OECD Equity Market Review

ASIA 2017

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ABOUT THE OECD EQUITY MARKETS REVIEW: ASIA

This is a new annual OECD report that follows and analyses trends in Asian public equity markets. It provides policy makers, regulators, corporations and other market participants with a comprehensive and comparable picture of the use and functioning of public equity markets in Asia. The review also informs policy discussions on how capital markets can serve their role to channel financial resources from households to productive investments in the real economy. The report complements OECD's wider mapping and analysis of market-based financing around the world and covers the main aspects of the capital market ecosystem.

The first part looks at the primary equity markets to describe how and to what extent Asian companies use public equity markets to raise equity capital. This includes data both on initial public offerings and the often neglected use of public equity markets by already-listed companies that choose to raise additional equity capital through a secondary public offering. Beyond the number of offerings and the amounts of equity that corporations raise, this first part also provides an account of the sectoral distribution of the companies that raise money. The second part pays special attention to the use of public equity markets by growth companies, including their size and sectoral distribution. The third part describes and analyses the stock exchange landscape in Asia, including developments over time and their relative size. Stock exchanges are an important part of the capital market ecosystem, where different business models and legal forms exist side by side in the Asian region. The fourth part examines the corporate ownership landscape. It provides information about who the shareholders are and how they own. Special attention is given to the government as an owner of publicly listed companies. The last part of the report looks at developments with respect to investment banking activities such as equity underwritings, corporate bond transactions and mergers and acquisitions. This section describes the emergence of the regional investment banking industry and the shifts in market shares between Asian and non-Asian banks since the turn of the century.

The review is part of the OECD's work on corporate governance, which is focused on how policies and regulations can improve corporate access to capital, competitiveness and the quality of investment. In this work, an empirical understanding of the structure and functioning of capital markets is essential in order to design corporate governance policies and practices that help economies to bridge the gap between household savings and investment in the real economy.

A set of selected indicators and detailed description of data sources as well as the methodology for data collection are provided in the annexes. The content and the methodologies in this first edition of the review will be further refined in discussions with the participants of the OECD Corporate Governance Committee, the OECD-Asian Roundtable on Corporate Governance and other experts. The OECD Secretariat welcomes any comments and suggestions.

The report was prepared by a team led by Mats Isaksson who is Head of the Corporate Affairs Division of the OECD Directorate for Financial and Enterprise Affairs composed of Serdar Çelik, Adriana de la Cruz, Alejandra Medina and Yun Tang. Akito Konagaya, also in the Corporate Affairs Division, provided valuable input. The review benefits from the financial support of the Government of Japan.

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ACRONYMS AND ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
CSRC	Chinese Securities Regulatory Commission
IMF	International Monetary Fund
IPO	initial public offering
M&A	mergers and acquisitions
MSCI	Morgan Stanley Composite Index
OECD	Organisation for Economic Co-operation and Development
R&D	research and development
REIT	real estate investment trust
ROE	return on equity
SPO	secondary public offering (follow-on offering)

EXECUTIVE SUMMARY

Since the turn of the millennium, Asian companies have used public stock markets to raise a total of USD 4 trillion in equity capital. This is equivalent to the combined size of the entire Indian and Korean economies in 2016. Today, Asian companies are the world's largest users of public stock markets, with initial and secondary public offerings (IPOs and SPOs) accounting for 47% of all public equity capital raised in the world. As a result, stock exchanges in Asia have emerged as the world's fastest growing trading venues for listed stocks and several domestic investment banks in the region have started to establish themselves as global actors. Local banks have increased their market shares in almost all Asian markets; not only in terms of equity transactions, but also in other capital market activities, including corporate bond issuance.

The rapid growth in Asian capital markets has been underpinned by the extensive use of public equity markets by Chinese companies. In fact, since 2009, Chinese companies have also come to dominate the global scene for initial public offerings. Companies from other Asian emerging markets such as Malaysia and Indonesia have also increased their use of public equity markets. While a striking feature of many advanced markets around the world is the structural decline in IPOs by growth companies, growth companies still represent an important share of public equity offerings in advanced Asian markets such as Korea and Japan.

Some of the main findings in the review include:

- Since 2000, Asian companies have raised USD 1.2 trillion through initial public offerings and USD 2.6 trillion through secondary public offerings. Companies from the People's Republic of China (China) have been the largest issuers, raising 43% of all public equity in the region, followed by companies from Japan (17%); Hong Kong, China (11%); Korea (8%) and India (7%).

- Nearly three quarters of all equity capital raised in Asia since 2000 went to non-financial companies. The largest share of the capital raised through IPOs went to industrial firms, while consumer product firms accounted for the largest share of funds raised through SPOs. In three out of the five largest Asian markets, the share of public equity raised by high technology firms has declined since 2008.

- While growth company IPOs (below USD 50M) have almost disappeared in the European Union and the United States during the last ten years, equity markets for growth companies remained strong in several Asian countries, including Japan, Korea and Hong Kong, China. Over the last three years, Japanese growth companies have on average raised almost USD 1 billion per year.

- A limited number of sectors account for the majority of Asian growth company IPOs. In Japan, for example, companies from the technology and healthcare sectors have accounted for 40% of all growth company IPOs during the last 5 years. The share of technology sector IPOs was also high in China and Korea. On average they accounted for 17% of all public equity capital raised in these two countries.

- During the last decade, Asian companies have increased their listings outside their local market. The most common destination for Asian companies that list outside the local market has been Hong Kong, China. Apart from some high-profile exceptions, relatively few IPOs by Asian companies are made outside the region. As a consequence, stock markets in the region have steadily grown their share of global public equity offerings (IPOs and SPOs) over the last 20 years from 16% in 1997 to 46% in 2016. Outside of Asia, the US has been the most popular destination for Asian companies that choose a foreign market for their listing.

- A look at the 100 largest listed companies in 12 of Asia's largest stock markets reveals a relatively high degree of ownership concentration at company level. In more than half of the 12 markets, the three largest shareholders on average hold the absolute majority of the company's capital. Japanese and Chinese Taipei corporations have the lowest levels of ownership concentration, with the three largest owners holding 24% and 27%, respectively.

- Another salient feature documented in the review is the high degree of government ownership in large listed companies in Asia. An analysis of a simple binary classification of the 100 largest listed companies indicates that, in nine out of 12 markets, higher government ownership is associated with lower company performance. In 10 of the 12 markets, larger average government ownership also tends to be associated with higher corporate leverage.

- Developments in Asian capital markets have not been limited to the surge in public equity markets. Asia's global share of corporate bonds, syndicated loans as well as mergers and acquisitions, has also grown significantly. Asia's share of the global corporate bond market has more than tripled from 10% a decade ago to almost 35% in 2016 and the share of global M&A activity has increased from 10% to 30%.

- Bolstered by this increase in capital market activities, banks from China, India and Korea have on average during the last 6 years gained more than 20 percentage points in their domestic market shares of investment banking activities. Another effect of the surge in Asian capital market activity is that several Asian banks now have emerged as important global actors.

Despite their recent dynamism, Asian equity markets differ significantly in terms of their level of institutional development, investment practices and the characteristics of the companies that are publicly traded. These variations highlight the potential for further improvement in the various parts of the capital market ecosystem that are documented in this review.

Such further improvements would include that corporations make sure to implement corporate governance practices that meet the expectations of domestic as well as foreign investors. It will also be important for policy makers and regulators to provide investors and other service providers throughout the investment chain - including stock exchanges - with the right incentives to carry out their key function of effectively allocating and monitoring the use of capital in the real sector. Since investment banking activities also constitute an important part of a well-functioning capital market ecosystem, the role and incentives of investment banks should also be considered an important element of the policy analysis.

The findings in this review can also serve to address specific challenges that have emerged with respect to the high level of non-financial sector debt and the misallocation of capital to non-productive zombie companies. High dependence on bank credit in combination with undeveloped or dysfunctional capital markets can create constraints on the sustainability of private sector growth and business sector dynamics. In this context, it will also be important to identify the long term effects on capital formation from different investment strategies used by large institutional investors, such as indexing and passive investment. Policy makers and regulators should also be vigilant in identifying undue barriers for companies - in particular growth companies - to access public equity markets and appropriate mechanisms for market exit, including effective insolvency regimes.

PART I. THE USE OF PRIMARY EQUITY MARKETS BY ASIAN COMPANIES

Equity capital is crucial for forward-looking corporate investments. Since there is no pre-defined rate of return on equity capital and the shareholder can only be paid after all the other stakeholders have been remunerated, equity is particularly well-suited to support long-term investments that include research and development with uncertain outcomes. In addition to the “eternal” nature of equity capital, the possibility to buy and sell public equity in regulated markets allows for a separation between the investment horizon of an individual provider of the capital and the investment horizon of the corporation. This means that long-term, high-risk, business ventures can be financed with relatively shorter term savings.

Equity financing is also essential to promote the long-term focus that is needed to improve productivity. From a firm-level perspective, the *OECD Business and Finance Outlook 2016* (OECD, 2016) demonstrated that companies with increased debt-to-equity ratios after the financial crisis were associated with weaker productivity growth. From a macroeconomic perspective it has also been shown that an increase in outstanding bank credit was associated with a reduction in long-term growth across OECD countries while further expansion of equity financing was likely to promote economic growth (Cournède *et al.*, 2015).

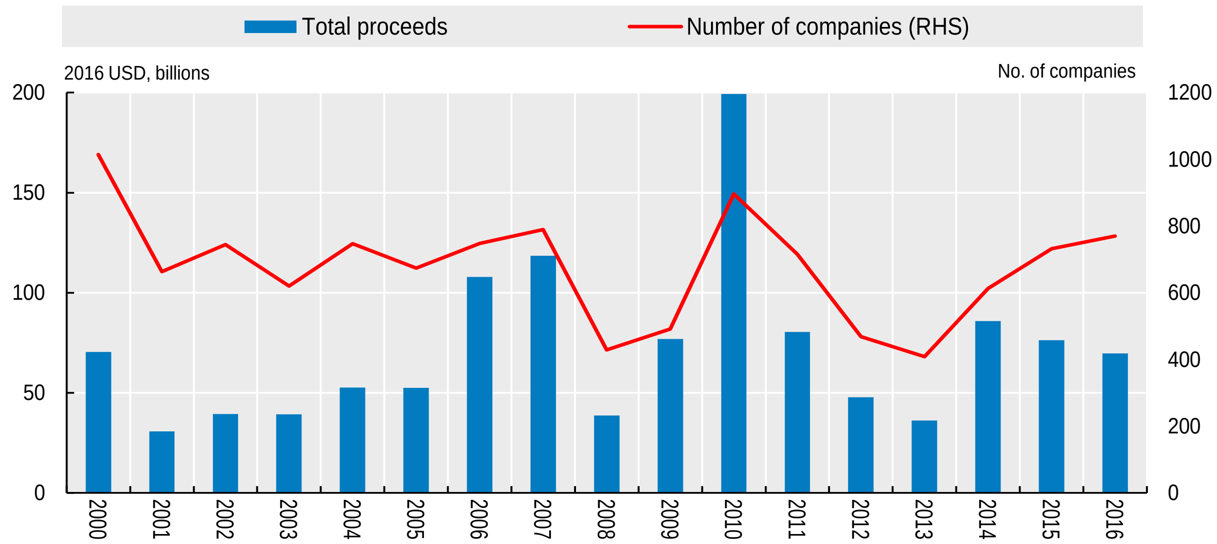
There are two main ways in which a company can raise equity capital by using the primary public market. The first way is through an initial public offering (IPO), which refers to the process through which a company is first introduced and listed on a stock exchange. The second way is through a secondary public offering (SPO) when an already publicly listed company again turns to the public equity market to raise additional equity. This part of the report provides an overview of how and to what extent Asian companies have used initial public offerings as well as secondary public offerings as sources of equity finance during the last two decades. It includes cross-country and cross-industry comparisons.

1.1. Trends in initial public offerings

Figure 1 shows the total amount of equity raised through IPOs by Asian companies and the total number of newly listed companies each year between 2000 and 2016. Before 2007 the annual average number of IPOs in Asia was around 700, without any major fluctuations. The exception was 2000 when there were around a thousand offerings. Since 2008, the annual number of IPOs has been more volatile, varying between 400 and 900 with an annual average of 614.

However, comparing the two periods with respect to the *amount* of equity raised rather than the absolute *number* of IPOs reveals a different picture. Mainly driven by the record level of IPOs in 2010, the annual average amount of equity raised through IPOs by Asian companies increased from USD 64 billion during the period 2000-2007 to USD 79 billion during the period 2008-2016. Between 2014 and 2016 the average amount of equity raised was USD 77 billion per year, which exceeds any year before 2005.

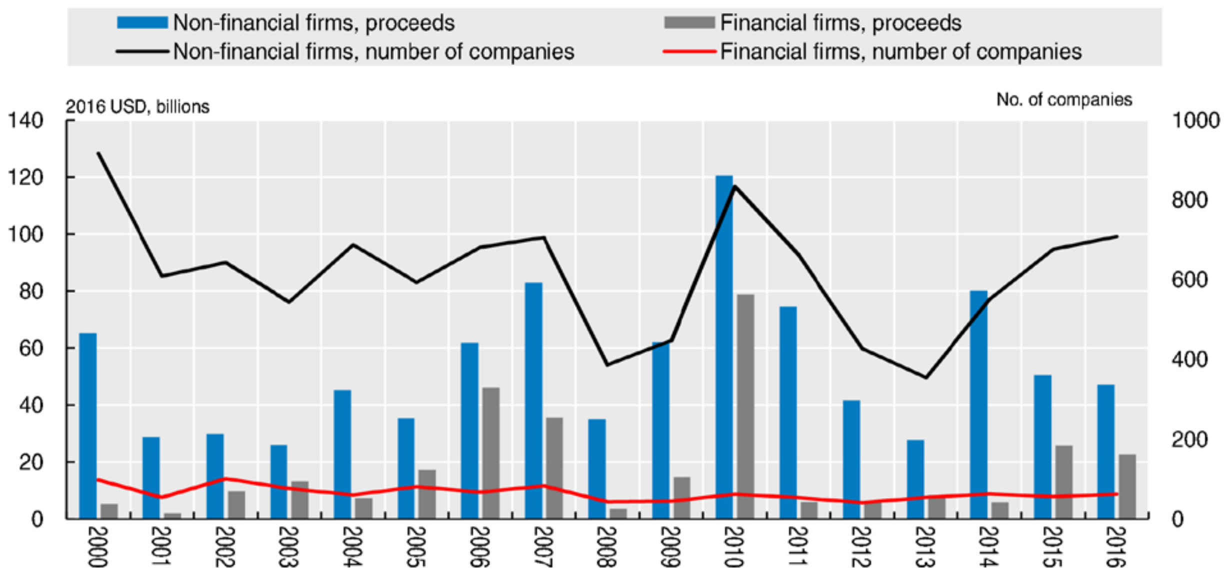
Figure 1. Initial public offerings (IPOs) by Asian companies



Source: OECD Equity Markets Review dataset, see methodology for details.

Figure 2 identifies initial equity offerings by both financial and non-financial companies. Excluding real estate investment trusts (REITs), other trusts and funds, an average of 65 Asian financial firms went public every year between 2000 and 2016. In the first two years following the global financial crisis, the number fell to 44 only to rise to 62 in 2010 where it has remained until today. The number of financial company IPOs is relatively low compared to the number of non-financial IPOs and the amounts of equity raised are heavily influenced by some large transactions. During the period as a whole, Asian financial firms raised a total of USD 307 billion. Almost half of that amount was raised in three years: 2006, 2007 and 2010. The only other years which saw an issuance volume above USD 20 billion were 2015 and 2016.

Figure 2. Initial public offerings (IPOs) by financial and non-financial Asian companies

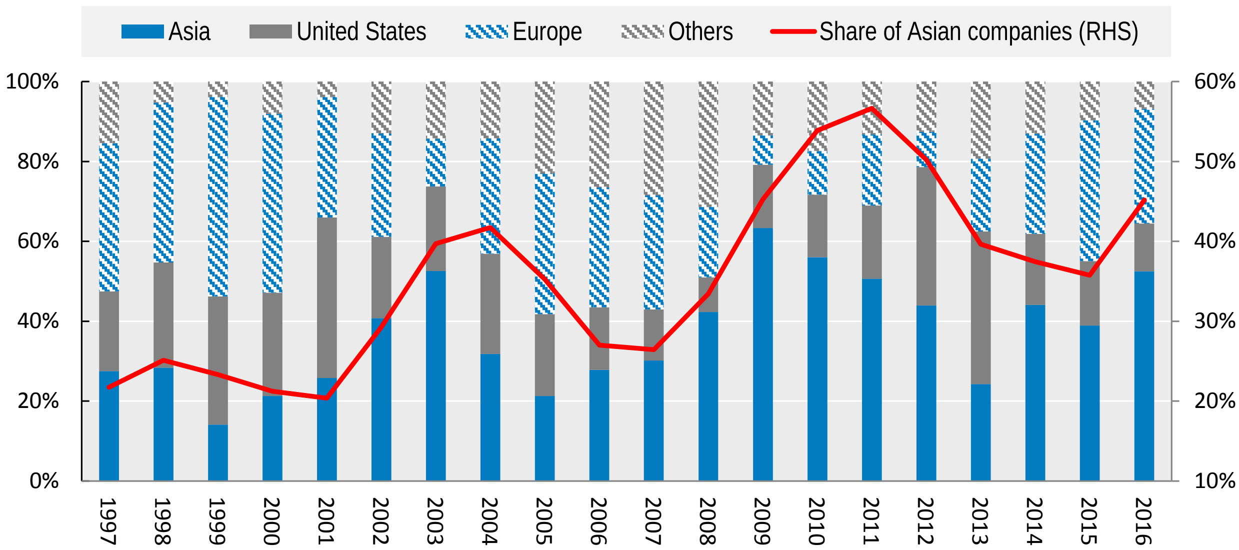


Source: OECD Equity Markets Review dataset, see methodology for details.

Similar to financial companies, the total amount of equity capital raised by non-financial Asian companies also reached a record level in 2010 with a total amount of USD 120 billion. Despite a decline in the average number of issuing companies from 672 in the period 2000-2007 to 560 in the period 2008-2016, the average annual amount of money raised was almost 30% higher in the second period, reaching USD 60 billion per year. In 2011 and 2014, non-financial Asian companies raised around USD 80 billion, which in the previous period was reached only in 2007.

