

# STOCK MARKETS IN LOW AND MIDDLE INCOME COUNTRIES

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by

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**Abstract**

This paper explores the question of whether the institution of the stock market is likely to be helpful to low and middle income countries in promoting development of their real economy and ensuring fast industrial growth. The case for and against the stock market inevitably involves a discussion of the important related subjects of corporate finance, corporate governance and corporate law. Contrary to the literature the paper arrives at a negative overall assessment of the institution of the stock market in relation to economic development. It also contributes by its policy proposals concerning the markets for corporate control which again are in conflict with much of the conventional wisdom on the subject.

**JEL Codes:** G1, G3

**Keywords:** stock market; market for corporate control; corporate finance; corporate governance; corporate law.

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## **1. Introduction**

Views about the usefulness and the relevance of the institution of the stock market to countries in general, and to developing countries in particular, have varied greatly over time. These assessments, like share prices on the stock market itself, tend to be quite volatile. At the time of the Great Depression of the 1930s, the stock market had a bad press. It was, probably unfairly, blamed for the Depression. This led to many popular denunciations of the stock market and calls for its reform. However, the most notable and intellectually coherent attack against the stock market came from John Maynard Keynes. In a strong criticism of the institution he termed the stock market a gambling casino and suggested that people should not be surprised by bad outcomes if the decisions on society's investment allocation are left to the vagaries of a gambling casino<sup>1</sup>.

By the late 1950s and early 1960s (nearly a quarter of a century later), the stock market indices in countries like the US and the UK recovered to their pre-Great Depression levels. As a result the stock market started to regain public confidence. Subsequently, in the 1980s, there was a worldwide spread and expansion of stock markets as a result of the Bretton Woods institutions' structural adjustment programmes that encouraged market-oriented financial sector reform which, among other things, explicitly promoted development of the stock market. This was an essential element in furthering the neo-liberal agenda of privatisation and deregulation. However the poor US economic performance relative to European countries and Japan in the 1980s and up to 1995 led to considerable disquiet in the US over the role of the stock market-based US financial system and particularly the role of the stock market itself in causing the US decline. A blue ribbon commission of 25 leading US specialists, under the chairmanship of Professor Michael Porter of Harvard University, was appointed to examine these issues. Significantly, the Commission included Professor Larry Summers, who later became Secretary of the Treasury and President of Harvard University. Professor Porter summed up the conclusions of the Commission in the following terms:

'The change in nature of competition and the increasing pressure of globalisation make investment the most critical determinant of competitive advantage. Yet the US system of allocating investment capital both within and across companies is failing. This puts America at a serious disadvantage in global competition and ultimately threatens the long term growth of the US economy' (Porter, 1992)

These negative views about the stock market-based financial system and its role in economic development during the 1980s and early 1990s changed once more during the last 10 years, as the US economy experienced relatively spectacular expansion, outdoing its industrial competitors in GDP and productivity growth. This was quite a remarkable achievement, bearing in mind the US was a frontier economy and not a catch-up economy. It has to generate and apply new technological breakthroughs in order to progress and it has been argued that the institution of the stock market has been particularly helpful to the US in this regard. It has enabled, it is suggested, the US to adopt information technology much more quickly than other advanced countries (see further Summers (1999) and Feldstein (1999)).

In this paper, a modest objective of which is to review the main issues in the light of available analyses and evidence, I explore whether the institution of the stock market is likely to be helpful to developing countries in promoting development of their real economy and ensuring fast industrial growth. The case for and against the stock market inevitably involves a discussion of the important related subjects of corporate finance, corporate governance and corporate law. As we shall see, the questions of the relationship between the legal system and the stock market and that between corporate finance and the stock market are salient to our assessment of the role of the stock market in economic development. Contrary to a large part of the literature, the paper contributes by arriving at a negative overall assessment of the institution of stock market in relation to economic development. It also contributes by its policy proposals concerning the markets for corporate control which again are in conflict with much of the conventional wisdom on the subject.

The paper is organised as follows. Section 2 outlines differing views on the role of the stock market particularly in encouraging invention and innovation in developed countries and its potential role in developing countries. Section 3 provides some illustrative statistical information on stock markets in countries at differing levels of development and per capita income. Section 4 considers the question of corporate finance and how developing country corporations, which are listed on domestic stock markets, finance their growth. Comparisons are made between developed and developing countries regarding their corporate financing patterns, and the implications of the similarities and differences for economic policy as well as for economic theory will be explored. Section 5 considers the question of the market for corporate control and its implications for corporate governance. Section 6 reviews the new literature on law, finance and development and outlines important hypotheses concerning legal origin and how these affect stock market development. Section 7 analyses the question of

regulation of the stock market in relation to developing countries. Section 8 provides a brief conclusion.

## **2. The Broad Debate about the Stock Market: Analytical and Policy Issues**

Notwithstanding Keynes, a surprisingly large constituency favours the establishment of the stock markets to promote economic development in emerging economies. As mentioned above, the IMF and the World Bank have, of course, fully supported the institution of the stock market and helped developing countries in various ways to either establish them or to encourage their growth (Singh, 1993, Sudweeks, 1990). The Bretton Woods institutions' reasoning has been straightforward. First, they suggest that in the post-war period many third world governments established the so-called Direct Finance Institutions (DFIs) to provide finance for industrialisation. But these institutions were deemed to be unsuccessful in that they resulted in a large incidence of non-performing loans, crony capitalism and inflationary finance. The stock market is seen as a preferred market-based institution to mobilise resources for industrial development. Even were the DFIs working well, it is suggested that the establishment of the stock market would provide a competing source of finance to the benefit of the country's industrialisation.[ see for example World Bank 1989].

A second important International Financial Institution (IFI) argument in favour of the stock market is that it represents 'natural progression' in the development of a country's economic institutions as a country reaches a higher stage of economic development. The latter, it is suggested, inevitably leads to the development of the stock market.

Interestingly, the institution of the stock market is also favoured by the communist party in China. The former Chinese leader Zhao Zhi Yang provided a spirited defence of the stock market particularly for a developing communist country. Arguing in Marxist terminology, Zhao suggested that during the 'primary state of socialism', and the 'commodity production' stages of the development of a socialist economy, it is necessary to use various market forms, including the stock market. Zhao argued that such institutions should not simply be regarded as a preserve of capitalism: socialism should also take advantage of them, whilst minimizing their harmful effects.<sup>2</sup> He noted that a socialist country is better able to preempt the latter through regulation.

