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Introducing the Map of the Global Stock Market

This chapter introduces the global stock market and presents the background information essential to contextualize the purpose of the book. Reflecting the multidisciplinary approach taken, it is an introduction that combines the basic economics of stock markets with their history, geography, and social scientific accounts. It starts with an outline of the roots and history of stock markets, highlighting their geographical nature, and moves on to focus on their unprecedented recent growth. As subsequent sections show, the map of stock markets around the world is highly uneven, and existing explanations of this map are insufficient. There is no end of the history of stock markets in sight, and the remaining potential for their development is high. The chapter finishes with a summary of controversies surrounding the role of stock markets in economy and society, and a roadmap for the rest of the book. Throughout the chapter up-to-date data is presented and analysed and novel measures of stock market development are introduced. Stock market development is demonstrated as an intinteressential part of economic globalization. This chapter also introduces readers unfamiliar with stock markets to some basic vocabulary while explaining the structure and functions of stock markets.

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The briefest history of stock markets

Stock markets are markets where stocks are sold and bought. Stocks (or shares) are issued by companies and sold to investors in order to raise capital. In contrast to debt, capital collected via issuance of shares does not ever need to be returned. Stockholders (or shareholders) are co-owners of the company, and have the right to influence corporate decision-making by exercising their votes at shareholders' meetings, the right to collect dividends (a part of company profits paid out to shareholders), and in case of the company

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going bankrupt, the right to obtain a share of proceeds from the sale of corporate assets left over after the repayment of debts. In addition to common stocks (ordinary shares), which give owners one vote and identical dividend rights per share, companies can issue preferred shares, with multiple votes and/or special dividend rights. When stocks are bought from the company that issues them, we refer to such transactions as the primary stock market. Shares sold and bought between investors and traders themselves constitute secondary stock markets (Mishkin 2007).

The existence of a stock market requires the existence of companies that issue stocks, known as joint-stock companies or corporations. The first joint-stock companies were created in the early seventeenth century, including the Dutch East India Company, which by 1617 had 954 shareholders (Davies 1961). This and other pioneering corporations were given charters by the state, and acted as prime agents of colonial expansion. Free incorporation, removing the need for government to authorize the purposes of a corporation, became widespread only in the nineteenth century and achieved the greatest scale in the United States, where it played a prominent part in raising capital for the rise of the United States to industrial power (Braithwaite and Drahos 2000). Indeed, the expansion of corporations transformed the whole economy, as it no longer needed to rely on family firms. In contrast to the latter, corporations could mobilize capital from thousands, and with time millions of scattered investors, and were not dependant on the life span of any particular owner. They were much less restricted by space and time.

Primary stock markets cannot survive without secondary markets, where investors trade shares and thus modify their investment portfolios. Trading can take place directly between investors, on an Over-The-Counter (OTC) market, but an overwhelming share of it became centralized in meeting places of professional stock traders, who collect orders from investors or trade on their own account. The concentration of trading in space and time, making it easier for traders to find a counterpart, judge their reputation, and exchange information, led to the creation of stock exchanges, with stocks being listed and traded according to established rules (Laulajainen 2003). Firms listing their shares on a stock exchange for the first time are referred to as going public, a process mostly combined with the issuance of new shares known as the Initial Public Offering (IPO). The first major stock exchange was established in Amsterdam in 1602 in order to trade the stocks of the Dutch East India Company. The London Stock Exchange (LSE) emerged as the premier market when French troops invaded Amsterdam in 1795, and maintained its dominance (though periodically heavily contested by the Paris Bourse) until 1914, when the New York Stock Exchange (NYSE) took over the lead in terms of size (Braithwaite and Drahos 2000).

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With free incorporation taking hold in Europe and North America, in the mid-nineteenth century, the supply of new corporations was large and stock exchanges were plentiful. The United States had hundreds and large European countries tens of them (Michie 2008). Each major city had a stock exchange, where local investors traded the shares of local companies. Throughout the nineteenth century, exchanges also developed in Latin America, Africa, Asia, Australia, and Oceania, and were particularly common in British colonies. The popularization of telegraph and the invention of telephone enabled the integration of stock markets, as information relevant to stock prices could now be collected from far away and acted upon quickly. A parallel trend was the growth of corporations, operating increasingly on a national and international scale. Consequently, in the course of the twentieth century local and regional stock exchanges were decimated in all but very large economies. National stock markets were forged, with national indices and systems for the clearing and settlement of transactions (Franks et al. 2009). The period between 1900 and 1914 also witnessed a significant market for cross-border stock transactions, primarily within Europe and between Europe and North America, for example with British investments in the US railway corporations.

The main function of the stock market is to establish the value of corporate shares. A large number of transactions, that is, a high liquidity of a stock market contributes to the process of price discovery. Financial return from holding shares consists of dividends and the appreciation of share price, that is, capital gain (Solnik 1999). Thus, the estimation of a share price requires at the very least predictions about the future profitability of the firm, which in turn involves guesswork about the future condition of the entire economy. There is no upper limit on a share price, while the bottom limit is zero. This is why investments in stocks are risky, and in the long run should be more profitable than relatively safe investments, such as government bonds. Between 1900 and 2000 the US stock markets, for example, have yielded an arithmetic average of 8.7 per cent per year above inflation, with the standard deviation of 20.2 per cent, compared to US bonds with real returns of 2.1 per cent per year and standard deviation of 10 per cent (Dimson et al. 2002). As a corollary of high risk and high potential return stock markets are affected by investor sentiment and irrational behaviour, resulting in a cycle of booms and busts, with the bursting of the internet boom in 2001 being a recent example (Shiller 2005).