The increase in the total amount of equity capital raised by Asian non-financial companies after the 2008 financial crisis has also influenced the global distribution of IPOs. Reinforced by the downward trend in IPOs by US and European companies (Isaksson and Celik, 2013), Asian non-financial companies have come to dominate the global initial public offerings scene. Figure 3 shows the shares of global IPO proceeds to non-financial companies from Asia, the United States, Europe and other countries during the last 20 years. Between 1997 and 1999, Asian companies accounted for 22% of all capital raised in the world. This share increased to 28% between 2000 and 2007 period and has since 2008 been 47%. In 2016, 53% of all equity raised in the world through IPOs went to Asian companies.

Figure 3. Distribution of global IPO proceeds by non-financial companies

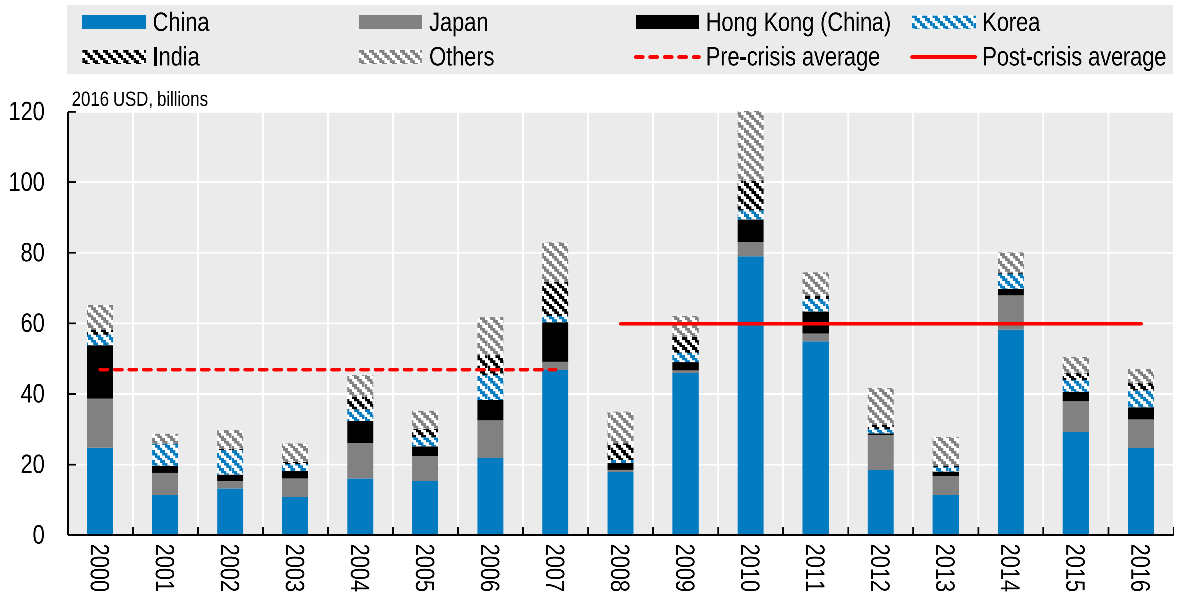


Note: The share of Asian companies is calculated as three-year moving averages.

Source: OECD Equity Markets Review dataset, see methodology for details.

When discussing the shift of IPOs towards Asian companies, it is also of interest to look at the regional distribution and the relative importance of different Asian economies. This is shown in Figure 4 together with the increase in the average annual amounts raised by non-financial Asian companies between the two periods 2000-2007 and 2008-2016. As illustrated by the red horizontal lines, the average annual amount raised was almost 30% higher in the second period with an annual average of USD 60 billion. The figure also shows that IPOs of Chinese companies increased both in absolute and relative terms.

Figure 4. IPO proceeds based on home country of the non-financial company



Source: OECD Equity Markets Review dataset, see methodology for details.

Since the 2008 financial crisis, Asian non-financial companies have raised a total amount of USD 539 billion through initial public offerings. The single largest group was companies from China who raised 63% of the total proceeds. China has traditionally been the largest IPO venue among emerging markets. Moreover, in eight out of the last ten years Chinese non-financial companies have also ranked first in the world in terms of the total amount of money raised through IPOs. In this context it may also be noted that IPOs in China were suspended during two periods in the last five years.[1]

In order to give a clearer picture of developments in other Asian markets, Figure 5 excludes IPOs by Chinese companies. One important observation from the figure is that the annual average amount for the other Asian companies declined from USD 27 billion to USD 22 billion between the two periods. Overall, throughout the period, Japanese companies[2] have raised the highest amount of equity capital followed by Hong Kong, China; Korea and India. The share of Japanese companies was around 31% of Asian IPO proceeds excluding China between 2000 and 2006, and dropped to an annual average of 7% in the years 2007-2011, only have reached an average of 40% of all Asian IPOs since 2012 when IPOs by Chinese companies are excluded.

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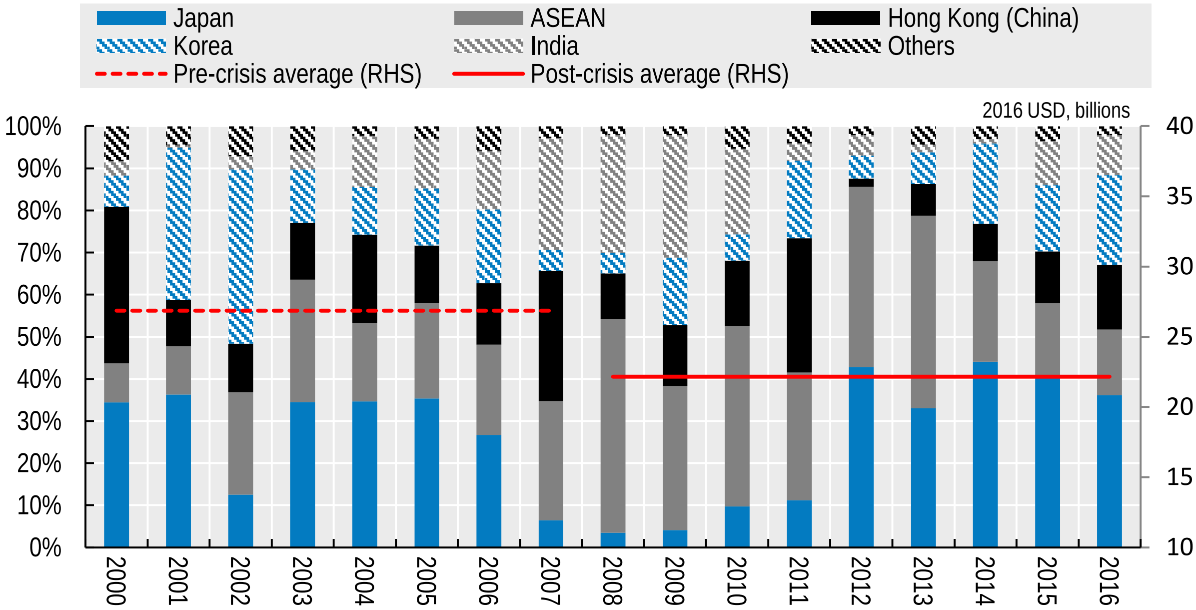
[1] The IPO activity has been suspended nine times in China, of which two of them happened during the last five years. There was a suspension of 14 months between October 2012 and January 2014. The most recent one was from July 2015 to November 2015.

[2] The analysis in this report does not cover over-the-counter (OTC) market listings. JASDAQ in Japan was a OTC market until December 2004, when it had become a regulated stock exchange. IPOs made by JASDAQ listed companies since December 2004 are included in the analysis.

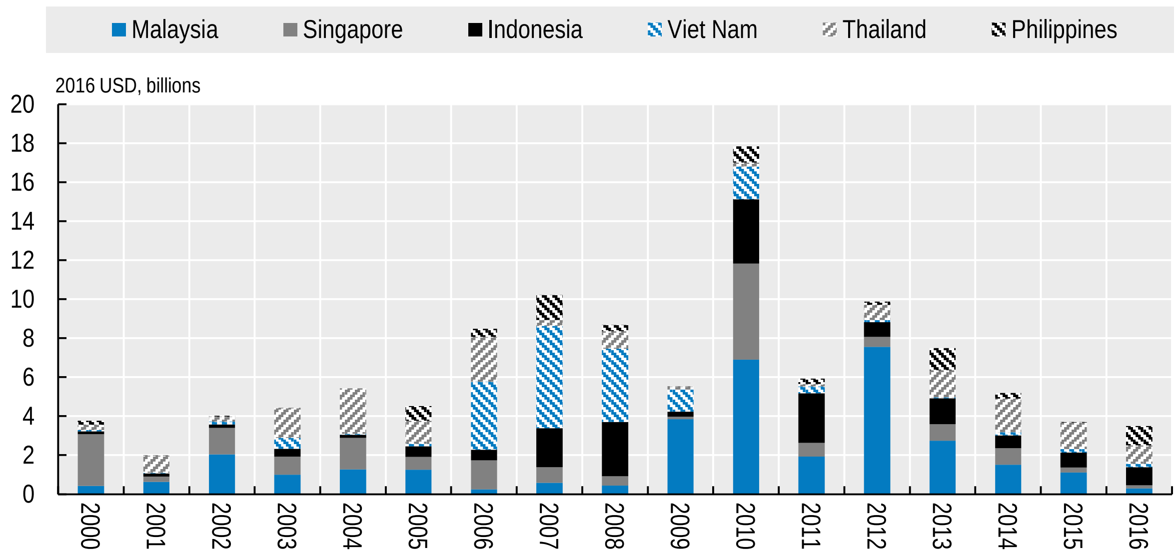
Figure 5. IPO proceeds based on home country of the non-financial company, excluding China



Source: OECD Equity Markets Review dataset, see methodology for details.

In some years, non-financial companies from ASEAN countries have also reached significant levels of initial public offerings. In 2008, 2010 and 2013 their share was almost 50% of all Asian IPOs excluding China, with a total amount of USD 25 billion. As seen from Figure 6, companies from Malaysia, Singapore and Indonesia raised record amounts of equity in 2010. However, since 2012, there has been a clear downward trend and 2016 saw the second lowest issuance volume in 17 years.

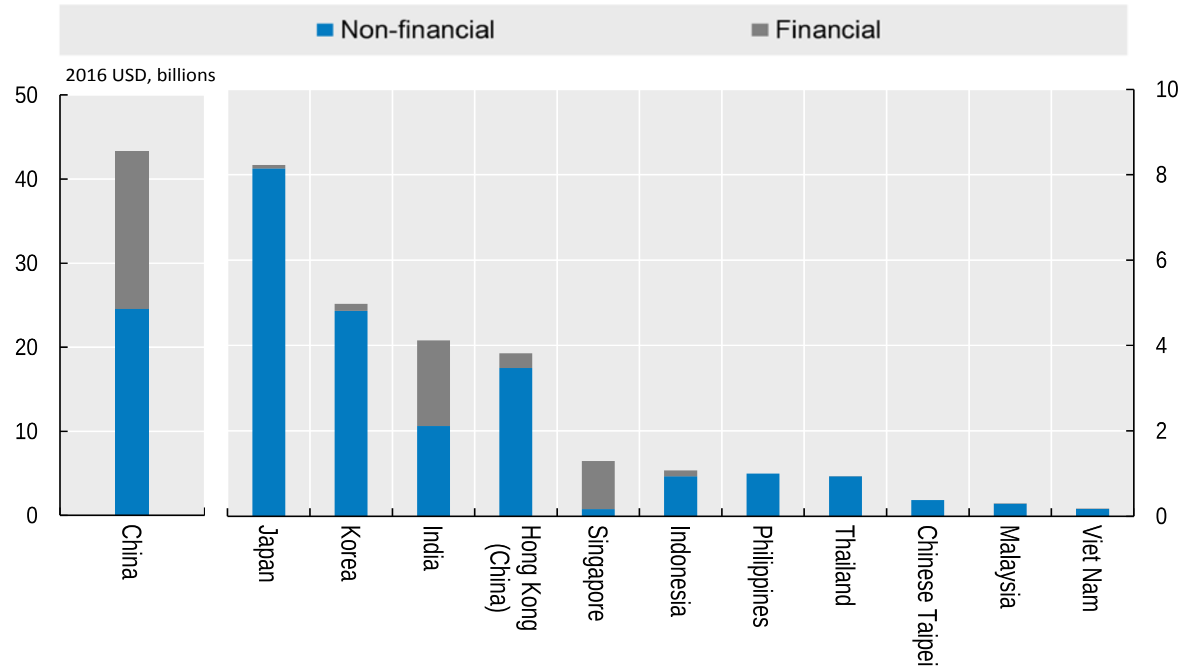
Figure 6. IPO proceeds by non-financial ASEAN companies



Source: OECD Equity Markets Review dataset, see methodology for details.

Figure 7 takes a closer look at 2016 with respect to both financial and non-financial company IPOs. The total amount of IPOs was almost USD 70 billion, of which one third of the proceeds (USD 23 billion) was raised by financial companies and two thirds (USD 47 billion) by non-financial companies. Similar to the overall trend since 2000, Chinese companies accounted for the largest share followed by Japan; Korea; India and Hong Kong, China. Indian IPOs were dominated by a few large financial IPOs, while the number for Singapore is heavily influenced by a single large financial company IPO.

Figure 7. IPOs by Asian companies in 2016



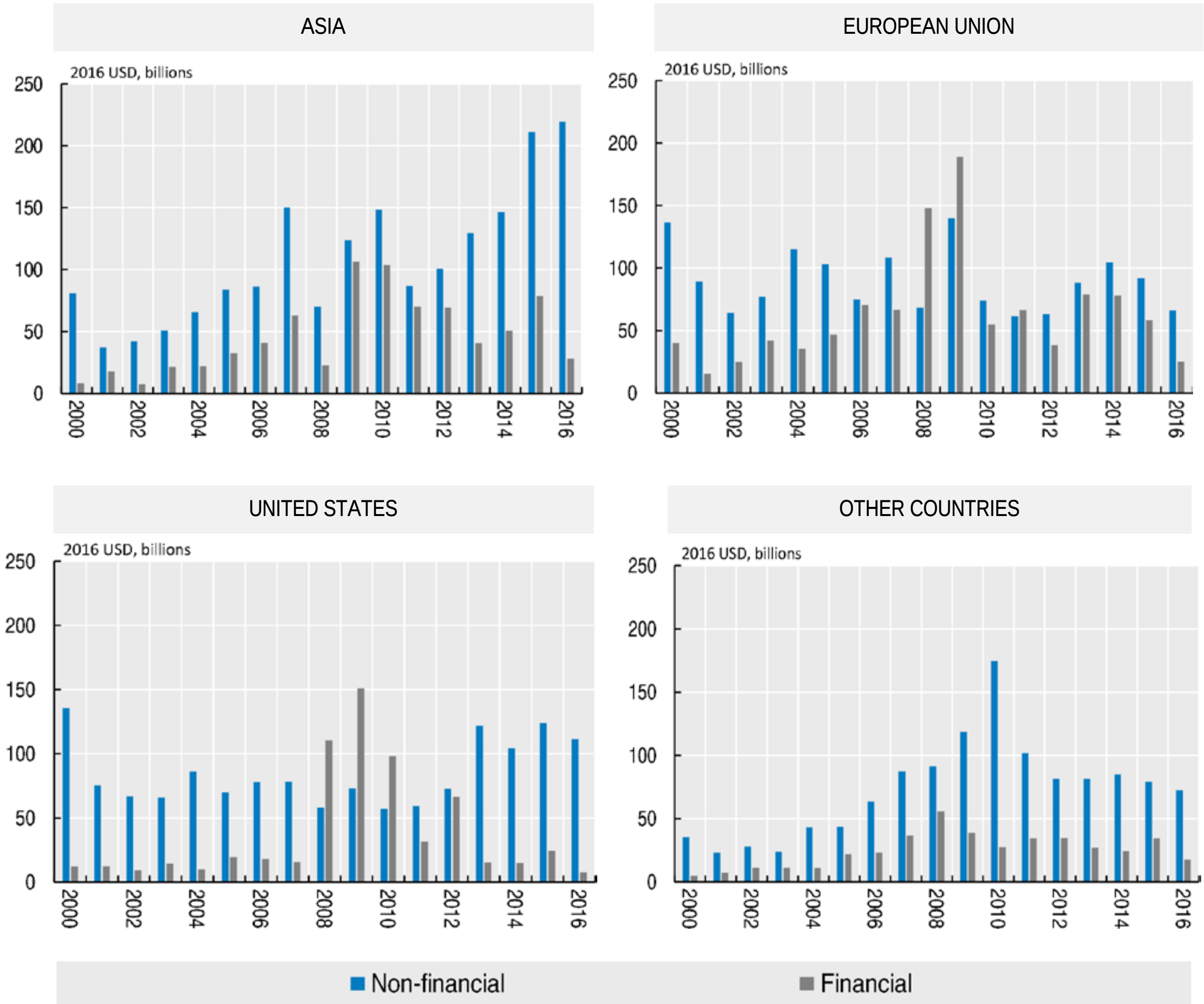
Source: OECD Equity Markets Review dataset, see methodology for details.

1.2. Trends in secondary public offerings

Fund raising through public equity markets is not limited to initial offerings. Companies that are already listed frequently tap public market for additional capital through a so-called secondary public offering (SPO or follow-on offering). Secondary offerings can be made several years after the initial offering in order to, for example, re-capitalise the firm or finance a new investment.

An often neglected and little-known fact is that secondary public market equity offerings actually are a much greater source of public equity funding than the capital raised through initial public offerings. While companies worldwide have raised a total of USD 3.3 trillion through IPOs since 2000, they raised no less than USD 9 trillion through SPOs. Notably, in the two years following the 2008 global financial crisis, financial companies to a significant extent relied on secondary offerings to raise more equity capital. Driven by issuances by large financial institutions in Europe and the United States, the global amount reached almost USD 1 trillion in 2009. Globally, the issuance volume for secondary offerings has remained strong in the last few years as shown in Figure 8. However, the overwhelming portion of proceeds now go to non-financial companies. Compared to the aftermath of the 2008 financial crisis, when financial institutions represented a significant share of SPO offerings, almost 90% of all equity raised through SPOs in 2016 went to non-financial companies.