Helmut Reisen (1994), an OECD economist, provided another rationale for third world stock markets. He argued that the development of such markets would be pareto-optimal since it provided the possibility for older first world

citizens to use their pension funds and other savings resources to invest in younger more profitable third world countries and thereby earning their investors a higher rate of return than otherwise. At the same time, third world countries would obtain the critical foreign exchange needed for economic development. Similar approval of the stock market was expressed by a World Institute for Development Economics Research (WIDER) study group which, in the 1980s, argued that, because of the debt crisis, developing countries will not, in foreseeable future, be able to borrow from the international banks. However, the former still had an opportunity to tap the fast growing institutional savings of the first world citizens. This would however only be possible if developing countries were to have well established equity markets.

Intellectual support for the stock market also came from Professor Larry Summers, among others. An erstwhile critic of the stock market, Summers became a firm supporter in the 1990s. He argued that the US stock market was, in large measure, responsible for the structural change experienced in the US economy in the 1990s. This had enabled it to recover from low productivity growth of the period 1980 to 1995, and achieve higher productivity growth between 1995 and 2005. This transformation, according to Summers, was brought about by the take-over mechanism on the stock market, which led to a huge reallocation of resources in the US economy leading to faster productivity growth. Similarly, Summers suggested that through the system of stock options the US stock market is better able to align the interests of managers with those of shareholders (Summers, 1999). It was also pointed out that the US stock market promotes technological progress through the venture capital route. Through the latter, it ensures that the US is able to provide much greater incentives for technological innovation than the institutional arrangements in other countries. One reason for the higher pay-off for inventors and innovators in the Anglo-Saxon system is precisely the exit mechanism through take-overs, which the US system allows, normally permitting the target company to be sold on the stock market with a sizable capital gain. It has been noted that other countries such as Germany, which have tried to emulate the US system in this respect, have not succeeded because traditional attitudes to involuntary take-overs still prevail (Black and Gilson, 1998).

On the critical side, however, there still persist the arguments of Michael Porter and his colleagues regarding the shortcomings of the US financial system, and these remain unanswered. To put these objections in more specific terms, the critics suggest that the stock market engenders short-termism and quick financial gains rather than long-term investment. The short time horizon is thought to be inimical both to competitiveness and fostering economic

development. The bursting of the technology share prices bubble in 2000 – the so-called ‘dot com boom and bust’ – has provided further support for the critics of the stock market.

These unresolved controversies about the merits and demerits of the stock market in fostering technical change in developed countries suggest that developing countries need to weigh carefully the implications of this institution for economic development. The sections below extend this discussion by outlining other channels, including ones suggested by textbook economic theory, through which the stock market can promote economic development. The available empirical evidence on these channels of transmission is also presented and evaluated. It is further asked whether the negative features of the stock market, such as share-price bubbles or prolonged depressed levels of prices, can be ameliorated if not eliminated by public regulation.

### **3. Stock Markets in Small, Poor Developing Economies**

My remit is to discuss a) whether poor countries, particularly in Africa, will benefit from establishing stock markets, and b) whether low- and middle-income countries in general will gain from encouraging the expansion of these markets. Before tackling these questions (some of which have been elaborated in the sections above), a few statistics on the dimensions of African stock markets in particular are in order.

In recent years, stock markets have been created in many countries in sub-Saharan Africa. Prior to 1989 there were just five stock markets in sub-Saharan Africa and three in North Africa. Today there are nineteen in Africa. Apart from South Africa, most African stock markets are small, with few listed companies, low market capitalisation and low turnover of shares. The South African stock market is approximately ten times as large as the rest of the Sub-Saharan African stock markets combined. Indeed it is one of the largest among emerging economies (Yates 2007). Tables 1-3 provide data on three widely used indicators of stock market development: (a) market capitalisation as a proportion of GDP (b) turnover ratio (trading value as a proportion of market capitalisation) and (c) number of listed companies. The tables contain data on ten sub-Saharan African stock markets, three north-African stock markets and for comparative purposes on six other selected emerging markets, as well as two advanced countries, namely the UK and Italy. It is significant that the South African stock market is of similar size as those of stock markets in leading emerging countries in Asia and Latin America. Analytically, it is therefore best treated as a part of the leading emerging markets group.

Turning to the small African countries, including those with recently established stock markets, a key issue is whether there is a viable future for these stock markets in the era of globalization and ever closer financial integration in the world economy. Gugler, Mueller and Yurtoglu (2004) suggest that, irrespective of whether they engage in foreign investment, large companies worldwide will be forced by competition for capital to enlist on the world's biggest stock exchanges, such as those of New York and London, where the cheapest external capital will be found. In this scenario, there is not much place for most national stock exchanges except to serve the local needs of small- and medium-sized enterprises.

This would appear at one level to be hopeful for small African stock markets to the extent that they can cater to the capital requirements of smallish domestic companies. However, there are other precedents which are not so helpful. For example, at the beginning of the twentieth century in England there were nineteen provincial stock exchanges situated in cities like Birmingham and Manchester. Economic historians tell us that they performed very useful functions including raising substantial amounts of equity capital for local firms and worked on the basis of trust rather than formal legal rules (Lavington, 1921; Thomas 1973). However, none of these provincial exchanges function today. The economies of scale enjoyed by the London stock exchange in its operations have overwhelmed all small stock exchanges. It is also unlikely that small African national exchanges could survive by joining together into regional stock exchanges. This is largely due to the fact that there are big differences between countries with respect to law, custom, working culture and accounting standards (Yartey, 2008). A merger of the exchanges may prove to be unviable and not cost effective.

Singh (1999) presented a somewhat different argument for not encouraging the establishment of stock markets in African countries at their current stage of development, suggesting that they should focus on reforming and improving the banking system to provide for the capital requirements of local firms. The banking system is more likely to meet the needs of ordinary savers and investors than are stock markets. Furthermore, a sound banking system is generally regarded by development economists as a pre-requisite for stock market development. Does the experience of the last ten years suggest a revision of these policy recommendations?