Although the birth and development of stock markets have been facilitated by legal inventions and the state, it was the Great Depression in the United States, triggered by the stock market crash of 1929, which provided a milestone in the regulation of stock markets. As a part of New Deal, the Securities and Exchange Act was passed in 1933, followed by the establishment of the Securities and Exchange Commission in 1934, which introduced strict entry

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requirements for companies willing to list their shares on stock exchanges, reporting duties for those listed, and a separation of investment from universal banking in order to insulate the latter from the vagaries of the stock market. The US model of stock market regulation spread (though with significant modifications) to many parts of the world. Many countries have emulated it, and Japan, for example, was persuaded to adopt it in late 1940s by the US military authorities (Braithwaite and Drahos 2000). Thus, while until 1930s stock exchanges operated largely as private clubs of traders, they emerged from 1940s as government controlled, semi-public institutions, granted a near-monopoly on organizing stock markets in their countries (Michie 2008).

The world of national and monopolistic stock exchanges started to crumble in late 1970s, and since then we have witnessed a gradual globalization of stock markets. The rising multinational enterprises have started listing on foreign exchanges to tap into new pools of capital and increase their visibility (Karolyi 2006). Institutional investors, including pension funds, have developed a huge demand for and means to diversify their portfolios internationally (Clark 2000). Stock exchanges themselves have been deregulated (though to various degrees in different countries), exposing them to international competition. New technology has again proven crucial, as computer networks have removed the necessity of traders meeting in one place, enabled an automatic processing of orders, and revolutionized investors' access to information. This has made virtual trading possible, and has questioned the raison d'être of stock exchanges. In response, many stock exchanges have become private publicly listed companies, engaged in international mergers and alliances, and redefined themselves as IT businesses selling listing services to issuers and information services to investors (Budd 1995; Lee 1998).

The globalization of stock markets has also involved their regulation. With companies issuing and listing shares, and investors trading on an increasingly international basis, the demand has arisen to coordinate various national rules on listing, disclosure, and illegal trading practices, as well as to integrate clearing and settlement systems to ensure quick and inexpensive cross-border payments and transfers of share ownership. The International Organization of Securities Commissions was established in 1983, and has been instrumental in promoting the application of the International Financial Reporting Standards (formerly known as International Accounting Standards) commonly applied by firms around the world, and adopted as compulsory for listed companies in the European Union in 2005 (Braithwaite and Drahos 2000). Some steps have also been undertaken, particularly within the EU, towards the coordination of listing rules as well as clearing and settlement. To be sure, it is a heavily contested process. Stock market integration lies at the core of capital market integration, and opinions on the desired extent and speed of this process differ between countries and stakeholders (Story and Walter 1997).

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The development of stock markets in terms of size and significance is by no means linear – a history of continuous expansion. Stock markets first developed in the seventeenth century, but the scandalous Mississippi and South Sea Company bubbles in 1720 cast a long shadow on stock market development, resulting in stagnation, particularly in England and France, but less so, for example, in the Netherlands, allowing Amsterdam to continue as Europe's leading financial centre throughout the eighteenth century. The mid-nineteenth to early twentieth century saw stock markets flourishing, partly due to the industrial revolution and partly due to the little competition for savings from government debt, the levels of which were low in this period of relative peace in international relations. After the First World War, stock market activity was subdued in Europe (with equity crowded out by government borrowing), but it continued to boom in the United States, with an unprecedented spread of corporate ownership, exemplified by ATT owned by approx. 0.5 million people in 1930. The Great Depression halted this development decisively. In 1939, the turnover value on the NYSE was less than 10 per cent of that in 1929 and less than half of that in 1920 (Michie 2006). After the Second World War, stock market activity remained subdued. It was reinvigorated only in late 1970s with deregulation of stock exchanges, the rise of institutional investors, privatization of the corporate sector, as well as technological advances.

The development of the geographical organization of stock markets cannot be seen as a linear progression from local to global markets either. From their inception in the seventeenth century, stock exchanges were focused on trading government debt instruments and relatively few corporate stocks. Only the mid-nineteenth century saw a boom in local and regional stock exchanges focused on railway, utilities, mining, with the largest stock exchanges, like those in London and Paris, still focused on government debt and developing trading in foreign securities. To be sure the situation differed between countries, as even in late nineteenth century, German governments did not support stock market activity, which was considered as speculation (in response large banks internalized stock market transactions to avoid taxes and regulation). The regional and local stock exchanges started to disappear in early twentieth century due to technology, but also due to state intervention. Costly regulation favoured large exchanges that could afford it, and so did high levels of government debt, which does not need multiple trading venues, as in contrast to corporate equity, it is national in nature, and does not rely on local or regional knowledge base. Thus, centralization of control over stock markets, spearheaded by the Securities and Exchange Act in the United States, and spread around the world, contributed to concentration in the geographical organization of stock market industry, including stock exchanges and brokerages. The decline of regional and local stock

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exchanges was however slow and long. In France, exchanges were consolidated in 1967, in the United Kingdom provincial exchanges were merged with the LSE in 1973, while in few large federal states such as the United States and Germany, regional stock exchanges still exist.

