BUSINESS GROUPS IN ISRAEL

DEVELOPMENT, DIVERSIFICATION, AND EXTERNAL FINANCE

Stanislav Sokolinski

Koret-Milken Institute Fellow

KORET
FOUNDATION MILKEN INSTITUTE

Business Groups in Israel

Development, Diversification, and External Finance

Stanislav Sokolinski

Koret-Milken Institute Fellow

Acknowledgments

About the Koret-Milken Institute Fellows Program

The Koret-Milken Institute Fellows Program accelerates Israel's economic growth through innovative, market-based solutions for long-term economic, social, and environmental issues. The program focuses on connecting government, philanthropic, and business resources that are vital to national growth and development.

Directed by the Milken Institute Israel Center, the Koret-Milken Institute Fellows Program awards annual fellowships to outstanding graduates of Israeli and international institutes of higher education. Fellows serve yearlong internships at the center of the nation's decision-making—the Knesset, government ministries, and other Israeli agencies—and aid policymakers by researching and developing solutions for economic and social challenges.

In addition, fellows craft their own policy studies aimed at identifying barriers to economic and employment growth in Israel. The fellows' studies, carried out under the guidance of an experienced academic and professional staff, support legislators and regulators who shape the economic reality in Israel. The program offers the ultimate educational exercise, combining real-life work experience with applied research five days a week.

Throughout the year, fellows receive intensive training in economic policy, government processes, and research methods. They acquire tools for writing memorandums, presentations, and policy papers, and they develop management, marketing, and communication skills. The fellows participate in a weekly workshop, where they meet senior economic and government professionals, business leaders, and top academics from Israel and abroad. They also participate in an accredited MBA course that awards three graduate-level academic credits that are transferable to other universities in Israel. The course, which focuses on financial and economic innovations, is taught at the Hebrew University of Jerusalem's School of Business Administration by Professor Glenn Yago, director of the Milken Institute Israel Center and director of capital studies at the Milken Institute in California.

Fellows Program alumni hold senior positions in the public and private sectors. Some serve as advisers to government ministries while others work at private-sector companies or go on to advanced studies at leading universities in Israel, the United States, and Great Britain. Within the program's framework, more than 80 research papers have been published, catalyzing reforms, reducing barriers, bringing about economic growth, and improving the quality of life for Israeli citizens. The Koret-Milken Institute Fellows Program is nonpolitical and nonpartisan. It is funded by the Koret Foundation, the Milken Institute, and other leading philanthropic organizations and individuals in the United States and Israel.

More about the program: www.kmifellows.org

Contact us: info@kmifellows.org

©2012

Table of Contents

Executive Summary

Wealthy individuals or families control many companies around the world. As a result, these individuals (or families) tend to establish control over a large number of corporations within a given economy—which constitute business groups. For example, 56 percent of aggregate stock value in South Korea is controlled by 85 business groups, and six family groups control 20 percent of stock market capitalization in Denmark. Previous studies showed that family business groups might consist of hundreds of firms operating in many sectors.

The aim of this work is to provide an additional analysis of business groups in contemporary Israel and to examine more closely their characteristics that previous literature has not addressed. Business groups have always been a dominant form of economic organization in Israel, and they purportedly played a critical role in Israeli economic development. In particular, previous work has shown that 20 business groups account for nearly 50 percent of the market capitalization of the Tel-Aviv Stock Exchange (Kosenko 2008).

In this paper, I further investigate the business group phenomenon in contemporary Israel. My work summarizes the historical development of business groups and examines the diversification of business groups and the multimarket contacts that result. I perform an international comparison of business groups' dominance based on data from recent literature (Masulis et al. 2011). In addition, I analyze the groups' capital structure, bond issues, and dividend payments.

The main points of this paper can be summarized as follows:

- **Examination of ownership concentration** suggests that the average Israeli-listed corporation has 2.5 block-holders and that these parties hold nearly 60 percent of firms' voting shares. The number of major shareholders and their average holdings are highly persistent, which means that ownership concentration at the firm level has always been a dominant feature of Israeli capital markets.

- **A cross-country comparison** indicates that business groups' dominance in Israel is relatively high: group-affiliated firms account for 43 percent of total market capitalization in 2010. This measure is high in comparison with 45 developed and undeveloped economies. These findings, combined with the previous evidence, confirm that large business groups heavily dominate the Israeli economy.

- **Investigation of the groups' overall holdings across industries** shows that several sectors are highly dominated by group-affiliated companies. The groups' market share is equal to 89 percent of the industrial investment sector, 66 percent of wholesale and retail trade, and 66 percent of the services sector. In addition, group-affiliated companies have a strong presence in the financial sector, accounting for 48 percent of the banking industry revenues and 66 percent of revenues in the financial services sector. Some sectors, such as accommodation services, food, and textiles, appear to be much less important for business

groups, as the groups' presence in those sectors is insignificant. The high level of market-share variation implies that some industrial sectors are greatly preferable for the business groups.

- **Investigation of the groups' overall holdings across industries** shows that 38 business groups spread their holdings across no more than three industries while 10 larger groups with average market value of 11.2 billion shekels venture into four or more industries. These results imply that cross-industry diversification within Israeli business groups is limited and that only large groups reach higher levels of diversification. They also suggest most Israeli business groups are relatively small and not diversified.

- **Multimarket contacts** are frequent within the Israeli economy. Given a small number of market participants in some industries, competition may be restricted. While this paper does not provide direct evidence of collusion by business groups, it shows that the structure of the Israeli economy enables such behavior via multimarket contacts.

- **Investigation of the evolution of capital structure from 1995 to 2008** shows that a representative Israeli business group tends to keep median leverage ratios of 60 percent to 80 percent. This shows that business groups, relative to average public companies in Israel, have wide access to external finance, which includes public and private debt.

- **Examination of corporate bond issues in 2008** suggests that business groups prefer to borrow from the public using their lower-level subsidiaries. For example, the largest group issued bonds via companies at four different tiers of its pyramid structure, but the debt issued by the top-tier companies was negligible relative to the total amount of debt issued.

- **Analysis of dividend payout** shows that group-affiliated companies were major payers in almost every year, accounting for more than 50 percent of total dividend payments. We also observe that during years of economic expansion, when dividends are high, top-tier companies paid more dividends. In every year from 2004 to 2007, the share of first-tier companies in the total dividend payout was more than 40 percent. By contrast, second-tier companies paid higher dividends during economic downturns, accounting for nearly 50 percent of payments.

1. Introduction

Wealthy individuals or families control many companies around the world (La Porta et al. 1999, Faccio and Lang 2002, Claessens et al. 2000). As a result, a large number of corporations become business groups controlled by a family or individual. In South Korea, 56 percent of aggregate stock market capitalization is controlled by 85 business groups, and six family groups control 20 percent of stock market capitalization in Denmark (see Masulis et al. 2011 for more examples). Previous studies showed that family business groups could consist of hundreds of firms that operate in many sectors. Evidence suggests that business groups are predominant economic agents in many developed and emerging economies (see Khanna and Yafeh 2007 for a detailed survey).

As a result, a substantial part of economic activity may depend on a relatively small number of entities, which are managed in a coordinated way as if the same individual controls them. The concentration of control in a few hands may lead to an ability to affect economic and political outcomes.

Previous literature provides ample evidence on the involvement of business groups in political processes and on their close ties to the authorities (Fisman 2001, Gomez 2006, Johnson and Mitton 2003). Bernheim and Whinston (1990) explain how diversified business groups may restrict competition through interaction in several product markets. Group contacts across several markets may facilitate collusion if those markets are non-competitive. In addition, large businesses may exacerbate risk to the economy as a whole because of their size and complexity. Larger business groups tend to borrow heavily from banks as well as issuing corporate bonds, and their failure to repay may cause severe disruptions. Several studies linked poor governance of East Asian business groups to the financial crisis of 1997, suggesting that their activities had a strong adverse effect on macroeconomic conditions and financial sustainability (Corsetti et al. 1999, Johnson et al. 2000b, Mitton 2002).

The aim of this work is to provide additional analysis of business groups in contemporary Israel and to examine more closely their characteristics that the previous literature did not address. According to Kosenko and Yafeh (2010), business groups have always been a dominant form of economic organization in Israeli markets and may have played a critical role in Israeli economic development. In the early days of Israel's economic history, government-owned groups controlled a large number of companies in the real and financial sectors. After 1985, when the government launched a privatization program, ownership of companies was gradually transferred to private investors, contributing to the emergence of contemporary family business groups.

