Foreign and Domestic Firms in Colombia: Development and Trends 1996-2003

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Abstract

This is the second of three papers investigating the differences between foreign and domestic firms in Colombia. The study uses a dataset containing annual balance sheets and income statements for a sample of 3,452 firms for the period 1996 to 2003. This period includes the 1999 economic crisis. The dataset was obtained from the Superintendencia de Sociedades. If the development of foreign majority-owned firms, as an aggregate, is compared to that of domestic firms, it is shown that foreign firms have, in terms of aggregate sales, grown faster than their domestic counterparts, and that they were less affected by the 1999 crisis. Profit developments have also been more positive for foreign firms than for domestic firms, both in terms of operating margin and net-profit margin. While the net-profit margin of domestic firms was seriously affected by the 1999 crisis, that of foreign firms was hardly affected at all. The leverage of foreign firms, measured as total liabilities to total assets, has, furthermore, increased during the period, while that of domestic firms have remained more or less flat. For foreign minority-owned firms, on the other hand, the results are less conclusive.

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[*] The opinions expressed here are those of the author and not necessarily of the Banco de la República, the Colombian Central Bank, nor of its Board of Directors. I express my thanks to Jorge Martínez, and Enrique Montes for helpful comments and suggestions. Any remaining errors are my own.

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1 Introduction

This paper is the second of three papers documenting the results of an investigation into the differences of foreign and domestic firms in Colombia.[1] The objective of the study has been to build a foundation for future research and to generate a general understanding of the topic, rather than to reach any conclusive results. This has been a necessary limitation, to restrict the scope of an otherwise potentially very extensive project. The research has, nevertheless, produced a number of initial results of which some are very interesting. The research is, furthermore, part of a larger project investigating foreign investment flows into Colombia.

The first paper of the two, *Foreign and Domestic Firms in Colombia: How Do They Differ?*,[2] studied foreign and domestic firms using data as of 2003. The study used a dataset containing the balance sheets and income statements for some 7,001 firms. The dataset was obtained from the *Superintendencia de Sociedades*.[3] This study concluded that foreign and domestic firms differ in a number of aspects. Foreign firms tend to have a larger total asset turnover than domestic firms; they are more leveraged than domestic firms; and they tend to have a lower net-profit margin than domestic firms. However, these results were not conclusive. When the dataset was broken down by sector, the results were much less clear. Large differences between different sectors were found, and while foreign firms might do better in some sectors, the situation was the opposite in others.

[1] The other two papers are Rowland (2005a), and Rowland (2005c). Another but related study looking at regional differences and developments is documented in Rowland (2005b).
[2] Rowland (2003a).
[3] This is the Colombian government body that supervises and regulates corporations in the country.

This second paper continues by investigating the development of foreign and domestic firms in the country during the period 1996 to 2003. The same dataset is used as in the preceding study, but only those firms present throughout the whole period are included, which reduces the number of firms to 3,452. The dataset is divided into different size brackets: Small and medium-sized, major, large, and the largest 100 firms. Micro enterprises are excluded from the study. The dataset is also divided into domestic firms, foreign minority-owned firms and foreign majority-owned firms. These categories of firms are then analysed and compared.

The paper presents a number of results: If the development of foreign majority-owned firms is compared to the development of domestic firms, it is shown that foreign firms have, in terms of aggregate sales, grown faster than their domestic counterparts. Profit developments have also been more positive for foreign firms than for domestic firms, both in terms of operating margin and net-profit margin. The leverage of foreign firms, measured as total liabilities to total assets, has, furthermore, increased during the period, while that of domestic firms have remained more or less flat. For foreign minority-owned firms, on the other hand, the results are less conclusive. The ratios studied are much more volatile for these firms than for the rest, which is probably explained by them being a smaller sample.

The period studied also include the economic crisis of 1999. It is shown that the sales of all firms were negatively affected by the crisis, even if foreign-majority owned firms were less affected than both foreign minority-owned and domestic firms. Concerning net-profit margins, it is shown that foreign majority-owned firms as an aggregate was not affected at all by the crisis, while both foreign minority-owned and domestic firms were affected, the former more seriously than the latter.

The study also looks at the development of firms of different sectors over time, and it is shown that the different sectors have, indeed, developed differently, both in terms of sales and in terms of profitability.

The paper is organised as follows: Chapter 2 introduces and discusses the dataset used for the study. Chapter 3 looks at some general trends and developments during the period. In chapter 4, the development of foreign and domestic firms is compared, and chapter 5 looks at the development of a number of different sectors during the period studied. Chapter 6 concludes the paper.

Note that this paper uses the Anglo-Saxon terminology for billions, trillions and so on.[4]

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[4] In the Anglo-Saxon terminology, one billion is 1,000,000,000 and on trillion is 1,000,000,000,000. In Spanish terminology, 1,000,000,000 is referred to as one thousand million, while 1,000,000,000,000 is referred to as one billion.

2 The Dataset Used for the Study

This chapter defines and discusses the dataset. The sample used for the study is retrieved from a database obtained from the Superintendencia de Sociedades, and this database is described in section 2.1. Section 2.2 continues by discussing how the particular sample used in the study has been retrieved, and section 2.3 and 2.4 divides this dataset into size brackets and ownership categories respectively.

2.1 The Superintendencia de Sociedades database

The study carried out here uses a database obtained from the Superintendencia de Sociedades. This presents the balance sheets and income statements from 1996 and up until 2003 for all firms that are registered with the Superintendencia. The database excludes banks and financial institutions, which are regulated by the *Superintendencia Bancaria*, as well as around 80 of the approximately 130 firms listed on the Colombian stock exchange, which are regulated by the *Superintendencia de Valores*. The database also excludes the large majority of micro enterprises, which are defined as firms with less than 10 employees or less than COP 166 millions in assets in 2003.[5] Apart from these exceptions, the database should include all firms in Colombia. In 2003 the database included some 9,204 firms. For the preceding years the number of firms varied between 9,027 and 10,680.[6]

[5] As defined by Law 590 of 2000.
[6] The database for 2001 contained only 6,239 firms due to a change in regulations, which resulted in a drop in the number of firms reporting to the Superintendencia that year. However, the database for 2001 was reconstructed using *previous year's data* from the 2002 database.

The database includes information on:

- NIT number (a unique identification number)[7]
- Company name
- City and department where registered
- CIIU (the firm's main activity area – one out of 366 activity areas)
- Sector (one out of 66 sectors)
- Balance sheet accounts (Assets, Liabilities, Equity)
- Income statement accounts (Revenues, Expenses, Net profit)

Even if most of the data has been verified by the Superintendencia, errors remain.[8] Considerable time has, therefore, been spent on correcting any such errors, since they could otherwise invalidate the results of the study.

2.2 The Dataset Used in the Study

For the purpose of the study, all figures in the database were adjusted by the GDP deflator, to account for inflation. The adjusted figures, therefore, represent constant 2003 pesos. The GDP deflator used is presented in table 2.1.

[7] *Numero de identificación tributaria*.

[8] One particular error is that the figures of a number of firms are reported in pesos rather than in thousands of pesos which is the norm.

Table 2.1: Colombian GDP deflator (2003 = 1)

Year	GDP deflator
1996	0.483
1997	0.564
1998	0.648
1999	0.729
2000	0.818
2001	0.869
2002	0.925
2003	1.000

Source: Banco de la República.

In line with the first part of the study, reported in Rowland (2005a), a number of firms were excluded from the database. These include micro enterprises, defined as firms with total assets of less than COP 166 million,[9] and firms with total sales of less than COP 83 million, which were regarded as too small as well. The rationale is that only a small fraction of micro enterprises are registered with the Superintenencia de Sociedades. We do, nevertheless, assume that all firms with assets or sales exceeding the above values are registered with the Superintendencia. In line with Rowland (2005a), firms in liquidation, in *concordato*, or in restructuring as defined by Law 550,[10] were excluded as well. These are firms generally under financial distress, and can be assumed to have a behaviour significantly different from the rest.

We now cross the databases for the different years, and we define our sample to only include those firms that existed throughout the whole period from 1996 up until 2003. We then end up with a sample of 3,452 firms.

[9] This definition is in accordance with Law 590 of 2000.
[10] Firms in *concordato* are firms in financial distress that are temporarily protected from creditors to give them time to restructure their operations. *Concordato* was in 2000 replaced by Law 550, which is a more elaborated legal framework. Law 550 has many similarities with Chapter 11 in the United States.

2.3 Firms by Size

In line with Rowland (2005a), the firms have been divided into size brackets. This division is based on total assets in 1996.[11] These size brackets are defined by table 2.2.

Table 2.2: Definition of size brackets for the firms in the dataset

Size	Total assets (COP million)	
	from	to
Micro	0	166
Small	166	1,660
Medium	1,660	4,980
Major	4,980	49,800
Large	49,800	340,500
Largest 100	340,500	

Note: The definitions here are the same as used in Rowland (2005a), where the Largest 100 size bracket was defined to include the largest 100 firms in the dataset. In the sample used here, this size bracket will include less than 100 firms. Large firms have been defined to have a cut-off point ten times the size of major firms. Micro, small, medium-sized and major firms are defined according to Law 590 of 2000. Micro enterprises are excluded from the sample used.

Table 2.3: The firms in our sample by size brackets

Size	No of firms	Total assets in 1996 (millions of constant 2003 pesos)	% of total (based on assets)
Small	174	218,411	0.2%
Medium	1,214	3,864,713	3.1%
Major	1,691	25,169,557	20.4%
Large	308	34,550,107	28.0%
Largest 100	65	59,579,453	48.3%
Total all firms	3,452	123,382,242	100.0%

[11] Note that these assets in our dataset are expressed in constant 2003 pesos.

Table 2.3 presents the firms in our sample divided into these size brackets. As discussed previously, micro enterprises have been excluded from the sample. Note that only 174 small firms are included in the sample. This is explained by the fact that of the small firms that existed in 1996, not many exist in their original form in 2003. Most of them have either seized to exist or have been merged with or acquired by other firms. In the study carried out here, we will merge the small and medium-sized brackets into one, i.e. small and medium-sized enterprises (SMEs).[12]

2.4 Foreign and Domestic Firms in the Dataset

We will, furthermore, for the purpose of the study, divide the firms in the sample into firms where foreigners, i.e. foreign individuals or companies, have a majority stake, where foreigners have a minority stake, and firms that are fully owned by Colombians.[13] Table 2.4 presents the firms in our sample divided into these three categories, and table 2.5 divides the firms in these three categories into size brackets. What should be emphasised is that, in the sample, there are only 17 small and medium-sized firms that are foreign-minority owned, and in the size bracket Largest 100, only 12 are foreign-minority owned. This might be too little to draw any definite conclusions for these categories of firms.

As in the case of the division of the firms into size brackets, we use the initial year of 1996 to determine to which ownership category a firm belongs. We will, consequently, compare the development of firms with foreign participation in 1996 to those without, irrespective of whether there have been changes in the ownership structure during the time period studied.

[12] In Spanish, these are referred to as *empresas pequeñas y medianas* or *PYMEs*.

[13] Foreign majority-owned firms are, consequently, firms where foreigners hold 50 percent or more of the equity. Foreign minority-owned firms are firms where foreigners hold less than 50 percent of the equity. The latter can also be classified as joint ventures. Data on foreign participation is reported in one of the annexes of the database of the Superintendencia de Sociedades.

Table 2.4: The firms in our sample divided according to foreign or domestic ownership

Ownership	No of firms	Total assets in 1996 (millions of constant 2003 pesos)	% of total (based on assets)
Domestic	2,850	63,467,666	51.4%
Foreign minority	156	22,961,223	18.6%
Foreign majority	446	36,953,353	30.0%
Total all firms	3,452	123,382,242	100.0%

Table 2.5: Foreign and domestic firms divided into size brackets

Ownership	SMEs	Major	Large	Largest 100	All sizes
Domestic	1,265	1,381	179	25	2,850
Foreign minority	17	88	39	12	156
Foreign majority	106	222	90	28	446
Total	1,388	1,691	308	65	3,452

3 General Trends and Developments

We will in this chapter look at some overall trends and developments between 1996 and 2003 in the Colombian economy as well as in the corporate sector. However, first we will define some financial ratios that we will use in the analysis. This is done in section 3.1. Section 3.2 then looks at some general trends and developments.

3.1 Financial Ratios: Some Definitions

For the purpose of analysing how domestic and foreign firms differ in their structure and profitability, we will use a number of financial ratios, and we will analyse how these have developed over time. To start with, we will here define and explain these ratios.[14] Box 3.1 defines some basic accounting concepts which might be useful for those not familiar with accounting in general.

Leverage is here defined as liabilities to total capital, which is calculated by dividing liabilities by total assets.[15] We will here use two different ratios to measure leverage, long-term liabilities to total capital as well as total liabilities to total capital. Firms in Europe and the U.S. normally use long-term bank debt to finance their operations, and in such a case, long-term liabilities to total assets might be a preferable measure of leverage. However, many Colombian firms have no or only limited access to bank loans at reasonable rates and, therefore, prefer to finance themselves through short-term liabilities. So, in Colombia, total liabilities to total assets might be a better leverage measure. A firm that is more leveraged is, moreover, a riskier investment. However, even if a low leverage might indicate that the owners or the management of the firm are risk avert, it might also indicate that the firm does not have access to debt financing at reasonable terms.

