

# **Financial Structure, Investment, and Economic Development A Flow of Funds Analysis of Emerging Countries**

**Cornelia Staritz**

## **Abstract**

This paper constructs data on financing patterns and financial structure for eight (mainly) emerging countries (Chile, Mexico, Venezuela, South Korea, India, China, South Africa and Tunisia). The first research on financing patterns in developing countries was conducted by Hamid and Singh (1992, 1995), in which they analyzed company-level data. This paper extends the research by using flow of funds data for the non-financial corporate sector. The focus is on three questions: First, which financial structures (classified according to sources and uses of funds) occur in emerging countries? Second, are there differences in sources and uses of funds between emerging and developed countries and within the emerging countries analyzed? Third, have there been any trends which could support a convergence towards more market-based financial systems?

The following conclusions can be drawn: First, although, a straightforward classification is not possible, the financial systems of South Africa, Chile and Venezuela can be roughly classified as market-based; conversely, the financial systems of China, India and South Korea can be classified as bank-based. Second, there are important differences on the uses side, especially to the extent which total sources are used for investment. Third, the convergence hypothesis can generally not be supported, but there is a trend towards more market finance. Fourth, compared to developed countries, internal finance is less important and market finance (especially equity), more important in financing investment. These findings do not support the “pecking order” found in developed countries financial structures and cannot be explained by traditional business theories on capital structure. However, policy changes which took place in emerging and developing countries during the 1980s and 1990s which have supported the development of stock markets and changed the relative cost of debt and equity finance, can partly explain these findings.

## **1. Introduction**

An expanding literature establishes the importance of the financial sector for economic development. However, different opinions prevail regarding the financial structure best for economic development. In the literature two main financial structures are described - bank-based financial systems and capital market-based financial systems. There is an ongoing theoretical and empirical debate about the effects of different financial structures on the economy and growth. Some authors come to the conclusion that not a certain structure of the financial system but the overall level of financial development - the quantity and quality of financial instruments, markets and intermediaries - are important determinants of growth. Others favor bank-based or market-based structures.

The literature on financial structure had long concentrated on developed countries - especially on the analyses of Germany and later Japan as the prototypes of bank-based systems and the US and the UK as the prototypes of market-based systems. Today there is also literature on financial structure for emerging and developing countries. However, in-depth country studies still nearly exclusively exist for developed countries. For emerging and developing countries mostly cross-country studies exist. Problems of this literature build the basis for the analysis in this paper.

The paper is organized in the following way: First, important limitations and missing elements in the literature on financial structure and economic development are emphasized. Secondly, building on this critique, flow of funds data and variables to measure financial structure are discussed and, third, used to construct data on financing patterns and financial structures for the non-financial corporate sector for eight (mainly) emerging countries (Chile, Mexico, Venezuela, South Korea, India, China, South Africa and Tunisia). The first research on financing patterns in developing countries has been conducted by Hamid and Singh (1992) and Singh (1995) who analyze company-level data. This paper extends this research by constructing flow of funds data for the non-financial corporate sector. Questions such as to which extent the financing of physical investment comes from internal sources, depends on the availability of external finance such as loans, bonds or equity as well as how funds are used especially for physical investment or financial assets purchases are analyzed. Fourth, observations on financial structures in emerging countries are formulated and compared to financing patterns of developed countries. Fifth, explanations for the observed financial structures are briefly discussed. At the end some conclusions and further research questions are pointed out.

## **2. Limitations of the Literature on Financial Structure and Economic Development**

There are several shortcomings in the current literature on financial structure and economic development regarding (a) the definition and classification of financial structure which is mostly based on stock data, (b) the wide-spread use of cross-country studies which masks country-specific factors, (c) the “one model fits all”-view which assumes that one financial structure is better for all countries and (d) the effects of financial structure on growth which are often analyzed directly or through saving but not through investment.

There are empirical and methodical problems grounded in the *definition and thus classification of financial structure*. Different classifications are used in the literature and there is no uniformly accepted empirical definition of whether a country is bank-based or market-based. Previous studies concentrated on Germany and later Japan as the prototypes of bank-based systems and the US and the UK as the prototypes of market-based systems. For those countries country-specific measures of financial structure have been used to characterize their financial systems. In recent panel and cross-section studies financial structure is often defined as the ratio of stock market capitalization or activity to total private bank lending (Demirgüç-Kunt/Levine, 1996; Levine, 2002, 2003; Beck/Levine, 2002). This measure is based on stock data and does not show sources and

uses of funds and how investment is financed. However, in order to classify countries' financial systems as bank-based or market-based, the question of how investment is financed is central. Thus, flow of funds data which show sources and uses of funds has to complement stock data.

Further empirical and methodical problems are based on the wide-spread use of *cross-country studies* to evaluate the effects of financial structures on growth. In-depth country case studies exist for developed countries but are even there concentrated on Germany, Japan, the US and the UK. However, recent empirical studies on the effects of financial structure on growth mostly use panel and cross-section approaches. These cross-country studies often pool data for a wide range of developed and developing countries and are subject to a number of concerns: Levine and Zervos (1996) state that panel regressions mask important cross country differences and suffer from measurement, statistical and conceptual problems. Pesaran and Smith (1995) point out the heterogeneity of coefficient across countries. Luintel and Khan (2004), Arestis et al. (2001) and Arestis et al. (2005) show that panel estimates often do not correspond to country specific estimates suggesting that it may be invalid to pool data across countries. Consequently, generalizations based on panel results may offer incorrect conclusions. However, for developing countries nearly exclusively panel and cross-country studies exist<sup>1</sup>. Time series data and the emphasis of country specific factors which may influence the relation between a certain financial structure and economic growth are widely missing.

Another problem arises from the view that "*one model fits all*". There might not be one financial structure which is better for all countries. Analyzing the economic history and present financial structure patterns in OECD countries indicates large differences and variances in financial structures. Corporate investment finance patterns differ in OECD countries and there is no "steady progress" towards a market-based model.

In addition the relationship between financial structure and growth is often analyzed directly or through savings behavior and not through *investment*. Theoretical explanations and empirical tests of the channels through which financial structures may effect growth are underdeveloped in the literature. Especially the focus on investment rather than savings as a constraint of growth and how financial structures influence investment is not emphasized enough. Financial systems may support the investment process by mobilizing households and foreign savings for investment, ensuring that these funds are allocated to productive uses and spreading risk and providing liquidity. The main function of financial systems is, thus, to support the investment and growth process and to increase productive investment. The role of financial systems is not seen in increasing savings per se or allocating funds to the most profitable uses no matter what the uses are (i.e. real estate or stock market bubbles), but rather in allocating funds to the most productive and developmental uses. Grabel (1997) evaluates financial systems according to their "functional efficiency" which she defines as the capacity of a financial system to transmit saving into long-term productive investment.