The analysis of Israeli business groups has given rise to several conclusions. First, Kosenko (2008) showed that 20 major business groups account for nearly half the market capitalization of the Tel-Aviv Stock Exchange. Second, group-affiliated companies tend to show inferior performance relative to their non-affiliated counterparts. Kosenko (2008) argues that group affiliation does not lead to significantly superior performance as measured by return on assets and return on equity,

but rather weakens performance as measured by Tobin's Q ratio. This finding could be associated with the inefficiency of intragroup activities and inferior allocation of corporate resources via internal capital markets (Scharfstein and Stein 2000).[1]

Finally, a dominant feature of Israeli business groups is a pyramidal ownership structure, which implies separation of ownership and control. Interestingly, pyramidal structure is the identifying feature of Israeli business groups since the establishment of the state, despite the fact that controlling entities changed at least three times in the past 60 years. A sharp separation of ownership from control creates incentives for expropriation of minority shareholders' wealth by controlling shareholders (Johnson et al. 2000, Djankov et al. 2008). Controlling shareholders have numerous ways to channel resources from the company to their own pockets. They may buy corporate assets at below-market prices or hire family members as executives of group-affiliated companies. While modern corporate governance allows minority shareholders to defend their interests, they do not take full advantage of legal protections. Hamdani and Yafeh (2011) argue that institutional shareholders in Israel are relatively passive in the governance of the companies they invest in.

In this paper, I focus on features of the business group that have received relatively little attention in the previous literature. My work provides a brief description of corporate ownership evolution in Israel and investigates the implications of business group diversification and multimarket contacts. I compare the dominance of business groups in different countries based on fresh data from recent literature. In addition, I analyze the groups' aggregate capital structure, corporate bond issues, and dividend payments.

Section 2 summarizes literature and evidence on historical development of Israeli business groups. I argue that privatization and structural reforms led by the government contributed to the emergence of large business groups. At the firm level, ownership of Israeli companies was highly concentrated, with average block-holding of 52 percent. Comparison with more than 40 other developed and undeveloped economies suggests that business groups enjoy a relatively high level of influence in Israel: Group-affiliated firms accounted for 43 percent of stock market value in 2010.

Section 3 analyzes cross-industry diversification of business groups. We observe that the average Israeli business group does not branch into more than three industries. In addition, group-affiliated companies have a strong presence in the financial sector, accounting for 48 percent of banking revenue and 66 percent of financial services income. Some sectors, such as accommodations, food, and textiles, appear to be much less important for business groups, as their presence in those industries is insignificant. The analysis of multimarket contacts shows that many groups operate in the same industries that other groups do business in. This presents opportunities for collusion that would limit competition.

Section 4 investigates the dynamics of capital structure of business groups, showing that leverage ratios were highly persistent from 1995 to 2007. Thus, business groups had access to external finance even when Israeli capital markets were relatively undeveloped.

---

1   See Kosenko and Yafeh (2010) for more detailed discussion.

These results are consistent with capital structure theories based on reputation and business connections. Analysis of bond issues in 2008 shows that groups tend to borrow through lower-tier subsidiaries. In doing so, controlling shareholders may transfer the risk of default to minority shareholders, a conflict of interest postulated in agency theory.

In section 4.3, I investigate dividend policies and show that group-affiliated companies tend to pay more dividends than non-affiliated corporations. Higher-tier companies pay more dividends in prosperous times, while lower-tier companies have more generous payout policies during leaner periods.

Section 5 concludes with a brief overview of the main findings and suggests several avenues for future research. In addition, I outline a number of policy implications arising from my analysis.

This work draws on a unique database on Israeli business groups for 1995 through 2010. The database was assembled and developed by Konstantin Kosenko from the Bank of Israel. Most of the analysis relates to 1995 through 2008, because for this period richer data are available. This data set aggregates information from sources such as the Israel Securities Authority, Tel Aviv Stock Exchange, the Company Registrar, and the Central Bureau of Statistics. The methodological approach in this paper draws heavily from Kosenko (2008), Kosenko and Yafeh (2010), and Kosenko (2011). The appendix lists definitions of all variables.

2. Historical Development of Israeli Business Groups

2.1 Transition of Control in Israel from 1985 to 2010: Privatization and Structural Reforms

Before 1985, the ultimate ownership of most companies was in the hands of the government due to its active role in early economic development in Israel. In 1985, however, the government decided to decrease its involvement in the economy. The state began an asset-sale privatization program —transferring a controlling block of voting stock to strategic investors. From 1986 to 1998, the government sold stock of numerous companies, raising a total value of $6.8 billion from privatization (Ben-Bassat 2002).

Forty percent of the stock went to wealthy individuals and families who already owned businesses in a number of industries. For example, the controlling block of shares of Bank Hapoalim was sold to the Arison-Dankner Group in 1996. Ted Arison, the head of the group, also acquired control of the Shikun & Binui company in the same year. Kosenko and Yafeh (2010) provide a number of similar examples of how corporate control was transferred during the privatization program.

Privatization was not the only process that affected corporate ownership. In addition, the government promoted structural reforms (see table 1) to support efficient and more competitive markets. These measures included the splitting of businesses and forced transition of control over business activities (Ben-Bassat 2010). In 1993, the government launched an effort to split small banking subsidiaries from large state-owned banks that dominated the financial system. As a result, control over two banking subsidiaries shifted to the private sector.

In 1995, the government limited the ability of large banks to control non-financial firms (Brodet report). This spurred banks to sell control of non-financial conglomerates to business groups. For example, Bank Hapoalim shifted control of the Koor conglomerate to the Shamrock Group (later sold to the IDB Group). Acquiring companies from banking institutions empowered large business groups and increased the total value of assets under their control. Another reform came in 2004-2005, when the government forced banks to sell mutual and provident funds to decrease concentration in the banking system and reduce conflicts of interest. Large family-owned insurance companies immediately bought control over part of these business activities. Once again, the enforced transfer of control from banks led to increased concentration of economic power in the hands of business groups.

Table 1: Privatization in Israel, 1993-2005

A summary of reforms that required transition of control over business activities

Year	Description	An example of transitions triggered by the reform
1993	Two small subsidiaries were split from large banking corporations.	In 1993, 60 percent of the shares of Bank Iggud were transferred from Bank Leumi to three family-owned holding companies.
1995	Large banks were restricted in owning voting stock of non-financial companies. Banks were required to gradually sell shares of non-financial corporations.	In 1996, control over the Koor conglomerate was transferred from Bank Hapoalim to Shamrock Group.
2005	Banking corporations were prohibited from managing mutual and provident funds. Banks were required to sell these activities gradually.	In 2006, Bank Leumi transferred its Leumi Pia mutual funds to Harel Group.

Source: Ben-Bassat (2010).

To conclude, privatization and structural reforms drove the transfer of economic power from banks and the government to large business groups and other corporations. Along with other factors, they contributed to the formation of contemporary business groups in Israel.

2.2 Evolution of Corporate Ownership at the Firm Level: A Bird's-Eye View

How significant and persistent is the concentrated corporate ownership in Israel? Figure 1 presents the average numbers of "parties of interest" in Israeli-listed companies as well as the share of stock they held from 1995 to 2009. A "party of interest" is a shareholder who owns more than 5 percent of a company's voting stock. An average number of parties of interest is presented on the right vertical axis. Aggregate stock holdings of all parties of interest are presented on the left vertical axis.

FIGURE 1. EVOLUTION OF STOCK HOLDINGS BY PARTIES OF INTEREST

Source: Author's calculations.

We observe that the average Israeli-listed corporation has 2.5 block-holders, and these parties hold nearly 60 percent of the voting shares. The number of parties of interest and their average holdings are highly persistent, which means that ownership concentration at the firm level has always been relatively high since 1995. However, this does not imply that the controlling parties do not change over time. While privatization, structural reforms, and transitions of control between large business groups contributed to rapid changes of Israeli business elites (Kosenko and Yafeh 2010) the overall level of ownership concentration has remained almost constant.

However, the average block-holder's share shows some variation over time. In particular, controlling shareholders progressively increased their holdings from 57 percent at the beginning of 1995 to nearly 62 percent at the end of 2003. A moderate reduction of large shareholdings from 2003 to 2006 was followed by a gradual increase afterward. This may be the effect of economic cycles on share prices. During the recession of 2000, controlling shareholders bought more shares as prices fell. Through the expansion of 2003 to 2007, those shareholders slightly decreased their holdings, taking profits from rising stock prices. Then, during the recession caused by the subprime mortgage crisis in the U.S., they were able to buy up cheap stocks again.

Figure 2 presents the number of business groups and the number of group-affiliated companies from 1995 to 2008. A "business group" is a set of two or more listed companies under common control. Control relations are identified using Aminadav et al.'s (2011) approach. A company is "group-affiliated" if a business group controls it.