Unprecedented recent growth with a qualification

Any social scientist, with the possible exception of historians, could probably be found guilty of exaggerating the significance of contemporary features and trends. Mindful of that bias, however, it still has to be argued that stock markets have never before played such an important role in the world economy, as they do at the start of the twenty-first century.

First of all, the spread of stock markets globally is unprecedented. In 1980, when the United Nations (UN) had 154 member states, fifty-nine countries had a stock exchange (Clayton et al. 2006). In July 2010, out of 192 members of the UN, 134 hosted a stock exchange and further thirteen were covered by a regional stock exchange arrangement (East Caribbean Securities Exchange and West Africa Regional Exchange). There were only twenty-one countries with a population over one million, which did not have a stock exchange, with the largest of them (over ten million) being: Ethiopia, Dem. Rep. of Congo, Burma (Myanmar), North Korea, Yemen, Madagascar, Angola, Chad, and Cuba. To be sure this spread of exchanges cannot be attributed to pure bottom-up forces of demand. It was fuelled by the collapse of communist countries, establishing or re-establishing stock exchanges; and affected by finance-led development strategies promoted by the International Monetary Fund and the World Bank. While the British Empire scattered many stock exchanges around the world in the nineteenth and early twentieth centuries, the Washington Consensus helped the proliferation of stock markets in the 1990s and 2000s (Weber et al. 2009).

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The recent growth of stock markets has also been unprecedented in terms of size. In 2010, there were approx. 45,000 listed companies in the world, almost twice more than twenty years earlier (World Federation of Exchanges 2010). Since 1990, companies around the world have raised approx. $2.5 trillion through IPOs. The global stock market capitalization, the total market value of outstanding publicly traded equity at the end of 2009 was close to $50 trillion, five times that in 1990 (Figure 1.1). This represented nearly 100 per cent of the world's gross domestic product (GDP), while in 1913 (at the end of a long period of dynamic stock market development) the ratio was close to 50 per cent (Rajan and Zingales 2003*b*). This growth was most spectacular in emerging markets. Figure 1.2 shows the change in market capitalization (MC) since 2002. The top of the graph is occupied by emerging market economies,

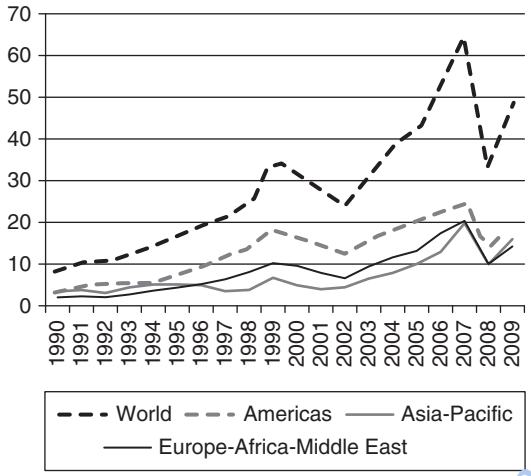

Figure 1.1. Stock market capitalization, 1990–2009 (USD trillion, current prices)
Sources: Author based on data from the World Federation of Exchanges.

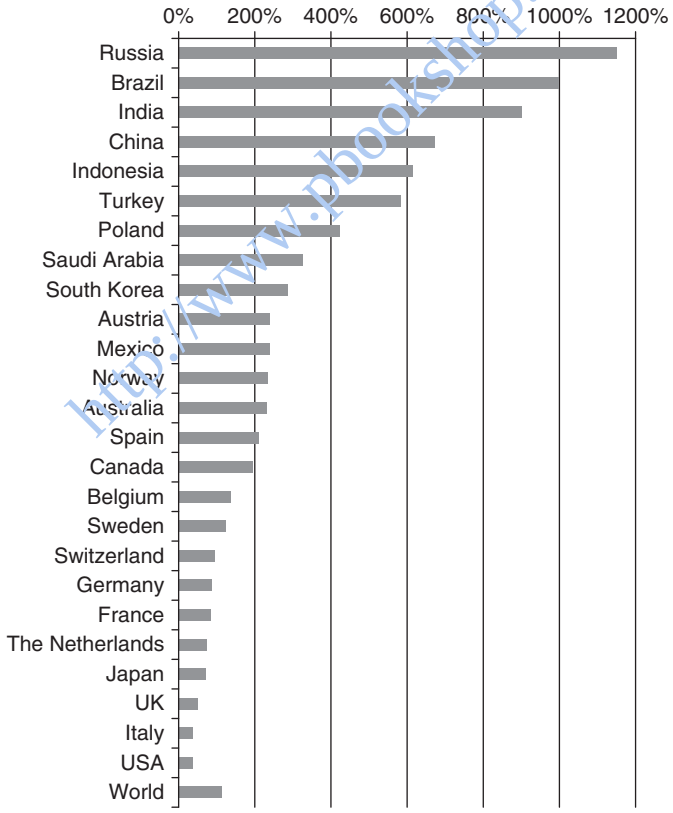

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Figure 1.2. Increase in domestic stock market capitalization, 2002–9
Sources: Author based on data from the World Federation of Exchanges.

many with more than a fivefold growth, despite the downturn of 2008. The very notion of emerging markets has been commonly associated with stock markets rather than any other part of their economies or financial markets.