---

<sup>1</sup> Exceptions are Arestis et al. (2001) and Arestis et al. (2005).

In light of these problems this paper uses flow of funds data for the non-financial corporate sector which shows sources and uses of funds to classify financial systems for emerging countries and concentrates on physical investment. The main focus is on three questions:

- First, which financial structures - classified according to sources and uses of funds - occur in emerging countries? How is physical investment financed? What is the role of banks, stock markets and internal funds?
- Second, are there significant differences in sources and uses of funds between emerging and developed countries and within the emerging countries analyzed?
- Third, have there been any trends or structural changes in the last decades which could support a convergence towards more market-based systems?

### **3. Comparing Financial Systems: Sources and Uses of Funds**

There are different indicators to define financial structures. I concentrate on flow of funds data in the non-financial corporate sector rather than more traditional approaches which consider the relative size of different asset stocks. Flow of funds data show the transactions taking place in an economy from one sector to another and can thus shed light on inter-sectoral financial flows, the role of financial institutions in the economy - particularly in channeling sources to investment - and the requirements of the corporate sector for financing investment. Although measurements of patterns of financing sources and uses provide a good framework for understanding the structure of a financial system, this approach is widely underrepresented in the analyses of financial structures and - to my knowledge - a coherent database on the sources and uses of funds for emerging and developing countries does not exist.

Flow of funds data has been quite widely used for developed countries - especially for the major OECD countries. Results for those countries challenge conventional views on international differences in financial structures. Mayer (1990, 1994) is one of the first who parts with the classical classification in bank-based or market-based systems. He observes that internal funds are the dominant form of finance in all OECD countries, that bonds and shares are not an important external source in so-called market-based financial systems and that bank finance is not generally more important in so-called bank-based financial systems than in market-based ones. Other authors who worked with flow of funds instead of stock data supported Mayer's results (Edwards/Fischer, 1994; Bertero, 1994; Corbett/Jenkinson, 1996; Schaberg, 1999).

Little flow of funds analyses have been done for emerging and developing countries despite its special importance in these countries because a "main function of the flow of funds accounts is to reveal the sources and uses of funds that are needed for growth and development" (Klein, 2000, p. ix). The main problem remains data availability. Only few emerging and developing countries report flow of funds data. However, through the United Nations, the OECD and central banks it was still possible to get accurate data for some countries. The country sample analyzed in this paper comprises eight (mainly)

emerging<sup>2</sup> countries: Chile, Mexico, Venezuela, South Korea, India, China, South Africa and Tunisia<sup>3</sup>. I use data from the capital account and the financial account in the framework of the SNA 1993. The time period for comparison is the 1990s (exactly 1991 to 2003) because for these years most countries report comparable data<sup>4</sup>.

Following broadly Schaberg (1999), mainly three variables which can provide information about financing patterns and uses are used:

**Share in Total Sources:** The share of different sources<sup>5</sup> in total gross sources (or uses) is calculated. Especially the share of internal finance, bank finance and the added share of bonds and equity finance is of interest on the sources side:

- s (internal) / total sources
- s (bank) / total sources
- s (bonds+equity) / total sources
- s (other) / total sources

**Share in Net Sources:** Net sources of finance can be calculated by subtracting firms' acquisition of financial assets from the corresponding increase in liabilities<sup>6</sup>. Total net sources (TNS) are equal to physical investment (PI).

$$TNS = (s_1 - u_1) + (s_2 - u_2) + \dots + (s_i - u_i) = PI$$

The method by which physical investment is financed, can be shown by netting out the sources of funds used to buy financial assets. Thus, the share of a net source in total net sources is the following:

- s (internal) / TNS
- (s\_bank - u\_bank) / TNS
- (s\_bonds+equity - u\_bonds+equity) / TNS
- (s\_other - u\_other) / TNS

**Share in Total Uses:** The literature on financial systems and also the flow of funds literature has focused on sources of finance to differentiate between systems. But there may be also differences in uses. Flow of funds data can show the different uses of funds and show how much of the total sources which are available to the non-financial

---

<sup>2</sup> The country sample consists of emerging and developing countries but I still refer to the countries as emerging countries as the majority can be classified as emerging countries.

<sup>3</sup> Data for Chile, South Africa, China and India comes from the Central Bank of Chile, the Reserve Bank of South Africa, the National Bureau of Statistics of China and the Reserve Bank of India respectively. Data for South Korea and Mexico comes from the OECD and from the UN. Data for Venezuela and Tunisia comes from the UN.

<sup>4</sup> Some countries report data for longer time periods which can be analyzed individually - especially South Africa, South Korea and India report data from 1975 onwards. India, however, only reports data until 1996 which has to be taken into account in the country comparisons.

<sup>5</sup> Total sources of funds include internal funds, bank finance, bonds, equity, trade credit, capital transfers and others. However, most countries do not report data on trade credit separately but within the category "others".

<sup>6</sup> E.g.: equity purchases as a use of funds is subtracted from equity issues as a source of funds

corporate sector are used for physical investment and how much goes to other uses. Uses<sup>7</sup> are regrouped in four aggregates - physical investment (PI), bank payments and deposits (BPD), stock and bond purchases (SBP) and other uses (OU) - and are shown as a share of total gross uses (or sources):

- PI / total uses
- BPD / total uses
- SBP / total uses
- OU / total uses

Schaberg (1999) shows for five developed countries<sup>8</sup> that market-based and bank-based financial systems can be differentiated on the basis of sources and uses of funds stressing especially three differences which are analyzed below for the country sample:

- differences in the dependence on internal funds for the financing of investment,
- differences between bank finance and market finance (bonds and equity) and
- differences in the extent to which funds are used for physical investment.

Sources and uses of funds are analyzed for the non-financial corporate sector. Concerning its classification especially the question whether the public and the unincorporated business sector are included is central. In the database - if possible - I analyze the private and the public non-financial corporate sectors but only incorporated businesses<sup>9</sup>.