FIGURE 2. EVOLUTION OF BUSINESS GROUPS AND GROUP-AFFILIATED COMPANIES

Source: Author's calculations.   —— Affiliated companies   - - - Business groups
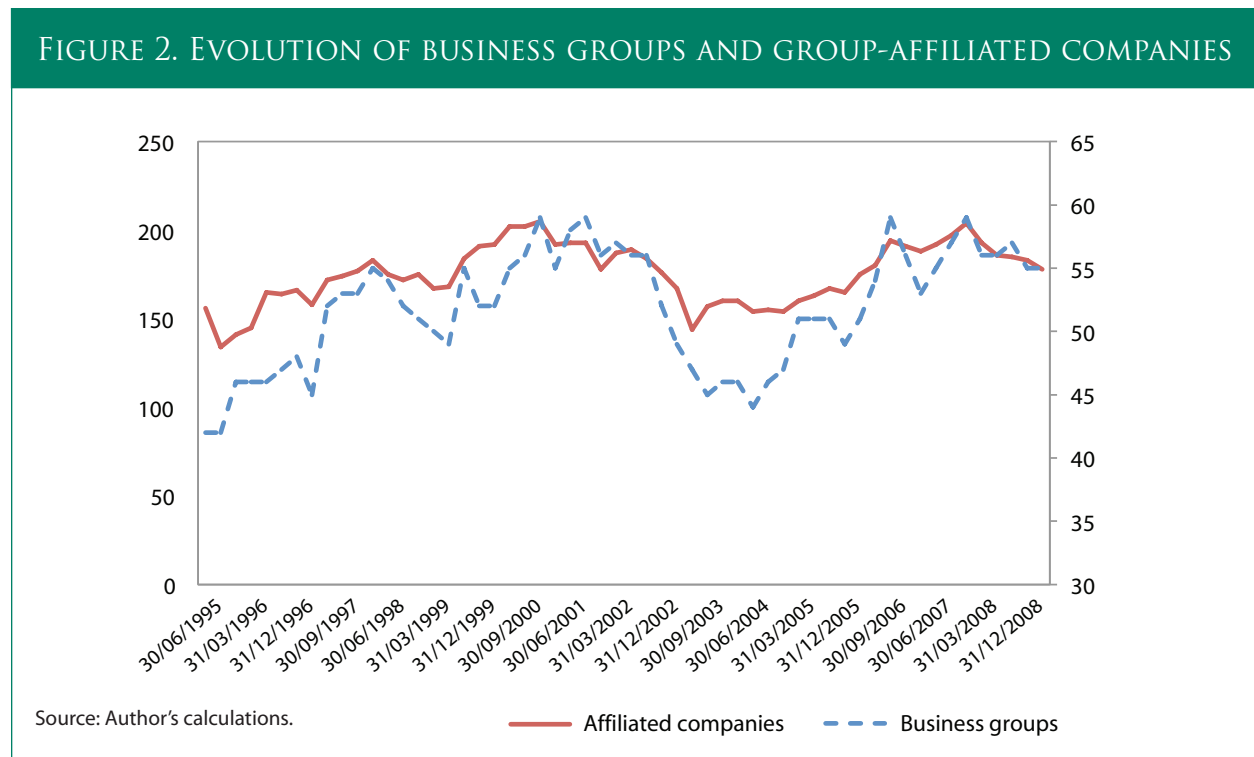
We observe that the number of business groups was growing erratically from 42 groups in 1995 to 55 at the end of 2008. In turn, the number of group-affiliated companies gradually increased from 156 listed firms in 1995 to nearly 178 corporations at the end of 2008. Both variables are highly correlated and, similarly to the number of average block-holders, exhibit a counter-cyclical pattern. In particular, business groups tend to expand their activity through the acquisition of new companies during stock market recessions and to sell off in more affluent times.

These results complement those of Kosenko (2008) and Kosenko and Yafeh (2010) documenting significant presence of family-controlled business groups among Israeli-listed companies. The combined evidence suggests that 55 business groups control 178 listed companies with an aggregate value equal to 43 percent of stock market capitalization.

To get a sense of the relative level of ownership concentration and business groups' dominance in the Israeli economy, this number should be compared to the recent cross-country studies. In their analysis of business groups around the world, Masulis et al. (2011) report that market capitalization of business groups in Israel is equal to 26 percent, which is much lower than my estimate. However, they study only 226 listed companies[2] while my analysis includes all listed corporations in Israel (nearly 630). As a result, they identified only 19 business groups, underestimating the importance of business groups in Israel as well as their impact on capital markets.

The economic importance of group-affiliated companies varies widely in the 45 countries represented in Figure 3, with Venezuela at the low end of the spectrum and South Korea at the opposite extreme. In Israel, 55 business groups control 178 companies with a combined value equal to 43 percent of stock market capitalization.

FIGURE 3. BUSINESS GROUPS' SHARE OF STOCK MARKET CAPITALIZATION, BY COUNTRY

Sources: Masulis et al. (2011) and author's calculations.
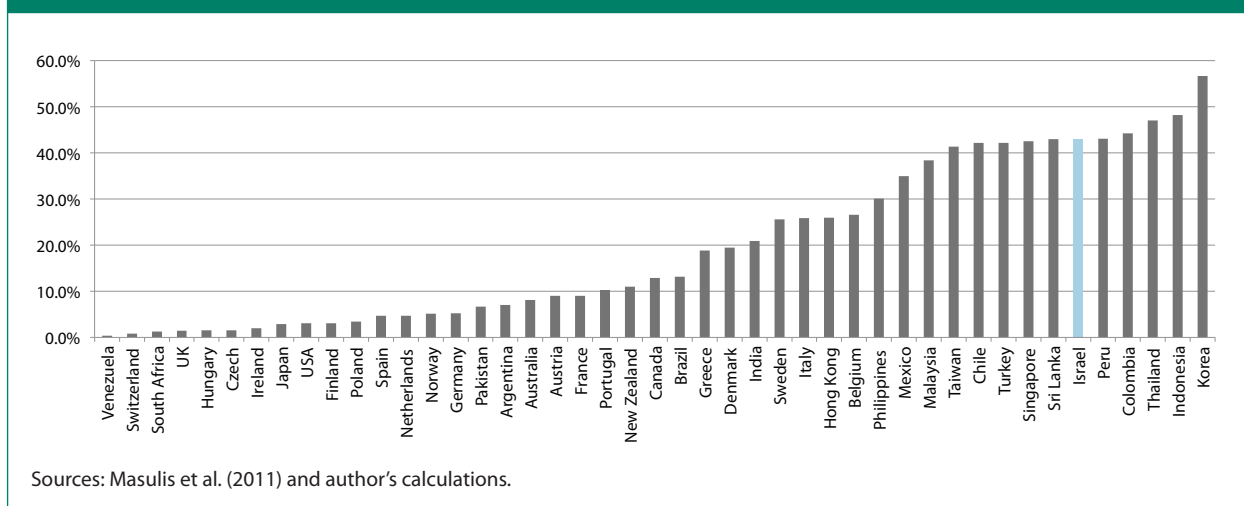
In figure 3, I compare my results with those Masulis et al. (2011) reported in table 2 of their work. As my estimate of business groups' market value in Israel is equal to 43 percent, it puts the Israeli economy in the top 10 in terms of business groups' importance in 45 developed and undeveloped economies.

In sum, my results confirm previous findings suggesting that the Israeli economy is heavily dominated by family business groups in comparison with other countries.

---

2   See table 2 in Masulis et al. (2011).

3. Groups and Industries

3.1 Group Dominance in Sectors of Economy

Cross-country evidence on business groups suggests that they are often highly diversified across industries (Khanna and Yafeh 2007). However, historical evidence implies that a high level of diversification has not always been a dominant feature of business groups in the United States. For example, in my investigation of groups in the U.S. of 1932 (Sokolinski 2010), I find little evidence of cross-industry diversification.

I first address the question of business-group significance within specific industries by measuring the market share of group-affiliated firms. Market share is measured as the total revenues of group-affiliated firms relative to the total revenue of the industry. Figure 4 presents the distribution of this estimate of group dominance across 21 industrial sectors. We observe that several sectors are highly dominated by group-affiliated companies. In particular, the groups' market share is equal to 89 percent of the industrial investment sector, 66 percent in the wholesale and retail trade, and 66 percent in the services sector. In addition, group-affiliated companies have a strong presence in the financial sector, accounting for 48 percent of banking revenues and 66 percent of income from financial services. Some sectors, such as accommodations, food, and textiles, appear to be much less important for the business groups, as their presence in those fields is insignificant. This variation implies that some industrial sectors are highly preferable for business groups.

In 2008, group-affiliated businesses commanded 88 percent of total revenue in the Israeli industrial investments sector, compared to a 2 percent share in the accommodations sector. "Market share" is the ratio of a business's revenue to the total revenue of the industry in which it operates.

