

FINANCE AND DEVELOPMENT RESEARCH PROGRAMME

WORKING PAPER SERIES

Paper No 43

CORPORATE FINANCIAL STRUCTURES IN INDIA

Christopher Green
Economics Department
Loughborough University,
Victor Murinde
Birmingham Business School
Birmingham University,
and Joy Suppakitjarak
University of Westminster

May 2002

ISBN: 1 904143 20 2

Series Editor: Colin Kirkpatrick

Further details: Maggie Baldwin, Marketing and Publicity Administrator

Published by: Institute for Development Policy and Management, University of Manchester,
Crawford House, Precinct Centre, Oxford Road, MANCHESTER M13 9GH

Tel: +44-161 275 2804/2800 Fax: +44-161 273 8829

Email: idpm@man.ac.uk Web: <http://www.man.ac.uk/idpm/>

Corporate Financial Structures in India

by

Christopher J. Green, Victor Murinde and Joy Suppakitjarak

Green: Department of Economics, Loughborough University,
Murinde: Birmingham Business School, The University of Birmingham; and Institute for
Development Policy and Management, The University of Manchester.
Suppakitjarak: University of Westminster

April 2002

CORPORATE FINANCIAL STRUCTURES IN INDIA*

by

Christopher J. Green, Victor Murinde and Joy Suppakitjarak

Green: Department of Economics, Loughborough University,
Murinde: Birmingham Business School, The University of Birmingham; and Institute for
Development Policy and Management, The University of Manchester.
Suppakitjarak: University of Westminster

JEL Classification: G30, G32, O16

Keywords: India, corporate finance, financial structure

ABSTRACT

In this paper, we document the financial structure of a large sample of Indian companies using a unique new company accounts dataset. The data form a panel consisting of the published accounts of more than 1000 Indian companies that reported every year during the period 1989-1999. They consist of non-financial companies; and, in a new departure within the literature, they include quoted and unquoted companies. We use this dataset to document and characterise developments in company financing in India over the last decade. We compare the sources-uses approach to analysing company financial structures with the asset and liability approach. We use both approaches to compare the financial structures of companies: over time; as between quoted and unquoted companies; and as between companies which belong to a business group and those which do not. Finally, we compare our results to those obtained previously for India and for the major industrial countries in recent studies. Overall, the paper provides a wealth of new information about corporate financial structures in the Indian economy.

correspondence to:

Christopher J. Green: Department of Economics, Loughborough University, Loughborough, Leicestershire, LE11 3TU, United Kingdom

Tel: +44 (0)1509 222711; *Fax:* +44 (0)1509 223910; *E-mail:* C.J.Green@lboro.ac.uk

* Earlier drafts of this paper were presented at The International Conference on Finance and Development, Evidence and Policy Issues, held in Nairobi on July 10-11, 2001, and funded by The Kenya Institute for Public Policy Research (KIPPR) and The Department for International Development (DFID), and at The International Conference on Finance for Growth and Poverty Reduction: Experience and Policy held at Manchester University on April 10-12, 2002, and funded by DFID. We thank participants in these conferences for their useful comments. The research underlying this paper forms part of a general research programme on finance and development funded by DFID. We thank DFID for their financial support. The interpretations and conclusions expressed in this paper are entirely our own and should not be attributed in any manner to DFID.

1. Introduction

In the last two decades, there has been an upsurge in research on company finance, particularly aimed at understanding how companies finance their activities and why they finance their activities in these specific ways. Company financing decisions involve a wide range of policy issues. At the macro level, they have implications for capital market development, interest rate and security price determination, and regulation. At the micro level, they have implications for capital structure, corporate governance, and company development. Much of the research literature has been concerned with the major OECD countries. A recent example is Corbett and Jenkinson (1997) who studied the financing of investment in four major industrial countries. However, there is a small but growing literature concerned with companies elsewhere: in newly industrializing countries (NICs), developing countries (DCs), and the transition economies of central and eastern Europe. The seminal study of company financing in NICs and DCs is that of Singh and Hamid (1992); The work of Cornelli, Portes and Schaffer (1996) exemplifies ongoing research concerned with the transition economies. In the last decade, most countries have shifted their development strategies towards a greater reliance on private companies and on the use of organized capital markets to finance these companies. This underlines the importance of research on the functioning and financing of private companies in a wide range of institutional environments, particularly in NICs and DCs.

In this paper, we study the financing activities of Indian quoted and unquoted companies. India is the second most populous country in the world, more than three-quarters the size of China and three-and-a-half times the size of the United States. The Bombay stock exchange has the second-largest number of domestic quoted companies of any stock exchange in the world after New York, and far more quoted companies than either London or Tokyo, for example. India has maintained a thriving private sector from the earliest phases of industrialization but, until recently, it has pursued development and financial policies that have emphasized the role of the state and state planning. The Capital Issues Control Act of 1947 authorized the government to control both the stream of new share issues and their issue price. This authority was exercised

for all primary and secondary issues, both of which were invariably priced at par. Debenture issues were regulated by (rarely-altered) ceilings on coupon rates and on term to maturity, although these rules were evaded to some extent by deep discounting of primary issues. Overall, the regulations provided a powerful disincentive for companies to finance their activities through the private capital market¹.

Beginning in the mid-1980s Indian markets were gradually liberalized. An important step was the abolition in 1991 of the Industries (Development and Regulation) Act under which all new firms and products had required a government license, a regulation which was used mainly by existing firms to pre-empt capacity and deter entry. See Goswami (1996). During the 1990s the pace of liberalization in the private capital markets quickened, with the repeal of the Capital Issues Control Act and the coming into force in January 1992 of the Securities and Exchange Board of India (SEBI) Act, which established SEBI as the principal authority governing the stock market and a range of other corporate financial activities. See Agarwal (1996) for a description of this act and its implications. In the same period, the Reserve Bank of India (RBI) liberalized its credit control regime, particularly during 1992-95. Ceilings on debenture coupon rates and other interest rates were also abolished.

The sheer size and diversity of the Indian capital market are, on their own, more than sufficient reasons for investigating Indian company financing in depth. In addition, the liberalization of the market offers a unique laboratory for evaluating the development of companies as liberalization proceeds.

Singh and Hamid (1992), Singh (1995), Cobham and Subramaniam (1998), and Guha-Khasnobis and Bhaduri (2000) have studied various aspects of Indian company finances over the period 1980-1998, largely with a view to documenting some stylised facts about their sample companies. Table 1 summarises the data and the sources and methods used in these studies. In this paper we enlarge on these exercises in several ways. First, we compare more systematically the popular sources-uses approach to analysing company financial structures with the asset and liability approach. We argue that the sources-uses approach is less satisfactory

than is generally believed. Second we utilize a substantially larger company accounts dataset. The data form a panel consisting of the published accounts of 1022 non-financial companies that reported every year during the eleven-year period 1989-99. Third, in a new departure within the literature, we consider and explicitly compare quoted and unquoted companies. Quoted companies consist of those quoted on the Mumbai stock exchange. Unquoted companies consist of a sample that have been regularly monitored and their accounts tabulated by the Indian *Centre for Monitoring the Indian Economy* (CMIE, 1997). Fourth, we compare the financial structures of companies over time and across sectors, and examine a broader range of characteristics than those documented by previous authors. Fifth, we compare our results to those obtained previously for India by Singh and Hamid (1992) and by Cobham and Subramaniam (1998); we also compare our results to those obtained for the major OECD countries. Finally, we pay attention to important institutional features of the Indian capital markets, particularly to the role of business groups in company financing decisions.

Table 1 about here

Understanding how companies finance their activities is predominantly a matter of measurement: to document the ways in which different companies at different times and in different institutional environments have financed their operations; and to identify possible implications of these financing patterns. In section 2 we discuss and compare different methodologies for summarizing and presenting the financial structure and financing decisions of companies. In this section we argue that insufficient attention has been paid either to the underlying purpose of descriptive comparisons or to the underpinnings of such comparisons which come from capital structure theory. In section 3 we discuss the data sources for our study; and consider the issues involved in comparisons which utilize Indian company accounts. Section 4 presents summary statistics describing various aspects of Indian company balance sheets and flows. In these descriptions we explain how the financial structure of Indian companies has changed over time, distinguishing carefully between quoted and unquoted

companies and between those that belong to a business group and those that do not. A final section 5 contains some concluding remarks.

2. Methodology: Measuring financial structure

The measurement of company financial structure has been subject to considerable debate, in which there are two interlinked strands. The first question concerns the source of data: whether to use the aggregate company sector statistics that form the basis of the national accounts, or individual company accounts data from company reports. The second question is conceptual: whether to use balance sheets (stocks of assets and liabilities) or flows of funds (sources and uses, or cash flows) to measure financing. Within this second question, there are further issues: particularly whether to use market values or book values in calculating balance sheet data; and whether and how to use gross or net sources and uses if flows of funds are the chosen basis of measurement. In deciding these questions, the central issue is to determine the purposes for which the data are to be used. This point has not always been addressed in the literature on this debate, and this has resulted in some confusion in deciding which methods are the most appropriate. In the following discussion, we address these issues in general terms and more specifically in the context of India.

The question of which data source to use is not entirely separable from the conceptual issue of whether to use stocks or flows. Aggregate balance sheet data are typically available at lower frequencies (if at all) than are aggregate flow of funds data, and are mostly thought to be less reliable. For India, there are no overall national balance sheet data, although the RBI does periodically publish annual balance sheet data for some 800 large companies, based mainly on an aggregation of the accounts of the individual companies. See Reserve Bank of India (1999). National accounts sector sources and uses statements are generally available for the major industrial countries but, as Green, Murinde, Suppakitjarak and Moore (2000) observe, India is the only non-industrialized country that has well-established data of this kind, and these are available only with a substantial lag². At the company level, balance sheets are typically required by law and are available in almost all countries for as long as limited companies have

been in existence. Sources and uses statements are derived by differencing successive balance sheets and making adjustments for changes in stock valuations. However, such valuation adjustments are rarely altogether reliable, and are often not made at all. Cash flow statements are of more recent origin and arguably of yet more variable quality. India introduced a requirement for quoted companies to produce a cash flow statement with effect from the 1995/96 accounting year, but the requirement and corresponding standard are not mandatory for unquoted companies. See Price Waterhouse (1996) and Institute of Chartered Accountants of India (2000, hereafter: ICAI). Other developing countries do not have such a requirement.

It is generally believed that company accounts data are less useful than aggregate data for making international comparisons, because of the variations which exist among national accounting standards. This suggests that aggregate flow of funds statistics are the most appropriate data for describing and making international comparisons of company financing decisions. See in particular Mayer (1988, 1990), Corbett and Jenkinson (1997), and Cobham and Subramaniam (1998). Such data are particularly useful for identifying the financial counterparts of company fixed investment which is one of the main objects of interest in studying company financial decisions. Singh and Hamid (1992) use flow data based on company accounts and their methodology is often compared to that of Mayer (1988). See for example Cobham and Subramaniam (1998). However, Singh and Hamid's data are constructed by first-differencing company balance sheets without a valuation adjustment, and can therefore equally well be interpreted as stock-based data. Singh (1998) provides a defence of his general approach against Cobham and Subramaniam's criticisms .

However, we would argue that national accounts data are not necessarily more internationally comparable than are company accounts. To be sure, national accounts are compiled to common standards, set out in the UN System of National Accounts (SNA, 1993). But there remain substantial differences in detail among individual countries and, for most developing countries, the flow of funds formats of the SNA remain largely a wish list. See Green, Murinde, Suppakitjarak, and Moore (2000). Moreover, the compilation of national accounts rests on national data sources and adherence to international standards in practise depends on the

reliability and comparability of the underlying national sources. For the company sector, these consist almost entirely of sample survey data, based on companies' tax returns and their published accounts. Contrary to the argument of Corbett and Jenkinson (1997), the sample sizes which are used in the calculation of national accounts are not necessarily larger than samples which can be constructed from published company accounts data available from commercial information services.

Moreover, the compilation of aggregate sources-uses data requires basic adjustments for variations in the accounting and tax years of individual reporting companies. In general, variations in national accounting standards will be reflected directly in the data reported to and compiled by national statistical offices. In the major industrial countries, certain basic adjustments can usually be made to reported data at the national level; for example, reported profits may be adjusted for depreciation to obtain sources-uses accounts. The situation for developing countries is more problematic. Singh and Hamid (1992) report that depreciation was not available for most companies in their sample of company accounts from nine developing countries. More subtle differences in standards cannot be picked up at all, either at the company level or at the national level. In the case of India for example, FIFO inventory accounting is required, whereas international standards permit either LIFO or FIFO, subject to certain conditions. Brainard, Shoven and Weiss (1980) discuss the difficulties involved in correctly adjusting published company accounts for differences in inventory valuation procedures. At the aggregate level, such adjustments are practically impossible. A second difference between Indian standards and international standards is in the manner in which recognition of revenue is defined. In some respects, the Indian standards could be said to be more stringent than international standards, but it is difficult to estimate the effect of such differences in practise. See Price Waterhouse (1996) and ICAI (2000). All these differences will be reflected in different national statistics to an unknown degree. In our view therefore there is no presumption that aggregate national accounts statistics are more reliable for international comparisons than statistics based directly on company accounts; and in this study, we do utilize company accounts data.

Whichever data source is used, there remains the question of whether to use flows or stocks and whether to use net or gross figures for certain items. The main methodologies that have been used to summarise corporate financial structures are given in stylised form in table 2 (sources and uses) and 3 (assets and liabilities). We begin with the methods that are based on flow data, the simplest of which is Corbett-Jenkinson. This approach has as its main goal the identification of gross investment (including inventories) and its financing³. Total uses of funds are defined to be equal to gross investment, with other uses of funds being netted off against matching sources. The Singh-Hamid approach focusses instead on net acquisitions of assets, including long-term financial assets, with depreciation being interpreted as a use rather than as a source of funds. Singh (1998) argued that this treatment of depreciation is more appropriate if the objective is to study the financing of the growth in net assets rather than the financing of gross investment⁴. Since depreciation is the main difference between gross and net acquisitions of assets, this is almost a truism. However, it could be argued that the Singh-Hamid approach, allowing as it does for the replenishment of existing capital, arrives at a concept for total uses which is closer to Hicksian income⁵ than is gross investment. Indeed, Edwards, Kay and Mayer (1987) have argued that the accounting rate of return, including the deduction of appropriately defined depreciation, corresponds to an economically meaningful definition of profit. These considerations suggest that the Singh-Hamid approach is no worse than and probably preferable to that of Corbett-Jenkinson. Cobham and Subramaniam (1998) identify a third approach which is similar to Corbett-Jenkinson in its treatment of depreciation but which uses gross rather than net sources and uses. Cobham and Subramaniam argue that this third approach is more vulnerable to international differences in reporting. Items which are classified as "gross" in the aggregate flow of funds often include components which are in fact only available on a net basis at the level of the reporting institution.

Tables 2 and 3 about here

A more fundamental difficulty with the Corbett-Jenkinson approach was identified by Hackethal and Schmidt (1999) who argued that aggregate flow of funds data do not give a meaningful picture of company financing patterns because of the netting out of sales and purchases within a particular asset category which is inherent in most national aggregate flow of funds accounts⁶. Corbett-Jenkinson's results suggest that a high proportion of fixed business investment in the main industrial countries is internally financed, and this is generally accepted as a stylised fact of international corporate finance. See Prasad, Green and Murinde (2001). However, Hackethal-Schmidt give an example in which all firms in a small model economy finance 70% of their investment externally through bank loans but, because of the pattern of borrowing and subsequent loan repayments by individual firms, the net flow calculations performed by Corbett-Jenkinson appear to show that almost 100% of aggregate investment is financed internally! This argument suggests that simple calculations of net financing ratios may be seriously misleading in the information they provide about firm financing. As Hackethal-Schmidt point out, Corbett-Jenkinson's method provides information about how the corporate sector as a whole is financed but, contrary to what is commonly assumed, this information cannot be used to make inferences about how individual firms finance their activities. Hackethal-Schmidt advocate estimating gross flows from aggregate flow of funds data by making assumptions about average debt maturity and the pattern of loan repayments, and then calculating the proportion of gross investment financed by gross inflows of external funds. When this is done for Germany, the USA and Japan, the contribution of external finance to gross investment rises dramatically, and the relative importance of external finance among the three countries changes. The problem with this approach is that it is entirely predictable that gross flows make an arithmetically larger contribution to gross investment than do net flows, and the assumptions needed to derive gross figures using aggregate data necessarily border on the heroic. These arguments reinforce our reservations about using aggregate data.