[14] See also White, Sondhi and Fried (1998).
[15] Note that total liabilities plus equity by definition equals total capital, which equals total assets.

Box 3.1. Some basic accounting concepts

The Balance Sheet

The Balance Sheet presents the financial position of a company at a given point in time. It is comprised of three parts: Assets, Liabilities, and Equity. The Assets are the resources that the company uses to operate its business, and can be broken down into Liquid Assets, e.g. Cash, and Inventory, and Fixed Assets, e.g. Machinery, and Buildings. In the same way, Liabilities, which are the debts of the company, are normally broken down into Current Liabilities, e.g. Suppliers, and Accounts Payables, and Long-Term Liabilities, e.g. Bank Loans. Equity is the net worth of the company. The Total Capital of the company consists of Total Liabilities plus Equity, and the Total Capital must equal Total Assets for the balance sheet to balance.

The Income Statement

The income statement presents the results of operations of a business over a specified period of time, e.g. one year, and it is composed of Revenues, Expenses and Net Income. Revenues normally arise from the sale of goods or services, but can also arise from, for example, the sale of a business segment or a fixed asset such as an office building or a machine. In such a case it will be classified as a Non-Operating Income.

Simplified Balance Sheet

EMPRESA S.A.

Liquid Assets (AL)	**Current Liabilities (LC)**
Cash	Accounts payables
Accounts Receivables	
Inventory	**Long-Term Liabilities (LL)**
	Bank Loans
Fixed Assets (AF)	Bonds
Buildings	
Machinery	**Equity (E)**
	Common Stock
	Retained Earnings
Total Assets (AL+AF)	**Total Capital (LC+LL+ E)**

Simplified Income Statement

Sales
- Cost of goods sold
Gross Earnings

- Administrative and Sales Expenses
Operating Income

+ Non-Operating Income
- Non-Operating Expenses
Earnings Before Taxes (EBT)

+ Inflation Adjustment (only in Colombia)
- Taxes
Net Profit

Note: Account names of financial statements are generally initiated with a capital letter.

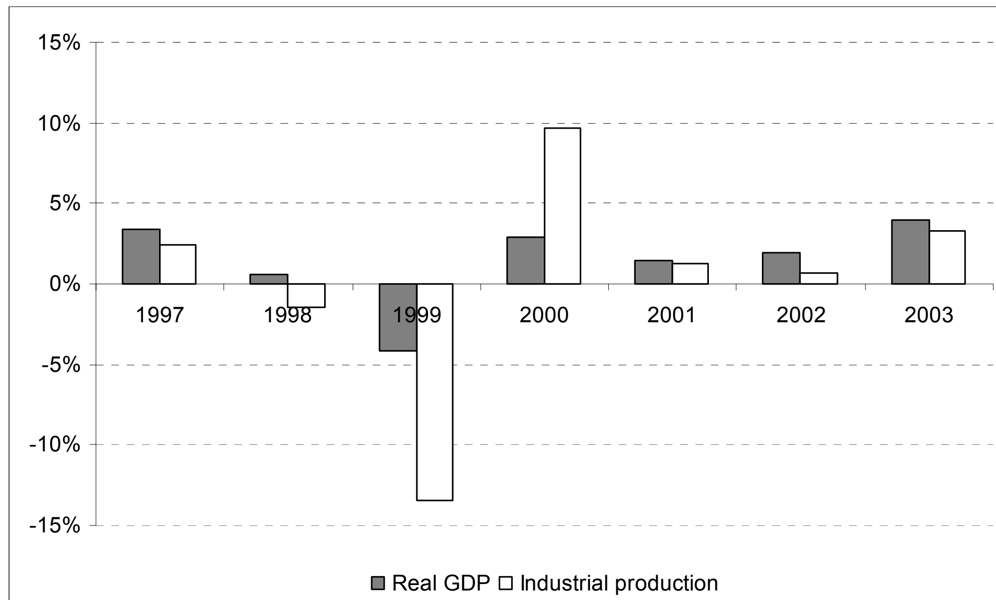
We will also study the profitability of firms, and then concentrate on two measures, *operations margin* and *net-profit margin*. Operations margin is defined as operating income divided by sales. This provides information about the firm's profitability from the operations of its core business. It excludes the effects of income from asset sales, interest expenses and tax position. Net-profit margin is defined as the firms net profit divided by its sales. Note that these measures can be highly misleading if a firm has sold assets (including subsidiaries) during the year and thereby made large capital gains or losses. We will use the aggregate values of these ratios, which we calculate by dividing the aggregate value of the numerator by the aggregate value of the denominator.[16]

3.2 General Trends and Developments, 1996-2003

In 1999, Colombia experienced its first recession for over 50 years.[17] As shown by figure 3.1, real GDP contracted by as much as 4.2 percent, and industrial production by an astonishing 13.5 percent. The economy was consequently in a deep crisis. We are in this paper studying the period 1996 to 2003, which, consequently, includes the 1999 recession. This gives us the opportunity to look at the impact of the recession on the corporate sector of the economy. It also allows us to study how the corporate sector recovered after the recession, and if there was any difference between firms of different size or between domestic and foreign firms.

[16] E.g. for the net-profit margin this would imply dividing the aggregate net profit of the firms in the sample by the aggregate sales volume.
[17] Recession is defined as two consecutive quarters of negative economic growth.

Figure 3.1: Year-on-year change in real GDP and industrial production

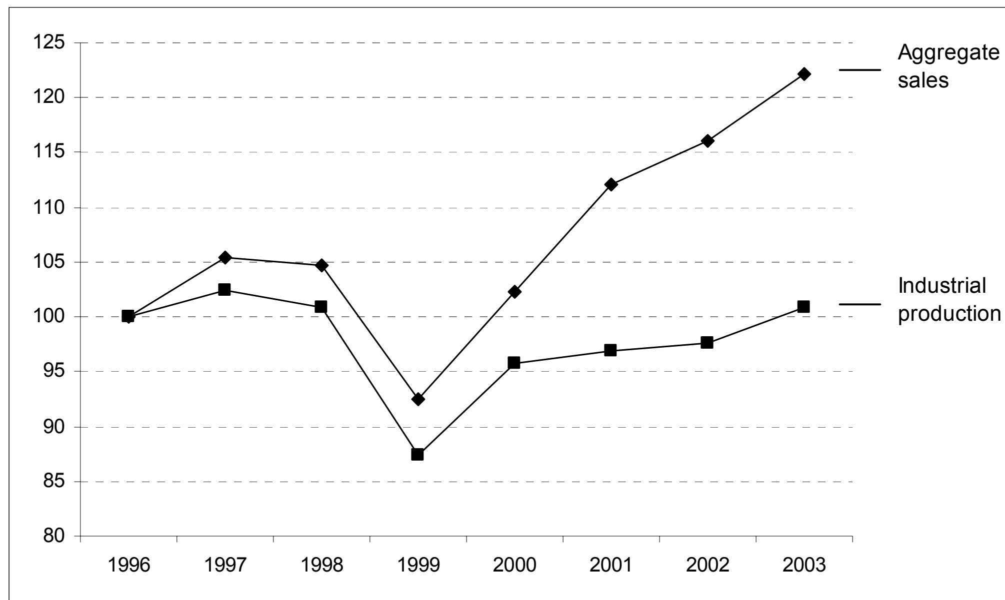


Source: Banco de la República.

Figure 3.2: Year-on-year change in aggregate sales in real terms and in industrial production

Source: Banco de la República, Superintendencia de Sociedades, and calculations by the author.

Figure 3.3: Aggregate sales and industrial production, indices (1996 = 100)



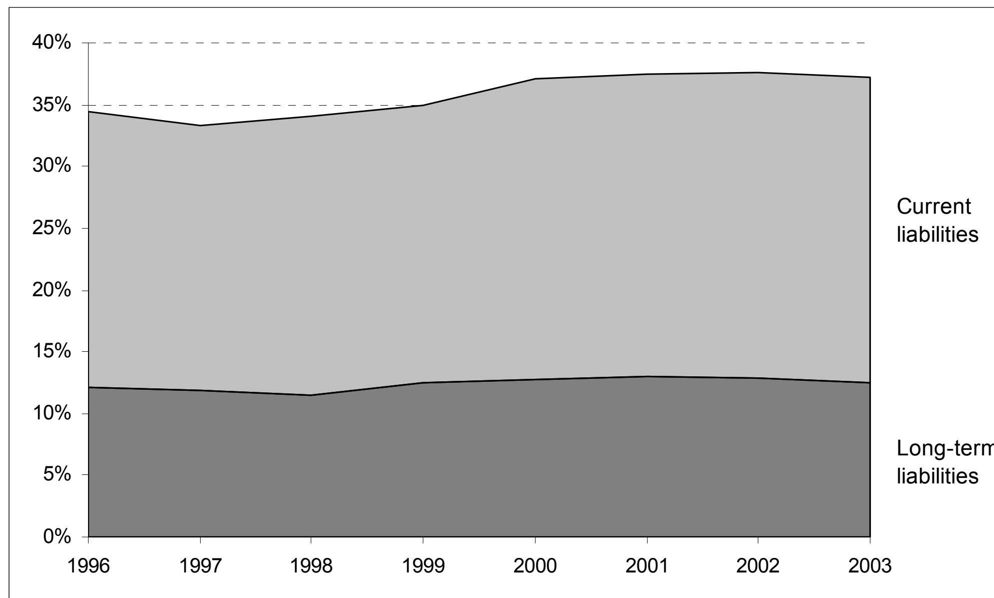
Source: Banco de la República, Superintendencia de Sociedades, and calculations by the author.

Figure 3.2, on the previous page, shows the change in aggregate sales of the corporate sector compared to industrial production. It is apparent from the figure that aggregate sales showed a similar pattern during the recession, but that it recovered more strongly, particularly in 2001 and 2002. This is also shown by figure 3.3, which plots the levels of aggregate sales against industrial production. The sharp fall in both aggregate sales and industrial production in 1999 is clearly apparent in the figure. It is also apparent that aggregate sales shows a much stronger growth than industrial production, particularly from 2001 and onwards.

Figure 3.4: Profitability margins, aggregate values

Figure 3.4 graphs the development in the aggregate profitability margins over the time period studied. It is clear that net profits fell sharply in 1999. However, no such decrease is visible in the operations margin. Another point is also worth noting: Aggregate net-profit margin in 1996 is standing at more or less the same value as operations margin. This is explained by the fact that a few of the largest companies that year reported large non-operating incomes.

Figure 3.5: Liabilities to total assets, aggregate values



It could be assumed that the crisis in 1999 would lead banks to try to recall loans and to restrict lending, leading to a credit squeeze. Figure 3.5 graphs aggregate liabilities to total assets of the corporate sector, and these have been divided into current and long-term liabilities. Interestingly, the figure shows no fall, neither in current nor in long-term liabilities during or after the 1999 crisis. However, if we study aggregate liabilities as an absolute value instead of as a ratio, the picture is slightly different, as illustrated in figure 3.6 and 3.7. Long-term liabilities contracted by 3.0 percent in 1999. Short-term liabilities, on the other hand, expanded by some 6.3 percent that same year. This might indicate that banks became more restrictive in their lending at the same time as firms sought alternative sources to finance themselves. Short-term liabilities, on the other hand, contracted sharply, by some 5.4 percent, in 1998. From 2000 onwards, long-term liabilities have grown each consecutive year, even if the rate of growth in 2003 only was 0.2 percent.