Figure 4. Market share of group-affiliated companies, by industry

Source: Author's calculations.
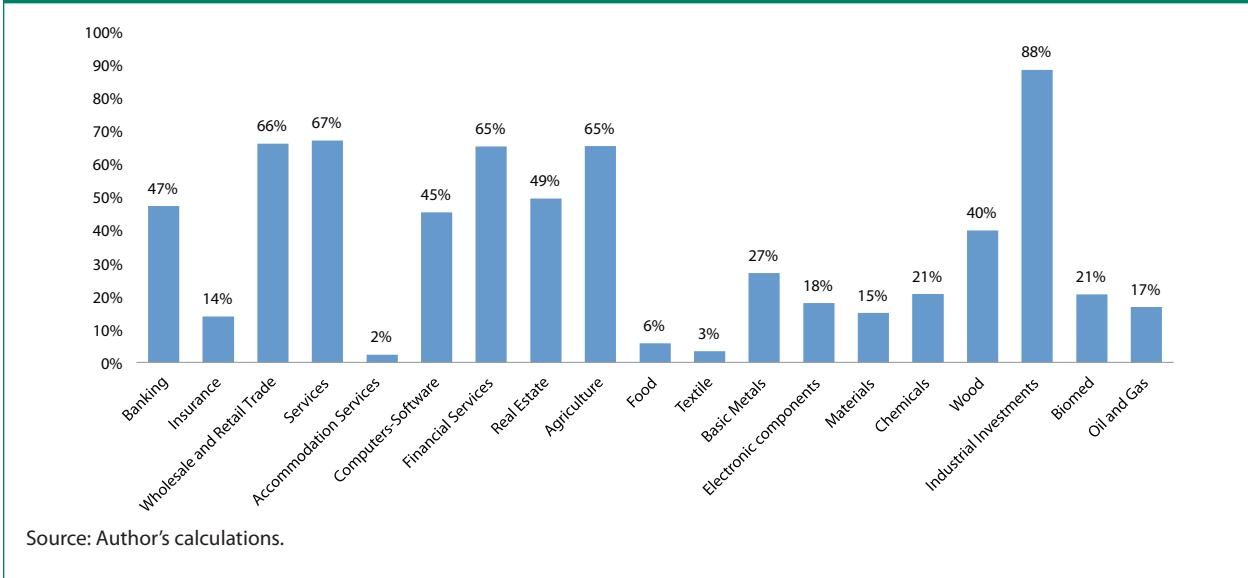
3.2 Intragroup Cross-Industry Diversification

In the next step I analyze the extent to which Israeli business groups diversify their holdings across industries. Table 2 provides summary statistics of 48 business groups in 2009. The sample is divided into four categories according to the number of industries a group operates in. A business group is a set of two or more listed companies under common control. A company is "group-affiliated" if a business group controls it. Industries are defined according to the CBS 65-industry aggregation. A "market value" is a total value of outstanding shares.

We observe that, on average, an Israeli business group consists of 3.6 corporations and its market value is equal to 6.8 billion shekels. Most business groups operate in a handful of industries. In particular, 38 groups spread their holdings across three or fewer industries, while only 10 larger groups with average market value of 11.2 billion shekels branch into four or more industries. These results imply that the degree of cross-industry diversification within Israeli business groups is limited to a few sectors and that only large groups reach higher levels of diversification. However, in comparison with other studies (Claessens et al. 2003), the degree of multi-industry diversification for Israel is not unusual or extraordinary.

Table 2. Business group diversification in 2009

Number of industries	Number of groups	Average number of group-affiliated firms	Average group market value (billions of shekels)
One industry	13	2.69	2.39
Two industries	15	2.80	9.91
Three industries	10	3.10	3.90
Four and more industries	10	6.60	11.20
Entire sample	48	3.60	6.80

Source: Author's calculations.

Several theories could explain why groups tend to acquire companies within specific industries. One possible explanation is opportunistic behavior associated with so-called tunneling. Tunneling is an extraction of corporate resources from group firms, which benefits controlling shareholders and hurts minority shareholders as well as bondholders (see Johnson et al. 2000a). Kosenko (2008) highlights tunneling as a possible explanation for inferior profitability of group-affiliated companies. The relatively low level of shareholder activism in Israeli (Hamdani and Yafeh 2011) could set the stage for tunneling.

Alternative theories look to industry connections to explain corporate diversification. In particular, a firm will prefer to acquire companies in industries related to the firm's current business. Classical economic theory describes this as a vertical integration. Empirical measures of business synergy could be one way to determine whether dishonesty (tunneling) or a simple desire for greater efficiency (vertical integration) is behind a company's decision to diversify. Another possible motivation is an opportunity to gain market power through multimarket contacts, which will be discussed in the next chapter.

3.3 Diversification and Group Characteristics

I conducted several formal tests to determine if diversification matters and how it affects group characteristics. Table 3 presents the results of t-tests for differences in means when the groups are compared with respect to diversification as measured by the number of industries they operate in. Two conclusions could be derived.

First, increased diversification is not typically associated with a larger number of firms under a group's control. More specifically, the difference among the average number of group-affiliated companies is small and insignificant for groups that operate in one, two or three industries. This could be a result of including relatively small groups in the selected sample. However, the difference is high (equal to almost four companies) and significant among the groups that branch out into four or more industries and the groups that do not diversify at all. Thus, Israeli business groups do not diversify by acquiring more companies. Rather, they direct their component companies to expand into new industries.

Second, diversification does not seem to affect market value. Single-industry groups tend to be smaller (in terms of market value) than more-diversified groups, but the differences are not significant. Interestingly, groups that spread their holdings over two industries seem to be larger than more-diversified groups, but this difference is insignificant as well. Thus, the overall evidence suggests that venturing into new industries does not lead to an increase in average group market value. The most-diversified groups are not the highest-valued and vice versa.

This table reports the results of tests of equality of means for various group characteristics based on the numbers of industries a group operates in. T-statistics are reported in parenthesis. *, **, and *** denote statistical significance at the levels of 1 percent, 5 percent, and 10 percent, respectively.

TABLE 3. NUMBER OF INDUSTRIES, NUMBER OF FIRMS, AND MARKET VALUE

	Number of group-affiliated firms	Market value (billions of shekels)
One industry vs. two industries	-0.11 (0.25)	-7.52 (1.07)
One industry vs. three industries	-0.41 (0.81)	-1.51 (0.68)
One industry vs. four or more industries	-3.91 (2.06)*	-8.81 (1.58)
Two industries vs. three industries	-0.30 (0.54)	6.01 (0.74)
Two industries vs. four or more industries	-3.30 (2.13)**	-1.29 (0.13)
Three industries vs. four or more industries	-3.50 (1.56)	-7.30 (1.11)

Source: Author's calculations.

In sum, a typical Israeli business group consists of three listed companies involved in three or fewer industries. An increase in diversification is not associated with an increase in number of affiliates or in group market value.

3.4 Interactions Between Groups: Multimarket Contacts

In this section I examine the potential for simultaneous collusion in several markets via multimarket contacts. In a seminal paper, Bernheim and Whinston (1990), spell out conditions under which diversification of business organizations may result in anticompetitive outcomes in several markets. To better understand this idea, consider a simple scenario: Two conglomerates each produce two types of goods: A and B. Thus, they meet each other at market A and market B: This is called "multimarket contact." If only these two groups produce A and B, these markets are potentially non-competitive. However, each conglomerate can choose from two options. On one hand, it can decide to collude with the other company and set high prices in both markets. On the other hand, the conglomerate can decide to lower prices of product A to grab the entire market. In the latter case, the other conglomerate may "punish" the collusion-breaking firm by starting a price war in both markets. Bernheim and Whinston concluded that multimarket contacts could encourage price-fixing because conglomerates may hesitate to set competitive prices in one market due to possible retaliation in other markets.

Bernheim and Whinston's findings could apply to Israeli business groups. While I am not able to provide direct evidence of collusion, I can assess the potential for such behavior by showing the "meeting points" between business groups in various markets.

To identify multimarket contacts, I list the groups and the industries in which they do business. I exclude industries where only one group operates, as there is no potential for multimarket contacts in these sectors.

Table 4 identifies some of the multimarket contacts among Israeli business groups. Consider for example group 22, which operates in four industries, and group 17, which operates in three. These two groups meet each other in two markets: electronic components and medical and scientific equipment.

Furthermore, table 4 shows that the number of meeting points is relatively large. Some sectors such as construction, real estate, and wholesale trade include a large number of business groups. By contrast, only a few groups operate in the banking and communication sectors, suggesting that the level of competition within those could be low. Of course, one should remember that this analysis is limited to public firms and does not take into account private companies, stand-alone companies, and international firms. Adding those countries to the mix could foster more competition.

In sum, we can observe from table 4 that multimarket contacts are not infrequent within the Israeli economy. Meetings between groups occur in various sectors, and given a small number of market participants in some industries, competition could be restricted. While this paper does not provide direct evidence of collusive behavior of business groups, it shows that the structure of the Israeli economy enables such behavior via multimarket contacts. Hence, this section provides limited empirical support to theories that explain how diversification could affect competition within a given economy. Certainly, more research should be done to investigate this question in depth, especially to test empirically which industries are less competitive than others, taking into account international competition as well.

