



**ADB Working Paper Series**

**SOLUTIONS FOR SMALL AND  
MEDIUM-SIZED ENTERPRISES'  
DIFFICULTIES IN ACCESSING  
FINANCE: ASIAN EXPERIENCES**

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**Abstract**

Small and medium-sized enterprises (SMEs) are the backbone of the Asian economy. They make up more than 96% of all Asian businesses that provide two out of three private sector jobs in the continent. Therefore, it is vitally important for the Asian economies' economic success that they have fully functioning support measures for SMEs. However, SMEs face major challenges in accessing cheap finance, mainly because there is an asymmetric information problem between suppliers and demanders of funds, which hinders their growth. This paper will highlight the difficulties of SMEs in accessing finance, and provides remedies for mitigating them. The remedies proposed in this paper include the development of credit information infrastructures for SMEs to remedy the asymmetric information problem, utilization of credit rating techniques for SMEs, the development of a sustainable credit guarantee scheme, the development of specialized private banks for SME financing, and the introduction of new ways of providing community-based financing such as hometown investment trust funds. The paper will provide operational examples from developed Asian economies such as Japan and the Republic of Korea, and developing Asian economies such as Thailand with a view to them being implemented in the rest of Asia.

**Keywords:** SMEs, Asian economies, credit rating, CRD, SME bank

**JEL Classification:** G21, G24, G32

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## 1. INTRODUCTION

Asia has been continuously growing, and this growth has alleviated poverty and increased the number of middle-income countries in the region. However, the recent regional and global economic slowdown was caused by several factors, including the limited access of small and medium-sized enterprises (SMEs) to bank credit. It requires new and sustainable models to ease access of SMEs to finance and boost economic growth and job creation in the region.

A survey carried out by the Asian Development Bank (Asia SME Finance Monitor (ASM)) on 20 countries from five ADB regions<sup>1</sup> shows that SMEs accounted for an average of 96% of all enterprises and 62% of the national labor forces across the ASM countries. These countries cover Central Asia, East Asia, South Asia, Southeast Asia, and the Pacific. Meanwhile, the latest data reveal that SMEs contributed an average of 42% of the gross domestic product (GDP) or manufacturing value added in ASM countries (ADB, 2015).

SMEs have continued to influence trade. The latest data show that SMEs in the People's Republic of China (PRC) and India accounted for more than 40% of total export values, followed by 26% in Thailand, 19% in the Republic of Korea, and 16% in Indonesia (ADB, 2015).

Definitions of SMEs differ between countries, not only as a common indicator, such as employment, but also in the types of indicators used. Along with employment, the other common criteria are assets or capital, and revenue, which may be defined as sales or turnover. Many economies set two criteria, one is employment and the other is assets or capital, and revenue. For example, manufacturing firms in Malaysia are considered SMEs if they have fewer than 200 workers or revenue of less than RM50 million (about \$12 million). There may also be different criteria for different sectors. The PRC has 15 sector definitions, Japan has 4, and Singapore has 1. To make matters even more complicated, government agencies within the same country may use different definitions. A ministry may use one definition while the national statistics office uses another, and a priority lending policy may adopt yet another (Vandenberg, Chantapacdepong, and Yoshino 2016).

Four indicators are commonly used to gauge the importance of SMEs. They specify the SME share of the total for (i) the number of enterprises, (ii) employment, (iii) domestic output, and (iv) exports. Not all economies compile data on all four indicators, with the first two being the most common. Tables 1 and 2 present recent available data on 14 Asian economies, including the region's three largest—the PRC, Japan, and India. The share of the total number of enterprises is the most consistently used indicator across countries, both in Asia and around the globe. The share for our Asian group is in the narrow range between 97% and over 99%. Both Bangladesh, which until recently was a low-income country, and the Republic of Korea, a high-income one, have shares of 99% or more (Vandenberg, Chantapacdepong, and Yoshino 2016).

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<sup>1</sup> (i) Kazakhstan, the Kyrgyz Republic, and Tajikistan in Central Asia; (ii) the People's Republic of China, the Republic of Korea, and Mongolia in East Asia; (iii) Bangladesh, India, and Sri Lanka in South Asia; (iv) Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand, and Viet Nam in Southeast Asia; and (v) Papua New Guinea, Fiji, and the Solomon Islands in the Pacific.

**Table 1: SME Share of Enterprises, Exports, and Output, Selected Asian Economies**

	Share of All Enterprises (%)	Share of Exports (%)	Share of Output (%)	Indicators for Output	Data Year*
<b>High income</b>					
Japan	99.7	...	43.7	Sales	2012
Rep. of Korea	99.9	18.8	47.6	MVA	2012
Singapore	99.4	...	45.0	GDP	2012
<b>Upper middle income</b>					
PRC	97.3	41.5	60.0	GDP	2013, 2011, 2013
Kazakhstan	97.5	...	26.0	GDP	2014, 2013
Malaysia	97.3	...	35.9	GDP	2014
Philippines	99.6	...	35.7	GVA	2013, 2006
Thailand	99.7	26.3	39.6	GDP	2014
<b>Lower middle income</b>					
Bangladesh	99.0	...	25.0	GDP	2013, 2014
India	...	42.4	37.5	MVA	2013
Indonesia	99.9	15.7	60.3	GDP	2013
Sri Lanka	99.5	20.0	30.0	GDP	2013
Viet Nam	97.7	...	...		2012
<b>Low Income</b>					
Cambodia	99.8	...	...		2014

GDP = gross domestic product, GVA = gross value added, MVA = manufacturing value added, PRC = People's Republic of China, SME = small and medium-sized enterprise.

Note: For the PRC, the definition of SME used for the share of enterprises is those with fewer than 1,000 workers, and the share of exports refers to the share of industrial exports.

\* When more than one year is indicated, the first year refers to the share of the enterprises, the second refers to exports, and the third to output.

Source: Vandenberg, Chantapacdepong, and Yoshino (2016).

ASM results show that limited access to bank credit is a structural problem in the ASM region. Bank loans to SMEs made up averages of 11.6% of GDP and 18.7% of total bank lending in the region, with a decreasing trend of the latter since the 2008/09 global financial crisis. Comparing SME access to bank credit relative to the income level of the countries in which they operate, bank credit reaches out to a larger number of SMEs (with a relatively low ratio of nonperforming loans) as the country's economy becomes more advanced (ADB, 2015).

