# Development of Corporate Credit Information Database and Credit Guarantee System

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# ABSTRACT

This study builds on the preceding **"Development of Database on Corporate Credit Information"** in 2007/2008 and extends and deepens the scope, focus and research methodology from the previous one. Primarily, it seeks to enrich existing perspectives on the capital market development impact of establishing a regional credit infrastructure for the ASEAN. The analysis revolves on the dynamics of three essential financial-economic elements: (1) the credit infrastructure — in this case, credit bureaus and credit guarantee systems — which were erected to impact on the efficient allocation of financial capital and risk; (2) the SME industry whose performance and contribution have been vital to ASEAN economies; and (3) the ABMI framework, which provides the blueprint for taking ASEAN economies to the next level of readiness and dynamism in global financial competitiveness and capital market development.

This paper has four major components. **Chapter 1** deals with the credit information infrastructure in Asia especially as they relate to SMEs' access to financing. The discussion is based on more detailed information on the existing credit bureaus and information registries in some ASEAN countries, in terms of major responsibility, institutional arrangement, regulatory framework, financial resources, management and country-specific economic, historical and social backgrounds. **Chapter 2** centers on credit guarantee systems (CGS) and SME finance in the ASEAN. It assesses the nature of CGS operations, its rationale, role and effects of CGS and surveys the present institutional arrangements between CGS-participating financial institutions and SMEs. Additionally, it features how SME financing is changing the strategy of banks in handling SME portfolios and creating lending products for SMEs. It also discusses how SMEs benefit from regional and local efforts to develop the credit infrastructure to provide more funding channels and eventually enable ASEAN SME firms' participation in the regional bond market. **Chapter 3** discusses the credit information system in Japan, a model in the Asian setting when it comes to credit information infrastructure and lending operations especially as regards SMEs. The spotlight is put on Credit Risk Database (CRD) of Japan, a successful case of credit information database specializing in SMEs and anchored on a framework that was uniquely developed for Asian economies. **Chapter 4** concludes the paper and offers policy recommendations. It touches on regional collaborative efforts to address the primary goal of this research. In the context of the ABMI paradigm, it attempts to suggest designs for collaboration among ASEAN10+3 nations to maximize the engagement and performance of SMEs in a regional setting.

# EXECUTIVE SUMMARY

The objectives of the new comprehensive ABMI Roadmap are for ASEAN+3 countries, both individually and as group, to develop local-currency denominated bond markets (both the demand and supply sides) and improve the regulatory framework as well as the supporting infrastructures surrounding such development. These objectives are directed to East Asian countries, nations whose industry population are SME-dominated and whose markets are marked by significant differences in economic performance and directions for growth. This same group of countries shares the common problem of information asymmetry and limited financing access, which continue to challenge their SME sectors.

This study builds on the preceding **"Development of Database on Corporate Credit Information"** in 2007/2008, which underscored (1) the reality that SMEs throughout East Asia face the difficulty in accessing finance from the market, and (2) the importance of having a credit information database to reduce the information asymmetry problems and ease financing access of SMEs, in particular. It extends and deepens the scope, focus and research methodology from the previous one and primarily seeks to enrich existing perspectives on the capital market development impact of establishing a regional credit infrastructure for the ASEAN economies. The analysis revolves on the dynamics of three essential financial-economic elements: (1) the credit infrastructure — in this case, credit bureaus and credit guarantee systems — which were erected to impact on the efficient allocation of financial capital and risk; (2) the SME industry whose performance and contribution have been vital to ASEAN economies; and (3) the ABMI framework, which provides the blueprint for taking ASEAN economies to the next level of readiness and dynamism in global financial competitiveness and capital market development.

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### The SME Industry and Credit Information Infrastructure in East Asia

Despite the degree of development in financial markets, which occurred after the 1997 AFC, the trickle-down effect to the SME industry of such progress leave a lot to be desired. Information asymmetry still exists and the type of infrastructure that could appropriately address this problem varies widely, in terms of existence and state of development, across the ASEAN region. SMEs play a pivotal role in the industry structure of ASEAN nations (in terms of contribution to output growth, value-creation and employment) and yet, as literature has established, their growing demand for credit is not entirely matched by the existing credit infrastructure and credit products of banks and other lending institutions. It appears that developments in credit infrastructure establishment in the ASEAN are not enough and must be pursued further to create more credit channels for SMEs and help these firms realize their full economic potential.