#### **4. Sources and Uses of Funds in Emerging Countries**

The variables showing sources and uses of funds are constructed and analyzed for the eight countries. Averages<sup>10</sup> of net sources as well as uses are shown for the period 1991 to 2003 and compared to results for developed countries especially for Germany - a typically bank-based financial system - and the US - a typically market-based financial system<sup>11</sup>.

---

<sup>7</sup> Total uses of funds include physical investment, bank payments and deposits, bonds, equity, trade credit, capital transfers and others. However, most countries do not report data on trade credit and capital transfers separately but within the category "others".

<sup>8</sup> US, UK, France, Germany and Japan

<sup>9</sup> Most countries analyzed report data on the non-financial corporate sector which includes data on private and public corporations (South Korea, Mexico, Venezuela, Tunisia, and China). Only for South Africa separate data for the private and public corporate sector exists. For India only data on the private corporate business sector exists, data on public corporations is reported in the government sector which cannot be disaggregated. For Chile there exists only data for "rest of the economy" which consists of the non-financial corporate sector (private and public) and the household sector which has to be taken into account in the country comparison. For all countries analyzed unincorporated businesses are reported with the household sector and cannot be disaggregated which makes their separate analyses impossible.

<sup>10</sup> The averages over time are found by calculating a source's share of total sources of finance for a whole period of time over the total sources for that whole period after all sources have been converted to constant prices. This is done for net and gross sources as well as for uses. This method follows Mayer (1990), Corbett and Jenkinson (1994) and Schaberg (1999). This weighted average method avoids that equal weights are given to years in which large and years in which little financing was raised.

<sup>11</sup> Data for Germany and the US comes from Schaberg (1999) and is for the period 1970 to 1994 which has to be taken into account when comparisons are made.

### *Net sources of finance*

Table 1 and figure 1 show average data on net sources of finance for the years 1991 to 2003.

**Internal finance:** Internal finance is the most important net source of finance for all countries. South Africa, Chile and Venezuela quite strongly rely on internal finance: 80.7%, 78.2% and 83.5% respectively, of physical investment is financed by internal funds, thus savings in the non-financial corporate sector. These contributions of internal finance are high but still lower than in the US (92.4%). South Korea, Mexico, Tunisia and especially China and India do not rely heavily on internal funds; 55.6%, 57%, 60.4%, 48.1% and 35%, respectively of physical investment is financed by internal sources. This is substantially lower than in Germany (73.9%). On average 62.3% of physical investment is financed by internal funds in the eight countries analyzed which is considerably lower than in the US and Germany.

**Bank finance:** The importance of bank finance in financing physical investment varies across the eight countries. The contribution of bank finance to net sources is negative in Venezuela (-9%). In South Africa (3%) and Mexico (7.6%) it is also not as important as in Germany and the US (and other developed countries). In Chile and Tunisia the importance of bank finance is comparable to Germany (13.2%) and the US (11.2%) reaching a net contribution of 13% and 13.6% respectively. In South Korea, China and India bank finance is an important net source reaching 24.3%, 23.4% and 27.9% respectively. On average 13% of physical investment is financed by bank finance in the eight countries analyzed which is similar to the US and Germany.

**Market finance:** In contrast to developed countries, market finance (the issue of bonds and equity on the primary market) is important in financing physical investment in seven of the eight countries analyzed. Bond finance is not that high compared to 15.4% in the US reaching 12.1% and 6.9% in South Korea and South Africa and 1.9% in Mexico. In Tunisia and Venezuela net bond finance is negative reaching -2% and -5.4% respectively. In China, India and Chile only data on bonds and equity together is available. However, equity finances are 25.2%, 10.5%, 46.4%, 21.9% and 30.5% respectively, of physical investment in South Africa, South Korea, Mexico, Venezuela and Tunisia, which is for all countries substantially higher than for the US (-6.4%) and Germany (-0.1%). In Chile and India market finance (bond and equity together) reach 22.6% and 24.9% respectively. In China, bonds and equity combined, finance 4.4% of physical investment. Thus, in seven of the eight countries (South Africa, South Korea, India, Mexico, Chile, Venezuela and Tunisia) market finance - especially equity - is strongly used as a source to finance physical investment. On average 25% of physical investment is financed by market finance in the eight countries analyzed which is considerably higher than in the US and Germany.

**Other:** Trade credit is only reported separately for South Africa and India where it reaches on average slightly negative values as a net source of finance. There is no data on capital transfers in India. Only in China and Tunisia and to a lesser extent in South Africa and Chile capital transfers have an important contribution - 13.5%, 8%, 4.3% and 4%

respectively. Thus, especially in China net capital transfers are an important net source. Other sources contributed negatively in five countries - especially in South Africa, Mexico, Chile and, to a lesser extent in Tunisia and South Korea where it reached -14.1%, -14.3%, -17.8%, -10.6% and -4.2% respectively. In India, China and Venezuela other net sources contributed positively to the financing of physical investment reaching 13.8%, 10.7% and 7.2% respectively.

Table 1: Net Sources of Finance, 1991-2003

Figure 1: Net Sources of Finance, 1991-2003

### ***Gross sources of finance***

Using gross data, internal finance is the most important source in all eight countries. In all countries internal finance as a gross source is however lower than in Germany and the US reaching on average 40.9% in the eight countries analyzed. On a gross basis bank finance is more important than in the US (8.5%) in all countries. In China and India it is higher than in Germany (26.3%). On average, bank finance as a gross source reaches 21.7% in the eight countries analyzed which is considerably higher than in the US but lower than in Germany. Equity is an important gross source of finance. In China, bond and equity finance combined have low importance. On average market finance as a gross source reaches 36.4% in the eight countries analyzed which is considerably higher than in the US and Germany.

### ***Uses of funds***

Differences may also exist in uses of funds. Table 2 and figure 2 show average data on uses of funds for the years 1991 to 2003.

On average South Korea, India and China use over 70% of total gross sources for physical investment, 70.9%, 71.7% and 74.7% respectively, which is comparable to (but still lower than) Germany's 77.1%. In Chile, South Africa and Venezuela only 52.9%, 53.6% and 53.6% are used for physical investment which is more comparable to (but also lower than) the US (57.4%). In Mexico and Tunisia sources used for physical investment lie in between reaching 67.3% and 64.9%. On average investment reaches 63.4% in the eight countries analyzed which is considerably lower than in Germany but higher than in the US.