**Table 2: SME Employment Share, Selected Asian Economies**

	SME Employment as a Share of:	SME Share (%)	Year
Rep. of Korea	Enterprise employment	87.7	2012
Thailand	Enterprise employment	80.3	2014
Bangladesh	Nonagricultural employment	75.0	2014
Cambodia	Enterprise employment	71.8	2014
Japan	Enterprise employment	69.7	2012
PRC	Industry employment	64.7	2011
Philippines	Enterprise employment	63.7	2013
Singapore	Total employment	68.0	2012
Malaysia	Total employment	65.0	2014
Viet Nam	Total employment	46.8	2012
Sri Lanka	Total employment	35.0	2013
Kazakhstan	Total employment	32.1	2014

PRC = People's Republic of China, SME = small and medium-sized enterprise.

Note: For Bangladesh, the figure is 70%–80%; we have taken the average.

Source: Vandenberg, Chantapacdepong, and Yoshino (2016).

Recently, there have been some concerns about the impact of Basel III (an international regulatory framework for banks) on SME lending. There may be a negative effect on banks' lending attitudes toward SMEs in countries that have decided to introduce Basel III. These countries include the PRC, India, Indonesia, and the Republic of Korea<sup>2</sup> (ADB, 2015).

If SMEs, which are the backbone of the Asian economy find it difficult to access finance, this might endanger economic growth and employment in Asia, especially in developing Asian countries, which are more vulnerable. This suggests that further policy support for SME finance is needed in low-income and lower-middle-income Asian economies. In particular, financial infrastructure—such as a credit risk database and a credit guarantee corporation—needs to be developed. In addition, the establishment and development of SME specialized banks, and the introduction of community-based financing schemes such as hometown investment trust funds, are other required policies. These are the remedies that will be highlighted and defined in this paper by providing operational examples from developed and developing Asian economies in order to provide policy recommendations for the developing Asian economies, especially the lower-income countries.

## 2. SMEs' DIFFICULTIES IN ACCESSING FINANCE

Almost 70% of the Indian, 80% of the Chinese, and 90% of Malaysian financial systems are bank loans (Yoshino and Taghizadeh-Hesary 2015). Asian economies are often characterized as having bank-dominated financial markets and their capital markets, in particular venture capital, are not well developed. This means banks are the main source of financing. Although the soundness of the banking system has improved significantly since the Asian crisis, banks have been cautious about lending to SMEs, even though such enterprises account for a large share of economic activity.

<sup>2</sup> Even Japanese SMEs have suffered from the implementation of the Basel capital accord, which limited their access to bank loans (Yoshino and Hirano 2011; Yoshino and Taghizadeh-Hesary 2016a).

Start-up companies, in particular, are finding it increasingly difficult to borrow money from banks because of strict Basel capital requirements. Riskier SMEs also face difficulty in borrowing money from banks. It is difficult for banks to evaluate SMEs since they often do not have solid accounting systems. Many SMEs in Asia borrow money by paying high rates of interest or offering costly collateral. Many banks prefer to lend to large enterprises rather than SMEs. The reason for this is that for large enterprises the financial statements are clearer and audited.

Every quarter the Bank of Japan (BOJ) performs a survey called the *Tankan* in accordance with the Statistics Law (Law No. 53 of 2007), with the aim of providing an accurate picture of the business trends of enterprises in Japan, thereby contributing to the appropriate implementation of monetary policy. The BOJ provides survey forms to sample enterprises by mail or online.<sup>3</sup> The survey is conducted quarterly, in March, June, September, and December. Survey results are released at the beginning of April, July, October, and mid-December in principle. One of the outputs of this survey is the comparison of the access to finance in small and medium-sized enterprises with that of large enterprises.

Figure 1, which is taken from the *Tankan* in December 2016 (BOJ, 2016), compares the lending attitude of financial institutions toward small and medium enterprises with that toward large enterprises. The thick line shows the large enterprises, the thin line is for small enterprises, and the dashed line exhibits the lending attitude of financial institutions toward medium-sized enterprises in Japan.

The value on the vertical axis shows the diffusion index (% points). If the value is higher, then the borrowing of enterprises from financial institutions is more accommodative, and if the vertical value is lower, it means borrowing is more difficult. It is clear, except for those periods when the economy was in crisis, that the borrowing situation for large enterprises compared to SMEs is more accommodative and SMEs have comparatively more difficulty in raising money.

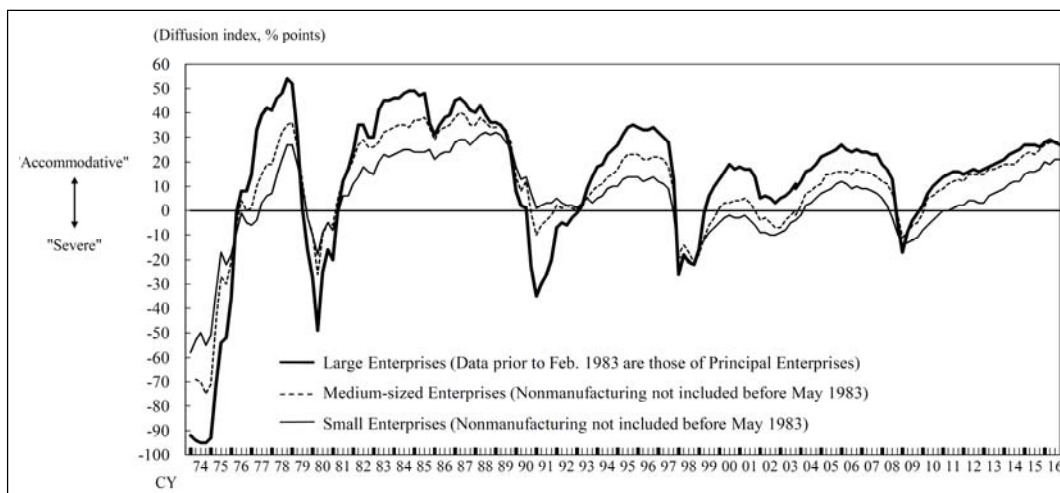
In order to see the reality of access to finance for SMEs and to compare it with that of large enterprises and evaluate the money raising of enterprises in terms of economic trends and adopting the right policies, it is important for other Asian central banks to carry out surveys similar to the *Tankan* periodically.

In addition to the prevalent difficulties that SMEs have in fundraising from banks, more recently, the Basel capital accord made the environment more difficult. Basel III has adopted new rules—liquidity frameworks and leverage ratio frameworks—to strengthen the risk management of banks, as well as introducing strengthened capital requirements. These new measures may restrict banks in providing long-term credit for enterprises, and may limit financing options for SMEs, including the availability of trade finance (ADB, 2015).

