Are Latin America’s corporate elites transnationally interconnected? A network analysis of interlocking directorates

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Abstract *Conflicting perspectives appear when thinking about the emergence of a cohesive transnational corporate network in Latin America. On the one hand, regional political integration, foreign investment growth, increased cross-border mergers and acquisitions, and cultural and linguistic homogeneity may have fostered transnational networks among Latin America’s corporate elites. On the other hand, domestic-based business groups, family control and trade orientation to the USA may have hindered the emergence of a cohesive transnational corporate network in Latin America. Based on a network analysis of interlocking directorates among the 300 largest corporations in Latin America, I ask whether the region’s corporate elites interconnect at the transnational level and form a cohesive transnational corporate network. I found few transnational interlocks, a lack of cohesion in the transnational corporate network and no regional leaders. Corporate elites in Latin America are not transnationally interconnected and so a cohesive transnational corporate network has not emerged. I discuss implications and avenues of future research.*

Keywords INTERLOCKING DIRECTORATES, NETWORK ANALYSIS, TRANSNATIONAL CORPORATE NETWORK, CORPORATE ELITES, LATIN AMERICA

Do Latin America’s corporate elites, namely those who rule largest firms, interconnect transnationally? In Latin American economies, the dominance of business groups and significant socio-economic stratification in capital cities may facilitate corporate (business) elite networks within the nations, but we do not know whether these elites connect beyond national borders and whether they integrate in a transnational corporate network. Over the last decade, examining interlocking directorates (namely, corporate ties due to multiple membership of corporate directors) among corporations of different national origins has become a key mechanism for addressing

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enquiries about the interconnection of corporate elites at the transnational level and the formation of transnational corporate networks (Burris and Staples 2012; Carroll and Fennema 2002; Heemskerk 2011, 2013; Kentor and Jang 2004; Staples 2006). Research has demonstrated increasing levels of transnational cohesion among corporate elites in Europe and North America, especially within Europe. However, Latin American firms have remained unmapped in these global studies because few were included in the sample of the top global corporations.

There are conflicting perspectives on the formation of transnational corporate elite networks in Latin America. On the one hand, the considerable increase in regional political agreements, cross-border mergers and acquisitions, intra-regional trade and foreign investment in Latin America over the last decade might have given rise to the development of transnational corporate elites with regional links not embedded in the national context. The cultural homogeneity (Hofstede 1984, 1993, 1997) and absence of language barriers would assist the emergence of a cohesive transnational corporate network in Latin America. Conversely, the prevalence of bilateral trade relations instead of a single regional union, the relatively low level of intra-regional trade compared with the volume of extra-regional trade, the small number of large Latin American multinational corporations, and domestic-based dominant business group structures call into question whether corporate elites interconnect at the transnational level and form a cohesive transnational corporate network. Considering these paradoxical logics, a network analysis of interlocking directorates in Latin America will reveal to what extent firms and corporate elites of Latin America interconnect transnationally within the region.

The literature on large Latin American firms and corporate elites concentrates on the study of national network structures (Enrione and Zerboni 2007; Mendes-Da-Silva 2011; Paredes 2011; Salas-Porras 2006; Santos et al. 2012) and ignores the configuration of transnational network structures. The present research analyses the network of interlocking directorates among the 300 largest corporations in Latin America to explore whether Latin America's corporate elites interconnect transnationally. The results will provide evidence of the cohesiveness of the transnational corporate network in Latin America. Characteristics of a cohesive corporate network are high connectivity and short geodesic distance, namely a high proportion of transnational interlocks and short distances between corporations. I structure the article as follows. First, I review transnational corporate elite networks studies. Second, I examine evidence both for and against the formation of a cohesive transnational corporate network in Latin America, before going on to describe the work's methodology and dataset. In the fourth section, I discuss network analysis measures regarding the corporate network in Latin America. Finally, I analyse the results, set out my conclusions and suggest avenues for future research.

Transnational corporate elite networks

Since the late 1970s, scholars have attempted to define and label the increasingly cross-border interconnections between corporate elites and the emerging transnational corporate elite structures. Researchers initially highlighted the interests of managers and owners of transnational corporations in foreign investment and in building global markets (Hymer 1979; van der Pijl 1984). These studies described the emergence of coalitions between capitalist class segments and labelled the resulting structure an international capitalist class. They used the term international to emphasize the inter-state relations; they understood the globalization of business elites in terms of the internationalization of national-based elites.

In the 1990s and throughout the early 2000s, Sklair (1991, 1999, 2002), Robinson (2004) and Robinson and Harris (2000) popularized the concept 'transnational capitalist class' to portray a set of interlocking groups. These consisted of the owners and executives of transnational corporations, globalizing bureaucrats and politicians, globalizing professionals, merchants and media whose perspective on a variety of issues was global rather than local. The globalization of capital, politics, technologies and consumers has given rise to transnational power elites whose interests lie in an expanding transnational capitalist system.

The main characteristic of transnational corporate elites is not that they manage transnational corporations but that they have ties that transcend national boundaries (Beaverstock 2005; Hannerz 2002). The term transnational refers to relations based on multiple sites and not just a single connection between home base and host country (Morgan 2001). Similarly, in migration studies, the term international describes state-based relations and transnational non-state-based ones, such as groups of people networking in multiple locations – here, there and at home (Portes 2001; Smith and Guarnizo 1998). Consequently, I refer to the cross-border interconnections of large corporations and directors as transnational corporate elite networks, which are articulated in specific meeting places (Amin and Thrift 1992), such as corporate boards.

