Expanding Multinationals -
Conglomerate M&A and Activity-Basket Proximity*

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Abstract

This paper analyzes how multinational firms (MNEs) expand the spectrum of their activities via Mergers & Acquisitions (M&A). While international trade studies systematically focus on horizontal *versus* vertical motives for foreign direct investment (FDI), I document that over 46% of both domestic and cross-border M&A deals done worldwide by MNEs are conglomerate, *i.e., neither* horizontal nor vertical. Literature to date fails to explain this puzzling stylized fact. What are conglomerate M&A and what are their drivers? Why do MNEs acquire firms in industries distinct from their own? The present study argues that conglomerate M&A represent a tool for multinationals to expand the spectrum of their activities towards industries that are *closely related* to their own range of occupations. The approach looks at MNEs from a multi-product perspective. It introduces a series of measures of "distance" between firms based on their respective activity-baskets. These are built relying on industry task intensities and the product space tools. The results show that despite the absence of direct horizontal or vertical linkages, conglomerate M&A appear to occur between firms relatively closely related in terms of their activity-mix. Further, the study investigates how the shape of activity basket of corporate group evolves with the acquiror's subsequent transactions. The degree of *compactness* of corporate activity decreases over time. MNEs also seem to expand their activity mostly radially, towards multiple direction, rather than linearly.

<u>Keywords:</u> Foreign direct investment, Mergers and acquisitions, Multinationals, Conglomerate M&A, Multiproduct firms, Product space, Task content

JEL Classification: F21; F23

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1   Introduction

International trade literature systematically studies the motives for foreign direct investment (FDI) from a horizontal-versus-vertical perspective. According to this *functional* organization scheme, multi-national firms (MNEs) invest abroad either to benefit from lower production costs (vertical FDI) or to move closer to consumers (horizontal FDI). However, the present study documents that nearly half of world mergers and acquisitions (M&A) done by MNEs does not belong to *either* of these categories and is classified instead as *conglomerate*. This surprising stylized fact disputes the functional vision of MNEs organization. Firms seem to frequently buy activities that are not directly related to their own. Trade literature to date does not provide an explanation for this type of FDI.

Why do MNEs acquire firms in industries not directly linked to theirs? What are conglomerate M&A and what are their drivers? How do conglomerate deals differ from horizontal and vertical transactions? This paper aims to answer to these questions. The proposed approach looks at MNEs from a multi-product perspective. It apprehends firms through the basket of their activities and presents M&A as means for MNEs to acquire new ones.[1] The study relies on task intensities (O*NET) and product space tools among others (Hidalgo et al., 2007) and introduces a series of activity-based measures of "distance" between firms. The analysis shows that even though conglomerate transactions escape the conventional FDI classifications, important regularities emerge. MNEs seem to acquire firms operating in industries that are relatively not far from their own spectrum of activities. The main claim of the paper is that conglomerate M&A represent a tool for MNEs to expand their product basket[2] towards activities that are *closely related* to their own range of products. As an illustration, take the example of a car manufacturer X located in France. Reported evidence shows that in almost half the cases, X neither acquires one of its suppliers, such as a tire manufacturer, nor one of its direct competitors, such as a German car producer. Instead, X acquires a firm operating in some other industry. I show however that the deals of this type are not completely arbitrary: the car-maker X is much more likely to acquire a motorbike producer than, for instance, a cupcake factory. I also further look at the dynamics of this expansion, analyzing how the shape of the activity basket of the overall corporate group evolves with the subsequent M&A.

This study is directly related to the recent puzzling findings that question the role of firm boundaries; Atalay et al. (2014) and Ramondo et al. (2015) both report the quasi-absence of shipments between vertically related plants within the same firm. These findings raise a question: why do firms own plants if they do not integrate them into their production value chain? As a possible explanation, Atalay et al. (2014) emphasize the role of transfers of intangible assets. Going a step further, this paper points to an underlying driver of these acquisitions, namely the proximity between activity baskets. The idea is that transfers of intangible assets, and related economies of scope, are arguably greater between firms doing

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[1]I use the term "activity" instead of "product" given that the study analyzes firms operating in both the manufacturing and services sectors.

[2]Of course, firms can expand their activity basket in various ways. M&A represents only a very specific way of this expansion.

more similar activities. Accordingly, it is expected that MNEs acquire firms doing activities relatively closer to their own. The evidence reported here is consistent with this hypothesis.

The paper makes several contributions to FDI studies. First of all, it documents a phenomenon that is underexplored in the international trade literature,[3] namely, the high proportion of conglomerate deals in overall M&A flows. The novelty of the study is that it looks at M&A decisions explicitly through the lenses of firms' *activities* - it measures the degree of similarity between firms in terms of distance between their activity baskets. By the same it introduces a new dimension of firm heterogeneity. To my knowledge, this is the first paper to apply the tasks content and the product space tools to study the links between MNEs' activities and their M&A expansion strategies.

Traditionally, trade literature apprehends firm structure from a functional, organic perspective. Along with this vision, firms' M&A choices are made either to acquire suppliers or retailers or for market access motives. From this perspective, the high share of conglomerate deals in the total M&A activity may seem puzzling. Adopting a broader view however, the documented facts appear less surprising; on the contrary they seem quite intuitive. Firms may find it more profitable to acquire a new activity instead of developing it internally. Via M&A they may acquire patents and realize productivity gains by choosing more efficient firms (Guadalupe et al., 2012). They can also gain access to exporter networks (Blonigen et al., 2012) as well as specific expertise and knowledge of the market (Nocke and Yeaple, 2007). At the same time, the proximity of activities between the two partners of the M&A should lower the integration cost of the acquired units and allow the firm to realize economies of scope (Panzar and Willig, 1981).[4] MNEs add activities that are relatively similar to their own product basket as they can pool part of their costs, such as those related to networks of suppliers and retailers, marketing strategies or organizational model. These economies of scope are presumably greater the more closely the two activities are related. Thus this links the paper with the flourishing literature on multi-product firms and to the concept of a firm's core competency product (Eckel and Neary, 2010; Arkolakis and Muendler, 2010).

The study explores Zephyr dataset (Bureau van Dijk) containing M&A transactions for 180 countries for 1997-2012 at 6-digit NAICS 2007 level. Zephyr provides industry primary and secondary codes (up to 30 secondary codes) for acquiring and acquired firms. The analysis looks at both domestic and cross-border M&A deals done by MNEs. I use industry vertical linkages based on Input-Output (IO) tables from Atalay et al. (2014) and classify transactions as either vertical or horizontal (common 6-digit industry code). In the baseline classification, over 46% of all the deals have neither horizontal nor vertical links upon analysis of all the combinations of acquiror and target industry codes.[5] In addition, the share of conglomerate

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[3]To my knowledge, there exist only one paper in international trade literature that looks at conglomerate M&A, Herger and McCorriston (2014). See next section for the description of the literature on conglomerate FDI.

[4]Along with the standard definition of economies of scope proposed in the seminal paper by Panzar and Willig (1981), firm realizes economies of scope if joint costs are *subadditive*, $F(x_1) + F(x_2) > F(x_1 + x_2)$.

[5]The results are robust to a series of alternative specifications and additional controls. Depending on the specification conglomerate deals represent between one third and a half of the total number of M&A

transactions is higher for manufacturing firms than for non-manufacturing ones. Moreover, most of the MNEs in the sample tend to do mainly one given type of M&A: some firms are "specialized" in horizontal deals, others in vertical ones and so on. The average size of MNEs doing predominantly conglomerate deals is in the middle of the size distribution.

In the second part of the paper, I focus on the activity dimension of firm heterogeneity. I look at the degree of proximity between the activities of acquiring and acquired units.[6] The analysis shows that despite the absence of direct horizontal or vertical linkages, conglomerate M&A do not appear to be random. They tend to occur between firms relatively close in terms of their activity mixes. To study the degree of similarity between firms I introduce several match-specific measures. Each of them takes into account the whole spectrum of activities performed by firms. The preferred measure, *task dissimilarity,* computes the difference between the task intensities of the product baskets of acquiring and acquired units.[7] The two additional measures - the degree of relatedness between activity baskets in the product space[8] and closeness in terms of their SIC (Standard Industrial Classification) codes[9] - confirm the importance of similarity between these firms. The final part of the paper analyzes how the shape of MNEs' product baskets evolves as they integrate new targets into their corporate group. I build a measure of the degree of activity concentration, a *compactness of corporate group activity*, and I study how it changes as new targets are integrated into the corporate group. Interestingly, while the activity mix of conglomerate groups in manufacturing becomes more dissimilar, the one of the non-manufacturing gets more compact. I investigate also whether groups expand radially towards various distinct activities or conversely in a linear, consequential way, i.e., towards one given type of activity. Although both strategies are present among the firms in the sample, radial expansion seems to dominate, with nearly 75% of MNEs expanding their activity in multiple directions.

Understanding what conglomerate M&A are and what are their drivers is of particular interest at several levels. The importance of multinationals in the global economy is indisputable. Approximately one third of total trade flows are intra-firm (Lanz and Miroudot, 2009), while 37 of the world's 100 largest economies were corporations in 2012. How do MNEs become what they are? - *multi*-national, *multi*-product, *multi*-location structures? How do they turn into sometimes gargantuan conglomerates that operate in a number of very different industries? While trade literature implicitly and explicitly studies MNEs' strategies, surprisingly little attention is paid to their choices in relation to the range of activities

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in the sample.

[6]By the degree of proximity between firms' activities I understand the similarity between firms in terms of range of industries in which they operate.

[7]The task dissimilarity index is computed as euclidean distance between the activity tasks vectors of acquiror and target. The task share data at occupation level come from O*NET. The vector shares of 41 tasks are converted to the industry level following Lanz et al. (2013).

[8]The average relatedness between activity basket of acquiring and acquired units is constructed relying on the seminar paper by (Hidalgo et al., 2007).

[9]The closeness measure builds on Alfaro and Charlton (2009) an it simply uses the absolute distance between activity SIC codes.

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produced. Most of the multi-product studies simply assume that firms produce multiple products and that the decision as to which products to produce depends on random product-specific productivity draws. The process through which MNEs choose which activities undertake remains a black box in the trade literature to a large extent. Moreover, the existing papers look at firms only in terms of their productivity, ordering products accordingly. They do not take into account the interdependency between products beyond the traditional value chain. Yet the question does not appear insignificant given the size of world's biggest firms and the wide range of products that many of them offer. One of the most intriguing question relates to the optimal (maximum) size of a multinational. Is there a threshold size of a firm, i.e., a threshold above which coordination costs outweigh scale and scope economies? Do the second order conditions of profit maximization actually hold in a real economy?

Lastly, it appears important to note that firms can add new activities in various ways. This paper focuses on a very specific way of adding products as well as on a very specific type of FDI, namely M&A. Therefore, the picture provided remains only partial.[10] Despite these obvious limits, the paper contributes to the literature documenting new stylized facts and by introducing new measures, it provides a series of new facts related to the behavior of multinationals.

The rest of the paper is organized as follows, Section 2 describes related literature. Section 3 presents the data. Section 4 provides descriptive a statistics analysis and investigates similarities and differences in determinants of M&A flows of country bilateral, sectoral and acquiror levels. Section 5 introduces acquiror-target measures of proximity and runs a corresponding match-level analysis. Section 6 looks at the dynamics of MNEs' expansion. Section 7 introduces a discussion and finally Section 8 concludes.

2   Related literature

This paper lies at the intersection of the literature pertaining to FDI, to conglomerates and to multi-product firms studied in different subfields of international economics, business and finance. Further, the paper associates these studies with the network theory of product space.

Motives for FDI - Horizontal, Vertical and beyond...   Traditionally, international trade literature distinguishes between two main motives for FDI: market access (horizontal FDI) and relocation of (parts of) production (vertical FDI).[11] The concept of conglomerate FDI on the other hand is quasi-

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[10]Next to M&A, firms can add activities internally by investing in R&D, doing greenfield investments, acquiring patents... At the same time, incorporating activities via M&A can represent a potential source of synergies. Moreover, acquiring less related activities to their original activity could also allow firms to avoid heavy internal investment costs. MNEs may consequently do M&A in a restrained range of sectors or acquire firms operating in a variety of less related industries.

[11] In the case of the former, MNEs have incentives to engage in FDI in the presence of low economies of scale, important trade costs and when the destination market is sufficiently large, along with proximity-concentration trade-off (Markusen, 1984). For the latter, MNEs engage in FDI to benefit from lower production costs (Helpman, 1984).

inexistent in international trade literature. Moreover, until recently it was assumed that M&A flows are mainly horizontal.[12] Alfaro and Charlton (2009) show however that the share of vertical FDI is larger than previously thought even between northern economies.[13] Recent literature exploring firm-level data sheds more light on M&A decisions at the level of the unit, with notable contributions from Guadalupe et al. (2012), Blonigen et al. (2012) or Head and Ries (2008) among others.[14] An extensive literature in international economics, finance and business analyses macroeconomic determinants of FDI flows.[15] The studies highlight the importance of, *inter alia*, financial development, governance and quality of institutions, tax rates or distance and cultural proximity.[16] The literature considers comparative advantage as a factor influencing FDI decisions. Firms investing abroad may want to acquire new assets. Yeaple (2003) shows that M&A flows follow patterns consistent with comparative advantage in US data.[17] Brainard (1997) and Carr et al. (2001) find that the effect of market access prevails over the effect of comparative advantage. Desbordes et al. (2015) investigate the effect of RCA on both outflows and inflows of GF and M&A. While domestic RCA seem to enhance GF outflows in particular, FDI inflows of both types appear to be equally affected by RCA on the destination side.

Firm boundaries, multi-product firms & multinational puzzles As noted in the introduction, the present study is related to new puzzling evidence that reports no shipments between vertically linked affiliates (Atalay et al., 2014; Ramondo et al., 2015). To explain this surprising fact, Atalay et al. (2014) suggest transfers of intangible assets from headquarters towards the affiliates as an alternative motive for vertical FDI. Furthermore, given the focus on the expanding nature of MNEs, this paper is also related to the literature on multi-product firms flourishing in international trade (e.g., Bernard

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[12] This conclusion was derived from the fact that a great proportion of M&A takes place between developed countries.

[13] Alfaro and Charlton (2009) introduce the term intra-industry vertical FDI to describe the relation between a parent and subsidiary that share the same two-digit code but different three-digit codes.

[14] Guadalupe et al. (2012) describes theoretically and show empirically on Spanish data that MNEs target more productive firms as such choices lead to higher post-merger returns from innovation. Blonigen et al. (2012) suggest acquiring networks of exporters as a motive for M&A using French inbound M&A data. MNEs target also more productive firms that experienced a negative productive shock in years prior to acquisition. The authors coin the term "cherries for sale" to describe this type of M&A and describe the reported findings theoretically. Head and Ries (2008), on the other hand, model M&A as an outcome of the market for corporate control.

[15] In international business literature, see Slangen and Hennar (2007) for a review on empirical studies on GF and M&A.

[16] For the effects of financial development see, *e.g.,* diGiovanni (2005), Coeurdacier et al. (2009), for governance and quality of institutions, *e.g.,* Rossi and Volpin (2004), Hur et al. (2011), Hyun and Kim, (2007), for tax rates, *e.g.,* Hebous et al. (2011), for distance and cultural proximity, *e.g.,* DiGuardo et al. (2013), Azemar et al. (2012), Drogendijk and Slangen (2006). Desbordes et al. (2015) provide a detailed review of literature on FDI determinants. See also Blonigen (2005).

[17] Yeaple (2003) shows that US outbound FDI in industries with high skilled-labor intensities favour skilled-labor abundant countries while the opposite holds true for industries with lower skilled-labor intensities.

et al., 2007; Bernard et al., 2010 and 2011; Feenstra and Ma, 2007, Yeaple, 2013 or Nocke and Yeaple, 2013). However these papers mainly focus on the export decisions of multiproduct firms, simply assuming that firms produce many products or that their choice of products to produce depends on randomly-drawn product-specific productivities. The notable exceptions are Eckel and Neary (2010) and, following them, Arkolakis and Muendler (2010). They introduce the notion of core competency product, where multiproduct firms have decreasing efficiency in subsequent products. To my knowledge, the only trade paper that analyses conglomerate FDI flows is Herger and McCorriston (2014). The authors use analogous classification applying vertical linkages data from Acemoglu et al. (2009). They report a comparably high share of conglomerate deals for Thomson Platinum dataset. They do not take into account domestic activity of MNEs and their study is limited to a bilateral comparison of conglomerate flows with the horizontal and vertical ones in a gravity setting. They do not explore at all transaction level dimension. Lastly, Flagge and Chaurey (2014) show existence of co-production correlations and that these can predict firms future production patterns.[18]

Conglomerate FDI While international trade studies put very little emphasis on conglomerate M&A, business and law literature analyzes the concept under various angles. Next to economies of scale and scope, these studies point to diversification motives, enhancement of market power or multimarket contact (Scott, 1982).[19] The consequences of conglomerate M&A are also studied in portfolio theory. The portfolio effect of conglomerate M&A corresponds to the risk of anti-competitive outcomes. These may be generated either by the increase of acquiror market power or the fact that the acquiror can gain control over complementary products.[20] In his seminal paper, Mueller (1969) looks at conglomerate mergers as non-value-creating transactions. The author suggests that managers' personal interests are the main driver of this type of deal, arguing that bigger, post-merger firms are perceived as a sign of prestige and wealth. The effects of conglomerate acquisitions are also widely studied in both corporate and competition law in the context of anti-trust law and public policies. See Dean (1970) for a list of determinants of conglomerate deals. In order to better understand current trends in M&A activity of MNEs, one should take a step back and look at the global patterns of M&A in a broader time framework. M&A flows are known to come in waves, each of them being dominated by one specific type of merger and remaining usually limited to a few industries (Lipton, 2006).[21] According to this classification, the period of time covered the present study

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[18]Using very detailed Indian data, Flagge and Chaurey (2014) show that certain pairs of products tend to be produced together within the same firm more frequently than the others.

[19]For a literature review on motives for M&A see Motis (2007).

[20]See OECD (2002) for an extensive analysis of literature on the portfolio effect of conglomerate M&A.

[21]Six waves of M&A can be distinguished. Lipton (2006) describe them from a corporate law point of view as follows; (i) a horizontal wave at the end of the XIXth century, driven by monopolistic motives, aiming to increase the acquirors' market share; (ii), a vertical wave in the 1920's, with high participation of manufacturers acquiring value chains of production, with the notable example of Ford; (iii) a conglomerate one, in the 1960's, with diversification motive as the main driver; (iv) a wave of takeovers in the 1980s; (v) a wave of market expansion in the 1990s, with deals that were neither purely horizontal nor purely

corresponds to the wave of "global champions" consistent with activity of conglomerates and expanding nature of M&A.

Networks and Product Space   Turning to the network theory literature, product space presents the universe of products traded in the global economy as a network, as defined in the seminal work by Hidalgo et al. (2007). This network is shaped by pair-wise proximity, or relatedness, between products. The proximity between pairs of products is calculated as co-exporting probability. The idea is that products exported jointly by an important number of countries should be related in terms of technology and knowledge requirements, infrastructure and institutional development. Hence, product proximity can be used as a predictor of country specialization patterns.[22] Hidalgo et al. (2007) use product space to analyze how countries move towards the production of goods close to the ones that they already produce. By the same, the concept of product space finds its main application in development economics as a predictor of economic growth (e.g., Hidalgo et al., 2007; Kali et al., 2013) and export performance (e.g., Poncet and Starosta de Waldemar, 2013).

3   Data

The study explores Zephyr dataset from Bureau van Dijk, a very detailed transaction level data on M&A deals among over 180 countries over a recent period 2000-2011. Zephyr reports M&A deals above one million pounds. It provides data on domestic and international M&A deals. While the majority of international trade papers focuses only on cross-border M&A, I look at both domestic and cross-border deals done by multinational firms. As multinationals are defined these firms that have made at least one cross-border M&A during the sample period. The important advantage of Zephyr is that, next to primary industry codes, it provides also all secondary codes for acquiring and acquired units. These go up to 30, with the mean of 3.5 for acquirors and 2.5 for target firms. These are reported at 6-digit NAICS 2007 classification as well as NACE rev.2 and corresponding to it 4-digit US SIC classification.

Zephyr also reports data on deal value. These are, however, missing for over half of the observations. Moreover the dataset required important cleaning and adjustment work in terms of country names, in-

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conglomerate, with a high concentration of deals in Financial Services, Telecommunication, Media and Technology industries. (*vi*) Finally, the sixth wave of mergers that began in the mid-2000's. Lipton (2006) proposes as the main factors globalization and "encouragement by the governments of some countries [...] to create strong national and global champions" (p.7). See Neary (2007) for the references in economic literature on the waves of M&A.

[22]To follow the example of Hidalgo et al. (2007): "[...] "proximity", which formalizes the intuitive idea that the ability of a country to produce a product depends on its ability to produce other products. For example, a country with the ability to export apples will probably have most of the conditions suitable to export pears. They would certainly have soil, climate, packing technologies, and frigorific trucks. In addition, they would have skilled agronomists phytosanitary laws, and trade agreement that could be easily redeployed to the pear business."

dustries and deals coding. See Desbordes et al. (2015) for detailed description of the construction of the dataset. The final sample contains 81629 deals done by 27132 MNEs.[23] In order to define which industries are vertically connected, I rely on vertical linkages from Atalay et al. (2014). The authors compute vertical links from the 1992 Bureau of Economic Analysis Input-Output (IO) Tables, the 1992 Economic Census, the 1993 Commodity Flow Survey, the 1993 Annual Wholesale Trade Survey, and the 1993 Annual Retail Trade Survey.[24] For the measures of task dissimilarity I use the O*NET dataset that provides task intensities by occupation for 41 task across 181 occupations. I follow Lanz et al. (2013) and match task intensity by occupation from O*NET with occupation data by industry from US Standard Occupational Classification (SOC).[25] Relatedness and density measures are calculated using Revealed Comparative Advantage (RCA) measured as Balassa (1964) index. RCA is computed from the BACI database (Gaulier and Zignago, 2010) on trade flows in manufacturing.[26] The remaining control variables used in the econometric approach come from the following sources; economic geography indicators from CEPII,[27] GDP and GDP per capita from Penn Tables,[28] corporate taxes form KPMG (2012),[29] market capitalization from *fDi markets*, currency crisis from Reinhart and Rogoff (2010). Lastly corporate governance and institutional development data were computed from QOG (Quality of Governance) dataset.

4 Classification of M&A and Descriptive Statistics

4.1 Classification of M&A

This section describes the classification of M&A deals across horizontal and vertical types (*HV*-classification) and documents the high share of conglomerate transactions in the total number of deals.

4.1.1 Baseline *HV* classification

M&A transactions are classified among four mutually exclusive categories, namely (*a*) *horizontal*, (*b*) *vertical*, (*c*) *mixed* and (*d*) *conglomerate*. For short call this classification *HV*. Deals are categorized

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[23]The initial sample contains over 360 000 deals.

[24]See Atalay et al. (2014) for details on the computation methodology.

[25]Lanz et al. (2013) use separate matrices for report little variation between the US and European task intensities as well as between 2001 and 2008 years. I apply the US matrix for the whole sample and use the data for 2002 and 2008. All 41 O*NET tasks are listed in Table E.1.

[26]Unfortunately analogous data for trade flows in services is not available at a disaggregation level adequate for the analysis proposed below.

[27]Distance is the log distance in kilometers between capital cities. This, along with the common language, contiguity, and colonial history data came from the CEPII database (Mayer and Zignago, 2006).

[28]Version 8 of the Penn-World Tables (Feenstra et al. (2013), GDPs are measured in constant 2005 US dollars.

[29]http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/corporate-tax-rates-table.aspx

using the information on firms' primary and secondary industry codes. Vertical links between industries are defined as in Atalay et al. (2014), based on US IO tables.[30] In the benchmark specification, a given pair of industries i, j is linked vertically ($V_{i,j} = 1$) if sales of one industry sent to the other are above an arbitrary threshold of 5% ($V_{i,j} = 1 \Leftrightarrow V_{i,j} \geq \bar{V}_{i,j} = 5\%$).[31] Industry pairs are defined as horizontal if they simply share the same 6-digit NAICS codes ($indu_i = indu_j$).[32] Accordingly, (a) deals iclassified as *horizontal* if, among all the possible combinations of acquiror and target industry codes, they have *at least* one horizontal link and *no* vertical links. Conversely, (b) *vertical* deals are those that include at least one industry pair that is vertically linked and no horizontal pairs. (c) *Mixed* deals regroup the transactions where both horizontal and vertical links were found. Finally, (d) the *conglomerate* category regroups deals for which neither horizontal nor vertical links were found among all the possible combinations of acquiror and target codes.[33] Table 1 provides a formal definition of the four categories.