Meanwhile, the Asian Bond Market Initiative (ABMI) has been very keen on developing the bond markets of different countries in the region in general. However, the level of activity in the regional bond market is a function of the level of activity in the domestic bond markets of individual countries in the region which, in turn, depends on the extent to which local firms are able to access credit from their country's capital markets. Industries that have more financing options are able to respond more actively and participate in sustaining a more conducive business environment. To this end, the ABMI has recommended the following measures: (1) the provision of credit guarantees; (2) improvement of the credit rating system; (3) establishment of a mechanism for disseminating information; (4) improvement of the settlement system; and (5) strengthening of the legal and institutional infrastructure for bond market development. How these recommendations will play out in supporting Asian SME industries, as the foundation of their respective economies, is one of the targets of this research. The findings of the study will also be tied to one of the sub-objectives of the new comprehensive ABMI roadmap (agreed on at the 11th ASEAN+3 Finance Ministers' Meeting in Madrid in May 2008) which is the *fostering of credit culture* via "the development of a credit risk database and the enhancement of credibility and visibility of local credit rating agencies."

Despite its relevance and dynamic growth, the SMEs industry is never immune to problems. SMEs are hardest hit by economic crisis and other unfavorable market conditions such as unfair competition in the marketplace. But the persistent challenge to SMEs is access to financing, not only because the level of financing available in the developing economies in which these SMEs operate are relatively scarce to begin with, but "many financial support measures for SMEs have limited outreach at disparate costs." It also does not help that capital markets in the region are far from adequate for SME debt and equity financing. The financing problem of SMEs is rooted on the information asymmetry problem that face both lenders (mostly banks) and SME-

borrowers and is compounded by existing market imperfections and the nature of the financing transaction itself. As a demand and supply issue, financing may only be successfully consummated if the lender finds acceptable the risk it faces subject to a given promise of return by the borrower. This acceptable level of risk depends on the accuracy and timeliness of information that the borrower is able to present or convey to the lending bank. The development of credit infrastructure such as credit bureaus would serve both the lending banks and the borrower-SMEs by bridging the gap between these two parties.

A credit information system is an indispensable infrastructure for credit market development. The provision of credit information helps lenders understand better the risk profile of their borrower-clients and enable them to expand their credit services. Recent availability of new technologies such as credit scoring has facilitated the ability of banks to service SMEs better. The information-capture platform of a credit bureau makes it possible to measure SME-borrowers in a number of ways. And since what gets measured gets managed, the metrics provided by credit bureau information serve the interests of both banks and SMEs. A World Bank study of 5,000 companies showed that, *without a credit bureau*, 49% of SMEs indicated facing high financing problems and the probability of getting a bank loan was 25 percent. With a credit bureau, the probability of getting a loan increases to 40 percent.

The foundation for better credit granting and risk management is better information, which a credit information system provides. By disseminating captured information about SMEs and its suppliers, it assists SMEs in building track records. Even if these SMEs have no banking relationships, if their credit bureau record indicates a good credit standing among their suppliers, such information may be used to their favor to support financing applications when the need arises. SMEs with good track records may also be able to access credit on more favorable terms, and obtain faster decisions on their financing applications. The negative and (especially) positive data that a credit bureau has benefit SME loan applicants by providing a more balanced view of SME credit ratings, and have a relation to default rates. By knowing how the credit bureau presents information about them, SMEs (which were rejected by banks) gain a better understanding of their financial deficiencies through the credit bureau reports and ratings. These reports would also serve as "a convenient tool for SMES to carry out a self-evaluation to identify areas that need improvement and initiate adequate remedial actions to increase their competitiveness. SMEs are thereby empowered to improve their own profile, with correspondingly enhanced prospects for the SME sector as a whole."

What are the credit information infrastructures that support ASEAN SMEs and how do they impact on the ability of SMEs to manage their challenges in accessing financial services? Indonesia has the Debtor Information System and the Indonesian Business Information and Data (DIBI) specifically for SMEs. Malaysia has the SME Credit Bureau, a key initiative under the transformation plan of the Credit Guarantee Corporation that officially commenced operations on July 2008. The Philippines has BAP and CIBI (credit bureaus and rating agencies) but these cater mostly to the needs of commercial banks. There is no dedicated SME credit information infrastructure but the recent passage of the Credit Information System Act (CISA) could provide

the necessary impetus for the establishment of an SME-dedicated information infrastructure. Singapore has its SME Credit Bureau while Thailand has a National Credit Bureau (Table E-1).