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<sup>3</sup> The BOJ is obliged to keep confidential information obtained from respondents under strict security in accordance with the Statistics Law. The population of the survey consists of approximately 210,000 private enterprises (excluding financial institutions) in Japan with a capital of 20 million yen or more, based on the *Economic Census for Business Activity*, jointly conducted by the Ministry of Internal Affairs and Communications and by the Ministry of Economy, Trade and Industry in February 2012. Sample enterprises are selected from the population based on industry and size classifications to satisfy established criteria such as that of statistical accuracy.



**Figure 1: Lending Attitude of Financial Institutions in Japan**

CY = calendar year, DI = diffusion index.

Note: The diffusion index is a method of summarizing the common tendency of a group of statistical series.

Source: Bank of Japan (BOJ). 2016. *Tankan* Summary (December 2016). 171st Short-Term Economic Survey of Enterprises in Japan. Research and Statistics Department, Bank of Japan.

## 2.1 Lack of Information Infrastructure for SMEs

There is an asymmetric information problem between suppliers and demanders of funds in general. Information infrastructures are necessary to remedy this problem. Many big enterprises list their shares on stock markets and issue securities in bond markets. Therefore, institutional information-sharing schemes of capital markets can facilitate access to a wide range of information needed to estimate the creditworthiness of big enterprises.

However, most SMEs have no connection with capital markets. Financial institutions can closely and continuously observe borrowers, but it is costly to do so for borrowers of small loans.

The lack of information infrastructure for SMEs exacerbates the information asymmetry problem.

In collateral-based lending, the provision of collateral is the simplest way for SMEs and financial institutions to reduce the risk premium in loan formulations. However, with the introduction of the Basel capital accord, many governments expanded policy-based finance for SMEs to mitigate the constraints on SME finance as an urgent countermeasure. In this situation, efficient and lower-cost credit risk evaluation tools were necessary for financing SMEs, especially for transaction-based lending. To address the serious credit constraints on SMEs after conforming to the Basel requirements for risk management, a comprehensive information infrastructure is needed. This soft infrastructure will be explained in Section 3.2 of this paper.

### **3. REMEDIES FOR TACKLING SMEs' DIFFICULTIES IN ACCESSING FINANCE**

The previous section defined the challenges Asian SMEs face when raising money. In this section, we present some efficient remedies and the soft infrastructures required for easing SMEs' access to finance. These solutions have worked in some Asian countries and it is necessary to expand them to the rest of Asia.

#### **3.1 Diversifying Channels of Financing**

In this section we present three different methods for easing SME financing: the development by governments of credit guarantee schemes, specialized banks for SMEs, and community-based financing schemes, e.g. hometown investment trust funds for financing risky SMEs and start-up businesses.

##### **3.1.1 Development of Credit Guarantee Schemes by Governments**

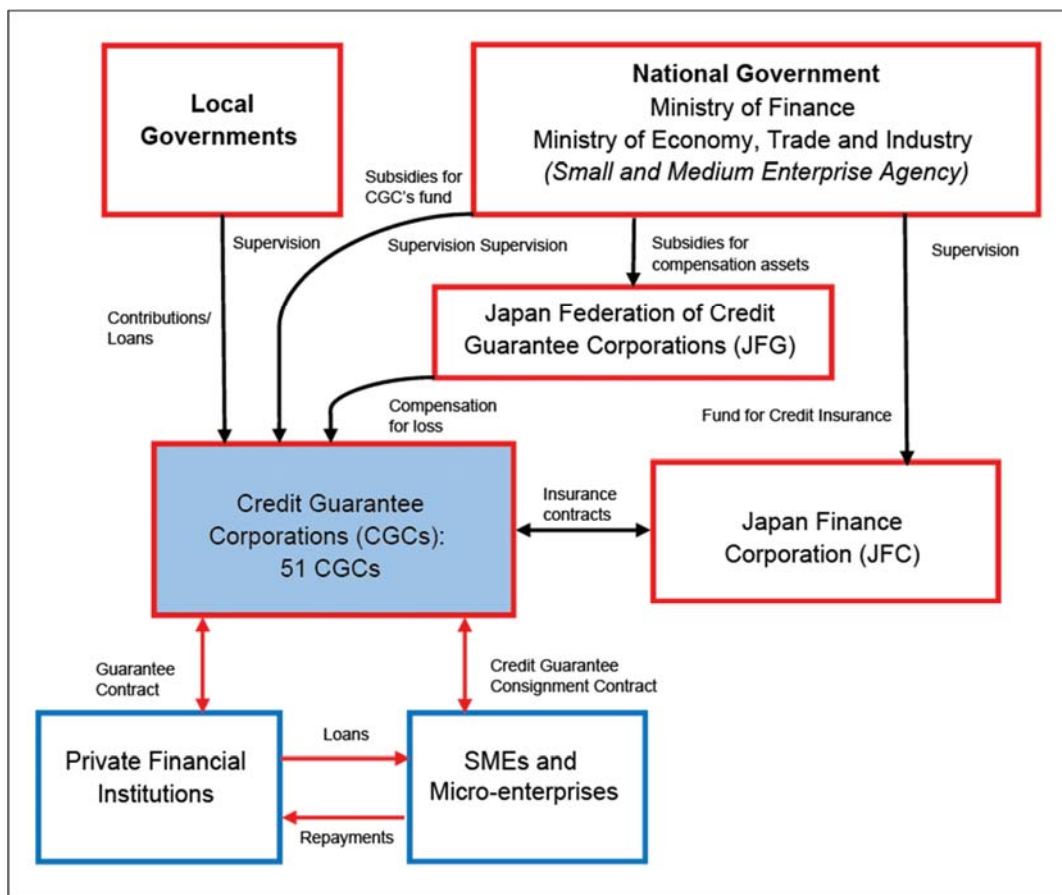
Owing to the significance of SMEs to Asian economies, it is important to find ways to provide them with stable finance. In order to remedy the undersupply of credit to SMEs, various government and donor initiatives have emerged in both developed and developing and emerging economies, including the so-called credit guarantee scheme (CGS). The public guarantee scheme is a tool aimed at reducing the gap between supply and demand in SME finance.

CGSs have been used for decades in many countries and in various forms as a way to increase the flow of funds into targeted sectors and groups. The purpose of the creation of such a scheme is to contribute to the flow of funding into sectors that have difficulty raising funds, including the SME sector. A CGS makes lending more attractive by absorbing or sharing the risks associated with lending to the targeted sector. Such schemes can also increase the amount of loan funds available to an enterprise beyond its own collateral limits, because the guarantee is a form of loan collateral. The guarantee manager can assume the additional role of loan assessor and monitor, which can improve the quality of the loans made (Zander, Miller, and Mhlanga 2013). However, guarantee funds have a cost, which is paid through the fees charged and/or subsidized by the government or by a third-party institution.