TABLE 4. MULTIMARKET CONTACTS IN 2009

Group number	Holding companies	Food products manufacturing	Textiles manufacturing	Clothing manufacturing	Industrial chemicals manufacturing	Soap and cosmetics manufacturing	Plastic products manufacturing	Mineral non-metallic products manufacturing	Metal products manufacturing	Electric motors manufacturing	Electronic components manufacturing	Medical and scientific equipment manufacturing	Ships and aircraft manufacturing	Residential buildings construction	Non-residential construction	Wholesale and retail trade	Accommodation services	Transport services	Communications and postal services	Banking services	Insurance	Real-estate activities	Renting of machinery and equipment	Computerized data processing	Recreational activities
1																						■			
2																					■				
3	■													■	■							■			
4										■		■										■	■		
5												■				■				■					
6	■																								
7											■														
8		■													■										
9	■		■												■							■			
10	■														■					■				■	■
11	■																■								
12															■									■	
13															■							■			
14	■	■	■						■																
15														■	■	■						■		■	
16	■																				■				
17											■	■					■								
18															■							■			
19	■	■				■								■	■	■		■			■				
20			■																						
21	■																								
22		■					■				■	■													
23	■													■	■							■			
24	■			■	■		■					■		■	■	■		■	■	■	■	■		■	■
25	■				■																	■			
26	■													■								■			
27	■																■					■			
28		■													■							■			
29	■													■			■			■		■			
30	■	■																	■	■					
31			■	■																					
32	■											■	■												
33	■																					■			
34	■																				■				
35	■								■																
36	■																								
37	■																		■						
38	■														■							■			
39	■	■																							
40	■															■					■				
41	■																							■	
42	■							■	■					■	■							■			
43	■																							■	
44	■													■	■							■			
45														■	■							■			
46	■													■								■			
47	■									■			■												
48																		■				■	■		

Source: Author's calculations.

4. External Finance

4.1 Capital Structure

In this section, I examine the capital structure of Israeli business groups, their dividend policies and selected patterns of corporate bond issues. The purpose of this analysis is to evaluate the macroeconomic impacts of business groups on financial stability and to better understand how patterns of external finance have evolved over time. It is important to mention that this section does not attempt to analyze group-specific capital structure or dividend policy decisions. Instead, I analyze aggregate statistics to provide a comprehensive view of the groups' financial decisions over time. I employ data and statistics presented in Interim Recommendations of the Committee on Increasing Competitiveness in the Economy in 2011. The role of this committee is to assess the level of competiveness in the Israeli economy and to seek ways to increase it.

Figure 5. Changes in leverage ratios, 1995-2007

A "leverage ratio" is a ratio of total debt to total assets.
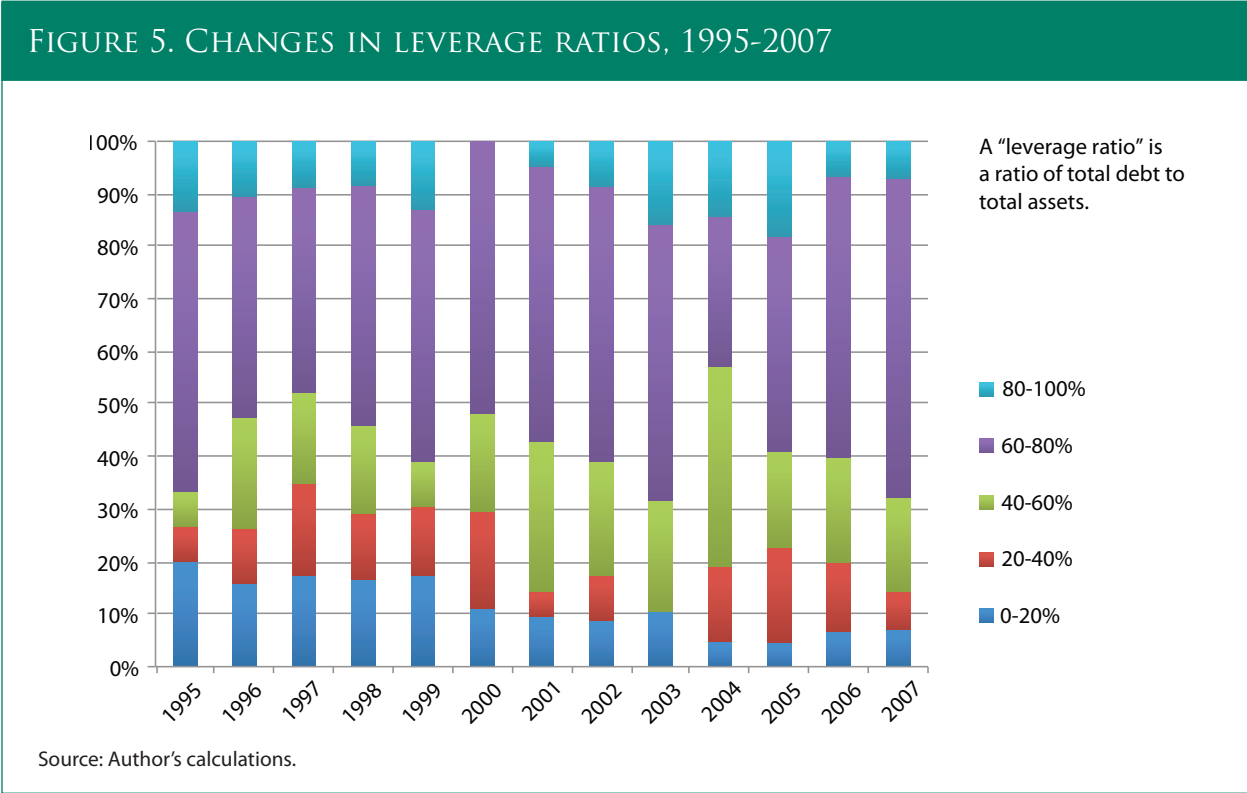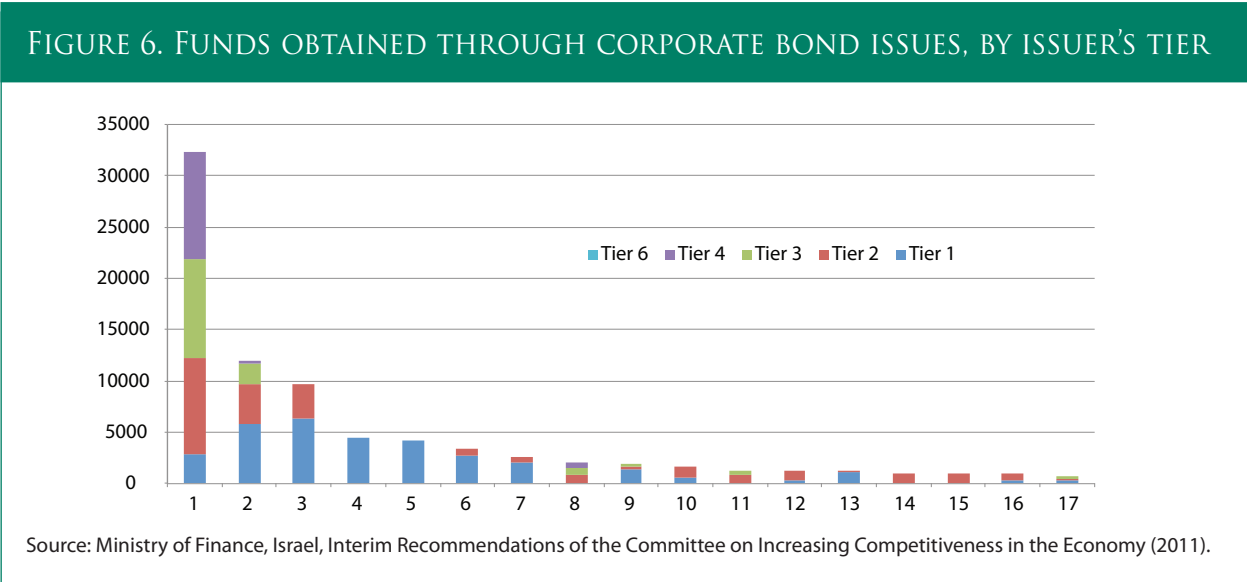
Source: Author's calculations.

Figure 5 presents the fluctuation of leverage ratios of Israeli business groups from 1995 to 2007. We can draw two basic conclusions: First, a representative Israeli business group has a median leverage ratio of 60 percent to 80 percent. This number is relatively stable: 2004 was the only year when the median level was below 60 percent. This shows that business groups have wide access to external finance, both public and private debt. On average, more than 60 percent of Israeli business groups had leverage ratios of 60 percent to 80 percent in 2007. Second, we observe an increase in borrowing

capacity in the left (lower) tail of the distribution. In particular, the proportion of groups with leverage ratios below 20 percent gradually has decreased from 20 percent in 1995 to 7 percent in 2007. This implies that, at least for some groups, the capital structure evolved toward a higher level of debt on average. Alternatively, this could be explained by a decrease in value of groups' assets.