**Table E-1. Credit Information Systems in ASEAN**

|  | Name | Supervising Agency | Specific Purpose |
|---|---|---|---|
| Indonesia | Debtor Information System Indonesian Business Information Data (DIBI) | Bank Indonesia | SMEs |
| Malaysia | SME Credit Bureau | private | SMEs |
| Philippines | CIBI, BAP Credit Bureau | CIBI | |
| Singapore | SME Credit Bureau | private | SMEs |
| Thailand | National Credit Bureau | Private | |

The experience of these ASEAN countries is a testament to the fact that the SME development and the credit information infrastructure are inextricably linked. SMEs are important for economic development of ASEAN, while credit information infrastructure is essential to financial development. SMEs cannot live without credit from banks, while banks cannot survive if they keep their credit reach to accommodate only premium borrowers. The information asymmetry problem that characterizes ASEAN SMEs' financing dilemma is as real now as it was before, and the problem of financial access that plagues most SMEs persists despite developments in these countries' credit information infrastructure.

The information gap that continue to plague ASEAN SMEs also indicate that more information bridges have to be built before these firms can be fully engaged in the formal financial sector. Even with credit infrastructure development, the responsibility to reduce the information asymmetry problem also falls on SME-borrowers and their creditors in the formal sector. The development of solutions to make credit information an enabling tool of finance and economics rests, to a large extent, on the depth of relationship that SMEs have with financial institutions and how both parties leverage on such a relationship. SMEs also need to initiate their own measures to complement those undertaken by the government and the banks by raising their commitment to improved value-creation and by finding new areas of growth while striving to achieve long-term competitiveness.

Lastly, while credit bureau information may be used for scoring SMEs and be a tool for risk management, this tool must be applied correctly and handled by well-trained risk managers who are not only familiar with SME banking but are adept in credit assessment systems for small and medium sized businesses. The availability of SME credit information which answers the 5 "C"s of credit – commitment, capacity, collateral, conditions and character will empower SMEs to have easier and better credit access.

*Credit Guarantee Systems and SME Finance in ASEAN*

Credit guarantee schemes (CGS) have the objective of absorbing part of the loss resulting from default of a bank loan.  It reduces the risk of the lender, serves to improve the supply of credit and facilitates the smooth operation of the loan market. CGS can be compared and contrasted according to: definition, types of CGS (direct or indirect, individual or portfolio model, funded or unfunded, open or targeted, ex-ante or ex-post schemes and ownership), country-differences in establishing the rationale for CGS operations, criticisms and issues (motivation, sustainability, funding, additionality, scheme design, moral hazard, scheme operations and practices, eligibility, enabling environment and success factors).

Indonesia has four corporate CGS institutions  (Sarana Pengenbangan Usaha, ASKRINDO, Penum Sarana Pembangunan Usaha and PT Penjaminan Kredit Pengusaha Indonesia) and one export credit insurer, Asuransi Ekspor Indonesia, Ltd. Currently, there is no law or regulation that regulated loan guarantee issues and guarantee institutions in Indonesia. Malaysia has Credit Guarantee Corporation (CGC), which is largely owned by its central bank and is noted for the diversification of its services, such as the synthetic securitization of SME loan portfolios.  In the Philippines, CGS firms include SB Corporation, which operates on the basis of risk sharing with accredited financial institutions, Quedancor, which concentrate mostly on agri-fishery loan guarantees, and Tidcorp, which was officially designated as the country's export and import credit guarantee agency. For Thailand, SBCG origins and development were featured. There are differences in country-specific objectives as well as the level of success.

**Table E-2.  ASEAN Credit Guarantee Scheme Objectives**

| COUNTRY | CGS OBJECTIVE |
|---|---|
| Indonesia: PT Askrindo | To give an easier access for SMEs to get financial assistance<br>Specifically regarding credit guarantees:<br>- MSMEs Loan Guarantee (Micro and Small Enterprises Loan Guarantee): Guarantees for the cash loan amount < IDR 500 million.<br>- Middle Market Loan Guarantee: Askrindo as the guarantor gives a guarantee for the cash loan over IDR 500 million.<br> - Others: credit Insurance & surety: trade credit Insurance, surety bond, customs bond, re-guarantee for banks' construction guarantees |
| Malaysia: CGC | 1. To assist SMEs, especially those with inadequate collateral or without collateral gain access to financing from the participating financial institutions at a reasonable cost.<br>2. To complement the Government's efforts in promoting and developing identified business sectors |
| Philippines: SBC | 1. To offer a wide range of financial services, specifically for small and medium enterprises engaged in manufacturing, processing, agribusiness (except crop level production) and services (except trading). |