**Table 1: Stock Markets in Africa and in Selected Developing and Advanced Economies, Market Capitalisation, and Relative GDP**

<b><i>Sub-Saharan Africa</i></b>			
<b>Country</b>	<b>Market Cap.</b>		<b>Proportion of GDP</b>
	<b>US\$ mn</b>		
	<b>1994</b>	<b>2003</b>	<b>1994</b>
Botswana	377	2131	0.98
Cote d'Ivoire	428	1650	0.48
Ghana	1873	1426	0.20
Kenya	3082	4178	0.44
Mauritius	1514	1955	0.44
Namibia	201	308	0.06
Nigeria	2711	9494	0.07
South Africa	225,718	267,745	1.85
Swaziland	338	172	0.11
Zimbabwe	1828	4975	0.12
<b><i>North Africa</i></b>			
<b>Country</b>	<b>Market Cap.</b>		<b>Proportion of GDP</b>
	<b>US\$ mn</b>		
	<b>1994</b>	<b>2003</b>	<b>1994</b>
Egypt	4,263	27,073	0.13
Tunisia	2,561	2,464	0.16
Morocco	4,376	13,152	0.06
<b><i>Other Emerging Markets</i></b>			
<b>Country</b>	<b>Market Cap.</b>		<b>Proportion of GDP</b>
	<b>US\$ mn</b>		
	<b>1994</b>	<b>2003</b>	<b>1994</b>
India	127,515	279,093	0.44
Thailand	131,479	118,705	0.92
Malaysia	199,276	168,376	2.75
Korea	191,778	392,616	0.50
Brazil	189,281	234,560	0.34
Mexico	130,246	122,532	0.35
<b><i>Advanced Country Markets</i></b>			
<b>Country</b>	<b>Market Cap.</b>		<b>Proportion of GDP</b>
	<b>US\$ mn</b>		
	<b>1994</b>	<b>2003</b>	<b>1994</b>
Italy	180,135	614,842	0.16
UK	1,210,245	2,412,434	1.13

**Table 2: Stock Markets in Africa and in Selected Developing and Advanced Economies, Trading Value and Turnover Ratio**

<b>Sub-Saharan Africa</b>					
<b>Country</b>	<b>Trading Value</b>		<b>Turnover Ratio</b>		
	US\$ mn		(%)		
	<b>1994</b>	<b>2003</b>	<b>1991</b>	<b>1995</b>	<b>2003</b>
Botswana	31.0	87.0	3.1	10.0	4.1
Cote d'Ivoire	12.0	24.0	1.4	2.2	1.5
Ghana	75.0	45.0	0.4	1.3	3.2
Kenya	62.0	209.0	2.6	2.8	5.0
Mauritius	85.0	99.0	1.9	4.6	5.1
Namibia	18.0	2.0	0.0	1.6	0.7
Nigeria	18.0	858.0	0.6	0.8	9.0
South Africa	15,607.0	102,808.0	7.2	6.5	38.4
Swaziland	2.0	0.0	1.7	0.1	0.0
Zimbabwe	176.0	1,345.0	4.2	7.6	27.0
<b>North Africa</b>					
<b>Country</b>	<b>Trading Value</b>		<b>Turnover Ratio</b>		
	US\$ mn		(%)		
	<b>1994</b>	<b>2003</b>	<b>1991</b>	<b>1995</b>	<b>2003</b>
Egypt	757	3,278	2.6	10.9	12.11
Tunisia	296	164	5.3	19.8	6.65
Morocco	788	694	4.2	45.9	5.27
<b>Other Emerging Markets</b>					
<b>Country</b>	<b>Trading Value</b>		<b>Turnover Ratio</b>		
	US\$ mn		(%)		
	<b>1994</b>	<b>2003</b>	<b>1991</b>	<b>1995</b>	<b>2003</b>
India	27,376.0	284,802.0	56.8	10.5	102.0
Thailand	80,188.0	96,573.0	102.2	41.4	81.4
Malaysia	126,458.0	50,135.0	20.2	35.9	29.8
Korea	286,056.0	682,706.0	82.3	97.8	173.9
Brazil	109,498.0	60,435.0	22.0	47.8	25.8
Mexico	82,964.0	23,489.0	47.9	33.0	19.2
<b>Advanced Country Markets</b>					
<b>Country</b>	<b>Trading Value</b>		<b>Turnover Ratio</b>		
	US\$ mn		(%)		
	<b>1994</b>	<b>2003</b>	<b>1991</b>	<b>1995</b>	<b>2003</b>
Italy	117,894	663,211	45	n.a	107.86
UK	464,085	2,150,753	77	n.a	177.71

Source: IFC Factbooks (various issues)

<b>Table 3: Number of Listed Companies</b>		
<b><i>Sub-Saharan Africa</i></b>		
<b>Country</b>	<b># Listed Companies</b>	
	<b>1994</b>	<b>2003</b>
Botswana	11	94
Cote d'Ivoire	27	66
Ghana	17	25
Kenya	56	51
Mauritius	35	40
Namibia	8	13
Nigeria	177	200
South Africa	640	426
Swaziland	4	5
Zimbabwe	64	81
<b><i>North Africa</i></b>		
<b>Country</b>	<b># Listed Companies</b>	
	<b>1994</b>	<b>2003</b>
Egypt	700	967
Tunisia	21	46
Morocco	51	53
<b><i>Other Emerging Markets</i></b>		
<b>Country</b>	<b># Listed Companies</b>	
	<b>1994</b>	<b>2003</b>
India	4413	5644
Thailand	389	405
Malaysia	478	897
Korea	699	1563
Brazil	544	367
Mexico	206	159

Source: IFC Factbooks (various issues)

#### **4. Stock Markets and Economic Development: the Case of Middle-Income Developing Economies with Established Stock Markets**

Leaving aside the question of stock markets in sub-Saharan African countries, an important question for this paper is whether and how the encouragement of these markets in the average middle-income developing country would assist their industrialisation and economic development. The relationship between stock markets and technological development was discussed in sections 1 and 2 above. Other ways in which the stock market can assist development are taken up here. According to orthodox economic theory, a stock market can contribute to development through a variety of channels: it could raise savings and investment by making it possible for individuals and households to purchase a fraction of a shipyard or a steel mill, thereby spreading the risk, without which investment may not occur at all. Similarly the monitoring function performed automatically and from the perspective of an entrepreneur, costlessly, by the stock market also helps raise investment. Moreover, a well-functioning stock market purportedly allocates resources more efficiently through its normal pricing process, which would accord, other things being equal, higher share prices to efficient firms and lower prices to inefficient ones. Furthermore, the take-over mechanism ostensibly ensures that not just the new investment resources but also the existing capital stock is efficiently utilised. Inefficient use of existing resources is punished by the market for corporate control through disciplinary takeovers.