Networks of interlocking directorates – the connections between corporations that directors who sit on two or more boards create – are one of the main defining features of large corporations and corporate elites. Through these networks, corporate elites share common business practices (Davis 1991; Haunschild 1993). They recruit members (Burt et al. 1980), boost their careers (Zajac 1988) and minimize conflicts (Mills 1956). They also exchange information (Haunschild and Beckman 1998), exert hegemony (Mintz and Schwartz 1981), restrict access to outsiders (Zeitlin 1974), reduce transaction costs (Granovetter 1985) and influence the media, as well as political and social organizations (Etzion and Davis 2008; Marquis et al. 2013; Mizruchi 1992; Moore et al. 2002; Useem 1984). An analysis of interlocking directorates among top firms reveals the interconnection of corporate elites and the extent to which they form cohesive networks.[1]

Scholars have used the network analyses of interlocking directorates among the largest global corporations as a proxy for defining and analysing transnational corporate elite networks. Recruiting directors who belongs to firms domiciled in different countries connects corporate elites at the transnational level and suggest the emergence of transnational business (or corporate) elites, communities, spaces and classes (Murray 2013). Some of the most influential studies are those of William K. Carroll and his colleagues (Carroll 2004, 2007; Carroll and Carson 2003; Carroll and

Fennema 2002; Carroll and Sapinski 2010), which show the transnational cohesion of North American and European firms – the North Atlantic power block (van der Pijl 1984) – and the isolation of Asian companies. Carroll and Fennema's research elicited a response from other researchers (Burris and Staples 2012; Kentor and Jang 2004; Staples 2006) who employed different sampling and statistical procedures, although they continued to use interlocking directorates as a relational indicator to study the interconnection of corporate elites at the transnational level. These latter studies confirmed the rise of transnational interlocks, the increasingly multinational composition of boards and the different levels of the regional cohesion of corporate elites. By comparing transnational ties within and between regions – North America, Europe and Asia – Burris and Staples (2012) showed the dispersion of Asian corporations, strong connections between North American and European firms, and cohesive networks within Europe.

Studies of transnational corporate interlocks that focused strictly on Europe (Carroll et al. 2010; Dudouet et al. 2012; Heemskerk 2011, 2013; Heemskerk et al. 2013; van Veen and Kratzer 2011) obtained similar results, revealing that transnational European corporate networks gained in strength as national networks eroded. Moreover, a small set of directors with multiple positions (*big linkers*) forged the transnational European corporate network (Heemskerk 2011). Research on transnational interlocking ownership in Europe (Rodríguez et al. 2006) also stressed these findings, showing the central role played by a small set of large financial firms in the structure of the transnational European ownership network.

Economic and political regional integration clearly explains the resulting cohesive transnational European corporate network. Following the initial international trade agreements were common market economic policies; the creation of a single market; free movement of people, goods and capital; supranational political institutions; and monetary union (Hix and Høyland 2011). The current debates and decision-making processes concerning the financial and economic crisis in Europe address the high degree of contagion among corporations and the complex interlinkages at the levels of trade and finance (Sheng 2010). Transnational corporate network studies provide relational maps that help us to understand better the extent to which economies are integrated, the identity of their leaders and the proficiency and vulnerability of the corporate elites. However, despite its importance, research on the structure of transnational corporate networks is rare beyond Europe.

Corporate elites in Latin America: is a cohesive transnational corporate network emerging?

Although studies of Latin American business elites, mostly developed by historians, have focused on reproducing the road to success of rich families or personalities, they are useful for comprehending the economic and political context that brought about the present-day corporate elites. Different processes – not stages – that occurred across the region explain the varied origins of Latin America's corporate elites. The first was the dominance of a landholding oligarchy in the first part of the twentieth century (Grupo

Monterrey in Mexico and the Larraín family in Chile). Second was the migration of West-Asian and European entrepreneurial families associated with trade and finance during the 1940s, for example the Luksic family in Chile. Third, an urban domestic industrial bourgeoisie, epitomized by Ardilla Lule in Colombia, emerged in the mid-twentieth century. Fourth, the privatization of state-owned enterprises during the 1970s and 1980s strengthened business groups like Slim in Mexico. Finally, there was the geographic concentration of firms such as the Grupo Empresarial Antioqueño in Colombia (Birle et al. 2007; Cerutti and Marichal 2010; Jacobo et al. 1989; Lomnitz and Pérez-Lizaur 1987; Paige 1998; Palacios and Safford 2002; Puga and Tirado 1992; Salas-Porras and Sandoval 2002; Saragoza 1988; Zeitlin et al. 1974, 1976).

Despite these heterogeneous historical trajectories, Latin American corporate elites share some common and distinguishing characteristics. They have strong family networks (Carrera et al. 2003; Silva et al. 2006), ruling positions by inheritance (Beltrán and Castellani 2013), firms managed by their founders (Casanova and Fraser 2009), political rent-seeking strategies (Camp 2006; Khanna and Yafeh 2007) and organized business groups and pyramidal-type structures (Figueroa 2008; Lefort 2005; Schneider 2013). In recent decades, they have become more transnational. They have taken postgraduate degrees at North American or European universities (Serna 2013), sold blocks of company shares to foreign investors (Lefort 2005) and expanded their business operations throughout the world (Casanova and Fraser 2009; Cuervo-Cazurra 2008). The Latin American corporate elites seem to be oriented transnationally but domestically based.