Stock markets have grown not only in terms of extensity (geographical spread) and intensity (size in relation to the economy), but also in terms of velocity. Since 2000, the total number of stock trades has increased eightfold (World Federation of Exchanges 2010). While in late 1980s, stock exchanges could boast of executing tens of trades per second, in 2010 some exchanges can handle a million transactions within a second. The increased velocity has been enabled by technology but also deregulation driving the trading costs down.

In the last decade the growth in secondary stock markets outpaced that in primary stock markets. In simple terms, the stock market development took the form of much larger trading activity for stocks already listed, rather than bringing new companies to the stock market. Figure 1.3 illustrates this phenomenon, presenting change in the number of listed companies between the end of 2000 and the end of 2009 for selected major economies. While the United Kingdom and particularly emerging markets steamed ahead with new listings, in the United States the number of listed companies fell by 28 per cent. In many Western European countries, primary stock markets also contracted or stagnated. The year 2000 was the peak of the Internet boom, which brought thousands of new companies around the world to the stock market. When the bubble burst, hundreds of companies ceased to exist and further hundreds left the public stock market. In some developed economies, the primary stock market still has not recovered.

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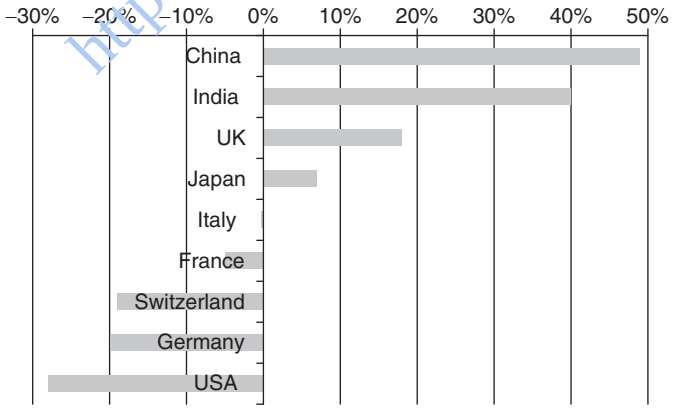

Figure 1.3. Change in the number of listed companies, 2000–9
Sources: Author based on data from the World Federation of Stock Exchanges.

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Uneven development

The stock market boom of the last decades, however unprecedented, has not levelled the development of stock markets around the world. The most popular measure of stock market development is the ratio of stock market capitalization to GDP. To be sure, it is far from a perfect measure. First, it is subject to market booms and crashes. The use of short-term credit in stock trading can further inflate stock prices. The recent global financial crisis of 2007–9 serves as a warning that high ratios relating financial stocks and flows to the underlying economy cannot be used uncritically as measures of financial development and economic sophistication (Roxburgh et al. 2009). Second, MC is biased towards companies with large capitalization. A country with few but very large listed companies may appear to have a much more developed stock market than one with a large number of small listed companies. Mistakes are commonly made interpreting the ratio. Consider, for example, a report of the Scottish Enterprise (2005) evaluating the chances of Scotland becoming and international financial centre location. Drawing a profile of Milan as on of the competitors, the report states: 'Milan stock exchange accounts for 47% of national GDP' (45). An unskilled reader may even think that the stock exchange contributes 47 per cent of Italy's GDP! A semi-skilled reader may still get an impression that 47 per cent of the Italian economy is somehow represented on the stock market. Only skilled readers would know that this statement means nothing less and nothing more than the MC to GDP ratio for Italy being 0.47.

With these precautions in mind, we can move on to analysing Table 1.1 presenting the MC to GDP ratio for fifty countries as at the end of 2009. The sample includes all twenty-five largest economies in the world (according to nominal GDP), plus a selection of other countries with available data. The ratio differs greatly between countries. While the median ratio for the whole sample is 0.66, only thirteen countries have ratios within the range between 0.50 and 0.85. The highest ratio in the table, for Hong Kong, is inflated as market capitalization for Hong Kong includes Mainland Chinese companies cross-listed in Hong Kong. However, even if only Hong Kong headquartered companies were considered (which account for approximately half of the Hong Kong market capitalization), Hong Kong would still lead the list. On the other extreme, the lowest ratio is found for Argentina.