Figure 3.6: Aggregate liabilities in real terms (COP trillions, constant 2003 value)

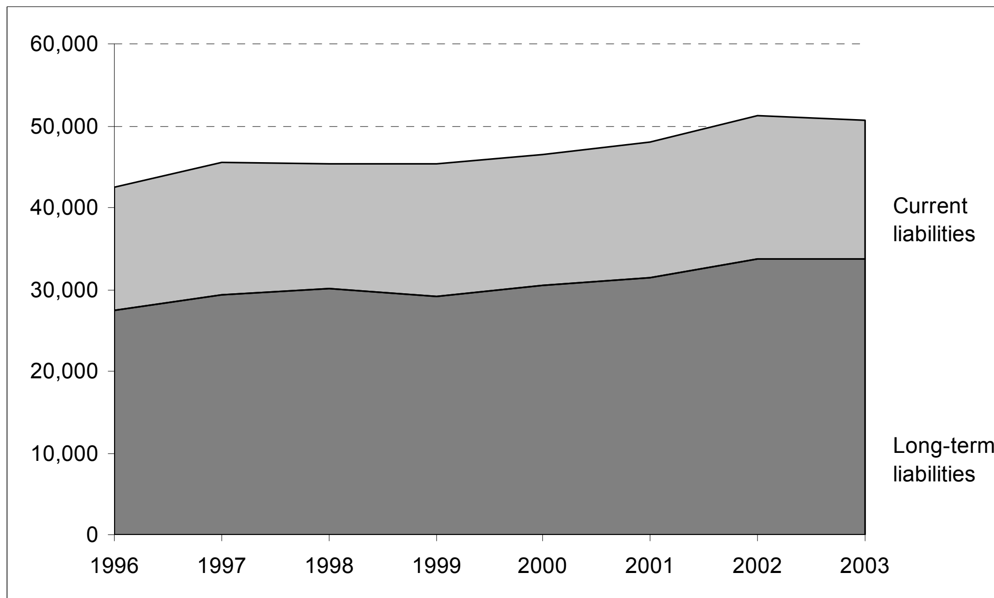
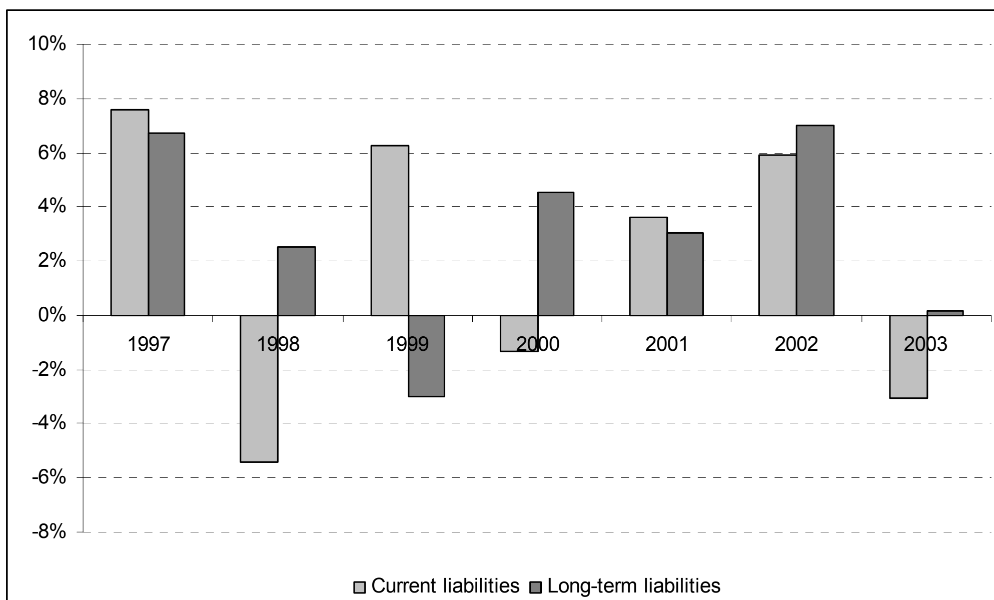


Figure 3.7: Aggregate liabilities in real terms, changes



4 Foreign versus Domestic Firms

We will now continue by comparing the developments of foreign and domestic firms during the period studied. Some overall trends and developments are analysed in section 4.1. Section 4.2 then continues by breaking down the dataset in size brackets and looking at the development of each such bracket. Section 4.3 then looks at the firms in each size bracket divided into domestic firms, foreign minority-owned firms and foreign majority-owned firms.

4.1 Foreign and Domestic Firms, 1996-2003

According to the definitions stated in chapter 2, we divide the firms in our dataset in domestic firms, foreign minority-owned firms and foreign majority-owned firms. Figure 4.1 and 4.2 shows the how aggregate sales in these three groups of firms have developed over time. Figure 4.1 shows changes in aggregate sales volumes in real terms, and figure 4.2 shows the development of aggregate sales expressed as indices. It is apparent from the figures that sales volumes were seriously hit by the economic crisis in 1999 for all three categories of firms. Sales volumes fell by some 13.5 percent, 16.4 percent and 7.5 percent for domestic, foreign minority-owned and foreign majority-owned firms respectively. This suggests that foreign majority-owned firms were less hit by the crisis than the other firms.

Figure 4.1: Aggregate sales in real terms, changes

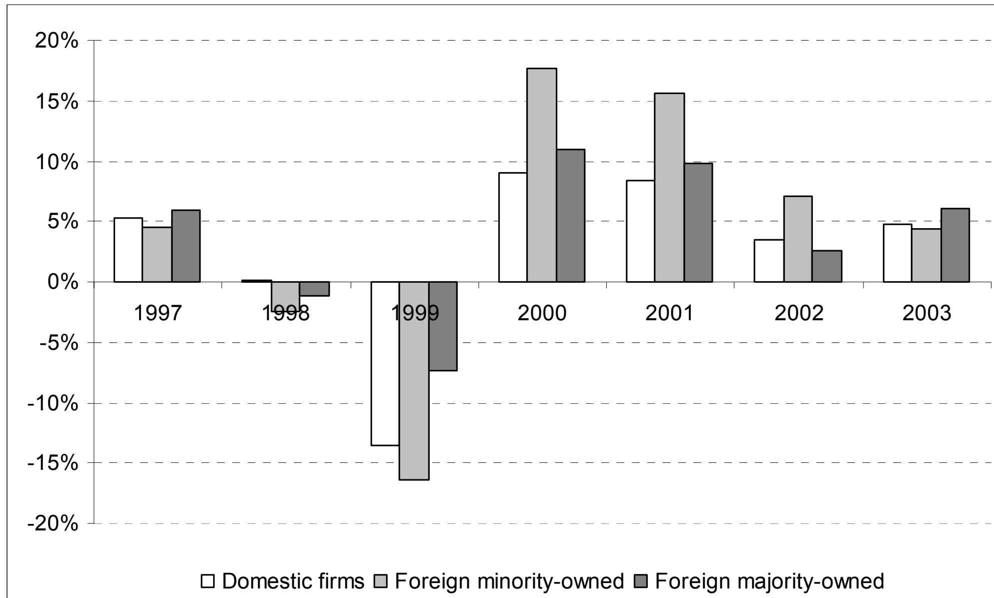
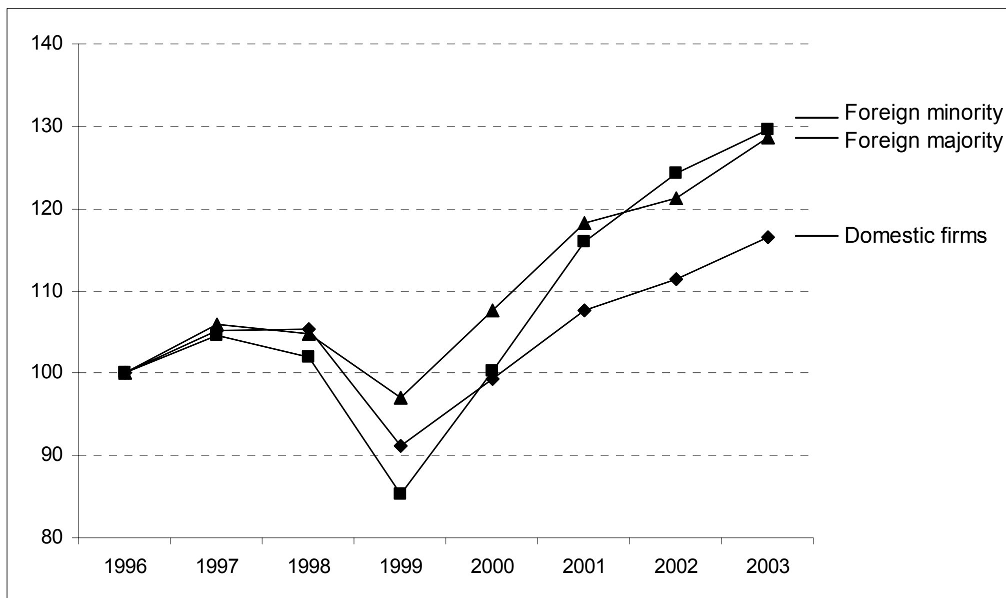


Figure 4.2: Aggregate sales in real terms, index (1996 = 100)



Throughout the period, foreign majority-owned firms have grown faster than domestic firms, with the exception of the years 1998 and 2002, when domestic firms slightly outperformed. This result does however need to be interpreted with a bit of caution. Most domestic firms are growing organically, while some foreign firms are growing fast simply because they are expanding their operations in Colombia. Carrefour, a French hypermarket chain which entered Colombia a few years ago, is expanding rapidly, due to an ambitious investment plan for Colombia. That Carrefour is growing much faster than Exito, the main Colombian hypermarket chain, is consequently because of their investment plan, and we cannot draw any conclusion about whether Carrefour is more profitable or more successful than Exito just by studying this parameter. For this reason, foreign majority-owned firms might, indeed, as an aggregated be expected to grow faster than domestic firms.

The developments of the operations margin and the net-profit margin in aggregate terms are illustrated in figure 4.3 and 4.4 respectively. Foreign majority-owned firms have during the period seen a stronger growth both in operations margins and net-profit margins than domestic firms. For foreign minority-owned firms, the volatility is much higher than for the other two categories, and the results are inconclusive.

As shown by figure 4.3, the operating margin of the firms does, however, not seem to have been directly hit by the 1999 crisis, apart from maybe at foreign minority-owned firms. Foreign majority-owned firms, on the other hand, saw a sharp increase in their operating margin in 1999. It should, nevertheless, be emphasised that the operations margin measures the operating income in relation to sales. The aggregate operating income in absolute terms, were quite seriously hit in both domestic and foreign minority-owned firms, where it fell by some 8.7 percent and 27.0 percent respectively. Foreign majority-owned firms, on the other hand, saw a strong growth in operating income.

Figure 4.3: Operations margins

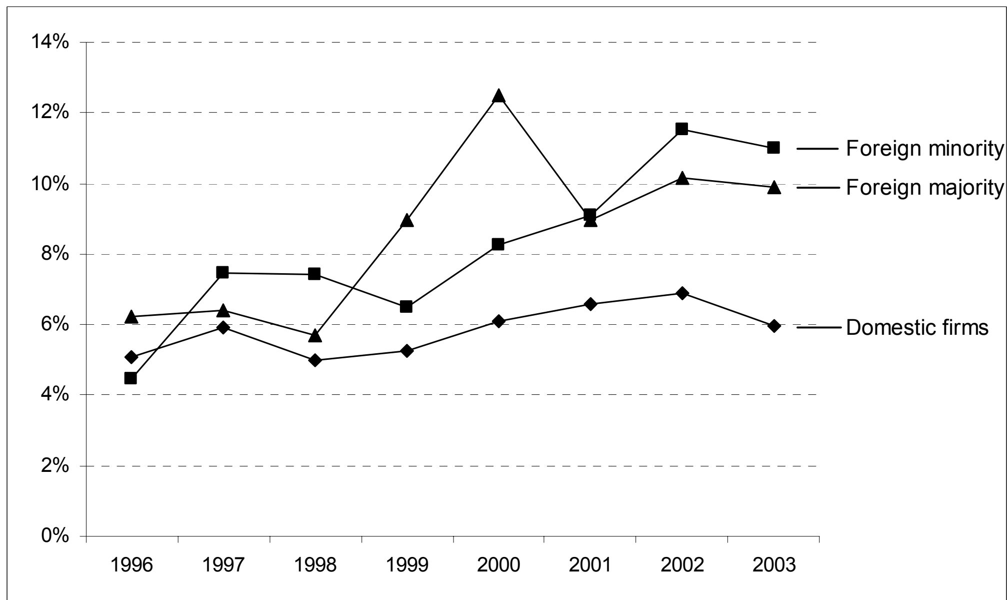


Figure 4.4: Net-profit margins

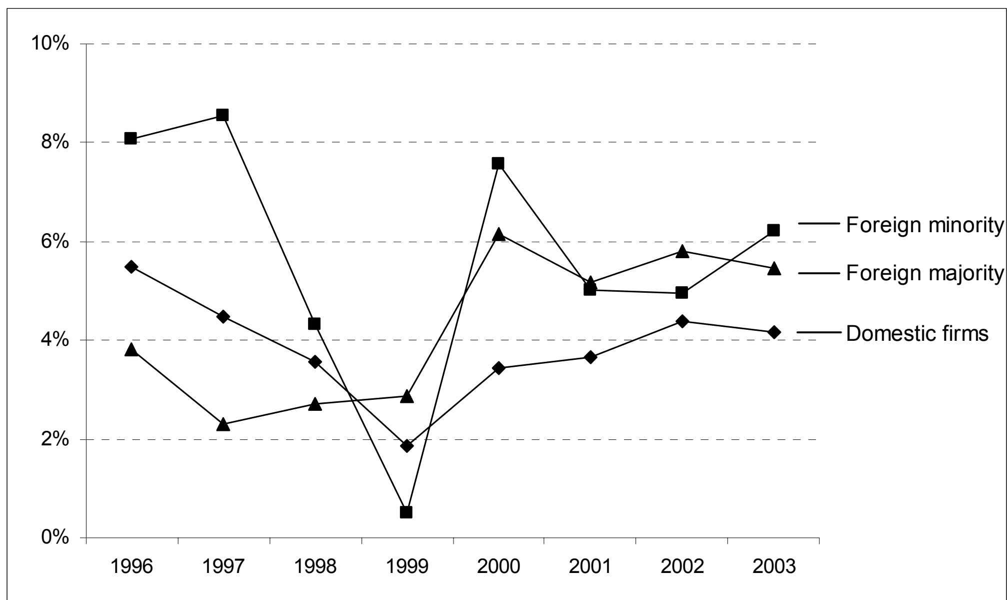


Figure 4.4, which graphs the net-profit margin, tells a quite different story. According to this figure, all three groups of firms were hit by the crisis in 1999. However, domestic and foreign minority-owned firms were much more seriously hit than foreign majority-owned firms, which as an aggregate only saw a slowdown in profit growth, rather than a steep fall in profits.