| COUNTRY | CGS OBJECTIVE |
|---|---|
| | 2. These financial services include among others guarantee, direct and indirect lending, financial leasing, secondary mortgage, venture capital operations and the issuance of debt instruments for compliance with the mandatory allocation provision. |
| Thailand: SBCG | To provide credit guarantee for viable small enterprises which do not have enough collateral to enable them to obtain sufficient credit from the financial institutions in order to : <br> 1. Increase credit extension from financial institutions to small enterprises. <br> 2. Strengthen the confidence of financial institutions in providing credit to small enterprises. <br> 3. Accelerate the dispersal of credit extension to small enterprises throughout the country. <br> 4. Promote industrial development to achieve the target of the National Economic and Social Development Plan. |
| Source: Compiled by the author. | |

Added attention has been given to CGS for the SME sector since the 1990s, in keeping with the increase in attention given to SMEs everywhere. CGS is a preferred means of government intervention on behalf of promoting SMEs, and there are more than 2,250 CGS in operation all over the world.

Because of these evolving changes in the regional environment and the recognized potency of the SME sector as a significant driver of growth, governments of ASEAN economies have cemented their recognition and support for the SME sector with the acceptance of the ASEAN Blueprint for SME Development (APBSD). Necessarily, the overriding intent is, through the APBSD framework, to arrive at solutions that would address the wide range of structural fiscal and non-fiscal issues that continue to challenge the SME sector.

The APBSD supports one of the key issues of this research - the establishment of credit information systems specifically to address the information asymmetry gaps that hound the financing access ability of SMEs. In its policy action framework, the APBSD specified its focus programs and activities to improve SMEs' access to financing. The 1st focus area involves engagement in capacity building in order to improve SME access to financing via the institutionalization of capacity building measures in the areas of accounting and financial information reporting and maintenance. The 2nd focus area is financial institutional capacity building specifically on the development on a credit information system. The 3rd area of focus is on the widening and deepening of SME access to credit through the regionalization and sub-regionalization of financial schemes and alternative financial sources.

Lessons offered by the best practice experiences of Japan and Korea indicate that having a central SME overseer is a crucial factor in the success of SME financing programs. This ensures coordinated actions of all stakeholders in the SME development agenda and helps minimize the

occurrence of conflicts in interest and direction, which is what usually happens when two or more offices of authority handles SME development.  ASEAN countries, such as the Philippines with its Small and Medium Size Development Council and Thailand with its SME Development Bank, are moving in this direction.

SME funding mechanisms are unique to each ASEAN country although the concept of establishing an SME fund for the whole ASEAN region is no longer an alien idea.  For example, one of the outcomes of the APBSP, which the ASEAN hopes to achieve by 2015 under the ASEAN Economic Community (AEC) is the establishment of the SME development fund – a financial resource pool for SMEs doing business in the ASEAN region with the intention of promoting entrepreneurship on a regional level.

Other ideas for SME funding include equity listing, bond issuance, securitization and setting up a regional credit guarantee mechanism to support SME funding avenues as well as contribute to the development of regional capital markets. Promoting securitization has been getting attention not only because it is an avenue for SMEs to get their foot in the door of capital markets but it is also connected to the current thrusts of the ABMI and the APEC to "*create an environment conducive to developing bond markets*."  This covers the provision of credit guarantees, improvement of credit rating systems, establishment of a mechanism for disseminating information, improvement of the settlement system and strengthening of the legal and institutional infrastructure for bond market development. Under the ABMI, the Working Group on Credit Guarantee and Investment Mechanisms (chaired by China and Korea) are focusing on ways to promote the use of CGS in Asia.  The ADB also decided to contribute to the creation of a regional credit guarantee mechanism to support the development of domestic and regional bond market in ASEAN+3 countries.  On the other hand, the APEC initiative to develop securitization and CGS involves high-level dialogues for APEC economies to exchange views on the use of securitization and CGS as well as identifying impediments and developing detailed action plans.