In addition, figure 5 shows that the cross-sectional distribution of leverage ratios is relatively stable over time. While, on aggregate, leverage ratios have become slightly higher, the overall distribution is not affected by those changes significantly. This finding might be a bit puzzling because the financial development of the Israeli economy has significantly evolved over the past two decades (see World Economic Forum – "Financial Development Report 2011"). Moreover, numerous reforms improved the functioning of the Israeli capital market, suggesting better access to external finance (Rajan and Zingales 2003). Thus, we would expect to observe a more significant increase in leverage ratio over time than figure 5 suggests. It could be that large Israeli business groups never experienced any credit constraints, even in 1995, and the aggregate level of leverage was around its long-run steady-state equilibrium value. Because the groups own banks and other financial corporations, they were able to finance themselves via internal capital markets. Another possible explanation is a reputation effect, which implies that large groups are always able to obtain financing from banks due to their reputation as stable borrowers. It also could be that the composition of debt changed over time toward public borrowing instead of private debt instruments and that the analysis presented in figure 5 does not capture this change. In addition, higher financial development may increase equity financing and, therefore, debt financing seems to be unaffected.

4.2 Corporate Bond Issues

This figure presents the distribution of funds obtained by selected business groups by issuing corporate bonds (in millions of NIS) in 2008. A "tier" is the number of companies between the controlling shareholder and the given firm plus one.

Figure 6. Funds obtained through corporate bond issues, by issuer's tier

Source: Ministry of Finance, Israel, Interim Recommendations of the Committee on Increasing Competitiveness in the Economy (2011).

To analyze the level of reliance on public debt more closely, figure 6 presents the distribution of bond issues of the 17 largest Israeli business groups in 2008. It shows the distribution of funding obtained by firms at every tier of the group pyramid. We observe that the distribution is heavily skewed toward the three largest groups, which were the central issuers of corporate bonds in 2008. Moreover, business groups tend to issue debt at lower tiers. For example, the largest group issued debt instruments via companies at four tiers in the pyramid, but borrowing by the tier 1 companies was negligible relative to the total amount of bonds issued. We also observe substantial cross-sectional variation of tier choices: some groups issue bonds only at the first tier while others use only lower-tier firms.

To explain tier choice, we must recall that complex ownership structures involve agency problems. In case of concentrated ownership, the central conflict arises between the controlling shareholders and the minority (Shleifer and Vishny 1997). On average, controlling shareholders are much more invested in the highest levels of the business group pyramid. They hold much smaller stakes in the firms at lower levels. However, they are able to control financial decisions of those low-level firms with some constraints to do so provided by corporate governance mechanisms. Thus, agency theory could explain the observed pattern of corporate bond issues. Given the typical pyramidal structure of Israeli business groups, controlling shareholders may prefer to issue debt through companies at lower levels, where their direct ownership is diluted. This enables them to shift risks of default to minority shareholders. If the market properly prices this risk, the business groups' stocks should depreciate. Hence, this mechanism of tunneling may work only if the risk of default is not priced correctly.

To better investigate this pattern over time, I present in figure 7 the average share of corporate bonds issued at the first two tiers from 2005 to 2009.

Figure 7. Corporate bond issues, by tier, 2005-2009

Share of funds obtained by business groups though corporate bonds in tiers 1 and 2
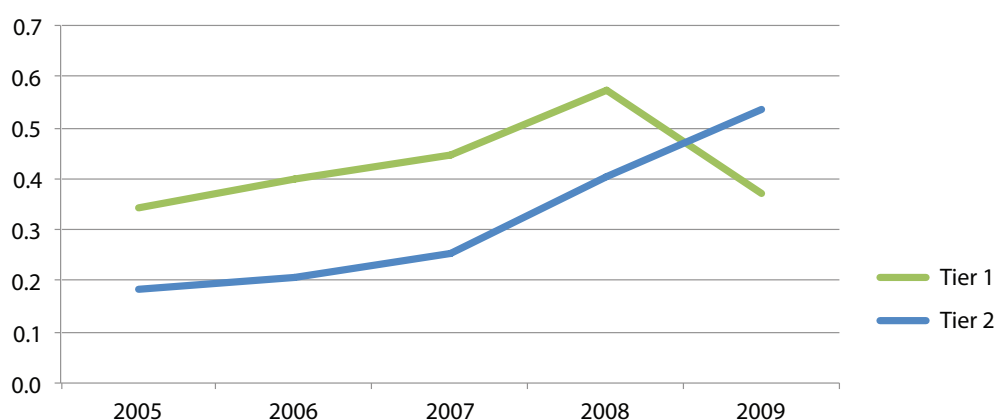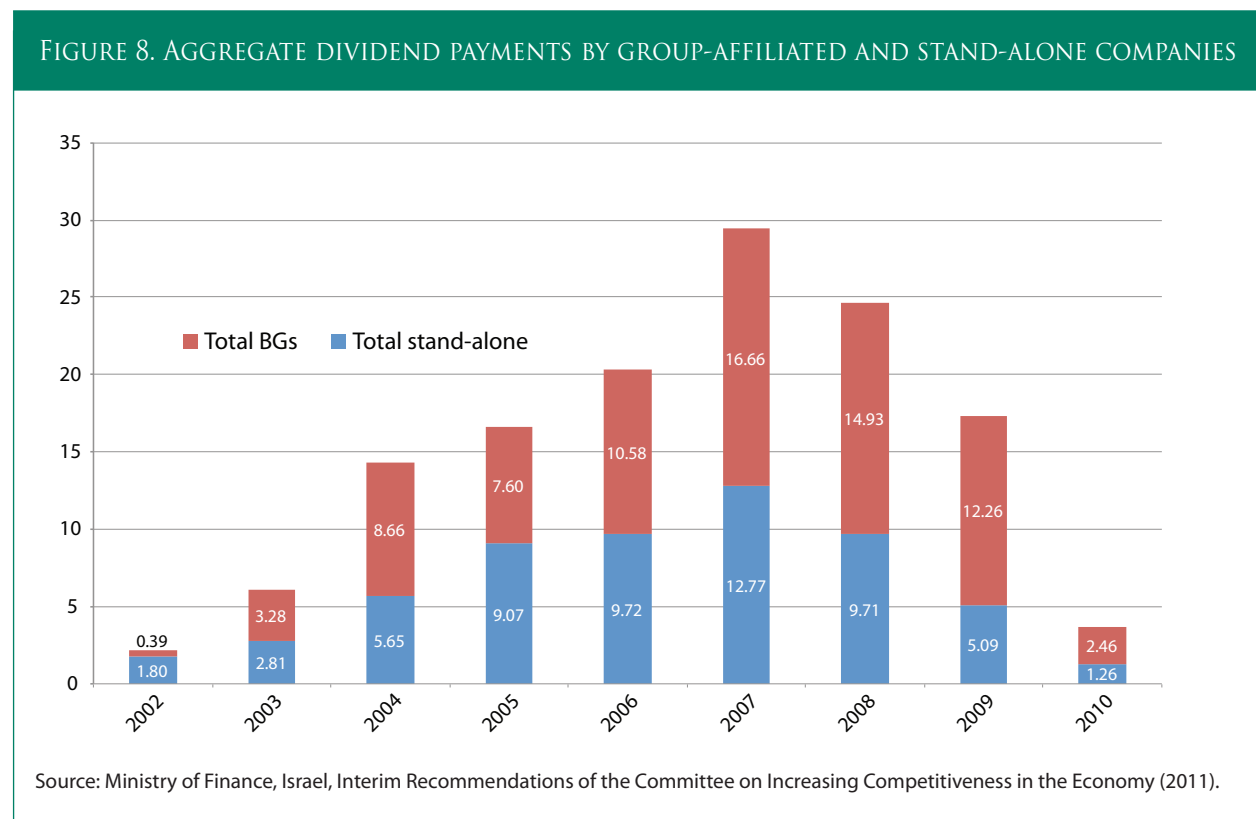
Source: Ministry of Finance, Israel, Interim Recommendations of the Committee on Increasing Competitiveness in the Economy (2011).

As we observe, the share of bond issues was historically higher in top tiers of group pyramids relative to lower tiers. Moreover, business groups tend to issue more debt at higher tiers over time. However, after 2008 we observe a shift: Business groups reduce the share of debt issued at the tier 1 companies from 60 percent to 40 percent. By contrast, the share of bonds issued by lower-tier companies is rising continuously. While this result does not provide direct evidence in support of the agency theory presented above, we do observe a shift in the bond issues toward lower-level firms. Hence, a possible interpretation of figure 7 could point to agency problems. Namely, after 2009, business groups decreased borrowing by higher-level firms, shifting risks of bond default to the minority shareholders of subsidiary businesses.