Bank payments and deposits are quite important as a use of funds in all countries analyzed but especially in Venezuela (24.4%), India (24%) and China (21.8%). In South Africa, South Korea, Chile, Mexico and Tunisia they are less important (12.9%, 9.5%, 9.9%, 9.4% and 7.5% respectively). Stock and bond purchases are generally less important as a use of funds - however in Mexico, South Africa, Tunisia and especially Chile and Venezuela they still reach 7%, 8.3%, 10.6%, 19.1% and 18.8% respectively. On average in the eight countries analyzed bank payments and deposits and stock and bonds purchases reach 14.9% which is considerably higher than in the US and Germany and 9.2% which is lower than in the US but higher than in Germany respectively.

Other uses are quite important - especially in South Africa, Chile, Tunisia, Mexico and South Korea reaching 25.2%, 18.2%, 17%, 16.4% and 13.8% respectively. In Chile other uses consists of “insurance technical reserves” which is the net equity of households in life insurance reserves and in pension funds because the household sector is included in the sector analyzed. In South Africa other uses are “interest in retirement and life funds” and “other assets” which account each for about one half of other uses. In South Korea, Mexico, Venezuela, and Tunisia other uses consist also of trade credit. In India and China the category “other uses”, is not further specified.

Table 2: Uses of Funds, 1991-2003

Figure 2: Uses of Funds, 1991-2003

## **5. Observations on Financial Structure**

For developed countries - mainly for the main OECD countries - there are quite broadly accepted research results concerning the financing patterns of the non-financial corporate sector. These “observations” are briefly summarized. For emerging and developing countries there are no broadly accepted research results, which is a key motivation for this paper. Drawing on the flow of funds analyses above, “observations” for emerging countries are presented which should be seen as hypotheses.

### ***Observations on developed countries***

***Observation 1:*** Internal sources are the dominant source of financing in the non-financial corporate sector. In market-based financial systems the share of internal finance is higher than in bank-based financial systems.

Corbett and Jenkinson (1994) analyze the non-financial corporations sector in Japan, Germany, the UK and the US for the period 1970-1989. Internal funds are the main source of finance in all countries, with the UK financing the highest proportion (97.3%) of its physical investment through internal funds, and Japan financing the lowest (69.3%). These findings are supported by Mayer (1990, 1994), Schaberg (1999) and other authors. Schaberg (1999) stresses the difference between bank-based and market-based systems as market-based systems show an even higher share of internal finance. According to his net sources of finance calculations internal finance accounts for 92.4% and 90% in the US and the UK respectively; however, only for 73.9%, 72.1% and 65.3% in Germany, France and Japan respectively for 1970 to 1994.

***Observation 2:*** Market sources, especially equity, are not an important source of financing physical investment.

Corbett and Jenkinson (1994) and Schaberg (1999) point out that, although US and UK firms are located in market-based financial systems, market finance is not an important source of financing physical investment. The typical market-based financial system does not exist if sources of funds are used as the main characteristic as market finance plays a

little or even negative role in the financing of physical investment. Thus, in developed countries which have well-developed stock markets, stock markets provide little new capital to the corporate sector. The net contribution of equity finance in the 1990s is even negative for the UK and the US which means that more company shares were retired through takeovers or buy backs of shares than were added by new issues.

**Observation 3:** Bank sources are the dominant form of external finance and are similarly important in bank-based and market-based financial systems.

Some authors such as Borio (1990) find that developed countries are either “high leverage”, such as Japan, Germany, France and Italy, or “low leverage”, such as Canada, the UK and the US. Other authors, such as Rajan and Zingales (1995) and Green et al. (2001) - state that the results depend on the precise definitions used differing widely between analyses where leverage is calculated as the ratio of debt to total assets expressed at book value or as the ratio of debt to debt-plus-equity expressed at market value. Authors who use flow of funds data such as Corbett and Jenkinson (1994) and Schaberg (1999) show that bank finance is the dominant form of external finance and is similarly important in bank-based and market-based financial systems which also calls in question the existence of the bank-based financial system if sources of funds are used as the main characteristic.

**Observation 4:** There are differences on the uses side. Bank-based systems in developed countries use a larger share of funds for physical investment; in market-based systems stock and bond purchases are higher.

In the market-based systems of the US and the UK 57.4% and 58.6% respectively, of total sources of funds are used for investment, in the bank-based systems of Germany, Japan and France 77.1%, 70.4% and 63% (Schaberg, 1999). Stock and bond purchases account for 11.2% and 15% in the US and UK and for 5.2%, 1.8% and 11% in Germany, Japan and France (Schaberg, 1999). Schaberg points out that France’s financial system has developed into a more market-based system in the last decade.

#### ***Observations on emerging countries***

Although there are variations in financial structures among the eight countries analyzed, some observations can be drawn based on, first, differences between the emerging countries analyzed and, second, differences between the group of emerging countries analyzed and developed countries.

**Observation 1 - Classification:** For the eight countries analyzed a straightforward classification in bank-based or market-based financial systems along the flow of funds criteria stressed by Schaberg is not possible. However, besides different patterns there are still some similarities and differences between certain countries’ financial structures along the bank-based and market-based classification of Schaberg.

Three countries can be roughly classified as market-based systems. In South Africa, Chile and Venezuela physical investment reaches the lowest levels compared to the other

countries analyzed staying at about 50%. The three countries also have the highest contribution of internal funds in net sources of finance reaching around and above 80%. In all three countries market finance is relatively more important than bank finance. Stock and bond purchases, as a use of funds are important, reaching on average 19% for Chile and Venezuela, and above 8% for South Africa.

China, India and South Korea (India and South Korea maybe only until the 1990s), can be roughly classified as bank-based systems. Physical investment levels are high, bank deposits are an important use of funds, stock and bond purchases are not important. Internal funds as a net source of finance are relatively low (reaching the lowest levels in these three countries and below 50% in China and India), and bank finance is important. Market finance is not important in China but gained considerable importance in India and South Korea which can be seen as an important structural change in their financial patterns starting at the end of the 1980s and maturing in the 1990s. However, in India at the end of the 1990s and in South Korea at the beginning of the 2000s market finance lost in importance and bank finance again became the most important external net source of financing corporate investment.

Mexico and Tunisia cannot be classified along Schaberg's criteria as described above because investment reaches an average level, internal finance is relatively unimportant as a net source but market finance is important.