*What attributes should a regional credit guarantee institution for ASEAN countries possess?*  A regional credit guarantee institution must be established to meet the following objectives: (1) development of regional capital markets for stable access to long-term funds to facilitate private sector and infrastructure development; (2) promotion of transparent and cash flow-based lending by facilitating securitization and bond issuance; (3) catalyzing investment by assuring investors through guarantees for new products and issuers; (4) providing cost savings to issuers in the region by sharing the reduction in spreads resulting from credit enhancement; (5) improving the liquidity of bonds through diversification of investment products; and  (6) creating an environment in the capital markets conducive to accelerated development of economies and establishment of bond markets.

There are also major institutional limitations that could make it difficult to establish a regional scheme. Particularly, these are (1) differences in the legal framework for securitization,  (2)

differences in accounting standards and tax treatment for special purpose companies, and (3) insufficient time series data on loan performance.

An Asian bond market may also include the facilitation of indirect finance for companies, which otherwise could not easily tap capital markets, as a long range objective. In such a case, credit supplementation, whether through guarantees or insurance, or counter-guarantees of sovereign origin, would be needed. Moreover, improvement and perhaps a degree of harmonization of the legal basis for debt recovery, that would involve property laws and other matters, would become desirable. These formidable obstacles to progress clearly indicate the need for a long timeframe for planning and preparation. The same conditions would apply to the securitization of SME debt.

### *Lessons and Insights from Japan's Credit Information Infrastructure and SME Financing Models*

In Japan, the establishment of credit reporting agencies such as the Tokyo Shoko Research and Teikoku Databank was instrumental in reducing the credit information gap that exists between borrowers and lenders. However, these credit information agencies collect only the information of SMEs above a certain threshold and not those of small and micro enterprises. In the meantime, only mega banks were conducting the adoption of Basel II framework in risk monitoring. Subsequent guidance from authorities to conduct strict internal ratings based approach for SME credit evaluation and risk management, long with the increasing number of smaller institutions, which have adopted scoring models crested the demand for large-volume credit information database. At the same time, computer technology enabled the development of credit scoring lending and collateralized debt obligation (CDO) schemes for SME financing especially of small and medium enterprises. These led to the development of large volume credit information database such as CRD.

The Japanese experience with credit information infrastructure, particularly for SMEs, indicates that for this kind of infrastructure to support the internal rating based approach of banks, it will need to provide additional services to evaluate the credit risk of pooled data while paying attention to the issue of data protection, specifically anonymity. CDOs with the guarantee of the public sector are the potent instrument to facilitate SME financing by means of bundling these small SME loans, however given the current global financial crisis, securitization is not such an attractive option.

For ASEAN economies in the process of building credit information infrastructure, it pays to remember that based on the experience of Japan, the promotion of a large volume credit information database and a shared regional database will facilitate cross-border SME financing.

### Conclusion and Policy Recommendations

Bridging the role and impact of SME financial access and actual SME output growth through the

establishment of a credit information infrastructure is not exactly alien to the key objectives of the new ABMI. Directing the aspect of SME development that centers on financing access to eventually integrate these firms into capital market activities may be treated as a parallel means of supporting the thrusts of the ABMI. In particular, two of ABMI's key areas — improvements in the regulatory framework and accompanying developments in infrastructure development for bond markets, in which credit information infrastructure is a part — will impact on SMEs as well. The establishment of a credit information infrastructure (e.g., credit bureaus and credit ratings agencies) and credit guarantee systems with special focus on SMEs would enable this sector to reach into a wider range of resources to fund their business needs.

Promoting SMEs is on every Asian country's must-do list, just as the development of their respective local bond market (and further on towards a regional level) is on the agenda of every ASEAN country. *How could the SME industry help drive the development of the bond market, given the existing differences and gaps in their current stage of development?* As diverse as these small and medium firms are, the respective bond markets in ASEAN countries vary just as well in depth and volume of activities. Necessary to the ability of SMEs to take part in the development of a regional bond market as espoused by the ABMI framework is their success and sustained growth. It means these firms have to be successful to such an extent that enables them to have operations large enough in scale to demand, encourage and justify financing through bond issuances and not just through the local arteries of commercial bank lending.

*The success of SMEs necessarily confirms the success of the development platform on which these firms were nursed. But such hinges on a number of factors.*

**First**, SMEs must be competitive and to breathe life to such spirit of competitiveness, governments must help establish a level playing field that helps SMEs compete on a more equal basis.