Figure 4.5 below and figure 4.6 on the following page shows the development of the total-liabilities-to-total-assets ratio and the long-term-liabilities-to-total-assets ratio respectively. These two figures show that foreign minority-owned firms have increased their leverage considerably during the time period studied. Their total-liabilities-to-total-assets ratio, in aggregate terms, increased from 29.6 percent in 1996 to 40.5 percent in 2003. The same ratio remained more or less flat at around 35 percent for domestic firms while it increased slightly from 37.5 percent in 1996 to 41.1 percent in 2003 for foreign majority owned firms. The latter were, consequently, more leveraged than domestic firms throughout the period.

Figure 4.5: Total liabilities to total assets

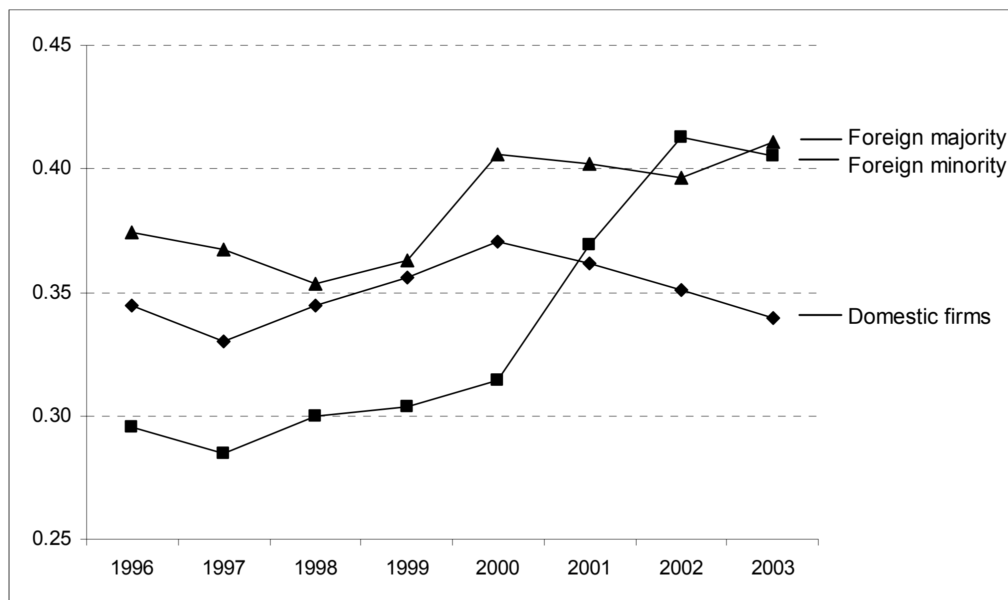
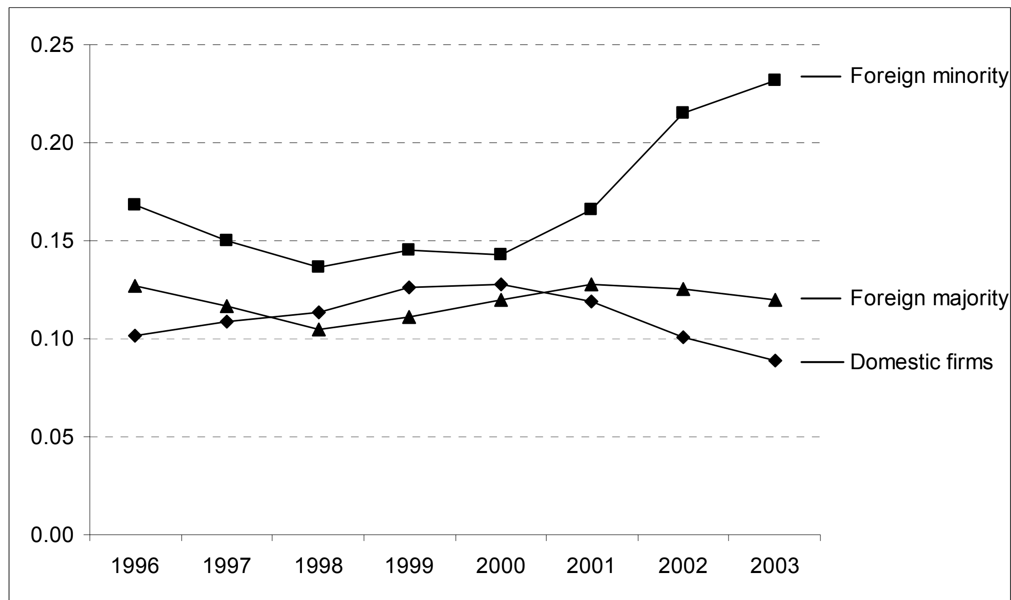


Figure 4.6: Long-term liabilities to total assets



4.2 Firms by Size

In this section we break down the dataset in the size brackets defined earlier, and we look at how the ratios have developed for firms of different sizes. In the next section we continue to investigate the three ownership categories, and how firms of different size performed in each of these.

Figure 4.7 and 4.8 shows how aggregate sales have developed for SMEs, major firms, large firms, and the largest 100 firms respectively. It is apparent from the figures, that firms of all sizes were severely hit by the crisis in 1999. Firms among the largest 100 saw their sales decline already in 1998, and this continued also during 1999, making them the hardest hit.

Figure 4.7: Aggregate sales in real terms, changes

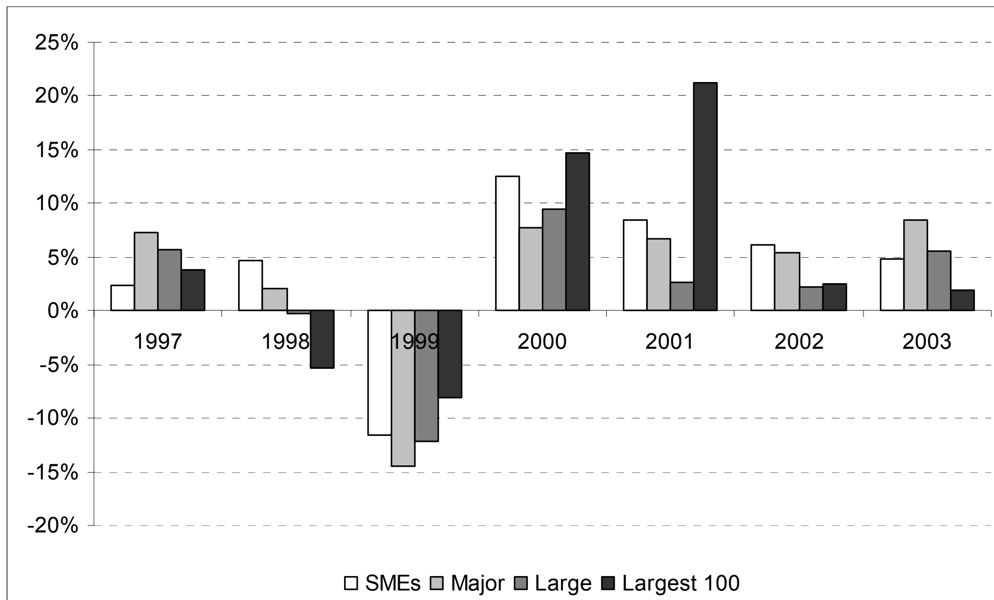
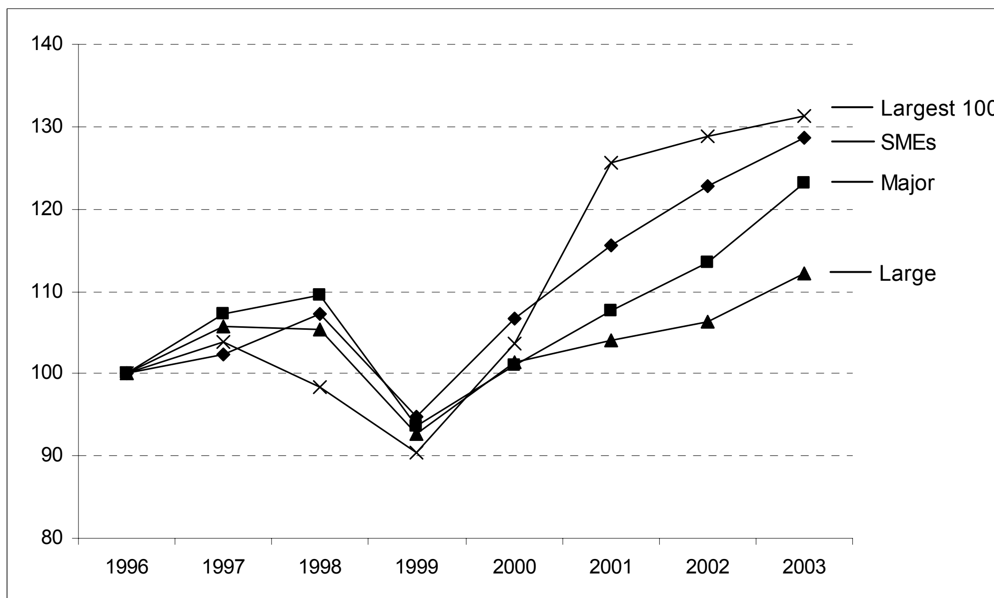


Figure 4.8: Aggregate sales in real terms, index (1996 = 100)



It is also apparent from figure 4.8, that for the whole period 1996-2003, the largest 100 firms were the ones that saw their sales grow fastest on average throughout the period. In 2003, their aggregate sales volume stood 31.3 percent above its 1996 value in real terms. These were followed by SMEs, whose sales volume stood 28.6 percent above its 1996 value. The corresponding increases for major and large companies were 23.1 percent and 12.3 percent respectively.

The development of the operations margin and the net-profit margin is shown in figure 4.9 and 4.10 on the following page. It is obvious from the figures, that none of the size brackets saw their operations margin severely affected by the crisis, while their net-profit margins were visibly influenced. It is also apparent from figure 4.10, that net profits fell sharply already in 1998 for firms in the largest-100 category, which accompanies the fall in aggregate sales these firms experienced that year, as shown by figure 4.7 earlier.

Profitability margins are not directly comparable between firms of different sectors, which will be discussed in the next chapter. It is, therefore, not possible to say whether firms belonging to the largest 100 are doing better than the rest throughout the period just because they have higher profitability margins, as apparent in figure 4.9 and 4.10. Here we are, instead, studying the development over time of the profitability margins. The sharp increase in operations margin for the largest 100 firms illustrated in figure 4.9 is, on the other hand, interesting. However, whether this indicates that these firms have become more efficient in their operations, or whether it depends on other factors needs further investigation.