What factors account for the variation of the MC to GDP ratios? One influential body of research, known as law and finance, has highlighted the role of legal rules protecting investors, and shareholders in particular. If laws protect shareholder rights, for example, by prohibiting multiple-voting or non-voting shares, and empowering minority shareholders, stock market

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Table 1.1. Stock market capitalization (MC), GDP, and legal family by country

Country	Legal family	MC 2009 (billion $)	GDP 2009 (billion $)	MC/GDP
Hong Kong	English	2,305	215	10.72
South Africa	English	799	286	2.79
Singapore	English	481	182	2.64
Malaysia	English	286	192	1.49
Australia	English	1,262	925	1.36
The United Kingdom	English	2,796	2,175	1.29
Canada	English	1,677	1,336	1.26
The United States	English	15,077	14,256	1.06
India	English	1,307	1,296	1.01
Israel	English	189	195	0.97
Thailand	English	177	264	0.67
New Zealand	English	36	125	0.28
Ireland	English	61	227	0.27
Sri Lanka	English	10	42	0.23
Luxembourg	French	105	52	2.02
Chile	French	231	164	1.41
Spain	French	1,435	1,460	0.98
Brazil	French	1,337	1,572	0.85
The Netherlands	French	628	792	0.79
France	French	1,864	2,649	0.70
Belgium	French	306	469	0.65
Colombia	French	141	231	0.61
Peru	French	72	127	0.56
Philippines	French	86	160	0.54
Egypt	French	91	188	0.49
Mexico	French	352	875	0.40
Indonesia	French	215	540	0.40
Turkey	French	234	617	0.38
Greece	French	113	330	0.34
Portugal	French	71	227	0.31
Italy	French	656	2,113	0.31
Argentina	French	46	309	0.15
Switzerland	German	1,065	500	2.13
Taiwan	German	658	379	1.74
South Korea	German	835	833	1.00
China	German	3,573	4,909	0.73
Japan	German	3,534	5,068	0.70
Russia	German	736	1,231	0.60
Germany	German	1,292	3,347	0.39
Poland	German	151	430	0.35
Austria	German	114	385	0.30
Slovenia	German	12	48	0.25
Czech Republic	German	45	190	0.24
Hungary	German	30	129	0.23
Saudi Arabia	Islamic	319	369	0.86
Iran	Islamic	59	331	0.18
Sweden	Scandinavian	403	406	0.99
Finland	Scandinavian	220	238	0.92
Norway	Scandinavian	227	382	0.59
Denmark	Scandinavian	169	310	0.55
Total		47,887	54,076	0.89

Sources: Author based on data from the World Federation of Exchange and the World Bank.

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development is more likely. In their famous paper, La Porta et al. (1998) examined the relevant legal rules and their enforcement in forty-nine countries, concluding that countries with legal systems based on English common law have the strongest, French civil law countries the weakest legal protection of investors, with German and Scandinavian civil law countries in the middle. Table 1.1, next to country names, shows the origin of legal system. For several countries not covered by La Porta et al. (1998), the following decisions were made. Luxembourg was classified in the French family; Poland, Hungary, Slovenia, and the Czech Republic were considered closest to the German civil law; and so were Russia and China, although the influences on their legal systems were mixed. Finally, Saudi Arabia and Iran were labelled as having Islamic laws.

At a high level of aggregation the law and finance theory works. The median MC to GDP ratio for common-law countries is 1.16 – the highest of all legal system groups. Next come Scandinavian-law countries with median of 0.75. The median for German-law countries is 0.50, lower than for French-law countries (0.55), but admittedly the former are affected by low ratios of Central and Eastern European countries with relatively new stock markets. When we zoom in on detail, however, there are large differences within each group. Not only Hong Kong and Singapore but also South Africa and Malaysia have higher ratios than the most established stock markets of the United States and the United Kingdom, which are often considered to have the highest level of shareholder protections (Wójcik 2006). New Zealand and Ireland, with investor protection very similar to that in the United Kingdom, have some of the lowest ratios in the table. Large contrasts can also be found within the French and the German legal system families. Even within a compact Scandinavian group, there is a marked difference between high ratios for Sweden and Finland, and low for Denmark and Norway.

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While stock markets are often presented in economics textbooks as a higher form of finance in relation to banks, and their development as a sign of sophistication of a national financial system (Mishkin 2007), there is no simple relationship between stock market development and general economic development, as measured, for example, by GDP per capita. Out of ten countries with the highest MC to GDP ratios in the table, six are emerging markets (Hong Kong, South Africa, Singapore, Malaysia, Chile, Taiwan). In contrast, the long-established wealthy economies of Germany, Italy, and the aforementioned Ireland and New Zealand, have ratios in the bottom fifteen of the list. Remarkably, the largest emerging market economies of Brazil, China, and India are already in the top half of the list, and so is Saudi Arabia. In other words, just as we stressed that the history of stock markets cannot be interpreted as a story of unstoppable gradual expansion and globalization, neither

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can stock market development be seen as a simple corollary of economic development.

We have to be skeptical of the treatment of stock markets in law and finance and economics, but we also need to be suspicious of the conceptualization of stock market development in political economy and other social sciences. According to varieties of capitalism – a school of thought influential in social sciences – stock markets are prominent in liberal market economies (LME) but play a lesser part in coordinated market economies (CME). In the latter type, a strong stock market would not be compatible with the significant role of stakeholders other than shareholders (workers, local communities, government) and considerable redistribution of wealth (Hall and Soskice 2001). A related strand of literature actually uses the term 'stock market capitalism', and contrasts it with welfare capitalism. The MC to GDP ratios are consistent with these approaches as far as the archetypes of LME and stock market capitalism (the United States and the United Kingdom), and CME and welfare capitalism (Germany, Japan) are concerned. However, there are important examples undermining these simple distinctions. Sweden and Singapore have arguably much more coordinated and welfare-oriented economies than Ireland or New Zealand, but they have much more developed stock markets. The percentage of households investing in stocks or mutual funds in Sweden was reported as higher than in the United States (Guiso et al. 2003).