Figure 8. Global trends in secondary public offerings (SPOs)

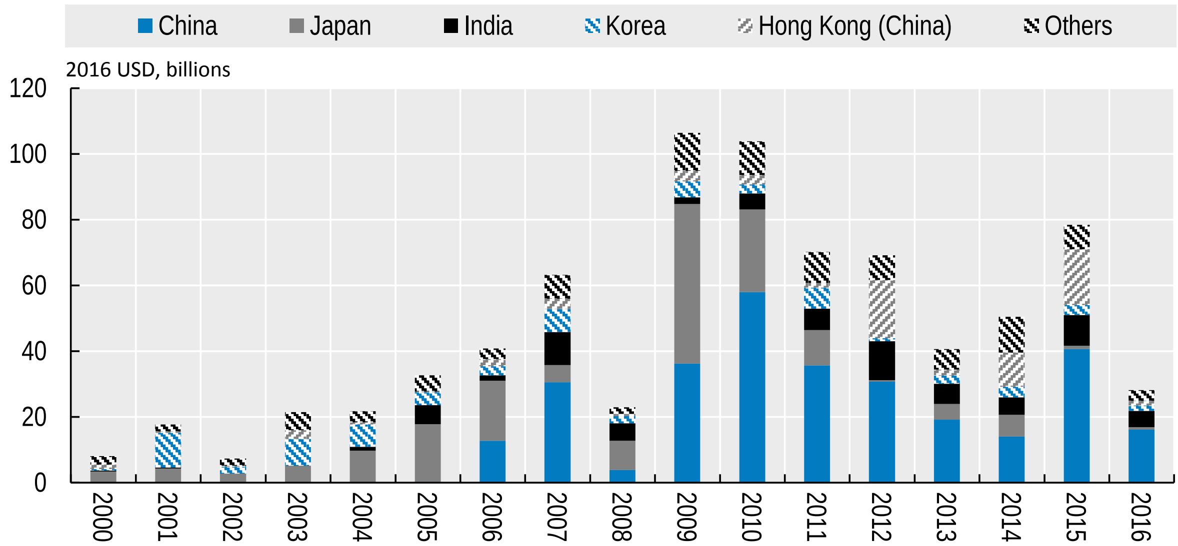


Source: Thomson Reuters, OECD Equity Markets Review dataset, see methodology for details.

Similarly, following the surge in SPOs in Asian markets after 2006, Asian companies on average raised three times as much equity through SPOs that they raised through IPOs. Also the SPO market has been dominated by Chinese companies. The average annual amount of equity capital raised by non-Chinese Asian companies since 2000 has nevertheless exceeded USD 100 billion. That is almost four times as much as they raised through IPOs during the same period.

With respect to Japan, SPOs by financial companies have followed a similar trend to that of other advanced economies over the last ten years. Figure 9 shows that Japanese financial companies raised a total amount of almost USD 50 billion in 2009, while the total proceeds from IPOs was below USD 1 billion. In the last two years, SPOs by Japanese financial companies have been negligible.

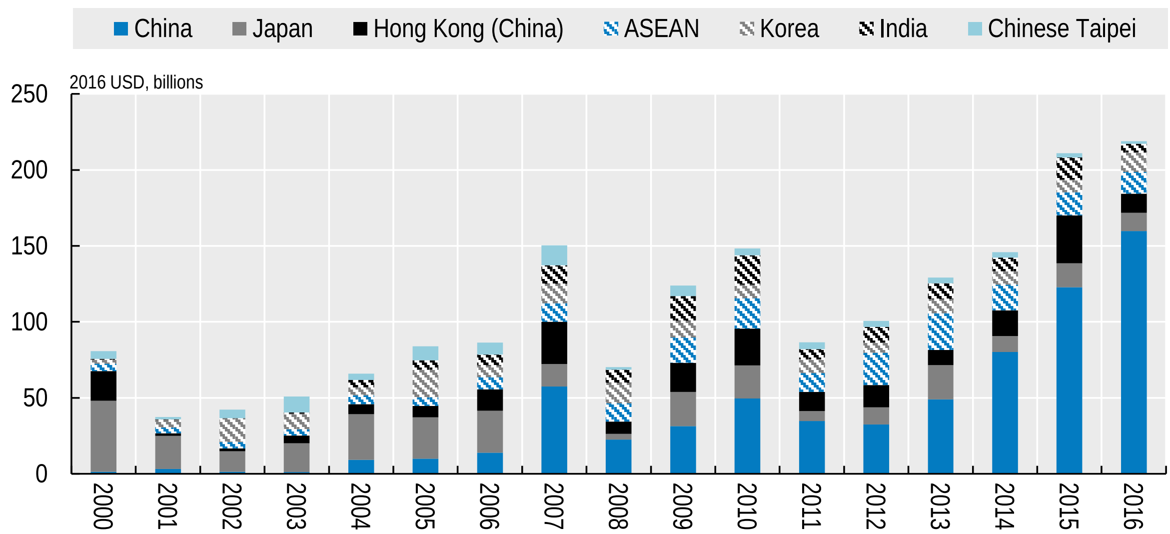
Figure 9. SPOs by Asian financial companies



Source: Thomson Reuters, OECD Equity Markets Review dataset, see methodology for details.

An overview of how non-financial companies have used secondary public offerings is provided in Figure 10. In the 5-year period 2012-2016, non-financial Asian companies almost tripled their use of secondary offerings compared to the first five years of the 2000s.The figure reveals that the surge in total proceeds was not only the result of an increased use of SPOs by Chinese companies. For example, while ASEAN countries' average annual issuance volume was only USD 5 billion in the first five year period, it reached USD 18 billion per year in 2012-2016. Another important observation from the Figure is that non-financial Korean companies almost regularly tap the SPO market with an annual average of USD 10 billion.

Figure 10. SPOs by Asian non-financial companies



Source: Thomson Reuters, OECD Equity Markets Review dataset, see methodology for details

In a public equity offering, the shares that are sold can either be in the form of shares that belong to one or several of the company's existing shareholders, or in the form of new shares issued by the company. If the offering is in the form of existing shares, the money that is raised through the offering does not go to the company but to the selling shareholder(s). However, the selling shareholder can also be a company, which is common in most Asian markets, who may indeed use the proceeds from the offering for corporate purposes including financing expansion plans. In the case when an offering includes the sales of state-owned shares, however, it is obvious that it is not a capital-raising transaction for the corporate sector. This concerns mainly some emerging Asian economies where there have been large privatisation programmes including public offerings of state-owned company shares.

A preliminary analysis of secondary public offering data shows that globally around 30% of the total amount raised through SPOs between 2000 and 2016 was related to a current owner selling part of their holdings. This also includes parent companies' offering to sell their shares in subsidiaries. Such transactions were more common before 2007 compared to the rest of the period. In 2008 and 2009 almost 90% of the total amount raised through SPOs was through new share issuance. In addition, there are big differences between countries in terms of the share that the owner sells to the public. In advanced markets around 35% of all SPO proceeds generally come from owner sales of shares, whereas it is around 20% in emerging markets. Further transaction level analysis of both initial and secondary public offerings would be useful to better understand the use of proceeds from equity offerings.[3]

1.3. Sectoral distribution of public equity financing

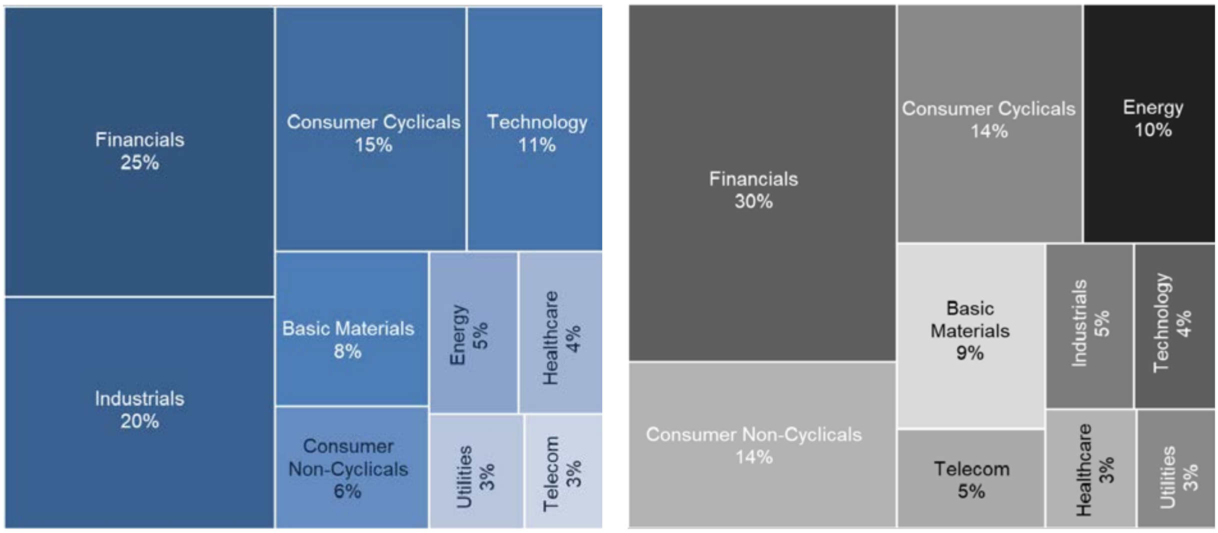
Figure 11 presents a breakdown of the total proceeds from IPOs and SPOs by Asian companies among different sectors over the period between 2000 and 2016. It shows that companies from the financial sector have been the single largest users of both initial and secondary public equity offerings. The breakdown of IPOs shows that financials (25%) is followed by industrials representing 20% of all IPOs but only 5% of all SPOs. Similarly, the share of technology sector of all Asian company IPOs (11%) was more than twice their share of SPOs (4%). Another important difference has been with respect to the energy sector which accounted for 5% of all IPO proceeds and 10% of all SPO proceeds.

Figure 12 shows the shifts in sectoral distribution of IPOs in five Asian countries before and after the 2008 financial crisis. The largest IPO market in the region, China, has with some exceptions experienced modest changes in sectoral distribution ranging between 2 to 5 percentage points. The two most important exceptions are the financial sector, which dropped 14 percentage points and the technology sector, which gained 7 percentage points. In Japan, the most significant shift has been towards the industrials sector from the consumer cyclical products and technology sectors, which have both decreased. In Hong Kong, China, six out of the nine non-financial sectors experienced a decrease in their share of the total IPO proceeds while the share captured by financials increased by 37 percentage points. Like Japan, India and Hong Kong, China experienced a decreased share going to the technology sector. In Korea the share of high

[3] Preliminary analysis of IPO data also reveals similar trends. Globally, 31% of all proceeds was raised by issuing of owners' shares since 2000. The ratio was 37% for financial companies globally.

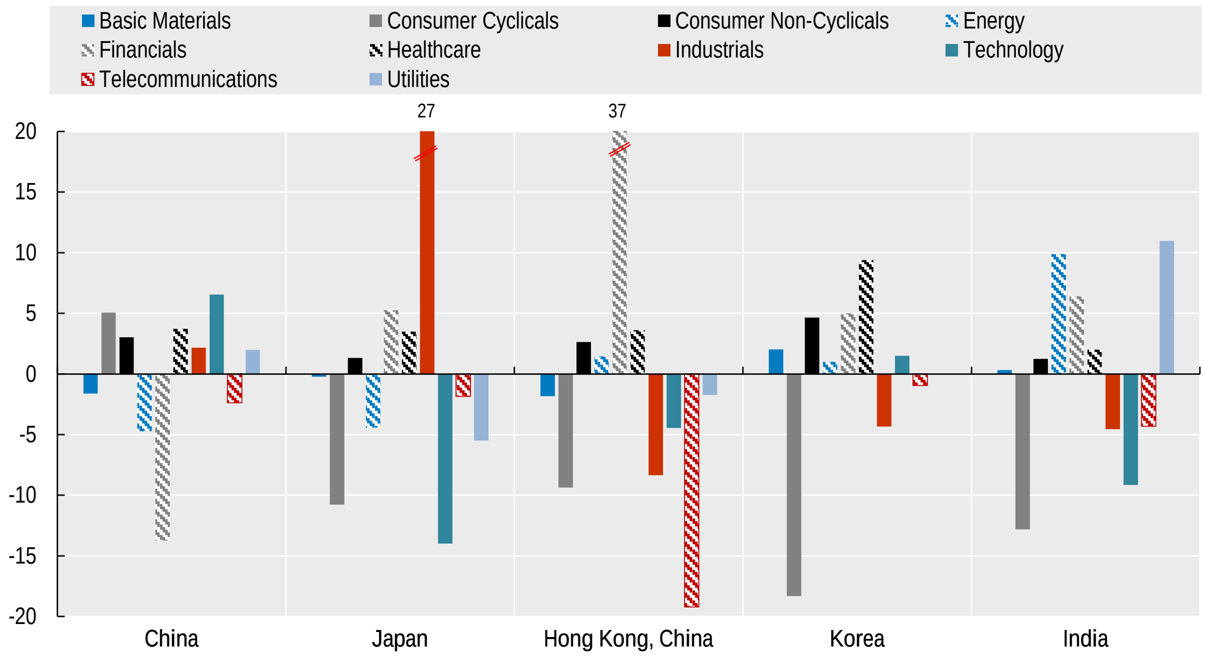
technology, which is the combined share of the technology and the healthcare sectors including pharmaceuticals and biotechnology, went up 11 percentage points.

Figure 11. Sectoral distribution of the proceeds from public equity offerings by Asian companies, 2000-2016



Source: OECD Equity Markets Review dataset, see methodology for details.

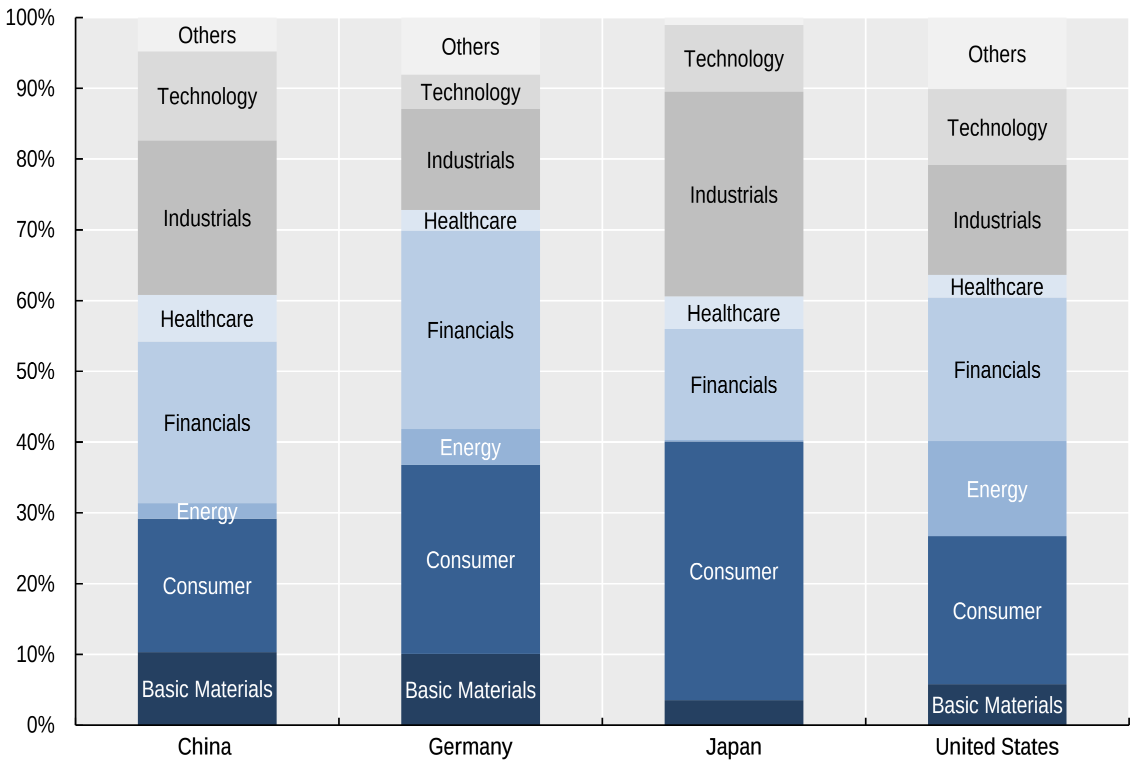
Figure 12. Changes in sectoral shares in IPOs, pre-crisis vs. post-crisis, percentage points



Source: OECD Equity Markets Review dataset, see methodology for details.

Figure 13 focuses on the four largest economies in the world in terms of GDP as of end 2016 and exhibits the sectoral distribution of the total combined proceeds from IPOs and SPOs during the five-year period since 2012. Companies from these four countries raised a total of USD 1,8 trillion over the period accounting for almost half of the total amount raised globally. Despite the fact that financials is the largest sector in two of the economies, it does not dominate the public equity scene in any of the four economies. In Japan and Germany the sectoral distribution is fairly concentrated with the two largest sectors reaching 66% and 55% respectively. Consumer products, financials and technology show fairly similar shares in China and the United States. This similarity in sectoral distribution vanishes only when considering the differences between the industrials and energy sectors.

Figure 13. Sectoral distribution of public equity financing in selected countries, 2012-2016



Source: OECD Equity Markets Review dataset, see methodology for details.

PART II. GROWTH COMPANIES' USE OF PUBLIC EQUITY FINANCING

Growth companies play a critical role in the economy by contributing to innovation, productivity and net job creation. In well-functioning markets, they also play an important role in challenging older and established corporations to upgrade, be more creative and more productive. For this to happen, growth companies need to invest in research, innovation, human resources and fixed capital. Since equity capital is "eternal" and allows companies to undertake forward looking investments with uncertain outcomes in tangible as well as intangible assets, it is more suitable for such investments than other forms of capital (OECD, 2015).