If aggregate sources-uses data are potentially misleading, it is natural to consider disaggregation. However, at the company level, the denominators required to calculate the relevant financing ratios are not guaranteed to be non-negative⁷, and the calculated ratios may therefore be

meaningless. Thus, a further disadvantage of the sources-uses approach is that it cannot readily be applied to disaggregated data

We turn next to stock data (table 3). Given the relative paucity of such data at the national level, calculations of company financing which are based on stocks must utilize company accounts if international comparisons are to be made. McClure, Clayton and Hofler (MCH, 1999) utilize the Worldscope/Global database and argue that Worldscope makes these data sufficiently consistent across the G7 countries as to require no further adjustment for international accounting differences. A more realistic approach is taken by Rajan and Zingales (1995) who utilize the Global Vantage database and suggest several different methods of presenting these data, in an effort to make them more internationally comparable.

Although it is simplistic to attempt a direct comparison between sources-uses and balance sheet data, nevertheless the three methods shown in table 3 correspond quite closely to those in table 2. The adjusted net assets method corresponds to the Corbett-Jenkinson method, apart from the inclusion of equity investments and other net current assets in total net assets. Likewise, there are similarities in approach as between the net assets method and that of Singh-Hamid. There are two major differences in practise between balance sheet and sources-uses data. First, balance sheets include several items, such as intangibles, which do not appear in the usual sources-uses statement. While intangibles are not directly associated with any cash expenses, they are indirectly related to cash costs and to real financing decisions taken by individual firms, such as the goodwill associated with a takeover. The second major difference arises because the balance sheet embodies the company's entire financial history including the impact of financing decisions, asset price changes, depreciation, and sales as well as purchases of fixed assets. Therefore, it is difficult to use balance sheets to identify changes in financing patterns as they actually take place. In contrast, sources-uses statements do show directly the counterparts to expenditures as they were incurred, subject always to the accounting rules used to recognise expenses.

The appropriate framework for analysis of company financing depends critically on the purpose of the analysis. Consider first the difference between aggregate data and company accounts. Aggregate data can only provide information about the company sector as a whole. The number and identity of companies in the sector are changing over time. Aggregate data cannot provide precise information about individual company behaviour, especially about how companies develop over time. This is particularly true where companies have large international operations presented in consolidated accounts. In principle, aggregate national data include only the local part of companies' operations. This suggests that for many purposes company accounts data are more useful. One of the concerns of the present research is in the development of Indian companies over time. For this reason too we prefer to use company accounts.

Turning next to balance sheets *versus* sources-uses, suppose that companies have an optimal capital structure (which may be conditioned on internal and external variables) to which they adjust over time. If so, the argument that flows provide direct information about the financing of current expenses is illusory because current flows will include a mixture of current financing decisions and stock adjustments. Of course, it is debatable whether companies do have an optimal capital structure. See Harris and Raviv (1991) and Prasad, Green and Murinde (2001). The Pecking Order hypothesis of Myers (1984) and Myers and Majluf (1984), would suggest that firms finance their investments using a hierarchy of sources. This might suggest that sources-uses data are more informative than balance sheet data. However, pecking order theory is silent on whether firms reorient their pre-existing financial structure in the event of a change in circumstances leading to a move along the pecking order for new investments. If this does happen, then balance sheet data will be at least as useful as sources-uses data in understanding company financial structures.

Overall therefore, we do not share the enthusiasm of several recent authors for aggregate flow of funds data, and we believe that as much and more can be learnt from company accounts and from balance sheets. Accordingly, our data is derived mainly from company accounts, and our analysis focusses particularly on balance sheets. However, for purposes of comparison, we do also provide some results of analysing company sources-uses statements⁸.

3. Data

The basic source of our data is the *Prowess* database collected by the CMIE (1997). *Prowess* contains data on more than 8000 Indian companies, mostly dating from 1989. These data consist of company accounts and related information including *inter alia* plant location, credit-rating and registration data, and daily share market information. The companies covered include quoted and unquoted, foreign-owned and domestic, and financial and non-financial. A summary of the broad composition of the whole *Prowess* database is contained in table 4⁹. As is to be expected, the largest group of companies is the quoted non-financial group. Although unquoted companies account for about 40% of the database, there is a larger turnover among these companies, both through births and deaths, and through variations in the timeliness with which their accounts are reported. An important factor in India is the existence of numerous business groups: groups of companies within which effective control is exercised by the same insider group of shareholders. More than one-quarter of the quoted companies in the database fall within a business group. The proportion of unquoted companies within a business group is higher still, although this could be because reporting standards are higher within a group than within comparable stand-alone companies. Business groups in India are of long-standing existence and have generally followed the same conglomerate structure as business houses in other Asian countries. However, Indian business groups vary considerably in size: from the Tata and Birla groups with assets of over Rs100bn, to groups which consist of just a few small companies. In the last decade, the character and identity of many business groups have changed substantially, following the liberalization of the capital markets in the early part of the decade. In 1991, 22 out of the top 50 companies by stock market capitalization were controlled by long-established family groups; by 2000, this figure had fallen to just 4¹⁰. On most measures, the Tata and Birla groups have been the two largest business houses for more than 45 years, and they trace their origins to the early years of the 20th century; but the Reliance group, which ranked as the third largest business house by market capitalization in 2000, did not exist at all 25 years ago.

Table 4 about here

We began by filtering the data in *Prowess* to identify a usable sample of companies. We concentrated on Indian non-financial companies, both quoted and unquoted. Thus, our data exclude foreign companies and all financial companies. The advantage of *Prowess* is that the data are organized in a broadly standardized format. The original data and the *Prowess* data both adhere to Indian accounting standards and no attempt has been made to correct for inter-firm variations in the application of these standards. Balance sheet data are reported at book value in the accounts, and it can be argued that market value data provide a more appropriate standard of comparison. See Rajan and Zingales (1995). However, a major purpose of our analysis is to compare quoted and unquoted companies and, by construction, only book value data are available for the latter. We therefore use book values throughout.

A set of inter-related difficulties arises from the fact that *Prowess* is updated every fortnight, and certain types of historical data, such as the composition of a company's shareholders and its quotation status are not retained at the update. One would particularly expect to observe systematic differences between the financial structures of quoted and unquoted companies. To make this distinction in the data with sufficient precision, it is necessary to identify those companies which went public within the sample. To do this, we acquired a complete list of all public offerings on the Mumbai stock exchange from *Prime* (2000)¹¹ and matched up the initial public offerings (IPOs) with the companies in *Prowess*. It transpired that the majority of the companies which went public within the sample had been collected in *Prowess* for just one year prior to the IPO, with the accounts presented for that year corresponding to the statutory listing requirements for the offer documents. For these companies, we deleted the one year's accounts before the company was listed and concentrated on the years in which it was a public company, provided it satisfied our other criteria for inclusion in the dataset. Companies whose accounts were available for more than one year before the IPO were segregated from wholly-quoted and

wholly-unquoted companies into a "mixed" category. This "mixed" category is not analysed in this paper.

We included all companies with complete accounts, irrespective of the timing or length of the financial year. Data for any particular year include companies reporting any time between January and December of that year. However, the overwhelming majority of companies have a report date of March, which corresponds to the end of the Indian tax year. A few companies have a regular June report date, but companies which reported accounts at any other month invariably did so on a once-off basis, presumably because of company-specific issues concerned with the preparation of the accounts for that particular year. For most practical purposes, the data can be treated as end-March.

The next step was to construct two samples of companies from the data. The "maximum sample" consists of all companies which reported in any particular year. The number of companies which reported each year varies over time, partly with the development of *Prowess*, but more particularly with the expansion in private company activities and new flotations during the 1990s. The second "fixed sample" consists of all those companies which reported every year over a fixed time period. In this sample, we excluded companies whose accounts were missing for at least one of the years in the sample period. The fixed sample is a balanced panel in which the same companies are present each year. The maximum sample is designed to obtain information about the company sector as a whole; the fixed sample enables us to characterise the development over time of a fixed group of companies. In this paper we concentrate on analysing the fixed sample.

We chose as fixed sample the one with the longest data span, covering 11 years from 1989 through 1999. This period encompasses the major liberalization measures applied to the capital market in the early 1990s. We deleted a few companies with obvious errors in the original data, such as balance sheets which did not balance. Companies which reported zero net sales (sales net of indirect taxes) for more than half the sample were deleted. Zero net sales could occur for several reasons, but most likely is that are missing for that particular period. Companies which

reported negative net assets (total assets less current liabilities) in every year of the sample were also deleted¹², but those which reported negative net assets in some years followed by positive net assets were retained.

Companies which reported negative net assets were not necessarily bankrupt according to Indian practise. Indian bankruptcy law is laid down in the 1985 Sick Industrial Companies Act and the reorganization of bankrupt companies is supervised by the statutory Board for Financial and Industrial Reconstruction (BFIR)¹³. One of the main features of the act and its procedures is that they involve an exceptionally slow and conservative process of recognition and reorganisation. See Anant, Gangopadhyay, and Goswami (1992). A company is defined as “sick” if it has been registered for at least 5 years and has a negative net worth¹⁴. Once a company is registered with the BIFR as “sick” an indefinite moratorium is imposed on creditors' claims. A sick company can propose a reorganization which must plan for a return to positive net worth within ten years; otherwise BIFR appoints an operating agency to run the company. See Goswami (1996) for details. BIFR decisions on reorganization plans routinely take several years. As of 1997, the mean delay was 1664 days. See Goswami (2000). This process means that bankrupt companies can continue operating for many years. We took the view that such companies should not be excluded from our sample, since managers would still be making financial decisions during the extended period until reorganization or winding-up. However, it would clearly be interesting to investigate further the implications of these regulations.

The resulting sample provides us with data for a constant 793 quoted companies and a further 229 unquoted companies, giving 1022 companies in total covering 1989-99. Table 5 shows the broad ownership composition of this sample and illustrates again the importance of business groups in the company sector: 30% of quoted companies and 24% of unquoted companies belong to one of the top 50 business houses; 66% of quoted Indian private sector companies and 60% of unquoted private companies belong to some business house. These figures perhaps over-estimate the true reach of the business houses as the smaller houses include many that control just 2 or 3 companies. Unlike many of their western counterparts, Indian companies are under no legal obligation to produce consolidated accounts and most chose not to consolidate.¹⁵

Therefore, some companies which belong to a business house may in practise be majority-owned subsidiaries.

Table 5 about here

A substantial proportion of unquoted companies and some quoted companies are wholly or majority owned by state or central government. Table 6 gives the industrial composition of the sample, including and excluding government, and shows that government participation in industry is widely spread across most industrial sectors. *A priori*, one might expect that government-owned firms would operate under different constraints, and perhaps have different characteristics from those in the private sector. Government-owned unquoted companies are mostly substantially larger on any measure than any private unquoted company. For example, *Air India* falls into the unquoted government group, and its activities dwarf those of any private unquoted company. Many government-owned firms were evidently under-capitalized or did not present the full extent of the government's commitment in their accounts, as they had negative net assets for most of the sample period. For these reasons, we deleted government-owned firms from the analysis and concentrated on those which were wholly in private ownership for the sample period. This left 748 quoted and 139 unquoted companies.

Table 6 about here

4. The financial structure of Indian companies

We now turn our attention to the financial structure of the sample companies. Table 7 gives the size distribution of the sample companies, measured by the value of net assets: total assets net of current liabilities. We also measured size by net sales (turnover less indirect taxes) but the distributional results were essentially the same. The striking feature of table 7 is the severe skewness of the size distribution of Indian companies, particularly in comparison with OECD

countries. Throughout the sample period, just over 2% of companies fell in the top 3 quartiles by size of assets. The vast majority of Indian companies are relatively small with just a few companies which are exceptionally large in comparison. In contrast, Rajan and Zingales (1995), found that 42% of US companies had above-median assets; for the other 6 OECD countries in their study the percentage was higher still. A second feature of our data is that the median quoted company grew substantially more rapidly than did the median unquoted company: the net assets of the median quoted company grew at just over 8% pa in real terms whereas that of the median unquoted company grew at just over 1.5% pa.

Tables 7-9 about here; and Charts 1-2

Charts 1 and 2 (also tables 8 and 9) report the evolution of the balance sheets of the two sets of sample companies¹⁶. These data are calculated by summing assets and liabilities across companies and then calculating proportions. They suggest several important conclusions. On the assets side, the balance sheets of quoted and unquoted companies consist almost entirely of fixed assets or current assets, with intangibles and longer-term financial assets (investments) being negligible, and certainly much smaller than in the main OECD countries¹⁷. Over time there is an upward trend in investments and intangibles offset by a decrease in current assets (quoted companies) or fixed assets (unquoted companies). The small share of investments and intangibles is perhaps what might be expected in a developing country where there are relatively few mergers, and corporate financial activity has been tightly regulated. However, the share is surprisingly small when it is recalled that these are mostly unconsolidated accounts, and given the large number of companies in business groups.

Turning to the liabilities, a striking feature of the data is that unquoted companies have a persistently higher proportion of financing from shareholders' funds than do quoted companies. This is consistent with Rajan's (1992) argument that one reason companies go public is to improve the terms on which they can obtain access to debt. It is hazardous to attempt to use

balance sheet data to discuss internal financing. Nevertheless a crude indication of the scale of internal financing can be obtained by separating shareholders' funds into the part originally raised by share issues (shown as the equity and share premium in tables 8 and 9) and the rest, which is derived from retentions. An outstanding feature of the data is that the stock of retentions is very small at the outset (7.7% for quoted and 2.3% for unquoted companies) but it rises substantially over the sample period suggesting that Indian firms were sufficiently profitable in the 1990s so as to be able to finance internally to a greater extent than in the past. Overall though, these data on retentions would tend to support the Singh-Hamid argument that firms in a developing country are quite heavily reliant on external funds. The debt component of the balance sheets of both quoted and unquoted firms is relatively stable during the 1990s. The increase in shareholders' funds is balanced arithmetically by a reduction in current liabilities.

Table 10 about here

In table 10 we provide some comparative international data. Specifically, we show the aggregate book ratio of total debt to total assets, based on company balance sheets, as reported in three recent studies. It is evident that, even though MCH and Rajan and Zingales perform allegedly the same calculation for the same year and the same OECD countries, but for different samples of companies culled from different commercial information services, they obtain widely different figures for this basic statistic. Booth, Aivazian, Demirguc-Kunt, and Maksimovic (2001) study the same developing countries as Hamid and Singh, and it can be seen that our results for India are broadly in line with theirs, giving some confidence in these calculations. Our figures suggest that the debt ratio of Indian companies is relatively high compared with other developing countries, but is in broadly in line with that of OECD countries according to MCH, though not according to Rajan and Zingales. Overall though, we would observe that table 10 illustrates the difficulties involved in making international comparisons along these lines.

Tables 11-12 about here; and Charts 3-4

Tables 11 and 12 (summarized in charts 3 and 4) report capital structure measures for quoted and unquoted companies. These ratios are calculated using the three separate methods outlined in section 2 (table 3). For each of these methods we present two statistics. First, is the weighted mean which is found by summing debt and assets separately across companies and then dividing total debt by total assets. This is analagous to a company sector ratio. The median is found by calculating the debt/asset ratio for each company and then computing the median of this ratio across companies. We also calculated the unweighted mean of individual companies' debt/asset ratios, but given the extreme skewness of the distribution of companies, it is not surprising that this statistic behaved very erratically over time and across methods, and we therefore do not report the results.

These statistics all show a small but perceptible rise over time in the equity share of the balance sheet, and a corresponding fall in debt. Although there was a boom in new issues in the equity market in this period, a part of the fall in debt appears to be attributable to improved company profitability rather than to a switch from debt to equity. These findings do not support the Singh-Hamid argument that external finance in developing countries is biased towards equities rather than debt, in comparison with OECD countries. India may be a special case in that equity market liberalization did not take place until the 1990s, so that the share of equity finance may be lower than in developing countries which liberalized earlier. However, we do see a steady upward trend in the share of equity financing during the 1990s, particularly for quoted companies, which may reflect a response to the liberalization of this era. Even so, the contribution of equity financing in 1999 was still less than for OECD countries on all our comparable measures.