**Second**, the effective use of public resources (and in Asia such resources are scarce) in financing SME-focused programs must be ensured. In most cases, the general rationale for SME development is always partly latched to the goals of poverty alleviation and the upliftment of living standards. On the other hand, specific programs to drive such rationale are almost always directed towards industrial efficiency and greater levels of competitiveness among SMEs. These objectives must always be kept from overlapping and the measures used to attain them must be implemented separately and treated distinctly. Public expenditure should be confined to those strategies that are directed towards the under-served and marginalized sections of the market and for which the necessity of providing public goods or promoting enterprise equity considerations are overriding.

**Third**, greater access to institutions, structures and instruments appropriate to SME needs must be provided. More attention and work must be poured towards the development of private markets for services suitable for SMEs to narrow access issues on both the demand and supply side, particularly on the matter of information. Rising on the spirit of the ABMI, bonds may be

issued to finance SME-related infrastructure such as transport, warehousing and logistics facilities as well as information technology. These practical measures would help SMEs step up to the plate, despite their lack of ability to realize economies of scale or other internally generated expertise, which remain confined to larger businesses.

**Lastly**, there is also the need to create a separate office for export-oriented high-tech SMEs in the manufacturing industry and those in the traditional lines of SME businesses, *under the umbrella of a single SME center*. A single SME center that houses separate offices for traditional and nontraditional SME firms is ideal. Aside from operational advantages, this set-up facilitates easier introduction of the concept of bond financing as an alternative to commercial bank financing. Nontraditional high-tech SMEs may take to this option of bonds with greater interest than traditional SMEs, and having a single SME center could help package the bond financing needs to these firms more effectively. Equally important is the need to upgrade the skills and knowledge levels of people handling SME programs.

Information and money are two important ingredients for ASEAN SME industries to really take off and make significantly sustainable contributions to the region over the long term. Accurate and timely information about market opportunities, financial assistance and access to technology is crucial for SMEs to compete and grow in an increasingly global market environment. Opportunity for financial access is an especially important catalyst for SMEs to have the resources they need to gain a foothold in the market.

*In the context of establishing a template for a regional information sharing mechanism, efforts must first be concentrated on the getting off the ground the establishment (and development) of reliable and robust credit information systems in all ASEAN10+3 economies.* Once operating, their best practice features can be added to the typical requisites of a credit information infrastructure and, once fine-tuned to incorporate the unique characteristics of ASEAN markets, can provide the basic framework for a regional credit information sharing mechanism that puts into place the following elements:
(1) The legal and regulatory frameworks for credit reporting;
(2) The technology platform that would support such regional information sharing mechanism;
(3) The providers and users of data;
(4) The kind and quality of data to be collected and distributed;
(5) The support for an advocacy program for credit reporting discipline, outreach and education;
(6) Institutional arrangements that would govern the collection and use of credit information across borders; and
(7) Policy guidelines for the use of regional credit information to benchmark how financial institutions rate in terms of credit reach to formal industries, with special interest to SMEs.

The legal and regulatory elements are anticipated as most critical and challenging among all the elements mentioned because of the existing differences in the judicial system and market regulatory set-up of ASEAN countries. Laws and regulations surrounding creditor rights and enforcement, corporate insolvency, credit risk management, debt recovery and enterprise

workout practices and privacy laws have to be leveled off to foster an environment that could give birth to an information-sharing set-up benefiting all economies in the ASEAN landscape.

To support the large volume of information, which SME-dedicated credit information infrastructures need to have in order to be financially viable, SMEs must be encouraged to disclose their truth data. Regulations must provide sufficient protection to institutions that collect SME information so they will not be compromised to disclose information to tax authorities and related agencies.

*In the context of establishing a regional credit guarantee mechanism, there exists an ADB ABMI regional credit guarantee and investment mechanism proposal that seeks to align both ABMI and ADB policies to provide:*

(1) Guarantees for bond issuances;
(2) Guarantees for swap transactions;
(3) Loans and loan guarantees;
(4) Equity investments in financial infrastructure that lead to the development of bond markets; and
(5) Technical assistance funding to provide funds for countries to assist in practical and targeted forms of capacity building to enable the issuance of bonds and to reduce risks.

Credit guarantees schemes (CGS) have played an important role in Asian economies. The CGS experience of ASEAN countries demonstrates the importance of guarantors having sufficient capitalization and prudent risk management practices since guarantees are vulnerable to concentration risk. The proposal for the ADB for a new regional credit guarantee entity aims at avoiding the problems that led to the failure of Asia Ltd, the first regional credit guarantee company in Asia. The new regional credit guarantee entity will have a bigger capitalization than Asia Ltd to obtain AAA rating. It may also be either housed within the ADB or set up as an independent multilateral organization with clear procedures for recapitalization.