Many countries like Japan used to have a full credit guarantee scheme that covered 100% of the default cost incurred by borrowers in Japan (Uesugi, Sakai, and Yamashiro 2006). Recently the Japanese government revised the credit guarantee policy and implemented a partial credit guarantee (PCG) as the full guarantee had moral hazard. If the government covers 100% of the SMEs' default costs and absorbs the full risk, then lending institutions will not monitor and analyze the healthiness of the borrowers, because their risk is covered by the government. Thus it will increase the non-performing loans in the banking sector and reduce the productivity of the public reserves. Hence, a partial credit guarantee scheme may be the optimal case scenario.

A CGS consists of at least three parties: a borrower, a lender, and a guarantor. The borrower is often an SME or a micro-enterprise, seeking debt capital. This borrower typically approaches a private financial institution (bank) for a business loan. For reasons of asymmetry of information, the loan request will frequently be turned down by the private lender. This is where the guarantor comes into the picture. The guarantor (Credit Guarantee Corporation), usually a government or trade association, seeks to facilitate access to debt capital by providing lenders with the comfort of a guarantee for a substantial portion of the debt (Riding and Haines 2001).

**Figure 2: Credit Guarantee Scheme (Japan)**



Note: The above figure is reproduced by the authors.

Source: Japan Federation of Credit Guarantee Corporations (JFG 2014).

As is clear in Figure 2, which is the example of Japan, CGC money comes from the national government (from the Ministry of Finance to the Ministry of Economy, Trade and Industry [METI]) and also from local governments. The national government provides direct subsidies to CGCs, and provides subsidies for compensation assets to the Japan Federation of Credit Guarantee Corporations (JFG), and the JFG provides them as compensation in the case of losses to CGCs. Also, the national government provides funds for credit insurance to the Japan Finance Corporation (JFC) and the JFC uses this budget to insure the contracts. On the other hand, local governments are also supporters of CGCs and provide contributions and loans to them. In Japan, in the fiscal year (FY) 2014, almost 3.852 million SMEs were operating, among which 36.6% or 1.412 million were guaranteed by CGCs. There are 51 CGCs in Japan, one for each prefecture and one in each of the cities of Nagoya, Yokohama, Kawasaki, and Gifu. At the end of FY2014, their total liabilities stood at approximately 27.7 trillion yen (JFG, 2015).

CGSs make banks' lending to SMEs easy, because in the case of an SME defaulting, the credit guarantee corporation will cover a certain percentage of the lenders' losses. For example, if a credit guarantee corporation puts up 80% as the guarantee ratio, it means that when an SME goes into bankruptcy, banks can recover 80% of their loans. If there is no credit guarantee system and if an SME goes into bankruptcy, then the banks lose everything. In Japan, after the tsunami and earthquake disaster at Fukushima in March 2011, the government decided to make credit guarantee ratios 100% (full guarantee), because it became much more difficult for many SMEs to borrow money from banks. However, a full guarantee by a credit guarantee corporation creates a moral hazard problem for banks. In the case of a full guarantee, if an SME goes into bankruptcy, all the money will be recovered for the banks, therefore banks do not monitor carefully the quality of business of the SMEs: Whether the SMEs are sound or not, banks are willing to lend money. Before the Japanese government decided to create a full credit guarantee, this ratio was 80%, which is called a "partial credit guarantee." More recently, since the majority of the losses of SMEs after the Fukushima disaster were recovered, the government reduced the credit guarantee ratio again. And now the question is: What credit guarantee ratio will be desired?

The Japanese credit guarantee system provides the same guarantee coverage ratio (80%) to all banks for their lending to SMEs regardless of the creditworthiness of the banks. However, the optimal case would be differentiating banks based on their creditworthiness, and those banks that show a healthier status receive a higher guarantee ratio and riskier banks that have accumulated nonperforming loans receive a lower guarantee, so that it is an incentive for them to improve their creditworthiness. Yoshino and Taghizadeh-Hesary (2016b) developed a model for calculating the optimal credit guarantee ratio. They found that the optimal credit guarantee ratio should be applicable to each bank, or to each group of banks, based on their financial soundness. Sound banks should receive a higher guarantee ratio from the government, and less healthy banks should receive a lower guarantee to avoid a moral hazard problem. Moreover, this rate should vary based on economic conditions. Governments should lower the guarantee ratio in good economic conditions where the default risk of SME loans is reduced, and raise it in bad economic conditions to protect SME financing and economic growth.

In Asia, credit guarantee schemes have been relatively widely established. India launched the Credit Guarantee Fund Scheme for Micro and Small Enterprises in 2000 as a partial guarantee scheme; it covers 75% of the credit applied force (statistics and information in this paragraph from ADB, 2015). Indonesia started a public credit guarantee scheme for MSMEs—People's Business Credit (KUR)—in 2007; it guarantees 70%–80% of the credit applied. Kazakhstan has a partial credit guarantee scheme for SMEs (up to 70%) under the Damu Entrepreneurship Development Fund. The Republic of Korea provides credit guarantees for SMEs mainly through two credit guarantee institutions: the Korea Credit Guarantee Fund (KODIT) and the Korea Technology Finance Corporation (KOTEC). In Malaysia, the Credit Guarantee Corporation provides guarantees for SMEs. In Papua New Guinea, a regional bank (Bank of South Pacific) provides partial credit guarantees for SMEs (50% of the credit applied). The Philippines has two credit guarantee programs for MSMEs: the partial guarantee scheme provided by the Small Business Corporation (70% of the credit applied) and the Credit Surety Fund Program under the central bank. In the Solomon Islands, the central bank provides a credit guarantee scheme for SMEs called the Small Business Finance Scheme, covering 90% of the credit applied. The central bank in Sri Lanka also provides credit guarantee schemes for SMEs as well as several credit lines. Thailand developed the portfolio guarantee scheme for SMEs in 2009 as part of the Thai economic stimulus measures against the global financial crisis. Viet Nam has

two channels of credit guarantees, although they do not directly target SMEs: the credit guarantee fund operated by the Vietnam Development Bank (85% partial guarantees) and the local credit guarantee funds operated by provincial authorities under the supervision of the Ministry of Finance.