Turning next to the composition of outstanding debt, the proportion of bank debt incurred by quoted companies fell following equity market liberalization in the early 1990s, but then rose

sharply as the RBI subsequently relaxed credit controls. Overall, quoted companies did not substantially increase the proportion of bank debt in their balance sheets during this time. In contrast, there was a steady increase in the proportion of both bank debt and debentures in the balance sheets of unquoted companies which was reflected in a declining share of other institutional debt such as Development Finance Institutions. This probably reflected a structural effect of capital market liberalization. Although institutional debt was a relatively high component of total debt throughout the 1990s, particularly for unquoted firms, the proportion of bank debt in the total remained moderate and, insofar as comparison is possible, generally less than suggested by Cobham and Subramaniam in their study.

Tables 13-14 about here

To test more rigorously whether any of these changes were significant, we compared the distributions of the main debt ratios year-by-year and from beginning to end. That is, we compared 1989 to 1990, 1990 to 1991, etc. and 1989 directly to 1999. Given the extreme skewness of the data, we took the view that t tests (employed by Cobham and Subramaniam) were less appropriate than non-parametric tests. We therefore employed the (normalized) Wilcoxon/Mann-Whitney rank sum statistic, distributed as $N(0,1)$. This is discussed in most statistics texts, for example: Mood, Graybill and Boes (1974). We based the test on the rank sums of the earlier of each pair of years; hence a negative statistic implies that the debt ratio rose between the two years. The results are shown in tables 13 and 14. Comparing 1989 and 1999 directly, both quoted and unquoted companies underwent significant changes in their financial structure. For unquoted companies the changes were gradual, as there were no significant year-to-year changes. For quoted companies, the year-to-year changes were more significant. Moreover, all the significant year-to-year changes took place in the period 1991-96, immediately following the introduction of the SEBI act and the liberalization of the RBI's credit control regime. This suggests that capital market reforms did have an impact on the financial structure of Indian companies. For unquoted companies, the proportion of total debt and bank

debt in the balance sheet fell significantly on 2 measures. As shown in table 14(ii), if government-owned enterprises are included in this calculation¹⁸, the debt ratio is seen to have fallen significantly on all measures. For quoted companies the behaviour of the debt ratios is less clear-cut. The total debt ratio fell significantly on the total assets measure, while bank debt fell significantly on one measure and rose on another. Again though, if government-owned companies are included, the total debt ratio fell significantly on all measures.

Tables 15-18 about here; and Charts 5-6

Sources-uses measures of financing are displayed in tables 15 and 16 (summarized in charts 5 and 6). These are calculated according to the definitions in table 2 except that, following Cobham and Subramaniam (1998), we did not use the gross sources-uses approach. As discussed in section 2, calculation of individual company measures was rendered nugatory by the existence of numerous observations with zero or negative denominators. Therefore, all the sources-uses measures were calculated once only using the same weighted mean method as in tables 11(i) and 12(i). These tables give an alternative and possibly more precise picture of the relative contributions of internal and external funds to company financing. They underline Cobham and Subramaniam's point that the Singh-Hamid approach (net asset growth) necessarily generates a higher share of external funding than the Corbett-Jenkinson approach. Indeed, we find the differences between the two methods to be greater than reported by Cobham-Subramaniam.

To compare our results with OECD countries we use the net sources-uses approach. On this measure, Corbett-Jenkinson found internal financing ratios for four major OECD countries¹⁹ to be consistently above 60% and, apart from Japan, well over 75%. Our table 15 confirms our conclusion from the balance sheets that Singh-Hamid are correct in asserting that quoted companies in developing countries rely more heavily on external funds, at least in India. The highest internal financing ratio in any year and on either measure is just over 50%, and in most

years it is much less. However, we see from table 16 that there is a substantial difference between quoted and unquoted companies in this respect, with unquoted companies employing internal financing at rates which varied considerably over time, but which were substantially higher than quoted companies, and on average were comparable with the highest internal financing ratios among the Corbett-Jenkinson countries. One reason for this could be that a lower proportion of companies go public in developing countries. Thus, the unquoted companies in India include many with higher internal financing ratios. However, this does not explain why unquoted companies should have financial structures which are systematically different from those of quoted companies. Our data also confirm that a temporary surge in equity financing took place beginning in 1993, particularly for quoted companies, and they suggest that this was largely at the expense of debt financing. This is consistent with the fact that liberalization of the equity market preceded that of debt market. Mann-Whitney tests are reported in tables 17 and 18; these were carried out in the same way as for tables 13 and 14, and with broadly comparable results: there were some significant changes over the whole decade for both quoted and unquoted companies; but the most significant year-to-year changes were among quoted companies following the capital market liberalization of the early 1990s.

Tables 19-20 about here

We turn finally to Indian business groups. To identify the impact of group membership, the sample was refined into 4 successively smaller categories following the categorisation in *Prowess*, and shown in tables 19 and 20. In these tables we show 4 statistics for each category: claims on group companies as a proportion of total assets (following the definition in tables 8 and 9); group debt as a proportion of total debt (following the weighted mean definitions in table 11) and Mann-Whitney tests on the ratios of group assets to total assets and of group debt to total debt.

There are several striking features of these data. First, the absolute values of the group asset and debt ratios are initially very small, but increase over time, especially the asset ratio of unquoted companies. The Mann-Whitney tests confirm that there were perceptible significant changes over time in the distribution of the debt ratios, particularly for quoted companies. Overall though, the figures for intergroup claims are surprisingly low given that these are mainly unconsolidated accounts. Of course, it is possible that not all group assets and liabilities are shown separately on the balance sheet. However, even if some group claims have been included indistinguishably in (non-group) investments, the overall figures for total investments are sufficiently small so that any under-estimation of group claims is also likely to be small.

Second, there are quite large and expanding discrepancies between the magnitudes of the debt ratios and the asset ratios. These can probably be attributed to group equity holdings which are included indistinguishably in group assets but not in group debt.

Third, the data for quoted companies suggest that there are essentially no cross-sectional differences among the asset and debt ratios by group membership or size of group. Thus, group membership *per se* would seem to have little direct impact on the group asset and debt composition of quoted companies. Group equity participation may be more important, but if so, it is a very recent phenomenon and it is unclear from these data whether it can be attributed to group membership or as just another effect of capital market liberalization in the 1990s. Insofar as group membership is important, its importance does not derive from any reported direct financial relationships among quoted companies, as these appear to be small.

Fourth, there are substantial differences among unquoted companies as between group and non-group firms and to a lesser extent as among groups of different size. These differences arise on the assets rather than the liabilities side. Claims on group companies were less than 2% of total assets in each group category in 1989. By 1999 however, this proportion had risen to 13.6% for all companies and to 28.3% within the top 50 business houses. One possible reason for these increases relates to the issue of corporate governance. As family-oriented firms are floated on the stock market and their share ownership is diversified, their ownership and control become

more diluted. However, families can retain influence or control in such companies using a closely-held unquoted company as an investment vehicle. This hypothesis is consistent with the increased group equity participation which is suggested by the increasing discrepancies between the debt and asset data of unquoted companies.

5. Summary of conclusions

Indian quoted non-financial companies exhibit financial structures which differ to some extent from their OECD counterparts. During the 1990s quoted companies made greater use of external funding than did firms in the OECD. However, we do not find evidence to support the claim of Singh-Hamid that the bulk of this external funding is equity, or of Cobham-Subramanian that it is bank debt. There are interesting and important differences between quoted and unquoted companies. In particular, unquoted companies are more heavily reliant on equity than quoted companies: this is consistent with the argument that companies go public to gain access to debt markets. Unquoted companies are also more heavily reliant on internal funds than are quoted companies. Both quoted and unquoted companies have experienced changes in their financial structures which, it seems reasonable to conjecture, were associated with the liberalization of the capital markets in the early 1990s. However, the changes in unquoted companies' structures took place more gradually over time than did those of quoted companies. An important topic for future research is to identify how far these changes were driven by financial liberalization, and how far they were incidental to it.

In aggregate, business groups do not appear to have close financial relationships among one another, as measured by the quantity of identified inter-group investments and debt in the balance sheets of quoted companies. If the group relationship does perform important functions for group members and for the economy as a whole, it must be through channels other than direct financing among group members. However, unquoted companies have experienced a significant rise in their intergroup assets which we conjecture may be associated with issues related to insider control. These too are clearly important topics for future research.

Footnotes

1. See Agarwal (1996) and Singh (1998).
2. See Reserve Bank of India (2000).
3. The Corbett-Jenkinson approach is often incorrectly identified with that of Mayer (1988). See Cobham and Subramanian (1995) and Singh and Weisse (1998). Actually, Mayer's approach has more in common with that of Singh and Hamid (1992), particularly in its treatment of depreciation. Mayer is quite clear that his objective is to identify the sources of financing of the net capital stock, not gross investment.
4. However, Singh and Hamid (1992) appealed to lack of data on depreciation to justify their treatment of this variable.
5. A firm's Hicksian income can be defined as that within-period distribution of resources which leaves its earning power unchanged. See Edwards, Kay, and Mayer (1987).
6. Hackethal and Schmidt apply their critique to Mayer (1988). Mayer does advocate the use of net financing data but, as we have argued in footnote 3, Hackethal and Schmidt's critique is arguably more applicable to Corbett and Jenkinson (1997).
7. Net acquisitions may obviously have either sign. "Gross investment" is the sum of fixed investment and inventory changes, and so a combination of small or zero fixed investment and a fall in inventories produces negative gross investment. See table 2.
8. As noted earlier, cash flow statements are only available in India from 1995/96.
9. These are data in Prowess as of the September 2000 release.
10. See Goswami (2000).
11. The Mumbai stock exchange (BSE) is by far the largest Indian stock exchange by number of companies, although the turnover in Mumbai is now exceeded by that of the National Stock Exchange of India (NSE).

12. 22 quoted companies and 11 unquoted companies reported zero net sales. Of these, 3 quoted and 3 unquoted were deleted. 28 quoted and 43 unquoted companies reported negative net assets. Of these 9 quoted and 3 unquoted were deleted.
13. The reorganization procedure is analagous to the US chapter 11, in which the emphasis is on reorganizing the firm as a going concen rather than on a rapid realization of the firm's assets, as in the UK.
14. Until 1994, a further requirement was that the company had incurred cash losses for at least two consecutive years.
15. Rajan and Zingales (1995) report that, in OECD countries in which consolidation is not required, around 75% of firms do nevertheless report consolidated accounts.
16. The data on financial structure are summarized in the charts and shown in more detail in the tables. The reader who wants a quick summary of the main results could confine attention to the charts.
17. In our comparisons with OECD countries we draw particularly on the analyses in Rajan and Zingales (1995) and MCH (1999).
18. 45 quoted and 90 unquoted government-owned companies were otherwise omitted from the calculations. See the discussion of table 6 earlier.
19. Japan, UK, USA and West Germany for 1970-1994.

References

- Agarwal, R.N., 1996, *Financial liberalization in India*, Delhi, BR Publishing.
- Anant, T.C.A., Gangopadhyay, S. and Goswami, O., 1992, "Industrial sickness in India: characteristics, determinants, and history, 1970-1990", *Ministry of Industry Studies in Industrial Development*, Paper No. 6, Government of India, October.
- Booth, L., Aivazian, V, Demirguc-Kunt, A., Maksimovic, V., 2001, "Capital structures in developing countries", *Journal of Finance*, Vol. 56, no. 1, February, pp.87-130.
- Brainard, W.C., Shoven, J. and Weiss, L., 1980, "The financial valuation of the return to capital", *Brookings Papers on Economic Activity*, No. 2, pp. 453-502.
- Centre for Monitoring the Indian Economy, 1997, *Prowess user's manual*, Vols I-III, CMIE, Mumbai, India.
- Cobham, D. and Subramaniam, R., 1998, "Corporate finance in developing countries: new evidence for India", *World Development*, Vol. 26, No. 6, pp. 1033-1047.
- Corbett, J. and Jenkinson, T., 1997, "How is investment financed? A study of Germany, Japan, the United Kingdom and the United States", *Manchester School*, Vol. 65, Supplement, pp. 69-93.
- Cornelli, F., Portes, R. and Schaffer, M. E., 1996, "The capital structure of firms in central and eastern Europe", *Discussion Paper No. 1392*, Centre for Economic Policy Research, London: UK.
- Edwards, J. Kay, J. and Meyer, C., 1987, *The Economic Analysis of Accounting Profitability*, Oxford, Oxford University Press.
- Goswami, O., 1996, *Corporate bankruptcy in India: a comparative perspective*, OECD Development Centre Studies, Paris, Organization for Economic Co-operation and Development.
- Goswami, O., 2000, "The tide rises gradually: corporate governance in India", *Indian Society of Capital Markets*, Processed.
- Green, C.J., Murinde, V., Suppakitjarak, J. and Moore, T., 2000, "Compiling and understanding the flow of funds in developing countries", *Finance and Development Research Programme Working Paper*, No. 21; repr as *Loughborough University Department of Economics Research Paper*, 00-22, December.

- Guha-Khasnobis, B. and Bhaduri, S.N., 2000, "A hallmark of India's new economic policy: deregulation and liberalization of the financial sector", *Journal of Asian Economics*, Vol. 11, pp. 333-346.
- Hackethal, A. and Schmidt, R.H., 1999, "Financing patterns: measurement concepts and empirical results", *Working Paper*, No. 33, Frankfurt, University of Frankfurt.
- Harris, M. and Raviv, A., 1991, "The theory of capital structure," *Journal of Finance*, Vol. 49, pp. 297- 355.
- Institute of Chartered Accountants of India, 2000, "Major differences between the Indian accounting standards and international accounting standards", *Mimeo*.
- Mayer, C., 1988, "New issues in corporate finance", *European Economic Review*, Vol. 32, pp. 1167- 1189.
- Mayer, C., 1990, "Financial systems, corporate finance and economic development", in R.G. Hubbard (ed.) *Asymmetric Information, Corporate Finance and Investment*, Chicago, University of Chicago Press.
- McClure, K.G., Clayton, R. and Hofler, R.A., 1999, "International capital structure differences among the G7 nations: a current empirical view", *European Journal of Finance*, Vol. 5, pp. 141-164.
- Mood, A.M., Graybill, F.A. and Boes, D.C., 1974, *Introduction to the theory of statistics*, McGraw-Hill, Tokyo, 3rd ed.
- Myers, S.C., 1984, "The capital structure puzzle", *Journal of Finance*, Vol. 34, pp. 575- 592.
- Myers, S.C., and Majluf, N. S., 1984, "Corporate financing and investment decisions when firms have information that investors do not have", *Journal of Financial Economics*, Vol. 13, pp. 187- 221.
- Prasad, S., Green, C.J., and Murinde, V., 2001, "Company financing, capital structure, and ownership", *SUERF Study No 12*, Vienna, SUERF, February.
- Price Waterhouse, 1996, *Doing business in India*, New Delhi, India, Price Waterhouse.
- Prime, 2000, Public offerings list.
- Rajan, R.G., 1992, "Insiders and outsiders: the choice between informed and arm's length debt", *Journal of Finance*, Vol. 47, pp.1367-1400.
- Rajan, R. and Zingales, L., 1995, "What do we know about capital structure? Some evidence from international data", *Journal of Finance*, Vol. 50, pp. 1421- 1460.
- Reserve Bank of India, 1999, "The finances of large public limited companies 1997-98", *Reserve Bank of India Bulletin*, April.

- Reserve Bank of India, 2000, *Flow of funds accounts of the Indian economy: 1951-52 to 1995-96*, Mumbai.
- Singh, A., 1995, "Corporate financial patterns in industrialising economies: a comparative study", *IFC Technical Paper No. 2*, Washington D.C., International Finance Corporation.
- Singh, A., 1998, "Liberalization, the stock market, and the market for corporate control: a bridge too far for the Indian economy?", Ch. 8 in I.J. Ahluwalia and I.M.D. Litte (eds.) *India's economic reforms and development: essays for Manmohan Singh*, New Delhi, Oxford University Press.
- Singh, A. and Hamid, J., 1992, "Corporate financial structures in developing countries", *IFC Technical Paper No. 1*, Washington D.C., International Finance Corporation.
- Singh, A. and Weisse, B.A., 1998, "Emerging stock markets, portfolio capital flows and long-term economic growth: micro and macroeconomic perspectives", *World Development*, Vol. 26, No. 4, pp. 607-622.
- United Nations, 1993, *Revised system of national accounts: SNA 1993*, New York.