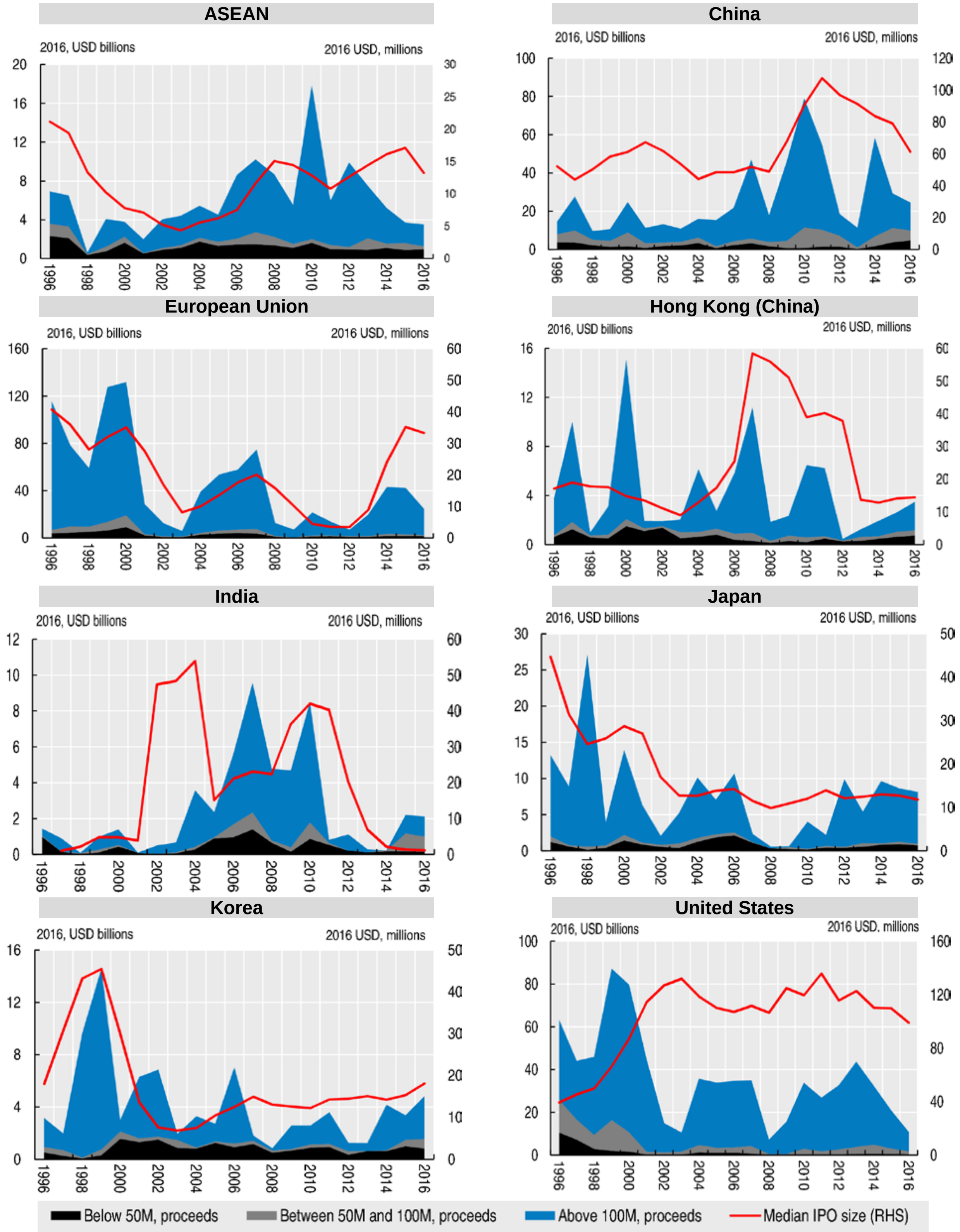
This part provides an overview of the use of primary public equity markets by Asian growth companies during the 20-year period between 1996 and 2016. It also compares developments in Asia with some other major markets. For the purpose of this analysis, growth company IPOs are defined as IPOs of less than USD 100M. Within this category, we also identify IPOs of less than USD 50M. Under the assumption that the average free float ratio for an initial offering is 25%, this means that the average market value of the two groups of growth companies would be below USD 200 and 400M respectively.

2.1. Initial public offerings by growth companies

Globally, the average annual number of growth companies that made an IPO of less than USD 50M (USD 100M) was 1 373 (1 739) in the period 1996-2000. That number fell to 1 041 (1 179) in the period 2001-2007 and to only 627 (785) in the period 2008-2016. At the same time the share of growth company proceeds from all non-financial company IPO proceeds also declined from 8% (19%) in the period 1996-2000 to 6% (15%) in the period 2008-2016.

Figure 14 provides a comparison between the European Union, the United States, the five largest Asian equity markets and the ASEAN countries as a group. As seen from the figure, IPOs below USD 50M have almost disappeared in the European Union and the United States since 2008. Japan also experienced a sharp decrease between 2008 and 2013. But since then, Japanese growth company IPOs have rebounded somewhat and raised an annual average of almost USD 1 billion during 2014-2016. The total amount raised by Korean companies has been fairly constant over time, with the exception of 2012. One notable difference between Korea, Japan and China is that in the first two countries the majority of growth company IPOs were below the USD 50M threshold. Whereas in China, since 2008 the majority of growth company IPOs were between USD 50M and 100M. In ASEAN, total proceeds from growth company IPOs were more evenly distributed with respect to the size of the IPO.

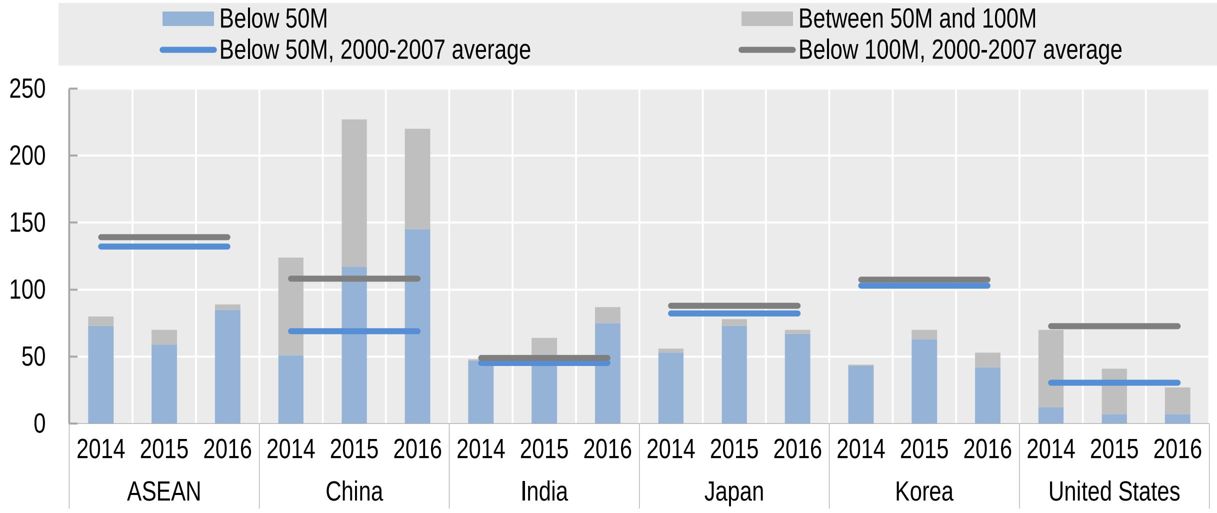
Figure 14. IPOs by non-financial growth companies



Source: OECD Equity Markets Review dataset, see methodology for details.

As discussed above, the number of growth company IPOs has declined globally over a 20-year period. Figure 15 shows Asian and US growth company IPOs in the last three years compared with the period 2000-2007. Only in China and India did the average number of growth company IPOs in 2014-2016 reach above the 2000-2007 averages. While Japanese growth company IPOs for the last three years have been close to the pre-crisis averages, the number of ASEAN, Korean and United States growth company IPOs were all significantly below their 2000-2007 averages.

Figure 15. Number of non-financial growth company IPOs



Source: OECD Equity Markets Review dataset, see methodology for details.

2.2. Sectoral distribution of growth company IPOs

Public equity offerings are often seen as an important source of funding for growth companies in future oriented industries with relatively high risk. During the period 2012-2016, industries like technology and healthcare, for example, accounted for 69% of all growth company IPOs below USD 100M in the United States and 40% in the European Union and Japan. The share of the technology sector was also high in China and Korea at an average level of 17% of all proceeds. In India; China and Hong Kong, China industrials represented around 30% of all IPOs under USD 100M. This is considerably higher than in other countries, particularly the US.

Table 1. Sectoral breakdown of growth company IPOs as a percentage of total proceeds, 2012-2016

	China	European Union	Hong Kong (China)	India	Japan	Korea	United States
Basic Materials	14%	5%	4%	5%	2%	9%	2%
Consumer Cyclicals	19%	13%	30%	25%	22%	26%	8%
Consumer Non-Cyclicals	7%	5%	14%	10%	6%	13%	1%
Energy	2%	3%	1%	2%	0%	0%	0%
Financials	2%	15%	9%	6%	10%	4%	13%
Healthcare	7%	25%	9%	16%	12%	12%	52%
Industrials	29%	18%	26%	32%	19%	18%	6%
Technology	17%	15%	7%	4%	27%	17%	17%
Telecommunications	1%	0%	0%	0%	0%	0%	1%
Utilities	1%	2%	0%	0%	1%	0%	0%

Source: OECD Equity Markets Review dataset, see methodology for details.

PART III. THE STRUCTURE OF THE SECONDARY PUBLIC EQUITY MARKETS

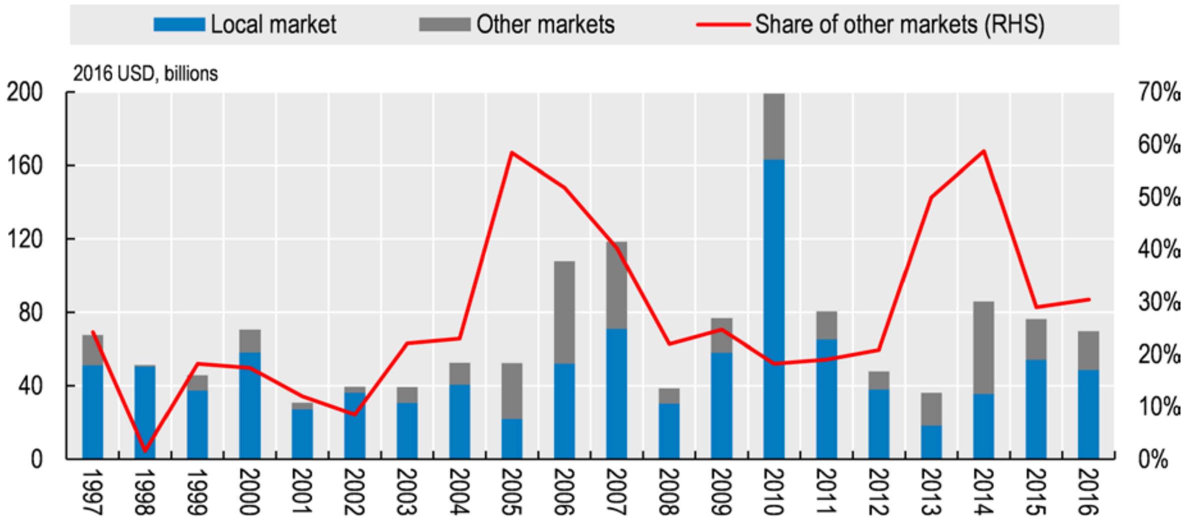
A key element of public equity markets are the marketplaces, most importantly stock exchanges, that should be playing a critical role in matching companies that need access to external equity capital with investors that are in search of investment opportunities. In the process of designing policies directed to improve the functioning of capital markets it is therefore important to understand how stock markets are structured, how trading venues function and the profound changes that they have undergone during the last decade or so. Stock exchanges serve some key functions that are also in the interest of the public. These include ensuring an efficient price discovery process, certain regulatory functions, supervision and sometimes enforcement responsibilities.

Part I and II of the report provided an overview of Asian companies' use of public equity financing from the perspective of the nationality of company. This part focuses on the domicile of the markets and classifies transactions based on the national domicile of the stock exchange where the offering was made. It also provides a brief overall view of the stock exchange landscape in Asia.

3.1. Stock markets in Asia

Figure 16 shows the amount of public equity raised through IPOs by Asian companies in their local market and other markets. From 1997 to 2004, at least 80% of all equity capital raised by Asian companies was through offerings in the company's local market. In five of the years between 2005 and 2016, however, offerings in other markets exceeded 40% and reached almost 60% in 2005 and 2014.

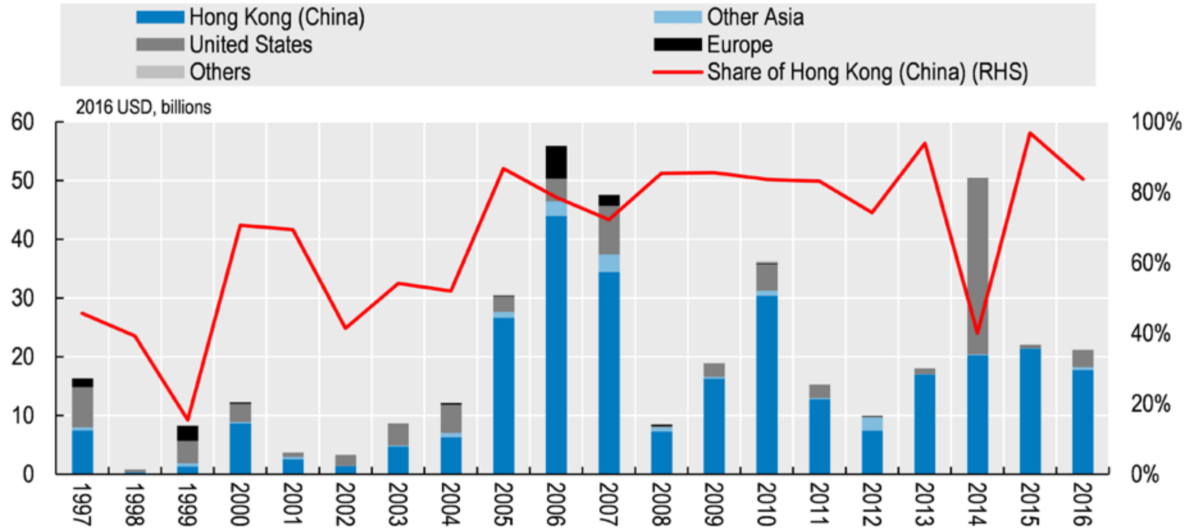
Figure 16. IPOs by Asian companies in local market and other markets



Source: OECD Equity Markets Review dataset, see methodology for details.

A more detailed analysis of the IPOs by Asian companies outside their local market is presented in Figure 17. It reveals that every year since 2005, when the share of other markets started to increase, Hong Kong, China has been the single largest recipient of Asian company listings outside the local market. The only exception is 2014 when a very large Chinese technology company (Alibaba) listed in the US. The US has always been the main market for Asian company offerings outside the region. In some years before 2008, there were also a considerable amount of transactions in European markets but this has largely come to a halt. It should be noted that nearly all proceeds raised by Asian companies in Hong Kong, China were raised by Chinese companies.

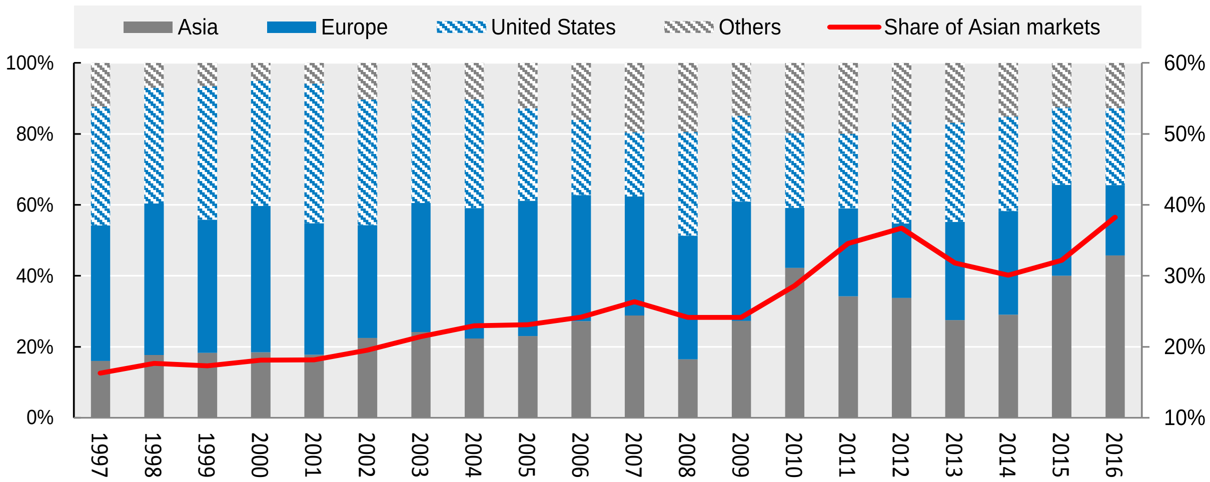
Figure 17. IPOs by Asian companies outside their local market



Note: Share of Hong Kong, China is three-year moving averages.

Source: OECD Equity Markets Review dataset, see methodology for details.

Figure 18. Share of Asian markets in global public equity market, as percentage of total proceeds from IPOs and SPOs



Source: OECD Equity Markets Review dataset, see methodology for details.

One important consequence of the increased use of public equity financing by Asian companies and their reliance either on local markets or other Asian stock markets has been an increasing share of the Asian stock market in global public equity offerings. The share of Asian markets has grown steadily during the last 20 years and reached 46% of global volume of IPOs in 2016.

3.2. Stock exchange landscape in Asia

Over the last two decades the stock exchange industry in developed markets has experienced fundamental changes. Most traditional stock exchanges have either been acquired by another exchange or become part of a stock exchange group. In most cases the parent companies of exchanges have also become public companies with their shares listed and traded on one or more of their own stock exchanges. At the same time, new venues for trading have emerged, such as alternative trading systems and multilateral trading facilities.

Stock exchanges in developed Asian economies have also been part of this transformation. For example, Japan Exchange Group (JPX) was established in 2013 as a result of the business combination between Tokyo Stock Exchange Group and Osaka Securities Exchange. Today, the parent company of the Tokyo Stock Exchange, the JPX, is listed on the exchange. The stock exchanges in Singapore and Hong Kong, China are also listed companies. Contrary to the situation in Europe and the United States, developed Asian markets do not face fierce competition from non-stock exchange trading venues. In 2015, for example, 33% of all trading in United States and around 50% of all trading in major European markets took place on off-exchange trading venues (OECD, 2016). In Japan, however, Tokyo Stock Exchange still accounts for almost all stock trading in domestic listed companies (JSRI, 2016).

In emerging markets the consolidation of the stock exchange industry has been mostly through M&As at the national level. For example, two stock exchanges in Indonesia merged in 2007 to form the Indonesia Stock Exchange. Also the three Pakistani stock exchanges recently underwent a merger and now operate as Pakistan Stock Exchange. While it is a common phenomenon that stock exchanges operating in advanced economies have transformed to become listed on their own exchange, the picture is less homogenous in emerging markets. Stock exchanges in Chinese Taipei, Thailand and Viet Nam are still run as state-owned enterprises. Also the two largest stock exchanges in Asian emerging markets, which are both in China, operate as semi-public institutions and are membership institutions governed by the China Securities Regulatory Commission (CSRC). The stock exchanges in Malaysia, Pakistan and the Philippines on the other hand, have transformed and are now listed companies on their own markets. Similar to developed Asian economies, non-exchange alternative trading platforms are not a significant feature in the Asian stock exchange landscape.

In addition to an overview of the legal status and listing information, Table 2 also presents some key indicators for Asian stock markets. Tokyo Stock Exchange had the highest market capitalisation as of end 2016, followed by the two Chinese exchanges and the Stock Exchange of Hong Kong. In terms of total annual trading volume the ranking was opposite: two Chinese exchanges had the highest volume followed by Tokyo Stock Exchange. In terms of trading volume, these three stock exchanges ranked among the 10 major stock exchanges worldwide by the end of 2016.