Recent research on corporate elite networks in Latin America has been concentrated within national borders. It reveals that Argentinean banking associations are typically the meeting room for corporate elites in Argentina (Paredes 2011); that the Chilean corporate network is denser than the Argentinean one (Enrione and Zerboni 2007; Salvaj and Lluch 2012); and that 'centripetal forces' (high cohesion) in the 1980s and 'centrifugal forces' (dispersion) in the 1990s (Salas-Porras 2006) moved the Mexican corporate network. It also shows that interlocking directorates are common among Brazilian large firms and that the corporate network is highly clustered (Mendes-Da-Silva 2011; Santos et al. 2012). However, it largely ignores the question of whether directors of large Latin American firms within the region interconnect transnationally or whether the transnational corporate network is cohesive.

The study of transnational corporate networks in Latin America is particularly appealing because the region seems to be at a crossroads between paradoxical and conflicting logical systems in the process of building a cohesive economic region. The evidence both for and against the formation of a cohesive transnational corporate network in Latin America is presented below.

Why a cohesive transnational corporate network in Latin America might have emerged

Since the 1980s, a new process of economic and political integration in Latin America has promoted openness to North American and European investors, as well as to trade and investment activity within the region. Between 1992 and 2008, the FDI growth rate in Latin America was higher than the global mean and higher than that of developing countries; the FDI–GDP ratio grew from 0.56 per cent to 2 per cent in the region over the same period (ECLAC 2010). Intra-regional trade has risen significantly in recent decades. Global exports from Latin American economies grew from US$ 126,498 to US$ 828,873 million between 1990 and 2008, and global imports increased from US$ 95,000 to US$ 763,000 million during the same period. There was an increase in the intra-regional exports from US$ 12,000 to US$ 138,000 million and in intra-regional imports from US$ 12,000 to US$ 140,000 million between 1990 and 2008. Intra-regional exports and imports constituted approximately 20 per cent of the global imports and exports in 2008 (ECLAC 2009). Moreover, in recent decades international strategic alliances have grown in parallel with cross-border mergers and acquisitions in Latin America in frequency, volume and value (ECLAC 2010; Guardiola 2012; Kotabe et al. 2000).

Regional markets, specifically those without supranational political regulators (such as Latin America), require transnational governance agreements, which private business elites, rather than nation-states on their own, are able to achieve (Joerges 2005). In Europe, the corporate elites organized themselves in the early 1980s in the European Round Table of Industrialist (van Apeldoorn 2000), which presaged the emergence of a cohesive transnational network of interlocking directorates. In Latin America, the Latin American Business Council (*Consejo Empresarial de América Latina*), launched in 1990, brings together directors of the major Latin American firms. Besides, Latin America is a region with cultural homogeneity (Hofstede 1984, 1993, 1997) and – with the exception of Brazil – a common language. Therefore, a cohesive transnational corporate network might well have emerged there.

Why a cohesive transnational corporate network in Latin America might not have emerged

Despite the increase of intra-regional trade, the volume of extra-regional trade is far more relevant for Latin American economies; the USA remains the major trading partner and investor for most economies in the region (Bulmer-Thomas 2001; CIA 2010; ECLAC 2010). Moreover, only a few Latin American firms have become globally competitive. In 2009, only seven of the top 100 transnational corporations from developing countries had headquarters in Latin America, whereas 60 had their headquarters in East Asia (UNCTAD 2010). The Latin Americans drew up multiple regional alliances and treaties to establish a common market, free trade areas and to coordinate economic policies. These included, among others, the Andean Community (founded in 1969), Latin American Integration Association (ALADI) (1980), South Common Market (MERCOSUR) (1991), Bolivarian Alternative to Latin America and the Caribbean (ALBA) (2004), the North American Free Trade Agreement (NAFTA) (1992) and the Union of South American Nations (UNASUR) (2004). By 2010, there were 42 agreements concerning 237 bilateral relationships (Baumann 2010). Such a large number of regional agreements could suggest that there is a lack of common objectives among the countries and uncoordinated strategies. All of the above lead one to question whether regional integration is perhaps merely a strategy to ensure zero tariffs on trade.

The most important indicator that queries the emergence of a cohesive transnational corporate network in Latin America is the significant presence of business groups in Latin American national economies (Khanna and Palepu 2000; Lefort 2005; Peres 1998; Rettberg 2001; Schneider 2008). Business groups – sets of corporations from diverse sectors bounded together in formal and informal ways by a common investor – have historically dominated Latin American economies. Included among these are the Grupo Empresarial Antioqueño and Ardilla Lulle in Colombia, Luksic and Falabella in Chile, Carso and Modelo in Mexico, Vale and Votorantim in Brazil, Techint and Arcor in Argentina, and Brescia and Romero in Peru. The combined sales of these business groups in 1996 amounted to 9.6 per cent of the region's GDP (Peres 1998: 33). Particularly in Latin America, business groups are often family-controlled and develop political rent-seeking strategies (Khanna and Yafeh 2007). Because of their close ties with local political elites and dominant positions in national markets, these groups are ill prepared to compete in international markets (Sargent and Ghaddar 2001). Their family and national foundations suggest that foreign directors are unlikely to manage the corporations, thus making it difficult to achieve a cohesive transnational corporate network in Latin America.

Given the paradoxical business structure of Latin America, it is useful to study the network of interlocking directorates among the largest corporations in the region. Research on the Latin American transnational corporate network structure may shed light on whether corporate elites are integrated at the regional level. It will also help identify the central actors in the region and reveal the extent to which large corporations and corporate elites are nationally and/or transnationally networked.