Table 1: Recent Studies of Indian Company Financing

Authors	Date	Period	No of companies	Industries	Stocks/flows	Source
Singh & Hamid	1992	1980-88	50	manufacturing	balance sheet	Bombay Stock Exchange World bank
Singh	1995	1980-90	100	manufacturing	balance sheet	Bombay Stock Exchange World bank
Cobham & Subramaniam	1998	1980-92	417-620; and aggregate data	non-financial companies	flow of funds	ICICI Reserve Bank of India
Guha-Khasnobis & Bhaduri	2000	1989-98	620	manufacturing	flow of funds	CMIE-Prowess

Notes: ICICI: Industrial Credit & Investment Corporation of India

Table 2: Company financing: Sources-uses methods

	Sources (s)	Uses (u)
	Gross sources-uses method	
1	EAITBD ¹	dividends paid
2		gross fixed investment
3	decrease in inventories	increase in inventories
4	equity issues	equity purchases
5	non-bank debt	non-bank debt purchases
6	bank debt	cash and deposits
7	other current sources ²	other current uses ²
8	Total sources (= ? s_i)	Total uses (= ? u_i)
	Net asset growth method (Singh-Hamid)	
1	EAITBD ¹ - depreciation - dividends paid	
2		gross fixed investment - depreciation - asset sales
3		increase in inventories - decrease in inventories
4	equity issues	equity purchases
5	non-bank debt	non-bank debt purchases
6	long-term bank debt	cash and deposits - short-term bank debt
7		other current uses ² - other current sources ²
8	Total sources (= ? s_i)	Total uses (= ? u_i)
	Net sources-uses method (Corbett-Jenkinson)	
1	EAITBD ¹ - dividends paid	
2		gross fixed investment
3		increase in inventories - decrease in inventories
4	equity issues - equity purchases	
5	non-bank debt - non-bank debt purchases	
6	bank debt - cash and deposits	
7	other current sources ² - other current uses ²	
8	Total sources (= ? s_i)	Total uses (= ? u_i)

Notes: 1. EAITBD: Earnings after interest and tax, before depreciation

2. Including trade credit

Table 3: Company financing: Balance sheet methods

Liabilities (d)		Assets (a)
<i>Total assets method</i>		
1		net fixed assets
2		intangibles
3		inventories
4	shareholders' funds	equity investments
5	non-bank debt	security holdings
6	bank debt	cash and deposits
7	other current liabilities ¹	other current assets ¹
8	Total liabilities (= ? d_i)	Total assets (= ? a_i)
<i>Net assets method</i>		
1		net fixed assets
2		intangibles
3		inventories
4	shareholders' funds	equity investments
5	non-bank debt	security holdings
6	bank debt	cash and deposits
7		other current assets ¹ - other current liabilities ¹
8	Total liabilities (= ? d_i)	Total assets (= ? a_i)
<i>Net tangible assets method</i>		
1		Net fixed assets
2		
3		Inventories
4	Shareholders' funds - intangibles	Equity investments
5	Non-bank debt - security holdings	
6	Bank debt - cash and deposits	
7	Other current liabilities ¹ - other current assets ¹	
8	Total liabilities (= ? d_i)	Total assets (= ? a_i)

Notes: 1. Including trade credit

**Table 4: Prowess: Distribution of companies among industry types and ownership groups
(no. of companies)**

	Manufacturing	Services	Finance	Banking	Total
All companies					
Indian Quoted Financial	-	-	498	36	535
Indian Quoted Non-financial	3495	646	-	-	4142
Indian Unquoted financial	-	-	471	127	598
Indian Unquoted non-financial	1766	525	-	-	2291
Foreign	279	68	25	43	415
Total	5540	1239	994	206	7981
Indian quoted companies					
Government	41	13	8	20	82
Top50 business houses	360	38	35		433
Other business houses	612	112	80	2	806
Private	2448	483	375	15	3321
Joint	34				34
Total Indian quoted	3495	646	498	37	4676

**Table 5 : Sample Company Characteristics (1989-99): Ownership Groups
(no. of companies)**

	quoted	unquoted
Top 50 business houses	235	56
Large business houses	135	15
Other business houses	127	13
Other Indian private	241	53
Co-operative	0	2
Joint state/private	10	0
Sub-Total	748	139
Central Government	41	86
State Government	4	4
Total	793	229

**Table 6 : Sample Company Characteristics (1989-99): Industry Groups
(no. of companies)**

	incl government		excl government	
	quoted	unquoted	quoted	unquoted
Manufacturing	706	174	676	116
Food & beverages	57	21	57	19
Textiles	103	31	103	21
Chemical	171	33	157	20
Non-metallic mineral products	58	8	58	6
Metals & metal products	90	13	86	7
Machinery	111	37	105	25
Transport equipment	51	15	50	7
Miscellaneous manufacturing	34	7	32	4
Diversified	31	9	28	7
Services	70	40	59	22
Hotels, tourism, recreation	14	1	13	0
Health	2	0	2	0
Construction & offshore drill	14	11	13	5
Trading	24	17	20	11
Transport services	12	3	9	1
Communications	1	1	0	0
Misc. services	3	7	2	5
Infrastructure (inc irrigation)	17	15	13	1
Mining	7	10	4	1
Electricity	10	5	9	0
Total	793	229	748	139

Table 7: Company size measured by net assets (total assets less current liabilities)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Quoted (748)											
maximum (R10m)	2,124	2,371	2,622	4,020	5,234	6,995	10,133	13,128	16,098	20,532	24,021
median (R10m)	17	23	27	32	39	50	65	81	86	94	94
minimum (R10m)	-1	-5	-4	-44	-91	-142	-15	-37	-68	-125	-166
quartile 4	737	734	734	738	738	737	739	741	741	742	743
quartile 3	9	11	12	8	8	9	6	5	5	5	4
quartile 2	1	1	0	0	0	0	2	1	1	0	0
quartile 1	1	2	2	2	2	2	1	1	1	1	1
Unquoted (139)											
maximum (R10m)	1,338	1,287	1,311	1,528	1,571	1,557	1,720	1,947	2,855	3,828	4,042
median (R10m)	8	9	11	12	12	15	17	19	22	22	24
minimum (R10m)	0	0	-3	-17	-22	-43	-48	-10	-17	-24	-30
quartile 4	136	136	136	136	136	135	135	135	135	136	136
quartile 3	1	1	1	1	1	2	1	1	1	1	1
quartile 2	1	1	1	1	1	1	2	2	2	1	0
quartile 1	1	1	1	1	1	1	1	1	1	1	2
Exchange rate (R per \$: year ave)	16.23	17.5	22.74	25.92	30.49	31.37	32.43	35.43	36.31	41.26	43.06
Consumer prices industrial workers	100	106	118	134	147	158	174	192	210	225	254

**Table 8: Balance sheets of quoted non-financial companies
(book values: proportion of total assets)**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Assets											
Net tangible assets	0.456	0.432	0.441	0.452	0.460	0.463	0.456	0.466	0.476	0.485	0.479
Intangibles and misc	0.005	0.005	0.005	0.006	0.007	0.007	0.007	0.008	0.008	0.012	0.013
Investments in group companies	0.003	0.003	0.006	0.009	0.013	0.018	0.025	0.026	0.024	0.023	0.022
Other financial investments	0.044	0.060	0.052	0.039	0.038	0.063	0.071	0.057	0.066	0.072	0.070
Current assets	0.493	0.500	0.496	0.494	0.482	0.449	0.441	0.444	0.425	0.409	0.416
Cash and bank accounts	0.031	0.034	0.034	0.035	0.034	0.031	0.028	0.035	0.035	0.043	0.045
Receivables from group companies	0.011	0.012	0.011	0.011	0.012	0.010	0.016	0.013	0.010	0.011	0.019
Other receivables	0.238	0.242	0.243	0.254	0.251	0.248	0.242	0.247	0.239	0.220	0.221
Inventories	0.213	0.212	0.208	0.194	0.186	0.159	0.155	0.149	0.141	0.135	0.131
Liabilities											
Shareholders' funds	0.188	0.198	0.202	0.200	0.236	0.284	0.334	0.336	0.324	0.311	0.297
Equity and share premium	(0.111)	(0.117)	(0.112)	(0.107)	(0.142)	(0.180)	(0.216)	(0.203)	(0.192)	(0.177)	(0.167)
Preference capital	0.002	0.002	0.001	0.001	0.001	0.001	0.002	0.004	0.003	0.005	0.006
Specific reserves	0.123	0.112	0.118	0.114	0.110	0.108	0.095	0.090	0.088	0.087	0.091
Total debt	0.432	0.435	0.428	0.432	0.431	0.396	0.370	0.366	0.387	0.402	0.400
Bank debt (short and long-term)	0.139	0.138	0.132	0.122	0.121	0.099	0.109	0.125	0.128	0.126	0.125
Other long-term debt	0.089	0.101	0.099	0.099	0.106	0.108	0.089	0.073	0.078	0.079	0.083
Loans from government	0.007	0.007	0.007	0.009	0.008	0.008	0.007	0.007	0.007	0.007	0.012
Loans from group companies	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.001
Other debt	0.196	0.189	0.189	0.201	0.194	0.181	0.165	0.161	0.174	0.189	0.179
Current liabilities	0.257	0.253	0.251	0.253	0.223	0.211	0.199	0.203	0.196	0.195	0.206
Payables	0.148	0.144	0.142	0.147	0.132	0.126	0.121	0.120	0.117	0.110	0.115
Other current liabilities	0.108	0.109	0.109	0.107	0.091	0.084	0.079	0.084	0.079	0.085	0.091
Composition of debt											
Long-term (short-term)	0.850	0.763	0.738	0.738	0.731	0.759	0.733	0.689	0.707	0.721	0.710
Institutional (marketable)	0.795	0.768	0.767	0.765	0.748	0.707	0.756	0.800	0.797	0.794	0.772
Foreign currency (domestic)	0.056	0.071	0.078	0.112	0.103	0.117	0.129	0.149	0.188	0.197	0.171

Table 9: Balance sheets of unquoted non-financial companies
(book values: proportion of total assets)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Assets											
Net tangible assets	0.431	0.404	0.370	0.355	0.334	0.319	0.282	0.303	0.356	0.342	0.325
Intangibles and misc	0.005	0.002	0.002	0.001	0.002	0.002	0.002	0.002	0.003	0.004	0.004
Investments in group companies	0.004	0.004	0.013	0.015	0.045	0.053	0.096	0.097	0.094	0.105	0.129
Other financial investments	0.039	0.037	0.059	0.054	0.018	0.020	0.015	0.013	0.012	0.012	0.012
Current assets	0.521	0.553	0.557	0.574	0.601	0.606	0.605	0.585	0.535	0.538	0.530
Cash and bank accounts	0.041	0.051	0.056	0.057	0.093	0.109	0.119	0.086	0.091	0.090	0.104
Receivables from group companies	0.005	0.006	0.005	0.005	0.007	0.007	0.006	0.007	0.006	0.006	0.006
Other receivables	0.264	0.273	0.267	0.271	0.249	0.259	0.268	0.270	0.254	0.272	0.255
Inventories	0.211	0.223	0.228	0.241	0.253	0.231	0.212	0.223	0.184	0.170	0.164
Liabilities											
Shareholders' funds	0.254	0.319	0.279	0.266	0.277	0.292	0.321	0.337	0.352	0.355	0.381
Equity and share premium	(0.231)	(0.217)	(0.197)	(0.165)	(0.157)	(0.151)	(0.155)	(0.142)	(0.132)	(0.116)	(0.111)
Preference capital	0.001	0.001	0.001	0.001	0.001	0.003	0.003	0.005	0.004	0.004	0.004
Specific reserves	0.104	0.088	0.122	0.146	0.146	0.146	0.130	0.120	0.104	0.100	0.094
Total debt	0.363	0.302	0.294	0.291	0.280	0.266	0.255	0.258	0.307	0.322	0.315
Bank debt (short and long-term)	0.095	0.085	0.091	0.090	0.091	0.089	0.096	0.101	0.116	0.134	0.130
Other long-term debt	0.011	0.012	0.014	0.017	0.016	0.022	0.032	0.030	0.037	0.039	0.050
Loans from government	0.079	0.033	0.031	0.024	0.014	0.010	0.007	0.006	0.008	0.006	0.006
Loans from group companies	0.002	0.002	0.001	0.002	0.002	0.003	0.002	0.003	0.003	0.005	0.003
Other debt	0.175	0.170	0.156	0.157	0.156	0.142	0.117	0.118	0.144	0.138	0.125
Current liabilities	0.278	0.290	0.304	0.297	0.297	0.293	0.292	0.280	0.233	0.219	0.206
Payables	0.170	0.183	0.189	0.186	0.178	0.169	0.171	0.158	0.152	0.140	0.129
Other current liabilities	0.108	0.107	0.115	0.111	0.119	0.124	0.121	0.122	0.081	0.079	0.078
Composition of debt											
Long-term (short-term)	0.923	0.780	0.728	0.709	0.696	0.659	0.653	0.629	0.685	0.709	0.696
Institutional (marketable)	0.969	0.961	0.951	0.941	0.943	0.915	0.875	0.883	0.880	0.871	0.824
Foreign currency (domestic)	0.021	0.140	0.143	0.212	0.196	0.183	0.148	0.124	0.095	0.052	0.045

Table 10: An International comparison of financial structures: Book value of total debt/total assets

Country	Source	Date(s) of data	Mean	No of firms	Source	Date(s) of data	Mean	Aggregate	No of firms
Canada	MCH	1991	0.522	106	RZ	1991	0.36	0.38	318
France	MCH	1991	0.683	99	RZ	1991	0.26	0.29	225
Germany	MCH	1991	0.699	78	RZ	1991	0.20	0.16	191
Italy	MCH	1991	0.659	33	RZ	1991	0.28	0.30	118
Japan	MCH	1991	0.645	670	RZ	1991	0.35	0.42	514
United Kingdom	MCH	1991	0.534	230	RZ	1991	0.21	0.24	608
United States	MCH	1991	0.507	725	RZ	1991	0.31	0.37	2580
Brazil	BADM	1985-87	0.307	49					
Mexico	BADM	1985-87	0.354	99					
India	BADM	1985-87	0.661	99	GMS	1989		0.688	748
					GMS	1991		0.679	748
					GMS	1999		0.606	748
South Korea	BADM	1985-87	0.728	93					
Jordan	BADM	1985-87	0.447	38					
Malaysia	BADM	1985-87	0.409	96					
Pakistan	BADM	1985-87	0.652	96					
Thailand	BADM	1985-87	0.509	64					
Turkey	BADM	1985-87	0.618	45					
Zimbabwe	BADM	1985-87	0.403	48					

Sources: BADM: Booth, Aivazian, Demirguc-Kunt and Maksimovic (2001)
GMS: Green, Murinde and Suppakitjarak: this paper
MCH: McClure, Clayton and Hofler (1999)
RZ: Rajan and Zingales (1995)

*Table 11(i): Financial structure: weighted mean measures for quoted non-financial companies
(book values: proportions)*

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
total assets method - ratios to total assets											
Equity/total assets	0.312	0.312	0.321	0.315	0.346	0.393	0.431	0.430	0.416	0.404	0.394
Debt/total assets	0.688	0.688	0.679	0.685	0.654	0.607	0.569	0.570	0.584	0.596	0.606
Bank debt/total assets	0.139	0.138	0.132	0.122	0.121	0.099	0.109	0.125	0.128	0.126	0.125
Group debt/total assets	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.001	0.001	0.001
Net other debt/total assets	0.548	0.550	0.546	0.562	0.531	0.507	0.460	0.445	0.455	0.470	0.480
net assets (na) method - ratios to net assets											
Equity/net assets	0.419	0.417	0.429	0.422	0.446	0.498	0.538	0.540	0.518	0.501	0.496
Debt/net assets;	0.581	0.583	0.571	0.578	0.554	0.502	0.462	0.460	0.482	0.499	0.504
Bank debt/net assets	0.187	0.184	0.176	0.164	0.156	0.126	0.136	0.157	0.159	0.156	0.158
Group debt/net assets	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Net other debt/net assets	0.393	0.397	0.394	0.413	0.397	0.375	0.326	0.303	0.322	0.342	0.345
adjusted na method - ratios to net tangible assets											
Equity/nta	0.458	0.476	0.488	0.479	0.526	0.619	0.695	0.686	0.660	0.633	0.625
Debt/nta	0.610	0.621	0.602	0.596	0.553	0.511	0.463	0.447	0.486	0.521	0.527
Bank debt/nta	0.162	0.162	0.151	0.135	0.136	0.110	0.132	0.146	0.150	0.134	0.132
Group debt/nta	-0.003	-0.003	-0.007	-0.013	-0.019	-0.027	-0.041	-0.041	-0.038	-0.037	-0.035
Net other debt/nta	0.447	0.458	0.450	0.460	0.417	0.400	0.331	0.300	0.335	0.386	0.394
debt ratios											
Bank debt/total debt	0.322	0.316	0.308	0.283	0.282	0.251	0.294	0.340	0.330	0.313	0.314
Debentures/total debt	0.205	0.231	0.231	0.230	0.246	0.272	0.241	0.199	0.201	0.198	0.207
Group debt/total debt	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.002	0.001	0.002