Horizontal	$\exists i, j \mid indu_i^o = indu_j^d$	$\wedge$	$V_{i,j} \neq 1 \quad \forall i, j$
Vertical	$indu_i^o \neq indu_j^d \quad \forall i, j$	$\wedge$	$\exists i, j \mid V_{i,j} = 1$
Mixed	$\exists i, j \mid indu_i^o = indu_j^d$	$\wedge$	$\exists i, j \mid V_{i,j} = 1$
Conglomerate	$indu_i^o \neq indu_j^d \quad \forall i, j$	$\wedge$	$V_{i,j} \neq 1 \quad \forall i, j$

Notes: i, j - NAICS 2007 industry codes (primary and secondary). *o* - country of origin, *d* - destination country. $V_{i,j}$ - vertical linkages dummy. $V_{i,j} = 1 \Leftrightarrow V_{i,j} \geq \bar{V}_{i,j}$. $\bar{V}_{i,j}$ defined as in Atalay et al. (2014) based on IO tables, for values of 1%, 5% and 10% of total value of sales going from industry i to industry j.

Table 1: *HV* classification of M&A deals

Table 2 presents the distribution of the deals among these four categories for overall, cross-border and domestic, deals done by MNEs. Conglomerate M&A appear by far as the largest category, representing 46.1% of all deals. The second biggest category corresponds to horizontal deals, with 28.4%, followed by mixed and vertical deals. Due to data restrictions, the reported *HV* distribution relies only on the count data. The last two rows in the table look at the deal values for the non-missing observations.[34] The respective rows report average transaction values and percentage shares of the total values of each of the *HV* types. While conglomerate deals dominate in terms of their number, they have smaller transaction

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[30] I am indebted to Enghin Atalaya, Ali Hortacsu and Chad Syverson for sharing their codes and data on industry linkages. See Section 3 for details.

[31] Notice that this specification takes into account both upstream and downstream linkages. Distinguishing between these two types of linkages does not change the main outcome of the study. The results are available upon request.

[32] Below, *HV* classification is redefined at lower aggregation levels for horizontal linkages, with shared 5, 4, 3, and 2 digits of NAICS code, as well as with different cutoffs values for vertical linkages, with 1% and 10%.

[33] Alfaro and Charlton (2009) propose a similar classification. They rely however only at firms primary industry codes. Herger and McCorriston (2014) use analogous classification applying vertical linkages data from Acemoglu et al. (2009), as discussed in literature review.

[34] Information on transaction values is missing for around 44% of the observation in the sample.

	Horizontal	Vertical	Mixed	Congl.	Total
# deals	26,039	10 922	12 394	42 197	91 552
Percentage	28.4	11.9	13.5	46.1	100
Average deal value	2 258	3 020	5 672	1 895	
Percentage of tot. value	22,2	14,3	32,5	31,0	

Notes: Cross-border and domestic transactions done by MNEs, 1997-2012. 6 digit NAICS codes, 5% cutoff for vertical linkages. Average deal values are in millions of euro.

Table 2: *HV* classification baseline - cross-border and domestic M&A

values on average. Their share in the total value of M&A transactions remains however important and represents 31%. Unsurprisingly, mixed M&A have the highest average deal values.[35] Additionally, Table A.1 in Appendix reports *HV* distribution for domestic and cross-border M&A subsamples separately. The proportions between the two subsamples remain similar. Thus conglomerate deals do not seem to be a phenomenon specific to home or foreign expansion.

Different thresholds for vertical links					Lower levels of horizontality				
	Horiz.	Vert.	Mixed	Congl.		Horiz.	Vert.	Mixed	Congl.
1%	12 796	26 945	25 637	26 174	**6 digit**	26 039	10 922	12 394	42 197
	14,0	29,4	28,0	28,6		28,4	11,9	13,5	46,1
5%	26 039	10 922	12 394	42 197	**5 digit**	30 391	9 590	13 726	37 845
	28,4	11,9	13,5	46,1		33,2	10,5	15,0	41,3
10%	31 629	5 700	6 804	47 419	**4 digit**	36 624	7 240	16 076	31 612
	34,6	6,2	7,4	51,8		40,0	7,9	17,6	34,5
					3 digit	43 413	4 522	18 794	24 823
						47,4	4,9	20,5	27,1
					2 digit	49 414	27 82	20 534	18 822
						54,0	3,0	22,4	20,6

Table 3: *HV* classification for different definitions of horizontal and vertical links

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[35]The high value for mixed deals and relatively low values for conglomerate transaction do not appear surprising. Mixed deals, by definition, occur between firms sharing some of both vertical and horizontal linkages. As such, the targeted firms can be expected to have larger varieties of assets and to be more important in size. Conversely, and also by definition, conglomerate M&A involve acquisitions of new activities. MNEs engaging in these types of transactions may prefer to avoid excessive risk and to make relatively more moderate investments.

4.1.2 Robustness

Different Thresholds The benchmark HV classification defines vertical linkages at a 5% cutoff and the horizontal ones by shared 6-digit NAICS code. This definition may be considered to be too restrictive and as such at the origin of the reported high shares of conglomerate deals. Table 3 reclassifies deals into the four HV categories relaxing the above restrictions. The left hand side part of the table reports HV distribution for 1, 5 and 10% cutoff values of vertical linkages. The share of conglomerate deals for 1% cutoff drops, but it still corresponds to nearly one third of all the deals. The right hand side part of the table reports HV distribution for less disaggregated levels of "horizontality", with shared 5, 4, 3 and 2 digits. The percentage of conglomerate M&A decreases gradually from 46% (for 6 digits) to 20% (for 2 digit classification). The decrease remains however progressive. All in all, the high share of conglomerate transactions does not appear to be driven by a too narrow definition of horizontal deals. Further, Figure B.3 in Appendix confirms these findings.[36]

	Horizontal	Vertical	Mixed	Congl.	Total
# deals	27 933	12 344	21 895	29 380	91 552
Percentage	30.5	13.5	23.9	32.1	100
Average deal value	1 743	3 070	4 955	1 567	
Percentage of tot. value	18,5	15,7	48,3	17,6	

Notes: Cross-border and domestic transactions done by MNEs, 1997-2012. 6 digit NAICS codes, 5% cutoff for vertical linkages. Average deal values are in millions of euro.

Table 4: *HV-Group* classification of M&A deals

Corporate Groups - HV-Group Classification The baseline HV classification focuses on the activity basket of the acquiror only. In Table 4 I apply HV-*Group* classification that takes into account the activity

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[36]Figure B.3 maps M&A deals by industry pair based on firms' *primary* industry codes. The hollow size is proportional to the number of deals by industry pair weighted by the total number of M&A. The omnipresence of conglomerate deals among the industry combinations of all the kinds can be noticed immediately (panel *d*). Hollows are very frequent, not only around the diagonal but also along horizontal and vertical lines. This confirms the results reported in Table 3. The high share of conglomerates does not appear to be driven by deals between industries close in terms of codes similarity. If that was the case, the distribution of deals would be concentrated around the diagonal line in *d*. Hence, acquirors in some industries tend to buy firms from all the other industries (vertical lines), while firms in some other industries tend to be bought by acquirors from most of the industries (horizontal lines). On the acquiror side (vertical lines), these are Agricultural Services (07), Holding and Other Investment Offices (67), business services (72) and Engineering and Management Services (87) that appear as particularly active conglomerate acquirors, with strong vertical lines. On the target side, except for Agriculture, a similar set of industries can be listed, with the additional presence of Legal Services (82). In addition, an important activity can be also noticed for a large part of manufacturing sectors $(32-39)$ and Retail Trade $(52-59)$. Reader must however remember that these graphs are plotted based exclusively on primary codes.

list also of the entire *corporate group*, i.e., of the acquiror and all its previous targets. The share of conglomerate deals drops again but it still corresponds to 32%. Tables A.2 and A.3 in Appendix report the *HV*-Group distribution for the subsamples analogously to tables 3 and A.1 for *HV* distribution. The proportion of conglomerate M&A shrinks but remains important.

Common Vertical Linkages Another factor that escapes the *HV* definition above is the presence of shared vertical linkages. Despite the lack of direct horizontal or vertical linkages, activities may rely on the same inputs or downstream services. Integrating new activities, MNE may hence take advantage of its networks of suppliers and retailers and, by the same, realize economies of scope. Table A.4 in Appendix shows that 11.2% of all match partners share some upstream and/or downstream linkages among all the combinations of acquiror and target codes at the 1% cutoff level. The shares vary among the subcategories, with 15.9% for mixed deals to 7.6% for conglomerate. Hence, conglomerate deals do not seem to be driven by the common linkages factor.

4.2 Descriptive Statistics

The exercise above demonstrated that conglomerate M&A represent a great proportion of deals in the sample. This subsection runs a series of descriptive statistics comparing conglomerate transactions with other *HV* types of M&A at (i) firm, (ii) sector and (iii) cross-country levels. (i) Interestingly at the firm level, most of the MNEs tends to "specialize" in one given *HV* type of M&A, with certain firms doing predominantly horizontal deals, some others doing mainly vertical ones, and so on. MNEs "specialized" in conglomerate M&A are, on average, in the middle of firm size distribution. (ii) At the industry level, the share of conglomerate deals is relatively greater for manufacturing firms. Furthermore, the overall sample is dominated by firms involved in IT services. (iii) At the country level, conglomerate M&A do not appear to be specific to developed or developing economies. They occur between countries that are closer in geographical and cultural terms.

4.2.1 Firm dimension

***F-HV* & *F-HV-Group* Classifications** It is widely recognized that the strategies of multinationals may vary significantly from one firm to another. Countless case studies show that while some MNEs acquire mainly the contributors of their production chain, others consequently acquire only their direct (horizontal) competitors. Zephyr confirms the diversity of these strategies. I categorize MNEs depending on the (*HV*) type of M&A of that they do *mainly*. The corresponding firm-type classification, *F-HV* (*F-* for firm), is analogous to *HV* categories. In Table 5 acquiror is classified to a given *F-HV* type if its share of corresponding *HV* type represents over 50% of its total deals.[37] Firms doing mainly conglomerate M&A dominate in terms of both, their number and the corresponding number of deals. Conversely, the residual

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[37]The classification takes into account MNEs that have done at least two deals during the sample period.

category, *None*, i.e., firms that do not do any type of M&A in majority, represents relatively small fraction of all firms and deals in the sample, with a total of 5 and 9% respectively. Hence, most of MNEs seem to consequently follow a given type of M&A.[38] The same classification is then recomputed using whole corporate group rather than parent firms, i.e., using *HV-Group* classification. The corresponding *F-HV-Group* distribution of group types is reported on the bottom part of the table. A fraction of conglomerate acquirors are reclassified as mixed or none-type firms. The share of MNEs specialized in conglomerate deals shrinks but remains dominant.[39]

				F-HV					**F-HV-Group**		
		Horiz.	Vert.	Mix	Congl.	None	Horiz.	Vert.	Mix	Congl.	None
Firms	#	3262	1061	1651	**7709**	686	3638	762	2669	**5903**	1397
	%	22,7	7,4	11,5	**53,6**	4,8	25,3	5,3	18,6	**41,1**	9,7
Deals	#	18942	5124	9076	**36658**	7120	20303	3870	18632	**19600**	76920
	%	24,6	6,7	11,8	**47,7**	9,3	26,4	5	24,2	**25,5**	18,9

Notes: HVF - firms classified by (*HV*) type of deals that they mainly do. A firm belongs to a given *HVF* category if the share of the corresponding *HV* type represent over 50% of total deals done by that firm. The residual firms, i.e., firms without a dominating type of deals, are classified as *None*. The classification takes into account firms that did more than one deal during the sample period.

Table 5: MNEs classification, multi-deal firms only

Case study   Once the classifications of deal- and firm-types described, it appears useful to illustrate these with an example from Zephyr. Let us examine M&A done by Siemens AG, German multinational, classified as *All Other Miscellaneous Electrical Equipment and Component Manufacturing* (NAICS 335999) (see tables E.5 and E.6 for the list of Siemens M&A). The firm ranks as one of most active conglomerate acquirors of the sample (Table E.8) with 65 out of 74 deals being conglomerate. Siemens' deals involve firms operating in a variety of industries such as *Audio and Video Equipment Manufacturing, Motor and Generator Manufacturing* but also in some less related industries such as *Water Supply and Irrigation Systems, Nuclear Electric Power Generation* or *Pharmaceutical Preparation Manufacturing.*

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[38]For the full summary statistics at the acquiror level see Table E.2 in Appendix. Tables E.7-E.8 list the most frequent acquirors for each of the four *HV* categories. The four lists are dominated by acquirors highly "specialized" in a given *HV* type of deals.

[39]One may fear that the high share of conglomerate deals may be driven by the most active acquirors, serial buyers, that could lead strategies of acquiring very divers activities. The baseline *HV* and *HV-Group* classifications are therefore recomputed without MNEs that do respectively more that 20, 15 and 10 deals during the sample period. As shown in Table E.3 the share of conglomerate deals is slightly higher once the most frequent buyers excluded from the sample. Conversely, the bottom part of the table takes into account only the transactions done by the most active acquirors (20% of sample deals). These correspond to 18 750 deals done by 654 MNEs. Each of MNEs have done over 16 transactions. While the share of conglomerates represents over 40% of the sample for the baseline *HV* classification, it shrinks to roughly 14% once the whole group is taken into account.

***HVI* - Intensity of direct linkages**   Table A.5 in Appendix corrects for the potential misclassifications dues to too restrictive definition of *HV* categories. In the benchmark *HV* classification deals are categorized based on dummies for at least one shared horizontal or vertical linkage. MNEs may target firms with which they have several horizontal and/or vertical linkages as well as firms with which they share only one single (potentially minor) secondary code.[40] The transactions of this type may in fact correspond to conglomerate deals.[41] To correct for this potential *misclassification* I calculate the intensity of linkages between the match partners. The index captures the share of horizontal and vertical linkages among all the industry combinations. As conglomerate are reclassified these deals that (*i*) neither have direct linkages between acquiror and target primary codes (*ii*) nor any other direct linkages with target primary code, (*iii*) that are done by acquirors operating in multiple industries and (*iv*) whose linkage intensity is below the arbitrary threshold of 33%.[42] These correspond to nearly 6 800 M&A in the sample (8%).[43] For the corporate group (*HV-Group*) classification I choose a threshold of 10% shared links, since corporate groups often accumulate a large number of activity codes which increases the number of possible combinations. I further reclassify also *F-HV-Group* categories.[44]

Firm characteristics   Out of 28 999 acquiring MNEs in the final dataset, nearly half (14 435 firms) have done only one transaction during the sample period, while the most active acquiror did 218 transactions. 13 882 firms did at least one conglomerate transaction and one third of all the MNEs (10 116 firms) did conglomerate deals only. Furthermore Table A.6 in Appendix summarizes firm characteristics in terms of their size (number of employees), capitalization, total assets and operating revenue over turnover.[45]

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[40]Firms in the sample have up to 30 industry codes which gives up to 30x30 possible combination of shared linkages. This raises a concern that some relatively loosely related deals may be classified as non-conglomerate.

[41]To illustrate that take the case Siemens acquiring Morgan Construction Company, a firm classified as *Rolling Mill Machinery and Equipment Manufacturing* (NAICS 333516). These two manufacturing firms seem to have *a priori* distinct activities. Both of them have however among their secondary codes *Custom Computer Programming Services* (541511) and therefore the M&A is classified as horizontal. Take Google Inc., one of the most active acquirors in the sample. The company is known for acquiring seemingly unrelated firms of all kinds, from mapping services to robots, gadgets or facial recognition software. Most of these targeted firms share, however, some industry codes with Google. Hence, Google appears as one of the major *horizontal* acquirors in Zephyr, with over 85% of its M&A being horizontal (Table E.7).

[42]Mean deal intensity is 0.54 and the median is at 0.5.

[43]Taking as a share threshold 0.5 instead of 0.33 increases the number of observations to 9 000 M&A (10% of the sample). With a threshold at 20%, 4 000 transaction qualify as conglomerate. Moreover, 33 223 deals (67.3% of non-conglomerate transaction) occurred between firms that have direct linkages between their primary codes. This number includes also single-industry firms. If to exclude single-industry acquirors the number is 25 353 (62.2%). If to further exclude single industry targets the number goes to 9 023 (50.28%). Further, among the remaining transactions, deals where acquiror has a direct linkage with target primary code correspond to 7 337 (14.88%).

[44]In addition, the data show that this type of loosely related deals is concentrated among relatively few firms (Table E.4).

[45]As stated above, the rate of missing observations in Zephyr remains significant. Notes at the bottom of the table report shares of non-missing observations for each displayed variable.

Unsurprisingly, the acquirors with the highest averages in terms of all the criteria are the MNEs doing deals of all kinds, i.e., firms classified in the residual category, *None.* They are followed by those doing predominantly mixed type of M&A. The smallest acquirors are the serial horizontal buyers. MNEs doing mainly conglomerate deals come as the third biggest category in terms of all the variables except total assets.[46] On the target side, again without surprise, the firms classified as acquired through mixed deals have the highest scores in terms of all the criteria.

4.2.2 Aggregate flows

Manufacturing *versus* Non-Manufacturing   In Table 7 I compare the distribution of *HV* types distinguishing between manufacturing and non-manufacturing firms.[47] Conglomerate transactions appear to be more frequent among the manufacturing M&A (with nearly 60% versus 38% of deals), while the opposite holds true for horizontal transactions (with only 20% for manufacturing M&A versus 35% for the non-manufacturing ones).[48]

Sectoral composition   Turning to sectoral composition, Table B.1 lists the most frequent industry pairs among conglomerate deals.[49] The rankings are dominated by services industries and especially IT services. In particular, *Custom Computer Programming Services* appear as the most active acquiring and the most targeted industry.[50] Moreover, the top ranking shows that both *horizontal-like* (e.g., rank 1 and 4) and *vertical-like* (e.g., rank 3, 6 or 7) types of pairs are among the most frequent industry matches.[51]

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[46]In common language, the term *conglomerates* is usually used to describe large firms active in a number of various industries. Here, as conglomerate are classified firms that occupy on average the middle part of size distribution. Notice that those results are obtained almost "by construction" of *HV* classification. It is more likely to find horizontal and/or vertical linkages for MNEs already operating in large number of industries at the beginning of the sample.

[47]As manufacturing are defined these firms whose primary sector belongs to manufacturing and that have among their secondary activities at least one third of manufacturing activities. According to this definition 28% of targets and 27% of acquirors are manufacturings firms. Moreover 17618 deals in the sample (nearly 20%) occur between manufacturing firms.

[48]While deals in services dominate the top frequent industry pairs for conglomerates, Figure B.2 shows that at an aggregate level the conglomerate M&A are relatively less dominated by services as compared to the other *HV* types of deals. See Desbordes et al. (2015) for a detailed descriptive statistics sectoral level analysis of M&A.

[49] The top part takes into account firms primary codes only, the bottom part on the other hand counts all the possible combination of target and acquiror industry codes.

[50]It is important to highlight that *Custom Computer Programming Services* are the most frequent industry among both acquiring and targeted activities in the sample. The industry appears frequently in particular among horizontal M&A.

[51]Table B.2 lists top ten the most frequent industry pairs among conglomerate deals at 3-digit NAICS primary codes. The top of the table is dominated by deals in IT services and manufacturing. At this aggregation level, most of the top industry pairs is classified as horizontal. This finding, while unsurprising, is in line with Alfaro and Charlton's (2009) vertical intra-industry trade discussed in Section 2.

Cross-country flows Looking at the geographical composition of conglomerate deals, Figure B.3 displays the shares of different HV types among the inflows from/to the North/South. The share of conglomerate deals remains very similar between different geographical directions. Additionally in Section B.1 in Appendix, I also apply a traditional gravity-type setting to compare conglomerate and non-conglomerate flows. While most of the factors have similar effects on both sub-categories, conglomerate flows seem to be more sensitive to geographic and cultural proximity. The results exclude also that the high share of conglomerate M&A in total M&A deals may reflect the opportunistic behaviour of financial conglomerates, so-called *fire-sale FDI* (Krugman, 2000).[52]

5 Proximity Between Firms' Activity Baskets

The paragraphs above have documented the importance of conglomerate transactions in the total M&A flows and have drawn corresponding basic descriptive statistics. Comparing conglomerate deals with other types of M&A on aggregate level did not bring however a clear conclusion as for distinctive character of this type of transactions. The high share of conglomerate deals does not seem to be driven by one particular sector nor geographical zone. Conversely, the omnipresence of conglomerate M&A suggests rather that this type of deals corresponds to firms' general practice. This yields a necessity to approach M&A choices at match level, taking into account the characteristics of both transaction partners. This section proposes corresponding transaction-level analysis and it investigates the degree of similarity between activity baskets of acquiring and acquired units. It proposes three alternative measures of proximity of activity-mixes, namely task dissimilarity, industry closeness and degree of relatedness in product space. Referring to the example from the introduction, the introduced metrics aim to investigate whether the car manufacturer X is indeed more likely to acquire a motorbike producer rather than cup cake factory of a firm operating in industry such as for instance *Soft pretzels made in a commercial bakery* (311812, NAICS 2007).

5.1 Distance Between Activity Baskets

Task dissimilarity [53] Task dissimilarity compares the task content of firms' activities. The idea is that even in the absence of direct horizontal or vertical links, there may nevertheless be an important overlap in the tasks composition between two seemingly unrelated activities.[54] Such a similarity can

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[52]MNEs may target firms in the destinations affected by external shocks such as a crisis (e.g., Baker et al., 2009). See Section B.1 for further detailed description of the estimation strategy and discussion of results.

[53]I am indebted to Rainer Lanz, Sébastien Miroudot and Hildegunn Nordas for sharing their codes for task intensity at industry level.

[54]To illustrate this, Figure E.1 draws one of the branches of dendrogram of 280 NAICS 4-digit industries based on their task intensities. The top branches show that several industries from Transportation

potentially represent a source of economies of scope. If the activities of both firms rely on similar types of tasks, the acquiror can arguably exploit more efficiently its expertise and know-how in managing the acquired firm. A share vector of 41 tasks is computed for each industry.[55] Task dissimilarity between baskets of activities is calculated as an average of euclidean distances between the task contents of all the industry pair combinations of acquiring and acquired firms.[56]

SIC-closeness Basket closeness metrics builds on Alfaro and Charlton (2009).[57] Closeness simply corresponds to the numerical proximity of SIC codes. It takes advantage of the fact that SIC classifies similar industries together. The closeness score between a pair of activities corresponds to the absolute difference between their 4-digit SIC codes.[58]

Relatedness in product space The measure builds on product relatedness from Hidalgo et al. (2007).[59] Following their seminal paper, industry relatedness corresponds to co-exporting probabilities between pairs of industries, $\phi_{ij} = min[P(i|j), P(j|i)]$, where $P(i|j)$ is a conditional probability that a country that has a comparative advantage in exporting products in industry j also has a comparative advantage in exporting products in industry i. ϕ_{ij} represents therefore an outcome-based indicator of how closely two industries are related to each other.[60] The relatedness score between the two partners of the match simply averages relatedness scores among all the possible combinations of acquiror and target

Equipment Manufacturing (336), such as *Motor Vehicle Body and Trailer Manufacturing* (3362), *Motor Vehicle Parts Manufacturing* (3363) or *Other Transport Equipment Manufacturing* (3369) require similar activities as for instance *Other Furniture Related Product Manufacturing* (3379), *Household Appliance Manufacturing* (3352). As an other illustration, Figures E.2-E.5 display dendrograms for task similarities between targets acquired respectively by Google and Siemens.

[55]Following Lanz et al. (2013), information on task shares by occupation from O*NET are matched with the data on occupations intensity by industry.

[56]Euclidean distance takes a standard form, $Eucl = \sqrt{\sum_n^{41}(\tau_n^a - \tau_n^t)^2}$ where τ_n is a share of task n^k in $j = a, t$, acquiror or target NAICS 4- or 5-digit industry.

[57]Alfaro and Charlton (2009) provide an evidence that MNEs chose to own rather proximate stages of production. Alfaro and Charlton (2009) construct their closeness using only firm primary activity. The variant used here takes into account all the combination between acquiror and target industry codes.

[58]For instance, the closeness of Aircraft & Parts (SIC 3720) with Aircraft Engines & Engine Parts (SIC 3724) is 4, while with Electronic Components & Accessories (SIC 3670) it is 50, with Search & Detection Systems & Instruments (SIC 3812) it is 88 and with Crude Petroleum & Natural Gas (SIC 1310) it is of 2410. The closeness score between the two activity baskets is the average of the scores of all the combinations of acquiror and target activities.

[59]Revealed comparative advantage (RCA) is measured using Balassa index for manufacturing trade flows from BACI (Gaulier and Zignago, 2010).