How effectively the stock market can perform the above tasks depends on the efficiency of two critical market mechanisms, namely (a) the pricing mechanism and (b) the take-over mechanism. These are central issues of debate on which there is a voluminous literature, which is briefly reviewed below.

##### *Determination of share prices<sup>3</sup>*

The orthodox paradigm of share price determination postulates that share prices are efficient because they emanate from perfect markets involving large numbers of well-informed buyers and sellers in which no one buyer or seller can influence the price and where there is a homogeneous product, namely shares. There is, however, an alternative paradigm indicated by the quotation from Keynes cited earlier that characterizes stock markets essentially as gambling casinos dominated by speculators. Stiglitz (1994); Allen and Gale (2000); Shiller, (2000), Shleifer (2000), Baker and Wurgler (2007), Hong and Stein (2007) and not least students of behavioural finance (see for example Barberis and Thaler, 2003, Hong et al (2007) and Baker et al (2007)), formalize the various elements of this paradigm. In brief, this literature suggests that, in the face of highly uncertain future, share prices are likely to be influenced by

the so-called ‘noise traders’, and by whims, fads and contagion. For similar reasons of psychology, investors may attribute much greater weight to near-term price forecasts rather than historical long-term performance. This line of reasoning is taken further in the growing literature on behavioural finance (Refer to above).

Until recently, the empirical literature on share prices has been dominated by the so-called ‘efficient markets hypothesis’ (EMH), which argues that real world share prices are efficient in the sense that they incorporate all available information (Fama, 1970). In the 1970s, evidence in favour of this hypothesis was thought to be overwhelming, with enthusiasts regarding it as the best-documented hypothesis throughout the social sciences (Jensen, 1978). In the 1980s and 1990s, with (a) the 1987 US stock market crash, (b) the meltdown in the Asian stock markets in the 1990s and (c) the bursting of the technology stocks bubble in 2000, the EMH has suffered fundamental setbacks. Alan Greenspan (1998) has commented as follows on the reasons for (a) and (b): ‘At one point the economic system appears stable, the next it behaves as though a dam has reached a breaking point, and water (read, confidence) evacuates the reservoir. The United States experienced such a sudden change with the decline in stock prices of more than 20 percent on October 19, 1987. There is no credible scenario that can readily explain so abrupt a change in the fundamentals of long-term valuations on that one day...But why do these events seem to erupt without some readily evident precursors? Certainly, the more extended the risk-taking, or more generally, the lower the discount factors applied to future outcomes, the more vulnerable are markets to a shock that abruptly triggers a revision in expectations and sets off a vicious cycle of contraction...Episodes of vicious cycles cannot be easily forecast, as our recent experience with Asia has demonstrated.’

Kindleberger (1989) similarly documented about thirty cases of unwarranted euphoria and excessive pessimism on the stock markets since the South-Sea bubble of 1720. He termed these episodes as manias, panics and crashes.

Tobin (1984) made an analytically useful distinction between two kinds of efficiency of stock markets, (a) the information arbitrage efficiency that ensures that all information concerning a firm’s shares immediately percolates to all stock market participants, ensuring that no participant can make a profit on such public information; (b) fundamental valuation efficiency, that is, share prices accurately reflect a firm’s fundamentals, namely the long-term expected profitability. The growing consensus view is that, in these terms, stock markets may at best be regarded as being efficient in the sense of (a) but far from being

efficient in the economically more important sense (b). Thus EMH, as identified in a, is compatible with share prices not reflecting fundamental values.

The latter proposition may be illustrated by considering the case of the recent dotcom boom and burst in the US. The main stock market for technology company shares there is NASDAQ. In 1995, the value of the NASDAQ index was 1052.1; by 1998, it doubled to 2192.7; in the next twelve months, it nearly doubled again to 4069.3 on 31 December 1999. At its peak in March 2000, the value of the index was 5063.3. Over the following three years, NASDAQ crashed to 1335.5, less than a fourth of its value at the peak. This pattern of share price movement on NASDAQ looks *prima facie* like a classical share price bubble, followed by a bust. These prices could not be efficient in the fundamental valuation sense, simultaneously both at the top of the boom and in the trough. This is because there was little evidence of a change of the required magnitude in the economic fundamentals during this period. True, the US economy had a trend increase in long-term productivity growth rate, but there were no dramatic changes in the growth of corporate earnings and dividends. While the share prices soared, the latter continued to expand at their normal far slower pace (Shiller 2000).

A more detailed discussion as well as other examples of share prices evidently departing from their fundamentals are provided in Singh *et al* 2005. It is generally accepted that such mis-pricing of shares is a common occurrence on the stock market and it may persist for a considerable period, some would say for as much as 10 –20 years. The Nikkei stock market index in Japan reached a value of approximately 38000 in the mid-1980s. Twenty-five years later, it has not recovered to even half the 1980s value. Evidence suggests a share price bubble on the Tokyo stock market in the mid-1980s. Similarly, UK and US stock markets did not recover to their pre-great depression index values until the mid-50s.

To sum up, analyses and evidence suggests that the average firm share prices may depart from the fundamentals for prolonged periods. Many friends of the stock market while acknowledging the likelihood of mis-pricing suggest that the latter persists only for three or four years rather than ten or twenty (Jensen 2005). In case of developing countries, there is a further difficulty. Apart from the normal mis-pricing, which is particularly likely to be severe in developing countries as their firms do not have a long track record, share prices in developing countries are more volatile than in advanced countries (see further Singh (1997); Kumar and El-arian (1996,1997)). Share price volatility is however a negative feature of stock markets for several reasons. First, it reduces

the efficiency of the price signals in allocating investment resources. Secondly, it increases the riskiness of investments and may discourage risk-averse corporations from financing their growth by equity issues and indeed from seeking a stock market listing at all. Thirdly, at the macroeconomic level, a highly volatile stock market may lead to financial fragility for the whole economy (Singh 1999; 2000).

### *The take-over mechanism and the market for corporate control*

The market for corporate control is thought to be the evolutionary endpoint of stock market development. The ability of an outside group of investors to acquire a corporation, often through a hostile bid, is the hallmark of the stock market dominated US and U.K. financial systems. The textbook interpretation of takeovers is that they improve efficiency by transferring corporate assets to those who can manage them more productively. Consequently, more effective managers emerge who can raise the firm's profitability and share price. Even if current managers are not replaced, an active market for corporate control presents a credible threat that inefficient managers will be replaced and thus ensures that the incumbent management actively seeks to maximize shareholder value and thereby raises corporate performance. Even if quoted firms were not directly susceptible to changes in share prices because they finance themselves almost exclusively from internal finance (as the pecking order theory implies; see section V below), the market for corporate control can still discipline managers. Furthermore, even if all firms are on the efficiency frontier, the amalgamation of some through the act of takeovers may lead to a better social allocation of resources via synergy.