*Table 11(ii): Financial structure: median measures for quoted non-financial companies
(book values: proportions)*

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
total assets method - ratios to total assets											
Equity/total assets	0.286	0.288	0.301	0.304	0.330	0.366	0.390	0.392	0.389	0.376	0.374
Debt/total assets	0.714	0.712	0.699	0.696	0.670	0.634	0.610	0.608	0.611	0.624	0.626
Bank debt/total assets	0.163	0.163	0.166	0.146	0.148	0.122	0.129	0.141	0.148	0.155	0.151
Group debt/total assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net other debt/total assets	0.523	0.520	0.509	0.517	0.498	0.479	0.451	0.442	0.446	0.453	0.464
net assets (na) method - ratios to net assets											
Equity/net assets	0.400	0.405	0.412	0.418	0.435	0.490	0.515	0.515	0.500	0.481	0.483
Debt/net assets;	0.600	0.595	0.588	0.582	0.565	0.510	0.485	0.485	0.500	0.519	0.517
Bank debt/net assets	0.224	0.219	0.224	0.204	0.197	0.162	0.171	0.188	0.189	0.199	0.201
Group debt/net assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net other debt/net assets	0.329	0.326	0.322	0.333	0.317	0.299	0.278	0.268	0.277	0.281	0.291
adjusted na method - ratios to net tangible assets											
Equity/nta	0.434	0.456	0.468	0.488	0.518	0.613	0.647	0.633	0.621	0.602	0.590
Debt/nta	0.600	0.578	0.568	0.552	0.523	0.465	0.448	0.453	0.471	0.501	0.506
Bank debt/nta	0.198	0.201	0.209	0.180	0.185	0.157	0.168	0.198	0.204	0.211	0.210
Group debt/nta	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net other debt/nta	0.377	0.352	0.346	0.343	0.297	0.259	0.247	0.223	0.233	0.250	0.258
debt ratios											
Bank debt/total debt	0.400	0.406	0.409	0.369	0.382	0.355	0.392	0.419	0.410	0.412	0.409
Debentures/total debt	0.000	0.005	0.031	0.048	0.049	0.047	0.039	0.031	0.029	0.031	0.022
Group debt/total debt	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

**Table 12(i): Financial structure: weighted mean measures for unquoted non-financial companies
(book values: proportions)**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
total assets method - ratios to total assets											
Equity/total assets	0.359	0.408	0.402	0.412	0.423	0.441	0.454	0.462	0.459	0.459	0.479
Debt/total assets	0.641	0.592	0.598	0.588	0.577	0.559	0.546	0.538	0.541	0.541	0.521
Bank debt/total assets	0.095	0.085	0.091	0.090	0.091	0.089	0.096	0.101	0.116	0.134	0.130
Group debt/total assets	0.002	0.002	0.001	0.002	0.002	0.003	0.002	0.003	0.003	0.005	0.003
Net other debt/total assets	0.543	0.505	0.505	0.496	0.483	0.466	0.448	0.434	0.422	0.402	0.388
net assets (na) method - ratios to net assets											
Equity/net assets	0.498	0.575	0.578	0.586	0.602	0.624	0.640	0.642	0.599	0.588	0.603
Debt/net assets;	0.502	0.425	0.422	0.414	0.398	0.376	0.360	0.358	0.401	0.412	0.397
Bank debt/net assets	0.132	0.120	0.131	0.128	0.130	0.126	0.136	0.140	0.152	0.171	0.164
Group debt/net assets	0.003	0.003	0.002	0.003	0.003	0.004	0.003	0.004	0.004	0.006	0.004
Net other debt/net assets	0.368	0.302	0.290	0.283	0.265	0.245	0.220	0.214	0.246	0.235	0.229
adjusted na method - ratios to net tangible assets											
Equity/nta	0.552	0.648	0.671	0.690	0.718	0.798	0.914	0.875	0.845	0.890	0.971
Net debt/nta	0.514	0.419	0.450	0.427	0.389	0.334	0.310	0.335	0.352	0.338	0.318
Gross bank debt/nta	0.084	0.055	0.058	0.055	-0.003	-0.035	-0.047	0.029	0.047	0.085	0.052
Gross group debt/nta	-0.003	-0.003	-0.019	-0.022	-0.073	-0.090	-0.189	-0.179	-0.169	-0.196	-0.258
Net other debt/nta	0.426	0.360	0.389	0.369	0.388	0.364	0.352	0.301	0.300	0.243	0.259
debt ratios											
Bank debt/total debt	0.262	0.283	0.310	0.309	0.327	0.335	0.378	0.391	0.378	0.416	0.412
Debentures/total debt	0.031	0.039	0.049	0.059	0.057	0.081	0.125	0.117	0.120	0.122	0.159
Group debt/total debt	0.006	0.007	0.004	0.007	0.008	0.012	0.010	0.011	0.009	0.015	0.011

*Table 12(ii): Financial structure: median measures for unquoted non-financial companies
(book values: proportions)*

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
total assets method - ratios to total assets											
Equity/total assets	0.267	0.276	0.263	0.276	0.284	0.296	0.311	0.317	0.312	0.331	0.339
Debt/total assets	0.733	0.724	0.737	0.724	0.716	0.704	0.689	0.683	0.688	0.669	0.661
Bank debt/total assets	0.170	0.160	0.168	0.186	0.170	0.150	0.154	0.156	0.148	0.155	0.145
Group debt/total assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net other debt/total assets	0.541	0.551	0.551	0.525	0.522	0.496	0.492	0.492	0.491	0.460	0.429
net assets (na) method - ratios to net assets											
Equity/net assets	0.452	0.433	0.425	0.430	0.452	0.486	0.483	0.473	0.492	0.495	0.518
Debt/net assets;	0.548	0.567	0.575	0.570	0.548	0.514	0.517	0.527	0.508	0.505	0.482
Bank debt/net assets	0.272	0.276	0.283	0.300	0.281	0.250	0.248	0.261	0.241	0.224	0.209
Group debt/net assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net other debt/net assets	0.212	0.202	0.232	0.224	0.202	0.207	0.199	0.181	0.196	0.177	0.169
adjusted na method - ratios to net tangible assets											
Equity/nta	0.443	0.425	0.438	0.471	0.482	0.514	0.522	0.556	0.582	0.611	0.653
Debt/nta	0.595	0.590	0.592	0.564	0.558	0.512	0.521	0.505	0.463	0.450	0.418
Bank debt/nta	0.204	0.207	0.238	0.247	0.216	0.179	0.179	0.193	0.182	0.197	0.196
Group debt/nta	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net other debt/nta	0.338	0.372	0.363	0.339	0.297	0.252	0.272	0.274	0.246	0.175	0.173
debt ratios											
Bank debt/total debt	0.525	0.519	0.506	0.531	0.552	0.519	0.522	0.544	0.505	0.509	0.502
Debentures/total debt	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Group debt/total debt	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 13(i): Financial structure: Mann-Whitney tests for quoted non-financial companies

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1989-99
total assets method											
Debt/total assets	0.817	0.364	1.071	2.679*	4.260*	2.144*	0.157	-0.987	-1.039	-0.788	7.358*
Bank debt/total assets	-0.942	-0.224	2.689*	0.078	3.528*	-0.603	-2.400*	-0.736	-1.032	0.352	0.694
net assets (na) method											
Debt/net assets;	-0.647	-0.592	1.959*	-0.126	1.823	-2.226*	-2.422*	0.623	-0.188	0.665	-1.097
Bank debt/net assets	-1.981	-1.021	-0.979	-0.272	0.061	0.637	0.967	-0.378	-0.241	0.584	-2.871*
adjusted na method											
Debt/nta	-0.461	-0.292	-0.011	-0.178	0.117	0.261	0.014	-0.392	0.105	-0.154	-0.623
Bank debt/nta	0.604	0.233	1.262	1.912	4.191*	2.232*	-0.144	-1.208	-1.398	-0.609	5.934*
debt ratios											
Bank debt/total debt	-0.611	-0.334	2.228*	0.778	3.580*	-0.571	-2.166*	-0.359	-0.753	0.007	1.680
Debentures/total debt	0.856	0.560	1.550	2.392*	3.256*	1.466	-0.367	-1.523	-1.313	-0.882	4.792*
Group debt/total debt	-1.027	-0.369	2.273*	0.002	2.528*	-0.785	-2.684*	-0.496	-0.948	-0.143	-1.521

* significant at the 95% level (2-tailed test)

Table 13(ii): Financial structure: Mann-Whitney tests for quoted non-financial companies: including government-owned firms

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1989-99
total assets method											
Debt/total assets	0.881	0.303	1.036	2.678*	4.128*	2.232*	0.170	-0.995	-0.970	-0.698	7.526*
Bank debt/total assets	-1.052	-0.166	2.820*	-0.227	3.502*	-0.444	-2.402*	-0.696	-0.894	0.361	0.734
net assets (na) method											
Debt/net assets;	0.650	0.184	1.280	1.838	4.053*	2.377*	-0.077	-1.249	-1.257	-0.442	6.228*
Bank debt/net assets	-0.720	-0.298	2.269*	0.562	3.567*	-0.398	-2.203*	-0.341	-0.636	0.033	1.680
adjusted na method											
Debt/nta	0.894	0.425	1.569	2.520*	3.198*	1.554	-0.277	-1.432	-1.250	-0.766	5.227*
Bank debt/nta	-1.068	-0.376	2.401*	-0.341	2.620*	-0.619	-2.735*	-0.445	-0.751	-0.045	-1.308

* significant at the 95% level (2-tailed test)

Table 14(i): Financial structure: Mann-Whitney tests for unquoted non-financial companies

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1989-99
total assets method											
Debt/total assets	-0.047	-0.099	0.384	0.406	1.010	0.339	0.130	0.464	0.740	0.449	3.449*
Bank debt/total assets	-0.296	-0.630	-0.219	0.550	1.016	0.041	0.170	0.143	0.179	0.090	0.896
net assets (na) method											
Debt/net assets;	-0.120	0.264	-0.526	-0.059	0.999	-0.360	-0.104	0.448	0.078	0.438	1.306
Bank debt/net assets	-0.651	-0.522	-0.157	0.003	-0.057	0.057	0.335	0.114	-0.048	0.536	0.349
adjusted na method											
Debt/nta	0.235	0.093	-0.122	0.005	-0.442	0.231	0.181	-0.645	-0.468	-0.049	-0.202
Bank debt/nta	-0.134	-0.288	0.304	0.428	1.033	0.216	0.151	0.193	0.255	0.267	2.246*
debt ratios											
Bank debt/total debt	-0.675	-0.575	-0.162	0.590	1.200	0.132	0.079	0.563	0.334	0.124	1.429
Debentures/total debt	-0.092	-0.249	0.668	0.372	1.029	-0.003	0.394	0.703	0.674	0.071	2.990*
Group debt/total debt	-0.517	-0.666	-0.185	0.688	0.758	0.480	-0.341	0.488	-0.124	0.366	0.776

* significant at the 95% level (2-tailed test)

Table 14(ii): Financial structure: Mann-Whitney tests for unquoted non-financial companies: including government-owned firms

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1989-99
total assets method											
Debt/total assets	-0.426	0.063	0.399	0.911	1.076	0.367	0.154	0.537	0.534	0.589	3.852*
Bank debt/total assets	-0.238	-0.505	-0.040	0.198	0.818	0.402	-0.164	0.288	0.223	0.058	0.919
net assets (na) method											
Debt/net assets;	-0.452	0.065	0.231	1.104	1.216	0.554	0.167	0.393	0.394	0.446	3.913*
Bank debt/net assets	-0.523	-0.299	-0.164	0.411	0.842	0.505	-0.295	0.439	0.118	0.130	1.145
adjusted na method											
Debt/nta	-0.382	-0.336	0.625	0.923	1.126	0.174	0.515	0.821	0.448	0.180	3.773*
Bank debt/nta	-0.284	-0.313	-0.346	0.066	0.823	1.173	-0.505	0.294	0.330	0.149	1.383

* significant at the 95% level (2-tailed test)

**Table 15: Sources-Uses measures of financial structure: weighted mean measures for quoted non-financial companies
(book values: proportions)**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Net asset growth - ratios to net acquisitions of assets										
Internal funds	0.199	0.284	0.243	0.157	0.223	0.252	0.326	0.221	0.215	0.150
External financing	0.801	0.716	0.757	0.843	0.777	0.748	0.674	0.779	0.785	0.850
Equity financing	0.187	0.123	0.126	0.331	0.425	0.414	0.200	0.132	0.077	0.096
Debt financing	0.614	0.594	0.630	0.512	0.353	0.334	0.474	0.647	0.708	0.753
Bank financing	0.176	0.157	0.118	0.142	0.024	0.174	0.268	0.180	0.154	0.241
Group financing	0.003	0.001	0.000	0.000	0.001	-0.001	0.001	0.003	-0.001	0.006
Net other financing	0.434	0.435	0.512	0.370	0.328	0.161	0.206	0.464	0.555	0.506
Net sources-uses - ratios to gross fixed investment										
Internal funds	0.476	0.522	0.427	0.398	0.460	0.463	0.501	0.485	0.503	0.619
External financing	0.524	0.478	0.573	0.602	0.540	0.537	0.499	0.515	0.497	0.381
Equity financing	-0.014	0.054	0.104	0.273	0.231	0.282	0.168	-0.040	-0.093	-0.014
Debt financing	0.538	0.424	0.469	0.329	0.309	0.255	0.331	0.555	0.590	0.395
Bank financing	0.113	0.080	0.056	0.116	-0.006	0.187	0.176	0.126	0.008	0.055
Net group financing (excl investments)	-0.021	-0.002	-0.013	-0.021	-0.007	-0.057	0.004	0.015	-0.024	-0.154
Net other financing	0.446	0.346	0.426	0.234	0.321	0.125	0.151	0.414	0.606	0.493

**Table 16: Sources-Uses measures of financial structure: weighted mean measures for unquoted non-financial companies
(book values: proportions)**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Net asset growth - ratios to net acquisitions of assets										
Internal funds	1.639	0.524	0.408	0.693	0.687	0.496	0.546	0.367	0.499	0.688
External financing	-0.639	0.476	0.592	0.307	0.313	0.504	0.454	0.633	0.501	0.312
Equity financing	0.046	0.019	0.015	0.061	0.147	0.216	0.088	0.035	0.045	0.034
Debt financing	-0.685	0.457	0.577	0.246	0.165	0.288	0.366	0.598	0.455	0.278
Bank financing	-0.045	0.280	0.175	0.167	0.093	0.183	0.179	0.224	0.261	0.097
Group financing	0.005	-0.013	0.015	0.008	0.005	0.003	0.006	0.005	0.010	0.001
Net other financing	-0.645	0.190	0.387	0.071	0.067	0.102	0.180	0.369	0.184	0.180
Net sources-uses - ratios to gross fixed investment										
Internal funds	1.508	0.981	0.703	0.978	1.549	1.245	0.652	0.690	1.122	1.719
External financing	-0.508	0.019	0.297	0.022	-0.549	-0.245	0.348	0.310	-0.122	-0.719
Equity financing	-0.004	-0.447	-0.066	0.059	-0.123	-0.302	-0.034	-0.048	-0.255	-0.715
Debt financing	-0.505	0.467	0.362	-0.037	-0.426	0.058	0.382	0.357	0.134	-0.004
Bank financing	-0.187	0.058	0.040	-0.386	-0.327	-0.090	0.283	0.142	0.256	-0.324
Net group financing (excl investments)	-0.012	-0.015	0.008	-0.021	-0.017	0.007	-0.009	0.008	0.001	-0.023
Net other financing	-0.306	0.423	0.314	0.370	-0.082	0.141	0.109	0.208	-0.123	0.342

Table 17: Sources-uses Measures of Financial structure: Mann-Whitney tests for quoted non-financial companies