Methods and data

To examine relational structures and to assess the cohesion of the transnational corporate network, I employed a social network analysis of interlocking directorates among top firms and selected the 300 largest corporations in Latin America for the sample. Other transnational-regional corporate network studies also employed this sample size (Heemskerk 2011, 2013). The N = 300 sample consists of the 200 largest non-financial corporations in Latin America ranked by revenues in 2010 and the 100 largest financial corporations ranked by assets in 2009. *Latin Business Chronicle* (Buchanan 2011) and *América Economía* (2010) published the rankings. Revenues and assets correspond to the end of 2010 and 2009. I employed this stratified sample selection because ranking by revenues favours non-financial capital; otherwise, it is possible to misrepresent financial firms with large assets and small revenues. This procedure is coherent with other corporate network studies (Carroll et al. 2010; Stokman et al. 1985; Windolf 2002). After selecting the corporate sample, I compiled the list of directors for each corporation using annual reports as the primary source because this is the most reliable way to identify board members (Carroll and Fennema 2004). Although boards have different regulations and different names, for example

Junta Directiva, Consejo de Administración or *Directorio*, they have a similar structure in the countries studied, namely a single board with approximately nine members composed of both insiders and outsiders.

To identify interlocks, I constructed a relationship matrix in Excel; the corporations are in columns and the individual members of boards of directors in rows. I then organized the list of directors' name in alphabetical rows by first name, middle name and surname. I identified individuals appearing more than once by the same first name, middle name and surname. I used Google, business directories and biographical data available from official company websites to double-check ambiguous cases, such as names spelled in different ways, the absence of middle names or presence of second surnames. I imported the Excel file to UCINET 6 software, which is the software package for social network analysis (Borgatti et al. 2002). My student assistants and I crosschecked the interlocks manually. We converted the 2-mode *directors-by-corporations* file into a 1-mode matrix in which both columns and rows refer to identical types of actors – an intercorporate network (*corporation-by-corporation*). The analysis focuses on the intercorporate network, which is consistent with the purpose of this article.

To identify whether corporate elites interconnect at the transnational level and form a cohesive transnational corporate network, we selected board interlocks among corporations of different national origins and labelled them as transnational interlocks. Directors who hold positions in firms from different countries create transnational linkages and are the transnational interlockers. This research employs the following tools to discover whether corporate elites interconnect in Latin America and to what extent they form a cohesive transnational network. These are:

- a network map of countries;
- network-level connectivity and average geodesic distance;
- the percentage of corporations with transnational interlocks;
- the number of transnational interlocks over national interlocks in the region;
- the average number of transnational interlocks per firm in each country;
- the number of components (the maximal interconnected subgraph); and
- for each country, the ratio of transnational interlocks over national interlocks.

High connectivity, short geodesic distances, a high proportion of transnational interlocks and a low number of components are indicative of a cohesive transnational corporate network. In addition, by analysing measures of centrality – betweenness and degree – we can identify key transnational leaders in the region.

I consider that a higher level of cohesion among corporations from different countries is sufficient proof that corporate elites interconnect at the transnational level and form a cohesive transnational corporate network. Because the European corporate network is rather cohesive (Burris and Staples 2012; Carroll et al. 2010; Heemskerk 2011), we compare our results with those that Heemskerk (2013) obtained in a network analysis of board interlocks among the largest listed European firms in 2010, which uses a similar sample size and focus on the regional level. Europe represents the most advanced regional integration and comparing it with Latin America will permit an assessment about the extent to which Latin American firms and business elites form a cohesive transnational business network.

Results

Prior to the network analysis, I created a national frequency distribution using the 300 selected corporations. The location of headquarters defined national origin. Table 1 shows the number of firms by country. The sample represents the seven largest economies in the region – Brazil, Mexico, Chile, Colombia, Argentina, Peru and Venezuela. Brazil stands out; Brazilian firms comprise 36 per cent of the entire sample, followed by Mexico (17.3 per cent) and Chile (16 per cent). Representation of Central American economies in the sample of the top corporations is poor.

Table 1: Distribution of large corporations by country*

	Number of corporations	Percentage	Size of the economy (GDP $US-billion, 2012)†
Brazil	108	36.0	2,253,000,000
Mexico	52	17.3	1,178,000,000
Chile	48	16.0	269.9
Colombia	29	9.6	369.6
Argentina	21	7.0	475.5
Venezuela	12	4.0	381.3
Peru	12	4.0	203.8
Panama	6	2.0	36.2
Dominican Republic	3	1.0	59.1
Costa Rica	3	1.0	45.1
Uruguay	2	0.6	42.9
Ecuador	2	0.6	84.0
El Salvador	1	0.3	23.9
Guatemala	1	0.3	50.2
Total	300		