[60]It reflects the idea that if countries export goods from both industries with comparative advantage, these industries may presumably share similar requirements in terms factors of production, technology, know-how, infrastructure, institutions and such.

industry codes.[61]

Additional Measures - M&A and Market Structure   Next to the measures of proximity between activity baskets in Section C.2 I also introduce several additional match- and firm-level metrics that have for purpose to control for other potential M&A motives. *Market structure* captures the degree of concentration on the set of markets on which target firm operates. *Market size* captures how large these markets are.[62] *Comparative advantage* captures whether the target is closely related to the local comparative advantage. Notice that all of these measures are build taking into account all[63] of the activity basket of acquiror and/or target firms.[64]
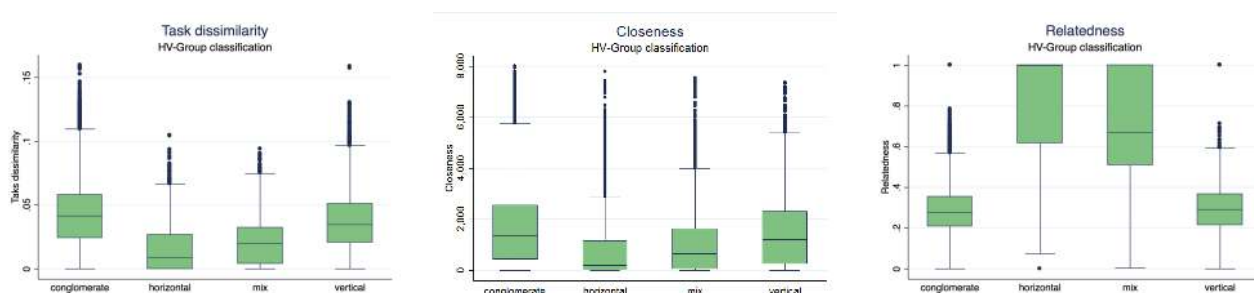
Figure 1: Distribution of similarity measures across *HV-Group* classification

5.2   Distance between conglomerate and non-conglomerate deals

Before running an econometric exercise, I look at the distribution of the three proximity measures across the *HV-Group* types in Figure 1. Despite the lack of direct horizontal and vertical links, conglomerate deals occur between firms doing relatively closely related activities. The degree of proximity between activity baskets for conglomerate M&A remains relatively comparable to the other types of deals, in particular to

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[61]More accurately, the acquiror-target relatedness score (ATRs) is computed simply as: $ATRs^{k,l} = (\sum_{i}^{m}(\sum_{j}^{n}\phi_{i,j})/n)/m$ with $ATRs^{k,l}$, the relatedness score between acquiror k and target l; i and j acquiror and target industries and m and n are the counts of respective *ac* and *tg* industry codes. Finally, $\phi_{i,j}$ is industry relatedness between i and j. Relatedness values are taken with one year lag to avoid the endogeneity issue.

[62]Measures of market size and structure are constructed following Fontagne et al. (2014).

[63]Notice that since the proposed measures are built on the trade flows data from BACI, they take into account only manufacturing activities.

[64]The three measures presented in this subsection are calculated using BACI database. All the variables are one year lagged to avoid potential endogeneity bias.

the vertical ones.[65] In Appendix, Figure C.1 additionally distinguishes between domestic and cross-border transactions. As expected, MNEs seem to target relatively more dissimilar firms on domestic markets. Surprisingly, the dissimilarity difference between domestic and cross-border M&A appears less pronounced for conglomerate M&A.[66]

5.3 Distance between firms and probability of M&A - econometric approach

To formally confirm that conglomerate deals do not correspond to random firm matches, I incorporate the measures presented above into a probit estimation with positive outcome corresponding to a realized M&A transaction:[67]

$$P(M\&A_{k,l}^t|.) = F(\beta_1 \mathbf{X_{k,l}} + \beta_2 \mathbf{Z} + \mu_t + \nu_o + \iota_d + \zeta_{s_k} + \vartheta_{s_l})$$

$$M\&A_{k,l}^t{}^* = \beta_1 \mathbf{X_{k,l}} + \beta_2 \mathbf{Z} + \mu_t + \nu_o + \iota_d + \zeta_{s_k} + \vartheta_{s_l} + \epsilon_{k,l}^t$$

$$M\&A_{k,l,t} = \begin{cases} 1 & if & M\&A_{k,l}^t{}^* > 0 \\ 0 & otherwise \end{cases} \tag{1}$$

where $Prob(M\&A_{k,l}^t|.)$ is the probability that firm k acquires firm l in year t, $\mathbf{X_{k,l}}$ is a vector of match-specific variables and $\mathbf{Z}$ is a vector of gravity variables.[68] The estimation includes fixed effects for time (t), origin (o) and destination (d) country and primary industry 2-digit codes of acquiror (s_k) and target (s_l). Standard errors are clustered at country-pairs level. Table 6 presents average marginal effects of the estimation of the cross-border deals for the subsamples of conglomerate, non-conglomerate deals as well as for the overall sample of M&A. As expected, task dissimilarity has negative and significant effect on the probability of acquisition for conglomerate M&A. This holds for all the specifications. The similarity

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[65]Reader may be surprised by the features of box plots for relatedness scores, in particular by the one for mixed deals. It should be noted however that since relatedness measures are available only for manufacturing activities, the distances for all the non-manufacturing activities are not captured by relatedness measure. Hence, if a mixed deal involves for instance a horizontal link between a pair of manufacturing activities and a vertical link between a pair of a manufacturing and a non-manufacturing activities, the latter one will not be captured by the relatedness score. This represents an important drawback of the measure. For that reason, the rest of the paper will privilege the two other metrics.

[66] Furthermore, looking at manufacturing vs. non-manufacturing transaction, these differences remain however moderate (Figure C.2). Manufacturing M&A appear to be of a slightly lower dissimilarity than the non-manufacturing ones. The opposite seem to hold true for closeness measures.

[67]Zephyr dataset reports only deals that took place. Non-M&A observations are generated then directly from the sample by matching randomly acquiror and target firms from the original sample.

[68]Gravity variables include both countries' GDPs and GDPs per capita, bilateral distance and dummies for shared border and official language.

in terms of task composition matters for conglomerate M&A. The coefficients for conglomerates are of course less negative than for the non-conglomerate deals. Further columns (4)-(6) include SIC closeness and columns (7)-(9) relatedness.[69] All the coefficients are significant and of the expected sign. The results therefore confirm the intuition illustrated in the example from the introduction, the car manufacturer X is more likely to acquire a motorbike producer than a cupcake factory. Section C.1 in Appendix delivers regression results for additional specifications and sub-sampling choices, distinguishing among others between cross-border and domestic deals, manufacturing and non-manufacturing as well as all four HV categories. Table C.1 reports results for tasks dissimilarity for cross-border deals and both cross-border and domestic deals as well as for manufacturing and non-manufacturing sub-samples. Table C.2 additionally displays the results for horizontal, vertical and mixed HV categories. Table C.3, analogous to Table C.2, reports in addition marginal effects for gravity variables not displayed in the main tables. Table C.4 reports the results of probit regression on gravity variables only. The following series of tables looks at the results including next to task dissimilarity also SIC-closeness. Table C.5 distinguishes between cross-border deals and both cross-border and domestic deals including, simultaneously and separately task dissimilarity and SIC closeness; Table C.6 reports analogous results for manufacturing and non-manufacturing subsamples and Table C.7 for additional subsamples for horizontal, vertical and mixed deals and as well as the average marginal effects for gravity variables. Next, I include also relatedness score. Note that this makes the sample shrink significantly and the following regression limit to deals involving manufacturing industries. Tables C.8 and C.9 report the corresponding results for all three proximity measures jointly, respectively for conglomerate and non-conglomerate deals and explicitly distinguishing between other HV categories. The proximity variables are significant and of expected sings across virtually all specifications. Lastly, Table C.10, next to the three proximity metrics, includes also the market structure controls defined in Section C.2, namely, market concentration, market structure and comparative advantage.

6   Expansion of product basket over time

The previous section has shown that, despite the lack of direct horizontal or vertical linkages, transactions classified as conglomerate occur between firms relatively closely related in terms of their activity mixes. M&A appear by the same as a tool for MNEs to expand their activity. This section studies the dynamics of this expansion. It looks at how the shape of MNEs activity baskets evolves as firms make subsequent deals. The question is analyzed from two different angles. From one hand side, I look at the changes in the degree of concentration of MNEs' activities. From the other, I categorize firms' expansion strategies into radial and linear depending whether they expand their activity towards one given type of

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[69] Due to the data restrictions related to the construction of SIC closeness and relatedness, the size of the samples shrinks with the inclusion of these measures. An additional series of tables in Section C.1 in Appendix reports results for constant sample sizes. See below.

	1 Cong.	2 Non-Cong.	3 All	4 Cong.	5 Non-Cong.	6 All	7 Cong.	8 Non-Cong.	9 All
Task Dissim.	-2.309*** [0.060]	-4.043*** [0.064]	-4.691*** [0.065]	1.827*** [0.072]	-4.120*** [0.055]	-4.374*** [0.077]	-0.955*** [0.085]	-0.800*** [0.077]	-1.386*** [0.099]
Closeness				-0.011*** [0.001]	-0.028*** [0.001]	-0.028*** [0.001]	-0.005** [0.002]	-0.003** [0.002]	-0.007*** [0.002]
Relatedness							0.381*** [0.014]	0.445*** [0.008]	0.711*** [0.011]
Grav. controls					YES				
FE					YES				
Observations	403,449	409,117	445,942	251,836	265,468	289,689	42,306	45,603	48,348

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* measured as average euclidean distance between the vectors of task contents among all the combination of acquiror and target codes.

Table 6: Baseline results - AME for probit estimation

industries or radially towards industries of different kinds.[70]
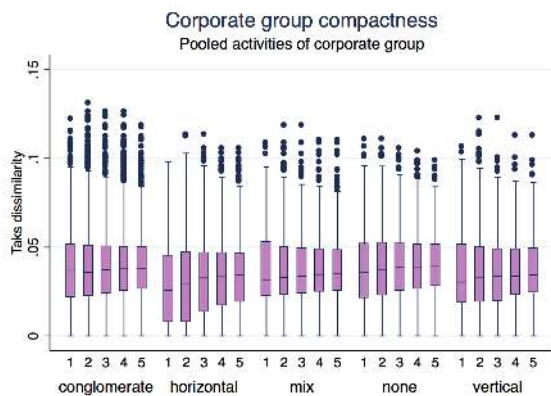
Corporate group compactness
Pooled activities of corporate group

	Congl.	Horiz.	Vert.	Mix	None
Sequence	0.008*** [0.001]	0.033*** [0.006]	0.034*** [0.006]	0.005*** [0.002]	0.006* [0.003]
FE:			Yes		
Obs.	24,878	10,334	4,752	7,821	7,178
R-squared	0.198	0.240	0.323	0.292	0.295

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. The dependent variable, the average compactness, was multiplied by 100. Table reports results of an OLS estimation on an unbalanced panel of acquiring MNEs between 1997 and 2012. The sample takes into account only the MNEs that did more than two deals over the sample period. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. The subsamples correspond to the type of *F-HV* firms.

Table 7: Changes in average corporate compactness

6.1 Compactness of corporate group

To study the evolution of the degree of concentration of firms' activities, I construct an index of (reverse) *compactness* of corporate group activity-mix. The index considers each firm with all of its previously acquired subsidies as one integral corporate group. It establishes the firm's primary code as the central activity of the group and computes average distance from this "centroid" to all the other

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[70]In the remaining part of the paper, firms are divided into sub-samples corresponding to the type of deals that they mainly do, taking into account the activity of the entire corporate group as well as correcting for all the potential miss-classifications of deals at 10% level as specified in subsection 4.2.

activities within the corporate cohort. The distance is measured in terms of task dissimilarity. I look at the evolution of the compactness over the sequence of deals through a simple OLS regression. Table 7 reports the corresponding results. The degree of compactness decreases with the subsequent deals across all of the corporate group types, *F-HV-Group*. MNEs activity becomes therefore less concentrated with the subsequent acquisitions. The figure on the left side of Table 7 displays the plot boxes of compactness for sequence of five consecutive transactions confirming the regression results. A series of additional estimations in Table D.1 in Appendix distinguishes between manufacturing and non-manufacturing firms. The coefficients remain comparable across all the specifications.[71] Table D.2 looks also at the evolution of the standard deviation from average compactness showing that it increases as well with the subsequent deals. Overall, the activity mix of the corporate groups becomes more diverse as MNEs make subsequent M&A.[72]

(a) Linear   (b) Radial
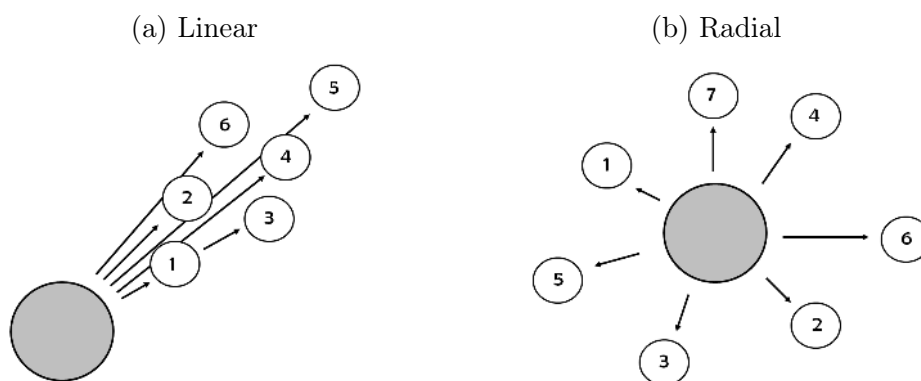
Figure 3: Radial vs. Linear Expansion

6.2   Radial vs. Linear Expansion

MNEs' expansion towards new activities can be of different natures. Firms can expand their activity *linearly*, consequently towards one given direction - a given "line" of activities - or expand *radially* towards multiple directions and, hence, diverse types of activities,[73] as illustrated in Figure 3. I categorize MNEs'

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[71]In addition, Figure D.1 displays analogous plot-boxes for compactness in manufacturing and non-manufacturing firms confirming the results from D.1.

[72] Note, that the index of the average compactness was computed taking into account all the activities of the corporate group *pooled* into one basket, i.e., that takes each activity into account only once. Section D.1.1 in Appendix discusses an alternative way of measuring firms' compactness and reports the corresponding results.

[73]Let us take the example of Google once again. In the case of linear expansion, Google Inc., initially provider of Internet services, could decide to acquire for instance Motorolla (M&A in 2011, USA), a mobile device manufacturer. Starting from these "simple" electronics, Google could invest in robotics,

expansion patterns accordingly. In order to classify whether firms expand radially or linearly I compare (a) the average "distance"[74] between the acquiring MNE, a, and its target, t, distance $d_{a,t}$, with (b) the distance between this target, t, and the entire corporate group associated with the MNE, g, distance $d_{g,t}$. In the other words, $d_{g,t}$ is computed including (activities of) all the firms previously acquired by a given MNE. For sake of example, the figure next to Table 8 illustrates the two types of distances, $d_{a,t}$ and $d_{g,t}$ for a linear expansion case. Circles (1), (2) and (3) represent MNE's subsequent targets. The gray areas in the RHS sub-figure correspond to the corporate group after the first and the second M&A, i.e., (MNE)+(1) and (MNE)+(1)+(2) respectively. In the case of linear expansion the distance between acquiror and n-th target, $d_{a,t}^n$, should be larger than between the target and the corporate group (i.e., acquiror with its n-1 targets), $d_{a,t} - d_{g,t} > 0$. Hence, in our illustration, for the linear expansion the distance from the acquiror to for instance the third target, (MNE)-(3), should be larger than the distance between this target (3) and the corporate group associated to the acquiror, (MNE)+(1)+(2)). Conversely, if a MNE expands radially acquiring more diverse activities, the distance from it to the new target, $d_{a,t}$, should be smaller than the distance from the group, $d_{g,t}$. I also calculate the average score per MNE to determine which type of deals a firm tends to do predominantly. Classifying the deals accordingly I find that nearly 75% of the transactions in the sample represent a radial type of expansion. In addition, over 60 % of MNEs do mainly deals through which they expand radially. Table 8 reports the results of an OLS regression of the evolution of the change between the two distances, $d_{a,t} - d_{g,t}$, with the subsequent deals. The results confirm the radial character of MNEs' expansion with the difference between the two distances becoming more important with the subsequent deals.

Furthermore, in Table D.5 in Appendix I look at the subsamples of MNEs practicing mostly linear and radial expansions.[75]

such as robotic arms and computer vision producer, *Industrial Perception, Inc.* (M&A in 2013, USA), then Google might be willing to invest further in humanoid robotics *SCHAFT, Inc.* (M&A in 2013, JPN). Google could be further interested in artificial intelligence and it could acquire for instance *DeepMind Technologies* (M&A in 2014, UK). It could finally invest in computational neuroscience internally under the label *Google X Lab,* for instance... afterwards it could invest further in bio-robotics, then in genetics and then... But this is just an example. As an other example, take again manufacturer like Siemens. In the case of linear expansion, Siemens could decide to invest into for instance medical equipment manufacturing. First, it would buy a firm producing dental equipment, then an other one producing surgical dental instruments, next some dental laboratories and so on. In the radial case, Siemens would acquire a variety of different activities that are not closely related between each other, for instance a firm specialized in railroad manufacturing, then one producing mill machinery and next one doing audio and video equipment and so on.

[74]The average distance is measured in terms of degree of task dissimilarity between all the combinations of acquiror's and target's activities.

[75] As MNEs expanding radially I classify firms of average difference score below the arbitrary threshold of -.01 (the maximum difference in the sample is - .11). 2,626 MNEs fits to this definition (with the total of 18 000 transactions). Among firms classified as expanding radially are for instance Google, IBM, Intel, AXA, LVMH and Siemens.500 MNEs that expand linearly are these who have their average difference score above .01 (maximum .09), they correspond to 6700 deals. For firms expanding radially, the expansion of conglomerate and mix MNEs appears to be less distant with the subsequent transactions. Conversely
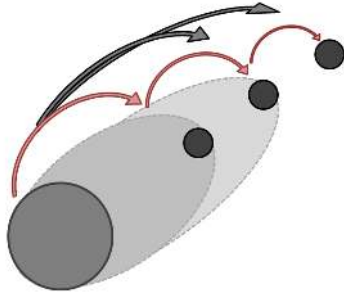
Linear expansion example; acquiror-target vs. corporate group-target distances.

	Congl.	Horiz.	Vert.	Mix	None
Sequence	-0.008***	-0.049***	-0.021***	-0.002	-0.011***
	[0.002]	[0.006]	[0.004]	[0.002]	[0.002]
FE:			Yes		
Observations	30,114	13,845	6,200	9,274	7,907
R-squared	0.091	0.152	0.150	0.144	0.104

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for acquiror country, 2-digit primary industry code and years. Explanatory variable: *Sequence* corresponds to the sequence of succeeding M&A done by a given MNE. Deals are ordered chronologically and a number is assigned to each of them. The dependent variable, the difference between *task dissimilarity* scores for target-acquiror and target-corporate group. The dependent variable was multiplied by 100.

Table 8: Radial vs. linear expansion

7 Discussion

M&A can be undertaken for a number of reasons.[76] Strategies of multinationals in terms of M&A are widely recognized as being complex. They also often vary from one firm to another. Most of the trade papers look at FDI decisions from a *functional* perspective, through simple horizontal or vertical lenses, taking firms as single products. While such simplifying assumptions are often necessary for analytic clarity, a more detailed study may be of value added. The present study looks at M&A decision, from a perspective that is relatively less common in FDI studies. It takes into account the multi-product character of multinationals and apprehends M&A as a way for MNEs to acquire new activities. The reported results, at odds with traditional FDI trade theories, appear, however, in line with the literature on multiproduct firms and a broader view of multinational strategies. MNEs willing to start a new activity may prefer to acquire already existing units rather than to develop the activity internally. Such an acquisition may generate synergies and reduce sunk costs of the investment as firms can potentially acquire specific know-how. International trade literature implicitly and explicitly studies strategies of multinationals and their consequences. Recent flourishing literature on multi-product firms focuses on *exports* basket choices of MNEs, implicitly assuming that firms produce various products. Surprisingly little attention has been given to the firm's decision about what and how to produce and towards which direction it would like to develop its activity.

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horizontal and vertical MNEs tend to expand further in different directions with the sequence of deals. As for firms expanding linearly, they appear to have more diverse activities over time and hence the difference between the two scores becomes less positive, at least for conglomerate and horizontal deals. More interestingly, the opposite holds true for MNEs doing mixed deals. They appear to persistently expand towards a given direction. The coefficient is also positive for vertical firms, but it remains however non-significant.

[76]See literature review, Section 2.

The clear limit of the study is that it provides a very partial picture of MNEs activity. It focuses only on one type of FDI, M&A, ignoring investments such as greenfield or joint ventures. Providing a full picture would also require data on arm's length activity as well as affiliate sales and shipments between plants. While such an ideal dataset does not exist for a large set of countries, a more in depth analysis could be run an one-country study.

8   Conclusions

This paper delivers a series of novel facts related to M&A choices done by multinational firms. The study reports that a high share of M&A done worldwide is conglomerate and as such are decided for different reasons than the ones commonly studied in the FDI literature. Multinationals do M&A not only as a substitute for exports, to gain access to foreign markets or to extend vertical integration along the production chain. They buy new activities. The study puts emphasis on the fact that conglomerate M&A represent a tool for MNEs to expand the spectrum of their activities and acquire specific assets. I explore the (multi-)activity dimension of MNEs and propose a series of measures capturing distance between acquiring and acquired units. The results confirm the expanding character of firms' M&A activity. MNEs acquire firms operating in the industries closely related to their own spectrum of occupations. The range of their activities becomes wider over time.

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A Distribution of M&A and MNEs types

	Horizontal	Vertical	Mixed	Congl.	Total
All					
# deals	26,039	10 922	12 394	42 197	91 552
Percentage	28.4	11.9	13.5	46.1	100
Cross-Border					
# deals	16 634	6 744	7 875	26 590	57 843
Percentage	28.8	11.7	13.6	46.0	100
Domestic					
# deals	9 405	4 178	4 519	15 607	33 709
Percentage	27.9	12.4	13.4	46.3	100
Deal values					
Average deal value	2 258	3 020	5 672	1 895	
Percentage of tot. value	22,2	14,3	32,5	31,0	

Notes: M&A transactions 1997-2012. 6 digit NAICS codes, 5% cutoff for vertical linkages. Average deal values are in millions of euro.

Table A.1: *HV* classification of M&A deals

	Horizontal	Vertical	Mixed	Congl.	Total
All					
# deals	27 933	12 344	21 895	29 380	91 552
Percentage	30.5	13.5	23.9	32.1	100
Cross-Border					
# deals	17 768	7 295	13 275	19 505	57 843
Percentage	30.7	12.6	23.0	33.7	100
Domestic					
# deals	10 165	5 049	8 620	9 875	33 709
Percentage	30.2	15.0	25.6	29.3	100
Deal values					
Average deal value	1 743	3 070	4 955	1 567	
Percentage (of tot. value)	18,5	15,7	48,3	17,6	

Notes: Cross-border and domestic transactions done by MNEs, 1997-2012. 6 digit NAICS codes, 5% cutoff for vertical linkages. Average deal values are in millions of euro.

Table A.2: *HV-Group* classification of M&A deals

	Different thresholds for vertical links					Lower levels of horizontality			
	Horiz.	**Vert.**	**Mixed**	**Congl.**			**Horiz.**	**Vert.**	**Mixed**	**Congl.**
1%	11 723	24 659	38 105	17 065		**6 digit**	27 933	12 344	21 895	29 380
	12.8	26.9	41.6	18.6			30.5	13.5	23.9	32.1
5%	27 933	12 344	2 1895	29 380		**5 digit**	31 571	10 067	24 172	25 742
	30.5	13.5	23.9	32.1			34.5	11.0	26.4	28.1
10%	3 5369	7 435	14 459	34 289		**4 digit**	36 916	6 744	27 495	20 397
	38.6	8.1	15.8	37.5			40.3	7.4	30.0	22.3
						3 digit	41 715	4 045	30 194	15 598
							45.6	4.4	33.0	17.04
						2 digit	45 694	2 368	31 871	11 619
							49.9	2.6	34.8	12.7

Table A.3: *HV-Group* classification of M&A deals - different definitions of horizontal and vertical

	Total	Horiz.	Vert.	Mix	Congl
Count of deals	10 242	2 882	1 630	3 486	2 244
Share within HVC type	11.2	10.3	13.2	15.9	7.6

Notes: Vertical linkages at 1% cutoff. A deal is classified as having common vertical linkages if among all the possible combination of acquiror and target 6-digit industry codes, at least one pair of industry codes have vertical upstream or downstream 6-digit industry in common. The distribution is computed using *HV-Group* classification.