Table 2. Stock exchanges in the Asia region

	Stock exchange	Legal status	Self-listing	Market capitalisation, billion USD, as of end 2016	Number of listed companies, as of end 2016	Trading volume, billion USD, as of end 2016
Bangladesh	Dhaka SE	Private company	No	36	294	15
	Chittagong SE	Private company	No	34	263	1
China	Shanghai SE	State-owned	No	4 100	1 182	7 510
	Shenzhen SE	State-owned	No	3 213	1 870	11 613
Hong Kong (China)	Stock Exchange of Hong Kong	Joint Stock Company	Yes	3 193	1 973	1 350
India	National SE	Joint Stock Company	No	1 540	1 840	692
	Bombay SE	Joint Stock Company	No	1 567	5 821	113
Indonesia	Indonesia SE	Private company	No	426	537	92
Japan	Tokyo SE	Joint Stock Company	Yes	4 955	3 541	5 626
Korea	Korea Exchange	Joint Stock Company	No	1 255	2 059	1 665
Malaysia	Bursa Malaysia	Joint Stock Company	Yes	360	903	106
Mongolia	Mongolian SE	Self-regulatory organisation	No	0.6	226	0.02
Pakistan	Pakistan SE	Private company	Yes	91*	560*	19*
Philippines	Philippine SE	Joint Stock Company	Yes	240	265	37
Singapore	Singapore Exchange	Joint Stock Company	Yes	640	757	197
Chinese Taipei	Taiwan SE	State-owned	No	844	911	512
	Taipei Exchange	State-owned	No	84	732	156
Thailand	Stock Exchange of Thailand	State-owned	No	433	656	329
Viet Nam	Ho Chi Minh SE	State-owned	No	66	320	23
	Hanoi SE	State-owned	No	7	376	6

Source: OECD Survey of Corporate Governance Frameworks in Asia 2017, OECD Corporate Governance Factbook 2017, World Federation of Exchanges and stock exchanges' websites. * Numbers are as of June 30, 2017.

In order to better compare the size of the stock markets, Table 3 relates market capitalisation to GDP. When benchmarking against the size of the economy, the ratio of market capitalisation to GDP was highest in Hong Kong, China; Singapore; Chinese Taipei and Malaysia; and lowest in Mongolia, Bangladesh and Pakistan. Table 3 also includes two simple indicators to illustrate stock market liquidity. The first one is the ratio of the total value of shares traded divided by GDP while the second relates the total value of shares traded to the market capitalisation (turnover ratio). Similar to the stock market capitalisation ratio, turnover ratios for China, Korea and Japan far exceed those of most other countries. The liquidity ratios are lowest in Mongolia, Pakistan, the Philippines and Indonesia. Interestingly, with a relatively low market turnover and a high market capitalisation, Hong Kong, China's turnover ratio is comparatively low. The same is true for Singapore.

Table 3. Key indicators for Asian exchanges, as of end 2016

	Stock exchange	Market capitalization/GDP	Total value traded/GDP	Turnover
Bangladesh	Dhaka SE and Chittagong SE	0.31	0.07	0.23
China	Shanghai SE and Shenzhen SE	0.64	1.68	2.61
Hong Kong (China)	Stock Exchange of Hong Kong	9.90	4.19	0.42
India	National SE	0.67	0.30	0.45
Indonesia	Indonesia SE	0.45	0.10	0.22
Japan	Tokyo SE	1.12	1.27	1.14
Korea	Korea Exchange	0.95	1.26	1.33
Malaysia	Bursa Malaysia	1.16	0.34	0.29
Mongolia	Mongolian SE	0.05	0.00	0.03
Pakistan	Pakistan SE	0.32	0.07	0.21
Philippines	Philippine SE	0.77	0.12	0.15
Singapore	Singapore Exchange	2.17	0.67	0.31
Chinese Taipei	Taiwan SE and Taipei Exchange	1.82	1.01	0.55
Thailand	Stock Exchange of Thailand	1.06	0.80	0.76
Viet Nam	Ho Chi Minh SE	0.36	0.14	0.40

Source: World Federation of Exchanges, stock exchanges' websites and IMF World Economic Outlook database.

PART IV. OWNERSHIP LANDSCAPE AND INVESTORS

When developing corporate governance rules and practices it is important to take into account and understand the implications of the ownership and control structure at company level. This includes the degree of concentration and control by individual shareholders as well as the character of the shareholders who can either be physical direct owners or institutional and intermediary owners.

Broadly speaking, in jurisdictions that traditionally have been categorised as having a dispersed ownership structure the corporate governance issues focus on the problems arising from the separation of ownership and control. In other jurisdictions where most companies have a concentrated ownership structure, the focus is on potential conflicts between the controlling shareholders and the minority shareholders.

With respect to different categories of owners, most of the legal and economic doctrine that underpins corporate governance policies assumes the classical case of direct ownership by a physical person where incentives among market participants stem from a direct relationship between corporate performance and the prosperity of the shareholder. However, in today's world, ownership in many markets is dominated by other categories of investors including governments and profit-maximising intermediaries that invest on behalf of the ultimate beneficiaries. These intermediaries all have their own business models and vary greatly with respect to their incentives to exercise their corporate governance functions in an informed manner (Celik and Isaksson, 2013).

This part provides a summary of the corporate ownership structures in both of these dimensions - the degree of concentration and control, and the categories of owners - for 19 jurisdictions including seven non-Asian markets. The description is based on a dataset that contains ownership information for the 100 largest companies in each market measured as market capitalisation at year end 2016. The analysis includes the level of concentration and the distribution of ownership among different categories of owners.

4.1. Categories of owners in Asia

With respect to the distribution of share ownership among different categories of owners, Table 4 reveals notable differences between the countries. In the United Kingdom and the United States, institutional investors dominate by holding around 70% of the total capital. In India, Indonesia, Singapore and the Philippines and some other emerging markets, such as Turkey, corporations are important owners holding between one third and half of the total capital. In Hong Kong, China; Japan; Korea and Thailand corporations are also significant and hold on average between 20 to 30% of the total shares. While they are not as dominant as they are in the US and the UK, institutional investors also play a prominent role in India, Japan, Chinese Taipei and Korea.

From an aggregate regional perspective, corporations are on average the most important owners in large Asian companies holding on average 28% of the capital. This indicates the strong presence of company groups and pyramids structures. The second largest category of owners is the government, holding on average 16% of the capital. This is mainly the result of large privatisation programmes over the past 25 years. Notably in China; Hong Kong, China; Malaysia and India, where the government is an important owner with average holdings ranging between 20% and 42% of the capital.

The third largest ownership category in the sample is institutional investors. Globally, the share of institutional investors in equity markets has been on the rise since the early 2000s (Celik and Isaksson, 2013), and their presence is increasing in Asia as well. On average, institutional investors account for 13% of the ownership in the largest companies. Importantly, most of the institutional ownership in Asian countries is attributed to foreign institutional investors who on average hold 10% of the capital. The successive liberalisation of financial flows in Asian economies has given foreign institutional investors the opportunity to increase their participation in the region. Japan, a mature market, exhibits the highest levels of ownership by institutional investors, followed by India, Chinese Taipei and Korea.

Table 4. Average aggregate share ownership by different categories of owners, as of end 2016

Based on ownership data from the 100 largest listed companies in each market, as percentage of total capital

	Corporation	Government	Institutional[4]	Individual
China	13%	42%	8%	8%
Hong Kong (China)	21%	25%	13%	14%
India	31%	20%	19%	9%
Indonesia	44%	16%	7%	7%
Japan	20%	6%	27%	3%
Korea	26%	13%	15%	12%
Malaysia	30%	33%	11%	8%
Philippines	54%	1%	6%	16%
Singapore	30%	10%	13%	14%
Chinese Taipei	20%	7%	18%	8%
Thailand	26%	10%	12%	22%
Viet Nam	18%	14%	8%	7%
Asia average	***28%***	***16%***	***13%***	***11%***
France	22%	8%	29%	9%
Germany	22%	5%	29%	8%
Mexico	16%	1%	19%	26%
Poland	21%	9%	32%	20%
Turkey	48%	9%	11%	10%
UK	5%	6%	66%	3%
US	2%	1%	73%	2%

Source: FactSet, OECD calculations. See methodology for details.

4.2. Ownership concentration at company level

Concentrated ownership is often seen as a way to overcome those corporate governance problems that are caused by the separation of ownership and management in many modern firms (Shleifer and Vishny, 1997; Denis and McConell, 2003). It may also provide the owner with

[4] It should be noted that institutional investors typically are required to disclose their equity holdings if their assets under management exceed certain thresholds. As a consequence, the amounts in the table for institutional investors should be considered as the minimum numbers. For example, according to the CSRC Annual Report 2016 institutional investors held 14.49% of all floating A-share stocks in China as of end 2016.

incentives to invest the time and money that is necessary to exercise informed corporate governance. However, concentrated ownership is also associated with risks, primarily through the possible extraction of undue private benefits for the controlling owner.

Table 5 shows the average holdings of the largest shareholders in the 100 largest listed firms in each of the jurisdictions. Indonesian corporations display the most concentrated ownership with the 3 largest shareholders holding an average of 68% of the capital. Indonesia is followed by Philippine companies with 66% and Malaysian and Hong Kong, China companies with around 60%. Japanese and Chinese Taipei corporations have the least concentration of ownership at 24% and 27%, respectively. In more than half of the Asian countries shown in the Table, the 3 largest shareholders on average hold the majority of the company's capital.

Table 5. Ownership concentration at company level, as of end 2016

Percentage owned by the largest holders

	Largest 3	Largest 5	Largest 20	Largest 50
China	58%	62%	70%	71%
Hong Kong (China)	60%	63%	70%	72%
India	55%	61%	73%	78%
Indonesia	68%	70%	74%	74%
Japan	24%	28%	43%	50%
Korea	45%	51%	63%	66%
Malaysia	62%	69%	80%	82%
Philippines	66%	70%	76%	78%
Singapore	56%	59%	65%	67%
Chinese Taipei	27%	33%	48%	51%
Thailand	49%	55%	67%	70%
Viet Nam	39%	42%	46%	46%
Average	***51%***	***55%***	***65%***	***67%***

Source: FactSet, OECD calculations. See methodology for details.

Table 6 shows the proportion of the 100 largest companies where the largest, or the two or three largest, shareholders hold at least 50% of the capital. Based on a definition of a controlling owner as somebody who holds more than 50% of the capital, Table 6 reports the percentage of the 100 largest companies in each economy that have a controlling owner. For example, in the case of Indonesia the largest owner holds more than 50% of the company's capital in 69% of the 100 largest companies measured by market capitalisation. In addition, the two largest owners together hold more than 50% of the capital in 82% of the companies and three largest owners in 86%.

Table 6. Portion of the 100 largest companies in each jurisdiction where the largest shareholders hold at least 50% of the capital, as of end 2016

	Largest shareholder	2 Largest shareholders	3 Largest shareholders
China	44%	59%	69%
Hong Kong (China)	58%	68%	71%
India	43%	53%	62%
Indonesia	69%	82%	86%
Japan	8%	10%	10%
Korea	12%	20%	30%
Malaysia	37%	68%	78%
Philippines	48%	72%	81%
Singapore	36%	50%	55%
Chinese Taipei	3%	6%	8%
Thailand	22%	38%	45%
Viet Nam	22%	27%	31%

Source: FactSet, OECD calculations. See methodology for details.

To further broaden the perspective, Table 7 shows the average holdings of the largest shareholders by investor category. The value in parenthesis is the number of companies where that category of investor is the largest holder. The table shows that 54 out of the largest 100 companies in Chinese Taipei have another corporation as its largest shareholder holding on average 19% of the capital. As a matter of fact, corporations are the most common category of large shareholders in Asia. Almost half (49%) of the companies have a corporation as the largest holder. Again, this can be seen as an indicator of strong presence of group structures, pyramids and cross-holdings. In particular, corporate ownership is quite strong in the Philippines where 80% of the companies have a corporate owner as the largest shareholder with an average holding size of 50%. Similarly, in Indonesia 67% of the companies have another corporation as its largest shareholder. In 26% of the companies overall in the region, the government is the largest shareholder with an average holding of 46% of the capital. In China, the government is the largest shareholder in 73 of the 100 largest listed companies holding on average 48% of the capital.

Table 7. Percentage owned by the largest shareholder, by investor category, as of end 2016

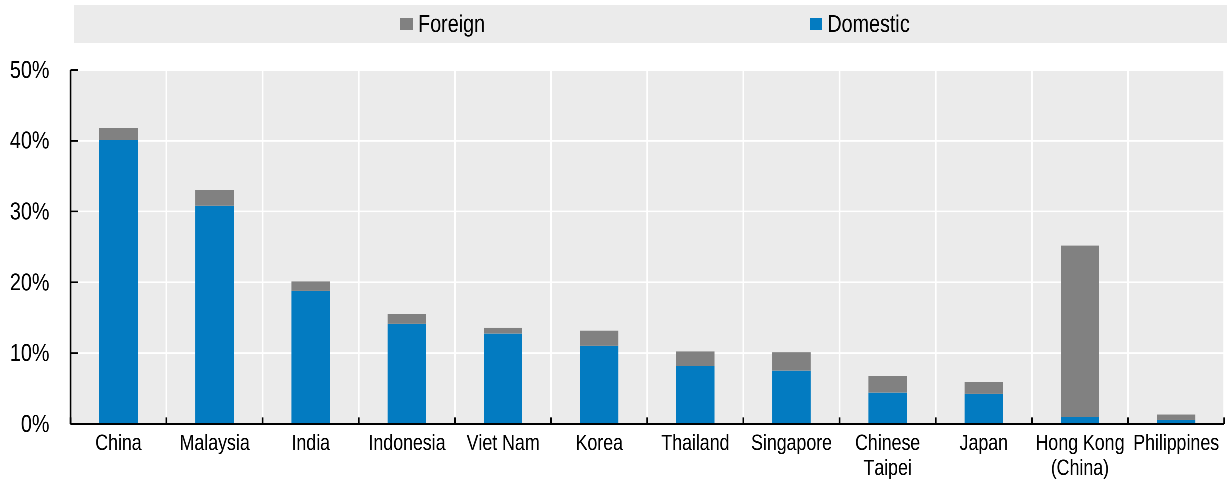
	Corporate	Government	Individual	Institution
China	38% (9)	48% (73)	33% (17)	13% (1)
Hong Kong (China)	49% (36)	52% (40)	51% (21)	5% (2)
India	40% (56)	49% (27)	34% (14)	21% (2)
Indonesia	55% (67)	61% (23)	48% (9)	-
Japan	15% (48)	57% (7)	21% (8)	6% (35)
Korea	32% (54)	27% (18)	23% (25)	7% (1)
Malaysia	43% (54)	43% (34)	39% (12)	-
Philippines	50% (80)	-	50% (18)	10% (1)
Singapore	46% (51)	42% (21)	43% (24)	21% (4)
Chinese Taipei	19% (54)	25% (13)	11% (17)	4% (16)
Thailand	38% (49)	46% (14)	27% (33)	5% (4)
Viet Nam	29% (33)	54% (21)	21% (17)	5% (19)

Source: FactSet, OECD calculations. See methodology for details.

4.3. Governments as owners

As a result of partial privatisations through public equity market listings in many Asian markets since 1990s, state ownership of listed companies has grown in importance. In many cases, privatisation through stock market listings has not led to any change in control and today governments have controlling stakes in a large number of Asian listed companies. In China; Malaysia; Hong Kong, China and India governments retain on average at least 20% of the capital of the companies. In the case of Hong Kong, China, the large ownership reported from foreign governments represents the Chinese government ownership.

Figure 19. Average government ownership in Asia, as of end 2016



Source: FactSet, OECD calculations. See methodology for details.

According to some studies, the identity of the controlling shareholder might affect the company performance.[5] There are also studies that claim a relationship between ownership structure and leverage.[6] In order to provide a preliminary picture of how any government ownership may relate to company performance and company leverage, Table 8 reports the difference between the average size of government ownership in companies that are classified into two groups with respect to high/low-performance and high/low leverage. For example, in Singapore government on average holds 7 percentage points larger stakes in high-performance companies than in low-performance companies. In China and Viet Nam the situation is the opposite, since the governments' average ownership stake in low-performance companies is 17 percentage points higher than their ownership stakes in high-performance companies. While the size of government ownership varies, the government's ownership is higher in low-performance companies than in high-performance companies in 9 out of the 12 countries. In five countries in the sample, the difference in average government ownership between high- and low-performance companies is more than 10 percentage points.

With respect to leverage, larger government ownership seems to be associated with higher leverage. In 10 of the 12 countries the average government ownership stake is higher in high-leveraged companies than it is in low-leveraged companies. However, there are significant differences between countries and in Japan and Hong Kong, China the average size of government ownership is about the same in high- and low-leveraged firms.

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[5] For further details see Morck *et al*. (2000), Xu and Wang (1999), Haniffa and Hudaib (2006), Wiwattanakantang (2001), Douma *et al*. (2006), Chen, Firth, and XU (2008), Sarkar and Sarkar (2000).

[6] See Ben-Nasr *et al*. (2015), Lean, Ting and Kweh (2015), Su (2015).

Table 8. Government ownership, performance and leverage, as of end 2016

	Leverage			Performance		
	High	Low	Difference	High	Low	Difference
	Average government ownership			Average government ownership		
China	52%	35%	*17*	34%	51%	*-17*
Hong Kong (China)	25%	24%	*1*	17%	31%	*-14*
India	20%	17%	*3*	11%	24%	*-13*
Indonesia	32%	19%	*13*	19%	30%	*-11*
Japan	4%	3%	*1*	3%	4%	*-2*
Korea	15%	11%	*4*	13%	12%	*1*
Malaysia	35%	28%	*7*	26%	35%	*-9*
Philippines	1%	4%	*-3*	1%	4%	*-3*
Singapore	20%	12%	*7*	20%	12%	*7*
Chinese Taipei	4%	7%	*-3*	4%	8%	*-4*
Thailand	16%	8%	*8*	5%	18%	*-13*
Viet Nam	35%	18%	*17*	26%	25%	1

Notes: High performance companies are defined as companies with a 5-year average ROE above the median, and low ROE companies are those with a 5-year average below the median ROE. High-leverage companies are defined as companies with a 5-year average leverage above the median, and low-leverage companies are those with a 5-year average below the median leverage. The difference in the size of government ownership is computed as the difference in average holding in high and low performance companies and high and low leverage companies respectively.

Source: FactSet, OECD calculations. See methodology for details.