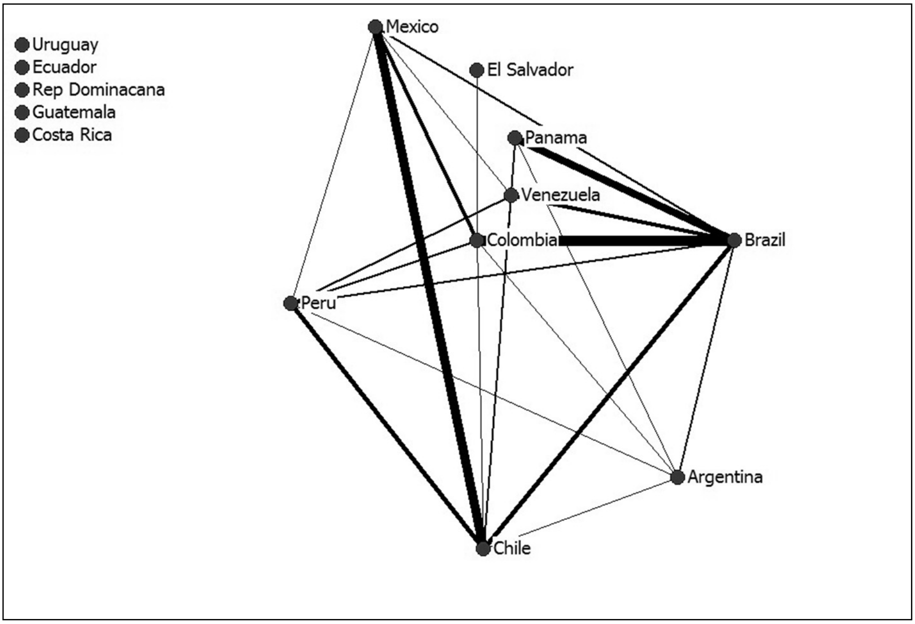
* National origin is defined by location of headquarter; † World Bank (2013).

By collapsing firms according to their national origin, I map the network of countries whose relations indicate the number of corporate interlocks they have among countries (Figure 1). The resulting network shows the connection of nine Latin American economies, the seven largest economies plus Panama and El Salvador. The analysis of strength ties shows the peripheral position of Argentina, Peru, Venezuela and Panama on the regional circuits. The strongest ties are Chile and Mexico, on the one hand, and Brazil and Colombia, on the other. The network map of countries reveals the incomplete connection of the region, the weak transnational ties among the national corporate elites and the lack of a central country.

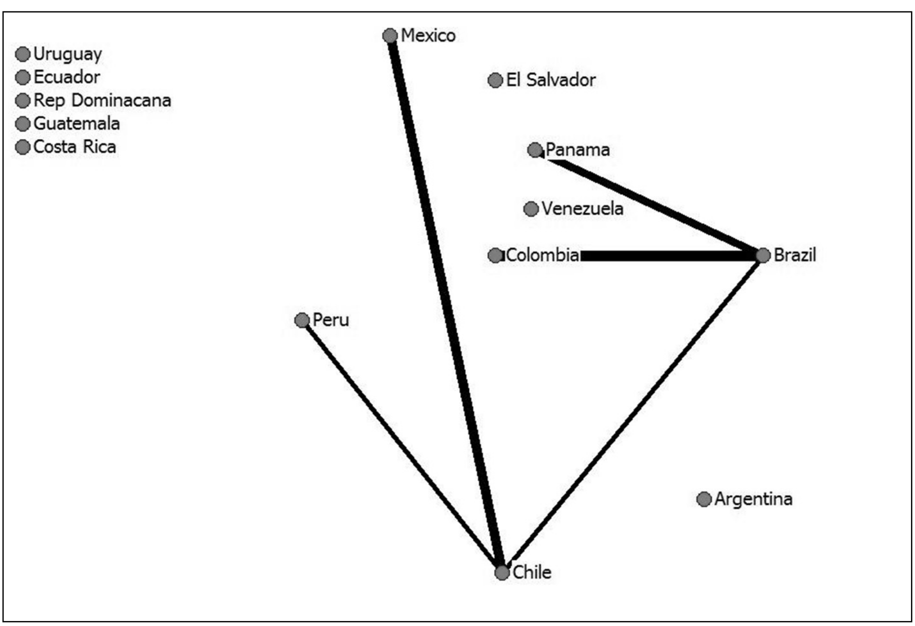
Figure 1: Network map of countries based on transnational interlocks

Nodes: countries; Tie strength: number of transnational interlocks

One or more transnational interlocks



More than three transnational interlocks



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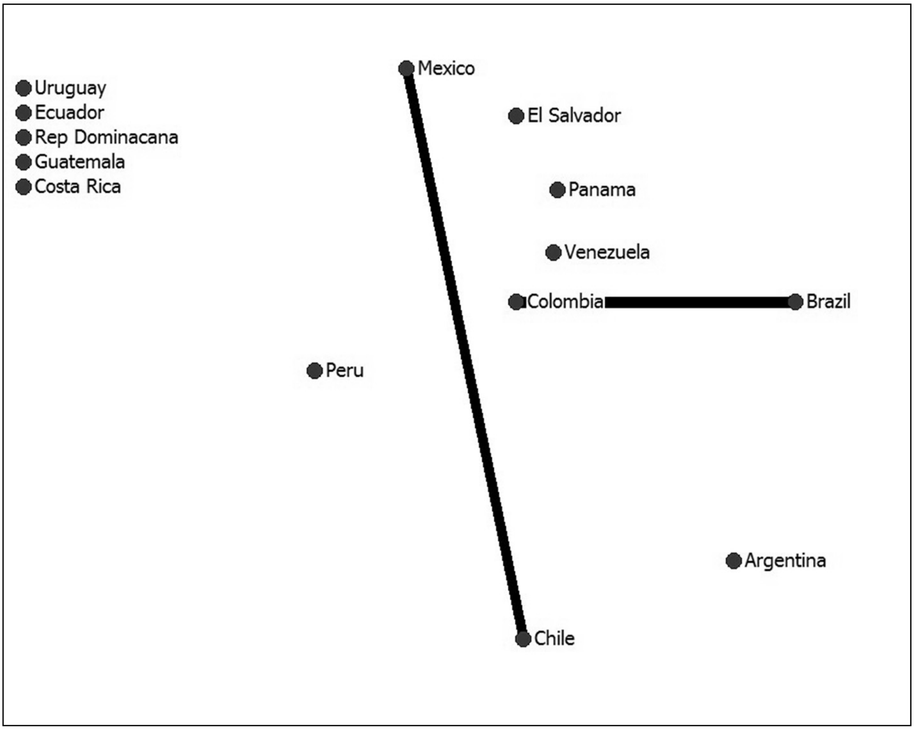
More than six transnational interlocks