### 3.1.2 Specialized Banks for SME Financing (SME Bank)

In Japan there is a good example of specialized private banks for SME financing, called “Shinkin banks.” Shinkin banks are deposit-taking cooperative banks that specialize in financing SMEs within a region. Just like city banks and regional banks, Shinkin banks are protected by deposit insurance and subject to capital adequacy requirements and other banking regulations and supervisions.

Unlike city banks or regional banks, however, Shinkin banks provide loans mainly to member SMEs who capitalize the Shinkin banks. They can make loans to nonmember SMEs, but they have to restrict the share of the loans to nonmember SMEs to 20%. On the other hand, they can accept deposits from anyone.

Shinkin banks are regional financial institutions in the sense that they can provide loans only to SMEs that operate within the same region as the Shinkin banks. Shinkin banks are generally smaller than city banks and tier-1 and tier-2 regional banks and larger than credit cooperatives (*shinyokumiai*). Shinkin banks played a significant role in the development of SMEs in different regions and in achieving comprehensive growth throughout Japan (Hosono, Sakai, and Tsuru, 2006). Shinkin banks provide 14.7% of total loans to SMEs, having a total of ¥128 trillion (equivalent to \$1,244 billion) in funds (SCB 2015).

In the Republic of Korea, since the establishment of the Industrial Bank of Korea (IBK) on 1 August 1961, acting as the SME bank of the country has constantly expanded the corporate lending bases, especially to SMEs, and the number of clients reached 1.2 million corporates as of 14 December 2015. The IBK retained the leadership role in financing competitive SMEs in financial distress over the past year.

In 2015 alone, the IBK extended new loans worth KRW 10.3 trillion, claiming 20% of the annual KRW 52.8 trillion net increase in SME loans extended by all banks in the Republic of Korea. The IBK’s SME loan balance stood at KRW 126.1 trillion in 2015 and accounted for 77.3% of the bank’s KRW 163.2 trillion total loan balance by the end of the year. Claiming 22.34% of the SME loan balance market share, this makes the IBK the sole financial institution in the Republic of Korea with a market share of 20% or greater for SMEs. As a policy bank that specializes in SME lending, the IBK contributed to upholding the government’s finance policy to help lift the nation’s economy out of its current quagmire and to stimulate the Republic of Korea’s creative economy by rolling out various new products aimed specifically at financing SMEs, especially startups in 2015.<sup>4</sup> As of the end of March 2017, the shareholder status of the IBK was: Ministry of Strategy and Finance (50.9%), Korean Development Bank (8.7%), the Export-Import Bank of Korea (2.3%), Foreigners (16%), Others (22.1%).<sup>5</sup>

<sup>4</sup> <http://eng.ibk.co.kr/lang/en/au/corporateBanking.jsp> (accessed 09 July 2017)

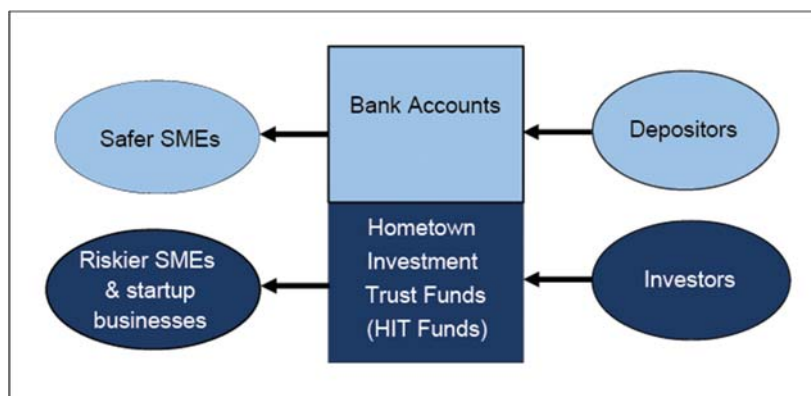
<sup>5</sup> <http://eng.ibk.co.kr/lang/en/ir/shareholderStatus.jsp> (accessed 09 July 2017)

### 3.1.3 Development of Hometown Investment Trust Funds for Risky SMEs

Given that Asian financial systems are dominated by banks, the creation of community-based funds (or hometown investment trust funds)<sup>6</sup> to promote lending to start-up companies and riskier borrowers, such as SMEs, would help to maintain the soundness of the banking sector, as banks would not be exposed to the risks that lending to such companies inevitably poses. Selling those community trust funds through branch offices of regional banks, post offices, credit associations, and large banks would increase funding sources for start-up companies and riskier borrowers (Figure 3).

Such trust funds would not be guaranteed by a deposit insurance corporation and the associated risks would be borne by investors. The terms of a trust fund would have to be fully explained to investors, such as where their funds would be invested and what the risks associated with the investment would be, in order to strengthen potential investors' confidence and help expand the trust fund market (Yoshino 2013).

**Figure 3: Utilizing HIT Funds for Investing in Riskier SMEs and Startups**



HIT fund: Hometown investment trust funds.

Source: Yoshino and Taghizadeh-Hesary (2014a).

Although the government does not guarantee these funds, without government supervision and regulations there might be several cases of fraud. In Japan's Financial Services Agency (FSA), the supervisor and regulator of the financial system regulates and supervises the Internet companies that provide a micro-investment platform for the introduction and investment matchmaking of HIT funds. Project owners can access these Internet companies, who will perform some sort of due diligence about the background of the project owner, the quality of products and expected return, and will carry out the project assessment. Then, once it is approved, they will introduce the project and the amount of required investment, the bid amount, and the recruitment period on their website. The FSA monitors and supervises the activities of these micro-investment Internet companies, of which there are currently seven in Japan, and these companies have a direct relationship with the project owners. These companies have significant roles in ensuring the transparency of this HIT fund scheme.

<sup>6</sup> Hometown investment trust funds emerged in Japan during the current decade and were initiated by Dr. Naoyuki Yoshino (Yoshino, 2013), and now have been adopted as a national strategy in Japan (Yoshino and Taghizadeh-Hesary 2014b).

There are examples of both successful and failed funds. Project assessors play a key role in evaluating each project to limit the number of nonperforming investments and losses by investors. Some of the funds set up in Japan are regarded as charities, with some investors viewing them as a way to invest in their region to support new business ventures.

Such new ventures pose a problem for banks, as although some will have high expected rates of return, the high risks involved make it difficult for banks to finance them. However, if the projects are financed by hometown investment trust funds rather than by deposits transformed into bank loans, they will not create nonperforming loans for banks. Banks can still benefit and compete with each other by selling the trust funds through their branch offices, although it has to be made clear that an investment in those funds is not guaranteed. If a bank sells successful hometown investment trust funds, it will be able to attract more investors, but on the other hand, if it sells loss-making funds, it will lose investors in the future. Competition will improve the quality of projects and enhance the risk-adjusted returns for investors.