4.3 Dividend Policy

Next, I analyze the aggregate dividend payout policy of Israeli business groups. How significant is dividend payout in business groups in comparison with other public companies? Is there a tendency to shift dividend payments to top levels of the group hierarchy?

Figure 8 presents the aggregate dividend payments by group-affiliated and stand-alone companies from 2002 to 2010 in billions of NIS. A company is defined as a "stand-alone" if it is not part of a business group.

FIGURE 8. AGGREGATE DIVIDEND PAYMENTS BY GROUP-AFFILIATED AND STAND-ALONE COMPANIES

Source: Ministry of Finance, Israel, Interim Recommendations of the Committee on Increasing Competitiveness in the Economy (2011).

Dividend payments tend to correspond to boom-and-bust cycles. In 2007, payments peaked at an aggregate payout of 29 billion NIS, then declined drastically as the recession took its toll on revenues in the following years.

Moreover, we observe that group-affiliated companies are major payers almost every year, accounting for more than 50 percent of total payments. These results show that Israeli business groups tend to pay more dividends than other companies produce. This result could be a simple result of the fact that group-affiliated companies represent 50 percent of stock market capitalization in Israel. But there are alternative interpretations. First, as argued earlier, business groups may rely less on internal funding because they have better access to external finance. In addition, they must maintain their reputation in the capital markets by paying back investors. So, by paying higher dividends today, business groups enable themselves to obtain more resources in future public offerings. However, this explanation does not distinguish between group-affiliated and other companies: Both could pay higher dividends to maintain reputation. Agency theory provides another interpretation: Controlling shareholders may prefer higher dividends today to future growth if they have a short-term investment horizon. Thus, they may withdraw corporate resources in the near term instead of investing in profitable projects and selling the company years later. Finally, these findings are consistent with Faccio et al. (2001), who find that dividend payments of group-affiliated companies in Europe are relatively high. According to their explanation, higher dividend payments dampen the expropriation of minority shareholders' wealth by insiders.
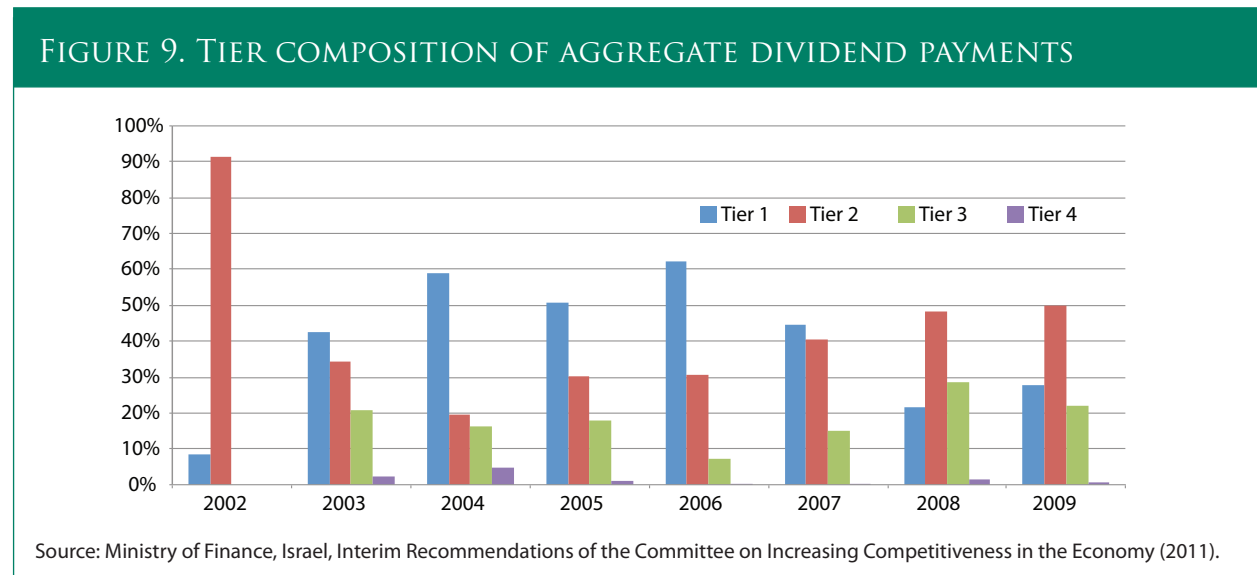
When the agency theory is applied, what predictions could be developed regarding the dividend payments? In particular, are higher-tier companies expected to pay more dividends? The answer to this question is unclear, as we have at least two forces that may drive the results in opposite directions. On one hand, controlling shareholders have higher cash-flow rights in higher-tier companies on average; thus these companies may prefer to declare dividends to benefit the controllers. A controlling shareholder who is willing to withdraw from the lower-tier companies may get involved in tunneling instead of sharing dividends with minority shareholders. On the other hand, if corporate governance limits tunneling, controlling shareholders have no incentive to prefer declaring dividends at the higher-tier companies. Thus, under tunneling, lower-tier companies should pay more dividends. Alternatively, if corporate governance effectively constrains tunneling, we should observe no difference in dividend policy between higher- and lower-tier firms.

Figure 9 breaks down dividend payments by tier from 2002 to 2009. We observe that during the years of economic expansion, when dividends were high, high-level companies paid most of the dividend share. In particular, in every year between 2004 and 2007, the share of first-level companies in the total dividend payout was more than 40 percent. By contrast, second-level companies paid higher dividends during the economic downturns, accounting for nearly 50 percent of business groups' payout.

Agency theory offers a possible explanation. In profitable times, controlling shareholders prefer to pay dividends through higher-tier firms while draining resources from lower-tier companies. During recessions, the controllers are more careful regarding the tunneling, as it may be much more difficult to hide those activities from the public. Thus, in difficult times, they may prefer to pay dividends from lower-level firms.

Other theories could provide a competing explanation. During downturns, groups may use internal capital markets more intensively, transferring more resources within the group. In this case, we would expect to observe more transactions at the lower levels during recessions. In addition, groups have other ways to transfer resources within themselves, and various types of related-party transactions could be involved. One possible extension of this analysis will be to investigate more closely how business groups use different ways to transfer corporate resources such as dividends, intragroup loans, and asset sales.

This figure presents the tier composition of aggregate dividend payments by group-affiliated companies from 2002 to 2009. A tier is the number of companies between the controlling shareholder and the given firm plus one. Firm level is the number of companies between the controlling shareholder and the given firm minus one.

FIGURE 9. TIER COMPOSITION OF AGGREGATE DIVIDEND PAYMENTS

Source: Ministry of Finance, Israel, Interim Recommendations of the Committee on Increasing Competitiveness in the Economy (2011).

We can summarize the central observations of this section with respect to capital structure, corporate bond issues, and dividends. First, cross-sectional patterns of business group leverage do not change significantly over time, with stable median leverage ratios ranging between 60 percent and 80 percent. Second, analysis of corporate bond issues indicates that groups tend to incur more public debt through lower-tier companies. Hence, minority shareholders bear higher risk, as they may lose corporate assets to the bondholders in case of the default. If those risks are mispriced, it could lead to exploitation of minority shareholders. Finally, we observe that group companies pay higher dividends in comparison to non-affiliated companies. During economic expansions, the groups tend to declare dividends at the top-tier companies, while in recessions lower-tier companies pay more dividends.

5. Conclusion

In an attempt to extend the existing empirical literature on Israeli business groups, this paper provides additional investigation of groups' development, evolution, and characteristics. In the concluding section, I present several possible extensions of this work as well as some policy implications.

First, one might examine which economic forces drive the acquisition process of Israeli business groups. Some ongoing research (Kosenko 2011) provides more careful analysis distinguishing between various theories that could account for groups' evolution. The overall preliminary results seem to reinforce the previous conclusion: The classical production-based theories do not account for expansion of Israeli business groups. In fact, Kosenko (2011) provides empirical support for an agency-based explanation that is consistent with tunneling. In general, one might try to examine tunneling activities in a direct way. For example, related-party transactions could be analyzed, and their transaction prices could be compared to similar dealings in the open market.

Second, the analysis of multimarket contacts finds that Israeli business groups are closely linked via many industries. The results suggest that the number of multimarket contacts is large and, at least potentially, these contacts may affect the level of competition in some sectors. One possible extension of this analysis is to measure the exact level of competition in those sectors and to investigate how it varies with the presence of business groups. This suggestion goes beyond standard analysis of competition in a single industry as it implies that other industries where the same groups operate should be considered as well. Regulators should consider these factors when enforcing anti-trust policy.[3]

Third, high leverage ratios and links between or inside business groups may increase systemic financial risks. Moreover, groups may share the same network of lenders. Regulatory authorities already weigh the possibilities of joint default and limit borrowing by group-affiliated companies. Constraints on Israeli pension fund investments are also a safeguard. Future research should delve into how business groups affect risk to the economy as a whole.