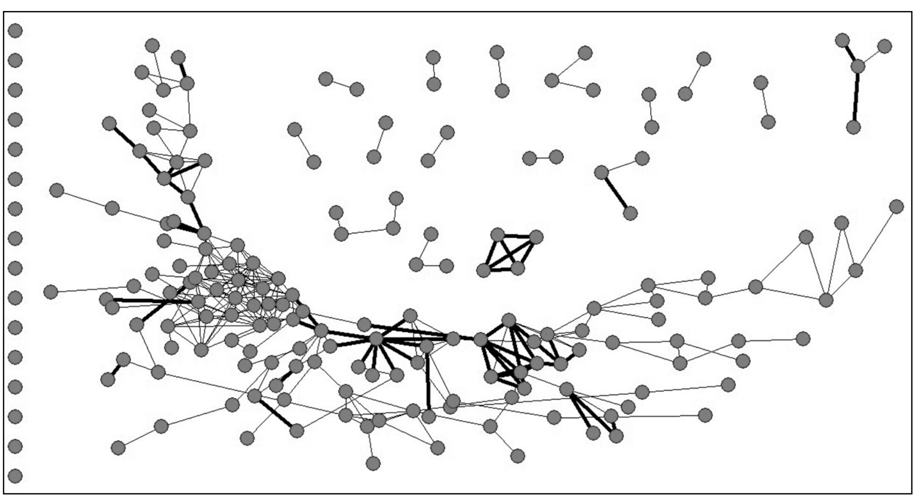
The largest Latin American firms are not widely connected by interlocking directorates. Out of 3084 directors who hold positions on the boards of the 300 largest firms in Latin America, 575 (18.6 per cent) serve on more than one board, and 283 interlocks are created. Apparently, several lines interweave Latin American firms, but only 175 firms (58.3 per cent) are connected in Latin America. This proportion is considerably lower than in Europe, in which 91.3 per cent of the firms are connected (Table 2). The largest component includes 134 corporations (44.6 per cent) in Latin America and 259 firms (90.6 per cent) in Europe. The average distance (6.3) and the diameter – the maximum shortest distance – (19) are significantly higher than in the European corporate network, 3.44 and 9, respectively. Firms in Latin America have great distances to be clustered together; the cluster coefficient is 0.44 in Latin America and 0.23 in Europe. Burris and Staples (2012) reported small-world properties for the European and North Atlantic corporate networks regions: average geodesic distance is 3.34 in the European corporate network and 3.73 in the North Atlantic one, with clustering coefficients of 0.29 and 0.17, respectively. The network of the largest Latin American firms is far from the small-world properties of small diameters, short path lengths and high clustering. Figure 2 shows the dispersed Latin American corporate network with its low connectivity and large geodesic distances.

Table 2: Comparison of corporate network between Latin America and Europe, all firms

	Latin America	Europe*
Year of data	2011	2010
Sample size	300	286
Firms with interlocks (connected)	175 (58.3%)	261 (91.3)
Total interlocks (dichotomous lines)	283	967
National interlocks	227 (80.2%)	586 (61.6%)
Transnational interlocks	53 (19.8%)	381 (39.4%)
Firms in the main component	134 (44.6%)	259 (90.6)
Diameter	19	9†
Average distance	6.3	3.44†
Average clustering coefficient	0.44	0.23†
Firms with transnational interlocks	57 (19%)	206 (72%)

* Reported by Heemskerk (2013); † Results reported by Heemskerk et al. (2013).

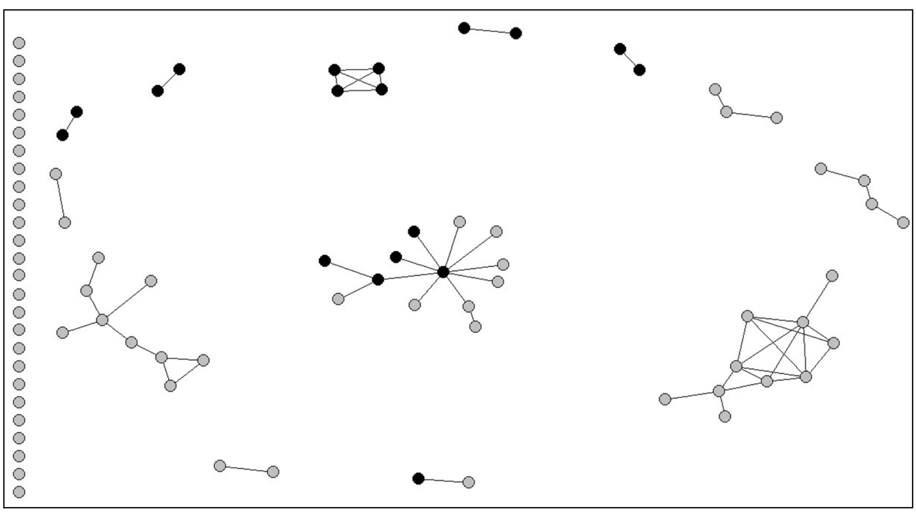
Figure 2: Corporate network in Latin America, national and transnational interlocks



Simple line: national interlock; Strength line: transnational interlock.