Figure 4.9: Operations margins

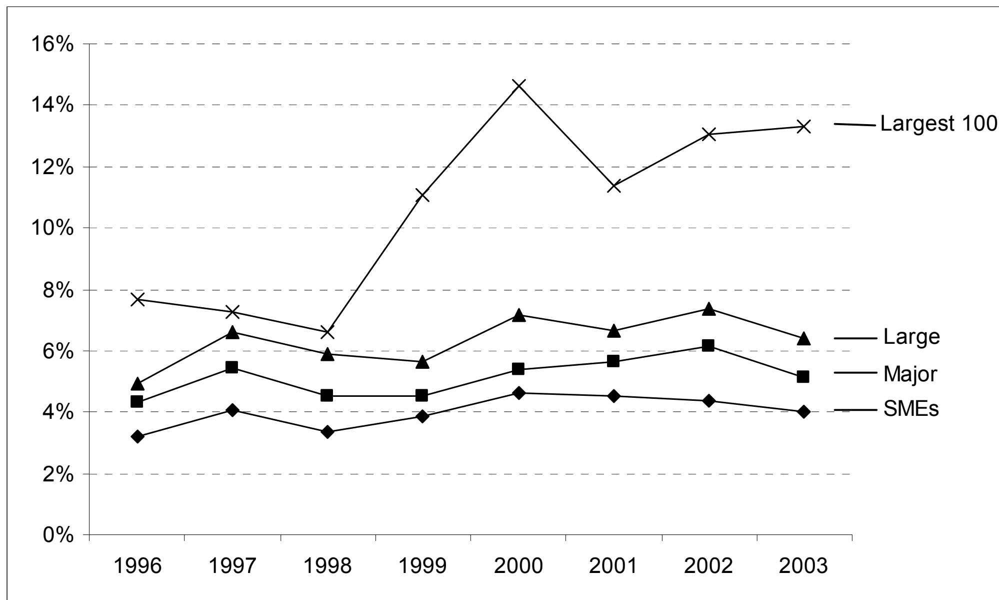


Figure 4.10: Net-profit margins

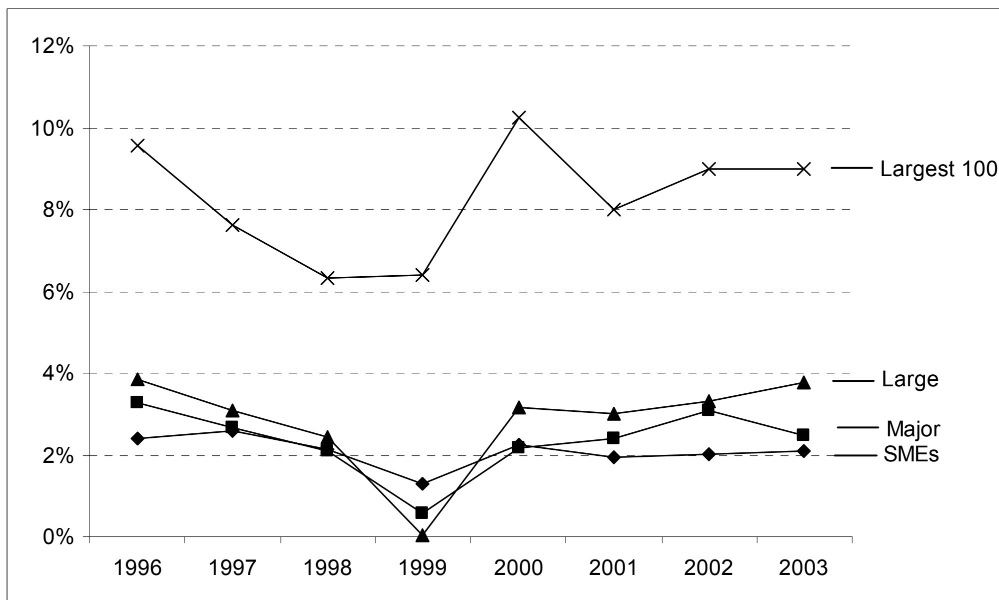


Figure 4.11: Total liabilities to total assets

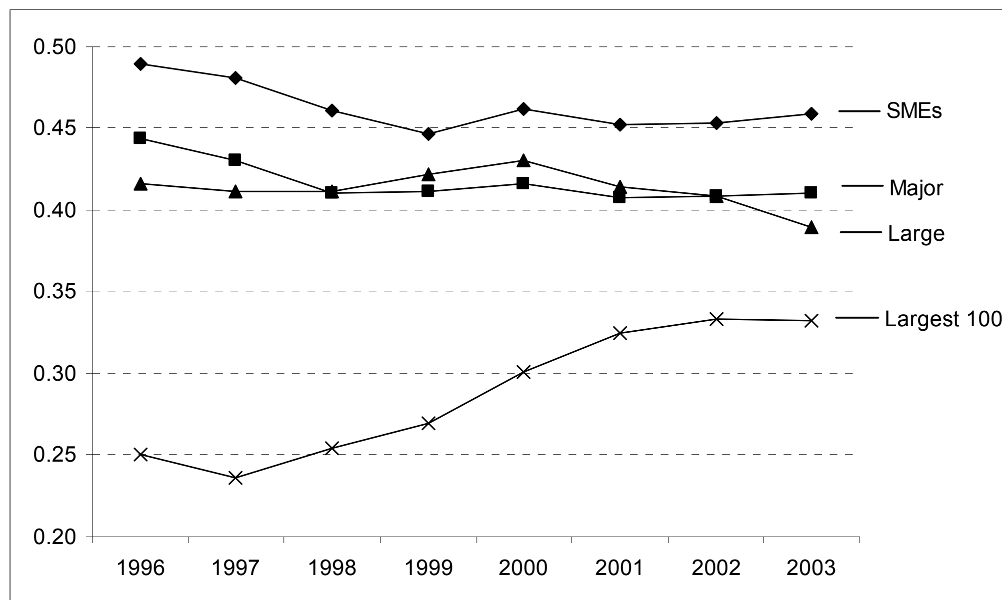
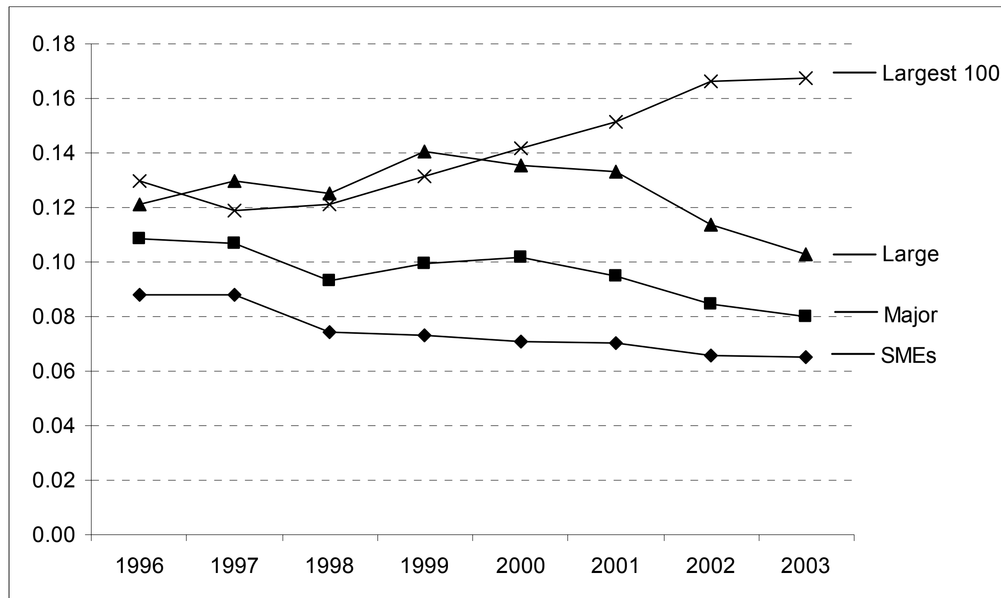


Figure 4.11 above and figure 4.12 on the following page shows total liabilities to total assets and long-term liabilities to total assets respectively. As discussed earlier, these two ratios are two possible definitions of leverage. Two interesting things are apparent in these figures: First, according to both these definitions of leverage, the leverage, in aggregate terms, of the largest 100 firms has increased significantly during the period of time studied, while the leverage of the other three size categories has shown a tendency to decrease. Second, the largest 100 firms have a lower total-assets-to-total-liabilities ratio than the others, standing at 0.33 in 2003. These firms are followed by major and large firms, with a corresponding value of around 0.40, and SMEs at 0.46. For the long-term-assets-to-total-liabilities ratio, the situation is exactly the opposite. The largest 100 firms had the highest ratio at 0.17, followed by large firms, major firms, and SMEs at 0.10, 0.08 and 0.07 respectively. This suggests that larger firms rely more on long-term debt to finance their operations, while smaller firms rely more on short-term debt. This can be explained by the fact that small firms only tend to have limited access to long-term debt in the form of bank loans at reasonable interest rates.

Figure 4.12: Long-term liabilities to total assets



4.3 Firms by Size and Ownership

We now continue by dividing the firms in each size bracket in the three categories domestic firms, foreign minority-owned firms and foreign majority-owned firms. We will study the development of aggregate sales of each of these sub-samples.[18] Figure 4.14 to 4.16 illustrates the development of the aggregate sales for SMEs, major firms, large firms, and the largest 100 firms respectively.

It is obvious from the figures that, with the exception of foreign-majority owned SMEs, all categories of firms seem to have been hit by the crisis of 1999, independent of size or ownership category.

[18] During the analysis, the developments of the profitability margins were also studied. However, this did not reveal anything new, and there were no clear differences in the development of the three ownership categories in any of the size-brackets. These results have, therefore, not been reported here.

Figure 4.13: Aggregate sales in real terms, SMEs, index (1996 = 100)

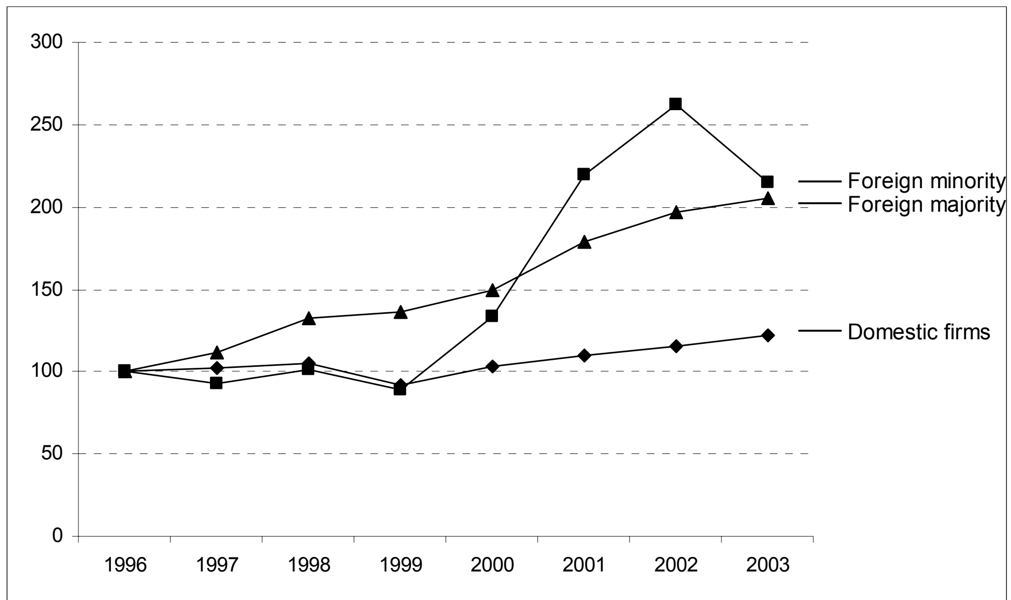


Figure 4.14: Aggregate sales in real terms, major firms, index (1996 = 100)

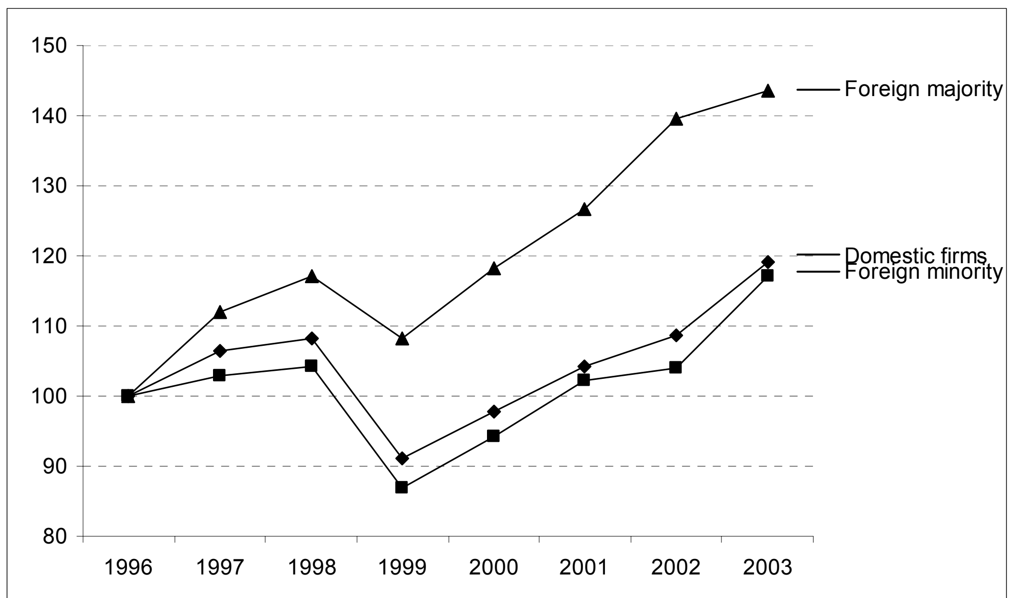


Figure 4.15: Aggregate sales in real terms, large firms, index (1996 = 100)