**Observation 2 - Internal Funds:** The use of internal finance varies in the countries analyzed. However, it still can be said that the non-financial corporate sector in the emerging countries analyzed generally relies less heavily on internal finance than in the developed countries analyzed. In South Africa, Chile and Venezuela internal finance is important reaching a share of around 80% in total net sources. However, in South Korea, India, China, Mexico and Tunisia internal funds finance only less than or about 60% of physical investment. On average 62.3% of physical investment is financed by internal funds in the eight countries analyzed which is considerably lower than in developed countries.

The concept that firms in emerging and developing countries use less internal finance than firms in developed countries, was first suggested by Hamid and Singh (1992) who analyzed corporate financing patterns using firm level data of the 50 largest manufacturing firms quoted on the stock markets in nine emerging countries - India, Thailand, Jordan, Malaysia, Taiwan, Mexico, Pakistan, Zimbabwe and South Korea - over the period 1980 to 1987. Atkin and Glen (1992) and Singh (1995) reach similar results for the 1980s, Singh (2003) supported these result for the 1990s.

**Observation 3 - Market Finance:** The use of market finance varies in the countries analyzed. However, it still can be said that market finance is more important in the emerging countries analyzed than in developed countries. In South Africa, South Korea, India, Mexico, Chile, Venezuela and Tunisia market finance as a net source of funds is much more important than in developed countries. Thus, bonds and especially shares are used as a source of finance but are only marginally used as uses of funds in the non-

financial corporate sector. On average 25% of physical investment is financed by market finance in the eight countries analyzed which is considerably higher than in developed countries.

Hamid and Singh (1992) and Singh (1995) were the first who found that firms in developing countries rely more heavily on equity than on debt to finance investment compared to developed countries using firm level data. Cobham and Subramaniam (1998) and Singh (2003) confirm this result for the 1990s.

**Observation 4 - Physical Investment:** On the uses side, three sub-groups can be defined: Countries where physical investment is low as a share of total sources reaching about 50% and being comparable to the US (54.4%). South Africa, Chile and Venezuela would be in this first group. Countries where physical investment is high as a share of total sources reaching above 70% and nearly as high as in Germany (78.6%). South Korea, India and China would be in this second group. And countries where physical investment reaches a level in between such as Mexico (67.3%) and Tunisia (64.9%).

There are big differences in the extent to which total sources of the non-financial corporate sector are used for physical investment. In South Africa, Chile and Venezuela it is only little above 50%. If the objective is to increase investment, it is not only important to increase total sources but to channel existing sources to physical investment. To channel funds into productive investment is central in the development process. There has been much emphasis on how to increase funds in developing countries which lead to incentives to increase savings and to attract foreign financial flows, etc. but there has been less emphasis on where these funds are channeled and if they are used for productive investment.

**Observation 5 - Convergence:** There is an expanding literature on changes in financial systems and a major argument in this literature is that financial markets become increasingly international in character and as financial liberalization programs continue a convergence towards market-based financial systems has occurred. Although important changes took place during the 1980s and 1990s in developing and emerging countries as many of them liberalized and deregulated their financial systems and created and expanded their stock markets (Singh, 2003, p. 1), using flow of funds data on sources and uses of funds in the non-financial corporate sector, the convergence hypothesis can not generally be supported as different financial structures still persist. However, a trend towards more market finance and also less bank finance as a net source of finance for investment can still be reported for nearly all emerging countries analyzed.

For South Africa, South Korea and India data exists from 1975 onwards and in all three countries the role of market finance, especially equity finance, as a net source of funds has increased; in South Africa market finance has always been quite important but still increased, in South Korea and India market finance increased especially in the 1990s. Bank finance has lost importance in South Africa and South Korea, in India bank finance is still an important net source. For the other countries there is only data for the 1990s and early 2000s. In Chile, Mexico and Tunisia market finance played an important role - in

Chile especially in the 2000s. In Venezuela the importance of market finance was reduced from a high level in the beginning of the 1990s. In China market finance increased, but it still does not play an important role. Bank finance has lost importance as a net source of finance in China, Mexico and Chile and has remained stable in Venezuela and Tunisia. Thus, over the period analyzed market finance increased in six countries and in the other two countries - Mexico and Venezuela - it decreased starting from a high level, and bank finance decreased in six countries and remained stable in the other two.

Concerning these five observations, three caveats have to be made: First, the hypotheses are based on limited data, in a limited number of emerging countries, due to flow of funds data limitations and a limited number of firms as only incorporated businesses are analyzed. These conclusions should be tested for more countries to be able to state more broadly valuable “observations” and to analyze differences within emerging (and developing) countries. Second, sources and uses of funds provide a good framework to analyze the structure of a financial system and its changes. However, it is not the only important dimension of a country’s financial system. Other dimensions include the institutional arrangements concerning the relationship between financial institutions and non-financial firms as well as corporate ownership and governance structures (Schaberg, 1999, 19). These institutional differences may help explain differences in sources and uses of funds. Third, the non-financial corporate sector consists of very heterogeneous firms which might have quite different financing patterns. Especially the analysis and comparison of sources and uses of funds for small and large firms, for firms from different industries as well as for incorporated and non-incorporated firms would be an important supplement to the aggregate sector analysis.

## **6. Explanations of the Observed Financial Structures**

Observations two and three are unexpected. First, because they show the reverse “pecking order” patterns of finance observed in developed countries which states that corporations prefer internal funds for financing investment and if external sources are needed bank finance is preferred to market finance and within market finance bond finance is preferred to equity finance. Second, economic analysis would expect a priori that in emerging (and developing) countries there are even more reasons for the pecking order of financing to hold. Because of underdeveloped and imperfect stock markets in emerging countries as well as regulatory deficits<sup>12</sup> and highly volatile share prices (Tirole, 1991; El-Erian/Kumar, 1994; Singh, 2003) one would expect that the non-financial corporate sector would, firstly, use internal finance and, secondly, prefer debt as an external finance option. However, observation two shows that internal finance is generally not that largely used compared to developed countries and observation three shows that within external finance the use of equity is higher compared to developed countries with well-organized stock markets.