With respect to the industry distribution of government ownership they have traditionally held large stakes in the utilities and energy sectors. Table 9 provides the sectoral distribution of government ownership in the 100 largest non-financial listed companies in the respective countries. Telecommunication, energy and industrials account for the largest concentration of government ownership. In Hong Kong, China; Indonesia and Singapore government holdings of companies in the telecommunication sector range between 59% and 40%. It is important to note that in Chinese Taipei and Korea, government ownership is mainly concentrated in the technology sector.

Table 9. Government ownership by sector, as percentage of total government ownership in the 100 largest listed companies in each jurisdiction, as of end 2016

	Basic Materials	Consumer Cyclicals	Cons. Non-Cyclicals	Energy	Healthcare	Industrials	Technology	Telecom.	Utilities
China	5%	8%	9%	41%	1%	24%	2%	2%	9%
Hong Kong (China)	0%	4%	2%	12%	2%	11%	3%	59%	8%
India	8%	4%	6%	51%	2%	11%	4%	1%	13%
Indonesia	17%	1%	3%	5%	3%	15%		49%	7%
Japan	2%	9%	26%	3%	4%	10%	13%	33%	
Korea	8%	12%	7%	8%	2%	11%	33%	3%	17%
Malaysia	12%	2%	8%	14%	8%	23%		20%	13%
Philippines	23%	13%	25%	21%		5%		2%	11%
Singapore		3%	6%	1%		43%		40%	6%
Chinese Taipei	11%	2%	3%	0%	1%	9%	49%	25%	
Thailand	8%	1%	2%	53%	1%	24%		8%	4%
Viet Nam	3%	2%	57%	34%	1%	1%			1%

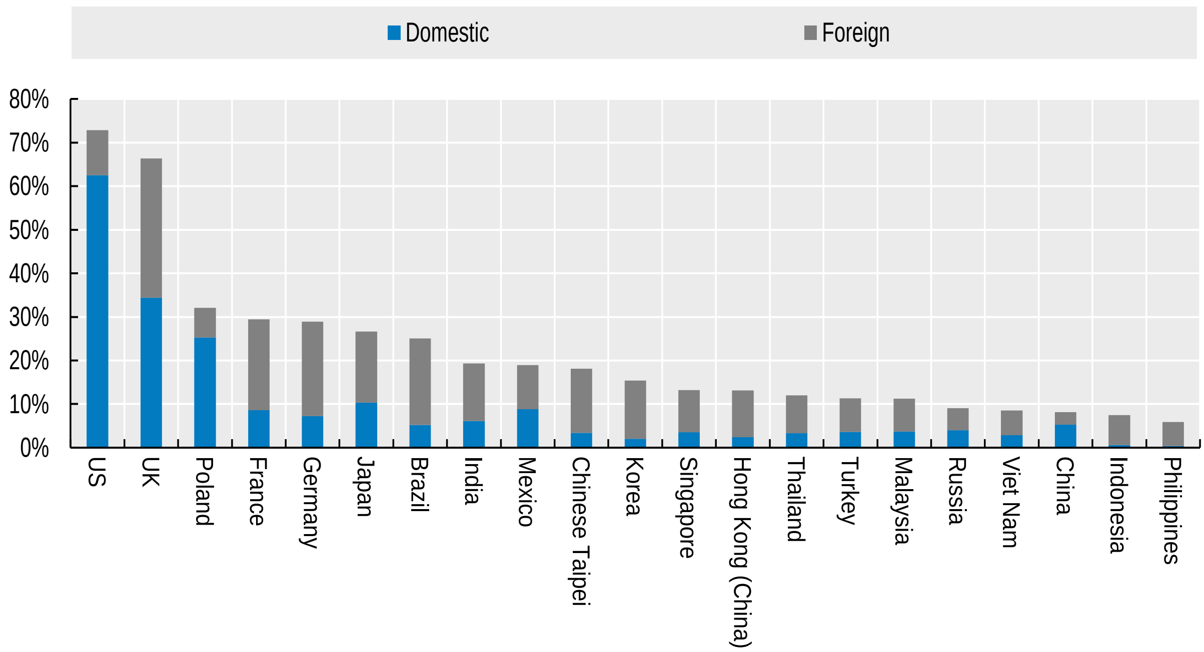
Source: FactSet, OECD calculations. See methodology for details.

4.4. Institutional investors

Most advanced markets in the last few decades have seen a significant increase in institutional ownership of public companies. Back in the mid-1960s, 84% of all shares in publicly listed companies in the United States were held by physical persons. Today, in our sample of the 100 largest listed companies in the United States, 73% of the shares are owned by institutional investors. The dominance by institutional investors has also led to a certain degree of re-concentration of ownership at company level among institutional investors. In the 20 largest US companies, the 5 largest institutional investors alone held on average 21% of the capital in 2016 and the 20 largest institutional investors together held 33% of the company's capital (Bebchuck *et al.*, 2017).

Institutional ownership is less common in Asia. In Asian markets, institutional investors hold on average 13% of the capital. And most of this capital (10%) is held by foreign institutional investors. Among the Asian countries, institutional investors are most prevalent in Japan and hold 27% of the capital in Japan's 100 largest listed companies. The lowest share of institutional ownership in the largest companies is found in the Philippines where institutional investors hold only 5.9% of their capital. Moreover, about 90% of all institutional ownership in the Philippines is attributed to foreign institutions.

Figure 20. Institutional investors, domestic versus foreign, as of end 2016



Source: FactSet, OECD calculations. See methodology for details.

Institutional investors' portfolio in the region by sector (excluding financials) is concentrated mostly in technology firms, industrials and consumer products. In Korea, institutional investors have a strong preference for technology firms holding 55% of the capital in the industry.

Table 10. Institutional portfolio by industry, as of end 2016

	Basic Materials	Consumer Cyclicals	Cons. Non-Cyclicals	Healthcare	Industrials	Technology	Telecom. Services	Utilities	Energy
China	8%	19%	13%	7%	25%	5%	1%	5%	17%
Hong Kong (China)	1%	13%	9%	1%	7%	34%	19%	11%	5%
India	11%	20%	11%	10%	11%	20%	3%	2%	12%
Indonesia	6%	28%	17%	6%	3%		30%	3%	7%
Japan	3%	24%	9%	12%	28%	12%	11%		1%
Korea	6%	14%	10%	2%	5%	54%	4%	3%	2%
Malaysia	5%	16%	15%	7%	21%	2%	13%	14%	7%
Philippines	3%	28%	27%		12%		9%	17%	4%
Singapore		6%	25%	2%	49%	3%	13%	2%	
Chinese Taipei	5%	4%	3%		3%	78%	6%		1%
Thailand	5%	8%	16%	9%	21%	2%	7%	5%	27%
Viet Nam	13%	20%	48%	5%	9%			2%	3%

Source: FactSet, OECD calculations. See methodology for details.

PART V. INVESTMENT BANKS AND UNDERWRITING IN ASIAN PUBLIC EQUITY MARKETS

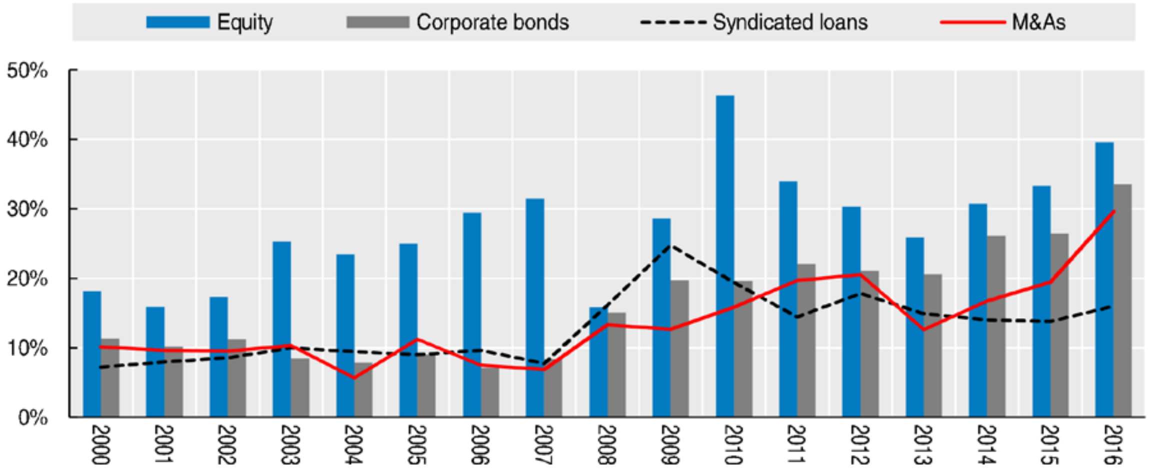
Underwriters play a key role in helping firms access capital markets. By supporting the issuance of securities, investment banks influence the likelihood of having a successful transaction. Their main services include the underwriting of debt and equity, syndicated loans, and advisory services in mergers and acquisitions (M&As). The underwriting process mainly consists of origination, distribution, risk bearing and certification. During the process, the underwriter advises the issuing firm on the type, timing and pricing of the securities, prepares the required documentation and forms a banking syndicate to distribute and market the products to institutional investors and the public.

This part provides an overview of the evolution of investment banking activities in Asian capital markets, with a particular focus on equity markets. It also illustrates some trends with respect to the development of national and regional investment banking activities.

5.1. Investment banking in Asia and the global shift

As shown in Part I, companies from Asia are today the largest issuers of public equity globally. Since they have tapped the region's markets for the bulk of their public offerings, as illustrated in Part III, Asian markets have also become the largest market for public equity financing. However, developments in Asian capital markets have not been limited to public equity. Asia's relative importance in the three other main capital market activities, namely corporate bonds, syndicated loans and M&As, has also increased. Between 2000 and 2007, Asia's global share was around 10 percent in all of the three activities. A decade later, in 2016, Asia's global share in M&As had tripled to 30% and reached no less than 35% for corporate bonds. The global share of syndicated loans is around 15%, which is almost twice the pre-2007 level. (Figure 21).

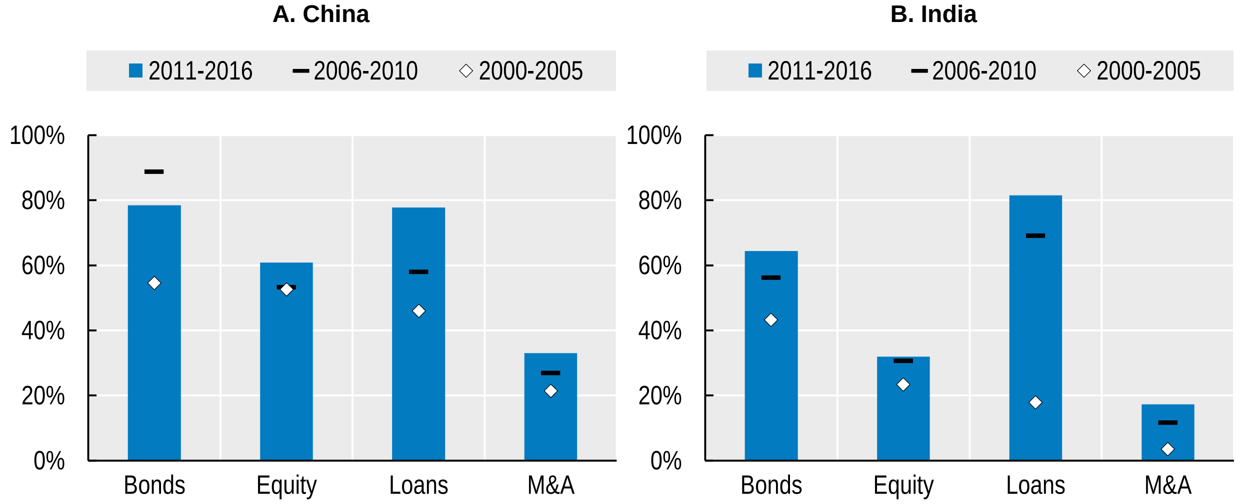
Figure 21. The share of Asia in global capital markets, as percentage of global transaction volume



Source: Thomson Reuters, OECD calculations, see methodology for details.

The increase in Asian investment banking activities is coupled with a significant increase in the extent to which Asian banks are serving domestic markets. Two important examples are China and India, where domestic banks have increased their market share in all four activities over the last five years compared to the period 2000-2005 (Figure 22). The increase has been most marked in corporate bond and syndicated loan activities.

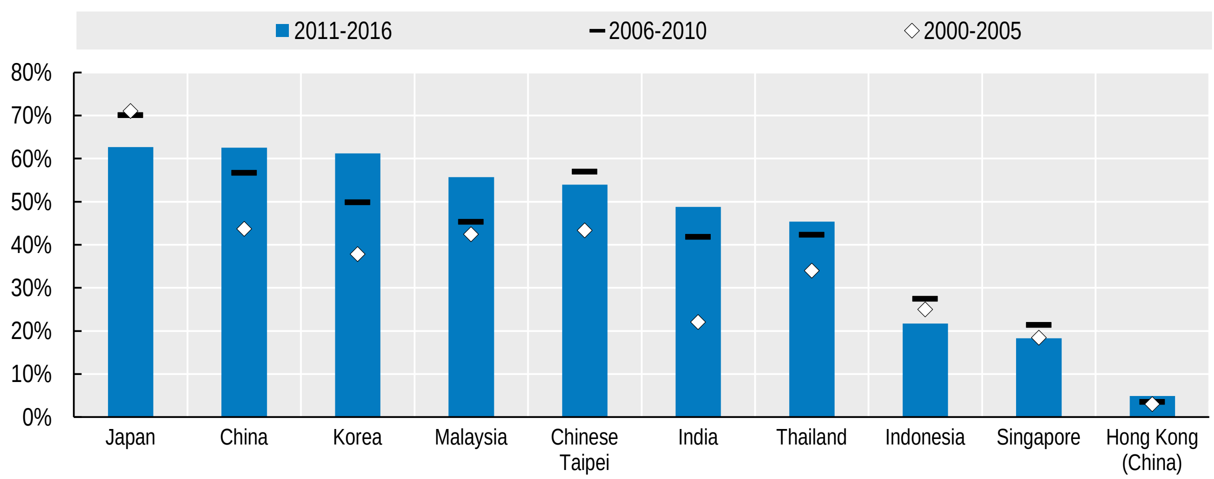
Figure 22. Market share of domestic banks in China and India



Source: Thomson Reuters, OECD calculations, see methodology for details.

Figure 23 summarises the trend also for other Asian markets using an average of four capital market activities. It shows a similar development in most other Asian markets, with the exception of Indonesia, and Japan. China, India and Korea have all witnessed an average increase of more than 20 percentage points in the market share of local banks across all four capital market activities.

Figure 23. Market share of local investment banks in their home market



Source: Thomson Reuters, OECD calculations, see methodology for details.

The combined result of a surge in capital market activities in China and the growth of their local banks is that Chinese banks today hold a significant market share with respect to investment bank activities in Asian capital markets. Table 11 shows the changes in market shares of the 100 largest banks that are active in Asian markets based on the nationality of the banks and across the four main investment banking activities.

Two striking and parallel developments are the significant gains in market share by Chinese banks and the losses experienced by Japanese banks. While Chinese banks increased their share by almost 19 percentage points in public equity markets – both initial and secondary offerings - Japanese banks have lost 21 percentage points. North American banks have also lost considerable Asian market share in M&As, corporate bonds and syndicated loans.

Banks from the rest of the region have experienced more modest changes compared to Chinese, Japanese and North American banks. Indian and ASEAN banks have grown their market shares in almost every segment. In particular, India has grown 8.7 percentage points in syndicated loans, which mirrors the European banks' loss in market share during the same period. European banks have also experienced a slight drop in their market share for corporate bonds, but a minor increase in the equity and M&A markets. Korean banks saw an almost 3 percentage point drop in corporate bonds and minor increases in equity, M&A and syndicated loans.

Table 11. Changes in the average share in Asian transaction volume of largest 100 investment banks, post-crisis versus pre-crisis, (percentage points)

	Equity	Mergers and acquisitions	Corporate bonds	Syndicated loans
ASEAN	0.48	-0.06	0.93	0.56
China	18.72	9.81	35.67	10.71
Europe	0.62	1.97	-2.00	-8.78
Hong Kong (China)	1.28	1.89	0.36	-0.05
India	0.97	0.57	1.61	8.71
Japan	-20.55	-7.32	-27.50	-5.43
Korea	0.39	0.37	-2.54	0.12
North America	-0.95	-8.33	-4.40	-7.93
Others	-0.96	1.10	-2.13	2.09

Source: Thomson Reuters, OECD calculations, see methodology for details.

Considering the simultaneous growth of the Asian capital markets, it is not surprising that the growth of Asian banks, in particular that of Chinese banks, is also reflected in their global share of investment bank activities. In 2016, around 18% of global corporate bonds issuances and 20% of global equity underwritings were served by Chinese banks, compared to a modest 0.1% and 1.4% respectively in 2005 (Figure 24).

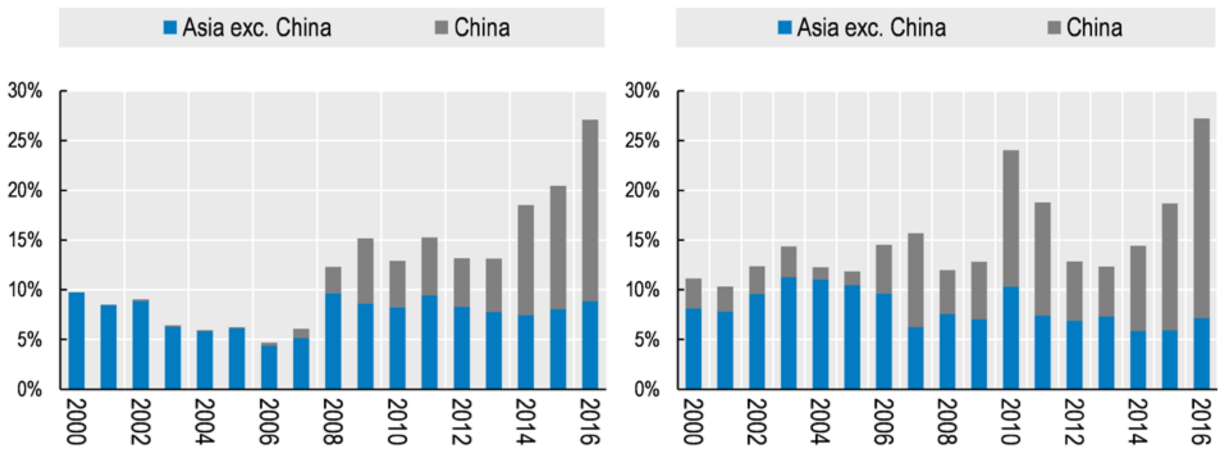
The rise of Chinese banks is especially striking during the last three years as the Chinese Central Government proposed a series of reforms to accelerate the development of equity and debt market.[7] In response, the CSRC has published a revised regulatory framework to clear away

[7] "The Decision on Major Issues Concerning Comprehensively Deepening Reforms" was adopted by the CPC Central Committee in 2013, in which it was proposed to "promote reform towards a registration-based stock issuance system and increase the proportion of direct financing". In response to this, "Guiding Principles for the Healthy Development of Capital Markets" was released in the following year to lay out the guidelines for reform in equity and bond market.

some obstacles for equity and bond issuances. Specifically, new rules released in early 2015 allowed unlisted firms for the first time to issue corporate bonds to be traded on the public market.[8] At the same time, the CSRC has accelerated the pace of IPO approval process. These developments have contributed to the rapid increase in the issuance of corporate bonds and IPOs, of which domestic investment banks have gained the lion's share.