Table A.4: Shared vertical linkages

	Horiz.	Vert.	Mix	Congl.	Total
			HV		
#	22104	9003	11436	49009	91552
%	24,14	9,83	12,49	53,53	100
			HV-Group		
#	2166	13049	14525	42318	91552
%	23,66	14,25	15,87	46,22	100

	Horiz.	Vert.	Mix	Congl.	None	Total
			F-HV-Group			
#	18656	8097	12242	44489	8068	91552
%	20,38	8,84	13,37	48,59	8,81	100

*Notes: HV, HV-Group and **F-HV-Group** classifications corrected for the intensity of direct linkages, as defined in Subsection 4.2.1. As conglomerate are reclassified these deals that (i) do not have direct linkages between acquiror and target primary codes (ii) nor any other direct linkages with target primary code, (iii) that are done by acquirors operating in multiple industries and (iv) that whose linkage intensity is below the arbitrary threshold of 33%. The threshold for HV-Group and **F-HV-Group** is at 10%.*

Table A.5: *HV* classification corrected by linkages intensities

	Rev.	Assets	Capit.	Empl.
Acquiror - *type of firm*				
Conglomerate	48.8	90.1	134.5	14.8
Horizontal	14.5	15.6	58.7	6.9
Vertical	41.1	216.1	55.8	11.5
Mix	73.7	574.5	196.1	14.2
None	364.1	1063.5	740.1	22.1
Total	76.6	256.0	202.6	13.6
Target - *type of deal*				
Conglomerate	2.4	4.0	-	0.6
Horizontal	1.8	2.9	-	0.5
Vertical	2.8	13.8	-	0.7
Mix	10.8	42.4	-	1.9
Total	3.8	11.9	-	0.8

Notes: Table reports mean values for the non-missing observations in Zephyr. Variables: *Revenue* - operating revenue/turnover millions euro, *Assets* - total assets in millions euro, *Capt.* - market capitalization in millions euro, *Empl* - number of employees in thousands, The rate of non-missing observations for acquiror characteristics 68, 52, 37 and 62% respectively. for target 39, 33 and 32% respectively. Market capitalization rates for target were not reported due to high rate of missing observation.

Table A.6: Firm characteristics

		Manufacturing deals				
		Horiz.	Vert.	Mix	Congl.	Total
Manuf.	#	6407	3504	3425	19589	32925
	%	19,5	10,6	10,4	59,5	100,0
Non-manuf	#	19632	7418	8969	22608	58627
	%	33,5	12,7	15,3	38,6	100,0
		Manufacturing acquirors				
Manuf.	#	5274	274	285	13875	24739
	%	21,3	11,1	11,5	56,1	100,0
Non-manuf	#	20765	8182	9544	28322	66813
	%	31,1	12,3	14,3	42,4	100,0
		Manuifacturing target				
Manuf.	#	5426	2752	2978	14648	25804
	%	21,0	10,7	11,5	56,8	100,0
Non-manuf	#	20613	817	9416	27549	65748
	%	31,4	12,4	14,3	41,9	100,0

Notes: As manufacturing are defined these firms whose primary sector is manufacturing and that have among their secondary activities at least one third of manufacturing activities. The first part of the table reports the distribution for deals where at least one of the partners is classified as manufacturing firm. The two bottom parts display the results respectively for manufacturing acquirors and targets. The repartition corresponds to the baseline HV specification as in Section 4.1.1.

Table 7: HV decomposition between manufacturing and non-manufacturing firms

B   Descriptive Statistics - Aggregate Flows

(a) Count of deals

(b) Shares

(c) Count of deals

(d) Shares
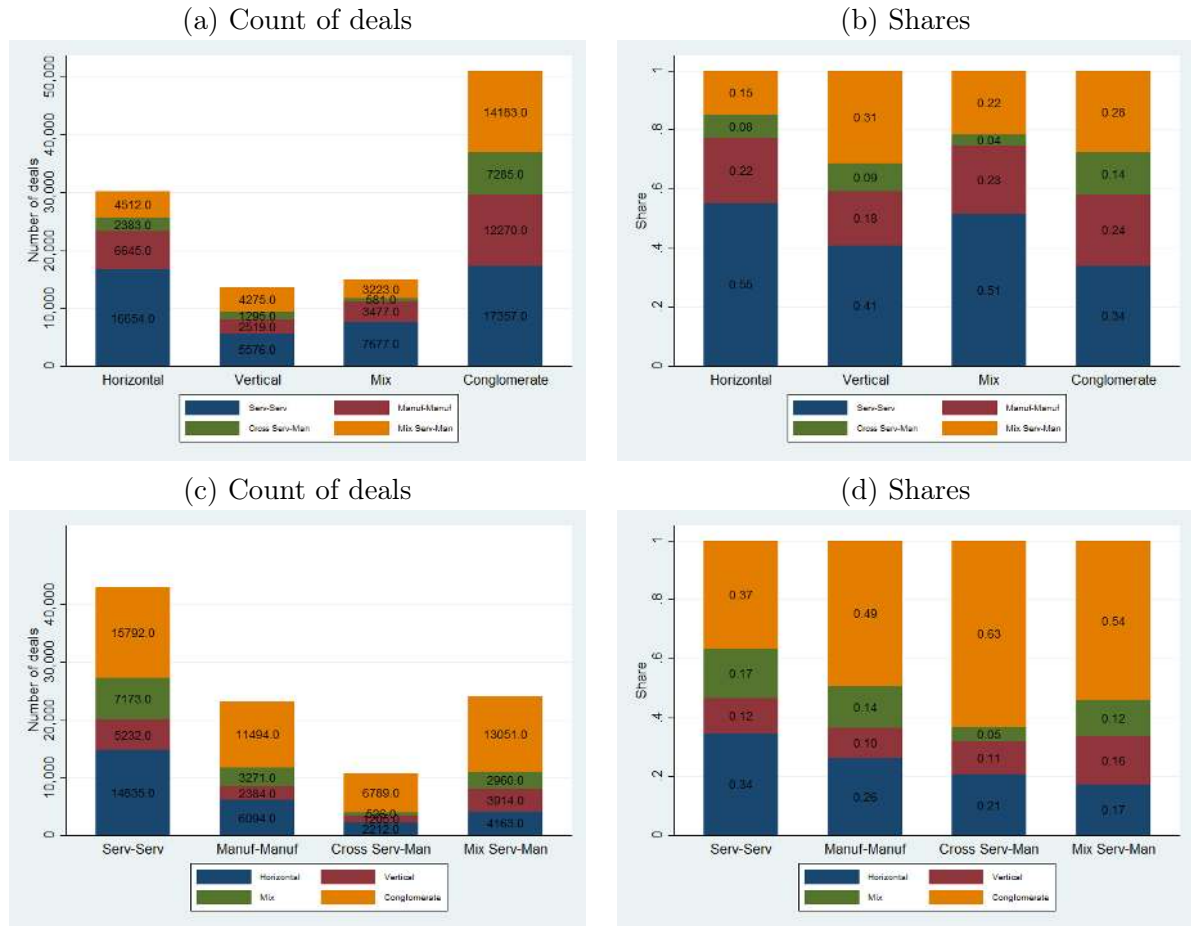
Figure B.1: Repartition of M&A flows broken by broad sectors categories

M&A flows are classified into four sectoral categories, deals between firms operating (*i*) only in manufacturing, *Manuf-Manuf*, (*ii*) only in services, *Serv-Serv*, (*iii*) cross-sectoral deals, where one of the match partners is a pure manufacturer while the other operates only in services, *Cross Serv-Man*, (*iv*) the last category, *Mix Serv-Man*, with deals where acquiror and/or target firms are active in both broad sectors, manufacturing and services. Interestingly, for within-services category, conglomerate deals are relatively less present, as compared to the three remaining sectoral categories. They account only for 34% for *pure serv*, opposite to p.ex., *pure manuf − serv* category where conglomerate flows represent 55%. Looking at the bottom panel of the figure, sectoral distribution within each of *HV* categories is relatively less uniform than in the previous specifications. Conglomerate M&A do not seem to be dominated by any of cross-sectoral categories. Conversely, they are more heterogeneous in terms of sectoral composition than the three other *HV* categories. In this specification, conglomerate M&A appear also as more similar to vertical deals in terms of cross-sectoral composition. Notice that, if to sum the two services-manufacturing categories, i.e., *pure Cross Serv-Man* and*Mix Serv-Man*, this combined category would represent over 40% for vertical deals, so it would be of a size comparable to within-services category. A similar score would be found for conglomerate deals. Hence within vertical and conglomerate M&A, over 40% of deals occurs across broad sectoral categories.

(a) Count of deals

(b) Shares

(c) Count of deals

(d) Shares
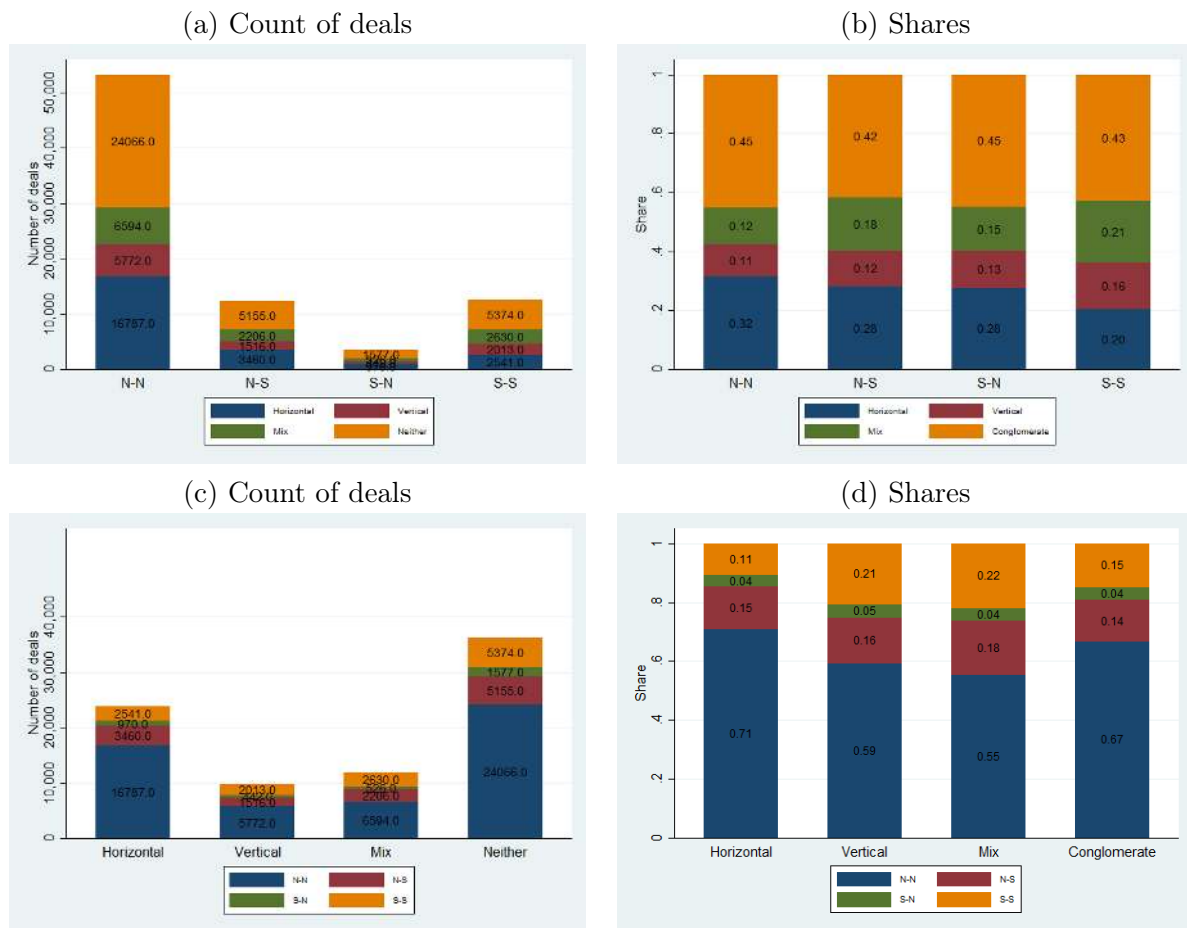
Figure B.2: Repartition of M&A flows broken by $N − S$ categories

M&A flows are classified into four "regional" categories $N-S$, depending whether home and host economies are among developed or developing countries, with North-North, North-South, South-North, South-South flows (NN, NS, SN and SS respectively). The classification into Northern and Southern economies rely on the standard IMF North-South categorization. The top panel (figures a and b) presents the distribution of HV deals for each of $N-S$ directions. The bottom panel (figures c and d) conversely draws the directional $N-S$ composition for each HV category. In line with the well established evidence, M&A are dominated by deals between Northern economies (a). Surprisingly, the distribution of the M&A flows of different HV types is very stable across all four $N-S$ categories (b). The share of conglomerate M&A varies only very little across different $N-S$ directions, from 42 to 45% and, thus, it does not appear to be specific to a one particular direction. Horizontal M&A represent the second largest category. They appear to be slightly less important for SS flows. Looking the distribution of HV categories broken by $N-S$ in the bottom specification ((c) and (d)), the differences in within-HV shares (d) are relatively more pronounced than the differences within-$N-S$ ones (b). Distribution of conglomerate flows among regional $N-S$ categories appears as more similar to the distribution of horizontal flows. Both horizontal and conglomerate M&A are relatively more dominated by NN flows and have relatively less SS flows.
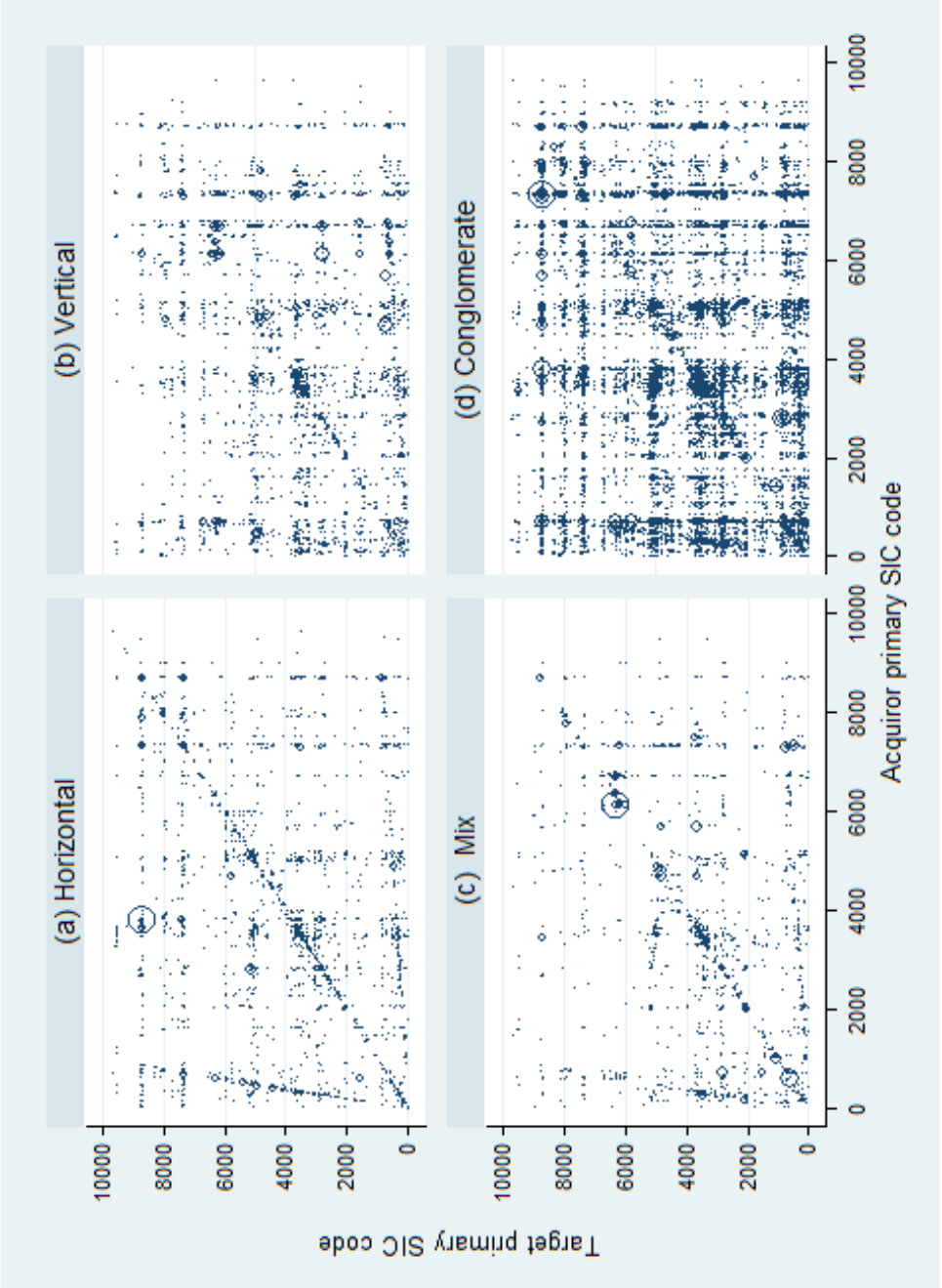
Figure B.3: Industry maps, count of deals by industry primary code wieghted by the total number of deals

The two-digit SIC broad sector categories are the following: Agriculture, forestry, & fishing (01-09); Mining (10-14); Construction (15-17); Manufacturing (20-39); Transportation & pub. utilities (40-49); Wholesale trade (50-51); Retail trade (52-59); Finance, insurance, & real estate (60-67); Services (70-89); Public administration (91-97). For the complete list of SIC codes see https://www.osha.gov/pls/imis/sicsearch.html.

	Acquiror		Target	deals
		Industry primary codes		
1	541512	Computer Systems Design Services	541511	Custom Comp. Progr. Serv.	166
2	523910	Miscellaneous Intermediation	541511	Custom Comp. Progr. Serv.	161
3	325412	Pharmaceutical Preparation Manuf.	541712	R&D in the Phys., Engin., and Life Scienc. (except Biotech.)	154
4	541511	Custom Comp. Progr. Serv.	541519	Other Computer Related Services	142
5	523910	Miscellaneous Intermediation	721110	Hotels (excp. Casino Hotels) and Motels	127
6	541511	Custom Comp. Progr. Serv.	423430	Comp. and Comp. Peripheral Equip and Software Merchant Wholesalers	119
7	519130	Internet Publish. and Broadcast and Web Search Portals	541511	Custom Comp. Progr. Serv.	118
8	541511	Custom Comp. Progr. Serv.	517919	All Other Telecommunications	114
9	541511	Custom Comp. Progr. Serv.	511210	Software Publishers	112
10	334210	Telephone Apparatus Manuf.	541511	Custom Comp. Progr. Serv.	112
		All combination of codes		
1	541511	Custom Comp. Progr. Serv.	541519	Other Computer Related Services	726
2	517919	All Other Telecommunications	541511	Custom Comp. Progr. Serv.	599
3	541511	Custom Comp. Progr. Serv.	517919	All Other Telecommunications	555
4	541511	Custom Comp. Progr. Serv.	423430	Comp. and Comp. Peripheral Equip and Software Merchant Wholesalers	491
5	541511	Custom Comp. Progr. Serv.	541512	Computer Systems Design Services	441
6	523910	Miscellaneous Intermediation	541511	Custom Comp. Progr. Serv.	434
7	541511	Custom Comp. Progr. Serv.	518210	Data Processing, Hosting, and Rel. Serv.	413
8	518210	Data Processing, Hosting, and Rel. Serv.	541511	Custom Comp. Progr. Serv.	332
9	541519	Other Computer Related Services	541511	Custom Comp. Progr. Serv.	319
10	523910	Miscellaneous Intermediation	721110	Hotels (excp. Casino Hotels) and Motels	316

Table B.1: Top 10 6-digit industry pairs for conglomerate M&A among all the possible combinations (count of deals)

	Acquiror		Target		deals
			6-digit		
1	541512	Computer Systems Design Services	541511	Custom Comp. Progr. Serv.	166
2	523910	Miscellaneous Intermediation	541511	Custom Comp. Progr. Serv.	161
3	325412	Pharmaceutical Preparation Manuf.	541712	R&D in the Phys., Engin., and Life Scienc. (except Biotech.)	154
4	541511	Custom Comp. Progr. Serv.	541519	Other Computer Related Services	142
5	523910	Miscellaneous Intermediation	721110	Hotels (excp. Casino Hotels) and Motels	127
6	541511	Custom Comp. Progr. Serv.	423430	Comp. and Comp. Peripheral Equip and Software Merchant Wholesalers	119
7	519130	Internet Publish. and Broadcast and Web Search Portals	541511	Custom Comp. Progr. Serv.	118
8	541511	Custom Comp. Progr. Serv.	517919	All Other Telecommunications	114
9	541511	Custom Comp. Progr. Serv.	511210	Software Publishers	112
10	334210	Telephone Apparatus Manuf.	541511	Custom Comp. Progr. Serv.	112
			3-digit		
1	541	Prof., Scient., and Tech. Serv	541	Prof., Scient., and Tech. Serv	2896
2	334	Computer and Electronic Prod. Manuf.	334	Computer and Electronic Prod. Manuf.	959
3	334	Computer and Electronic Prod. Manuf.	541	Prof., Scient., and Tech. Serv.	944
4	325	Chemical Manufacturing	325	Chemical Manufacturing	728
5	311	Food Manufacturing	311	Food Manufacturing	617
6	221	Utilities	221	Utilities	485
7	523	Securities, Commodity Contracts, and Other Finc. Invest. and Related Activ.	541	Prof., Scient., and Tech. Serv	447
8	333	Machinery Manufacturing	333	Machinery Manufacturing	436
9	334	Computer and Electronic Prod. Manuf.	33	Manufacturing	420
10	517	Telecommunications	541	Prof., Scient., and Tech. Serv.	384

Table B.2: Top 10 3- and 6-digit industry pairs for conglomerate M&A, *primary* codes only (count of deals)

B.1 Conglomerate vs. Non-Conglomerate M&A bilateral cross-country flows - estimation

I compare non-conglomerate and conglomerate M&A flows at country bilateral level in a gravity-like estimation common to FDI studies. Given the count character of the data, a negative binomial regression is estimated. I adapt exponential conditionally correlated random effects model as in Desbordes et al. (2015). The controls are included on their own for the overall sample of M&A and interacted with a conglomerate dummy. The estimation includes both means and deviation from the mean of control variables. These correspond to short- and long-run effects.[77] The following model is estimated:[78]

$$
\begin{aligned}
M\&A_{godt} &= \alpha_{odg}exp(x\beta + \tilde{x}\eta)\epsilon_{godt} \\
\alpha_{god} &= exp(\delta_1 cM\&A + \overline{x}\gamma + z\theta + \tilde{\overline{x}}\phi + \tilde{z}\psi + \delta_{odg})
\end{aligned}
\tag{2}
$$

with $M\&A_{godt}$, the count of deals between origin country o and destination country d at time t and $g = \{ncM\&A, cM\&A\}$ where $cM\&A$ corresponds for conglomerate deals while $ncM\&A$ for the remaining non-conglomerate ones. $cM\&A$ is a dummy taking the value of one if the deal is conglomerate, $\mathbf{x}$ is a vector of time-varying factors, while $\overline{\mathbf{x}}'$ the time-average of these factors, $\mathbf{z}$ is a vector of time-invariant explanatory variables, symbol ˜ indicates that variables have been interacted with the $cM\&A$ dummy, $exp(\delta_{odg})$ is a random effect, and ϵ_{odst} is a multiplicative error term. Year dummies are included. Standard errors are clustered at the country-pair level (a-d). The regression includes a set of macroeconomic controls with market size GDP_k (long-run effects of GDP, average), economic growth (short-run effects of GDP, deviation from the mean) $Growth_k$ and country wealth, measured as average GDP per capita, $GDPcap_k$[79] with $k = o, d$. Economic geography indicators include bilateral distance, shared border, common official language and past colonial ties, respectively $Distance$, $Border$, $Language$ and $Colony$. The estimation controls also for quality of institutions, $Inst_k$, technological development, $Tech_k$, corporate governance $Corp.Gov_k$, destination corporate tax rates, $Crop.Taxes_d$, credit constraint, $Cred_k$ and short and long run effects, $SR\ \ C.Crisis_k$ and $LR\ \ C.Crisis_k$ of currency crisis.

Table B.3 presents results of the estimation. Each of the regression blocks has two columns. The first column reports the results for the sub-sample of all deals that are not conglomerate. The second column reports the results of the interaction term of conglomerate dummy. •, •• and ••• analogously to ***, ** and * correspond to significance levels and denote whether coefficients of interaction with the conglomerate

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[77] Including an interaction term allows comparing directly the coefficients of conglomerate flows with other types of M&A, while using averages and deviation from the mean allows obtaining both cross-section and time-series estimates (i.e., between and within estimates). Note that approximately similar results could be obtained by running regressions on averages and on changes, with fixed effects.

[78] See Desbordes et al. (2015) for a detailed description of the approach.

[79] Analogous regression was run with GDP per worker measure instead of GDP per capita. The results remain comparable.

dummy are significantly different from coefficients for non-conglomerate M&A. Looking directly at Block (2), most of the factors have similar effect on both conglomerate and non-conglomerate deals. Among these are market size, growth or corporate governance. Some differences however emerge as well. Conglomerate flows originate from and go to relatively wealthier economies, i.e., to the economies with presumably larger asset markets. They are more sensitive to geographic factors such as distance and border and appear to be more affected by cultural proximity, measured by a common official language. MNEs doing conglomerate deals therefore seem to target destinations that are geographically and culturally closer. One interpretation could be that conglomerate M&A may require relatively more coordination and supervision, given that firms acquire assets not directly related to their own activity. MNEs may therefore prefer to target firms in destination that are closer and where communication barriers are lower (common language). This could potentially facilitate control of the acquired units. Further, home technological development is slightly more important for conglomerate flows. This could correspond to the idea that MNEs from more technologically advanced countries could potentially transfer their (presumably superior) technology to the acquired units. Such an interpretation is also in line with Atalay et al. (2014).[80] Further, high rates of corporate tax do not appear to deter conglomerate M&A.