Singh and Hamid (1992) and Singh (1995) were one of the first who did comparative empirical analyses of corporate financing patterns in emerging countries, using firm-level

---

<sup>12</sup> These deficits also exist in developed countries but they tend to be considerably larger in emerging and developing countries with newly established stock markets.

accounting data and reach the same unexpected conclusions - even more pronounced: "(...) (although there were variations in corporate financing patterns among developing countries, in general corporations in the sample countries used more external than internal funds to finance the growth of their net assets. Further, within external sources, the average developing country corporation used new shares issue on the stock market to a surprisingly large degree." (Singh, 1995, p. 3)<sup>13</sup> These first studies covered the 1980s but in later work Singh supports these results for the 1990s (Singh, 2003)<sup>14</sup>.

Singh (1995, 2003) tries to find methodological explanations for the surprising differences in financing patterns in developed and emerging countries analyzing the differences between the studies. Singh uses corporate accounting data for individual companies and asks how individual firms finance the growth of their net assets. The majority of studies on financing patterns in developed countries uses flow of funds data for the whole non-financial corporate sector and asks how gross physical investment in the corporate sector as a whole is financed. When using corporate accounting data also for developed countries Singh (2003) concludes that the differences are smaller. However, I use flow of funds data also for emerging countries and still reach similar results like Singh with firm-level data and can, thus, confirm the differences to developed countries. Although my results are not that pronounced as Singh's results (because internal finance is still in most emerging countries the most important source of finance and bank finance has also an important role in some countries analyzed), the conclusion that the importance of internal finance as a net source is lower and equity finance is substantially higher than in developed countries, can be supported using flow of funds data for both groups of countries.

Thus, how can the high use of external finance and especially equity finance by itself and compared to developed countries be explained? Traditional business theories on capital structure cannot explain these differences<sup>15</sup>. However, policy changes which took place in many emerging and developing countries during the 1980s and 1990s which have supported the development of stock markets and changed the relative cost of debt and equity finance can partly explain these findings. Despite differences in the financial structures of the emerging countries analyzed, most countries pursued these policy changes, however to different extents.

Economic policies and, thus, also financial policies have changed considerably in most emerging and developing countries in the 1980s and 1990s which had effects on financial

---

<sup>13</sup> In the 1980s the average company in the ten emerging countries analyzed by Singh (1995) financed marginally more of its growth of net assets from equity (39.3%) than from internal sources (38.8%). Long-term debt contributed a little over 20% to the average sample's firm's growth. (Singh, 1995, p. 7)

<sup>14</sup> One problem with Singh's results concerning the relative low importance of bank finance in the 1980s - which he also pointed out by himself - is that he used only long-term debt which might not be an adequate reflection of indebtedness of corporations as short-term debt (bank loans of a duration of up to one year) is often used for long-term investment and rolled over which makes it functionally equivalent to long-term debt. For the 1990s Singh also used short-term debt which increased the importance of bank finance but did not change his general conclusions.

<sup>15</sup> The main theories on capital structure in the business administration literature are the pecking order theory, the trade-off theory and the agency theory (see f.e. Singh, 2003; Myers, 2001).

institutions and the cost of different sources of capital. Many emerging and developing countries liberalized and deregulated their financial systems, privatized and deregulated their industries, created and expanded their stock markets and embarked on a whole series of market-oriented reforms (Singh, 2003, p. 1). Singh (1995) argues that the dependence of firms in emerging countries on market finance is due to (a) the fast development of stock markets which was actively supported by governments through regulatory changes, specific policies that encourage the demand and supply of funds and privatization<sup>16</sup> and (b) external and internal financial liberalization which often lead both to a stock market boom and to high real interest rates. The stock market boom was accompanied by increases in share prices and price-earnings ratios which lowered the cost of equity finance. The high real interest rates which were due to a sharp increase in international interest rates in the 1980s and domestic financial liberalization increased the cost of debt finance.<sup>17</sup> These changes in relative prices have contributed to the observed greater use of equity compared to debt in the non-financial corporate sectors in a number of the countries analyzed.<sup>18</sup>

The motivation to support stock markets are partly country specific but there are important common factors which have influenced governments in different countries: (a) Privatization programs have been an important stimulus for stock market development. (b) Due to the debt crises of the 1980s emerging and developing country governments tried to foster stock market development to attract non-debt creating foreign portfolio investment. A WIDER (1990) study group argues “(...) because of the debt crisis, banks are unlikely in the foreseeable future to again become major sources of foreign finance for the debtor countries. In the study group’s view the best avenue for getting such finance for these countries is to attract portfolio investment from the advanced countries. For this reason, the study group urges stock market development as well as removal of capital controls.” (Singh, 1995, p. 28) (c) Governments tried to finance state-owned

---

<sup>16</sup> Measures to support stock markets not only consisted of removals of restrictions but governments actively supported stock markets with tax incentives, non-tax benefits, direct interventions, regulation such as ceilings on debt-equity ratios (f.e. in South Korea) or possibilities for banks to turn debt into equity at times disadvantageous for the corporation (f.e. in India) (Singh/Weisse, 1998).

<sup>17</sup> Amsden and Ruh (1990) note that in 1980 the average price/earnings ratio on the Korean stock market was about 3, the cost of capital through share issues thus roughly 33%. In 1989 the average price/earnings ratio rose to 10 reducing the cost of equity capital to 7.1%. Taking into account taxes equity capital cost was only 3% in 1989 (Euh/Barker, 1990). The interest rate on preferential commercial bank loans was 12.5%. For India, Sen and Vaidya (1997) state: “Financial liberalization thus, had not lead to a major disruption in investment activity of the private corporate sector. This ability to respond to shocks generated by interest rate deregulation was a consequence of far reaching change in the primary issue markets which opened up a new source of funds.” (p. 136) Singh states it in the following way: “(...) (In the 1980s stock markets did not complement the effects of credit market reforms but rather in important respects subverted them. (...) The (...) sharp fall in the price of equity capital seriously undermined and indeed allowed large private corporations to bypass altogether the main channel of high real interest rates (...).” (Singh, 1997, p. 773f)

<sup>18</sup> The reduction in bank finance in the majority of the countries analyzed can be - besides financial liberalization - also explained by financial deregulation policies which lead to the closure of public sector and development banks as well as a changing role of commercial banks from their traditional role of intermediaries between households savings and firm’s investments to asset management and away from financing productive investment in general and small and medium sized enterprises in particular (Ocampo, 2006).

enterprises by selling portions of the enterprises in the stock market. (d) The International Monetary Fund and the World Bank strongly favored stock market development (see f.e. World Bank, 1989, 1998) and pressured emerging and developing countries from the 1980s onward to deregulate and liberalize their stock markets.