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1990-99
Net acquisitions										
Internal funds	-1.324	0.246	1.869	-2.167*	0.870	-1.205	-0.035	-1.376	-1.412	-4.259*
External financing	1.323	-0.247	-1.869	2.168*	-0.871	1.205	0.035	1.376	1.413	4.258*
Debt financing	0.803	1.025	1.095	3.221*	-1.163	-2.582*	-1.096	0.835	1.041	3.519*
Bank financing	0.342	2.433*	-2.211*	4.366*	-4.473*	-1.329	2.583*	1.153	-0.096	3.067*
Gross fixed investment										
Internal funds	0.069	1.156	0.549	-0.204	-0.243	0.304	-0.141	-0.136	-1.498	-1.089
External financing	-0.068	-1.156	-0.549	0.204	0.242	-0.304	0.140	0.137	1.498	1.089
Debt financing	0.008	0.825	1.012	0.729	0.220	-2.143*	-2.161*	0.852	0.262	0.235
Bank financing	0.118	2.573*	-2.368*	2.733*	-2.997*	-2.045*	1.871	0.384	0.335	0.814

* significant at the 95% level (2-tailed test)

Table 18: Sources-uses Measures of Financial structure: Mann-Whitney tests for unquoted non-financial companies

	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1990-99
Net acquisitions										
Internal funds	0.731	-0.236	2.110*	-0.932	-1.660	1.223	-0.082	-1.096	-1.039	-1.619
External financing	-0.729	0.237	-2.111*	0.930	1.660	-1.224	0.084	1.093	1.047	1.619
Debt financing	-0.510	0.143	-1.622	1.011	1.358	-0.796	-0.546	1.774	0.374	1.831
Bank financing	-0.444	-1.001	-0.168	1.079	0.197	-0.164	0.638	0.909	1.240	2.433*
Gross fixed investment										
Internal funds	0.779	0.437	-0.046	-0.323	-0.192	0.136	-1.133	0.606	-0.305	-0.514
External financing	-0.783	-0.437	0.046	0.327	0.192	-0.138	1.133	-0.606	0.303	0.510
Debt financing	-0.657	0.321	-0.404	0.745	-0.227	0.470	0.235	-0.231	0.261	0.734
Bank financing	0.487	1.054	-0.509	-0.076	-1.228	0.896	0.162	0.453	1.129	2.728*

* significant at the 95% level (2-tailed test)

Table 19: Business Groups: quoted non-financial companies

	No.	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Claims on group companies (in proportion of total assets)												
All companies	748	0.014	0.015	0.017	0.020	0.025	0.028	0.041	0.038	0.034	0.034	0.041
All business groups	497	0.014	0.016	0.017	0.022	0.026	0.030	0.044	0.041	0.036	0.036	0.043
Large business groups	370	0.014	0.016	0.018	0.022	0.027	0.030	0.045	0.041	0.036	0.035	0.043
Top 50 groups	235	0.016	0.019	0.019	0.023	0.028	0.031	0.050	0.046	0.039	0.039	0.047
Group debt/total debt (in proportions)												
All companies	748	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.002	0.001	0.002
All business groups	497	0.002	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.002	0.001	0.002
Large business groups	370	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.002	0.001	0.002
Top 50 groups	235	0.002	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.001	0.001	0.002
Mann-Whitney tests												
		1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1989-99
Group assets/total assets												
All companies	748	-0.043	-0.891	-3.510*	-1.661	-3.341*	-2.374*	-0.840	-0.655	-0.011	0.814	-11.89*
All business groups	497	0.012	-1.071	-4.259*	-1.685	-3.497*	-2.512*	-0.670	-0.883	0.142	1.019	-12.75*
Large business groups	370	0.015	-1.251	-4.828*	-1.641	-3.020*	-2.029*	-0.716	-0.537	0.330	0.872	-11.73*
Top 50 groups	235	0.026	-1.331	-4.533*	-1.177	-1.603	-1.676	-0.721	-0.389	0.115	0.859	-9.137*
Group debt/total debt												
All companies	748	-1.027	-0.369	2.273*	0.002	2.528*	-0.785	-2.684*	-0.496	-0.948	-0.143	-1.521
All business groups	497	-0.601	-0.108	1.947	0.212	2.188*	-1.299	-2.434*	-0.629	-0.631	-0.219	-1.495
Large business groups	370	-0.549	-0.027	1.455	-0.156	2.535*	-1.617	-2.290*	-0.440	-0.102	-0.076	-1.268
Top 50 groups	235	-0.633	-0.339	0.838	0.068	1.863	-1.922	-2.191*	-0.172	-0.311	0.272	-2.254*

* significant at the 95% level (2-tailed test)

Table 20: Business Groups: unquoted non-financial companies

	No.	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Claims on group companies (in proportion of total assets)												
All companies	139	0.009	0.010	0.018	0.020	0.052	0.060	0.102	0.103	0.100	0.111	0.136
All business groups	84	0.016	0.017	0.032	0.036	0.071	0.085	0.159	0.160	0.160	0.182	0.216
Large business groups	71	0.011	0.014	0.029	0.035	0.073	0.088	0.168	0.167	0.167	0.191	0.224
Top 50 groups	56	0.012	0.016	0.036	0.044	0.095	0.112	0.210	0.213	0.215	0.245	0.283
Group debt/total debt (in proportions)												
All companies	139	0.006	0.007	0.004	0.007	0.008	0.012	0.010	0.011	0.009	0.015	0.011
All business groups	84	0.012	0.015	0.006	0.011	0.012	0.016	0.012	0.013	0.010	0.018	0.009
Large business groups	71	0.013	0.017	0.007	0.013	0.013	0.018	0.013	0.015	0.011	0.020	0.010
Top 50 groups	56	0.022	0.022	0.007	0.016	0.014	0.020	0.014	0.016	0.011	0.021	0.011
Mann-Whitney tests												
		1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1989-99
Group assets/total assets												
All companies	139	0.051	-0.192	-1.368	-1.046	-0.818	-0.036	-0.178	-0.463	0.146	0.053	-3.247*
All business groups	84	0.057	-0.230	-1.554	-1.134	-0.803	-0.083	-0.152	-0.689	0.090	0.032	-3.510*
Large business groups	71	0.194	-0.268	-1.576	-1.188	-0.469	0.000	-0.057	-0.666	0.089	-0.018	-3.176*
Top 50 groups	56	-0.006	-0.372	-1.638	-1.161	-0.352	-0.036	-0.268	-0.583	0.082	0.069	-3.395*
Group debt/total debt												
All companies	139	-0.517	-0.666	-0.185	0.688	0.758	0.480	-0.341	0.488	-0.124	0.366	0.776
All business groups	84	-0.758	-0.573	-0.127	0.320	0.531	0.259	-0.196	0.861	0.189	0.162	0.355
Large business groups	71	-0.651	-0.660	-0.213	-0.048	0.650	0.280	-0.172	0.581	0.289	0.321	0.228
Top 50 groups	56	-0.745	-0.244	-0.209	-0.117	0.145	0.594	-0.293	0.417	0.411	0.187	0.036

* significant at the 95% level (2-tailed test)