A hometown investment trust fund has three main advantages. First, it contributes to financial market stability by lowering information asymmetry. Individual households and firms have direct access to information about the borrowing firms, mainly SMEs, that they lend to. Second, it is a stable source of risk capital. The fund is project driven. Firms and households decide to invest by getting to know the borrowers and their projects. In this way, the fund distributes risk, but not so that it renders risk intractable, which has been the problem with the “originate and distribute” model. Third, it contributes to economic recovery by connecting firms and households with SMEs that are worthy of their support. It also creates employment opportunities at the SMEs as well as for the pool of retirees from financial institutions who can help assess the projects (Yoshino 2013; Yoshino and Taghizadeh-Hesary 2014b).

The main differences between the hometown investment trust funds and conventional crowdfunding or venture capital is the “warm feeling” that is behind the hometown investment trust funds (HITs), because investors sympathize with the company/project owners and their efforts and are not solely seeking profit, while in crowdfunding and venture capital the investors are solely seeking financial profit.

Examples of such funds in Japan include wind power generators and musicians' funds. In the first example, to construct 20 wind power generators, private-public partnerships were launched and local residents invested \$1,000–5,000 in a fund. They receive dividends every year through the sales of electricity by each wind power generator that they invested in. Musicians' funds gather many small investors buying units for \$150–500. If the musicians become successful and their DVDs sell well, the sales will generate a high rate of return for the fund.

In recent years, there have been several successful cases of HIT funds in Japan. For example, the Fukushima Daiichi nuclear disaster, which was an energy accident initiated primarily by the tsunami following the Tohoku earthquake on 11 March 2011, resulted in nuclear power plants shutting down across the whole of Japan due to government disapproval because of a lack of safety. After this disaster happened, in the region that suffered and also in other parts of Japan, people who were opposed to the use of nuclear power supported the use of renewable energy, especially wind power and solar power. However, renewable energy projects are costly and require private sector investments, and banks are reluctant to finance many of these projects as they are considered risky projects from the point of view of most banks. Hence local communities created local funds and collected money in each region in order to collect sufficient capital for the establishment of wind power generators and solar power

panels on the roofs of houses, and several projects were started by this framework in the Nagano prefecture, the Hokkaido prefecture and so on, which are examples of HITs. Several solar and wind power projects started to generate electricity, hometown residents used the electricity, and the spillover was sold to the power companies in order to make profit and pay dividends to the investors.

There are many cases that demonstrate the aforementioned “warm feeling,” e.g. to construct a wind power generator in Japan, almost 2 million US\$ (approx.) was required, and 249 people from a hometown or those who sympathized with that region or with this specific project from all over Japan donated to or invested in this fund, and the users of the electricity of this wind power generator agreed to purchase the generated electricity at a 5% higher cost in order to help make this project feasible. The Music Securities company,<sup>7</sup> which is an Internet company that provides a micro-investment platform for absorbing investments for projects through HITs and is one of the seven companies to whom the FSA of Japan issued an operating license, through about 40 HIT funds, raised 1.08 billion yen for earthquake reconstruction efforts and replacing renewable energy.

The second difference between HIT funds and conventional crowdfunding and venture capital is that the investors are eager to receive the products or services that the project generates, e.g. electricity, agricultural products, fish, etc. However, in two other cases, the return is only in the form of liquid profit.

The third and last difference is the “transparency” that exists in HIT funds; in fact, the basis and nature of HIT funds is transparency. The Internet micro-investment companies make the project information, the background of the project owner, the results of project assessment, and other information concerning the project completely transparent for the investors.

### **3.2 Development of SME Credit Risk Databases, Credit Bureaus, and SME Credit Rating**

Given the importance of SMEs to many dimensions of Asian economic activity, further efforts are needed to offer them access to finance. Their financial and nonfinancial accounts are often difficult to assess, but the Credit Risk Database (CRD) in Japan shows how SMEs can be rated based on financial and nonfinancial data. The CRD includes a huge amount of data that can be used to rate SMEs through statistical analysis.

#### **3.2.1 Credit Risk Database (CRD) (Japanese Experience)**

The CRD Association was established in 2001 as an initiative of the Japanese Ministry of Economy, Trade and Industry and the Small and Medium Enterprise Agency. Its aim was to facilitate fundraising for SMEs and to improve their operational efficiency. The association’s membership increased from 73 institutions at the end of March 2002 to 181 by 1 April 2016 (Kuwahara et al. 2016).

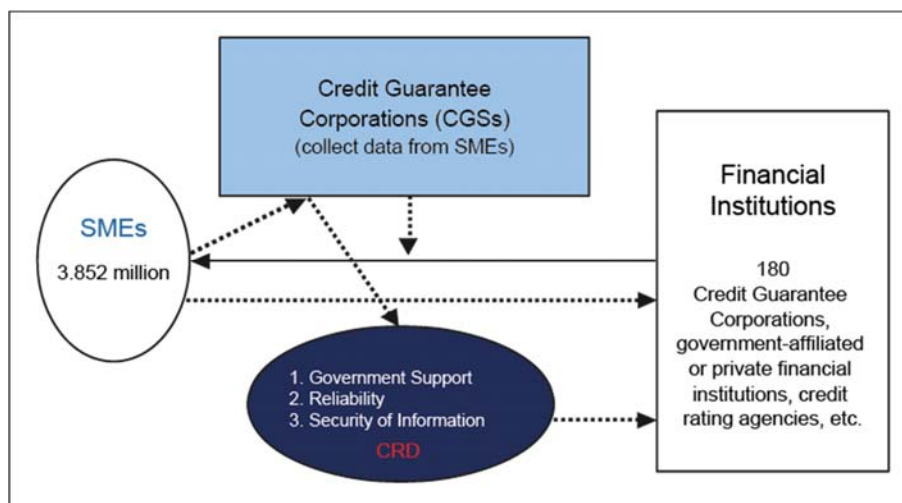
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<sup>7</sup> The Music Securities micro-investment platform, which allows users to invest in local regions or industries through HITs in Japan.