*In the context of SME participation in bond markets, the securitization of SME bonds plus a credit guarantee on those bond issues could render it more attractive to investors.*

Current efforts to establish credit information systems in ASEAN countries where such infrastructures were previously absent is a move in the right direction. This will improve the quantity and quality of market information and help present better portfolio investment profiles. It will also improve the efficiency of domestic credit rating agencies and render possible the establishment of regionally specialized credit ratings firms that rate Asian corporate bonds.

Hopefully, the development of credit information infrastructure would generate a critical mass of SME information and spur the creation of SME-focused credit rating agencies and related market entities, which are essential in helping SMEs that opt for bond financing. To date, basic market infrastructure and market-supporting institutions to encourage SME participation in capital

markets are still in the process of being built. These include a strong legal framework to protect investors in the face of a credit event, credible credit rating agencies to provide informed assessments of issuers, good financial reporting and accounting practices to ensure accurate and timely information, transparent price information, a pool of liquidity and viable hedging instruments, and individual and group performance benchmarks for SME firms. *The rates of progress of SME development agendas in ASEAN countries remain heterogeneous and domestic bond markets continue to be works in progress.* Some capital markets are relatively more advanced than others, but regional initiatives and ongoing drive to promote regional bond market help steer ASEAN countries to move in the same direction.

On the SME front, the following need to be part of SME discipline to prepare them for their entrance in capital market activities --- continuous disclosure of information on company's financial and operational profiles, aligning company procedures and outcomes with best business practices; establishing track record and related footprint in business transactions; tapping the support of broking community; obtaining knowledge as to the requirements and costs of listing, underwriting and funding; possessing and upholding sound principles and business ethics surrounding company management, governance, integrity, accountability, transparency, credibility to reliable information, and discretion for directors and management. Through these disciplines, ASEAN SME culture could learn to be more comfortable and trusting of capital market activities and encourage SMEs to be more transparent about their activities.

Different types of SME debt instruments must be developed to cater to different types of issuers. SME loans can be bundled, securitized and together with a regional credit guarantee mechanism be made more attractive to investors. Infrastructure projects that promote technology injection, transport and logistics efficiency and operational competitiveness among SMEs can also be securitized in bonds. If various Asian countries collect SME data, cross-border comparison becomes possible for SME credibility. SME loans can then be securitized based on cross-border data. Through pooled information sharing, credit risk models for SMEs can be improved, and the risks of SME bonds can be properly assessed and diversified to make it more attractive to investors. A regional credit information sharing system will contribute to the enhancement of the Asian bond market by allowing SMEs to issue SME bonds and enhancing capital flows among Asian countries.

Over the long run, given that the population of SME firms is concentrated on small rather than medium-sized firms, the ultimate metric of success of SME financing access and development programs is one that would indicate how many of these firms have eventually graduated from being originally small firms to becoming medium-sized corporate enterprises. Research on methodologies to develop such metrics, apart from developing SME scorecard with cross-country comparability features, is recommended.

# LIST OF TABLES AND FIGURES

**IN CHAPTER 3:**

# CHAPTER 1. THE SME INDUSTRY AND CREDIT INFORMATION INFRASTRUCTURE IN EAST ASIA

Home to at least half a trillion people, ASEAN10 countries have a combined GDP of US$1.281 trillion, a total trade of US$654 billion and a 6.5% average GDP growth rate.[1] Near-future economic prospects are relatively good for a region that was badly battered by the Asian Financial Crisis (AFC) just a decade ago (see **Table 1-1**).

Excessive dependency on bank-intermediated financing was identified as one of the main culprits behind the unraveling of 1997 AFC. This is not to say that bank-sourced financing is bad. In fact, bank financing has certain advantages – it can be customized to the borrower's needs, it is practically more suited to small borrowers and its terms can be more easily renegotiated when contingencies arise.[2] However, the over-reliance on bank financing led to the concentration of credit risks within the banking sector that eventually exploded like a financial bomb and left the region with severe economic casualties. Literature has documented the catastrophic fall-out that resulted from this event. It has also established the lack of intermediation channels (particularly bond markets) to limit the disruption of the banking sector in the event of a crisis, as a parallel factor of the AFC.