The demand for stocks increased domestically due to internal financial liberalization, stock market development and incentives to invest in stock markets. But in most emerging countries, demand increased even more from foreign investors, especially institutional investors from developed countries (Singh, 1995). In the early 1990s capital flows to emerging countries increased dramatically and their composition changed substantially. Portfolio flows (bonds and equity) and foreign direct investment replaced commercial bank debt<sup>19</sup> as the dominant sources of foreign capital (Grabel, 2003, 327). These inflows supported stock market booms in many emerging countries. Also the actors and institutions have changed: “Instead of the big transnational banking interests, the chief players in the 1990s were the more mobile, less vulnerable insurance and pension funds managers and other portfolio investors.” (Strange, 1999, 99) These changes could not have happened without financial liberalization and stock market development in emerging countries (Bekaert/Harvey, 2003, p. 1).

## 7. Conclusions

In this paper data on sources and uses of funds in the non-financial corporate sector for emerging countries was constructed and analyzed. Besides different patterns and variations in the countries analyzed some conclusions can be drawn:

- There are different financial structures in the emerging countries analyzed which cannot easily be classified into the prototypes of bank-based and market-based financial systems. However, there are still similarities and differences between certain countries' financial structures along the classification of Schaberg (1999). South Africa, Chile and Venezuela can be roughly classified as market-based systems referring to their low levels of physical investment, high dependence on internal funds and relative high dependence on market finance. China, India and South Korea can be roughly classified as bank-based systems. Physical investment levels are high, internal funds as a net source of finance is relatively low and bank finance is important. But in India and South Korea a change occurred starting in the beginning of the 1990s where the importance of the stock market in financing investment increased.
- There are important differences on the uses side, especially to the extent which total sources of the non-financial corporate sector are used for physical investment. Three sub-groups can be defined: Countries where physical investment is low as a share of total sources reaching about 50% (South Africa, Chile and Venezuela). Countries where physical investment is high as a share of total sources reaching above 70% (South Korea, India and China). And countries

---

<sup>19</sup> The reduction in lending in the 1990s can be explained by two developments: First, commercial banks became wary of lending to developing countries following the debt crises of the 1980s and, second, banks also found the speculative opportunities available in the liberalized financial environment of the 1990s far more appealing than lending (Grabel, 2003, p. 327).

- where the investment share is in between (Mexico and Tunisia). Thus, if the objective is to increase investment, it is not only important to increase total sources but to channel existing sources to physical investment.
- The convergence hypothesis can not generally be supported as different financial structures still persist. However, a trend towards more market finance and also less bank finance as a net source of finance for investment can be reported for the emerging countries analyzed.
  - Besides differences within the group of emerging countries analyzed, two unexpected observations can be made if financial structures in emerging countries are compared to developed countries: First, internal finance is generally not that important compared to developed countries and, second, within external finance the use of equity is higher compared to developed countries. Thus, the non-financial corporate sector in the emerging countries analyzed finance a greater part of investment by external sources and within external sources by stock markets compared to developed countries.
  - These findings do not support the “pecking order” found in developed countries financial structures and cannot be explained by traditional business theories on capital structure. However, policy changes which took place in many emerging and developing countries during the 1980s and 1990s, which have supported the development of stock markets and changed the relative cost of debt and equity finance can partly explain these findings.

Important questions arise following this analysis, such as: Do financial structures analyzed in this paper have an effect on physical investment? Especially, does the importance of equity finance and stock markets in the countries analyzed have an effect on physical investment? More generally, what are the linkages between financial structure and physical investment? For a discussion of these questions see Staritz (2008).

## **Literature**

Allen, F., Gale, D., 2000, *Comparing Financial Systems*, Massachusetts: MIT Press, Cambridge

Arestis, P., Demetriades, P., Luintel, K., 2001, Financial development and Economic Growth: The Role of Stock Markets, *Journal of Money, Credit and Banking*, 33, 1

Arestis, P., Luintel, A., Luintel, K., 2005, *Financial Structure and Economic Growth*, CEPP Working Papers No. 06/05

Beck, T., Demirgüç-Kunt, A. and Levine, R., 2001, *The Financial Structure Database*, in *Financial Structure and Economic Growth, A Cross-Country Comparison of Banks, Markets and Development*, The MIT Press, Cambridge, Massachusetts

Bekaert, G., Harvey, C.R., 2003, Emerging markets finance, *Journal of Empirical Finance* 10, 3 – 55

Corbett, J., Jenkinson, T., 1996, The Financing of industry, 1970 – 1989: An International Comparison, *Journal of the Japanese and International Economies* 10, 71 – 96, article no. 0004

Demirgüç-Kunt, A., Levine, R. (eds.), 2001, *Financial Structure and Economic Growth, A Cross-Country Comparison of Banks, Markets and Development*, The MIT Press, Cambridge, Massachusetts

Gerschenkron, A., 1962, *Economic Backwardness in Historical Perspective*, Cambridge: The Belknap Press of Harvard University

Goldsmith, R.W., 1969, *Financial Structure and Development*, New Haven: Yale University Press

Grabel, I., 1997, Savings, Investment and Functional Efficiency: A Comparative Examination of National Financial Complexes, in R. Pollin (ed.), *The Macroeconomics of Finance, Saving and Investment*, Ann Arbor: University of Michigan Press

Green, C.J., Murinde, V., Prasad, S., 2001, *Company Financial Structure: a survey and implications for developing economies*

Hirschmann, A.O., 1970, *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States*, Cambridge, MA: Harvard University Press

Klein, L.R., 2000, 'Preface', in A. E. Fleming and M. M. Giugale (eds.), *Financial Systems in Transition*, pp. ix-xii, Singapore, World Scientific

Levine, R., 2000, Bank-Based or Market-Based Financial System: Which is better?, *Journal of Financial Intermediation*, 11 (4)

Mayer, C., 1994, The Assessment: Money and Banking: Theory and Evidence, *Oxford Review of Economic Policy*, 10 (4)

Myers, S.C., 2001, Capital Structure, *Journal of Economic Perspectives*, Vol. 15, No. 2 (Spring), 81 – 102

Ocampo, J.A., 2006, The Case and the Experience with Regional Financial Cooperation, in: *Regional Financial Cooperation. The Role of Regional Financial Arrangements in a Global Order*

Organization for Economic Co-operation and Development, 2000, *System of National Accounts (SNA) 1993*

Pollin, R. (ed.), 1997, *The Macroeconomics of Savings, Finance and Investment*, University of Michigan Press

Schaberg, M., 1999, Globalization and the Erosion of National Financial Systems. Is declining Autonomy Inevitable?, Edward Elgar

Singh A., 1995, Corporate Financial Patterns in Industrializing Economies: A Comparative International Study, IFC Technical Paper 2, Washington D.C.