However, a critical school has developed a multifaceted critique that has increasingly questioned the above textbook version of the market for corporate control. First, a number of analysts in the critical school have pointed out that in the real world the market for corporate control, even in advanced economies, has an inherent flaw in its operation: it is far easier for a large firm to take over a small one than the other way around (Singh, 1971, 1975, 1992). In principle, it is possible that a small efficient firm may take over a larger and less efficient company (and to a degree this occurred in the US takeover wave of the 1980s through 'junk bonds'), its incidence is very small (Hughes, 1989).

This consideration is particularly important for developing countries like India where there are large, potentially predatory conglomerate groups (Singh, 1995). These could take over smaller, more efficient firms and thereby reduce potential competition to the detriment of the real economy. In a takeover battle it is the absolute firepower (absolute size) that counts rather than the relative efficiency.

Therefore, the development of an active market for corporate control may encourage managers to 'empire-build' not only to increase their monopoly power but also to progressively shield themselves from takeover by becoming larger (see further Singh, 1975, 1992).

Secondly, the efficient operation of the takeover mechanism requires that enormous amounts of information are widely available. Specifically, market participants require information on the profitability of corporations under their existing management and what its prospective profitability would be under an alternative management if it were taken over. It has been noted that such information is not easily available even in advanced countries and this informational deficit is likely to be greater in developing countries.

Thirdly, takeovers are a very expensive way of changing management (Peacock and Bannock, 1991). There are huge transactions costs associated with takeovers in countries like the US and UK which hinder the efficiency of the takeover mechanism. Given the lower income levels in the developing countries, these costs are likely to be proportionally heavier in these countries. It should also be borne in mind that highly successful countries such as Japan, Germany and France have not had an active market for corporate control and have thus avoided these costs, while still maintaining systems for disciplining managers. Furthermore, there is no evidence that corporate governance necessarily improves after takeovers. This is for the simple reason that all takeovers are not disciplinary; in many of them the acquiring firm is motivated by empire-building considerations or even by asset-stripping..

Fourthly, there is theoretical work (see for example Stein, 1989) which suggests that even if managers wish to maximise shareholder wealth, it would pay them to be myopic in a world of takeovers and signal-jamming. Thus, takeovers could exacerbate the already present tendencies towards short-termism in a stock market-based system.

Fifthly, it has been argued that takeovers can be used as a device to avoid honouring implicit contracts developed between workers and the former management (Shleifer and Summers, 1988). This abandonment of implicit contracts can be argued to be socially harmful in that it discourages the accumulation of firm-specific human capital by workers. The absence of strong worker-protection laws in many developing countries means that such considerations may be significant.



In view of the foregoing considerations, it is not surprising that although there exists a very active market for corporate control in the major Anglo-Saxon countries, it is seriously inefficient. Two kinds of evidence support this conclusion. First, studies of the take-over selection process indicate that selection in the market for corporate control takes place only to a limited extent on the basis of the target firm's performance and much more so on the basis of its size. A large relatively unprofitable firm has a much smaller chance of being acquired than a small profitable firm. Secondly, controlling for other relevant variables, studies of post-merger profitability of amalgamating firms indicate that there is at best no improvement on average in post-merger profits but most likely a decline (Ravenscraft and Scherer (1987), Scherer (2006), Singh (1992), Tichy (2002). To the extent that an increase in market power is associated with mergers, the lack of such an increase suggests a micro-economic inefficiency in resource utilization, certainly not an improvement.

A related set of financial studies – the so-called ‘events studies’ – suggest, however, that in US take-overs the acquiring firms suffer a sizeable decline in share prices in the period of six months to three years following the merger. The gainers are mainly the acquired firms whose share prices may rise by up to 20 per cent on average (Jensen, 1988). This poses serious incentive problems as potential acquiring firms stand to lose rather than to gain. Equally importantly, in order to classify these gains to the shareholders of acquired firms as being social gains, the analysis has to assume that share prices are always efficient in the fundamental valuation sense, which, as indicated above, is far from being the case. The rise in the share price of the acquired firm may reflect simply the price for control which empire builders are willing to pay even to the detriment of their own shareholders (Singh 2000).

Further, *a priori* analysis as well as evidence indicates that in practice the imperfections of the pricing and the take-over processes together may lead to ‘short-termism’ on the part of corporate managements. This is reflected in the fact that the latter are obliged to fulfil the market analysts’ short-term (quarterly or six-monthly) expectations of the firms’ earnings per share. Evidence suggests that if such short-term targets are not met, there is a fall in share prices making the firm *cetris paribus* vulnerable to take-over.

The existence of take-over mechanisms not only induces short-termism, but also as Jensen (2005) emphasises, a change in the culture and operations of the corporations leading to such pathological cases as Enron and Worldcom. Jensen seeks to explain the ‘forces’ bearing on the many firms who experienced large rises in share prices and subsequent declines during the ICT bubble in 2000.

Jensen blames the mispricing of shares which is ubiquitous in stock markets on deficiencies in corporate governance. He regards overvalued equity as being a bigger problem than undervalued equity. Jensen notes that although the market for corporate control could solve the problem of undervalued equity, it cannot solve the agency problems of overvalued equity. 'This is because it is difficult to buy-up an overvalued company, eliminate its overvalue and make a profit.' He cites many examples of subsequent value destruction because of overvaluation of equity by analysts, stock brokers and others during the stock market euphoria.

In a closely related but more general sense, the dominance of stock markets can also result in the unhealthy ascendancy of finance over production, and that of financial engineering (through the take-over process) over the normal long-term entrepreneurial tasks of introducing technical change, reducing costs and improving products.

### **5. Corporate Finance, the Stock Market and Corporate Governance**

A central function of the stock market is to finance corporate growth. The nature of finance in turn affects corporate governance. Although the manner in which corporations are governed is affected by many factors, the ownership and control of a company's shares are bound to be affected by the manner in which the companies are financed. For example, if they are primarily financed by creditors, say bank debt, the managers' first concern will be to earn at least the level of profit required to finance the debt. If, on the other hand, the principal financing is provided by equity shareholders, managers may earn any rate of profit to finance dividends, which rise and fall with the profits, but with the risk of take-over by another company, if share prices are too low.