Figure 3 shows the transnational corporate network in Latin America that includes only transnational interlocks made by directors who serve on boards of corporations of different national origins, which reveals the high fragmentation of corporate elites in Latin America at the transnational level, the absence of a core and the great number of isolated firms with no transnational interlocks. Only 57 out of 300 (19 per cent) of the largest firms in Latin America form transnational interlocks, whereas 72 per cent of the largest firms in Europe have transnational interlocks, which indicates that Latin American corporate elites are only slightly transnationalized (Table 2). Most of the interlocks in Latin America occur within national borders: 80.2 per cent of board interlocks are among firms of the same nationality. The total number of interlocks that are transnational (53) is much lower than in Europe (381). The component analysis identifies six subgraphs of 3 or more nodes, 7 pairs of firms independently connected, and 243 isolated nodes, that is, firms without transnational interlocks. Visually, the transnational corporate network is clearly disconnected and without a core. Also, note the low interconnection between financial and non-financial firms (Figure 3). The lack of large banks in the region might explain the lack of regional cohesion that played a central role in the integration of Europe (Rodríguez et al. 2006).

Figure 3. Transnational corporate network in Latin America, only transnational interlocks



Black nodes: financial firms; Grey nodes: non-financial firms.

I identify the most central companies in the transnational corporate network, those with transnational interlocks, using betweenness and degree measures. Betweenness detects brokers that connect parts of the network; it is the number of geodesic paths from all vertexes to all others that pass through a node. Degree indicates the involvement of the node in the network; it is the number of ties that a node has. Because the transnational corporate network is highly disconnected, I did not consider closeness and eigenvector measures. The number of countries reached by a node through adjacent edges is also measured. Results are shown in Table 3. Bladex, the banking firm of foreign trade headquartered in Panama, has the highest centrality concerning betweenness and degree. No specific country or sector dominates the ranking of most central firms. The limited brokerage and involvement of the most central nodes is notable. The most central firm in Europe has 17 transnational interlocks, whereas the most central firm in Latin America, Bladex, is linked to 9 corporations and 4 countries, which elucidates the fragmentation of the transnational Latin American corporate network and the absence of leaders in the region. Looking at the nationality of the 66 directors who are transnational interlockers, only 12 are from out of Latin America, of those 9 are from Spain. This fact suggests that Latin American firms are not integrated in a global corporate network, only partially to Spanish firms, although further research is required on this issue.

Table 3: Most central firms in the transnational corporate network, firms with transnational interlocks

	Betweenness	Degree 1 step	Reachability at 1 step*	Number of countries reached
Bladex (PAN)	62	9	16.1 %	4
Banco de Chile (CHI)	21	3	5.4 %	2
CTEEP (BRA)	21	4	7.1 %	1
Avianca (COL)	15	2	3.6 %	2
TIM (BRA)	11	2	3.6 %	2
Telmex Int. (MEX)	12	3	5.4 %	2
Telefonica Colombia (COL)	10.4	6	10.7 %	4

* Reachability = node degree / n-1; n: connected actors, 57.

Table 4: Comparison of corporate networks among Latin American countries

	Size	Firms with interlocks (connected)	National interlocks per firm	Transnational interlocks per firm	Ratio transitional to national interlocks
Brazil	108	54 (50.0%)	0.53	0.23	0.47
Mexico	52	40 (76.9%)	2.08	0.27	0.13
Chile	48	36 (75.0%)	0.88	0.40	0.48
Colombia	29	14 (48.3%)	0.55	0.52	0.94
Argentina	21	2 (9.5%)	0.05	0.19	6.00

To compare the formation of interlocking directorates nationally and transnationally, I have calculated the number of national and transnational interlocks controlled by the number of sampled corporations for each country (Table 4). Mexican firms form more than two national interlocks on average but only 0.27 transnational ties. Chilean corporations have an average of 0.88 national interlocks and 0.40 transnational links, whereas Brazilian firms have an average of 0.53 national ties and 0.23 transnational interlocks. Colombian firms have an average of 0.55 national interlocks, and 0.52 transnational links. The sampled Argentinean firms have barely even attempted to develop interlocking directorates. The ratio of transnational interlocks to national interlocks shows the different orientation of firms (Table 4). Mexican, Chilean and Brazilian firms are highly and medium connected at the national level, but they form few transnational interlocks. Colombian corporations are the most transnational-oriented in the region, with almost one transnational interlock per each national interlock. However, 16 out of 28 Colombian firms are isolated.

To summarize, Latin American boards seem hermetically closed to foreigners, including to regional neighbours. Corporations of different national origin have barely established corporate interlocks, even in countries in which interlocks are common, such as in Mexico and Chile. The few transnational ties among Latin American firms and the low connectivity of the transnational Latin American corporate network indicate that a cohesive transnational corporate network has not emerged in the region.