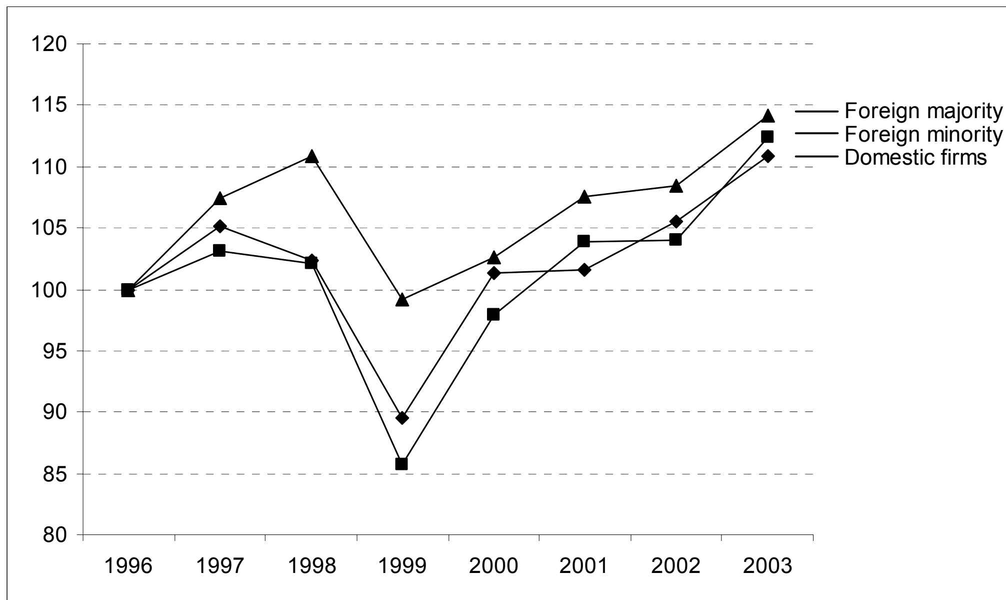
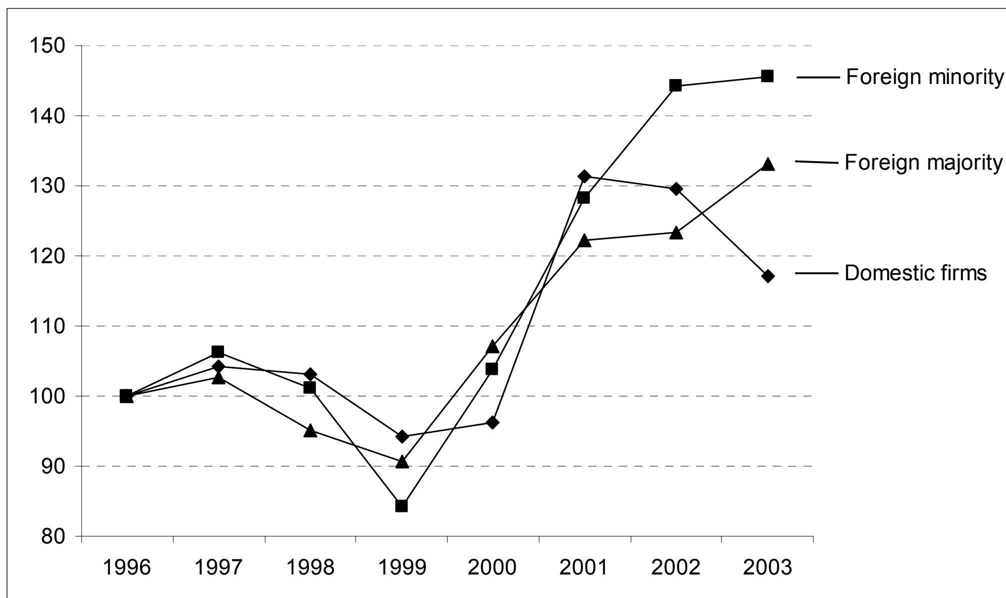


Figure 4.16: Aggregate sales in real terms, largest 100 firms, index (1996 = 100)



Another interesting finding is that foreign-majority owned firms have outperformed domestic firms throughout all size brackets. This trend is at its most obvious among SMEs, where real aggregate sales at domestic SMEs stood 22.2 percent above its 1996 value in 2003, while aggregate sales at foreign-majority owned firms was some 105.1 percent above its 2003 value.

One explanation to the difference in development of sales between domestic and foreign-majority owned firms, and not only SMEs, might be that some foreign firms are growing because their mother company have an ambitious expansion plan for the country, while most domestic firms are growing organically, as discussed earlier in section 4.1. The faster sales growth of foreign majority-owned firms does, consequently, not necessarily imply that these have done better than domestic firms.

A further point, that should be emphasised, is that for foreign minority-owned firms, particularly in the case of SMEs and firms among the largest 100, the samples are too small to draw any conclusive results. There are only 17 foreign minority-owned SMEs in the dataset, and only 12 of the firms in the Largest-100 bracket are foreign minority owned.

5 Firms Analysed by Sector

In this chapter, we analyse the firms in our dataset by sector. We will select the 12 sectors that we find the most important, which is discussed in section 5.1. Section 5.2 continues by looking at some trends and developments in these sectors over time. We will not specifically study the developments of foreign and domestic firms in different sectors, but we will discuss this in general terms in section 5.3.

5.1 The Firms Divided into Sectors

The database from the Superintendencia de Sociedades divides the firms into 60 different sectors representing different business segments. These are, in fact, numbered 1 to 66 with some numbers missing. Table 5.1 shows a complete list of these sectors.

Rowland (2005a) analysed the different sectors of the economy and their relative importance. Figure 5.1 shows the 20 most important sectors by aggregate assets. It is apparent from the figure that investment activities is the most dominant sector, with aggregate assets of some COP 41,103 trillion in 2003.[19] This sector includes holding companies as well as conglomerates. The sector is by no means homogenous, and the companies in the sector can be assumed to behave very different from one and another depending on their business activities. After investment activities follow wholesale, food industry, drinks, and telecommunications, in order of aggregate assets.

[19] The analysis in Rowland (2005a) is based on a 2003 dataset with some 7,001 firms.

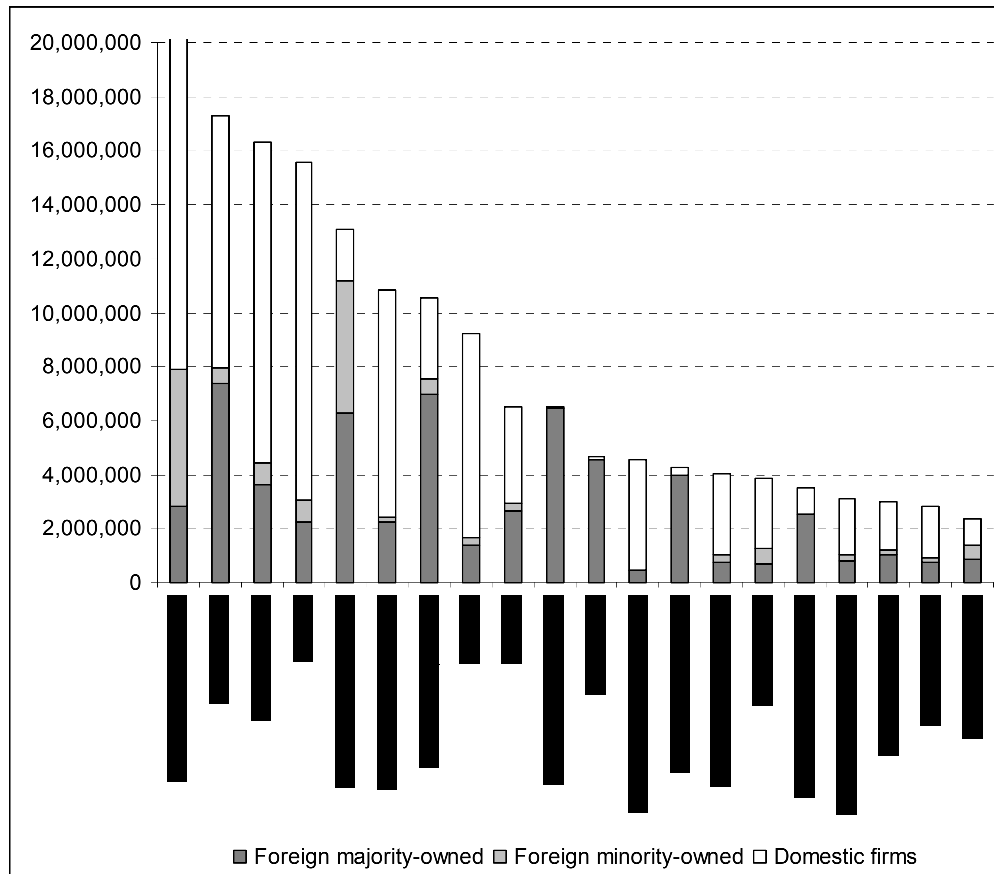
Table 5.1: The different sectors

1	Agriculture with export predominance	31	Accommodation
2	Coal and derivatives	32	Cargo transportation by land
3	Oil and gas extraction	33	Mail delivery
4	Extraction of other minerals	**34**	**Investment activities**
5	**Food industry**	**35**	**Real estate**
6	**Drinks**	37	Education
7	Tobacco	38	Health and social services
8	Textiles and fabrics	39	Other community services
9	Clothes	41	Sales of fuels and lubricants
10	Leather	42	Other agricultural sectors
11	Shoes and footwear	43	Cattle farming
12	Wood products	45	Forestry and related activities
13	**Paper, carton and derivatives**	46	Manufacturing of other products
14	Editorial and printing (excl publication)	47	Publication of periodicals
15	**Chemical products**	48	Manufacturing of machines and equipment
16	Rubber products	49	Transportation by sea
17	**Plastics products**	50	Transportation by air
18	Glass and glass products	52	Other passenger transportation systems
19	Mineral products (excl metals)	53	Pipelines
20	**Cement and concrete products**	54	Storage
21	**Steel and basic metals**	**55**	**Telecommunications and networks**
22	Metal-mechanical products	56	Radio and television
23	Vehicle manufacturing	59	Fishing
24	Manufacturing of other means of transportation	60	Information systems
25	Other manufacturing industries	61	Other business activities
26	Electricity generation	62	Civil construction
27	Residential building construction	63	Construction preparation
28	Vehicle sales	64	Oil and gas derivatives
29	**Wholesale**	65	Food retail
30	**Retail**	66	Tourism activities

Note: Sectors chosen for the purpose of the study marked in bold.

Source: Superintendencia de Sociedades.

Figure 5.1: The 20 most important sectors in terms of aggregate assets (COP million)



Note: Investment activities have total assets of COP 41,103 trillion, of which 6.9% belongs to foreign majority-owned firms and 12.4% to foreign minority-owned firms. The graph is based on a 2003 dataset with 7,001 firms.

Source: Rowland (2005a).

If we study foreign firms by sector, we will see that some sectors are dominated by foreign firms, while others are dominated by domestic firms. Of the sectors illustrated in figure 5.1, investment activities, drinks, retail, and residential construction are dominated by domestic firms, while telecommunications, oil and gas extraction, pipelines, and coal and derivatives are dominated by foreign firms. It is also apparent from the figure, that while investment in some sectors have taken the form of acquisitions or fully-owned green-field investments (i.e. foreign majority ownership), in others joint ventures (i.e. foreign minority ownership) has been the preferred model. The sector where joint

ventures have been the norm is investment activities. Other sectors with a large proportion of joint ventures include telecommunications, metal products, and real estate.

5.2 Developments and Trends: Selected Sectors

Based on the analysis in Rowland (2005a), we have chosen the 12 sectors we find most important. These sectors have been highlighted in table 5.1. The sectors have been chosen to exclude the sectors oil and gas exploration, pipelines, and coal and derivatives, since these sectors are related to the petroleum and basic minerals industry and are expected to behave very differently from the rest of the sectors. These three sectors are also completely dominated by foreign firms, as shown in figure 5.1 earlier.

Figure 5.2 and 5.3 shows the development of aggregate sales for the firms in each of the 12 sectors. Most of the sectors were hit by the 1999 crisis. One exception seems to have been the investment activities, which saw sales increase sharply in 1999, to fall back in 2000. The steel industry saw sales fall in 1999, but had its crisis year in 2000. Real estate is another sector that saw its worst crisis in 2000. This sector has not recovered since then.

We have not sought answers for the different developments of different sectors. This is outside the scope of this particular research, but is an interesting topic for future research.

Figure 5.2: Aggregate sales in real terms, selected sectors, index (1996 = 100)

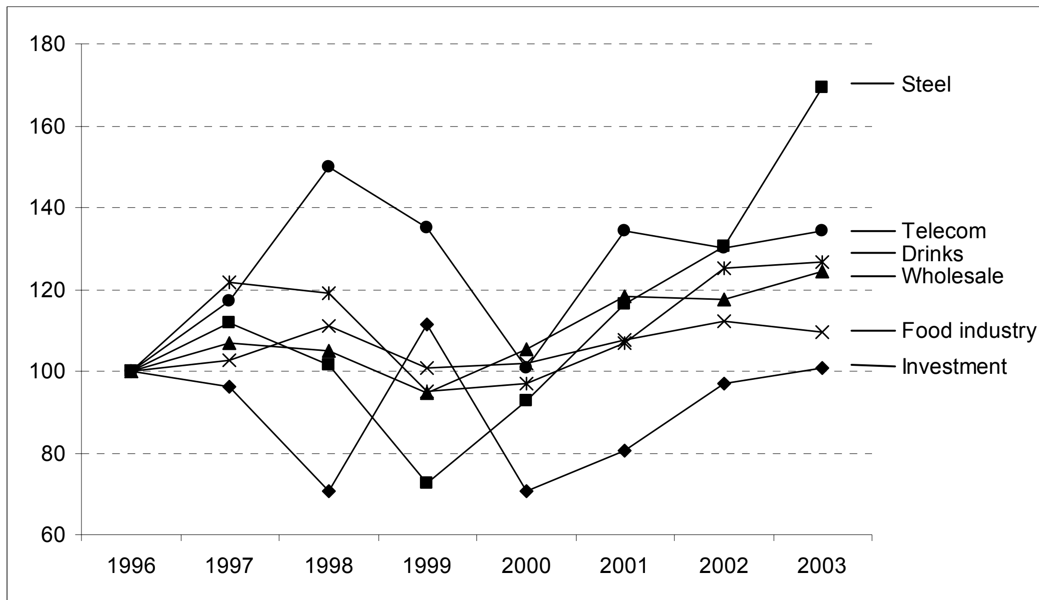


Figure 5.3: Aggregate sales in real terms, selected sectors, index (1996 = 100)