Lastly, one may suspect that the high share of conglomerate M&A in total M&A deals may reflect the opportunistic behaviour of financial conglomerates, so-called *fire-sale FDI* (Krugman, 2000), rather than the expansion of MNEs towards new industries. MNEs may target firms in the destinations affected by external shocks such as a crisis.[81] In order to verify whether conglomerate deals in the data are not simply the result of capital market interactions, block (2) additionally controls for currency crisis. The results for overall sample of M&A are in line with fire-sale motive for FDI. On a short run a currency crisis in the destination country attracts M&A, but its effect on a long run is negative. These results however are not significantly higher for conglomerate deals. Conglomerate M&A do not seem to correspond to a purely speculative phenomenon.[82]

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[80]The authors provide evidence consistent with transfers of intangible assets from MNEs to newly acquired (vertically linked) units, as described in Section 2.

[81] In line with that, Baker et al. (2009) document that MNEs engaging into FDI take advantage of cross-border arbitrage on capital markets. They decompose stock market valuation into fundamental and misvaluation components and document that MNEs take advantage of temporarily cheap access to external finance in their sources countries to engage in FDI. Desbordes et al. (2015) confirm the importance of fire-sale FDI motive for M&A, as opposite to greenfield FDI.

[82] These results are also in line with the evidence reported by Alquist et al. (2013). The authors show that acquisitions made during the crisis are not driven by foreign financial firms but rather by MNEs targeting firms in the same *broad* industry.

Type of M&A	(1) Non-Congl.	(1) Congl.	(2) Non-Congl.	(2) Congl.
(a)				
GDP_o	0.690***	-0.0271	0.644***	-0.0283
	(0.0369)	(0.0193)	(0.0365)	(0.0197)
GDP_d	0.798***	-0.0310•••	0.828***	-0.0123
	(0.0348)	(0.0146)	(0.0355)	(0.0155)
$Growth_o$	1.885***	0.157	1.908***	0.136
	(0.396)	(0.316)	(0.380)	(0.302)
$Growth_d$	-0.299	-0.0309	-0.362	-0.0968
	(0.325)	(0.208)	(0.323)	(0.200)
$GDPcap_o$	0.446***	0.112••	0.430***	0.0977•
	(0.105)	(0.0504)	(0.112)	(0.0545)
$GDPcap_d$	-0.0661	0.108••	-0.0231	0.0923••
	(0.0984)	(0.0438)	(0.103)	(0.0462)
(b)				
$Distance$	-0.768***	-0.0528•••	-0.781***	-0.0544•••
	(0.0346)	(0.0151)	(0.0352)	(0.0153)
$Border$	0.351**	0.168••	(0.169)	(0.0746)
	(0.124)	(0.109)	(0.109)	(0.0923)
$Language$	0.957***	0.153•••	0.944***	0.168•••
	(0.110)	(0.0409)	(0.111)	(0.0400)
$Colony$	0.497***	0.0462	0.471***	0.0165
	(0.134)	(0.0625)	(0.129)	(0.0562)
(c)				
$Instit_o$	0.0376	-0.140•••	-0.0833	-0.138•••
	(0.0879)	(0.0414)	(0.0855)	(0.0423)
$Instit_d$	0.134*	-0.0746••	0.135*	-0.0450
	(0.0769)	(0.0323)	(0.0787)	(0.0351)
$Corp.Gov_o$	0.255***	0.0244	0.276***	0.00991
	(0.0487)	(0.0252)	(0.0497)	(0.0250)
$Corp.Gov_d$	0.313***	-0.0240	0.357***	-0.0255
	(0.0516)	(0.0218)	(0.0534)	(0.0222)
$Tech_o$	0.350***	0.0909	0.318***	0.0939•
	(0.110)	(0.0559)	(0.105)	(0.0531)
$Tech_d$	-0.496***	0.0216	-0.554***	0.0307
	(0.106)	(0.0424)	(0.109)	(0.0422)
$Corp\ taxes_d$	-0.00430	0.00634•••	-0.00412	0.00577••
	(0.00655)	(0.00252)	(0.00638)	(0.00250)
(d)				
$Cred_o$			0.398***	0.0222
			(0.0749)	(0.0448)
$Cred_d$			-0.0642	-0.0716••
			(0.0618)	(0.0312)
$LR\ Curr.Crisis_o$			-0.249	0.477••
			(0.396)	(0.212)
$LR\ C.Crisis_d$			-1.106**	-0.155
			(0.437)	(0.164)
$SR\ C.Crisis_o$			0.00323	-0.0155
			(0.0623)	(0.0423)
$SR\ C.Crisis_d$			0.166***	0.00772
			(0.0618)	(0.0402)
Year FE		yes		
Observations	38,066		38,066	

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Analogously •, •• and ••• denote whether coefficients of interaction with conglomerate dummy are significantly different from coefficients for non-conglomerate M&A. Negative binomial regression, random effects, country-pair clusters, year dummies. Regression on a staked data for conglomerate and non-conglomerate M&A. In each of the two samples, the left hand side corresponds to the net effect while the right hand side to the interaction effect of the conglomerate deals dummy. Hence, RHS results show whether the coefficient for conglomerate deals is significantly different from the coefficient for non-conglomerate deals.

Table B.3: Conglomerate *vs.* non-Conglomerate M&A

C MNEs Activity Basket

C.1 Proximity of activity baskets - additional results
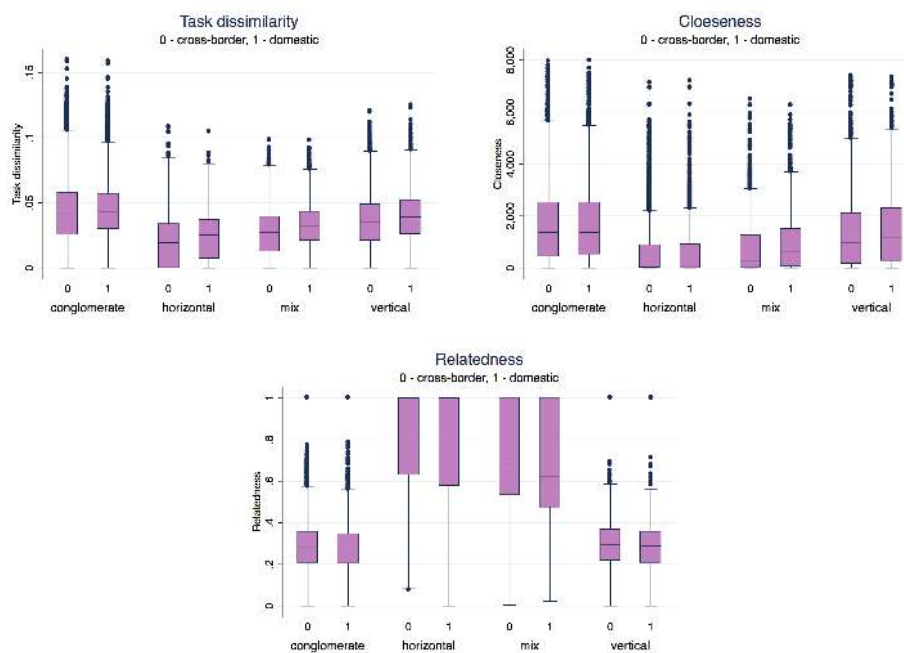
Figure C.1: Cross-border vs. domestic - distribution of similarity measures across *HV-Group* classification
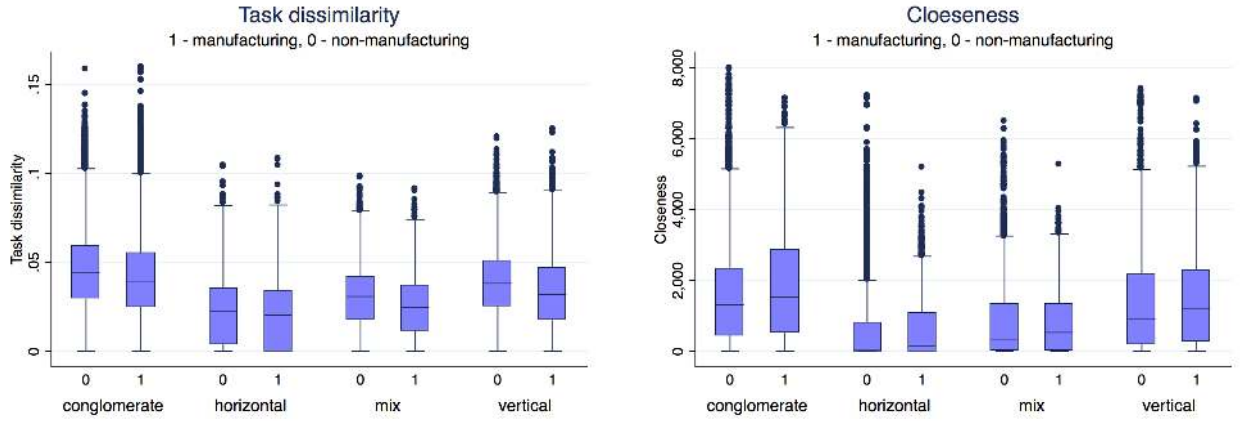
Figure C.2: Manufacturing vs. non-manufacturing - distribution of similarity measures across *HV-Group* classification

	1 Cong.	2 Non-Cong.	3 All	4 Cong.	5 Non-Cong.	6 All
	Cross-border and domestic			Cross-border only		
All sample						
Task Dissim.	-1.826*** [0.038]	-3.417*** [0.041]	-4.078*** [0.050]	-2.309*** [0.060]	-4.043*** [0.064]	-4.691*** [0.065]
Observations	356,735	360,671	383,244	403,449	409,117	445,942
Manufacturing						
Task Dissim.	-0.568*** [0.021]	-1.094*** [0.023]	-1.267*** [0.029]	-0.682*** [0.024]	-1.235*** [0.041]	-4.691*** [0.065]
Observations	343,648	338,639	352,244	382,249	374,667	445,942
Non-Manufacturing						
Task Dissim.	-0.892*** [0.020]	-2.026*** [0.025]	-2.319*** [0.029]	-1.168*** [0.031]	-2.472*** [0.033]	-4.691*** [0.065]
Observations	344,696	352,274	363,417	385,392	397,261	445,942

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* measured as average euclidean distance between the vectors of task contents among all the combination of acquiror and target codes.

Table C.1: Baseline results - AME for probit estimation

	Cross-border and domestic						Cross-border only					
	1 Horiz.	2 Vert.	3 Mix	4 Cong.	5 Non-Cong.	6 All	7 Horiz.	8 Vert.	9 Mix	10 Cong.	11 Non-Cong.	12 All
All sample												
Task Dissim.	-2.014***	-0.932***	-1.242***	-1.826***	-3.417***	-4.078***	-2.446***	-1.223***	-1.563***	-2.309***	-4.043***	-4.691***
	[0.028]	[0.021]	[0.025]	[0.038]	[0.041]	[0.050]	[0.049]	[0.036]	[0.042]	[0.060]	[0.064]	[0.065]
Observations	344,606	339,982	341,298	356,735	360,671	383,244	383,673	377,301	378,394	403,449	409,117	445,942
Manufacturing												
Task Dissim.	-0.689***	-0.312***	-0.511***	-0.568***	-1.094***	-1.267***	-0.750***	-0.368***	-0.581***	-0.682***	-1.235***	-4.691***
	[0.019]	[0.013]	[0.017]	[0.021]	[0.023]	[0.029]	[0.033]	[0.018]	[0.035]	[0.024]	[0.041]	[0.065]
Observations	302,936	326,617	257,964	343,648	338,639	352,244	343,758	362,500	292,452	382,249	374,667	445,942
Non-Manufacturing												
Task Dissim.	-1.238***	-0.478***	-0.685***	-0.892***	-2.026***	-2.319***	-1.556***	-0.657***	-0.892***	-1.168***	-2.472***	-4.691***
	[0.018]	[0.013]	[0.015]	[0.020]	[0.025]	[0.029]	[0.027]	[0.019]	[0.020]	[0.031]	[0.033]	[0.065]
Observations	340,389	336,639	338,847	344,696	352,274	363,417	378,302	372,724	374,872	385,392	397,261	445,942

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* measured as average euclidean distance between the vectors of task contents among all the combination of acquiror and target codes.

Table C.2: Task dissimilarity - AME for probit estimation

	Horiz.	Vert.	Mix	Cong.	Non-Cong.	All
All sample						
Task Dissim.	-2.014***	-0.932***	-1.242***	-1.826***	-3.417***	-4.078***
	[0.028]	[0.021]	[0.025]	[0.038]	[0.041]	[0.050]
GDP_o	-0.023	-0.000	0.026	-0.045	0.005	-0.024
	[0.029]	[0.023]	[0.020]	[0.068]	[0.048]	[0.090]
GDP_d	0.022	0.022	0.013	-0.014	0.048	0.022
	[0.017]	[0.016]	[0.014]	[0.039]	[0.031]	[0.054]
$GDPcap_o$	-0.041**	-0.054***	-0.060***	-0.151***	-0.123***	-0.227***
	[0.019]	[0.015]	[0.013]	[0.043]	[0.031]	[0.057]
$GDPcap_d$	-0.015	-0.012	-0.003	0.038	-0.025	0.013
	[0.014]	[0.012]	[0.010]	[0.031]	[0.023]	[0.041]
Dsit.	-0.012***	-0.010***	-0.010***	-0.031***	-0.026***	-0.049***
	[0.001]	[0.001]	[0.001]	[0.002]	[0.002]	[0.003]
Broder	0.004*	0.002	0.003	0.007	0.008	0.012
	[0.002]	[0.002]	[0.002]	[0.006]	[0.005]	[0.008]
Language	0.015***	0.012***	0.010***	0.035***	0.031***	0.055***
	[0.002]	[0.002]	[0.001]	[0.004]	[0.004]	[0.006]
Colony	0.011***	0.010***	0.010***	0.032***	0.025***	0.048***
	[0.002]	[0.002]	[0.001]	[0.004]	[0.004]	[0.007]
Observations	344,606	339,982	341,298	356,735	360,671	383,244
Manufacturing						
Task Dissim.	-0.689***	-0.312***	-0.511***	-0.568***	-1.094***	-1.267***
	[0.019]	[0.013]	[0.017]	[0.021]	[0.023]	[0.029]
GDP_o	-0.006	-0.001	-0.005	-0.013	-0.002	-0.009
	[0.017]	[0.014]	[0.014]	[0.045]	[0.027]	[0.059]
GDP_d	0.013	0.017	0.018	-0.021	0.039**	0.015
	[0.010]	[0.011]	[0.011]	[0.028]	[0.020]	[0.037]
$GDPcap_o$	-0.032***	-0.029***	-0.027***	-0.106***	-0.068***	-0.150***
	[0.011]	[0.009]	[0.010]	[0.029]	[0.018]	[0.038]
$GDPcap_d$	-0.007	-0.010	-0.012	0.025	-0.024	0.000
	[0.008]	[0.008]	[0.009]	[0.022]	[0.015]	[0.028]
Dsit.	-0.005***	-0.004***	-0.004***	-0.016***	-0.010***	-0.023***
	[0.000]	[0.000]	[0.000]	[0.001]	[0.001]	[0.002]
Broder	0.001	0.000	0.001	0.002	0.001	0.003
	[0.001]	[0.001]	[0.001]	[0.003]	[0.002]	[0.005]
Language	0.006***	0.004***	0.005***	0.018***	0.012***	0.027***
	[0.001]	[0.001]	[0.001]	[0.003]	[0.002]	[0.004]
Colony	0.004***	0.003***	0.003***	0.016***	0.008***	0.021***
	[0.001]	[0.001]	[0.001]	[0.002]	[0.002]	[0.004]
Observations	302,936	326,617	257,964	343,648	338,639	352,244
Non-Manufacturing						
Task Dissim.	-1.238***	-0.478***	-0.685***	-0.892***	-2.026***	-2.319***
	[0.018]	[0.013]	[0.015]	[0.020]	[0.025]	[0.029]
GDP_o	-0.016	0.003	0.035**	-0.027	0.015	-0.003
	[0.019]	[0.014]	[0.014]	[0.030]	[0.030]	[0.045]
GDP_d	0.008	0.006	-0.002	0.003	0.009	0.006
	[0.012]	[0.009]	[0.008]	[0.016]	[0.017]	[0.025]
$GDPcap_o$	-0.017	-0.025***	-0.042***	-0.054***	-0.066***	-0.100***
	[0.013]	[0.009]	[0.009]	[0.019]	[0.020]	[0.029]
$GDPcap_d$	-0.004	-0.002	0.010	0.019	0.003	0.022
	[0.009]	[0.007]	[0.006]	[0.014]	[0.013]	[0.020]
Dsit.	-0.007***	-0.007***	-0.007***	-0.017***	-0.017***	-0.028***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]
Broder	0.003*	0.002	0.003**	0.005	0.007**	0.009*
	[0.002]	[0.001]	[0.001]	[0.003]	[0.003]	[0.005]
Language	0.010***	0.008***	0.006***	0.018***	0.020***	0.032***
	[0.001]	[0.001]	[0.001]	[0.002]	[0.002]	[0.004]
Colony	0.007***	0.006***	0.008***	0.017***	0.017***	0.029***
	[0.001]	[0.001]	[0.001]	[0.003]	[0.002]	[0.004]
Observations	340,389	336,639	328,847	344,696	352,274	363,417

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* measured as average euclidean distance between the vectors of task contents among all the

	Horiz.	Vert.	Mix	Cong.	Non-Cong.	All
All sample						
GDP$_o$	-0.064	-0.013	0.010	-0.075	-0.054	-0.089
	[0.047]	[0.026]	[0.025]	[0.075]	[0.072]	[0.114]
GDP$_d$	0.010	0.017	0.013	-0.023	0.035	0.007
	[0.025]	[0.017]	[0.016]	[0.042]	[0.041]	[0.065]
GDPcap$_o$	-0.056*	-0.054***	-0.061***	-0.150***	-0.148***	-0.255***
	[0.029]	[0.017]	[0.017]	[0.046]	[0.044]	[0.070]
GDPcap$_d$	0.003	-0.006	0.001	0.048	-0.004	0.037
	[0.019]	[0.013]	[0.012]	[0.033]	[0.031]	[0.050]
Dsit.	-0.019***	-0.012***	-0.013***	-0.034***	-0.039***	-0.061***
	[0.001]	[0.001]	[0.001]	[0.002]	[0.003]	[0.004]
Broder	0.008**	0.002	0.003	0.009	0.012*	0.017
	[0.004]	[0.002]	[0.003]	[0.006]	[0.007]	[0.011]
Language	0.025***	0.013***	0.013***	0.038***	0.045***	0.071***
	[0.003]	[0.002]	[0.002]	[0.005]	[0.005]	[0.008]
Colony	0.019***	0.011***	0.014***	0.035***	0.040***	0.064***
	[0.003]	[0.002]	[0.002]	[0.005]	[0.006]	[0.009]
Observations	344,606	339,982	341,298	356,735	360,671	383,244
Manufacturing						
GDP$_o$	-0.089	-0.007	-0.004	-0.010	-0.018	-0.012
	[0.114]	[0.022]	[0.014]	[0.015]	[0.047]	[0.032]
GDP$_d$	0.007	0.007	0.014	0.021*	-0.025	0.035
	[0.065]	[0.012]	[0.011]	[0.012]	[0.029]	[0.022]
GDPcap$_o$	-0.255***	-0.040***	-0.030***	-0.028**	-0.106***	-0.076***
	[0.070]	[0.014]	[0.009]	[0.011]	[0.030]	[0.021]
GDPcap$_d$	0.037	0.000	-0.007	-0.013	0.029	-0.018
	[0.050]	[0.009]	[0.008]	[0.009]	[0.022]	[0.016]
Dsit.	-0.061***	-0.005***	-0.004***	-0.005***	-0.016***	-0.011***
	[0.004]	[0.001]	[0.000]	[0.000]	[0.001]	[0.001]
Broder	0.017	0.001	0.001	0.001	0.002	0.002
	[0.011]	[0.001]	[0.001]	[0.001]	[0.003]	[0.003]
Language	0.071***	0.007***	0.004***	0.005***	0.019***	0.013***
	[0.008]	[0.001]	[0.001]	[0.001]	[0.003]	[0.002]
Colony	0.064***	0.005***	0.003***	0.003***	0.016***	0.010***
	[0.009]	[0.001]	[0.001]	[0.001]	[0.002]	[0.002]
Observations	383,244	302,936	326,617	257,964	343,648	338,639
Non-Manufacturing						
GDP$_o$	-0.089	-0.046	-0.002	0.028	-0.043	-0.017
	[0.114]	[0.029]	[0.016]	[0.017]	[0.033]	[0.043]
GDP$_d$	0.007	0.003	0.003	-0.007	0.002	-0.001
	[0.065]	[0.018]	[0.010]	[0.009]	[0.017]	[0.024]
GDPcap$_o$	-0.255***	-0.023	-0.025**	-0.044***	-0.052**	-0.078***
	[0.070]	[0.019]	[0.010]	[0.011]	[0.020]	[0.027]
GDPcap$_d$	0.037	0.006	0.001	0.016**	0.023	0.019
	[0.050]	[0.014]	[0.008]	[0.007]	[0.015]	[0.018]
Dsit.	-0.061***	-0.013***	-0.008***	-0.009***	-0.018***	-0.026***
	[0.004]	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]
Broder	0.017	0.006**	0.001	0.002	0.005	0.009*
	[0.011]	[0.003]	[0.002]	[0.002]	[0.003]	[0.005]
Language	0.071***	0.017***	0.009***	0.008***	0.020***	0.030***
	[0.008]	[0.002]	[0.001]	[0.001]	[0.003]	[0.004]
Colony	0.064***	0.014***	0.008***	0.010***	0.020***	0.028***
	[0.009]	[0.002]	[0.001]	[0.001]	[0.003]	[0.004]
Observations	383,244	340,389	336,639	338,847	344,696	352,274

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages.

Table C.4: Gravity variables- cross-border deals only - AME for probit estimation

	1 Cong.	2 Non-Cong.	3 All	4 Cong.	5 Non-Cong.	6 All
	Cross-border and domestic			Cross-border only		
Task Dissim.	-1.651***	-4.375***	-4.666***	-2.144***	-5.064***	-5.267***
	[0.043]	[0.046]	[0.054]	[0.074]	[0.065]	[0.073]
Observations	222,235	231,226	245,796	251,836	265,468	289,689
Closeness	-0.021***	-0.066***	-0.067***	-0.027***	-0.076***	-0.075***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]
Observations	222,235	231,226	245,796	251,836	265,468	289,689
Task Dissim.	-1.407***	-3.572***	-3.878***	-1.827***	-4.120***	-4.374***
	[0.041]	[0.043]	[0.054]	[0.072]	[0.055]	[0.077]
Closeness	-0.009***	-0.025***	-0.025***	-0.011***	-0.028***	-0.028***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Observations	222,235	231,226	245,796	251,836	265,468	289,689

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. only cross-border deals taken into account. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* - measured as average euclidean distance between the vectors of task contents among all the combination of acquiror and target codes. *SIC Closeness* measured as average of absolute differences in numbers corresponding to SIC codes between all the combinations of industry codes. The variable was divided by 1000.

Table C.5: Task dissimilarity and SIC closeness - AME for probit estimation

	Non-Manufacturing			Manufacturing		
	Cong.	Non-Cong.	All	Cong.	Non-Cong.	All

Cross-border and domestic

	Cong.	Non-Cong.	All	Cong.	Non-Cong.	All
Task Dissim.	-0.894***	-2.737***	-4.666***	-0.406***	-1.364***	-4.666***
	[0.024]	[0.031]	[0.054]	[0.021]	[0.028]	[0.054]
Closeness	-0.012***	-0.040***	-0.067***	0.001***	-0.013***	-0.067***
	[0.000]	[0.001]	[0.001]	[0.000]	[0.000]	[0.001]
Task Dissim.	-0.740***	-2.231***	-3.878***	-0.572***	-1.351***	-3.878***
	[0.023]	[0.030]	[0.054]	[0.025]	[0.030]	[0.054]
Closeness	-0.007***	-0.017***	-0.025***	0.006***	-0.001	-0.025***
	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.001]
	214,480	223,916	245,796	213,277	210,600	245,796

Cross-border and domestic

	Cong.	Non-Cong.	All	Cong.	Non-Cong.	All
Task Dissim.	-1.196***	-3.270***	-5.267***	-0.512***	-1.531***	-5.267***
	[0.041]	[0.040]	[0.073]	[0.030]	[0.040]	[0.073]
Closeness	-0.016***	-0.047***	-0.075***	0.002***	-0.014***	-0.075***
	[0.000]	[0.001]	[0.001]	[0.000]	[0.001]	[0.001]
Task Dissim.	-0.998***	-2.662***	-4.374***	-0.730***	-1.536***	-4.374***
	[0.039]	[0.037]	[0.077]	[0.040]	[0.035]	[0.077]
Closeness	-0.010***	-0.020***	-0.028***	0.009***	0.000	-0.028***
	[0.000]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
	240,622	255,056	289,689	237,108	233,550	289,689

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. only cross-border deals taken into account. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* - measured as average euclidean distance between the vectors of task contents among all the combination of acquiror and target codes. *SIC Closeness* measured as average of absolute differences in numbers corresponding to SIC codes between all the combinations of industry codes. The variable was divided by 1000.