This, of course, also describes the nature of the agency problem in the normal US/UK corporation. Managers are supposed to look after the interests of the shareholders, but the latter, for various reasons, may not be able to motivate the managers to act in their interest rather than those of the management itself.

The corporate governance question will be discussed analytically and empirically below in two stages. Firstly, we will enquire, how do emerging firms finance their growth, i.e., to what extent firms use retained profits or long-term debt or new equity to pay for the expansion of their net assets? At the second stage the implications of the observed financing patterns for corporate governance will be examined.

Singh and Hamid (1992) and Singh (1995), were among the first large scale studies of financing corporate growth in emerging markets. These studies arrived at theoretically quite unexpected conclusions: Developing country corporations rely far more on external than on internal finance, and within external finance, they use equity finance to a surprisingly large degree. (See Table 4.)

**Table 4: The financing of corporate growth in ten emerging markets during the 1980s**

Country	Internal Finance	External Finance (equity)	External Finance LTD
Brazil	56.4	36	7.7
India	40.5	19.6	39.9
Jordan	66.3	22.1	11.6
Malaysia	35.6	46.6	17.8
Mexico	24.4	66.6	9
Pakistan	74	1.7	24.3
Republic of Korea	19.5	49.6	30.9
Thailand	27.7	NA	NA
Turkey	15.3	65.1	19.6
Zimbabwe	58	38.8	3.2
All	38.8	39.3	20.8
F1	20.0*	31.4*	21.2*
F2	16.69*	18.93*	6.38*

Note: 1. F-statistic for comparison of means across countries. ‘\*’ implies rejection of the null hypothesis of the equality of means. 2. Bartlett-Box F-statistic for variance across countries. ‘\*’ implies rejection of the null hypothesis of equality of variance. 3. External finance LTD refers to long-term debt. The accounting identity, which is the basis of the figures in this table, ensures that the total growth of net assets equals the sum of internal and external sources of financing growth. The external sources are subdivided into: (a) new equity issues, and (b) long-term debt.

Source: Singh (1995).

The reasons why Table 4 figures are so surprising is conveyed in part by the data reported in Table 5 for advanced countries (ACs). It is not surprising in itself that there should be differences between AC and DC corporations in relation to how they would meet their financing requirements. However, what is observed is totally opposite to what economic analysis would predict to be the nature of the differences between the two groups. However, it may be noted that the pattern of finance reported in Table 5 for AC corporations themselves is fully compatible with the so called ‘pecking order’ theory of finance. The latter

suggests that firms will choose sources of external finance for their investment needs in the following order. Firstly, they will rely on internal sources (i.e., retentions) as much as they can; if they require more finance, they will borrow from the banks, and will go to the stock market only as a last resort.

**Table 5: Net sources of finance for Germany, Japan, U.K. and U.S., 1970–1989 (percentages)**

	<b>Germany</b>	<b>Japan</b>	<b>U.K.</b>	<b>U.S.</b>
Internal	80.6	69.3	97.3	91.3
Bank finance	11	30.5	19.5	16.6
Bonds	-0.6	4.7	3.5	17.1
New equity	0.9	3.7	-10.4	-8.8
Trade Credit	-1.9	-8.1	-1.4	-3.7
Capital transfers	8.5	-	2.5	-
Other	1.5	-0.1	-2.9	-3.8
Statistical adj.	0	0	-8	-8.7

*Source:* Corbett and Jenkinson (1994)

Myers and Majluf (1984) showed long ago that this pattern of finance can arise from the existence of asymmetric information between managers and the world outside the corporation. Singh (2003) suggested that these considerations apply with even greater force to developing countries. This is because with imperfect capital markets developing country corporations may be expected to be obliged to rely largely on self-financing for their expansion; in addition, they will be reluctant to issue equity capital for fear of losing control of the corporation.

Thus, economic analysis predicts that developing country corporations should depend more on internal finance and less on equity than corporation of advanced countries. The empirical results are not compatible with this proposition.

How does one explain these theoretically anomalous results in Tables 4 and 5? The first point here is that the two tables are using different sources of data and are answering different questions. Singh's 1995 study was based on the data for the 1980s. For the 1990s there is now more comprehensive data available which raises the issue whether these anomalous results for the 1980s continue into the 1990s.

Table 6 provides information on this subject for firms in 22 developing and 22 advanced countries for the period 1995-2000. This is a more comprehensive dataset that which was available in the 1980s. Exactly the same methodology is used to measure financing of corporate growth. The results show that for the 1990s, the pecking order pattern of finance is decisively rejected for both rich and poor countries. Also, what stands out is the high recourse to equity finance by developing country corporations. (For a full discussion and explanation of these anomalous results, termed as the Singh paradox by Dennis Muller see Singh (2003) and Gugler *et al* 2003).

**Table 6: Financing of corporate growth in 19 developing countries and 22 advanced countries for 1995-2000\***

Developed Markets	Liabilities	Ext F.	Int F.	Emerging Markets	Liabilities	Ext F.	Int F.
AUSTRALIA	58%	32%	11%	ARGENTI	46%	16%	38%
AUSTRIA	52%	3%	45%	BRAZIL	74%	11%	15%
BELGIUM	56%	6%	38%	CHILE	44%	33%	23%
BERMUDA	41%	23%	36%	COLOMBI	73%	16%	11%
CANADA	56%	32%	12%	CZECH	33%	21%	46%
CAYMAN ISLANDS	90%	8%	2%	HONG	44%	20%	35%
DENMARK	72%	6%	23%	HUNGAR	28%	1%	71%
FINLAND	53%	26%	22%	INDIA	53%	5%	43%
FRANCE	61%	7%	31%	INDONESI	110%	12%	-23%
GERMANY	62%	5%	33%	ISRAEL	54%	6%	40%
GREECE	52%	34%	14%	KOREA	27%	48%	25%
IRELAND	76%	5%	18%	MALAYSI	40%	18%	42%
ITALY	68%	5%	27%	MEXICO	61%	30%	10%
JAPAN	62%	6%	32%	PHILIPPIN	34%	17%	49%
NETHERLANDS	65%	9%	26%	SOUTH	49%	10%	41%
NORWAY	50%	23%	27%	TAIWAN	59%	40%	1%
SINGAPORE	66%	15%	19%	THAILAN	74%	11%	15%
I SPAIN	68%	-9%	40%	TURKEY	61%	18%	21%
SWEDEN	57%	4%	39%	VENEZUE	27%	54%	19%
SWITZERLAND	54%	7%	39%				
UNITED KINGDOM	52%	21%	27%				
UNITED STATES	47%	21%	32%				
Group Average	53%	17%	30%		35%	39%	27%
Global Average	49%	22%	29%				

Filter: Companies are excluded if any of their ratios are outside [-200,+200]

Sample Size: 3360

\* The basis of figures in this table is the same as that for Table 4. The only difference is that instead of net assets, this table considers corporate growth in terms of percentage change in total assets. The latter is decomposed into growth of liabilities, of equity finance and that of internal finance.