Finally, corporate bond issues and dividend policy could reflect agency problems. While tunneling is extremely difficult to identify, the combined evidence suggests that activities of this kind may take place within large Israeli business groups. Recent defaults on corporate debt by several family groups show that both minority shareholders and creditors are vulnerable to losses. Institutional bondholders such as pension funds may get into trouble when major borrowers fail to repay debt. This suggests that the market may not price the risks of default correctly, and more research into those risks could be helpful. Requiring better disclosure from business groups as well as encouraging more careful and detailed analysts' coverage of those securities could deliver the desired outcome.

---

3   In fact, numerous conversations with the relevant regulators suggest that policymakers take into account multimarket contacts while approving mergers and acquisitions.

Appendix: Description of Variables

Variable	Description
Business group	A set of two (unless stated otherwise) or more listed companies under common control. Control relations are identified using Aminadav et al.'s (2011) approach.
Affiliated company	A company controlled by a business group
Stand-alone company	A company that is not a part of a business group
Firm tier	The number of companies between the controlling shareholder and the given firm plus one
Definition of industries	CBS, 65-industry aggregation
Leverage	Total debt to total assets
Market value	Total market value of outstanding shares
Relative market value	The ratio of market capitalization of the group/company to total market capitalization
Party of interest	A shareholder who owns more than 5 percent of a company's voting stock
Market share	Revenues of all affiliated firms out of total revenues of the industry

References

Aharoni, Y. (2006). "New Business Elites," from *New Elites in Israel*, Bialik Institute.

Aharoni, Y. (1976). "Structure and Performance of the Israeli Economy," *Chirokover*, Tel Aviv.

Almeida, H., and D. Wolfenzon (2006). "Should Business Groups Be Dismantled? The Equilibrium Costs of Efficient Internal Capital Markets," *Journal of Financial Economics*, 75, pp. 133–164.

Almeida, H., and D. Wolfenzon (2004). "A Theory of Pyramidal Ownership and Family Business Groups," *Journal of Finance*, 61, pp. 2637–2681.

Aminadav G., Y. Bachrach, K. Kosenko, J. Rosenschein, and Y. Wilf (2011). "Rebuilding the Great Pyramids: A Method for Identifying Control Relations in Complex Ownership Structures," working paper.

Asher B., O. Yosha, and Y. Yafeh (1998). "Corporate Governance in an Emerging Market: The Case of Israel," *Journal of Applied Corporate Finance*, 10(4), pp. 79-89.

Ben-Bassat, A. (2010). "Conflicts, Interest Groups and Politics in Structural Reforms," forthcoming, *Journal of Law and Economics*.

Ben-Bassat, A. (2002). "The Israeli Economy, 1985-1998: From Government Intervention to Market Economics," vol. 1, 1st ed., *The MIT Press.*

Bernheim, D., and M. Whinston (1990). "Multimarket Contact and Collusive Behavior," *RAND Journal of Economics*, 21(1), pp. 1–26.

Claessens, S., S. Djankov, J. Fan, and L. Lang (2003). "When Does Corporate Diversification Matter to Productivity and Performance? Evidence from East Asia," *Pacific-Basin Finance Journal*, 11(3), pp. 365-392.

Claessens, S., S. Djankov, and L. Lang (2000). "The Separation of Ownership and Control in East Asian Corporations," *Journal of Financial Economics*, 58(1-2), pp. 81–112.

Corsetti, G., P. Pesenti, and N. Roubini (1999). "What Caused the Asian Currency and Financial Crisis?" *Japan and the World Economy*, 11(3), pp. 305–373.

Djankov, S., R. La Porta, F. Lopez-de Silanes, and A. Shleifer (2008). "The Law and Economics of Self-Dealing," *Journal of Financial Economics*, 88, pp. 430-465.

Faccio, M., and L. Lang (2002). "The Ultimate Ownership of Western European Corporations," *Journal of Financial Economics*, 65, pp. 365–395.

Faccio, M., L. Lang, and L. Young (2001). "Dividends and Expropriation," *American Economic Review*, 91(1), pp. 54–78.

Fan, J., and L. H. P. Lang (2000). "The Measurement of Relatedness: An Application to Corporate Diversification," *Journal of Business*, 73, pp. 629-660.

Fisman, R. (2001). "Estimating the Value of Political Connections," *American Economic Review*, 91(4), pp. 1095–1102.

Gomez, E. (2006). "Malaysian Business Groups: The State and Capital Development in the Post-Currency Crisis Period," in *Business Groups in East Asia: Financial Crisis, Restructuring, and New Growth*, ed. S. Chang. Oxford: Oxford University Press, pp. 119–146.

Grossman, S., and O. Hart (1986). "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy*, 94, pp. 691-719.

Hamdani, A., and Y. Yafeh (2011). "Institutional Investors as Minority Shareholders," forthcoming, *Review of Finance.*

Johnson, S., P. Boone, A. Breach, and E. Friedman (2000b). "Corporate Governance in the Asian Financial Crisis," *Journal of Financial Economics*, 58(1–2), pp. 141–186.

Johnson, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer (2000a), "Tunneling," *American Economic Review (Papers and Proceedings)*, 90(2), pp. 22–27.

Johnson, S., and T. Mitton (2003). "Cronyism and Capital Controls: Evidence from Malaysia," *Journal of Financial Economics*, 67(2), pp. 351–82.

Khanna, T., and Y. Yafeh (2007). "Business Groups in Emerging Markets: Paragons or Parasites?" *Journal of Economic Literature*, 45, pp. 331–373.

Khanna, T., and Y. Yafeh (2005). "Business Groups and Risk Sharing Around the World," *Journal of Business*, 78(1), pp. 301–340.

Kosenko, K. (2008). "Evolution of Business Groups in Israel: Their Impact at the Level of the Firm and the Economy," *Israel Economic Review,* 5, pp. 55-93.

Kosenko, K. (2011). "In Search for the 'Missing Link': Exploring the Evolutionary Dynamics of Business Groups," working paper, The Hebrew University of Jerusalem.

Kosenko, K., and Yafeh, Y. (2010). "Business Groups in Israel" in A. Colpan, T. Hikino and J. Lincoln (eds.), *Oxford Handbook of Business Groups*, Oxford University Press, pp. 459-485.

La Porta, R., F. Lopez-de-Silanes, and A. Shleifer (1999). "Corporate Ownership Around the World," *Journal of Finance*, 54, pp. 471–517.

Maman, D. (2002). "The Emergence of Business Groups: Israel and South Korea Compared," *Organization Studies*, 23, pp. 737–758.

Masulis, R. W., P. Kien Pham, and Jason Zein (2011). "Family Business Groups Around the World: Costs and Benefits of Pyramids," *Review of Financial Studies*, forthcoming.

Ministry of Finance, Israel (2011), Interim Recommendations of the Committee on Increasing Competitiveness in the Economy.

Mitton, T. (2002). "A Cross-Firm Analysis of the Impact of Corporate Governance on the East Asian Financial Crisis," *Journal of Financial Economics*, 64(2) pp. 215–241.

Morck, R. (2009). "The Riddle of the Great Pyramids," in A. Colpan, T. Hikino and J. Lincoln (eds.), *Oxford Handbook of Business Groups*, Oxford University Press, pp. 602-629.

Morck, R., D.A. Stangeland, and B. Yeung (2000). "Inherited Wealth, Corporate Control, and Economic Growth: The Canadian Disease?" in *Concentrated Corporate Ownership,* ed. R. Morck, NBER Conference Report series, Chicago and London: University of Chicago Press, pp. 319–69.

Morck, R., D. Wolfenzon, and B. Yeung (2005). "Corporate Governance, Economic Entrenchment and Growth," *Journal of Economic Literature*, 43, pp. 657–722.

Rajan, R., and L. Zingales (2003). "Saving Capitalism from the Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity," New York: Crown Business Division of Random House.

Scharfstein, D.S., and J.C. Stein (2000). "The Dark Side of Internal Capital Markets: Divisional Rent-Seeking and Inefficient Investment," *Journal of Finance*, 55, pp. 2537–2564.

Shleifer, A., and R. Vishny (1997). "A Survey of Corporate Governance," *Journal of Finance*, 52(2), pp. 737-783.

Sokolinski, S. (2010). "Did Corporate Pyramids Ever Exist in the United States?" unpublished MA thesis, The Hebrew University of Jerusalem.

World Economic Forum (2011). The Financial Development Report.

FELLOWS PROGRAM | KORET MILKEN INSTITUTE

ver. 8/12