1,552	2,246
#obs	25,446	25,446	25,446	25,446
$\ln L$	-1,342	-488.5	-654.5	-392.5

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$ within the manufacturing sector (SIC 2000-3999). Estimation of the panel Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Bootstrapped standard errors (clustered by α_{st}) are reported in parantheses. * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Table 16: Robustness Checks IX: Value Data

	All CBAs	Horizontal CBAs	Vertical CBAs	Conglomerate CBA
	(1)	(2)	(3)	(4)
GDP	0.174	0.170	0.216	0.144
	(0.108)	(0.123)	(0.189)	(0.220)
SWP	1.207	0.906	0.831	2.303**
	(0.838)	(1.228)	(0.941)	(1.085)
Distance	-0.228***	-0.861***	0.018	-0.146***
	(0.088)	(0.159)	(0.137)	(0.044)
Language	0.013	0.057**	0.025	0.014
	(0.015)	(0.025)	(0.023)	(0.015)
CU	0.152***	0.101	0.375***	-0.107*
	(0.055)	(0.069)	(0.110)	(0.060)
Trade Freedom	-0.155	-0.172	-0.516***	0.229
	(0.168)	(0.280)	(0.201)	(0.334)
Investment Fd.	0.230	-0.251	0.658	-0.048
	(0.396)	(0.501)	(0.950)	(0.522)
Corruption	0.041	0.472	-0.715	0.709**
	(0.307)	(0.570)	(0.580)	(0.345)
Corporate Taxes	-0.137	-1.820***	1.059	0.650
	(0.452)	(0.662)	(0.888)	(0.524)
Exchange Rate	-0.156	-0.369***	-0.443	0.184
	(0.216)	(0.317)	(0.430)	(0.380)
Euro	0.003	0.010	-0.031	0.046*
	(0.021)	(0.033)	(0.048)	(0.026)
$\alpha_{s,t}$	yes	yes	yes	yes
δ_h	yes	yes	yes	yes
#obs	25,446	25,446	25,446	25,446
$\ln L$	-2,278,025	-721,431	-721,431	-784,646

Notes: The dependent variable is the value of CBAs $v_{sh,t}$. Estimation of the panel (pseudo) Poisson regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010 period and include observations from 31 source and 58 host countries. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Block bootstrapped robust standard errors are reported in parantheses; 100 replications (blocks defined by α_{st}). * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Table 17: Robustness Checks X: Negative Binomial Regression

	All CBAs	Horizontal CBAs	Vertical CBAs	Conglomerate CBA
	(1)	(2)	(3)	(4)
GDP	0.026	0.083***	0.032	-0.011
	(0.015)	(0.022)	(0.021)	(0.017)
SWP	0.436***	0.113	0.499***	0.457***
	(0.147)	(0.208)	(0.177)	(0.181)
Distance	-1.112***	-1.246***	-1.055***	-1.112***
	(0.032)	(0.038)	(0.033)	(0.044)
Language	0.098***	0.109***	0.090***	0.099***
	(0.003)	(0.004)	(0.004)	(0.003)
CU	0.046***	0.016	0.042***	0.067***
	(0.008)	(0.011)	(0.010)	(0.011)
Trade Freedom	-0.015	-0.001	-0.013	0.002
	(0.027)	(0.051)	(0.045)	(0.039)
Investment Fd.	-0.029	-0.080	-0.041	-0.014
	(0.067)	(0.093)	(0.102)	(0.086)
Corruption	-0.116**	-0.107	-0.072	-0.099
	(0.051)	(0.086)	(0.076)	(0.069)
Corporate Taxes	-0.694***	-0.738**	-0.822***	-0.840***
	(0.066)	(0.111)	(0.085)	(0.098)
Exchange Rate	-0.116***	-0.298***	-0.235***	-0.190**
	(0.050)	(0.075)	(0.068)	(0.081)
Euro	0.009**	0.010***	0.013***	0.003
	(0.003)	(0.003)	(0.003)	(0.004)
$\alpha_{s,t}$	yes	yes	yes	yes
δ_h	yes	yes	yes	yes
#cba	126,481	24,133	36,334	45,251
#obs	25,446	25,446	25,446	25,446
$\ln L$	-37,308	-17,729	-20,517	-23,091

Notes: The dependent variable is the number (count) of CBAs $n_{sh,t}$. Estimation of the panel Negative Binomial regression with fixed effect $\alpha_{s,t}$ is by maximum likelihood. All explanatory variables have been transformed into deviations from their mean. Hence, the coefficient estimates represent an elasticity, that is the percentage change of $n_{sh,t}$ when an explanatory variable, at its average value, changes by one per cent. The 5% cut-off level is used for $\overline{V}$ to define FDI strategies. The data cover a common sample of CBAs for the 1995 to 2010 period and include observations from 31 source and 58 host countries. Furthermore, #cba is the number of deals, #obs is the number of observations, and $\ln L$ the value of the log likelihood function. Block bootstrapped robust standard errors are reported in parantheses; 100 replications (blocks defined by α_{st}). * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.