1. Spain has 18 companies, one of which experienced a small decline in total assets over 1995-00. That company also saw external equity increase, which resulted in a large negative value for the external equity ratio.

Excluding that one company the sample mean of the ratio is 3%; the internal equity ratio would decline accordingly.

Source: Glen and Singh (2005)

Next we take up the implications of these observed patterns of financing corporate growth for corporate governance. The empirical results show *prima facie* that new issues on the stock market are relatively more important for corporations in emerging countries than for those in advanced countries, making the former apparently more subject to the influence of the stock market than the latter. There are in principle three channels through which corporate governance may be affected by the stock market: a) the regulatory framework of the stock market itself concerning standards for corporate accounts, disclosure of information about major changes in corporate activities, transparency, etc., b) the pricing process on the stock market and c) the take-over process. It is worth noting that although AC corporations do not use stock market as much as the DC corporations to raise equity capital, the former are paradoxically subject to greater discipline of the stock market than are the latter. This is because of the existence of a highly active market for corporate control in the U.S. and the U.K. so that even firms which never go to the stock market to raise funds, nevertheless, become subject to take-over discipline. The nature of discipline imposed by the stock market through the take-over mechanism has been discussed in detail in the last section. It falls far short of what is required and indeed creates major distortions of its own particularly for developing countries. The stock market pricing process and the take-over mechanism are not in general very helpful in improving economic performance in advanced countries and there are good reasons to suggest that they are even less likely to do so in developing countries.

To illustrate, consider the Indian case. India, like many other developing countries, has large, potentially predatory conglomerate groups (Singh, 1995). As suggested earlier, if there was a market for corporate control these groups could take over smaller, more efficient firms and thereby reduce potential competition to the detriment of the real economy. Also as noted above, the development of an active market for corporate control may encourage managers to 'empire-build' not only to increase their monopoly power but also to progressively shield themselves from takeover by becoming larger.

However, the market for corporate control in developing countries remains rudimentary because, shareholdings are not widely dispersed and standards of disclosure are not conducive to takeovers. It is therefore not surprising that hostile takeovers are rare in developing countries. However, this situation may change if large international MNCs are allowed to engage in takeovers in developing countries. Domestic firms, with their limited funds and relatively restricted access to international capital markets, would not be able to either compete with or resist the MNCs.

There are also other potential factors that could lead financial liberalisation and stock markets to have a negative effect on corporate governance. Financial liberalisation establishes a strong link between two potentially volatile markets, the stock market and the foreign exchange market. The Asian crisis of 1997-1998 demonstrated that there could be a strong negative feedback relationship between a falling stock market and a depreciating currency. As the stock market declines, investors pull out of the market and move their funds into foreign currency. The depreciating currency, in turn, lowers real returns on the stock market which in turn propels the cycle.<sup>3</sup> Such a collapse in currency and equity values of course, ultimately may encourage ‘fire-sale-type FDI’ in the form of takeovers, (suggesting that the expected rate of return measured in foreign currency has increased sufficiently due to the steep decline in domestic share prices). This may overturn quite successful corporate governance structures and replace them with ones that are less suited.

To sum up, the above considerations together suggest that the greater influence of the stock market on developing country corporations is unlikely to improve corporate governance in these countries but may on the contrary make it worse.

## **6. Legal Origin, Corporate Law, Corporate Finance and the Stock Market**

The International Financial Institutions’ (IFIs) preference for the Anglo-Saxon model of corporate governance is based on what they regard as ‘best practice’. Conspicuously, it is not based on systematic theoretical analysis or rigorous empirical research. However, a recent series of papers by Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Schleifer and Robert Vishny (hereafter referred to as LLSV) on law and finance has helped fill these theoretical and empirical *lacunae*.

### *The LLSV thesis*

The central proposition of the by now fairly extensive literature generated by LLSV and their colleagues is that there is a systematic causal relationship between the legal framework, the corporate financing patterns, corporate behaviour and performance, and overall economic growth. The LLSV analysis is based on an empirical and theoretical evaluation of different legal systems whose historical origins are exogenous (or, in the case of LDCs, they are a legacy of colonial rule). The main analysis focuses on the differences between the common and civil law traditions.

A distinguishing characteristic of these contributions is their strong empirical emphasis. The empirical results presented by LLSV indicate that the predictions of the legal origin model are verified by empirical evidence.

### *The Berglof and von Thadden Critique*

There are, among others, two significant lines of criticism that can be directed against this body of thought. The first, articulated by Berglof and von Thadden,(1999) finds the theoretical framework presented in LLSV far too limited for examining corporate governance issues in developing countries. LLSV appear to be solely interested in the question of the protection for providers of external finance to the exclusion of other significant stakeholders in the firm.

Berglof and von Thadden also note that the reference point for the LLSV study is the widely-held, Berle and Means-type corporation which is prevalent mainly in the United States and the United Kingdom.

The typical firm in developing countries, however, is a family-controlled or closely-held by block holders, i.e. it has concentrated share ownership. The important corporate governance problem for this class of firms is not legal protection for outside shareholders but rather the problems of family succession and maintaining family control while raising funds from outside investors.

The LLSV argument is also susceptible to the fact that the direction of causality between legal system and financial structure could run in either direction. The legal system may lead to the formation of a certain financial structure, as LLSV maintain, but it is at least equally plausible that the financial structure may also lead to the creation of legal norms.

It is important to note that even on its own terms, maximising investor protection cannot be optimal. It will result in the dilution of efficiency advantages deriving from the lower agency costs of concentrated ownership.

### *The Glen, Lee and Singh analysis*

The second and rather different critical line of argument against the central LLSV thesis has been presented by Glen, Lee and Singh (2001). They suggest that over the past 50 years there have been major changes in the economic regime and in the role of stock markets in India. These have occurred without any fundamental changes in India's constitution, basic legal framework or its legal origins. Rather, the law has shown itself to be able to accommodate the needs and desires of India's economic policy makers.