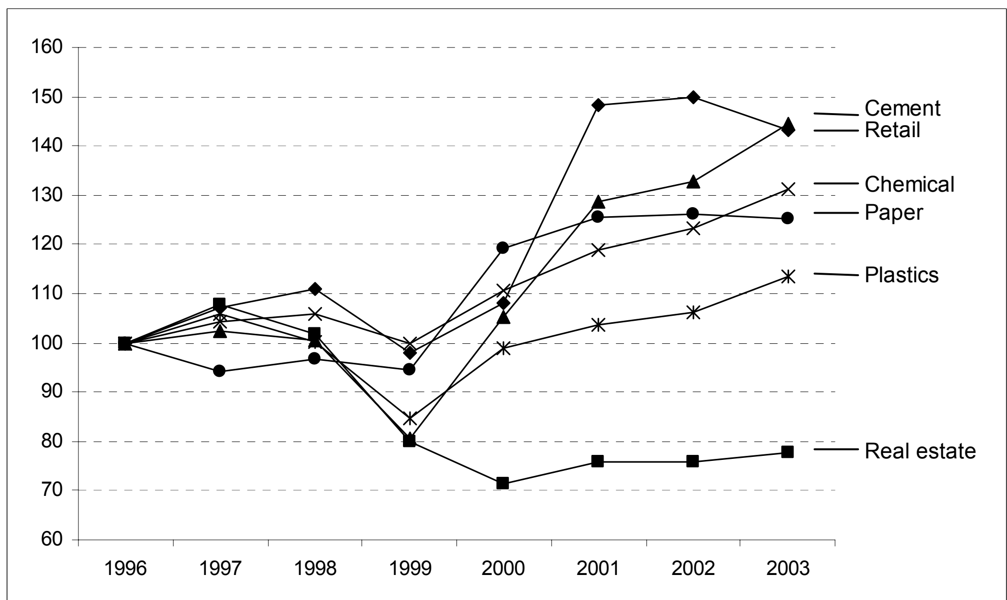


Figure 5.4 and 5.5 graphs the aggregate operating margins of the firms in the 12 sectors, and figure 5.6 and 5.7 graphs the aggregate net-profit margins. It is apparent from figure 5.4 and 5.5 that few industries saw their operating margins seriously hit by the 1999 crisis. Plastics products, the steel industry, and possibly also the paper industry did, nevertheless, see sharp falls in their operating margin that year.

Net-profit margins, as graphed by figure 5.6 and 5.7 shows a different story. Most industries saw a sharp fall in net-profit margins in 1999. A rare exception is investment activities, which actually saw a sharp increase in net profits that year. Again, to look for an explanation to this lies outside the scope of this particular study, but is left for future research. One quite interesting observation is that the food industry as well as the drinks industry did not see any sharp falls in profit margins during 1999. These industries seem to be quite immune to crises like this. One explanation might be that basic food and drink products are the last thing people cut in a crisis. Luxury food products should, on the other hand, behave very differently.

The sectors most seriously affected by the crisis seem to have been telecommunications, steel, plastics products, and paper, which all made aggregate losses in 1999. Telecommunications, and steel were actually loss making throughout most of the period studied. Wholesale also saw its aggregate profits dip into negative territory in 1999. One important point is that these are all aggregate values. Some firms within a sector were certainly doing much worse than others. Another point that should be emphasised is that we have not included firms that are in financial distress in our sample,[20] so the firms we are looking at here are the relatively successful ones. In reality the situation was, consequently, worse than illustrated by these graphs.

Table A.1 in the appendix presents a selection of indicators for the complete set of sectors.

[20] Firms in distress, i.e. firms under *concordato*, Law 550, and firms in liquidation are excluded from our sample, as discussed earlier.

Figure 5.4: Operating margins, selected sectors

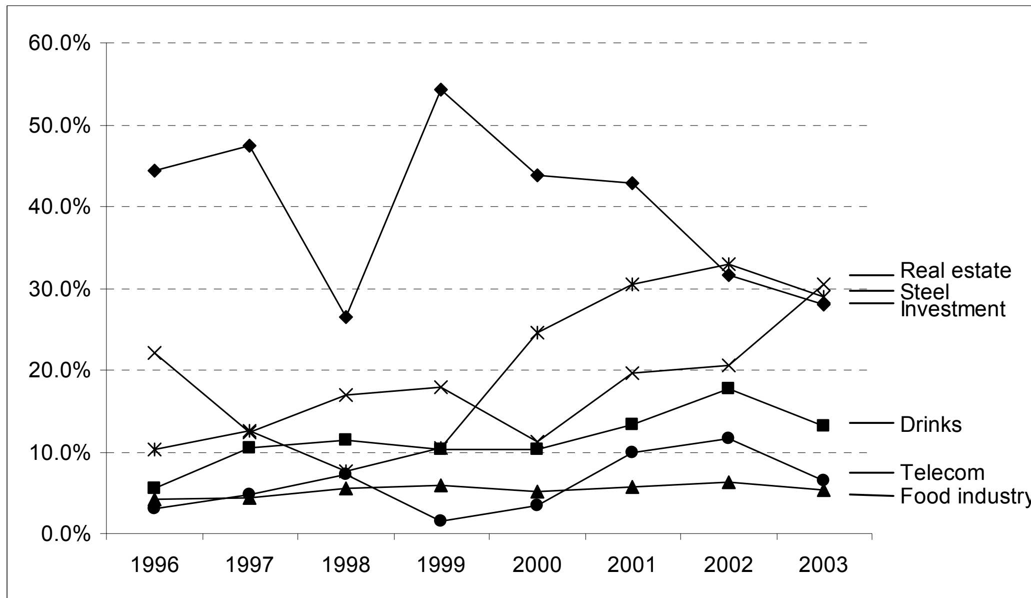


Figure 5.5: Operating margins, selected sectors

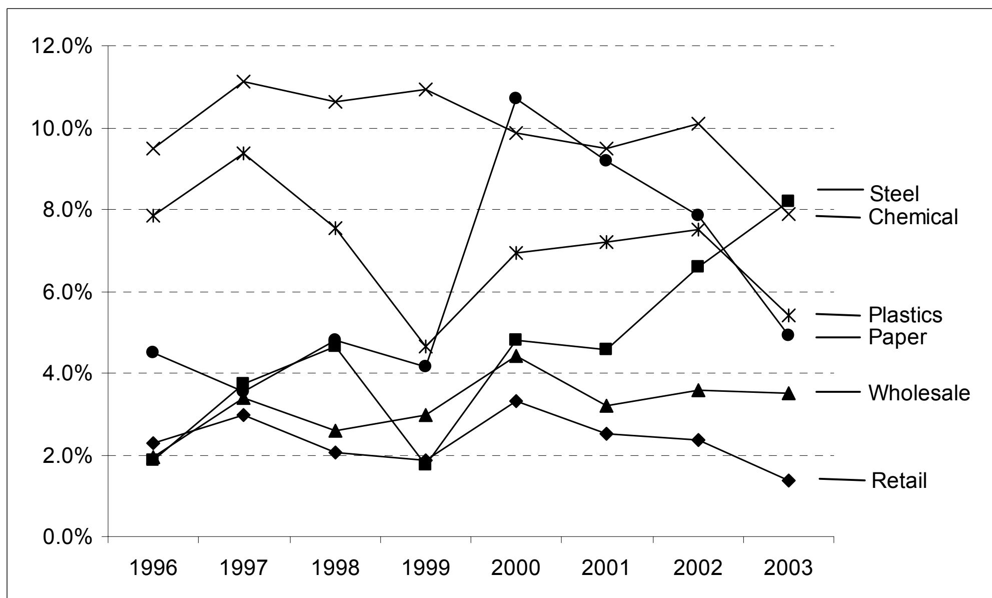


Figure 5.6: Net-profit margins, selected sectors

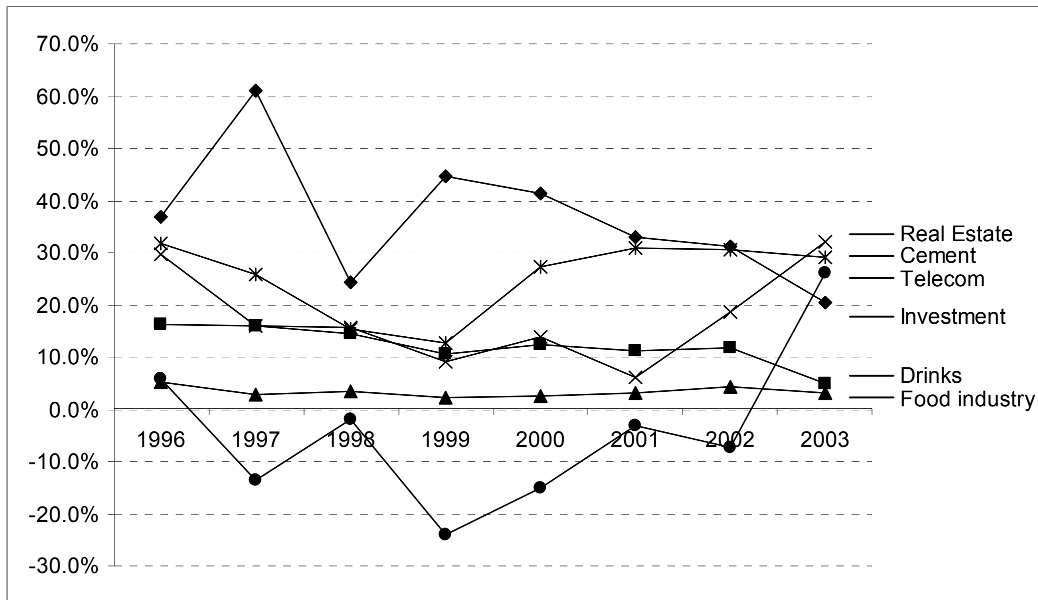
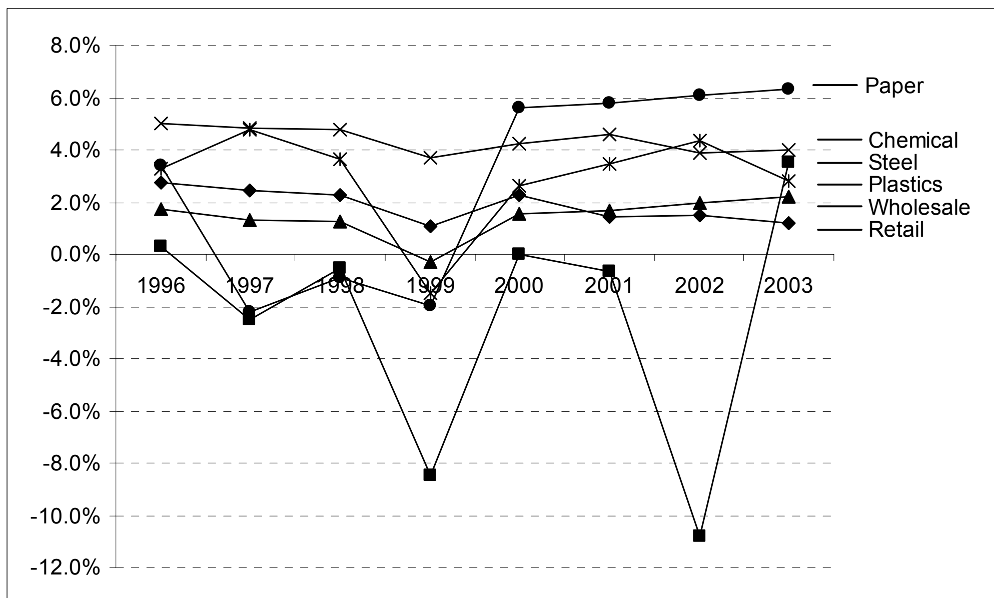


Figure 5.7: Net-profit margins, selected sectors



5.3 The Problems of Comparing Foreign and Domestic Firms

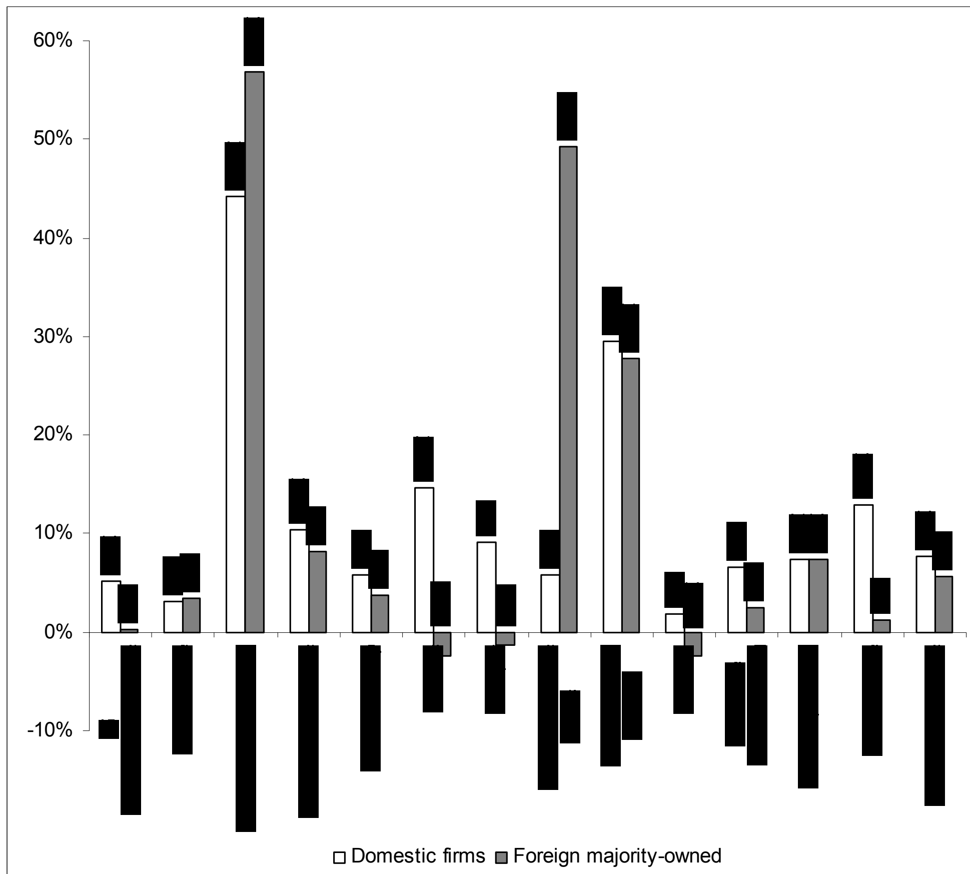
We will in the particular study presented in this paper not look into the development of foreign and domestic firms in specific sectors. This is an interesting area for future research, and it is a necessity to fully understand the behaviour of and difference between domestic and foreign firms in the country.