The CRD covers SMEs exclusively (Figure 4). As of 31 March 2015 it included 2,210,000 incorporated SMEs and 1,099,000 sole-proprietor SMEs, and it is by far the largest SME database in Japan. The database for enterprises in default covered 500,000 incorporated and sole-proprietor SMEs (Yoshino and Taghizadeh-Hesary 2014c). The CRD Association receives active support from both the private and public sectors, which has contributed to its success. For example, the Small and Medium Enterprise Agency nominates representatives of the CRD Association for government councils, which gives the association an opportunity to promote its activities and increase its membership. Credit guarantee corporations and private financial institutions use the CRD when they create a joint guarantee scheme.<sup>8</sup> Before the CRD was formally established, the government invested ¥1.3 billion from supplementary budgets for the fiscal years 1999 and 2000 to finance the setting up of the CRD's computer system and other operational costs. The association provides sample data and statistical information, as well as scoring services.

**Figure 4: Credit Risk Database of Small and Medium-Sized Enterprises**



CRD = Credit Risk Database; SME = small and medium-sized enterprise.

Note: Numbers of financial institutions are as of 1 April 2016. Number of SMEs shows all SMEs in Japan at the end of FY2014.

Source: Authors, CRD website,<sup>9</sup> source of number of SMEs: (JFG, 2015).

Member financial institutions use scoring models to evaluate creditworthiness, check the validity of internal rating systems, and align loan pricing with credit risk. In addition, the CRD Association provides consulting services to support the management of SMEs on the assumption that if SMEs are better managed, this will reduce the credit risk for member financial institutions and strengthen SME business operations. Consulting services have also been offered to member financial institutions to help them promote the implementation of Basel III.

<sup>8</sup> A credit guarantee system would make it easier for banks to lend money to SMEs. For example, in the case of an SME defaulting, a percentage of the losses would be met by the credit guarantee corporation, which is a governmental organization. For example, assuming a credit guarantee corporation sets 80% as the guarantee ratio, if an SME went into bankruptcy, a bank could recover 80% of its loan. If there were no credit guarantee system in place and an SME went into bankruptcy, the bank would lose its entire loan. Arráiz, Meléndez, and Stucchi (2014) have provided a framework for a partial credit guarantee system.

<sup>9</sup> <http://www.crd-office.net/CRD/en/index.html>

If such systems could be established in other parts of Asia to accumulate and analyze credit risk data, and to measure each SME's credit risk accurately, SMEs would not only be able to raise funds from the banking sector, they could also gain access to the debt market by securitizing their claims.

### **3.2.1 National Credit Bureau (Thai experience)**

The National Credit Bureau (NCB) is well-known among debtors, businessmen, and SMEs in Thailand as the organization that collects and processes the credit information of the clients of financial institutions. However, not many people know exactly what the responsibilities and duties of the NCB are. Some people believe that the credit bureau can place people on a blacklist, or that it sells credit information to telesales businesses, and most people believe that the credit bureau is responsible for credit rejections.

The NCB was established in 1998 under a policy by the Thai government. The government realized that a significant cause of the economic crisis in Thailand was that the country's financial sector did not have an organization to collect credit information thoroughly and systematically. Financial institutions thus performed inaccurate analyses of credit because they did not know the overall obligations or payment histories of borrowers.

Firstly, the government supported the establishment of two credit bureaus for collecting and assembling credit information and the payment history of financial institutions' clients as well as serving credit inquiries to financial institutions with clients' consent. Later, in 2005, the two credit bureaus merged and became the National Credit Bureau running under the Credit Information Business Act B.E. 2545.

The NCB is a private credit bureau company that operates under a good governance policy and does not seek profit maximization. The shareholders are customers or members and the board of directors consists of experts and executives from the Ministry of Finance, financial institutions, and insurance companies. Credit information is treated impeccably to meet the international standards of credit bureaus in other countries (Yoshino et al. 2016).

## **3.3 SME Credit Rating**

Credit ratings are opinions expressed in terms of ordinal measures reflecting the current financial creditworthiness of issuers such as governments, firms, and financial institutions. These ratings are conferred by rating agencies—such as Fitch Ratings, Moody's, and S&P—and may be regarded as a comprehensive evaluation of an issuer's ability to meet their financial obligations in full and on time. Hence, they play a crucial role by providing participants in financial markets with useful information for financial planning. To conduct rating assessments of large corporates, agencies resort to a broad range of financial and nonfinancial pieces of information, including domain experts' expectations. Rating agencies usually provide general guidelines on their rating decision-making process, but detailed descriptions of the rating criteria and the determinants of banks' ratings are generally not provided (Orsenigo and Vercellis 2013). In the search for more objective assessments of the creditworthiness of large corporate and financial institutions, there has been a growing body of research into the development of reliable quantitative methods for automatic classification according to their financial strength.

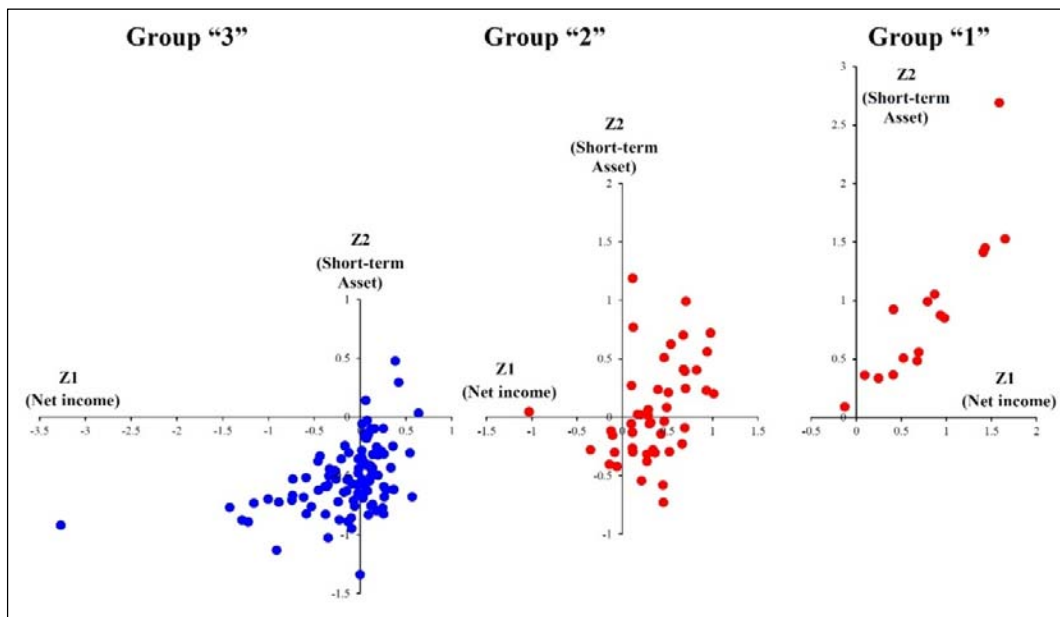
Extensive empirical research devoted to analyzing the stability and soundness of large corporates dates back to the 1960s. Ravi Kumar and Ravi (2007) provided a comprehensive survey of the application of statistical and intelligent techniques to predicting the likelihood of default among banks and firms. Despite its obvious relevance, however, the development of reliable quantitative methods for the prediction of large corporates' credit ratings has only recently begun to attract strong interest. These studies are mainly conducted within two broad research strands focusing on statistical and machine learning techniques, and may address both feature selection and classification. Poon, Firth, and Fung (1999) developed logistic regression models for predicting financial strength ratings assigned by Moody's, using bank-specific accounting variables and financial data. Factor analysis was applied to reduce the number of independent variables and retain the most relevant explanatory factors. The authors showed that loan provision information, and risk and profitability indicators added the greatest predictive value in explaining Moody's ratings.