It is also important that, despite the growth of Chinese investment banks, their share of foreign business is still very limited. Even Chinese firms, when tapping into foreign markets to raise capital tend to use international banks. For example, out of 93 Chinese corporations that were listed in the United States between 1997 and 2016 only 11 companies used a Chinese bank in the underwriting syndicate. More than half of the remaining deals (45 deals) choose the five largest US banks as underwriters.

Figure 24. Global market share of Asian investment banks



Source: Thomson Reuters, OECD calculations, see methodology for details.

As illustrated in Table 12, the increase in Asian capital market activities has come to influence the global banking landscape. US and European banks lost market share in all segments during the period 2009-2016 compared to the period 2000-2006. On the other hand, Asia −as a region− increased its presence at the global level. As explained above, there are two main factors driving this development: first, the increased importance of Asia in the volume of securities issued globally; and second, the increased domestic market share of Asian banks.

[8] China's corporate bond market is mainly segmented into two parts: corporate bonds are listed on the Shanghai and Shenzhen Stock Exchanges, which are regulated by CSRC; and SOE bonds which are regulated by National Development and Reform Commission (NDRC).

Table 12. Changes in the average share in global transaction volume of largest 100 investment banks, post-crisis versus pre-crisis, (percentage points)

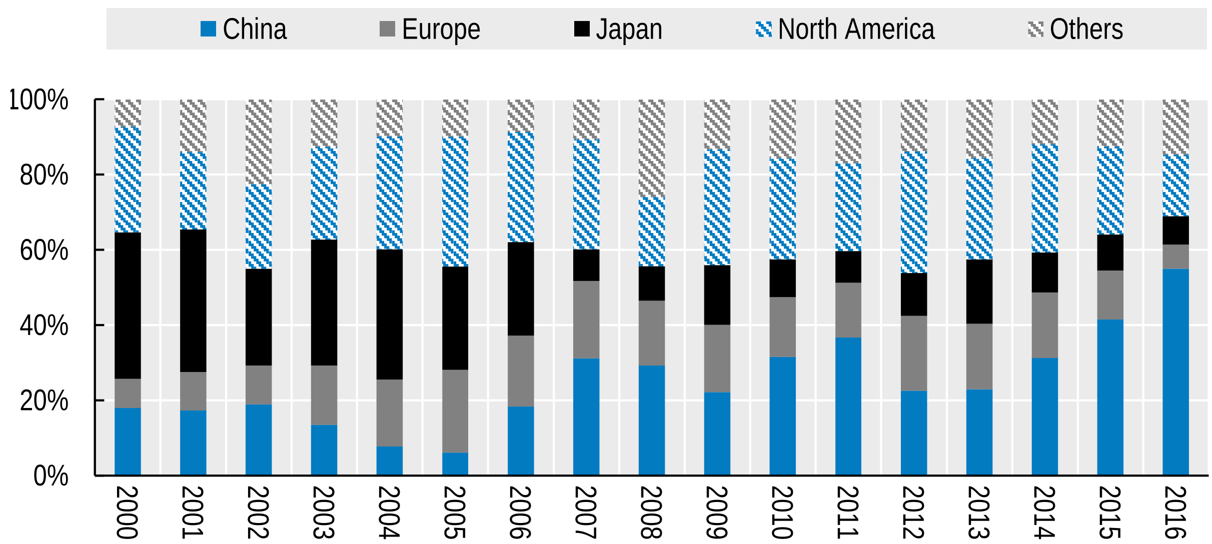
	Equity	Mergers and acquisitions	Corporate bonds	Syndicated loans
China	7.69	2.11	8.51	2.39
Japan	-3.66	-0.56	-0.02	6.20
Asia exc. China & Japan	1.20	0.69	1.24	2.43
Europe exc. UK	-7.05	-6.09	-3.12	-1.96
Rest of the World	1.71	0.58	1.27	1.52
United Kingdom	1.30	3.60	0.50	0.76
United States	-1.20	-0.33	-8.38	-11.34

Source: Thomson Reuters, OECD calculations, see methodology for details.

5.2. Trends in underwriting in Asian equity markets

At the beginning of the millennium underwriting activity in Asia was highly concentrated to a few banks. And the largest actors in terms of equity underwriting were two Japanese and three North American banks. This has changed quite dramatically in the last few years and by the end of 2016 four Chinese banks were among the top five underwriters of Asian IPOs. As described in Part I of this report, this development has taken place during a time when the average annual amount of money raised through public equity offers has more than doubled.

Figure 25. Equity market share distribution of top 100 banks in Asian market

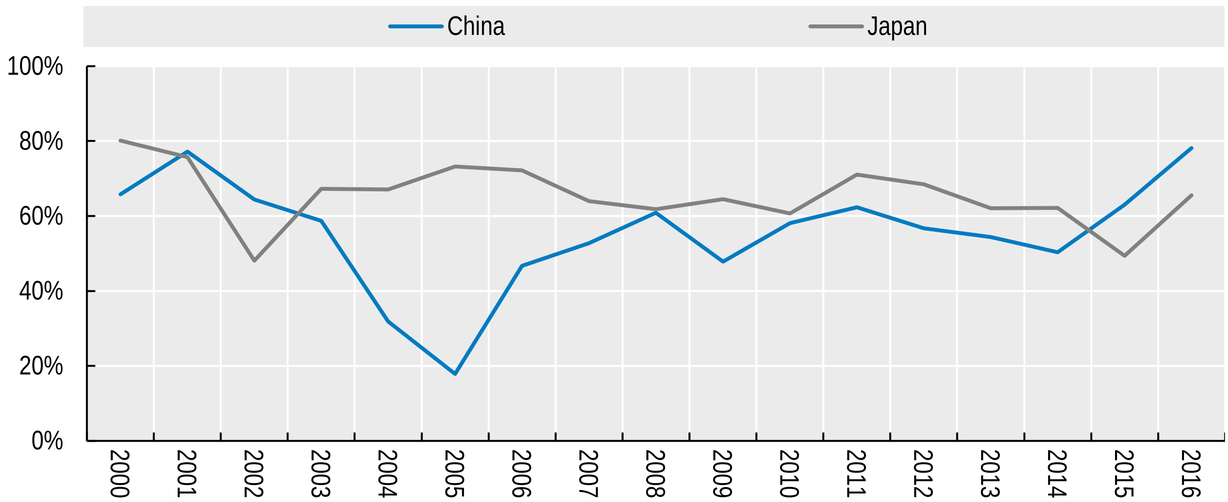


Source: Thomson Reuters, OECD calculations, see methodology for details.

Figure 25 presents the shift in the shares of equity market underwritings in Asia during the period 2000 and 2016. While Chinese banks have gained market share, their Japanese counterparts have experienced a relative decrease. Similar to the overall trend in capital markets explained above, the main two factors driving this shift have been the growth of the Chinese equity market and the increasing dominance of local banks in the Chinese market. By the end of 2016, China ranked as the second largest equity market worldwide by market capitalisation and first in terms of turnover volume. While Chinese investment banks mainly serve the Chinese market, they occasional have activities in ASEAN countries. For instance, in Indonesia and Singapore they accounted for 6.6% and 3.1% of the total equity underwritten over the period.

During the period 2001 through 2005 Chinese banks continuously lost market share in their home market. One explanation for this quite dramatic, but temporary, trend has been China's commitment to liberalise the financial services industry after joining the WTO in 2001. This opened the door for foreign investment banks to conduct investment business in the mainland.[9] In the period that followed, North American and European banks gained market share by serving Chinese firms in both China and Hong Kong, China. In fact, these banks experienced an increase from 33% to 81% between 2000 to 2005 in the underwriting business for Chinese firms. As a result, Chinese banks' domestic share in the IPO segment dropped from 70% in 2001 to 21% in 2005. However, since 2005, Chinese investment banks have continuously regained their market share in the domestic equity market, which in 2016 was about 80%. A level similar to what they had in the beginning of the millennium.

Figure 26. Share of Chinese and Japanese banks in the domestic equity market



Source: Thomson Reuters, OECD calculations, see methodology for details.

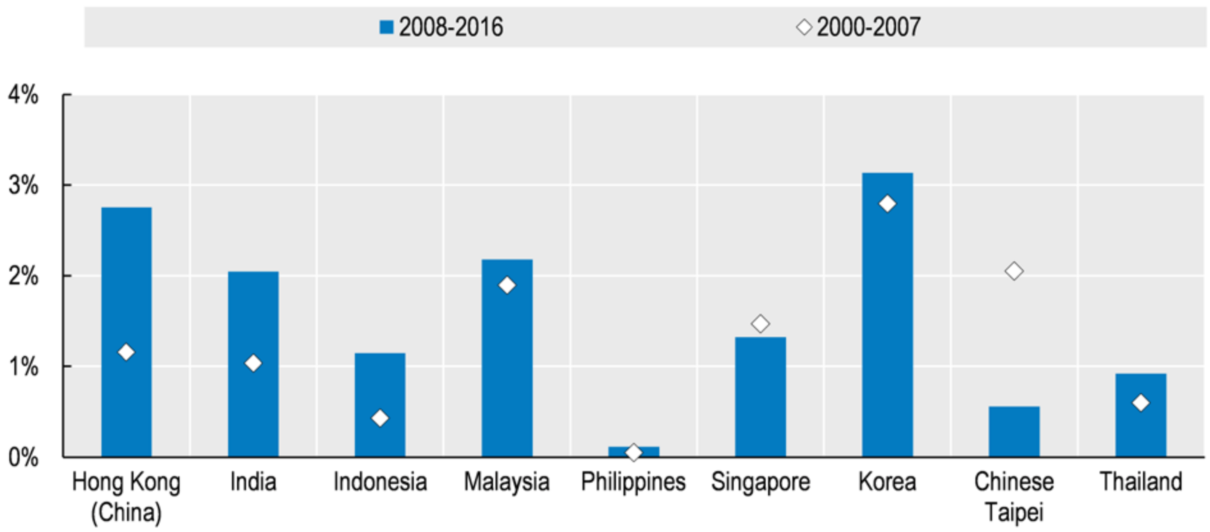
In Japan underwriting activities are still dominated by domestic investment banks. While there has been a slight decrease in their market share in the last few years they still accounted for about 65% of equity underwritings in 2016. Investment banks headquartered in the US still have a prominent role in the Japanese underwriting market. Their average market share during the period has been about 20%.

As shown in Figure 27, banks from other Asian jurisdictions also play a role in Asian capital market activities. Most of them have also increased their market share since 2008. Hong Kong,

[9] As written in the commitment of China to WTO, China will open up the market for financial services industry, especially with respect to foreign investment banks: Within three years, foreign investment banks will be permitted to establish joint ventures, with foreign ownership not exceeding 33%, to engage in underwriting domestic shares (A shares) and underwriting and trading in foreign currency denominated securities (B and H shares, government and corporate debts). This ownership cap was changed to 49% in 2012.

China has seen the largest rise in market share, which is partly driven by Chinese companies' issuance in Hong Kong, China. Since China restricts foreign ownership of securities joint ventures to 49%, a great number of foreign investment banks choose to establish their branch in Hong Kong, China to operate in China, which has strengthened Hong Kong, China's position as a financial centre. Indian investment banks have also benefited from its growing capital markets and its business has grown two-fold since 2000. Almost all ASEAN countries - with the exception of Singapore - experienced a rise in their share of the Asian equity underwriting market. In particular, Indonesia - the largest economy in ASEAN - has more than doubled its market share in the last decade due to the rapid development of its domestic equity market. Banks from Chinese Taipei have experienced a large drop in the market share due to the declining issuance volumes in its domestic stock market. Korean banks have kept their place as the third largest regional underwriters of equity in Asia.

Figure 27. Market shares in equity underwriting in Asia



Source: Thomson Reuters, OECD calculations, see methodology for details.

ANNEX 1 – ASIAN PUBLIC EQUITY MARKET DATA

A. Initial public offerings by home jurisdiction of the company

Table A.1. Proceeds, 2016 USD, millions

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bangladesh	51	131	37	97	226	187	143	122	185	58	79
Cambodia	124	0	0	0	0	0	22	0	20	5	8
China	61 140	72 411	18 603	52 826	113 067	58 654	22 765	17 703	63 318	47 633	43 316
Hong Kong (China)	6 049	12 497	2 009	5 195	29 324	7 117	527	1 469	1 966	2 671	3 815
India	5 772	10 791	5 382	4 689	9 454	1 654	1 369	367	298	2 204	4 119
Indonesia	587	2 073	2 831	487	3 836	2 555	1 172	1 682	802	863	1 073
Japan	15 217	6 032	1 472	706	16 297	2 254	10 136	5 934	9 716	15 070	8 228
Korea	7 291	2 736	1 012	3 019	9 180	3 598	1 256	1 255	4 239	3 829	4 977
Malaysia	270	732	439	3 842	6 917	1 952	7 815	2 946	1 532	1 114	301
Mongolia	3	0	34	0	821	0	0	0	0	0	0
Pakistan	1 274	221	90	10	59	19	5	26	48	70	25
Philippines	751	1 328	305	1	827	285	818	1 430	299	113	1 001
Singapore	1 486	1 247	480	2 423	5 037	724	504	937	913	276	1 297
Sri Lanka	6	0	5	15	29	257	9	8	13	7	8
Chinese Taipei	1 202	1 189	279	231	1 071	454	349	565	454	624	379
Thailand	2 444	306	895	247	220	188	770	1 486	1 930	1 525	938
Viet Nam	4 263	6 755	4 713	3 072	2 933	549	116	180	159	175	175

Source: OECD Equity Markets Review dataset, see methodology for details.

Table A.2. Number of companies

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bangladesh	8	11	12	8	8	7	16	10	21	10	7
Cambodia	1	0	0	0	0	0	1	0	1	1	1
China	158	230	105	175	469	345	196	74	215	304	315
Hong Kong (China)	42	54	23	41	48	47	29	45	47	55	68
India	78	108	42	24	68	42	30	41	59	72	101
Indonesia	13	23	18	14	25	26	22	29	26	16	19
Japan	187	119	49	21	22	36	52	56	76	93	85
Korea	77	75	48	64	72	67	31	40	58	87	63
Malaysia	35	24	21	11	30	23	15	17	15	12	18
Mongolia	1	1	4	0	1	0	0	0	0	0	0
Pakistan	5	5	9	3	5	3	3	3	5	4	3
Philippines	7	12	2	2	4	7	5	8	5	4	4
Singapore	25	32	18	19	24	20	19	21	22	14	19
Sri Lanka	2	0	3	3	9	19	3	2	5	2	2
Chinese Taipei	8	19	12	15	16	22	13	24	12	20	20
Thailand	21	15	13	21	14	11	19	29	38	32	23
Viet Nam	80	61	50	70	81	40	14	9	8	6	22

Source: OECD Equity Markets Review dataset, see methodology for details.

B. Initial public offerings by Asian companies outside local markets

Table B.1. Proceeds, 2016 USD, millions

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total	55 891	47 606	8 465	18 954	36 315	15 293	9 956	18 027	50 431	22 071	21 205
Non-financial	23 098	38 146	7 979	15 948	20 715	13 640	5 858	11 641	46 453	10 991	7 062
Financial	32 793	9 460	485	3 006	15 599	1 653	4 097	6 387	3 978	11 080	14 144
Asia	46 447	37 382	7 980	16 618	31 232	12 993	9 636	17 063	20 372	21 427	18 233
Hong Kong (China)	43 933	34 394	7 235	16 228	30 381	12 726	7 396	16 932	20 238	21 386	17 766
Europe	5 524	1 883	255	22	149	7	87	28	32	25	7
United States	3 917	8 300	191	2 265	4 555	2 254	217	911	29 985	489	2 924

Source: OECD Equity Markets Review dataset, see methodology for details.

C. Sectoral distribution of initial public offerings

Table C.1. Distribution of IPOs among different sectors, 2016 USD, millions

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Basic Materials											
Volume	6 308	10 181	4 641	5 935	19 024	9 866	3 367	1 709	2 940	3 513	4 023
Share	6%	9%	4%	5%	18%	9%	3%	2%	3%	3%	4%
Consumer Cyclicals											
Volume	14 703	23 658	5 221	15 730	19 427	16 990	8 189	3 679	11 804	9 793	10 150
Share	14%	22%	5%	15%	18%	16%	8%	3%	11%	9%	9%
Consumer Non-Cyclicals											
Volume	3 200	5 663	3 375	3 874	8 735	6 362	4 427	7 975	9 878	4 174	2 764
Share	3%	5%	3%	4%	8%	6%	4%	7%	9%	4%	3%
Energy											
Volume	9 293	3 157	3 930	2 897	10 500	3 671	830	1 520	1 947	706	509
Share	9%	3%	4%	3%	10%	3%	1%	1%	2%	1%	0%
Financials											
Volume	46 093	35 555	3 555	14 753	78 763	6 008	6 204	8 309	5 825	25 700	22 608
Share	43%	33%	3%	14%	73%	6%	6%	8%	5%	24%	21%
Healthcare											
Volume	1 139	1 657	470	4 185	10 383	6 273	3 594	1 871	2 468	6 051	7 712
Share	1%	2%	0%	4%	10%	6%	3%	2%	2%	6%	7%
Industrials											
Volume	19 026	26 079	11 974	16 240	37 900	17 286	16 220	8 110	13 311	17 184	14 645
Share	18%	24%	11%	15%	35%	16%	15%	8%	12%	16%	14%
Technology											
Volume	6 254	9 560	1 467	3 415	12 133	7 565	3 311	2 290	33 326	4 549	6 153
Share	6%	9%	1%	3%	11%	7%	3%	2%	31%	4%	6%
Telecommunications											
Volume	981	1 515	75	3 794	599	1 354	882	2	106	630	127
Share	1%	1%	0%	4%	1%	1%	1%	0%	0%	1%	0%
Utilities											
Volume	935	1 425	3 878	6 038	1 833	5 072	752	646	4 287	3 937	1 050
Share	1%	1%	4%	6%	2%	5%	1%	1%	4%	4%	1%

Source: OECD Equity Markets Review dataset, see methodology for details.