A simple but important lesson here is that there is no single driver or theory that would explain the uneven development of stock markets across countries. Additional factors that should be thrown into the mix of explanations include the role of big companies. Where those are missing and an economy is dominated by small firms, stock market capitalization is likely to be small, as small firms can rely to a larger extent on bank financing, without resort to stock markets. This may explain some of the differences between low MC to GDP ratios in Ireland, New Zealand, and Denmark in relation to Finland (with Nokia accounting for the bulk of market capitalization). The relative significance of debt financing also plays a part. Denmark has a large bond market, which absorbs the funds of investors, possibly at the expense of equity market. In Chile, which followed the prescriptions of the Washington Consensus more closely than any other Latin American country, massive privatization programmes and shift to funded pensions were decisive in the development of stock market. Last but not least, there is a strong coincidence between the role of a country in international finance and its level of stock market development. Hong Kong, Singapore, Luxembourg, and Switzerland claim four of the top five spots on the list.

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Underused potential

The recent boom in stock market development may give an impression that many economies are so penetrated by stock markets that potential for further development is limited. The MC to GDP ratios close to or exceeding 1 in many countries may reinforce that impression. Such judgement however is wrong. To prove that this section focuses on primary stock markets and proposes novel and simple to interpret measures of stock market development, which complement the MC to GDP ratios.

To assess the level of stock market development a simple question is asked: What percentage of companies that could possibly be traded publicly is already present on the stock market? Table 1.2 answers the question, presenting the number of publicly traded companies as a percentage of all large, and all very large companies registered and headquartered in a given country. The thresholds of €50 million and €200 million in annual turnover are used to classify a company as large or very large, respectively. The threshold of €50 million is used officially in the European Union to distinguish large from small and medium sized companies. The thresholds were adjusted to the price level

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Table 1.2. Stock market participation of companies

Country	Number of publicly traded companies	Number of large publicly traded companies / number of large companies	Number of very large publicly traded companies / number of very large companies
Austria	109	0.07	0.14
Belgium	152	0.04	0.09
Czech Republic	37	0.02	0.05
Denmark	178	0.07	0.12
Finland	134	0.10	0.16
France	946	0.06	0.11
Germany	1014	0.05	0.08
Greece	336	0.27	0.45
Hungary	37	0.04	0.09
Ireland	114	0.05	0.11
Italy	292	0.03	0.09
Japan	3858	0.25	0.47
Luxembourg	49	0.10	0.18
Norway	277	0.11	0.16
Poland	241	0.07	0.13
Portugal	73	0.05	0.14
Spain	198	0.03	0.09
Sweden	395	0.09	0.15
Switzerland	274	0.15	0.23
The Netherlands	224	0.04	0.09
The United Kingdom	2542	0.07	0.12
The United States	8861	0.11	0.22
Average	n/a	0.09	0.16

Sources: Author based on data from ORBIS provided by Bureau van Dijk Electronic Publishing.

in a given country. They are used for two reasons. First, it is not possible to consider all companies existing in an economy due to the difficulty of obtaining internationally comparable data. Second, such an approach would fail to recognize that companies participating in stock markets are relatively large, mainly as a result of fixed costs of stock market participation such as reporting costs or listing fees (Pagano et al. 1998).

Publicly traded companies are defined broadly as all those admitted to be traded on regulated markets (for EU countries) and those that are publicly listed or at least quoted and traded on public markets. This definition is inclusive, covering small company, alternative, and technology-focused segments of stock markets. To be sure, the requirements for companies to be publicly traded vary across countries and lenient rules can result in a large number of publicly traded companies, not to be mistaken for a high level of stock market development. Within the EU, the rules on becoming a publicly traded companies are now harmonized, but the variation in the total stock of such companies across countries is still affected strongly by the old diversity of rules.

Table 1.2 documents a very low level of corporate participation in stock markets. On average, only every eleventh large company is publicly traded. The percentage varies from 27 and 25 per cent for Greece and Japan, respectively, to 2 per cent for the Czech Republic. Even in the United Kingdom only every fourteenth company is present on the stock market. Stock market participation grows with company size but only slowly. On average only every sixth very large company is publicly traded. In short, companies present on the stock market represent an absolute minority of the total population of companies, even in countries with the most developed stock markets. This clearly shows that the corporate sector is far from being saturated with publicly traded companies, but it also raises issues of how unrepresentative the stock market can be of the underlying economy (Wójcik 2007). We should keep that in mind whenever we see a stock market index presented as a barometer of the whole corporate sector and economy.

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Stock market controversies

While explaining the level of stock market development is complicated, explaining its impact on the economy and society is even more difficult and controversial. The size and structure of stock markets has significant implications for the whole economy and society. There are strong disagreements on the virtues and vices of stock markets between mainstream/orthodox economics and more socially oriented research in sociology, political science, geography, and heterodox economics.