We will, however, briefly discuss the potential problem that might arise when comparing firms from different sectors, which we are, indeed, doing in this study. Rowland (2005a) concluded that particular caution has to be taken when carrying out such comparisons, since parameters such as capital intensity, aggregate sales to total assets and profitability margins vary considerably over different sectors.

Figure 5.8 shows the aggregate operations margins in 2003 for domestic and foreign majority-owned firms for different sectors. The figure illustrates some of the difficulties faced by researchers who are studying the corporate sector. It is obvious from the figure that operations margins vary significantly between different sectors. This was also shown by figure 5.4 and 5.5 in the previous section. Another problem is that foreign-majority owned firms, according to figure 5.8, have a much higher operations margin than domestic firms in some sectors, while in other sectors the situation is the opposite. This applies also to other ratios, as discussed in Rowland (2005a).

The problem of comparing firms of different sectors is, however, much less serious in the research presented here than in that presented in Rowland (2005a). While Rowland (2005a) directly compared the levels of different ratios, we are here looking at the developments of these ratios over time. We are, consequently, comparing the level of a ratio for a certain group of firms with its historical value rather than with its value for a different group of firms. What we are then analysing is differences in the development over time of different groups of firms.

Figure 5.8: Operations margin for firms in different sectors, 2003



Note: Based on a 2003 dataset with 7,001 firms.

Source: Rowland (2005a).

6 Conclusions

This is the second of three papers investigating the differences between foreign and domestic firms in Colombia.[21] These three studies have been carried out by analysing the balance sheets and income statements of Colombian firms, using a database obtained from the Superintendencia de Sociedades. The objective of these studies has been to build an understanding of the differences in behaviour between foreign and domestic firms in the country. The scope for research in the area is potentially very extensive, and the project has never intended to cover the area completely. However, it aims to act as a foundation for future research in the area.

In this second paper, we have looked at differences in development between foreign and domestic firms between 1996 and 2003. We have only studied those firms that were present throughout the whole period, which resulted in a sample of 3,452 firms. The firms were divided into four size brackets, as well as into three ownership categories, i.e. foreign majority-owned, foreign minority-owned and domestic firms.

When the development of foreign majority-owned firms was compared to that of domestic firms, it was shown that, in terms of aggregate sales, foreign firms have grown faster than their domestic counterparts. Profit developments have also been more positive for foreign firms than for domestic firms, both in terms of operating margin and net-profit margin. The leverage of foreign firms, measured as total liabilities to total assets, has, furthermore, increased during the period, while that of domestic firms have remained more or less flat. Both foreign majority-owned and domestic firms were hit by the 1999 crisis, even if the latter were much worse affected than the former. Foreign minority-owned firms, on the other hand, were the ones that were worst hit by the crisis, both in terms of sales and in terms of net profits. These firms, furthermore, increased their leverage much more during the period than the other firms.

[21] The first part of the study was documented in Rowland(2005a) and the third part in Rowland (2005c).

The study also looks at the development of firms of different sectors over time, and it is shown that the different sectors have, indeed, developed differently, both in terms of sales and in terms of profitability. In terms of net profits, telecommunications, and steel has been the two sectors with the worst performance during the period. Both these sectors were, moreover, badly hit by the 1999 crisis. On the contrary, others sectors showing an aggregate net loss in 1999 include paper, plastics products, and wholesale. Sectors like retail, chemical products, food, drinks, cement and real estate were, as an aggregate, profitable throughout the period.

References

Rowland, Peter (2005a), “Foreign and Domestic Firms in Colombia: How Do They Differ?”, Borradores de Economía, Banco de la República, Bogotá.

Rowland, Peter (2005b), “A Regional Study of the Colombian Corporate Sector: Differences, Trends and Developments in Different Cities”, Borradores de Economía, Banco de la República, Bogotá.

Rowland, Peter (2005c), “Foreign and Domestic Firms in Colombia: Exports, Imports, and External Debt”, Borradores de Economía, Banco de la República, Bogotá.

Appendix

Table A.1a: Firms by sector, 5-year averages of selected indicators, 1999-2003

The table is presented on the following pages.

Table A.1a: Firms by sector, 5-year averages of selected indicators, 1999-2003

Sector	No of firms in sample	Total Assets (COP mn)	Leverage	Sales (COP mn)	Sales CAGR	Gross Margin	Operations Margin	Net Profit Margin
1 Agriculture for exports	211	2,827,249	0.34	1,865,162	2.3%	19.4%	3.4%	2.2%
2 Coal and derivatives	8	2,565,055	0.31	1,923,695	21.3%	19.4%	13.6%	8.2%
3 Oil and gas extraction	16	6,278,803	0.34	3,913,530	10.8%	53.3%	42.4%	26.0%
4 Extraction of other minerals	14	215,022	0.30	129,454	3.8%	43.3%	24.6%	17.4%
5 Food industry	202	12,380,773	0.34	12,753,907	2.2%	22.7%	5.6%	3.1%
6 Drinks	32	13,305,038	0.40	4,329,171	7.5%	48.2%	13.2%	9.7%
7 Tobacco	1	553,586	0.33	203,200	7.2%	46.7%	8.1%	10.4%
8 Textiles and fabrics	61	1,912,265	0.34	1,488,253	6.0%	25.2%	8.1%	2.2%
9 Clothes	103	1,616,592	0.47	1,876,064	10.3%	27.1%	6.7%	3.0%
10 Leather	10	95,402	0.45	96,869	8.6%	29.7%	6.7%	1.6%
11 Shoes and footwear	11	210,993	0.45	197,484	3.9%	30.6%	5.8%	-0.3%
12 Wood products	12	63,239	0.36	48,652	6.8%	25.1%	3.6%	1.8%
13 Paper	26	5,389,201	0.34	2,843,198	7.3%	26.9%	7.5%	4.7%
14 Editorial and printing	81	1,716,733	0.48	1,396,308	1.5%	32.4%	4.7%	2.5%
15 Chemical products	153	8,320,831	0.42	8,860,204	7.1%	36.8%	9.6%	4.0%
16 Rubber products	12	763,774	0.42	686,172	5.5%	21.8%	6.8%	-1.2%
17 Plastics products	97	2,030,862	0.38	1,716,526	7.5%	23.9%	6.4%	2.5%
18 Glass and glass products	8	1,066,388	0.35	591,364	10.0%	30.7%	9.2%	6.1%
19 Mineral products	20	977,250	0.39	634,262	26.7%	37.6%	7.2%	1.7%
20 Cement and concrete	26	8,615,313	0.22	2,076,740	15.7%	44.8%	26.9%	27.5%
21 Steel and basic metals	23	812,887	0.44	705,281	23.5%	20.0%	5.7%	-2.7%
22 Metal-mechanical products	67	1,899,698	0.42	1,577,449	8.5%	21.8%	7.3%	1.1%
23 Vehicle manufacturing	48	1,623,140	0.49	2,762,817	18.3%	13.4%	3.8%	1.1%
24 Manufacturing of OMT	7	391,317	0.42	406,597	4.0%	21.9%	6.6%	2.5%
25 Other manufacturing	88	1,436,757	0.43	1,848,200	2.6%	27.9%	6.9%	2.7%

Note: OMT stands for other means of transportation. Leverage is defined as total liabilities to total assets. CAGR stands for compound annual growth rate.

Table A.1b: Firms by sector, 5-year averages of selected indicators, 1999-2003 (continued…)

Sector	No of firms in sample	Total Assets (COP mn)	Leverage	Sales (COP mn)	Sales CAGR	Gross Margin	Operations Margin	Net Profit Margin
26 Electricity generation	3	18,699	0.45	21,251	0.1%	17.6%	2.7%	2.9%
27 Recidential construction	113	1,908,147	0.54	1,011,459	8.4%	33.3%	5.7%	1.4%
28 Vehicle sales	158	1,764,067	0.53	2,923,006	14.1%	19.8%	3.0%	0.9%
29 Wholesale	569	11,876,799	0.54	20,027,737	7.1%	19.9%	3.5%	1.5%
30 Retail	213	5,472,639	0.45	7,881,531	9.9%	22.5%	2.3%	1.5%
31 Accommodation	40	608,625	0.26	245,127	4.5%	69.8%	2.3%	-2.7%
32 Cargo transportation by land	13	153,185	0.53	188,772	4.7%	60.1%	7.6%	2.4%
33 Mail delivery	1	7,456	0.77	8,611	9.2%	100.0%	9.9%	0.6%
34 Investment activities	136	15,099,691	0.15	966,897	-2.5%	85.5%	40.3%	33.9%
35 Real estate	164	1,626,467	0.19	184,205	-0.8%	90.9%	19.9%	11.4%
37 Education	4	328,268	0.25	99,244	5.7%	86.8%	8.1%	3.7%
38 Health and social services	13	421,638	0.53	900,938	11.1%	24.4%	2.9%	1.9%
39 Other community services	36	626,130	0.33	353,722	7.5%	55.3%	7.3%	5.3%
41 Sales of fuels and lubricants	17	92,287	0.36	129,116	3.6%	20.4%	0.4%	1.1%
42 Other agricultural sectors	22	231,921	0.26	137,905	3.8%	27.4%	5.8%	3.7%
43 Cattle farming	90	1,060,009	0.32	942,050	3.2%	19.9%	2.0%	0.9%
45 Forestry	12	641,921	0.07	46,765	1.9%	38.8%	26.5%	24.4%
46 Other products	23	436,473	0.54	445,339	5.9%	21.9%	8.5%	3.2%
47 Publication of periodicals	13	382,280	0.49	236,190	-3.0%	44.2%	-2.6%	-9.6%
48 Machines and equipment	58	1,315,751	0.41	1,229,469	6.3%	28.6%	7.6%	2.7%
49 Transportation by sea	2	6,345	0.22	9,310	2.9%	48.3%	8.5%	6.0%
50 Transportation by air	3	55,609	0.61	124,266	10.6%	40.1%	3.0%	3.7%
52 Other passenger transport.	3	13,519	0.49	23,188	24.2%	44.5%	4.9%	1.6%
53 Pipelines	1	411,246	0.06	67,191	-26.1%	-88.1%	-95.8%	-112.2%
54 Storage	36	214,133	0.52	139,880	8.8%	77.6%	2.2%	2.8%

Note: Leverage is defined as total liabilities to total assets. CAGR stands for compound annual growth rate.

Table A.1c: Firms by sector, 5-year averages of selected indicators, 1999-2003 (continued…)

Sector	No of firms in sample	Total Assets (COP mn)	Leverage	Sales (COP mn)	Sales CAGR	Gross Margin	Operations Margin	Net Profit Margin
55 Telecommunications	22	2,646,910	0.67	1,003,327	-0.1%	51.4%	6.7%	-3.8%
56 Radio and television	27	1,412,222	0.45	529,736	0.7%	68.4%	8.7%	0.6%
59 Fishing	7	204,112	0.43	142,001	10.6%	23.1%	8.8%	4.2%
60 Information systems	10	91,373	0.43	102,852	1.9%	55.3%	-17.1%	-23.6%
61 Other business activities	126	1,837,535	0.49	1,845,916	1.9%	45.5%	4.1%	0.4%
62 Civil construction	67	1,115,325	0.48	778,184	6.3%	25.2%	4.0%	3.0%
63 Construction preparation	44	404,810	0.66	214,171	3.7%	20.1%	-0.8%	-2.7%
64 Oil and gas derivatives	32	1,344,946	0.29	1,456,394	6.6%	40.0%	7.9%	4.3%
65 Food retail	21	204,507	0.40	283,634	0.5%	54.2%	1.2%	-0.3%
66 Tourism activities	16	75,146	0.65	68,295	6.9%	95.1%	1.1%	-0.4%

Note: Leverage is defined as total liabilities to total assets. CAGR stands for compound annual growth rate.