Note: Industry classification is made based on Thomson Reuters Industry Classification (TRBC)

D. Largest initial public offerings by Asian companies

Table D.1. Largest 20 IPOs between 1990-2016

Company	Jurisdiction	Exchange	Sector	Year	Proceeds (USD, millions)
Alibaba Group Holding	China	New York	Technology	2014	25 032
Agricultural Bank of China	China	Hong Kong /Shanghai	Financials	2010	22 121
Industrial & Commercial Bank of China	China	Hong Kong /Shanghai	Financials	2006	21 969
AIA Group	Hong Kong (China)	Hong Kong	Financials	2010	20 491
NTT Docomo	Japan	Tokyo	Telecommunications	1998	18 052
Bank of China	China	Hong Kong	Financials	2006	11 186
Dai-ichi Mutual Life Insurance	Japan	Tokyo	Financials	2010	11 159
East Japan Railway	Japan	Tokyo	Industrials	1993	9 914
Japan Tobacco	Japan	Tokyo	Consumer Non-Cyclicals	1994	9 576
China Construction Bank Corp	China	Hong Kong	Financials	2005	9 227
Japan Airlines	Japan	Tokyo	Industrials	2012	8 474
Postal Savings Bank Of China	China	Hong Kong	Financials	2016	7 627
DDI Corp	Japan	Tokyo	Telecommunications	1993	7 591
China State Construction Eng.	China	Shanghai	Consumer Cyclicals	2009	7 343
China CITIC Bank	China	Hong Kong /Shanghai	Financials	2007	6 495
KT Corporation	Korea	Korea	Telecommunications	1998	6 033
China Railway Engineering	China	Hong Kong /Shanghai	Consumer Cyclicals	2007	5 877
Japan Post Holdings	Japan	Tokyo	Industrials	2015	5 726
China Railway Construction	China	Hong Kong /Shanghai	Industrials	2008	5 706
China Unicom	Hong Kong (China)	Hong Kong /Nasdaq	Telecommunications	2000	5 656

Source: OECD Equity Markets Review dataset, see methodology for details.

Table D.2. Largest 10 IPOs in 2016

Company	Jurisdiction	Exchange	Sector	Year	Proceeds (USD, millions)
Postal Savings Bank Of China	China	Hong Kong	Financials	2016	7 627
Kyushu Railway	Japan	Tokyo	Industrials	2016	4 004
Samsung BioLogics	Korea	Korea	Healthcare	2016	1 962
China Resources Pharmaceutical	Hong Kong (China)	Hong Kong	Healthcare	2016	1 942
China Zheshang Bank	China	Hong Kong	Financials	2016	1 939
Bank of Shanghai	China	Shanghai	Financials	2016	1 588
ZTO Express (Cayman)	China	New York	Industrials	2016	1 406
LINE Corp	Japan	New York /Tokyo	Technology	2016	1 311
BOC Aviation	Singapore	Hong Kong	Financials	2016	1 126
Bank of Jiangsu	China	Shanghai	Financials	2016	1 089

Source: OECD Equity Markets Review dataset, see methodology for details.

E. Secondary public offerings by home market of the company

Table E.1. Proceeds, 2016 USD, millions

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bangladesh	0	0	0	0	0	0	0	0	12	0	0
Cambodia	0	0	0	0	0	0	141	161	0	0	122
China	26 703	88 074	26 458	67 593	107 597	70 432	63 342	68 148	94 178	163 374	175 814
Hong Kong (China)	16 404	30 928	8 659	22 282	27 116	13 945	32 279	11 723	27 343	48 570	13 965
India	8 733	22 207	13 900	18 276	24 099	13 075	22 069	16 692	14 276	23 891	10 618
Indonesia	1 366	3 292	6 654	3 204	11 943	6 630	3 690	4 770	3 536	2 805	3 376
Japan	45 772	19 958	12 655	71 077	46 793	17 336	11 710	27 322	17 097	16 881	12 866
Korea	10 468	19 815	15 842	15 870	11 752	15 552	7 677	11 673	12 015	11 427	14 658
Malaysia	996	3 888	2 074	6 301	5 806	3 204	4 789	4 743	8 172	5 864	4 275
Mongolia	0	0	0	0	0	0	85	0	215	0	0
Pakistan	0	747	121	0	115	273	11	65	775	1 229	463
Philippines	1 345	2 854	626	2 220	2 091	2 133	5 186	6 563	3 295	2 275	1 973
Singapore	3 745	5 655	2 144	11 261	3 110	2 887	3 417	5 031	4 955	3 571	2 122
Sri Lanka	0	0	2	57	188	356	110	263	150	138	28
Chinese Taipei	9 288	13 383	2 474	9 691	5 343	7 123	5 665	6 758	4 814	5 042	1 727
Thailand	2 366	2 630	626	1 277	4 491	2 686	9 167	5 464	4 920	3 263	5 009
Viet Nam	0	17	997	1 260	1 808	1 418	515	729	1 033	1 213	415

Source: Thomson Reuters, OECD Equity Markets Review dataset, see methodology for details.

Table E.2. Number of companies

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bangladesh	0	0	0	0	0	0	0	0	1	0	0
Cambodia	0	0	0	0	0	0	1	1	0	0	1
China	69	145	98	186	269	208	165	324	461	659	629
Hong Kong (China)	211	330	135	275	319	205	199	220	304	379	250
India	93	88	156	232	300	206	240	258	224	189	192
Indonesia	10	21	24	21	44	35	38	23	14	9	17
Japan	290	229	146	191	153	117	110	197	163	164	116
Korea	191	365	413	410	293	224	185	195	207	245	287
Malaysia	40	70	51	52	72	81	95	99	132	117	94
Mongolia	0	0	0	0	0	0	1	0	2	0	0
Pakistan	0	1	1	0	7	13	3	3	13	11	12
Philippines	13	24	21	19	19	30	35	38	23	14	11
Singapore	64	136	56	111	105	63	87	105	88	68	71
Sri Lanka	0	0	2	12	28	24	18	12	13	15	8
Chinese Taipei	47	11	34	70	83	69	59	68	59	56	42
Thailand	30	26	36	29	46	40	47	87	59	53	41
Viet Nam	0	4	23	78	146	83	31	46	68	66	38

Source: Thomson Reuters, OECD Equity Markets Review dataset, see methodology for details.

ANNEX 2 - METHODOLOGY FOR DATA COLLECTION AND CLASSIFICATION

A. Public equity data

The dataset is based on transaction and/or firm-level data gathered from several financial databases, such as Thomson Reuters Eikon, Thomson Reuters Datastream, FactSet and Bloomberg.

Considerable resources have been committed to ensure the consistency and quality of the dataset. Different data sources are checked against each other and whenever necessary, the information is also controlled against original sources, including regulator, stock exchange and company websites and financial statements. The dataset will be continuously updated following a strict protocol in terms of definitions provided below.

Country coverage and classification

The dataset includes information about all initial public offerings (IPO) and secondary public offerings (SPO or follow-on offering) by financial and non-financial companies from 17 Asian economies. This currently amounts to 20 638 IPOs for the period from January 1990 to December 2016, and 29 222 SPOs for the period January 1990 to December 2016.

All public equity listings following an IPO, including the first time listings in an exchange other than the primary exchange, are classified as a SPO. If a company is listed in more than one exchange within 180 days, that transactions are consolidated under one IPO.

The country breakdown is carried out based on the domicile country of the issuer. In the dataset, country of issue classification is also made based on the stock exchange location of the issuer.

It is possible that a company becomes listed in more than one country when going public. The financial databases record a dual listing as multiple transactions for each country where the company is listed. However, there are also significant number of cases that dual listings are reported as one transaction only based on the primary market of the listing. For this reason, the country breakdown based on the stock exchange is currently carried out based on the primary market of the issuer. Going forward, the objective is to allocate proceeds from an IPO to respective markets where the issue is listed at the same time.

The OECD does not have an official country classification. However, there are several country classification methods adopted by international organisations or credit rating and index companies. The review will follow the IMF country classification, which takes into account multiple criteria, including per capita income level, export diversification, and degree of integration into the global financial system.

The classification of Asian economies based on IMF methodology is presented in Table 2.1.

Table 2.1. IMF classifications

	Advanced economies	Major advanced economies (G7)	Other advanced economies	Emerging market and developing economies	Emerging and developing Asia	ASEAN
Bangladesh				X	X	
Cambodia				X	X	X
China				X	X	
Hong Kong (China)	X		X			
India				X	X	
Indonesia				X	X	X
Japan	X	X				
Korea	X		X			
Malaysia				X	X	X
Mongolia				X	X	
Pakistan				X		
Philippines				X	X	X
Singapore	X		X			X
Sri Lanka				X	X	
Chinese Taipei	X		X			
Thailand				X	X	X
Viet Nam				X	X	X

Currency conversion and inflation adjustment

The IPO and SPO data, and related financial statement data such as total assets before offering, are collected on a deal basis via commercial database in current USD values. The information is aggregated at the annual frequency and in some tables presented at the year-industry level.

Inflation adjustment, or "deflation", is the result of dividing a monetary time series by a price index, such as the Consumer Price Index (CPI), GDP deflator, Producer Price Index (PPI) among others. The deflated series are said to be expressed in constant USD values whereas the original series was measured in nominal USD or current USD. Inflation is often a significant component of apparent growth in any series measured in USD or any other currency. By adjusting for inflation the real growth in the series in uncovered.

The issuance amounts in this report are presented in 2016 USD adjusted by US CPI.

Industry classification

Financial data providers usually provide multiple industry classifications for each company. However, in general only one or a few classifications are available for most companies. The data presented in this report uses Thomson Reuters Business Classification (TRBC).

The main economic sectors and their industry groups are the following:

Economic Sector	Industry Group
Basic Materials	Chemicals Construction Materials Containers / Packaging Metal / Mining Paper / Forest Products
Cyclical Consumer Goods / Services	Automobiles / Auto Parts Homebuilding / Construction Supplies Hotels / Entertainment Services Household Goods Leisure Products Media / Publishing Retailers - Diversified Retailers - Specialty Textiles / Apparel
Energy	Coal Energy Related Equipment / Services Oil / Gas Renewable Energy
Financials	Banking Services Insurance Investment Banking / Investment Services Real Estate Operations
Healthcare	Biotechnology / Medical Research Healthcare Equipment / Supplies Healthcare Providers / Services Pharmaceuticals
Industrials	Aerospace / Defence Air Freight / Courier Services Airline Services Commercial Services / Supplies Construction / Engineering / Materials Machinery / Equipment / Components Marine Services Rails / Roads Transportation
Non-Cyclical Consumer Goods / Services	Beverages Food / Drug Retailing Food / Tobacco Personal / Household Products / Services
Technology	Communications Equipment Computers / Office Equipment Semiconductors / Semiconductor Equipment Software / IT Services
Telecommunications Services	Telecommunications Services
Utilities	Electric Utilities Gas Utilities Utilities - Multiline Utilities - Water / Others

Exclusion criteria

With the aim of excluding IPOs and SPOs by trusts, funds and special purpose acquisition companies the following industry categories are excluded:

- Financial companies that conduct trust, fiduciary and custody activities
- Asset management companies such as health and welfare funds, pension funds and their third-party administration as well as other financial vehicles
- Companies that are open-end investment funds
- Companies that are other financial vehicles
- Companies that are grant-making foundations
- Asset management companies that deal with trusts, estates and agency accounts
- Special Purpose Acquisition Companies (SPACs)
- Closed-end funds

Real Estate Investment Trusts are also excluded from the data presented in this report, but they are followed separately from other financial companies.

Listings on an over-the-counter (OTC) market are also excluded.

In terms of security types, the public offerings of “units” and “trust” are also excluded.

Transactions without any proceeds (such as market/segment/stock exchange changes and admissions to trading without any fund raising) are excluded.

B. Investment banking data

The investment banking data uses as the main source of information the Thomson Reuters League Tables. Each table offers information about the top 100 investment banks in the selected region, their ranking in the table, total gross proceeds allocated to that bank, the market share for each bank and the number of deals in which the bank was involved during the selected period of time.

Inclusion criteria

The information is collected for Bonds (including High Yield, Investment Grades, and Emerging Markets); Equity (includes Initial Public Offerings and Secondary Public Offerings); Syndicated Loans; and Mergers and Acquisitions (M&A). Information is retrieved on an annual basis from 2000 to 2016. Each table provides information for the top 100 investment banks involved in underwriting each of the above mentioned securities. The allocation method chosen is equal to each bookrunner, which means that if there is a USD 1 billion loan and 2 bookrunners on the deal they will get USD 500 million each.

Country coverage and classification

Data are collected by security at global, regional and country level. For the global analysis information is collected for the following eight regions of activity: Global; United States; United Kingdom; China; Japan; Europe excluding United Kingdom; Asia excluding China and Japan; and the Rest of the World.

For the Asia analysis, the information is collected for Asia and the selected countries included in the region were: Bangladesh, Cambodia, China, Hong Kong (China), India, Indonesia, Japan, Korea, Laos, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, and Viet Nam. Note that information for Viet Nam is not available before 2006.

Identification of the banks' country and region

A full list containing each unique bank in the sample is created to identify its country of origin. The list of unique bank names contains almost 6 thousand banks. Their nation of origin is assigned based on the location of the headquarters. Sources of information such as FactSet, Thomson Reuters, Bloomberg and banks websites/annual reports are used to identify banks' origin nation.

C. Ownership data

The main source of information is FactSet Ownership database. This dataset covers companies with a market capitalisation of more than USD 50 million and accounts for all positions equal to or larger than 0.1% of the issued shares. All Japanese companies are covered, regardless of market value.

To complement the information with additional market information Thomson Reuters is also used. For each of the countries covered in the sample the information about the 100 largest companies by market capitalisation −as of the end of 2016− is collected.

In a second step, the information for the reported owners as of the end of 2016 is collected for each company. Some companies can have up to 5 000 records in the list of owners. Each record contains the name of the institution, the percentage of outstanding shares owned, the investor type classification, the origin country of the investor, the ultimate parent name, among others. Each owner record is re-classified into the following investor class: Corporate, Government, Individual, Institutional and Others. When the ultimate parent was recognised to be a Government, the investor record is by default classified as Government. For example, public pension funds[10] that are regulated under public sector law are classified as government and sovereign wealth funds are also included in that same category.

Country coverage and classification

The sample under study in the analysis extends to the following countries: Brazil, China, Germany, France, Hong Kong (China), India, Indonesia, Japan, Korea, Malaysia, Mexico, Philippines, Poland, Russia, Singapore, Chinese Taipei, Thailand, Turkey, Viet Nam, United States, and United Kingdom.

Currency conversion and inflation adjustment

Data are collected as of end of 2016 in current USD, thus no adjustment is needed in this edition.

Industry classification

For each company in the sample the TRBC Economic Sector classification from Thomson Reuters is used.

[10] Following the definition in: OECD (2005), *Private Pensions: OECD Classification and Glossary*, OECD, Paris.

REFERENCES

Bebchuk, L. A., Cohen, A., and Hirst, S. (2017), "The Agency Problems of Institutional Investors", *Discussion Paper No. 930,* Havard Law School

Ben-Nasr, H., Boubaker, S., and Rouatbi, W. (2015), "Ownership structure, control contestability, and corporate debt maturity", *Journal of Corporate Finance*, Vol.35, pp. 265-285

Çelik, S. and M. Isaksson (2013), "Institutional Investors as Owners: Who Are They and What Do They Do?", *OECD Corporate Governance Working Papers*, No. 11, OECD Publishing, Paris

Chen, G., Firth, M., Xin, Y., and Xu, L. (2008), "Control transfers, privatization, and corporate performance: Efficiency gains in China's listed companies", *Journal of Financial and Quantitative Analysis*, Vol.43, No.1, pp.161-190

Cournède, B., O. Denk and P. Hoeller (2015), “Finance and Inclusive Growth”, *OECD Economic Policy Papers*, No. 14, OECD Publishing, Paris

Denis, D. K., and McConnell, J. J. (2003), "International corporate governance”, Journal of Financial and Quantitative Analysis", Vol.38, No.1, pp.1-36

Douma, S., George, R., and Kabir, R. (2006), "Foreign and domestic ownership, business groups, and firm performance: Evidence from a large emerging market", *Strategic Management Journal*, Vol.27, No.7, pp.637-657

Haniffa, R., and Hudaib, M. (2006), "Corporate governance structure and performance of Malaysian listed companies", *Journal of Business Finance & Accounting*, Vol.33, No.7-8, pp.1034-1062

Isaksson, M. and S. Celik (2013), “Who Cares? Corporate Governance in Today's Equity Markets”, *OECD Corporate Governance Working Papers*, No. 8, OECD Publishing

Japan Securities Research Institute (JSRI), *Securities Market in Japan 2016*, Tokyo

Lean, H. H., Ting, I. W. K., and Kweh, Q. L. (2015), “Ownership concentration, family ownership and leverage: Evidence from Malaysia", *Malaysian Journal of Economic Studies*, Vol.52, No.2, pp.117.

McKinsey Global Institute (2011), “Global corporate and investment banking”

Morck, R., Nakamura, M., and Shivdasani, A. (2000), "Banks, ownership structure, and firm value in Japan", *The Journal of Business*, Vol.73, No.4, pp. 539-567

OECD (2005), *Private Pensions: OECD Classification and Glossary*, OECD, Paris

OECD (2015), *Growth Companies, Access to Capital Markets and Corporate Governance*, OECD Report to G20 Finance Ministers and Central Bank Governors, September

OECD (2016), *OECD Business and Finance Outlook 2016*, OECD Publishing, Paris

OECD (2017a), *OECD Business and Finance Outlook 2017*, OECD Publishing, Paris

OECD (2017b), *OECD Corporate Governance Factbook*

OECD (2017c), *OECD Survey of Corporate Governance Frameworks in Asia*

Sarkar, J., and Sarkar, S. (2000), “Large shareholder activism in corporate governance in developing countries: Evidence from India", *International Review of Finance*, Vol.1, No.3, pp.161-194

Shleifer, A. and R.W.Vishny (1997), “A survey of Corporate Governance”, *Journal of Finance*, June

Su, K. (2015), "The inner structure of pyramid and capital structure: Evidence from China." *Economics*, Vol.9, No.14, pp.1

Xu, X., and Wang, Y. (1999), "Ownership structure and corporate governance in Chinese stock companies", *China Economic Review*, Vol.10, No.1, pp.75-98

www.oecd.org/corporate