One characteristic of stock markets, commonly acclaimed by mainstream economists, is their impersonal nature in comparison with bank lending, as an alternative way of channelling capital from savers to firms. Bankers can act in their own interest, at the expense of depositors' interest, for example, colluding with managers of borrowing firms. In other situations, banks can exert too much power over borrowers, if the latter do not have any alternative source of financing (Wenger and Kaserer 1998). Stock markets bypass the intermediary, channelling funds to firms directly from the public. In addition, stock markets are seen as enhancing competition between companies. Shares of companies that underperform can be acquired by competitors more easily if they are traded on a stock market. In general, acting impersonally, stock markets are believed to be better than banks at applying the 'axe' of creative destruction. Banks, with established long-term relationships with borrowers, are less likely to let them go bankrupt, even if bankruptcy is justified (Rajan and Zingales 2003*a*). Finally, stock markets provide a forum where multiple opinions (expert and non-expert) on firms and their decisions clash with each other, while in bank lending such evaluations are made by few experts within one organization. As such, it is argued, stock markets improve the allocation of capital and at the very least complement banks.

Another important way in which stock markets may outperform or at least complement banks concerns innovation. It is claimed that banks have an inherent bias towards prudence, low-risk investments, and borrowers that offer tangible collateral to secure their loans (Morck and Nakamura 1999). Young and innovative firms, with potentially highly profitable but very risky projects, are therefore likely to struggle to obtain bank financing. Stock market investors would be more willing to fund such firms, since shares allow the provider of funds to participate in the success of the firm without an upper limit on their return (Wójcik 2008). Thus, bank-centred financial systems may be more conducive to the funding of mature, less risky firms, while more market-based systems better support the growth of newer, riskier sectors (Levine 2005). Strong stock markets may therefore enhance the innovativeness and competitiveness of an economy. The relatively high growth of the US economy in the 1990s and early 2000s, and high levels of technological innovation in the United States have often been associated with large and liquid stock markets, fed with hundreds of IPOs of high-technology companies.

Many countries have tried to replicate the US model to capitalize on synergies between stock markets, venture capital, and high technology sectors. In Europe, a set of new stock markets (with the German Neuer Markt and French Nouveau Marché in the lead) was created in the late 1990s, modelled after the US NASDAQ, during the US-led boom of Internet stocks. Although these markets did not survive the end of the boom in the early 2000s, they helped

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raise tens of billions of Euro for new ventures and contributed to the development of venture capital industry in Europe. Thousands of new companies and millions of new investors entered the stock market for the first time in a span of just a few years. Before the mid-1990s, small and medium-sized firms in Europe were shut out of stock markets and dependent on banks (Posner 2005).

On the other side of the corporate spectrum stock markets facilitate the existence of very large companies, which may find it difficult to satisfy their capital needs with bank loans. Stock markets can mobilize capital for large capital projects. Arguably the development of infrastructure (including water, gas, canals, and railways) in the nineteenth and early twentieth centuries in the United Kingdom and particularly in the United States would have been difficult without stock markets. In the process, stock markets transform short-term investments, made by people who want to trade stocks for capital gains only, into long-term corporate projects, by the virtue of combining the primary with an active secondary market. In addition, borrowed money can be used for trading in secondary stock markets. Thus, the stock markets bridge the divide between short- and long-term investments, as well as between money, capital, and credit markets. This allows flows of money between different parts of financial markets and the integration of these markets (Michie 2006).

In contrast to orthodox economics, behavioural economics stresses the role of irrational behaviour in stock markets. Prices can rise or fall, even for years, without any changes in underlying fundamentals (e.g. in terms of corporate profitability) that would justify such price movements (Akerlof and Shiller 2009). In other words, bubbles and crashes are common in stock market history, and their effects on the distribution of wealth can be tremendous. Those who bought shares towards the end of a bubble, presumably the most vulnerable, lower income investors, lose most (Kindleberger and Aliber 2005; Shiller 2005). If considerable over- and underpricing are common on stock markets, and bursting bubbles lead to perverse distributional outcomes, this seriously undermines claims about the efficiency of stock markets as a mechanism allocating capital to firms, and a mechanism providing reliable investment returns on savings, including savings for retirement (Engelen 2003). On the other hand, we may wonder, for example, whether some valuable Internet-related innovations would have occurred without the Internet boom of late 1990s, however irrationally exuberant it was.

In addition to irrationality, stock markets may be subject to manipulation, with the main suspects including investment banks and corporate managers. Investment banks and investment banking departments of universal banks advise firms on their stock market entry (IPOs) and other capital market activities, such as mergers and acquisitions, which gives them access to corporate information, before other investors have it. On the other side of their business, their investment advisors and analysts influence investors' opinions

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and decisions. This gives investment banks and bankers a position of power in stock markets, which contributes to their very high profitability and legendary pay packages, and which they could abuse, for example, by using inside information when trading on their own account (Bodnaruk et al. 2007; Crotty 2008).

Stock markets enable the creation of a class of salaried managers, thus professionalizing corporate management and transforming labour markets. This, however, implies the preponderance of corporations with a multitude of small owners, none of which on their own can counterbalance the power of corporate managers (Clark and Wójcik 2007). Since 1990s, in order to align the interests of managers with those of shareholders, it has been popular to award managers with stock options, which promise them big payouts if the stock price of the company goes up (Wójcik 2009). Arguably, however, this may fixate managers' interest on short-term stock market performance, and even enhance incentives to manipulate accounting figures (Bebchuk and Fried 2004; Froud et al. 2006). Corporate scandals at Enron, WorldCom, or Ahold, where managers, investment bankers, and other intermediaries colluded with each other, as well as the recent failure of corporate governance in banks exposed in the global financial crisis of 2008–9, exemplify in an extreme fashion that stock market relations are not as impersonal as orthodox economists paint them (Clark et al. 2006).