Singh, A., 1997, Financial liberalization, stock markets and economic development, The Economic Journal 107 (May), 771-782

Singh, A., 2003, Corporate Governance, Corporate Finance and Stock Market Development in Emerging Countries, ESRC Center for Business Research, University of Cambridge, Working Paper 258

Singh, A., Hamid, J., 1992, Corporate Financial Structures in Developing Countries, Technical Paper 1, IFC, Washington D.C.

Singh, A., Weisse, B.A., 1998, Emerging stock markets, portfolio capital and long-term economic growth: micro and macro perspectives, World Development Vol. 26, No. 4, pp. 607 – 622

Staritz, C., 2008, Financial Structure, Investment, and Economic Development - A Flow of Funds Analysis of Emerging Countries, Dissertation at the New School for Social Research, defended March 2008

United Nations, 1993, A System of National Accounts (SNA), DESA, Statistical Office of the UN, New York

World Bank, 1989, World Development Report 1989, New York: Oxford University Press

World Bank, 1998, East Asia: The Road to Recovery, Washington, DC: World Bank

Table 1: Net Sources of Finance, 1991-2003

Net Sources of Finance, 1991- 2003							
	Internal	Bank	Bonds	Equity	Trade credit	Capital transfers	Other
South Africa	80.7%	3.0%	6.9%	25.2%	-6.2%	4.3%	-14.1%
South Korea	55.6%	24.3%	12.1%	10.5%	-	1.7%	-4.2%
India	35.0%	27.9%		24.9%	-1.5%	-	13.8%
China	48.1%	23.4%		4.4%	-	13.5%	10.7%
Mexico	57.0%	7.6%	1.9%	46.4%	-	1.5%	-14.3%
Chile	78.2%	13.0%		22.6%	-	4.0%	-17.8%
Venezuela	83.5%	-9.0%	-5.4%	21.9%	-	1.8%	7.2%
Tunisia	60.4%	13.6%	-2.0%	30.5%	-	8.0%	-10.6%
Average	62.3%	13.0%		30.5%	-3.8%	5.0%	-3.7%
Germany*	73.9%	13.2%	0.5%	-0.1%	-0.9%	8.7%	4.5%
US*	92.4%	11.2%	15.4%	-6.4%	-5.0%	-	0.2%

\* Data for Germany and the US comes from Schaberg (1999) and is for the period 1970 to 1994.

Table 2: Uses of Funds, 1991-2003

Uses of Funds, 1991-2003						
	Investment	Bank	Bonds	Equity	Trade credit	Other
South Africa	53.6%	12.9%	2.2%	6.1%	10.5%	14.6%
South Korea	70.9%	9.5%	3.1%	2.6%	-	13.8%
India	71.7%	24.0%		3.6%	-	0.7%
China	74.7%	21.8%		0.1%	-	3.4%
Mexico	67.3%	9.4%	2.4%	4.6%	-	16.4%
Chile	52.9%	9.9%		19.1%	-	18.2%
Venezuela	53.6%	24.4%	10.1%	8.7%	-	3.2%
Tunisia	64.9%	7.5%	4.4%	6.1%	-	17.0%
Average	63.7%	14.9%		9.2%	10.5%	10.9%
Germany*	77.1%	8.6%	2.4%	2.8%	12.3%	6.8%
US*	57.4%	2.3%	0.9%	10.3%	10.1%	19.0%

\* Data for Germany and the US comes from Schaberg (1999) and is for the period 1970 to 1994.

Figure 1: Net Sources of Finance, 1991 - 2003

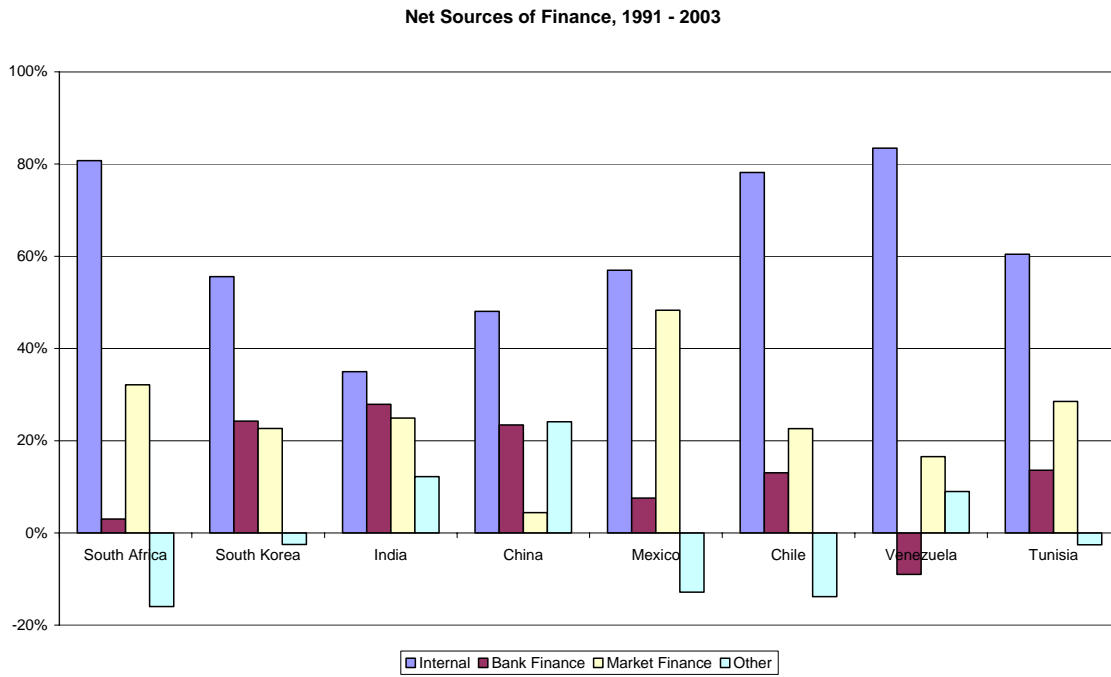


Figure 2: Uses of Funds, 1991 - 2003