Discussion and conclusions

There does appear to be very low interconnection between Latin American corporate elites at the transnational level. Previous studies have reported increasing levels of transnational cohesion among corporate elites in the North Atlantic region (Burris and Staples 2012; Carroll and Fennema 2002; Kentor and Jang 2004), that is, a corporate elite network among North–North countries emerged. The present analysis of interlocking directorates among the top 300 firms in Latin America shows few transnational interlocks, a lack of cohesion in the transnational corporate network and corporate elites that are nationally oriented. A corporate elite network among South–South countries has not emerged.

There is no cohesive transnational corporate network to support the economic and political integration of Latin American economies. Trade barrier reductions, market liberalization and international treaties have not generated transnational interlocks. The Latin American market is transnational in terms of transactions but national in terms of management. The underdevelopment of the capital markets and the absence of supranational institutions of supervision and regulation exacerbated this situation in Latin America. Moreover, the international trade of Latin American economies is primarily oriented to the USA – except for Argentina – and the major foreign investors are from the USA or Europe (CIA 2010; ECLAC 2006, 2010; Lefort 2005). Therefore, the major business interests of Latin American corporate elites are not within the region. Conversely, the main trading partners of European economies are in Europe (CIA 2010), which might help explain the high connectivity of the European corporate network.

The limited brokerage and involvement of central firms and the absence of transnational leadership have exacerbated the lack of a coherent regional project.

Notwithstanding the high volume of Brazilian firms in the sample of the largest Latin American corporations, Brazilian corporations are not inner-circle players in the transnational Latin American corporate network. The largest economy in the region fails to connect with the transnational flows of communication. It is a mistake to argue that language difference can explain the low internationalization of Brazilian corporate elites. Despite the several heterogeneous languages in Europe, corporations from Germany, the largest economy in the region, occupy a central position in the European network with strong ties to French, Dutch and Belgian firms (Heemskerk 2011; Rodríguez et al. 2006; van Veen and Kratzer 2011). It may be possible that Brazil's connections lie beyond the region. Future research should examine the interconnections of Latin American corporations with North Atlantic firms. There might be links between Spanish and South American corporations, and between North American and Mexican firms because of the high volume and value of trade and investment networks among these economies.

Nevertheless, trade and investment patterns are not always useful in explaining the patterns of interlocking directorates. China represents the second biggest trading partner for most Latin American economies (CIA 2010), but no Chinese director holds a position on the boards of top Latin American firms. Determinants of corporate network configurations are complex, context-dependent and varied (Cárdenas 2012; Kono et al. 1998; Mizruchi 1996) which demand methodological techniques (such as structural equation models and qualitative comparative analysis) that allow for combinations of factors to explain network structures and equifinality, that is, when different conditions lead to identical network structures. Transnational corporate network studies should develop causation models integrating network analysis, econometric analysis and qualitative comparative analysis to trace the conditions of building transnational interlocks, which might be different from those that help build national interlocks.

In general, Latin American corporations and their directors employ interlocking directorate practice, but not to build bridges between countries. Corporate elites remain nationally based in Latin America and seem afraid to open their boards to foreigners. Companies become accustomed to the benefits of operating in protected domestic markets with their dominant market positions, close ties with political elites and business group structures. Consequently, the corporate elites have little experience of developing transnational networks, competing in international markets and integrating foreign investors into management. Despite sharing the same language – with the exception of Brazil – and similar cultural values across the region, business elites are homebound. Family ownership of most large firms in Latin America also reduces the opportunities to incorporate foreign management (Lefort 2005).

Latin America is a hotbed of family business groups, in which families typically control firms and family ties among directors are strong (Lefort 2005; Schneider 2008, Silva et al. 2006). When members of the same family sit on the boards of directors of several companies, it creates a relationship between these corporations because family members share dinner tables, informal meetings and barbecues on Sundays. Thus, the family members of the corporations create channels of communication, coordination and control among themselves. Tracking interlocking families – the relationships between corporations with members of the same family on their boards – should be the subject of future research to figure out the organization of corporate elites, particularly in economies dominated by business groups such the Latin American ones.

Latin America resembles Asia insofar as a lack of supranational state structures, business-group dominated economies, family-controlled business groups and the absence of a cohesive transnational corporate network characterize both regions. Burris and Staples (2012) analysed the 112 largest Asian firms – mostly from Japan – and found no transnational ties within the region and very few transnational interlocks linking Asia to the Western regions. Nonetheless, specific studies on Asian countries insisted on the lower density of national corporate networks and that interlocking directorates primarily occur within business groups (Cárdenas 2012; Chan 2004; Naudet and Dubost 2014). This fact illustrates one of the distinguishing features between Latin American and Asian nations: national corporate networks in Mexico and Chile are highly connected, which suggest that business groups link with each other, whereas Japanese, Malaysian and Indian business groups do not. The intriguing question for future research is why business groups are interrelated to each other in some countries and not in others.

We do not expect the development of a cohesive transnational corporate network in Latin America in the short term because the transnationalization of boards requires time and – most importantly – a different orientation of family business groups. The growth of *multilatinas* (TNCs from Latin America) (Cuervo-Cazurra 2008) and the trade and investment orientation of Latin American firms to southeast Asian and Arab countries may change the orientation of corporate elite networking. If Latin American corporations wish to improve their competitiveness in the global market, the formation of a cohesive transnational corporate network may be required. Corporate networks provide opportunities for coordination, collaboration and cooperation, which are fundamental tasks for firms not used to compete at the global level.

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Note

1. A caveat – other ties such as kinship relations, meetings and gatherings in social clubs are also essential corporate elite networking patterns and useful to analyse inter-corporate networks, but systematic data collection is extremely difficult due to the informal nature of these interactions and the lack of transparency.

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