Even if we assume that stock markets genuinely discipline corporate managers to maximize the value of shares, the 'shareholder value' orientation is in itself problematic, as it can undermine the interests of other corporate stakeholders, such as labour and local communities (Lazonick and O'Sullivan 2000; Dore 2008). Takeovers, facilitated by stock markets, can further erode the power of labour and local communities, as they result in abrupt closures and layoffs that may be socially harmful, while benefiting nobody but corporate raiders (Shleifer and Summers 1988). Indeed, financial economics has no conclusive evidence that hostile takeovers improve the performance of target firms (Becht et al. 2003). Thus, as the literature on financialization stresses, stock markets may be seen as turning firms into commodities, things made for sale on the market, stripped of complex and locally embedded social relations that they represent (Aglietta and Reberioux 2005).

On the investor side, stock markets allow diversification of investments. By investing in the shares of local private health care companies or local water suppliers, individuals can insure themselves to some extent against the rising prices of these services. At an international scale, benefits of diversification are even larger. Investors from Norway, for example, can insure their future welfare by investing in the stock markets of foreign economies that benefit if the prices of oil and gas fall (Clark 2005). Cross-border equity investment arguably lowers the incentives of the public to support, and of the

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governments to introduce, policies that adversely affect the corporate sector of foreign countries (Doremus et al. 1998). On the other hand, the growing exposure of households to stock market investments, either directly or via pension funds, may be seen as contributing to the rise of casino capitalism, where welfare provision is privatized, with individuals focusing on their own risky bets, and neglecting the need for social cooperation (Strange 1997; Dore 2000; Martin 2002; Langley 2008).

What is the verdict of empirical research on the relative virtues and vices of stock markets? One recent review states that there is no conclusive evidence from cross-country studies that stock market-based or bank-based financial systems are better at fostering growth (Levine 2005). There is not one optimal structure for providing financial functions to the economy (Merton and Bodie 2004; Peck and Theodore 2007).

Rethinking stock markets

This chapter stresses the fundamentally geographical nature of stock markets. The very act of creating a joint-stock company, a prerequisite for stock market development, is about freeing an enterprise from the constraints of time and space, facilitating its existence beyond the lifespan and immediate environment (family and friends) of the founders. The essence of primary stock markets – selling corporate shares to the public – is spreading the ownership of a company, reaching new investors. While many investors can be found within a city or a region, spreading ownership ultimately necessitates reaching investors in more and more places. Finally, the secondary stock market is based on interactions of investors and traders from different places, with flows of information and transactions across space, which necessitate physical (technology, infrastructure) and institutional (rules, language) connections between places.

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The development of stock markets is a quintessential part of globalization. As globalization, stock market development unfolds unevenly in both time and space. It is not a linear, gradual, and unstoppable force operating throughout history, nor does it take the same shape everywhere. And just as globalization, stock market development can be analysed across four dimensions: extensity, intensity, velocity, and impact propensity (Held et al. 1999). Extensity is evident in the spread of stock markets and stock exchanges around the world. Intensity is reflected in the magnitude of stock market activity (market capitalization or trading values and volumes) in relation to the whole financial system and economy, and the participation of companies and investors in stock markets. Velocity concerns the frequency and speed of transactions conducted on stock markets. Impact propensity involves the influence of

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stock markets on economic growth, economic stability, governance of companies, and the whole economy. On all four counts, the last twenty years have seen a spectacular wave of stock market development. It has been unprecedented historically, uneven and controversial, but by no means exhaustive – stock market development has not run its course yet.

This chapter is just an introduction to the map of the globalizing stock market. For all research on stock markets accumulated in financial economics, business studies and in the industry, our knowledge of this map is still very limited. Many important questions beg for systematic answers. What is the spread and intensity of stock market activity within countries? To what extent does stock market activity remain local and regional as opposed to national or international? What economic interactions does the development of the global stock market forge between cities and regions? How do stock markets affect regional, local, and urban development? How do they affect competition between financial centres? What is the impact of financial crises on the spatial organization of stock markets?

The remainder of the book breaks away from the tradition of treating nation-states as the exclusive spatial unit of analysis in research on stock markets, as homogeneous containers of stock market activity. After all, cities, not states, were some of the first issuers of securities, as they had revenues from business, but unlike states they were not above the law, and could be pressurized into paying back (Michie 2006). Mainstream research on stock markets, obsessed with prices and returns, effectively imagines the stock market as a set of transactions among anonymous actors, an epitome of free markets and their invisible hand at work (as opposed to studies on banking, where agency is taken more seriously). The focus of this book is on actors and relations between them, both in primary and secondary markets. Actors come from specific places, and interactions among actors forge connections among places. This logic is reflected in the structure of the book, with Chapters 2 and 3 focusing on issuers, Chapters 4 and 5 on investors, and Chapters 6 and 7 on intermediaries. Chapter 8 consolidates the findings proposing a theory of stock market centres and their networks, further refining the understanding of stock market development as a crucial part of globalization.

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