Table C.6: Task dissimilarity and SIC closeness - Manufacturing vs. Non-Manufacturing - AME for probit estimation

	Horiz.	Vert.	Mix	Cong.	Non-Cong.	All
Task Dissim.	-2.295***	-0.826***	-1.428***	-1.407***	-3.572***	-3.878***
	[0.033]	[0.023]	[0.031]	[0.041]	[0.043]	[0.054]
Closeness	-0.014***	-0.004***	-0.013***	-0.009***	-0.025***	-0.025***
	[0.000]	[0.000]	[0.001]	[0.001]	[0.001]	[0.001]
GDP$_o$	-0.038	-0.014	0.022	-0.098	-0.018	-0.081
	[0.038]	[0.028]	[0.026]	[0.080]	[0.059]	[0.104]
GDP$_d$	0.034	0.040**	0.011	-0.016	0.064	0.035
	[0.024]	[0.019]	[0.019]	[0.045]	[0.039]	[0.062]
GDPcap$_o$	-0.044*	-0.054***	-0.073***	-0.151***	-0.129***	-0.227***
	[0.025]	[0.018]	[0.017]	[0.050]	[0.038]	[0.065]
GDPcap$_d$	-0.024	-0.025*	-0.000	0.048	-0.035	0.011
	[0.019]	[0.015]	[0.014]	[0.037]	[0.030]	[0.049]
Dsit.	-0.015***	-0.011***	-0.013***	-0.032***	-0.031***	-0.053***
	[0.001]	[0.001]	[0.001]	[0.002]	[0.002]	[0.003]
Broder	0.004	0.003	0.003	0.006	0.008	0.011
	[0.003]	[0.002]	[0.003]	[0.006]	[0.006]	[0.010]
Language	0.021***	0.013***	0.014***	0.037***	0.038***	0.063***
	[0.002]	[0.002]	[0.002]	[0.005]	[0.004]	[0.007]
Colony	0.013***	0.010***	0.014***	0.033***	0.030***	0.052***
	[0.003]	[0.002]	[0.002]	[0.005]	[0.005]	[0.007]
Observations	218,646	211,183	214,618	222,235	231,226	245,796

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* - measured as average euclidean distance between the vectors of task contents among all the combination of acquiror and target codes. *SIC Closeness* measured as average of absolute differences in numbers corresponding to SIC codes between all the combinations of industry codes. The variable was divided by 1000

Table C.7: Task dissimilarity and SIC closeness - cross-border deals only - AME for probit estimation

	1 Cong.	2 Non-Cong.	3 All
Task Dissim.	-0.955***	-0.800***	-1.386***
	[0.085]	[0.077]	[0.099]
Closeness	-0.005**	-0.003**	-0.007***
	[0.002]	[0.002]	[0.002]
Relatedness	0.381***	0.445***	0.711***
	[0.014]	[0.008]	[0.011]
Observations	42,306	45,603	48,348
Task Dissim.	-1.857***	-6.092***	-6.517***
	[0.080]	[0.112]	[0.118]
Observations	42,306	45,603	48,348
Closeness	-0.024***	-0.085***	-0.091***
	[0.002]	[0.003]	[0.003]
Observations	42,306	45,603	48,348
Relatedness	0.435***	0.484***	0.784***
	[0.013]	[0.008]	[0.011]
Observations	42,306	45,603	48,348

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. only cross-border deals taken into account. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages.

Table C.8: Task Dissimilarity, SIC Closeness & Relatedness- AME for probit estimation

	(1) Horiz.	(2) Vert.	(3) Mix	(4) Cong.	(5) Non-Cong.	(6) All
Task Dissim.	-0.118***	-0.621***	-0.114***	-0.955***	-0.800***	-1.386***
	[0.044]	[0.068]	[0.038]	[0.085]	[0.077]	[0.099]
Closeness	-0.001	-0.002*	-0.002**	-0.005**	-0.003**	-0.007***
	[0.001]	[0.001]	[0.001]	[0.002]	[0.002]	[0.002]
Relatedness	0.180***	0.130***	0.221***	0.381***	0.445***	0.711***
	[0.004]	[0.009]	[0.005]	[0.014]	[0.008]	[0.011]
Observations	42,354	38,416	41,893	42,306	45,603	48,348
Task Dissim.	-4.103***	-0.910***	-3.038***	-1.857***	-6.092***	-6.517***
	[0.102]	[0.064]	[0.093]	[0.080]	[0.112]	[0.118]
Observations	42,354	38,416	41,893	42,306	45,603	48,348
Closeness	-0.052***	-0.011***	-0.045***	-0.024***	-0.085***	-0.091***
	[0.002]	[0.001]	[0.002]	[0.002]	[0.003]	[0.003]
Observations	42,354	38,416	41,893	42,306	45,603	48,348
Relatedness	0.186***	0.158***	0.227***	0.435***	0.484***	0.784***
	[0.005]	[0.009]	[0.005]	[0.013]	[0.008]	[0.011]
Observations	42,354	38,416	41,893	42,306	45,603	48,348

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. only cross-border deals taken into account. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* - measured as average euclidean distance between the vectors of task contents among all the combination of acquiror and target codes. *SIC Closeness* measured as average of absolute differences in numbers corresponding to SIC codes between all the combinations of industry codes. The variable was divided by 1000. *Relatedness score* - average of distances in the product space between target and acquiror activity baskets.

Table C.9: Task Dissimilarity, SIC Closeness & Relatedness- AME for probit estimation

C.2 Additional Measures - M&A and Market Structure

This section describes additional market-related measures used in Section 5.

- *Market Structure* The measure of market structure has for purpose to capture the degree of concentration on the target market. If the destination market is relatively concentrated, it may be easier for an MNE to enter the market by acquiring an existing firm. Market structure of industry i in destination d is proxied by Herfindahl index, $HH_{i,d}$.[a] The measure at the target level corresponds to an average of $HH_{i,d}$ across all target activities, i.e., across all the industries in which target operates, $M.Struct._{tg,d} = \sum_{i \in N} HH_{i,d}/n$, where n is to the total number of target activities. The higher values of the index are related to higher concentration level.

- *Market Size* Market size measure captures simply whether the target firm operates on a large market(s). The proxy for market size is calculated simply by averaging the total value of imports across all industries $i \in N$ in which a given target firm, tg, operates, $M.Size = \sum_{i \in N} ln(imp_{i,d})/n$, with $imp_{i,d}$, total value of imports in industry i across all the source countries.

- *Comparative advantage (Target Density* Density relates to the proximity of the target firm to the activities in which target country has comparative advantage in. Density of industry i in country d is calculated as an average bilateral relatedness of i with all the other industries in which d exports with comparative advantage. Thus, density captures how closely a given industry is related to the local productive structure. It is considered as a proxy of industry (product) spillovers in terms of knowledge, economies on scope and scale, that are due to the consistent specialization. Formally, industry density is computed as $\Theta_i^d = \sum_{j \in RCA^d=1, j \neq i} \phi_{ij}/\sum_{j \neq i} \phi_{ij}$, where the numerator sums all the relatedness scores of industry i with each of industries j in which the host country d exports with comparative advantage. The denominator sums relatedness scores of i with all the industries that exist in the world product space. Hence, industry i density in a host country d corresponds simply to an average of industry i bilateral relatedness with the other industries that country d exports with comparative advantage. Target Density index (TDi) is calculated as an average of density scores across all the industries in which given target firm operates.[b] TDi is target-destination specific and it captures whether MNEs acquire firms that have activity relatively more closely related to the comparative structure of the destination country.[c]

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[a]The index for industry i in destination country d, corresponds to $HH_{i,d} = \sum_{o \in O}[imp_{i,o}/\sum_{o \in O} imp_{i,tot}]^2$, with $imp_{i,o}$, value of imports from country o in industry i and O, total number of countries exporting to d.

[b]The formula is simply $TDi_d^l = \sum_{j}^{n} \Theta_{,j}^l/n$.   56

[c]This corresponds to the idea, that expanding activity MNEs would prefer to target firms that are potentially better in the occupations towards which acqauiror wishes to expand its activity to. By doing such an acquisition the firm could acquire non-transferable assets (Nocke and Yeaple, 2007).

	(1) Cong	(2) noCng	(3) all	(4) Cong	(5) noCng	(6) all
Task Dissim.	-1.276***	-3.638***	-3.858***	-0.929***	-0.716***	-1.287***
	[0.051]	[0.072]	[0.077]	[0.087]	[0.072]	[0.097]
Closeness	-0.004***	-0.012***	-0.014***	-0.004*	-0.002	-0.005**
	[0.001]	[0.001]	[0.001]	[0.002]	[0.002]	[0.002]
Relatedness				0.386***	0.437***	0.710***
				[0.014]	[0.007]	[0.011]
M. Concentration	-0.019***	0.010	-0.009	-0.021**	0.009	-0.008
	[0.007]	[0.008]	[0.011]	[0.009]	[0.007]	[0.011]
M. Size (imports)	-0.006***	-0.005***	-0.009***	-0.009***	-0.006***	-0.012***
	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.001]
Comp. Advant.	0.085	0.048	0.115	-0.004	-0.011	-0.022
	[0.094]	[0.080]	[0.136]	[0.122]	[0.053]	[0.132]
Observations	84,557	87,173	92,203	40,894	43,820	46,462

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. See Section C.2 for description of *Market size*, *Market concentration* and *Comparative advantage* measures.

Table C.10: Additional market structure measures - AME for probit estimation

Cross-border only

	Non-Manufacturing						Manufacturing					
	Horiz.	Vert.	Mix	Cong.	Non-Cong.	All	Horiz.	Vert.	Mix	Cong.	Non-Cong.	All
Task Dissim.	-1.440***	-0.439***	-0.796***	-0.740***	-2.231***	-3.878***	-0.939***	-0.320***	-0.734***	-0.572***	-1.351***	-3.878***
	[0.024]	[0.015]	[0.021]	[0.023]	[0.030]	[0.054]	[0.027]	[0.014]	[0.026]	[0.025]	[0.030]	[0.054]
Closeness	-0.009***	-0.003***	-0.008***	-0.007***	-0.017***	-0.025***	-0.001**	0.001***	-0.002***	0.006***	-0.001	-0.025***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.001]
	214,875	208,756	212,354	214,480	223,916	245,796	187,764	197,709	152,498	213,277	210,600	245,796

Cross-border and domestic

	Non-Manufacturing						Manufacturing					
	Horiz.	Vert.	Mix	Cong.	Non-Cong.	All	Horiz.	Vert.	Mix	Cong.	Non-Cong.	All
Task Dissim.	-1.770***	-0.628***	-1.014***	-0.998***	-2.662***	-4.374***	-1.016***	-0.396***	-0.819***	-0.730***	-1.536***	-4.374***
	[0.028]	[0.023]	[0.025]	[0.039]	[0.037]	[0.077]	[0.034]	[0.017]	[0.028]	[0.040]	[0.035]	[0.077]
Closeness	-0.011***	-0.004***	-0.011***	-0.010***	-0.020***	-0.028***	-0.001***	0.001***	-0.001	0.009***	0.000	-0.028***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]	[0.001]	[0.000]	[0.000]	[0.001]	[0.001]	[0.001]	[0.001]
	240,152	231,301	235,734	240,622	255,056	289,689	213,545	222,440	178,788	237,108	233,550	289,689

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. Table reports average marginal effects of a probit estimation with a positive outcome corresponding to realized M&A deal. only cross-border deals taken into account. Gravity controls include acquiror and target country GDPs and GDP per capita, bilateral distance and dummies for common border, official language and past colonial linkages. *Independent variables: Task dissimilarity* - measured as average euclidean distance between the vectors of task contents among all the combination of acquiror and target codes. *SIC Closeness* measured as average of absolute differences in numbers corresponding to SIC codes between all the combinations of industry codes. The variable was divided by 1000.

Table C.11: Task dissimilarity and SIC closeness - Manufacturing vs. Non-Manufacturing - AME for probit estimation

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D Evolution of Activity Basket

D.1 Expansion of product baskets over time - additional results

	Congl.	Horiz.	Vert.	Mix	None
	COMPACTNESS				
	(pooled - list of activities)				
All sample					
Sequence	0.008***	0.033***	0.034***	0.005***	0.006*
	[0.001]	[0.006]	[0.006]	[0.002]	[0.003]
Observations	24,878	10,334	4,752	7,821	7,178
R-squared	0.198	0.240	0.323	0.292	0.295
Manufacturing firms					
Sequence	0.013***	0.024**	0.021**	0.016**	0.012***
	[0.002]	[0.012]	[0.008]	[0.007]	[0.003]
Observations	12,065	1,782	1,384	1,770	2,263
R-squared	0.275	0.231	0.404	0.406	0.287
Non-manufacturing firms					
Sequence	0.003***	0.034***	0.041***	0.006***	0.007*
	[0.001]	[0.006]	[0.005]	[0.002]	[0.004]
Observations	12,813	8,552	3,368	6,051	4,915
R-squared	0.236	0.295	0.386	0.319	0.363

Notes: Table reports results of an OLS estimation on an unbalanced panel of acquiring MNEs between 1997 and 2012. The sample takes into account only the MNEs that did more than two deals over the sample period. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Explanatory variable: *Sequence* corresponds to the sequence of succeeding M&A done by a given MNE. Deals are ordered chronologically and a number is assigned to each of them. The dependent variable corresponds to the average *pooled* compactness (i.e., to the compactness measured for the pooled list of activities of corporate group). The dependent variables was multiplied by 100. The subsamples correspond to the type of *F-HV* firms, as defined in Section 4.2.1.

Table D.1: Change in the compactness of corporate group activity - all sample, manufacturing and non-manufacturing, basic definition of compactnessÃ

	Congl.	Horiz.	Vert.	Mix	None
All sample					
Panel A	*Av. Compact.*				
Sequence	0.008***	0.033***	0.034***	0.005***	0.006*
	[0.001]	[0.006]	[0.006]	[0.002]	[0.003]
Observations	24,878	10,334	4,752	7,821	7,178
R-squared	0.198	0.240	0.323	0.292	0.295
Panel B	*Standard deviation*				
Sequence	0.014***	0.038***	0.034***	0.006**	0.016***
	[0.001]	[0.004]	[0.005]	[0.002]	[0.003]
Observations	24,878	10,334	4,752	7,821	7,178
R-squared	0.143	0.186	0.263	0.225	0.192
Non-manufacturing firms					
Panel C	*Av. Compact.*				
Sequence	0.003***	0.034***	0.041***	0.006***	0.007*
	[0.001]	[0.006]	[0.005]	[0.002]	[0.004]
Observations	12,813	8,552	3,368	6,051	4,915
R-squared	0.236	0.295	0.386	0.319	0.363
Panel D	*Standard deviation*				
Sequence	0.011***	0.037***	0.032***	0.007***	0.017***
	[0.001]	[0.004]	[0.005]	[0.002]	[0.003]
Observations	12,813	8,552	3,368	6,051	4,915
R-squared	0.173	0.181	0.293	0.250	0.248
Manufacturing firms					
Panel E	*Av. Compact.*				
Sequence	0.013***	0.024**	0.021**	0.016**	0.012***
	[0.002]	[0.012]	[0.008]	[0.007]	[0.003]
Observations	12,065	1,782	1,384	1,770	2,263
R-squared	0.275	0.231	0.404	0.406	0.287
Panel F	*Standard deviation*				
Sequence	0.019***	0.057***	0.047***	0.012***	0.012***
	[0.003]	[0.006]	[0.010]	[0.003]	[0.004]
Observations	12,065	1,782	1,384	1,770	2,263
R-squared	0.182	0.390	0.348	0.326	0.234

Notes: Table reports results of an OLS estimation on an unbalanced panel of acquiring MNEs between 1997 and 2012. The sample takes into account only the MNEs that did more than two deals over the sample period. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Explanatory variable: *Sequence* corresponds to the sequence of succeeding M&A done by a given MNE. Deals are ordered chronologically and a number is assigned to each of them. The estimation looks at the evolution of average compactness and its standard deviation, as computed for separated baskets of each firm within the corporate group (i.e., allowing for multiple apparitions of activities in the overall corporate basket). MNEs that did at least three deals during the sample period were taken into account. The same set of estimation is run on the whole sample of the dependent variable is the dependent variable corresponds to the average *pooled* compactness (i.e., to the compactness measured for the pooled list of activities of corporate group), as discussed in Section sec:comp. Both dependent variables were multiplied by 100.

Table D.2: Evolution of the compactness - pooled activities

D.1.1 Evolution of average corporate compactness - alternative measure

This subsection introduces and discusses an alternative way of computing average compactness of corporate group from the one presented in Section 6.1. The benchmark compactness is constructed pooling all the activities of the corporate group into one basket, i.e., taking each activity into account only once. This alternative measure takes separately the activity basket of each subsidy, i.e., it allows for repetitions of the activities on the activity list of the group. Hence, it corresponds to an average compactness "weighted" by the number of repetitions.[83] Table D.3 analogous to Table D.1, reports the corresponding results for the overall sample as well as for manufacturing and non-manufacturing sub-samples. The results differ from the ones from the baseline definition of compa The activity-mix of conglomerates (column 1) becomes more dissimilar for the manufacturing groups and conversely more compact for the non-manufacturing ones. Therefore, the activity of manufacturing corporate groups appears less and less concentrated with the subsequent deals even if to allow for repetition among the codes within the corporate group. Interestingly, the opposite occurs for the non-manufacturing transactions. This may result from the fact that many non-manufacturing firms may have some (IT) services in common with their targets emphasized in Section 4.2.1 with the example of Google discussed in while introducing index of intensity of linkages. Further, the degree of compactness decreases for vertical non-manufacturing groups. The opposite happens for horizontal and for non-manufacturing "none" groups. The coefficients for the remaining sub-categories are non-significant. Next to the variation of the average compactness, I also look at the evolution of standard deviation. Table D.4 reports the corresponding results. Standard deviation from the average compactness increases for virtually all subsamples. Figure D.2, analogous to Figure D.1 for pooled compactness, displays the plot boxes of (separate baskets) compactness for sequence of five consecutive transactions. The top figure presents the results for all the firms while the two bottom ones for manufacturing and non-manufacturing firms respectively.

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[83]Notice that since the distance between the same activities is zero, allowing for repetition on the activity list of the corporate group involves potentially higher scores of compactness.

	Congl.	Horiz.	Vert.	Mix	None
	COMPACTNESS *(separate baskets of activities)*				
All sample					
Sequence	-0.002	-0.025***	0.014	-0.004	-0.012***
	[0.002]	[0.003]	[0.010]	[0.003]	[0.004]
Observations	24,878	10,334	4,752	7,821	7,178
R-squared	0.162	0.181	0.304	0.317	0.247
Manufacturing firms					
Sequence	0.015***	-0.041***	-0.008	0.013	-0.006
	[0.003]	[0.010]	[0.008]	[0.014]	[0.004]
Observations	12,065	1,782	1,384	1,770	2,263
R-squared	0.284	0.279	0.409	0.471	0.292
Non-manufacturing firms					
Sequence	-0.009***	-0.024***	0.024***	-0.003	-0.008*
	[0.002]	[0.002]	[0.009]	[0.002]	[0.005]
Observations	12,813	8,552	3,368	6,051	4,915
R-squared	0.205	0.235	0.363	0.356	0.315

Notes: Table reports results of an OLS estimation on an unbalanced panel of acquiring MNEs between 1997 and 2012. The sample takes into account only the MNEs that did more than two deals over the sample period. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Explanatory variable: *Sequence* corresponds to the sequence of succeeding M&A done by a given MNE. Deals are ordered chronologically and a number is assigned to each of them. In Panel A, the dependent variable is the average compactness (i.e., average distance from MNE's primary activity to all the activities across all the *baskets* of the corporate group). The dependent variable was multiplied by 100. The subsamples correspond to the type of *F-HV* firms, as defined in Section 4.2.1.

Table D.3: Change in the compactness of corporate group activity - all sample, manufacturing and non-manufacturing

	Congl.	Horiz.	Vert.	Mix	None
All sample					
Panel A	*Av. Compact.*				
Sequence	-0.002	-0.025***	0.014	-0.004	-0.012***
	[0.002]	[0.003]	[0.010]	[0.003]	[0.004]
Observations	24,878	10,334	4,752	7,821	7,178
R-squared	0.162	0.181	0.304	0.317	0.247
Panel B	*Standard deviation*				
Sequence	0.014***	0.023***	0.021***	0.001	0.013***
	[0.001]	[0.004]	[0.006]	[0.001]	[0.003]
Observations	24,878	10,334	4,752	7,821	7,178
R-squared	0.162	0.170	0.231	0.210	0.217
Non-manufacturing firms					
Panel C	*Av. Compact.*				
Sequence	0.011***	0.023***	0.022***	0.002**	0.012***
	[0.001]	[0.004]	[0.007]	[0.001]	[0.003]
Observations	12,813	8,552	3,368	6,051	4,915
R-squared	0.214	0.179	0.270	0.250	0.283
Panel D	*Standard deviation*				
Sequence	0.011***	0.037***	0.032***	0.007***	0.017***
	[0.001]	[0.004]	[0.005]	[0.002]	[0.003]
Observations	12,813	8,552	3,368	6,051	4,915
R-squared	0.173	0.181	0.293	0.250	0.248
Manufacturing firms					
Panel E	*Av. Compact.*				
Sequence	0.015***	-0.041***	-0.008	0.013	-0.006
	[0.003]	[0.010]	[0.008]	[0.014]	[0.004]
Observations	12,065	1,782	1,384	1,770	2,263
R-squared	0.284	0.279	0.409	0.471	0.292
Panel F	*Standard deviation*				
Sequence	0.019***	0.031***	0.029***	-0.002	0.012***
	[0.003]	[0.005]	[0.008]	[0.005]	[0.004]
Observations	12,065	1,782	1,384	1,770	2,263
R-squared	0.177	0.289	0.306	0.309	0.231

Notes: Table reports results of an OLS estimation on an unbalanced panel of acquiring MNEs between 1997 and 2012. The sample takes into account only the MNEs that did more than two deals over the sample period. Estimation includes fixed effects for both acquiror and target country, acquiror and target 2-digit primary industry codes and years. ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Explanatory variable: *Sequence* corresponds to the sequence of succeeding M&A done by a given MNE. Deals are ordered chronologically and a number is assigned to each of them. The estimation looks at the evolution of average compactness and its standard deviation, as computed for separated baskets of each firm within the corporate group (i.e., allowing for multiple apparitions of activities in the overall corporate basket). MNEs that did at least three deals during the sample period were taken into account. The same set of estimation is run on the whole sample of the dependent variable is the average compactness (i.e., average distance from MNE's primary activity to all the activities across all the *baskets* of the corporate group), as discussed in Section sec:comp. Both dependent variables were multiplied by 100.