Chart 1i. Quoted companies: assets

Proportions of total assets

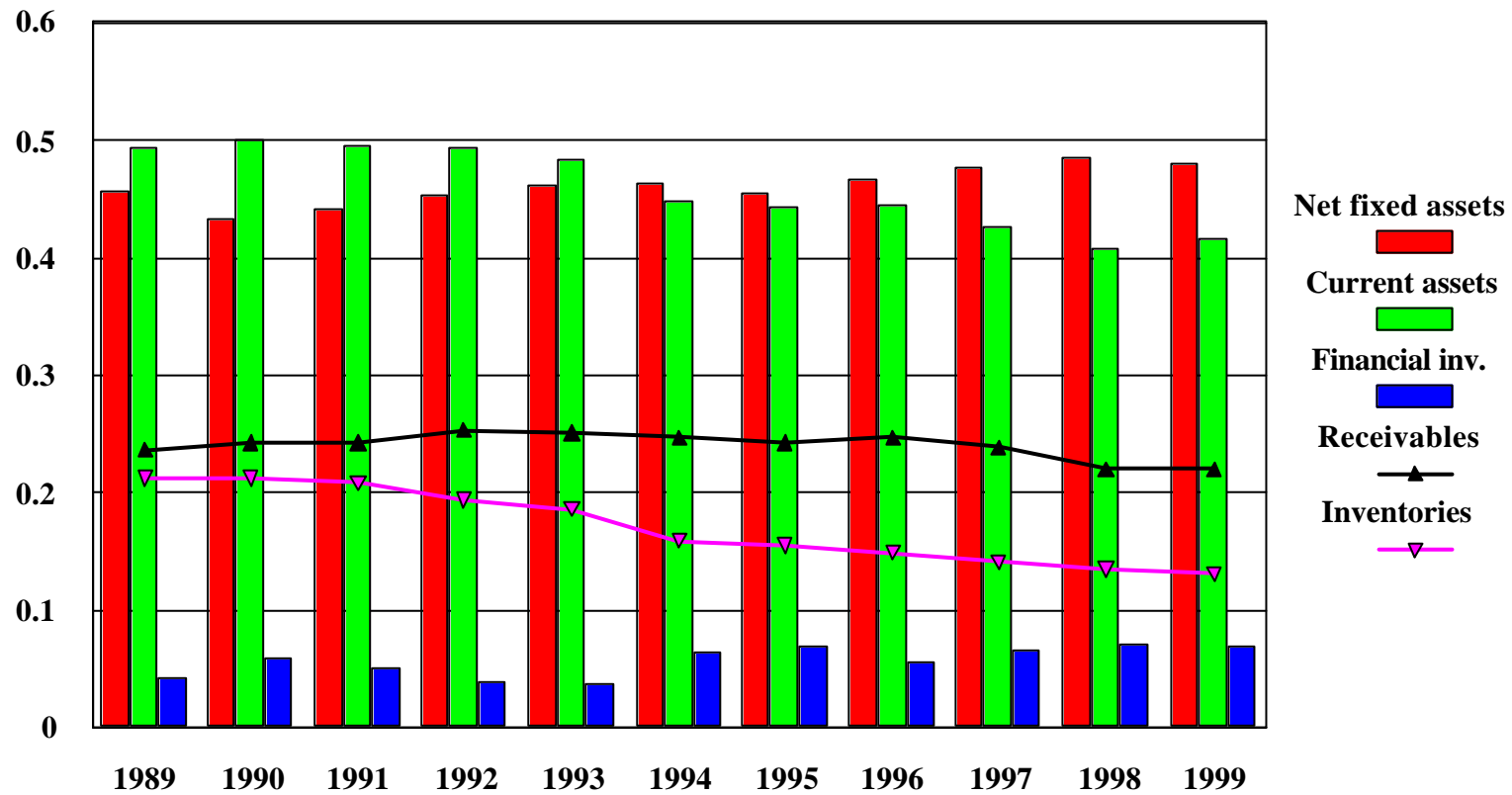


Chart 1ii. Unquoted companies: assets

Proportions of total assets

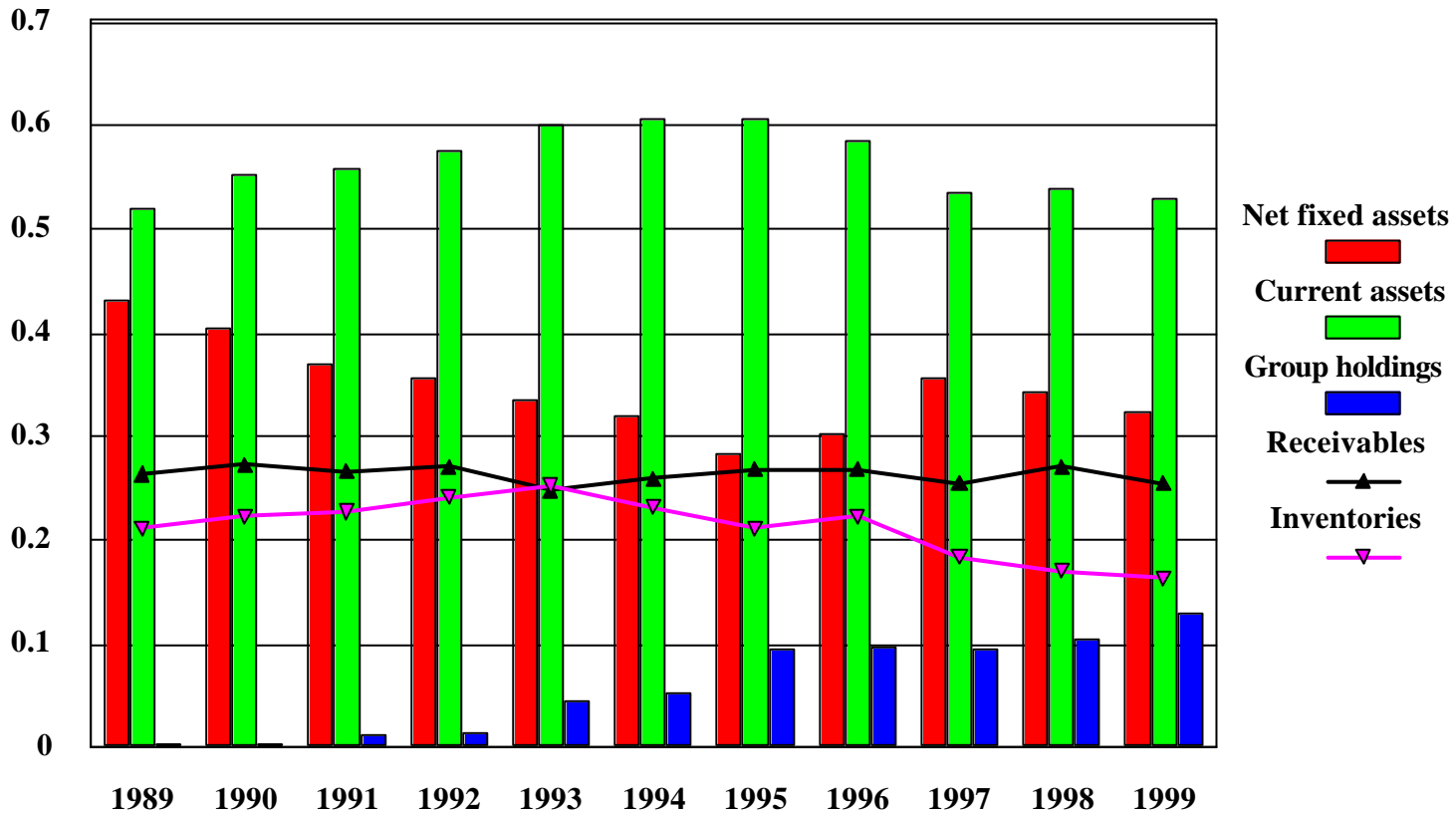


Chart 2i. Quoted companies: liabilities

Proportions of total assets

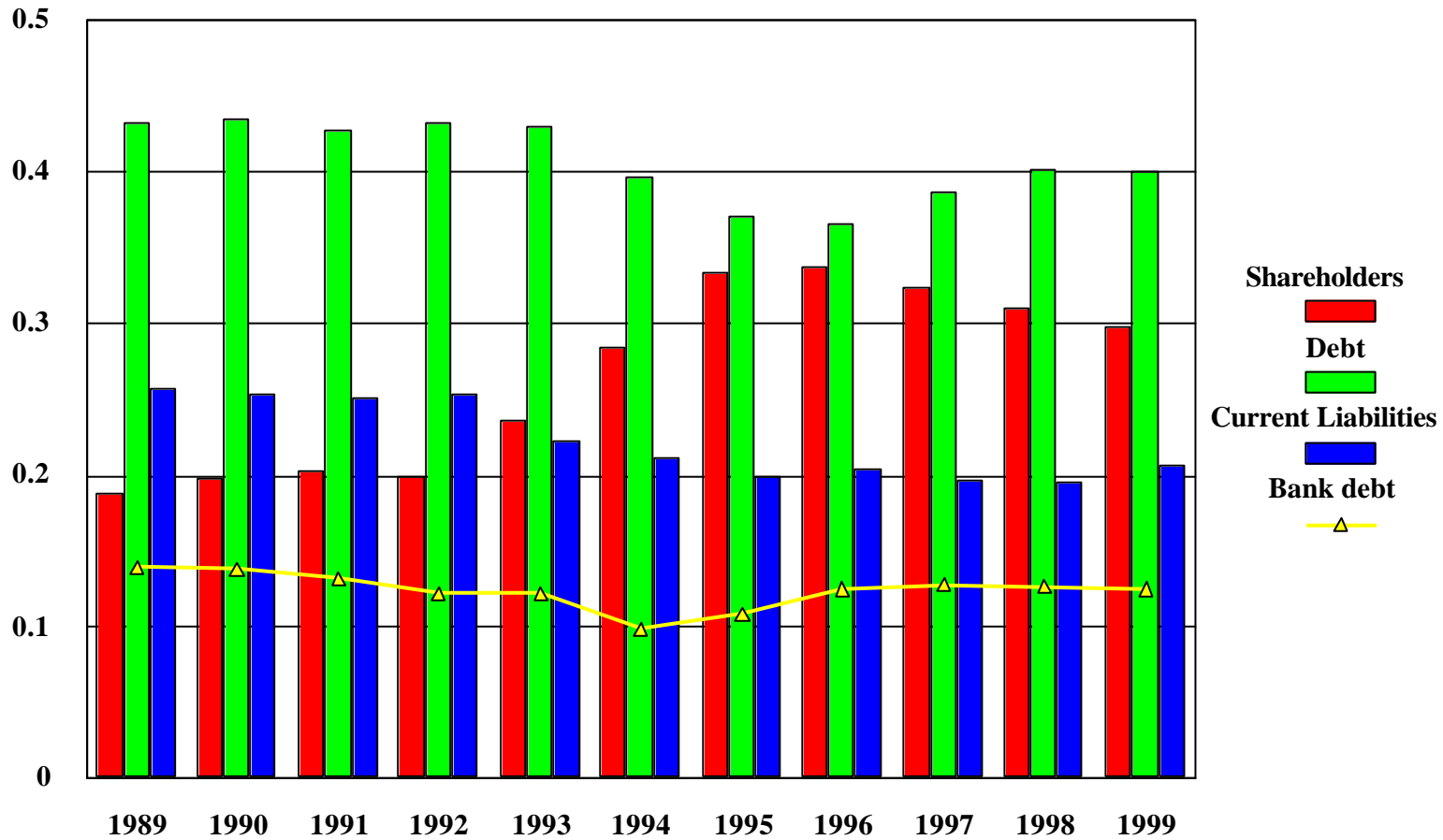


Chart 2ii Unquoted companies: liabilities

Proportions of total assets

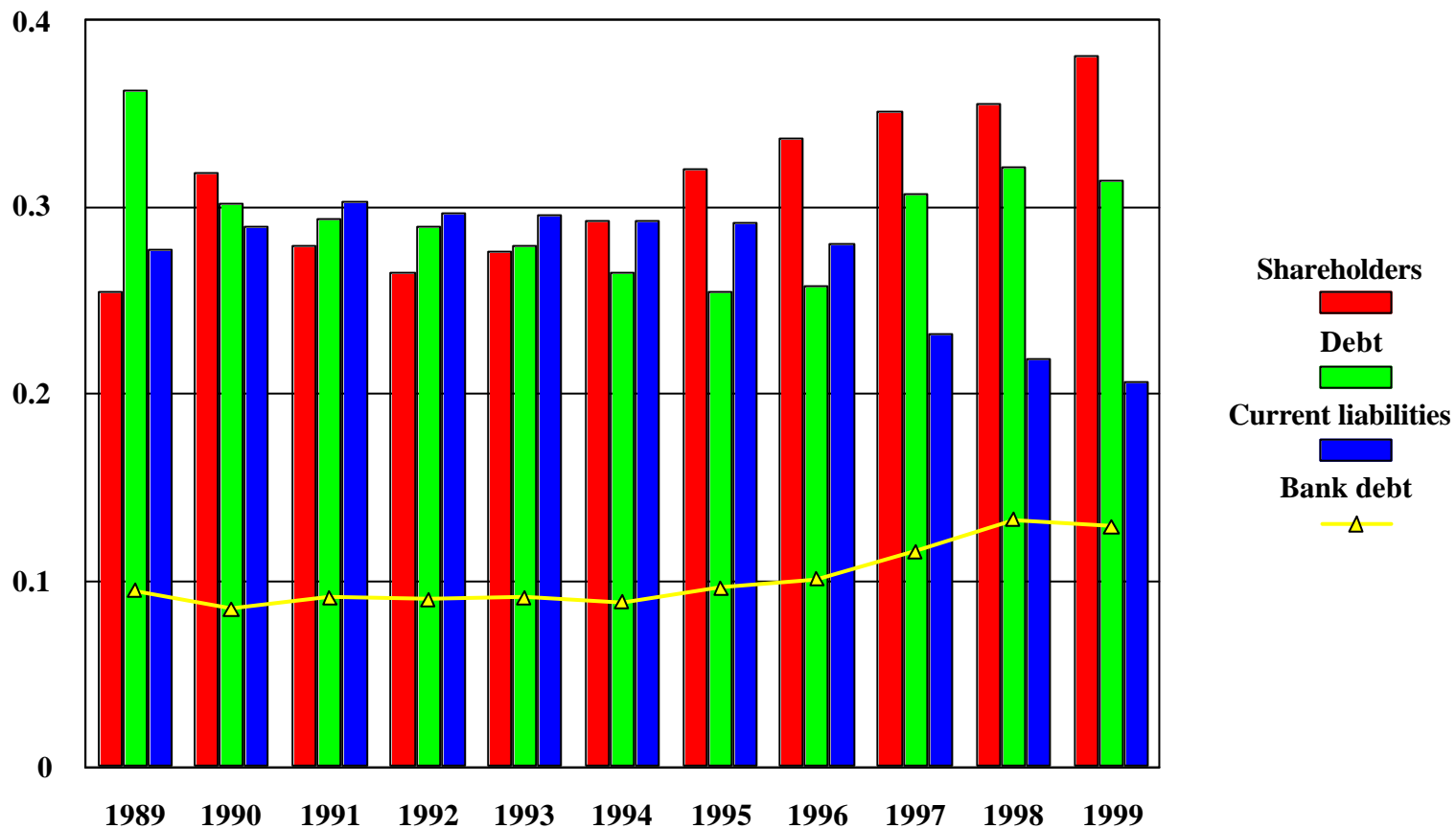


Chart 3i. Quoted companies: leverage

Proportions

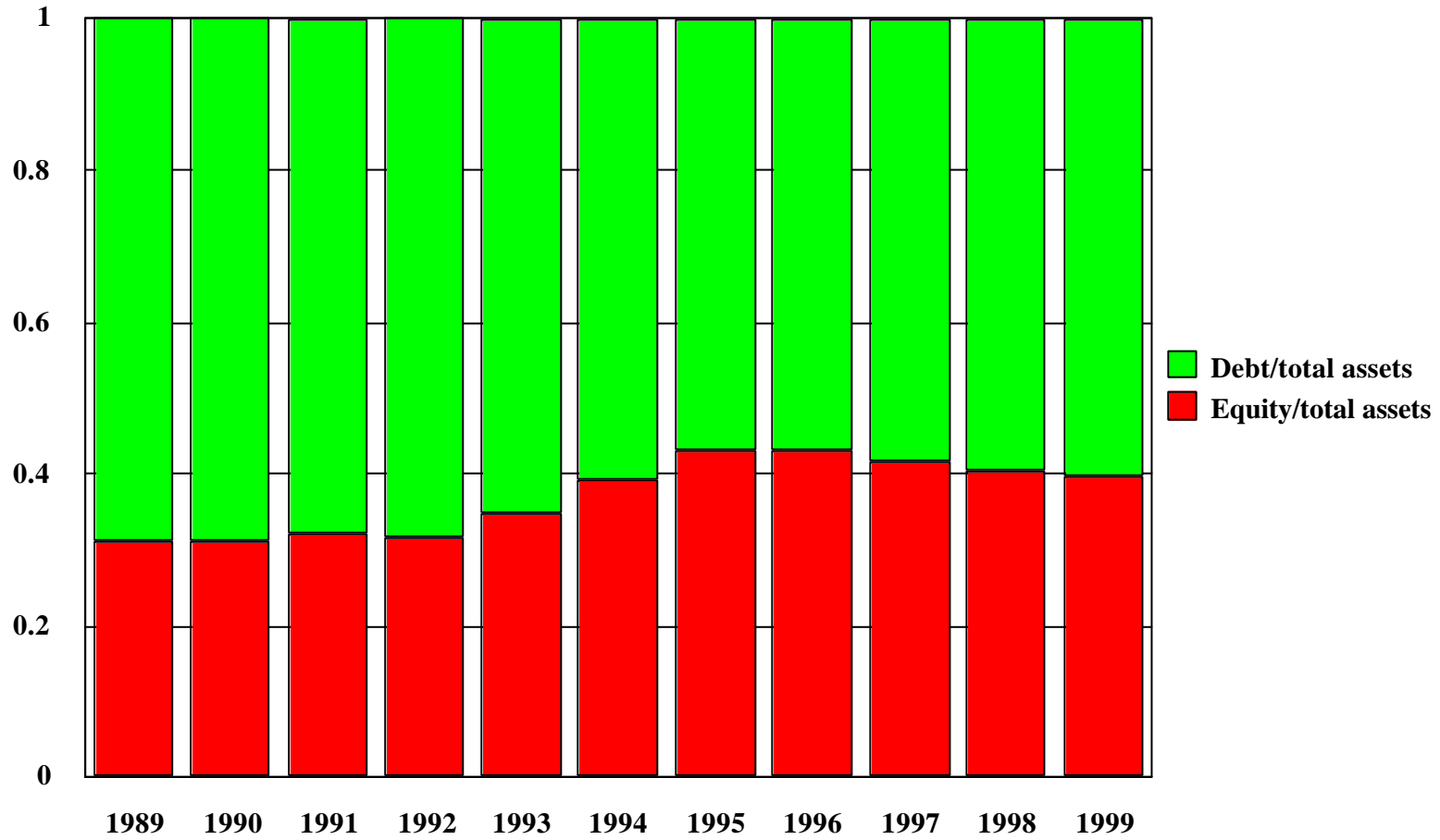


Chart 3ii. Unquoted companies: leverage

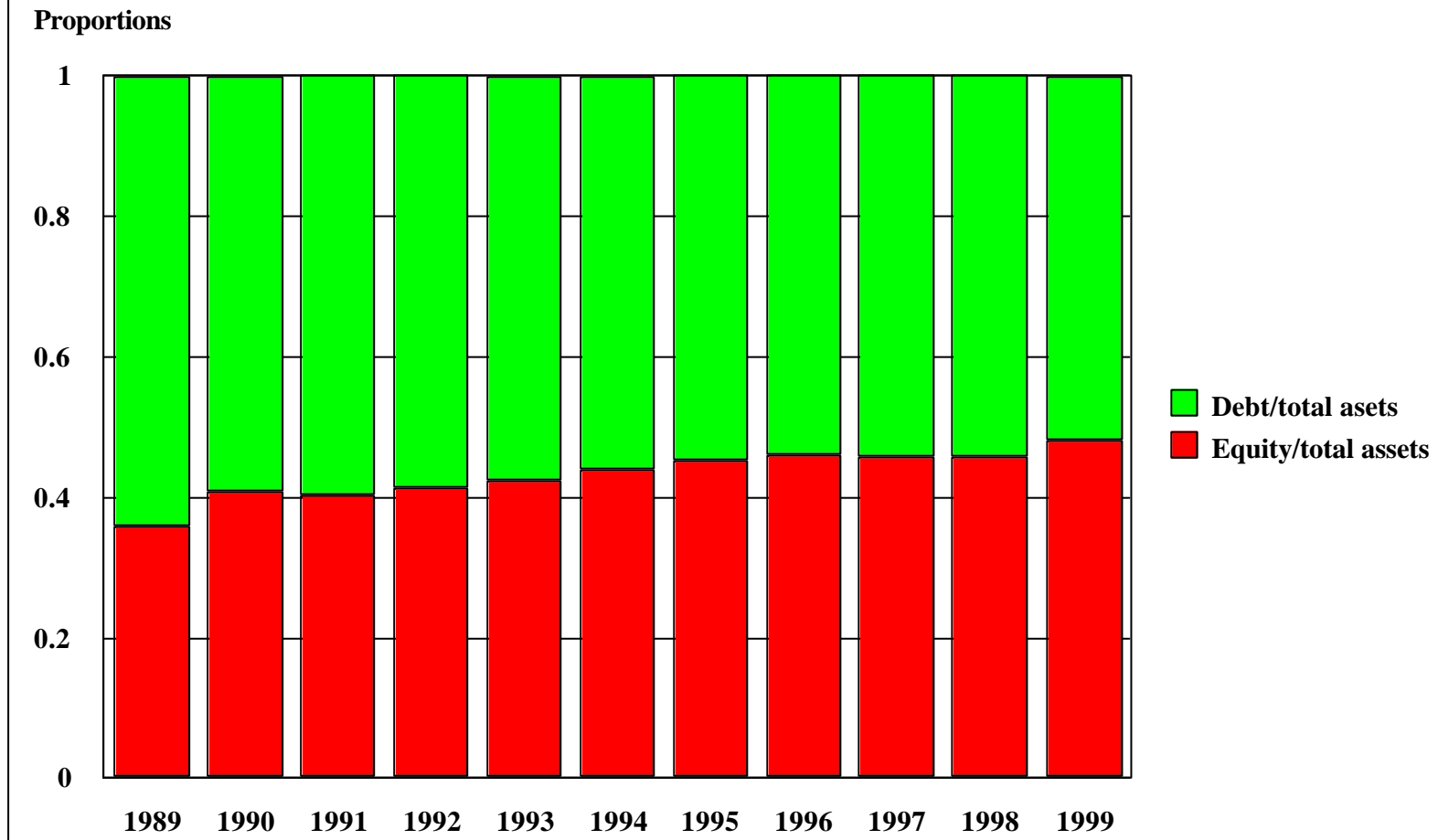