As mentioned earlier, the main purpose of developing the CRD is to create the infrastructure for improved credit rating of SMEs, which could be the medium-term target for Asian economies in order to remedy the asymmetric information problem of SMEs. However, in the short run, it is possible to implement various methods for the performance of credit risk analysis and credit rating of SMEs by lending institutions, credit guarantee corporations, or independent local rating agencies, using data on SMEs. A comprehensive credit rating method developed by Yoshino and Taghizadeh-Hesary (2014c) employed statistical analysis techniques on various financial variables of a group of 1363 SME customers of an Iranian bank by utilizing two statistical techniques (principal component analysis and cluster analysis) on various financial ratios of the sample of SMEs. These financial ratios cover all characteristics of SMEs including activity, profitability, coverage, leverage, and liquidity. Figure 5 shows random samples from the 1363 SMEs and each dot is one SME. The analysis classifies SMEs into three groups: financially healthy SMEs, medium-risk SMEs, and financially risky SMEs. The detailed analytical framework is explained in Yoshino and Taghizadeh-Hesary (2014c).

For SMEs in the financially healthy group, banks can lend them more money by charging low rates of interest with no required collateral, while credit guarantee corporations can charge them lower premiums when guaranteeing the allocated credit. On the other hand, for SMEs in the high-risk group, banks can charge higher rates of interest with greater collateral requirements. If an SME's performance improves and it moves into a lower-risk group, banks can change their interest rates from high to low, accordingly.

Similar SME data analysis was done by using NCB data for Thai SMEs (Yoshino et al. 2016). Yoshino et al. (2016) show how a credit rating scheme for SMEs can be developed, when access to other financial and nonfinancial ratios is not possible, by using data on lending by banks to SMEs. They employ statistical techniques on five variables from a sample of Thai SMEs from the NCB database and classify them into subgroups based on their financial health.

By employing these techniques in Asian economies, banks could reduce information asymmetry and consequently set interest rates and lending ceilings for SMEs. This would ease the financing of healthy SMEs and reduce the amount of nonperforming loans to this important sector.

**Figure 5: Classification of Small and Medium-Sized Enterprises**

SME = small and medium-sized enterprise.

Note: Group 1 = financially healthy SMEs; Group 2 = medium-risk SMEs; Group 3 = financially risky SMEs.

Source: Yoshino and Taghizadeh-Hesary (2014c).

## 4. CONCLUSIONS

SMEs play a significant role in Asian economies as they are responsible for very high shares of employment and output in all Asian countries. However, in the bank-dominated financial systems in Asia, SMEs have difficulty accessing cheap finance.

Banks are cautious about lending to SMEs even though such enterprises account for a large share of economic activity. Start-up companies, in particular, are finding it increasingly difficult to borrow money from banks and the strict Basel III capital requirements have made the situation more difficult. Riskier SMEs also face difficulty in borrowing money from banks. It is difficult for banks to evaluate SMEs since they often do not have solid accounting systems and their credit risk is not obvious for lending institutions. Many SMEs in Asia borrow money by paying high rates of interest or offering costly collateral, which hinders their growth.

Many banks prefer to allocate their resources to large enterprises rather than SMEs. The reason for this is that for large enterprises the financial statements are clearer. SMEs are mainly riskier from the point of view of lenders as they do not have clear accounting information.

This paper highlighted SMEs' difficulty in accessing finance, and, with a view to easing the financing of SMEs, provides three methods for diversifying channels of finance. These three methods are the development of sustainable credit guarantee schemes by governments, specialized banks for SMEs (SME bank), and community-based financing schemes, i.e. hometown investment trust funds for financing risky SMEs and start-up businesses.

One of the major requirements for making SMEs' credit risk transparent for lending institutions and for credit guarantee corporations is having a nationwide credit risk database. In this paper, a unique example of such a database from Japan is mentioned (CRD). The CRD Association was established in 2001 as an initiative of the Japanese Ministry of Economy, Trade and Industry and the Small and Medium Enterprise Agency with the aim of facilitating fundraising for SMEs and improving their operational efficiency. The CRD covers SMEs exclusively. As of 31 March 2015 it included 2,210,000 incorporated SMEs and 1,099,000 sole-proprietor SMEs, and it is by far the largest SME database in Japan. The CRD provides credit risk analysis and credit scoring services and examines the probability of SMEs defaulting for banks and credit guarantee corporations that are members of the CRD (presently 180 members).

If such systems could be established in other parts of Asia to accumulate and analyze credit risk data, and to measure each SME's credit risk accurately, SMEs would not only be able to raise funds from the banking sector, they could also gain access to the debt market by securitizing their claims. The establishment of a CRD could be a medium-term infrastructure target in Asian economies.

In the short run it is possible to implement various methods for measuring the credit risk and assessing the credit rating of SMEs. These methods could be used by lending institutions, credit guarantee corporations, or independent local rating agencies, using data regarding SMEs. A comprehensive SME credit rating method developed by Yoshino and Taghizadeh-Hesary (2014c, 2015) could be used by financial institutions and credit guarantee corporations in Asian companies who want to lend to, or guarantee finance for, SMEs.

Finally, it is important for Asian economies, especially for lower-income Asian countries, that SMEs represent the main parts of their economies to diversify channels of financing of SMEs. Asian economies also need to accumulate the SME data in a nationwide database for categorizing SMEs based on their creditworthiness. Those who are ranked higher get higher credit guarantees from the government at lower costs, so that they can be successful. They will have a significant role in job creation and in production. In addition, those that are risky should avoid borrowing from banks, because if they use bank loans it will cause nonperforming loans. For promoting startups and riskier SMEs, community-based lending such as hometown investment trust funds, which are explained in this paper, is a suitable solution.

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