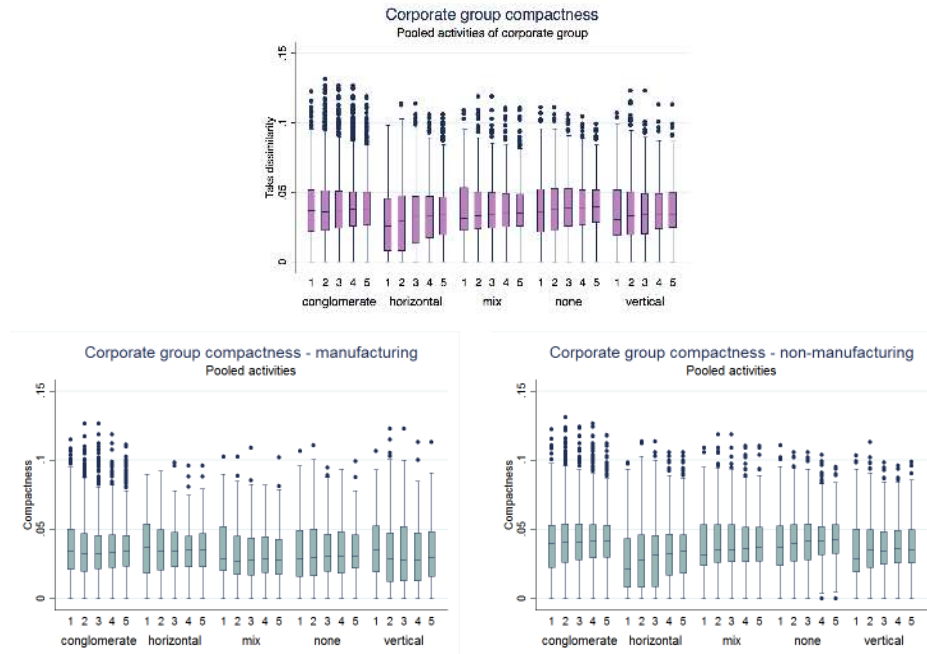Table D.4: Evolution of the compactness - alternative measure - separate baskets

Figure D.1: Compactness (pooled activity) - all sample and manufacturing vs. non-manufacturing deals
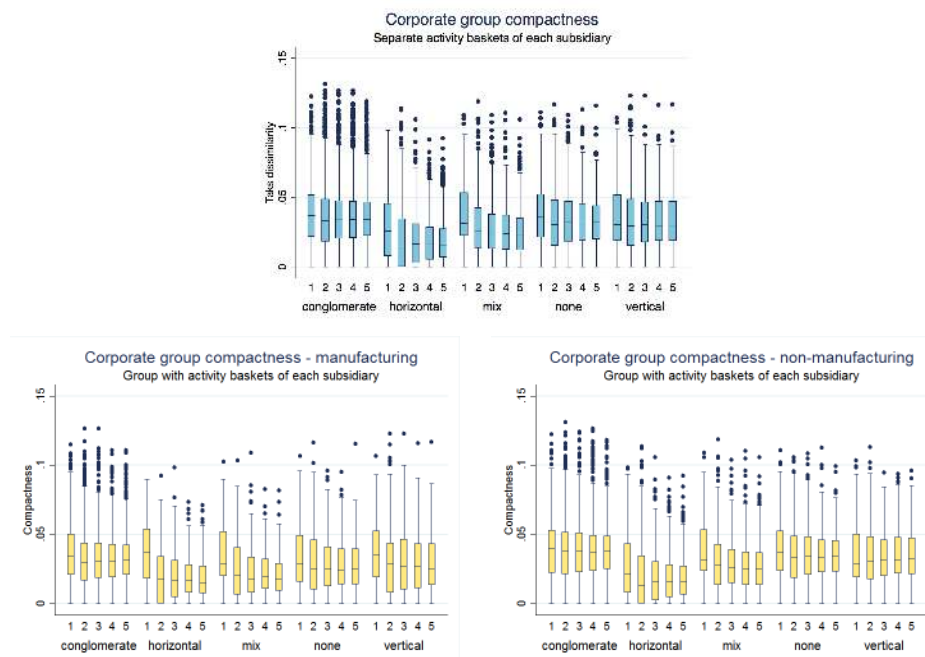
Figure D.2: Compactness (alternative measure - separate baskets) - all sample and manufacturing vs. non-manufacturing deals

	Congl.	Horiz.	Vert.	Mix	None
All sample					
Sequence	-0.008***	-0.049***	-0.021***	-0.002	-0.011***
	[0.002]	[0.006]	[0.004]	[0.002]	[0.002]
Observations	30,114	13,845	6,200	9,274	7,907
R-squared	0.091	0.152	0.150	0.144	0.104
MNEs expanding mainly radially					
Sequence	0.003***	-0.019***	-0.020***	0.005***	-0.001
	[0.001]	[0.006]	[0.005]	[0.002]	[0.002]
Observations	6,839	4,168	1,258	2,539	2,424
R-squared	0.100	0.238	0.254	0.264	0.185
MNEs expanding mainly linearly					
Sequence	-0.005***	-0.019*	0.003	0.011*	-0.005
	[0.002]	[0.011]	[0.006]	[0.006]	[0.004]
Observations	3,815	382	965	305	607
R-squared	0.326	0.479	0.562	0.703	0.419
FE:			Yes		

Notes: ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Standard errors reported in the brackets are clustered at acquiror-target country pairs. Estimation includes fixed effects for acquiror country, 2-digit primary industry code and yearss. Explanatory variable: *Sequence* corresponds to the sequence of succeeding M&A done by a given MNE. Deals are ordered chronologically and a number is assigned to each of them. The dependent variable, the difference between *task dissimilarity* scores for target-acquiror and target-corporate group. The dependent variable was multiplied by 100. The subsamples correspond to the type of *F-HV* firms, as defined in subsection 4.2.1. The estimation takes into account MNEs that did at least three deals during the sample period. The top part reports the results for the whole subsample. The middle and bottom parts reports the results for the subsample of firms expanding respectively radially and linearly. MNEs classified as expanding radially (linearly) are these that have their average difference score below (above) the arbitrary threshold of -(+).01.

Table D.5: Radial vs. linear expansion

E   Activity baskets - Additional analysis

	Task	ID
1	Getting Information	111
2	Monitor Processes, Materials, or Surroundings	112
3	Identifying Objects, Actions, and Events	121
4	Inspecting Equipment, Structures, or Material	122
5	Estimating the Quantifiable Characteristics of Products, Events, or Information	123
6	Judging the Qualities of Things, Services, or People	211
7	Processing Information	212
8	Evaluating Information to Determine Compliance with Standards	213
9	Analyzing Data or Information	214
10	Making Decisions and Solving Problems	221
11	Thinking Creatively	222
12	Updating and Using Relevant Knowledge	223
13	Developing Objectives and Strategies	224
14	Scheduling Work and Activities	225
15	Organizing, Planning, and Prioritizing Work	226
16	Performing General Physical Activities	311
17	Handling and Moving Objects	312
18	Controlling Machines and Processes	313
19	Operating Vehicles, Mechanized Devices, or Equipment	314
20	Interacting With Computers	321
21	Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	322
22	Repairing and Maintaining Mechanical Equipment	324
23	Repairing and Maintaining Electronic Equipment	325
24	Documenting/Recording Information	326
25	Interpreting the Meaning of Information for Others	411
26	Communicating with Supervisors, Peers, or Subordinates	412
27	Communicating with Persons Outside Organization	413
28	Establishing and Maintaining Interpersonal Relationships	414
29	Assisting and Caring for Others	415
30	Selling or Influencing Others	416
31	Resolving Conflicts and Negotiating with Others	417
32	Performing for or Working Directly with the Public	418
33	Coordinating the Work and Activities of Others	421
34	Developing and Building Teams	422
35	Training and Teaching Others	423
36	Guiding, Directing, and Motivating Subordinates	424
37	Coaching and Developing Others	425
38	Provide Consultation and Advice to Others	426
39	Performing Administrative Activities	431
40	Staffing Organizational Units	432
41	Monitoring and Controlling Resources	433

Table E.1: O*NET 2010 list of tasks
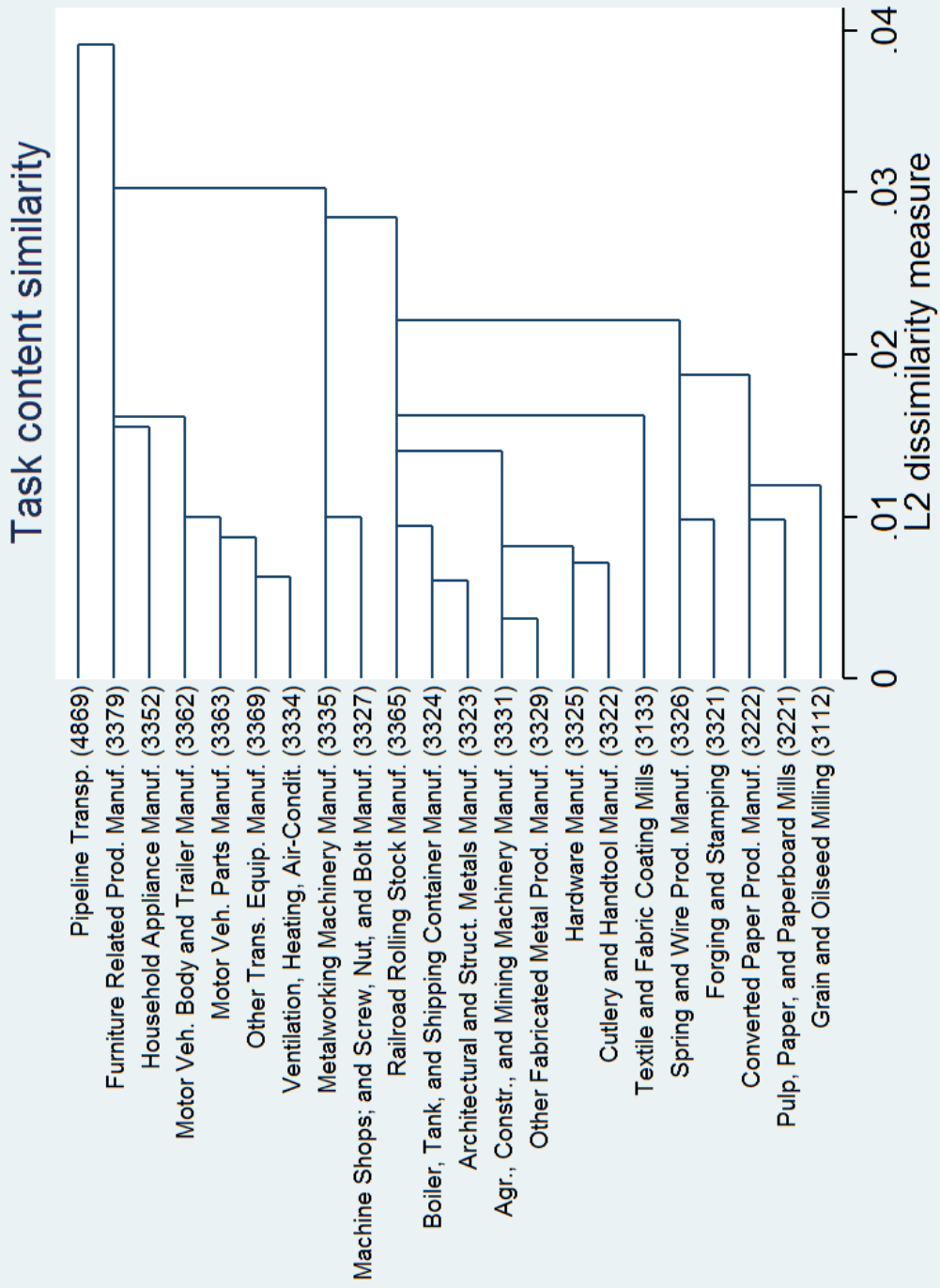
Figure E.1: Dendrogram task content similarity of manufacturing industries (NAICS 2007 4-digit)
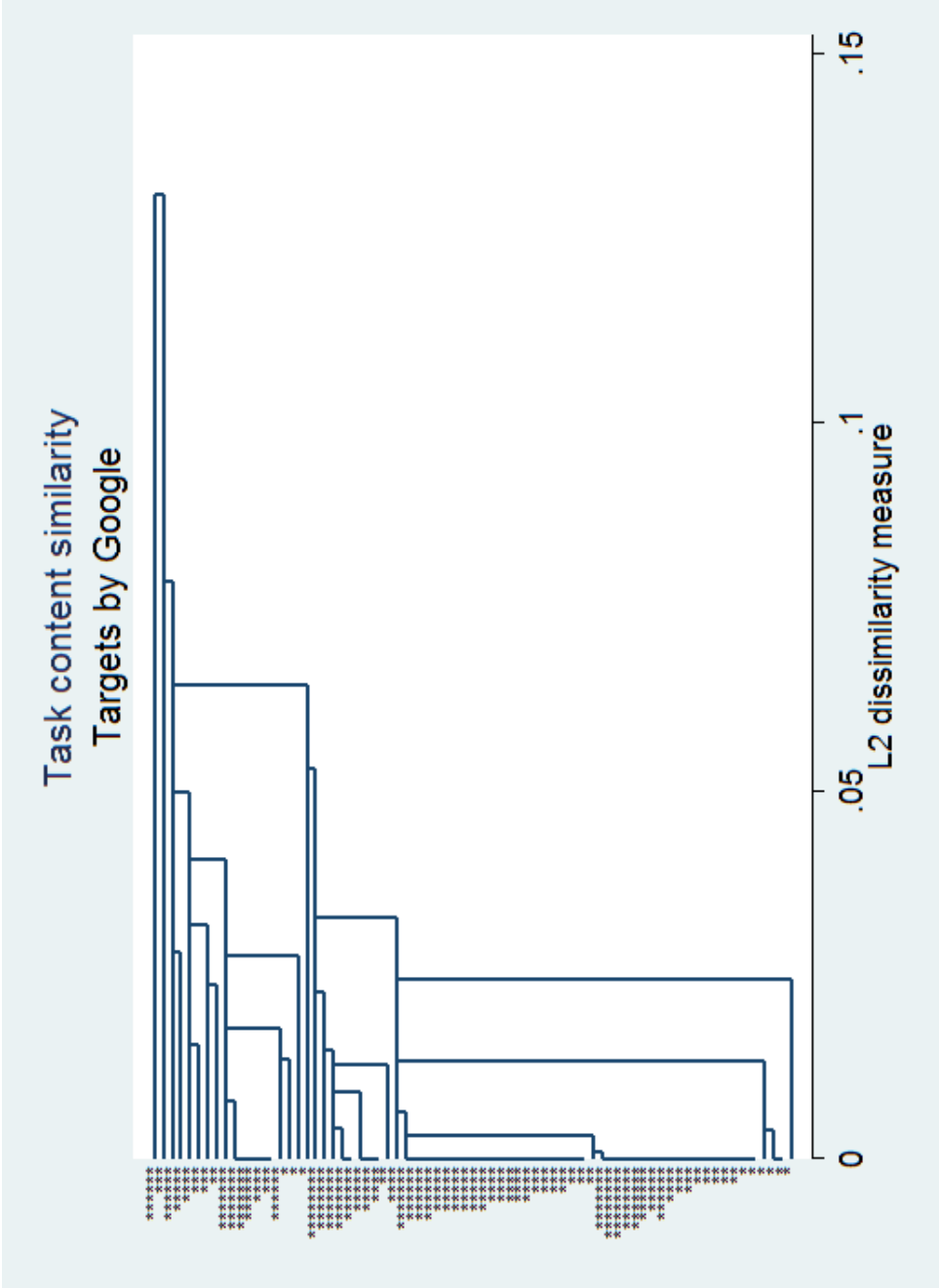
Figure E.2: Task similarity between Google's targets

Number of (*) corresponds to the chronological cohort of deals. The first ten deals done by the firm during the sample period have one star, the next ten have two and so on.
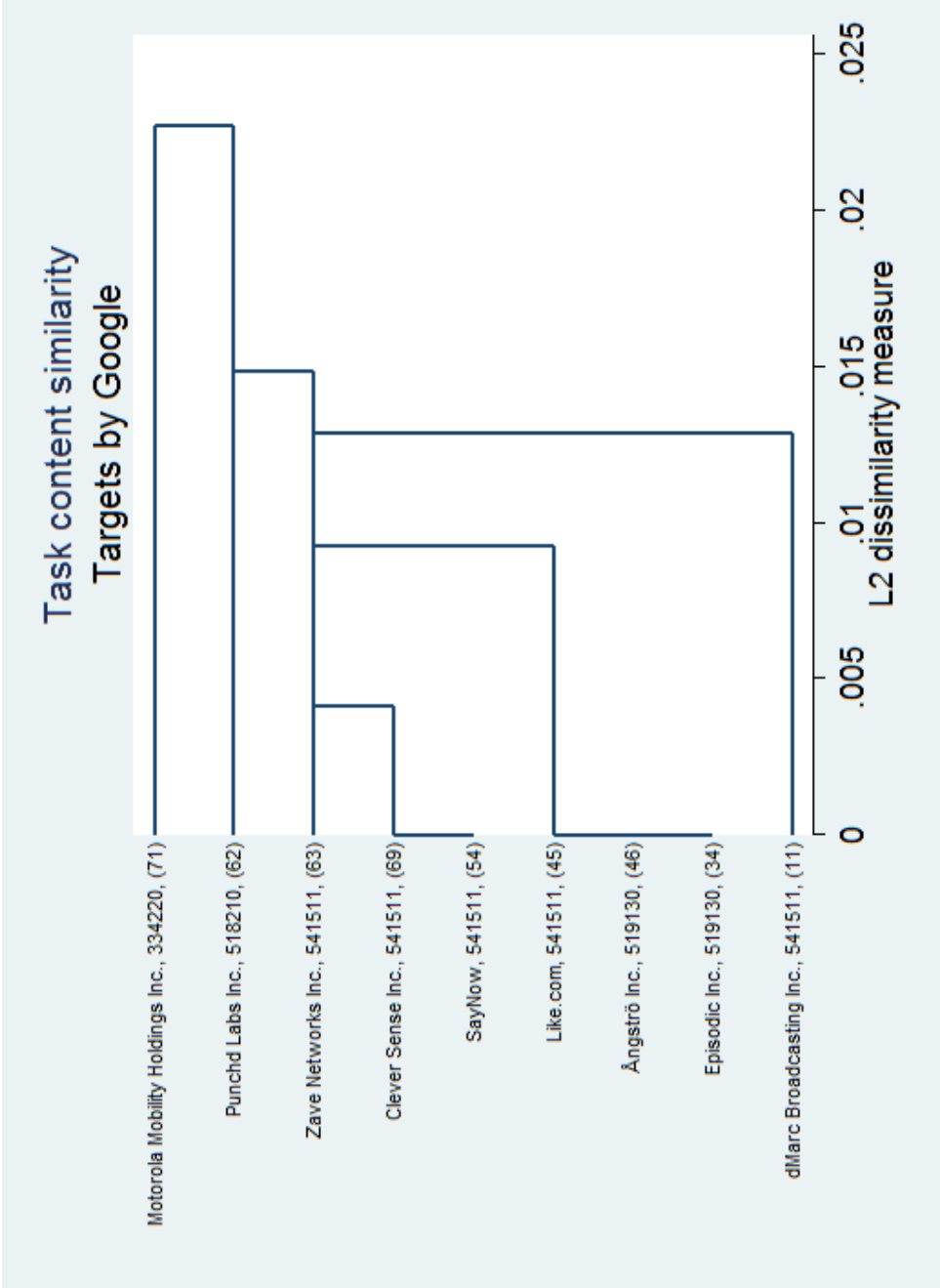
Figure E.3: A branch of Google's targets

Names of the targets are followed by their primary industry NAICS code. The number in the parenthesis corresponds to the chronological number of deal among these done by Google.
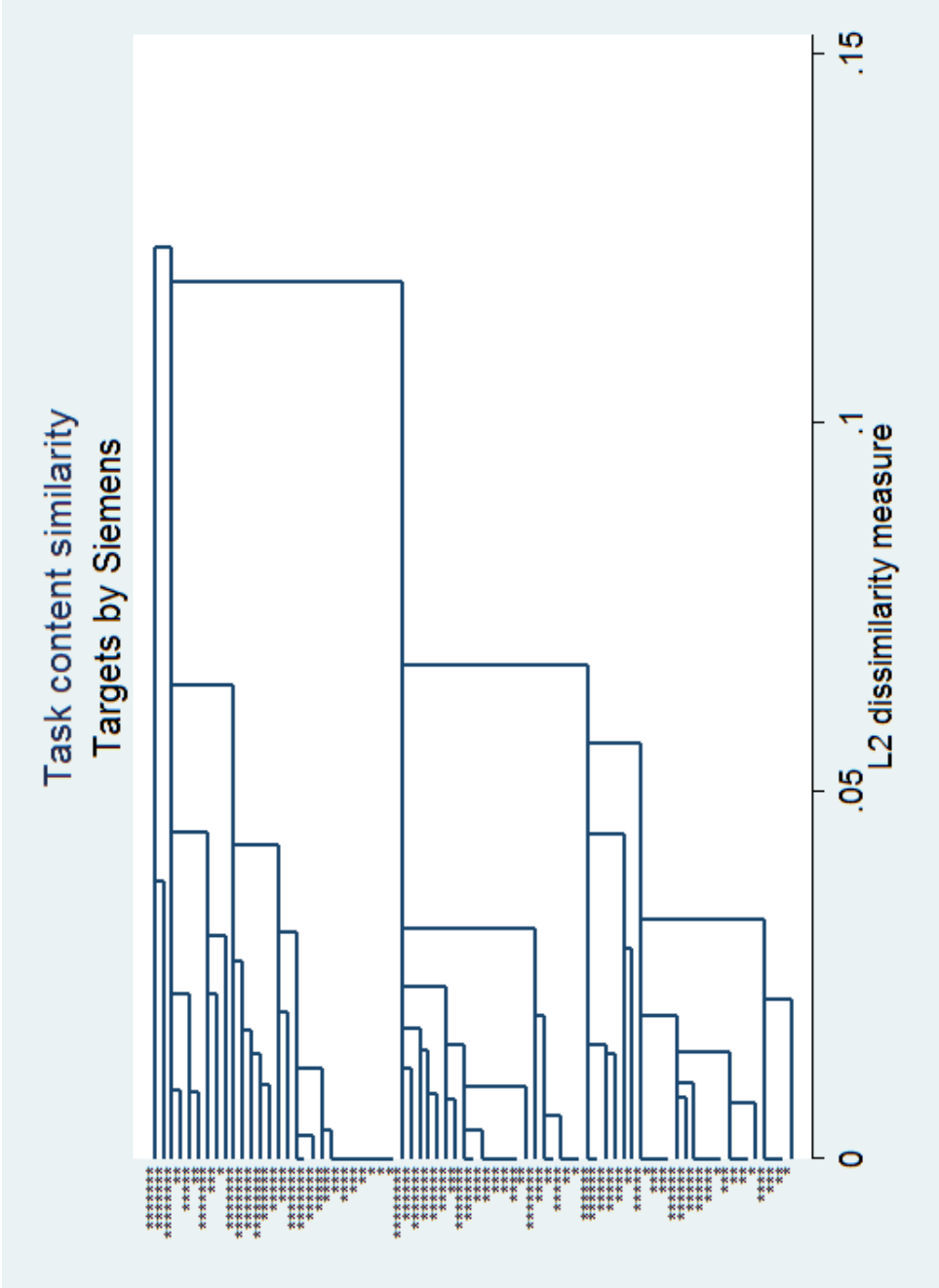
Figure E.4: Task similarity between Siemens' targets

Number of (*) corresponds to the chronological cohort of deals. The first ten deals done by the firm during the sample period have one star, the next ten have two and so on.
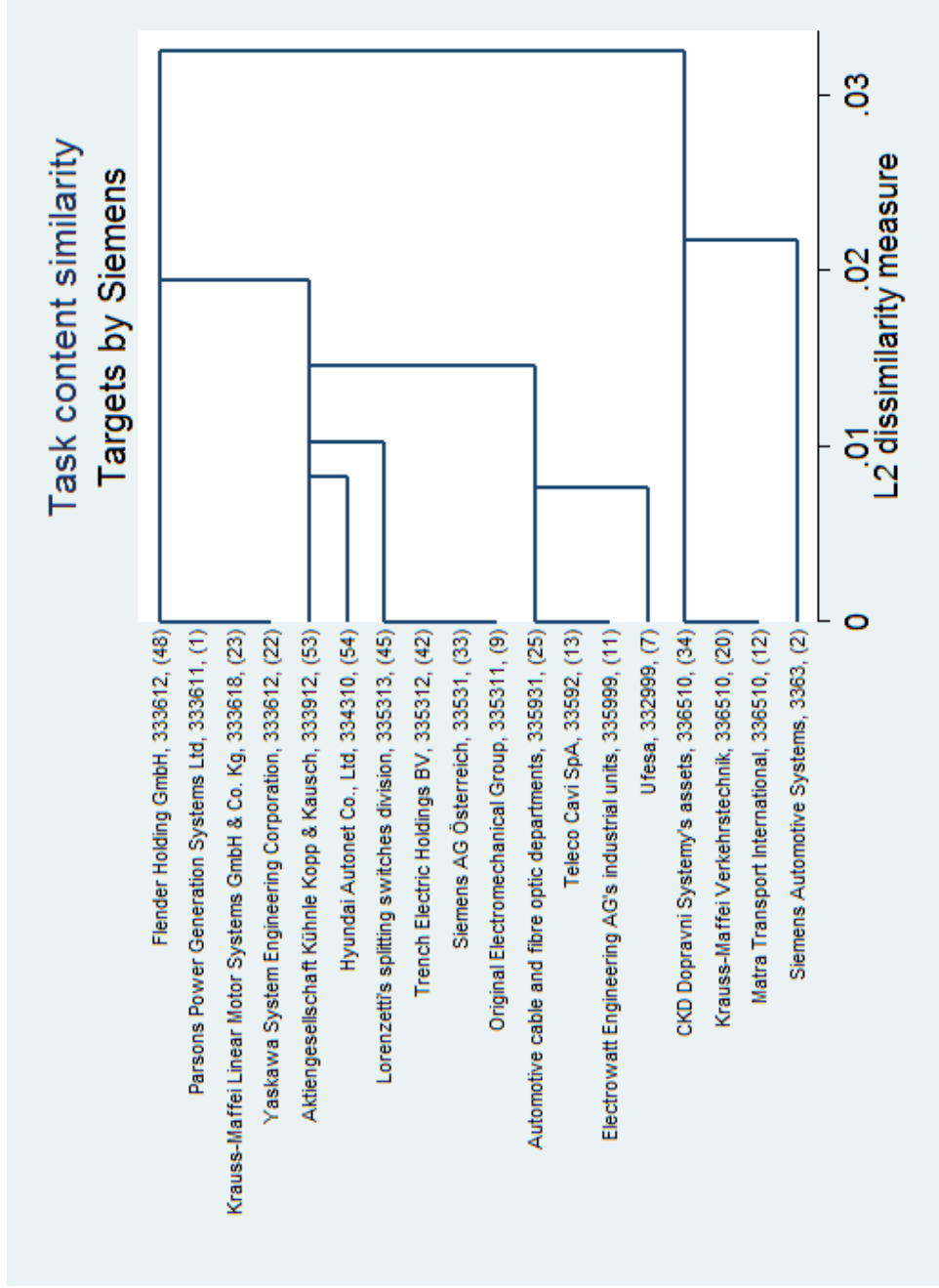
Figure E.5: A branch of Siemens's targets

Names of the targets are followed by their primary industry NAICS code. The number in the parenthesis corresponds to the chronological number of deal among these done by Siemens.