Chart 4i. Quoted companies: debt composition

Proportions

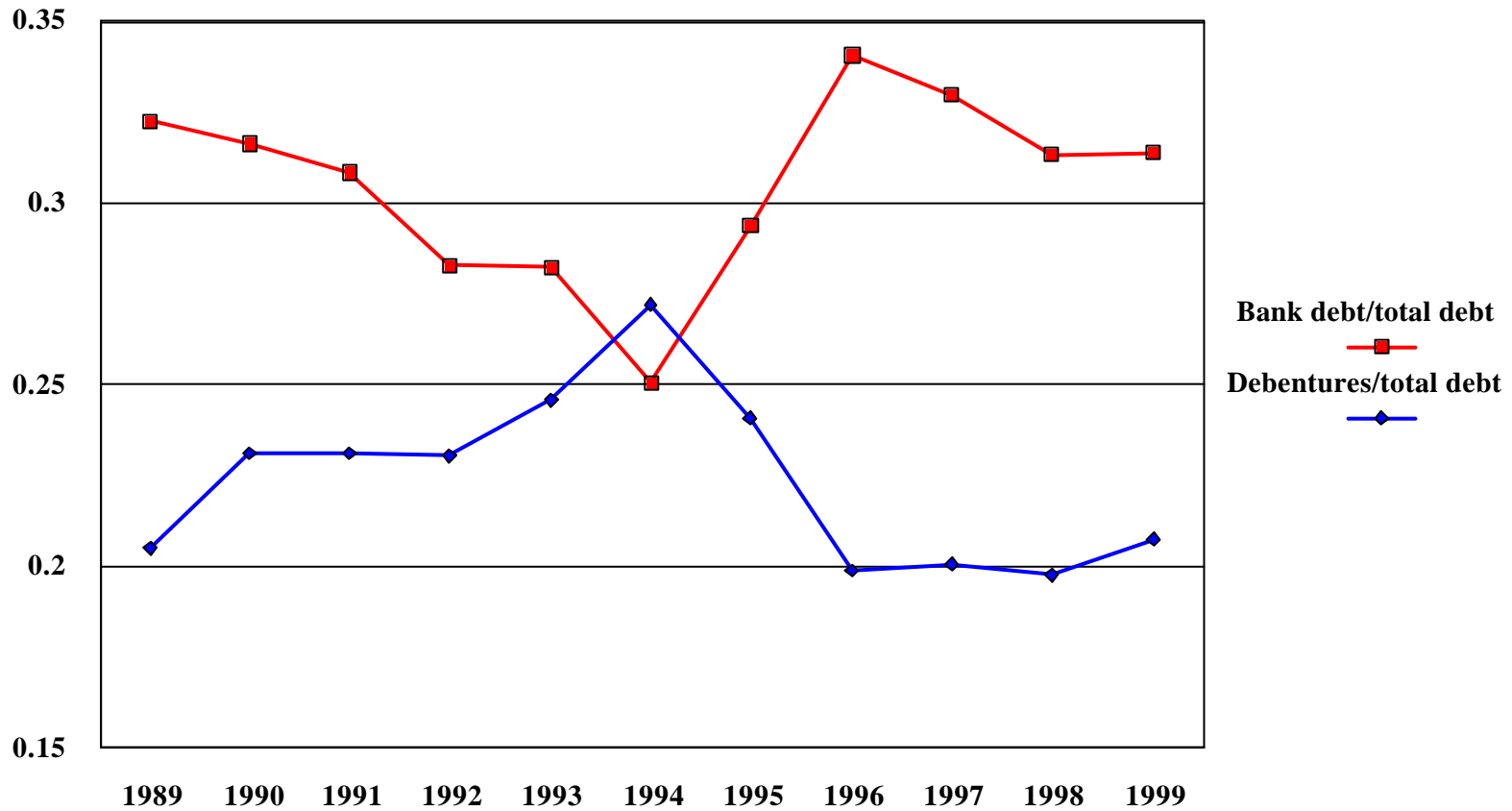


Chart 4ii. Unquoted companies: debt composition

Proportions

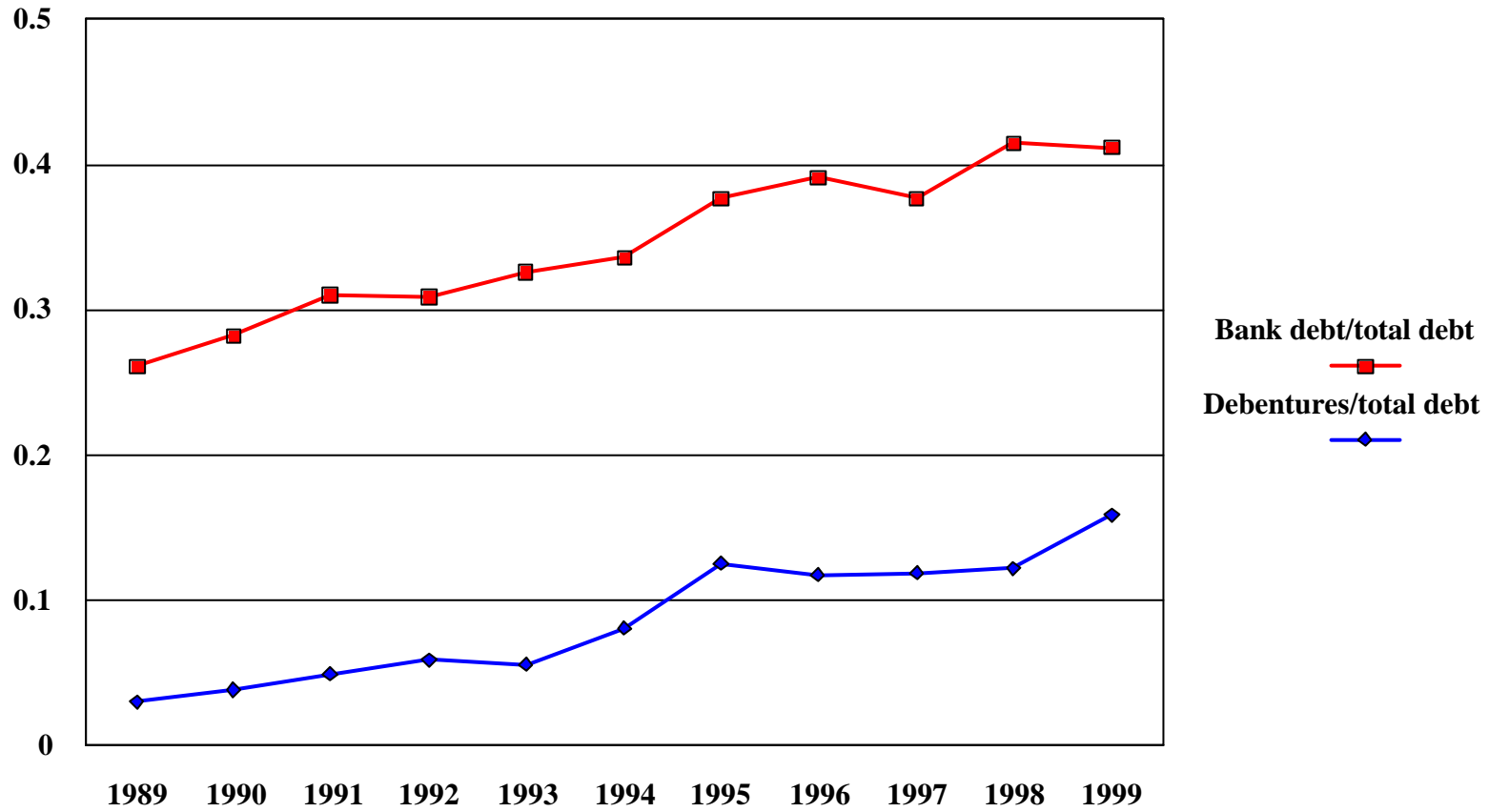


Chart 5i. Quoted companies: sources of funds

Proportions

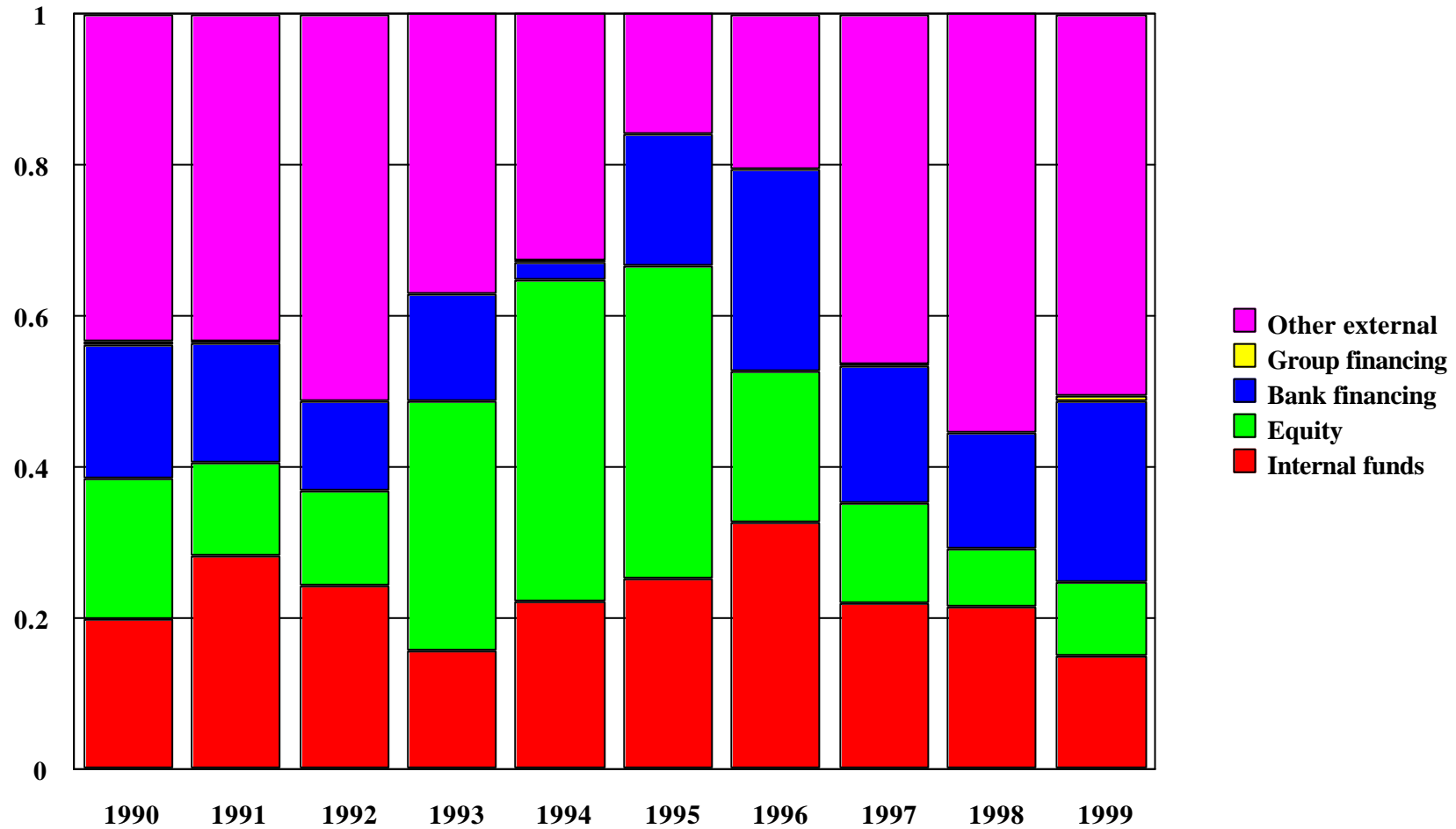


Chart 5ii. Unquoted companies: sources of funds

Proportions

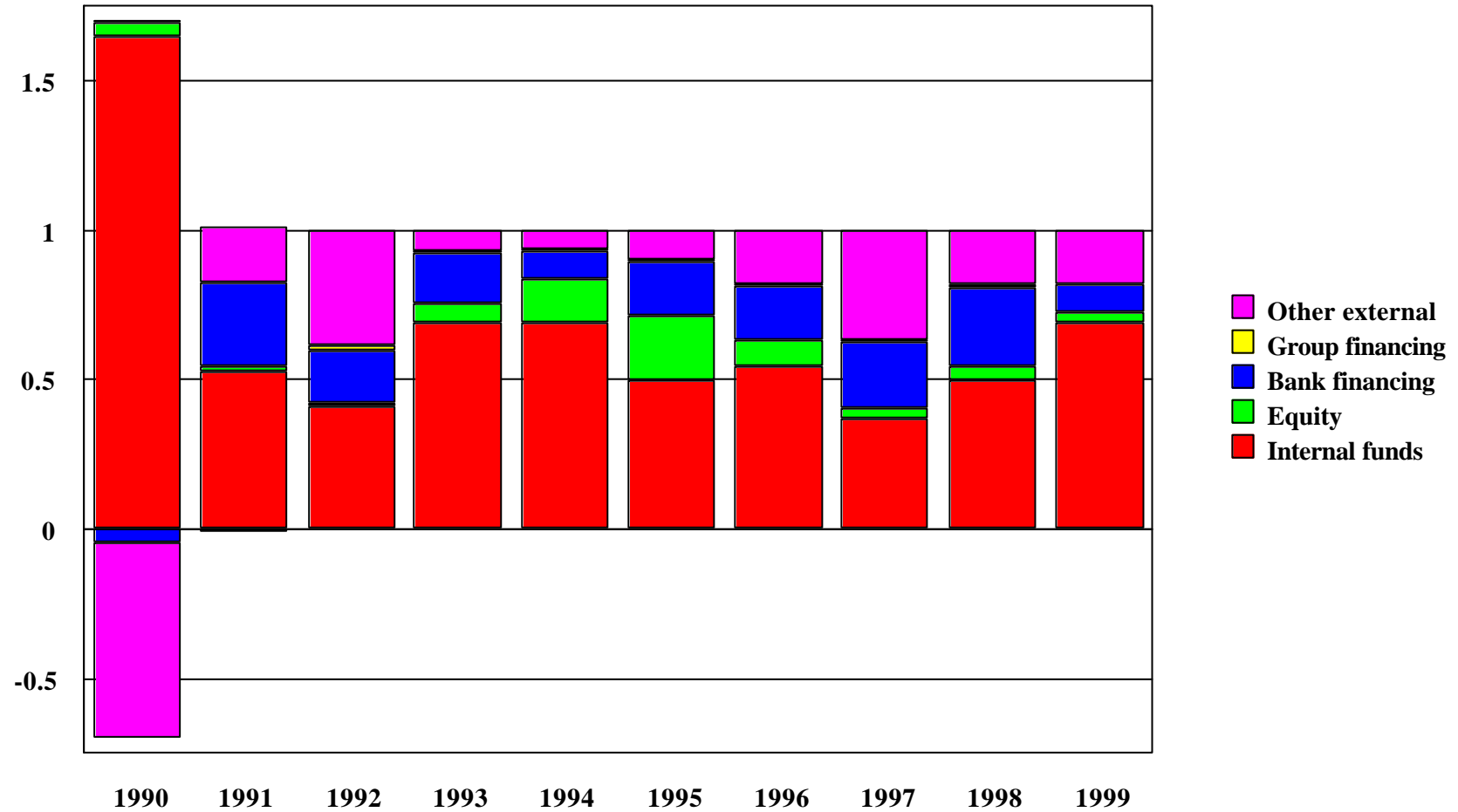


Chart 6i. Quoted companies: financing of gross investment

Proportions

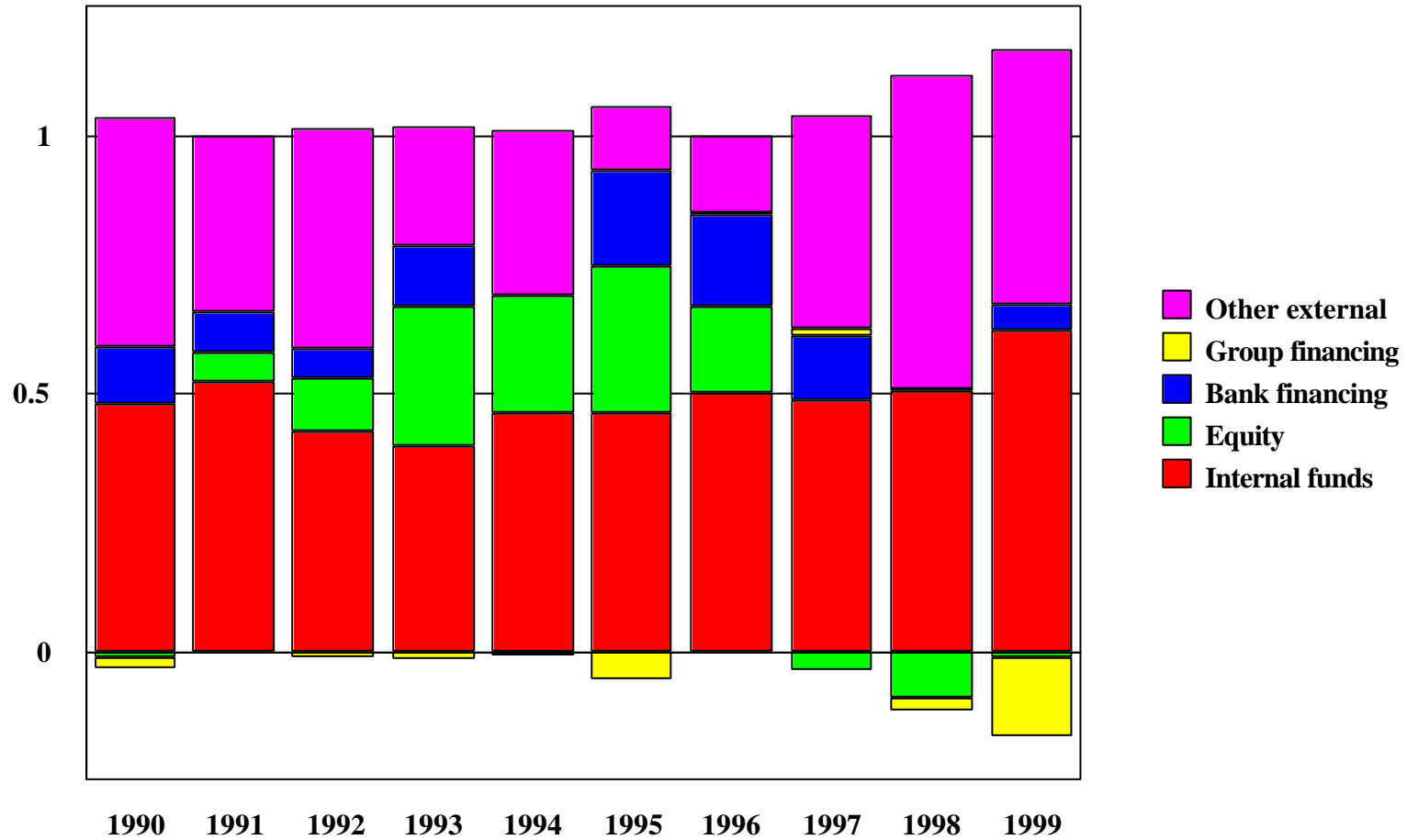


Chart 6ii. Unquoted companies: financing of gross investment

Proportions