To illustrate, following independence from colonial rule, India embarked on a 'socialist pattern of development'. It nationalised the 'commanding heights' of the economy – strategic industries. The private sector was heavily regulated and



private investment by large corporations was not permitted without government permission. Thirty years later the government decided that this was the wrong path and they took major steps to de-regulate and privatise the economy. In both these dramatic episodes the common law tradition India had inherited from the British continued to work. The law became the hand-maid of politics rather than being a prime mover.

Finally, the LLSV thesis concerning legal origin has been subject to a more detailed critical analysis by Fagernas, Sarkar and Singh (2008) and Armour *et al* (2007). These studies are based on new time series data and they decisively reject or substantially modify LLSV's core propositions.

### **7. Natural Progression and Econometric Studies**

One hypothesis which can certainly be refuted, even by broad brush data is that of natural progression mentioned in section II. This theory suggests that as countries develop they establish stock markets and stock market development is therefore an emblem of economic development.

Two kinds of evidence are relevant here. The first is the observation that economic miracles which have occurred in the second half of the twentieth century, hardly any can be ascribed to stock market development. Thus, in post-World War II Europe – the Italian Miracle, the German miracle, the Austrian miracle and in Asia, the justly famous miracles of Korea or Taiwan, did not depend conspicuously on the equity or bond markets in these countries. Similarly, the second kind of evidence relevant here consists of an examination of comparative growth rates over a one hundred year time span. Such an examination reveals that the bank-based countries (e.g. Germany and France) have as good if not a better long-term record of economic growth as do US and UK. Pagano (1993) notes that the Italian stock market was bigger a hundred years ago, than it was until a decade ago. The Italian economy evidently grew during these hundred years without any expansion of the stock market.

Turning from the crude historical evidence above to more precise quantitative and econometric studies, the pioneering contribution of Goldsmith (1969), on the relationship between finance and growth has been followed by econometric exercises. An important issue in this research has been the causal question whether finance causes growth or economic growth leads to the development of the financial system. Another issue which has received attention is whether the banks and stock markets complement each other in causing economic growth or whether they are substitutes.

Levine (1997; 1998) found a positive relationship between banks and economic growth, but he did not control for stock market development. Levine and Zervos (1998) found that stock market and bank development complement each other in assisting economic growth. This finding is confirmed by Beck and Levine (2004) which improves upon earlier studies in terms of both methodology and for being able to control for any other relevant variables. On the other hand, Atje and Jonanovic concluded in an earlier 1993 study that while stock markets positively affect growth, raising it by a huge 2.5 percent per annum banks, had little influence, Sarkar examines the long-term relationship between stock market development and rate of investment in India over a fifty-year period from 1950 – 2000. Using time-series analysis, he found no long-term relationship between the two variables.

Apart from their mixed results, there are important methodological limitations of these econometric exercises. Firstly, as Arestis and Demetriades (1997) noted, most of the studies are based on reduced form analysis and are therefore difficult to interpret in causal terms. Secondly, they ignore altogether the evidence presented in the earlier sections on the observed inefficiencies of the pricing and takeover mechanism on the stock markets. These methodological limitations are serious and detract from the value of this research.

## **8. Stock Market Regulation and Developing Countries**

There was an enormous expansion of DC stock markets in the 1980s and 1990s in the wake of financial liberalisation in many of these countries. Compared with the highly organised and extensively regulated stock market activity in the US and the UK, most DCs do not have such well-functioning markets. Not only is there inadequate government regulation, but private information gathering and disseminating firms are also often absent in DCs. These markets continue to suffer from significant regulatory and informational deficits: most DC markets remain ‘immature’ (i.e., riddled with insider trading and lack of transparency) and relatively illiquid. Most trading takes place in a few blue-chip shares (Singh, 1995; 1997).

DCs have found it difficult to regulate stock markets, as is indicated by frequent scams on DC stock markets. This should not be surprising as even highly regulated and well-functioning markets, such as those of the US, from time to time experience episodes such as those of Enron and WorldCom. Nevertheless, Singh (1998) has argued that one regulatory reform, which would be particularly useful for DCs, is to stop the emergence of a market for corporate control. Such a market, as indicated above, exacerbates the negative effects of stock markets (e.g. short-termism) from the perspective of economic

development. This reform may however involve major changes in company law, reducing the role of shareholders and enhancing that of stakeholders or the government in takeover situations. DC governments need to find cheaper and more efficient ways of changing corporate managements than the lottery and the huge expense of the market for corporate control. They should also encourage product market competition to discipline corporations rather than rely on the stock market alone for this purpose.

As seen earlier, there are good theoretical reasons as well as evidence for the volatility of DC share prices. Volatility is, however, further accentuated if DCs allow external portfolio capital inflows. This greatly increases the vulnerability of the economy not only to international shocks, but also to domestic shocks, substantially magnifying their effects. The main reason for this is that capital inflows lead to an interaction between two inherently unstable markets – the stock market and the currency market. In the event of a large shock (domestic or external) these interactions generate a negative feedback that may lead to, or greatly worsen, a financial crisis.

## **9. Conclusion**

This paper has provided a comprehensive review of the role of the stock markets in economic development. It has surveyed analyses and evidence from both developed and developing countries in order to assess how best, if at all, can stock markets contribute to economic growth.

The paper has two main messages – First, in relation to low-income developing countries which do not yet have established stock markets or have only rudimentary ones. It is suggested that these countries will be better off by encouraging the development of banks rather than expend their human and material resources on establishing stock markets. As far as middle-income countries are concerned, many of whom have well established stock markets, these must be regulated to ensure that they do not become a source of instability or short-termism in the economy. For this reason, middle-income countries should discourage the emergence of a market for corporate control. These countries should find other institutional ways of replacing inefficient managements which are reliable and cheap compared with the takeover device on the stock market.

## Notes

<sup>1</sup> Keynes observed, ‘When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done’ (Keynes, 1936 Ch. 12.) The classic reference to this literature is J.K. Galbraith’s ‘The Great Crash’, 1929, Boston: Houghton Mifflin 1961.

<sup>2</sup> See further, Singh (1990) on the establishment of the stock market in a socialist economy. See also Singh (1993).

<sup>3</sup> This section and the next rely heavily on and updates the discussion of Singh, Singh and Weiss (2003) and Singh (2005).

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