"Standard" HV classification						

Shares of different *HV* types in the total number of acquiror's deals

	N	mean	sd	p50	p75	p95
Multi-deal firms only						
Conglomerate	14,369	0.475	0.373	0.500	0.833	1
Horizontal	14,369	0.280	0.353	0	0.500	1
Vertical	14,369	0.117	0.234	0	0.125	0.667
Mix	14,369	0.129	0.261	0	0.0909	0.750
All firms						
Conglomerate	28,999	0.480	0.442	0.500	1	1
Horizontal	28,999	0.285	0.407	0	0.583	1
Vertical	28,999	0.112	0.274	0	0	1
Mix	28,999	0.124	0.295	0	0	1

Cumulative HV classification						

	N	mean	sd	p50	p75	p95

Shares of different *HV* types in the total number of acquiror's deals

|	N	mean	sd	p50	p75	p95
Multi-deal firms only						
Conglomerate	14 369	0.363	0.324	0.333	0.500	1
Horizontal	14 369	0.319	0.352	0.200	0.500	1
Vertical	14 369	0.121	0.210	0	0.200	0.500
Mix	14 369	0.198	0.291	0	0.381	0.833
All firms						
Conglomerate	28 999	0.424	0.426	0.333	1	1
Horizontal	28 999	0.304	0.407	0	0.667	1
Vertical	28 999	0.114	0.264	0	0	1
Mix	28 999	0.158	0.311	0	0.125	1

Difference in shares between cumulative and baseline *HV* classifications

	N	mean	sd	p50	p75	p95
Conglomerate	14 369	0.112	0.192	0	0.200	0.500
Horizontal	14 369	-0.0384	0.170	0	0	0.143
Vertical	14 369	-0.00326	0.134	0	0	0.200
Mix	14 369	-0.0690	0.157	0	0	0

HVF - firm classification (majority shares)						
	Horiz.	Vert.	Mix	Congl.	None	Total
All Firms						
# firms	7 501	2 611	3 404	14 797	686	28 999
Percentage	25.9	9	11.7	51	2.4	100
# deals	23 181	6 674	10 829	43 748	7 120	91 552
Percentage	25.3	7	12	47.8	7.8	100
Multi-deal firms only						
# firms	3 262	1 061	1 651	7 709	686	14 369
Percentage	22.7	7.38	11.49	53.65	4.77	100
# deals	18 942	5 124	9 076	36 660	7 120	76 922
Percentage	24.62	6.66	11.8	47.66	9.26	100

Table E.2: Acquiring MNEs - summary statistics

	Horizontal	Vertical	Mixed	Congl.	Total
MNEs that did <20 deals					
HV					
deals	22043	905	9882	35868	76843
Percentage	28,69	11,78	12,86	46,68	100
HE					
deals	24638	9364	1538	27461	76843
Percentage	32,06	12,19	20,01	35,74	100
MNEs that did <15 deals					
HV					
deals	20439	8314	9092	33373	71218
Percentage	28,7	11,67	12,77	46,86	100
HE					
deals	22987	8453	13561	26217	71218
Percentage	32,28	11,87	19,04	36,81	100
MNEs that did <10 deals					
HV					
deals	17671	7197	7919	2936	62147
Percentage	28,43	11,58	12,74	47,24	100
HE					
deals	19783	7243	11198	23923	62147
Percentage	31,83	11,65	18,02	38,49	100
20% of observations done by the most frequent buyers					
(over 16 deals corresponding to 654 MNEs)					
HV					
deals	511	2421	3111	8108	18750
Percentage	27,25	12,91	16,59	43,24	100
HE					
deals	4386	3674	7884	2806	18750
Percentage	23,39	19,59	42,05	14,97	100

Notes: M&A transactions 1997-2012. 6 digit NAICS codes, 5% cutoff for vertical linkages. Average deal values are in millions of euro.

Table E.3: *HV* classification without serial buyers

#	Acquiror name	% of all deals	all deals
	less than 50% of codes shared		
1	International Business Machines Corporation	78%	102
2	Cisco Systems Inc.	65%	92
3	Google Inc.	72%	72
4	MITIE Group plc	68%	66
5	EMC Corporation	93%	43
6	Black Box Corporation	54%	65
7	Publicis Groupe SA	28%	110
8	Stantec Inc.	79%	39
9	Kesko Oyj	76%	38
10	Eaton Corporation	56%	50
11	Trimble Navigation Ltd	69%	39
12	Hewlett-Packard Company	63%	43
13	Assa Abloy AB	35%	71
14	Hastie Group Ltd	71%	34
15	Wienerberger AG	92%	25
16	Sistema Aktsionernaya Finansovaya Korporatsiya OAO	61%	38
17	Siemens AG	30%	73
18	General Electric Company	40%	55
19	Amec plc	54%	41
20	Parker Hannifin Corporation	28%	75
	less than 33% of codes shared		
1	International Business Machines Corporation	78%	102
2	Cisco Systems Inc.	65%	92
3	MITIE Group plc	68%	66
4	EMC Corporation	93%	43
5	Black Box Corporation	51%	65
6	Stantec Inc.	77%	39
7	Kesko Oyj	76%	38
8	Hewlett-Packard Company	63%	43
9	Sistema Aktsionernaya Finansovaya Korporatsiya OAO	61%	38
10	Hastie Group Ltd	68%	34
11	Eaton Corporation	44%	50
12	General Electric Company	40%	55
13	Computer Sciences Corporation	64%	33
14	Amec plc	51%	41
15	Pitney Bowes Inc.	84%	25
16	Hunter Douglas NV	57%	35
17	Autodesk Inc.	50%	38
18	IHS Inc.	63%	30
19	Siemens AG	26%	73
20	Glencore International AG	67%	27
	less than 20% of codes shared		
1	International Business Machines Corporation	77%	102
2	Cisco Systems Inc.	65%	92
3	Stantec Inc.	72%	39
4	Sistema Aktsionernaya Finansovaya Korporatsiya OAO	61%	38
5	Eaton Corporation	44%	50
6	General Electric Company	40%	55
7	Pitney Bowes Inc.	84%	25
8	Hewlett-Packard Company	47%	43
9	IHS Inc.	63%	30
10	Glencore International AG	67%	27
11	MITIE Group plc	27%	66
12	Compagnie de Saint-Gobain SA	23%	74
13	Parker Hannifin Corporation	23%	75
14	Endesa SA	59%	27
15	CACI International Inc.	70%	23
16	Hitachi, Ltd	70%	23
17	Teleflex Inc.	76%	21
18	Harris Corporation	60%	25
19	Mentor Graphics Corporation	70%	20
20	Thomson Reuters Corporation	38%	34

Notes: As conglomerate are reclassified these deals that (*i*) do not have direct linkages between the primary codes of acquiror and target, (*ii*) nor any other direct linkages with target primary code and (*iii*) that are done by acquirors operating in multiple industries. The three parts of the table reports the top top 20 firms with the highest share of deals reclassified as conglomerate. The classification is done using respectively thresholds of 50, 33 and 20% of shared links.

Table E.4: By MNE's share of deals reclassified as conglomerate based on the intensity of direct linkages per M&A

	Target Name	ISO	Year	Primary 6-digit NAICS 2007 code	HV
1	E-MAS Sdn Bhd	MYS	2000	Engineering Serv.	C
2	Seabridge	ISR	2000	Other Electr. Component Manuf.	V
3	BigBand Networks Inc.	USA	2000	Telephone Apparatus Manuf.	H
4	Telegyr Systems AG	CHE	2000	Comp. Systems Design Serv.	C
5	Netstal-Maschinen AG	CHE	2000	Indu. Machinery Manuf.	H
6	ENTEX Information Serv. Inc.	USA	2000	Custom Comp. Prog. Serv.	H
7	Shared Medical Systems Corporation	USA	2000	Custom Comp. Prog. Serv.	H
8	Automotive cable and fibre optic departments	TUR	2000	Current-Carrying Wiring Device Manuf.	C
9	S-Y Systems Technologies Europe GmbH	DEU	2001	Other Electr. Parts and Equip. Merchant Wholesalers	C
10	Siemens AG Österreich	AUT	2001	Electrical Equip. Manuf.	C
11	Atecs Mannesmann AG	DEU	2001	Indu. Machinery Manuf.	C
12	S-Y Systems Technologies Europe GmbH	DEU	2001	Other Electr. Parts and Equip. Merchant Wholesalers	C
13	Customax' installation unit	NOR	2001	Comp. Systems Design Serv.	C
14	Areva NP SAS	FRA	2001	Nuclear Electric Power Generation	C
15	CKD Dopravni Systemy's assets	CZE	2001	Railroad Rolling Stock Manuf.	C
16	Netstal-Maschinen AG	CHE	2002	Indu. Machinery Manuf.	C
17	NERTUS Mantenimiento Feroviario SA	ESP	2002	Other Engine Equip. Manuf.	C
18	Shanghai Siemens High Voltage Switchgear Ltd	CHN	2002	Switchgear and Switchboard Apparatus Manuf.	C
19	e-xtendnow SL	ESP	2002	Internet Publishing and Broadcasting and Web Search Portals	V
20	Energy Serv. GmbH	DEU	2002	Other Business Service Centers (including Copy Shops)	C
21	Atecs Mannesmann AG	DEU	2002	Indu. Machinery Manuf.	C
22	BSL Ltd's spindle service and	IND	2002	Commercial and Indu. Machinery and Equip.	C
23	repair workshop business			(except Automotive and Electr.) Repair and Maintenance	
24	Cycos AG	DEU	2003	Custom Comp. Prog. Serv.	H
25	Danfoss A/S's Flow Division	DNK	2003	Instr. and Related Products Manuf. for Measuring, Displaying, and Controlling Indu. Process Variables	C
26	Hospital Equip. manufacturer joint venture	DEU	2003	Surgical and Medical Instr. Manuf.	C
27	Itron Business Serv.	ARG	2003	Data Processing, Hosting, and Related Serv.	C
28	Lorenzetti's splitting switches division	BRA	2004	Switchgear and Switchboard Apparatus Manuf.	C
29	Alstom Projects India Ltd's Indu. turbine business	IND	2004	Electric Power Generation	C
30	Dasan Networks Inc.	KOR	2004	Custom Comp. Prog. Serv.	H
31	Trench Electric Holdings BV	NLD	2004	Motor and Generator Manuf.	C
32	Photo-Scan plc	GBR	2004	Other Communications Equip. Manuf.	V
33	Elektropult-Siemens	RUS	2004	Communications Equip. Manuf.	C
34	Beijing International Switching System Corporation Ltd	CHN	2004	Telephone Apparatus Manuf.	M
35	US Filter Corporation	USA	2004	Other Commercial and Service Industry Machinery Manuf.	C
36	Natural gas-fired turbines joint venture	CHN	2004	Turbine and Turbine Generator Set Units Manuf.	V
37	Broadcastle plc	GBR	2005	Consumer Lending	C
38	Flender Holding GmbH	DEU	2005	Speed Changer, Indu. High-Speed Drive, and Gear Manuf.	C
39	TD Tech Co., Ltd	HKG	2005	Communications Equip. Manuf.	C
40	Transconverter LLC	RUS	2005	Electric Power Distribution	C

Table E.5: Siemens M&A in Zephyr, chronologically

	Target Name	ISO	Year	Primary 6-digit NAICS 2007 code	HV
41	Shanghai Electrical Apparatus Co., Ltd and Siemens AG's Chinese Manuf. joint venture	CHN	2005	Semiconductor and Other Electr. Component Manuf.	C
42	Aktiengesellschaft Kühnle Kopp & Kausch	DEU	2006	Air and Gas Compressor Manuf.	C
43	Sernagiotto Technologies SpA	ITA	2006	Indu. Machinery Manuf.	C
44	Hyundai Autonet Co., Ltd	KOR	2006	Audio and Video Equip. Manuf.	C
45	Siemens LLC	OMN	2006	Highway, Street, and Bridge Construction	C
46	Monosep Corporation	USA	2006	Other Commercial and Service Industry Machinery Manuf.	C
47	CNC Water Technology Inc.	CHN	2006	Water Supply and Irrigation Systems	C
48	Tsentr Innovatsionnykh Razrabotok OOO	RUS	2006	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	C
49	Nokia Siemens Networks Oy	FRA	2007	Telephone Apparatus Manuf.	H
50	Bayer India Ltd	IND	2007	Pharmaceutical Preparation Manuf.	C
51	Siemens Informatica SpA	ITA	2007	All Other Telecommunications	M
52	Bayer AG's diagnostics division	DEU	2007	Navigational, Measuring, Electromed., and Control Instr. Manuf.	C
53	UGS Corp	USA	2007	Custom Comp. Prog. Serv.	H
54	Chemitreat Group Pte Ltd	SGP	2008	Sewage Treatment Facilities	C
55	SG Wasseraufbereitung und Regenerierstation GmbH	DEU	2008	Indu. Machinery Manuf.	C
56	innotec GmbH	DEU	2008	Custom Comp. Prog. Serv.	H
57	Morgan Construction Company	USA	2008	Rolling Mill Machinery and Equip. Manuf.	H
58	Fabrica Electrotecnica Josa SA	ESP	2008	Electrical Equip., Appliance, and Component Manuf.	C
59	Siemens Israel Ltd	ISR	2008	Engineering Serv.	C
60	Simens Vysokovoltnye Apparaty OOO	RUS	2008	Instr. Manuf. for Measuring and Testing Electricity and Electrical Signals	C
61	Steinmuller Engineering GmbH	DEU	2009	Other Scientific and Technical Consulting Serv.	C
62	Simens Vysokovoltnye Apparaty OOO	RUS	2009	Instr. Manuf. for Measuring and	C
63	Elan Software Systems SA	FRA	2009	Custom Comp. Prog. Serv.	H
64	RusTurboMash OOO	RUS	2010	Pump and Pumping Equip. Manuf.	C
65	Uralskie Lokomotivy OOO	RUS	2010	Railroad Rolling Stock Manuf.	C
66	Gwynt y Mor wind farm	GBR	2010	Other Electric Power Generation	C
67	Active SA	BRA	2011	Custom Comp. Prog. Serv.	H
68	Siemens Gas Turbine Power Plant Holding BV	NLD	2011	Portfolio Management	C
69	DeltaLizing ZAO	RUS	2011	Other Commercial and Indu. Machinery and Equip. Rental and Leasing	C

Table E.6: Siemens M&A in Zephyr, chronologically (cont'd)

	Acquiror	Horizontal #	Share	NAICS	3-digit NAICS
1	International Business Machines Corp.	76	0,792	541512	Prof., Scientific, and Tech. Serv.
2	Microsoft Corp.	64	0,853	541511	Prof., Scientific, and Tech. Serv.
3	Cisco Systems Inc.	60	0,706	334210	Computer and Electronic Prod. Manuf.
4	Google Inc.	59	0,855	519130	Other Information Serv.
5	Publicis Groupe SA	53	0,688	541810	Prof., Scientific, and Tech. Serv.
6	TietoEnator Oyj	48	0,828	541511	Prof., Scientific, and Tech. Serv.
7	Oracle Corp.	45	0,918	541511	Prof., Scientific, and Tech. Serv.
8	ISS A/S	44	0,259	561790	Admin. and Support Serv.
9	ICA Norge AS	38	0,644	445110	Food and Beverage Stores
10	SunGard Data Systems Inc.	37	0,771	541511	Prof., Scientific, and Tech. Serv.
11	EMC Corp.	36	0,900	334112	Computer and Electronic Prod. Manuf.
12	Heineken NV	36	0,878	312120	Beverage and Tobacco Prod. Manuf.
13	Autodesk Inc.	34	0,944	511210	Publishing Industries (except Internet)
14	Quest Software Inc.	30	0,968	541511	Prof., Scientific, and Tech. Serv.
15	Vedior NV	28	0,778	561311	Admin. and Support Serv.
16	Symantec Corp.	28	0,966	541511	Prof., Scientific, and Tech. Serv.
17	Bentley Systems Inc.	27	0,931	541511	Prof., Scientific, and Tech. Serv.
18	Aegis Group plc	27	0,287	541613	Prof., Scientific, and Tech. Serv.
19	Hewlett-Packard Company	26	0,591	334111	Computer and Electronic Prod. Manuf.
20	Sage Group plc, The	26	0,867	541511	Prof., Scientific, and Tech. Serv.
21	SAP AG	24	0,828	511210	Publishing Industries (except Internet)
22	Trimble Navigation Ltd	24	0,649	334519	Computer and Electronic Prod. Manuf.
23	Carrefour SA	24	0,774	445110	Food and Beverage Stores
24	BMC Software Inc.	24	0,923	541511	Prof., Scientific, and Tech. Serv.
25	Wiener Stadtische Allgemeine Versicherungs AG	24	0,727	524126	Insurance Carriers and Related Activ.
25	Wienerberger AG	23	0,958	327331	Nonmetallic Mineral Prod. Manuf.

Table E.7: Most active acquirors in terms of number of deals - Horizontal deals

	Vertical				
	Acquiror	#	Share	NAICS	3-digit NAICS
1	Triumphal Associates Bhd	45	1,000	336399	Transp. Equip. Manuf.
2	Gazprom OAO	36	0,379	211111	Oil and Gas Extraction
3	MITIE Group plc	32	0,516	561210	Admin. and Support Serv.
4	Securitas AB	30	0,500	561612	Admin. and Support Serv.
5	Arthur J Gallagher & Company	29	0,170	524210	Insurance Carriers and Related Activ.
6	FirstService Corp.	25	0,694	531312	Real Estate
7	Atomnyi Energopromyshlennyi Kompleks OAO	22	0,333	221113	Utilities
8	CB Richard Ellis Group Inc.	22	0,595	531210	Real Estate
9	Sumitomo Corp.	22	0,415	423510	Merchant Wholes., Durable Goods
10	CRH plc	22	0,239	327320	Nonmetallic Mineral Prod. Manuf.
11	Bank of New York Company Inc., The	21	0,840	522110	Credit Intermediation and Related Activ.
12	Gruppa Kompanii PIK OAO	20	0,556	236116	Construction of Buildings
13	Neftyanaya Kompaniya Yukos OAO	19	0,432	211111	Oil and Gas Extraction
14	Citycon Oyj	18	0,857	531120	Real Estate
15	Via Technologies Inc.	18	0,621	334413	Computer and Electronic Prod. Manuf.
16	Sistema Aktsionernaya Finansovaya Korporatsiya OAO	18	0,450	517919	Telecommunications
17	Brady Corp.	17	0,447	561910	Admin. and Support Serv.
18	Mechel OAO	17	0,531	212112	Mining (except Oil and Gas)
19	Jones Lang Lasalle Inc.	16	0,667	237210	Heavy and Civil Engineering Construction
20	Marubeni Corp.	16	0,381	423690	Merchant Wholes., Durable Goods
21	Vympel-Kommunikatsii OAO	16	0,444	517210	Telecommunications
22	British American Tobacco (Holdings) BV	15	0,938	31222	Beverage and Tobacco Prod. Manuf.
23	United Drug plc	14	0,737	424210	Merchant Wholes., Nondurable Goods
24	ISS A/S	14	0,082	561790	Admin. and Support Serv.
25	DTZ Holdings plc	14	0,875	531311	Real Estate
25	Lassila & Tikanoja Oyj	14	0,230	562111	Waste Manag. and Remediation Serv.

Table E.8: Most active acquirors in terms of number of deals - Vertical deals

	Acquiror	#	Share	NAICS	Mix 3-digit NAICS
1	Brown & Brown Inc.	146	0,901	524210	Insurance Carriers and Related Activ.
2	Arthur J Gallagher & Company	134	0,784	524210	Insurance Carriers and Related Activ.
3	Mobilnye TeleSistemy OAO	76	0,826	517210	Telecommunications
4	Hub International Ltd	55	0,846	524210	Insurance Carriers and Related Activ.
5	Hilb Rogal & Hobbs Company	47	0,855	524210	Insurance Carriers and Related Activ.
6	Black Box Corp.	39	0,629	334290	Computer and Electronic Prod. Manuf.
7	Cullum Capital Ventures Ltd	37	0,860	524210	Insurance Carriers and Related Activ.
8	Stantec Inc.	33	0,846	237990	Heavy and Civil Engineering Construction
9	Tele2 AB	33	0,943	517110	Telecommunications
10	Gazprom OAO	30	0,316	211111	Oil and Gas Extraction
11	Hastie Group Ltd	29	0,853	541330	Prof., Scientific, and Tech. Serv.
12	France Telecom SA	28	0,636	517110	Telecommunications
13	Telenor ASA	27	0,771	517210	Telecommunications
14	Komstar - Obyedinnenye TeleSistemy OAO	27	0,711	517110	Telecommunications
15	Societe Generale	27	0,587	522110	Credit Intermediation and Related Activ.
16	CRH plc	27	0,293	327320	Nonmetallic Mineral Prod. Manuf.
17	Deutsche Bank	26	0,441	522110	Credit Intermediation and Related Activ.
18	Telefonica SA	25	0,833	517110	Telecommunications
19	Tetra Tech Inc.	25	0,781	541330	Prof., Scientific, and Tech. Serv.
20	Securitas AB	25	0,417	561612	Admin. and Support Serv.
21	Toll Holdings Ltd	24	0,649	488510	Support Activ. for Transp.
22	Credit Agricole SA	24	0,571	522110	Credit Intermediation and Related Activ.
23	OAMPS Ltd	23	0,920	524210	Insurance Carriers and Related Activ.
24	Citigroup Inc.	23	0,561	523110	Securit., Commod. Contr., and Other Fin. Invest. and Related
25	Vodafone Group plc	23	0,719	517210	Telecommunications

Table E.9: Most active acquirors in terms of number of deals - Mix deals

	Acquiror	#	Share	NAICS	Conglomerate 3-digit NAICS
1	ISS A/S	112	0,659	561790	Admin. and Support Serv.
2	Aegis Group plc	67	0,713	541613	Prof., Scientific, and Tech. Serv.
3	Illinois Tool Works Inc.	55	0,887	332722	Fabricated Metal Prod. Manuf.
4	Bunzl plc	54	0,771	423990	Merchant Wholes., Durable Goods
5	Nordea Bank Finland Abp	54	0,857	522110	Credit Intermediation and Related Activ.
6	Capita Group plc, The	51	0,836	541611	Prof., Scientific, and Tech. Serv.
7	Siemens AG	51	0,750	335999	Elect.Equip., Appliance, and Component Manuf.
8	Mitsui & Co., Ltd	50	0,877	423510	Merchant Wholes., Durable Goods
9	Parker Hannifin Corp.	47	0,671	334513	Computer and Electronic Prod. Manuf.
10	CRH plc	42	0,457	327320	Nonmetallic Mineral Prod. Manuf.
11	Schneider Electric SA	41	0,804	334513	Computer and Electronic Prod. Manuf.
12	AMETEK Inc.	41	0,872	334513	Computer and Electronic Prod. Manuf.
13	Atomnyi Energopromyshlennyi Kompleks OAO	40	0,606	221113	Utilities
14	Compagnie de Saint-Gobain SA	37	0,841	327331	Nonmetallic Mineral Prod. Manuf.
15	Koninklijke Philips Electronics NV	37	0,860	335999	Elect.Equip., Appliance, and Component Manuf.
16	3M Company	36	0,735	322222	Paper Manuf.
17	First Advantage Corp.	35	0,795	541511	Prof., Scientific, and Tech. Serv.
18	Novolipetskii Metallurgicheskii Kompleks OAO	34	0,944	331513	Primary Metal Manuf.
19	ResCare Inc.	34	0,895	611710	Educational Serv.
20	Severstal OAO	33	0,660	331210	Primary Metal Manuf.
21	Yahoo! Inc.	33	0,868	519130	Other Information Serv.
22	SGS SA	33	0,868	561499	Admin. and Support Serv.
23	Bureau Veritas SA	32	0,970	541350	Prof., Scientific, and Tech. Serv.
24	Curtiss-Wright Corp.	32	0,914	334513	Computer and Electronic Prod. Manuf.
25	Point P SA	31	0,795	423310	Merchant Wholes., Durable Goods

Table E.10: Most active acquirors in terms of number of deals - Conglomerate deals