In 2006, the capitalization of Asian local bond markets was at US$2.7 trillion, at least 4.5 times higher than before the crisis; private sector financing raised through the bond market has increased to around 25 percent.[3] Now, despite the turmoil, local currency bond markets have continued to expand – between end-2007 and June 2008, it expanded by 8.1% to US$3.7 trillion. Government issuance has continued to dominate, increasing by 9.1% to US$2.7 trillion in the first half of 2008. Corporate bond issuance slowed down and grew just 5.7% for the same period.[4]

The figures in **Table 1-2** indicate the domestic financing profile of the ASEAN5 economies as of March 2008. Note the continued prevalence of bank and equity financing over bond financing. An Asian corporate is allegedly 3 times as likely to go to a bank than to the capital market to source funding.[5] Hence, the ADB continue to encourage policymakers to pursue reforms to deepen their local bond markets "by promoting transparency, strengthening regulatory frameworks and fostering regional cooperation to improve liquidity and broaden the investor base."[6]

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[1] ASEAN Secretariat at www.aseansec.org.

[2] The keynote address of Mr. Heng Swee Keat, Managing Director of the MAS, at the Asian Bond Markets Summit in November 14, 2007.

[3] Ibid.

[4] http://www.adb.org/media/printer.asp?articleIS=12708.

[5] Taken from the keynote address of Mr. Heng Swee Keat, Managing Director of the MAS, at the Asian Bond Markets Summit in November 14, 2007.

[6] http://www.adb.org/media/printer.asp?articleIS=12708.

On the other hand, despite the degree of development in financial markets, which occurred after the 1997 AFC, the trickle-down effect to the SME industry of such progress leave a lot to be desired. Information asymmetry still exists and the type of infrastructure that could appropriately address this problem varies widely, in terms of existence and state of development, across the ASEAN region. SMEs play a pivotal role in the industry structure of ASEAN nations and yet, as literature has established, their growing demand for credit is not entirely matched by the existing credit infrastructure and credit products of banks and other lending institutions. For example, in the Philippines where at least 99% of total establishments are classified as micro, small and medium enterprises (SMEs), the problem of limited access to financing has not waned.[7] It appears that developments in credit infrastructure establishment in the ASEAN are not enough and must be pursued further to create more credit channels for SMEs and help these firms realize their full economic potential.

Meanwhile, the Asian Bond Market Initiative (ABMI) has been very keen on developing the bond markets of different countries in the region in general. The level of activity in the regional bond market is a function of the level of activity in the domestic bond markets of individual countries in the region which, in turn, depends on the extent to which local firms are able to access credit from their country's capital markets. Industries that have more financing options are able to respond more actively and participate in sustaining a more conducive business environment. To this end, the ABMI has recommended the following measures: (1) the provision of credit guarantees; (2) improvement of the credit rating system; (3) establishment of a mechanism for disseminating information; (4) improvement of the settlement system; and (5) strengthening of the legal and institutional infrastructure for bond market development. How these recommendations will play out in supporting the Asian SME industries, as the foundation of their respective economies, is one of the targets of this research. The findings of the study will also be tied to one of the sub-objectives of the new comprehensive ABMI roadmap (agreed on at the 11th ASEAN+3 Finance Ministers' Meeting in Madrid in May 2008) which is the *fostering of credit culture* via "the development of a credit risk database and the enhancement of credibility and visibility of local credit rating agencies."[8]

## 1.1  SMEs in the ASEAN

The overwhelming majority of businesses categorized as small and medium scale enterprises (SMEs) characterize the economic landscape of nearly all Asian countries, even the most developed of them all – Japan.[9] The SME industry is a major contributor to economic growth and accounts for significant levels of value-creation and employment due to the tendency of the

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[7] According to Policy Advisory No. 2008-06 of the Congressional Planning and Budget Department of the Philippine House of Representatives, the unmet demand for loans remains as high as PhP67-180 million.

[8] ASEAN+3 New ABMI Roadmap, sourced from
http://asianbondsonline.adb.org/documents/080731_ABMI_Roadmap_Publication_Final.pdf.

[9] Tsukahara (2008) reports that SMEs account for over 99% of businesses in Japan, over 71% of the work force and exceeds large-sized enterprises in annual value added.

sector to employ more labor-intensive technologies and provide job access to women and younger members of the labor force. The sector nurtures entrepreneurial abilities and encourages innovative behavior by allowing entrepreneurs to access and utilize whatever resources are at hand to reap market opportunities. It also helps establish an industrial system that is "resilient, flexible and interlinked, with significant positive externalities to the surrounding economy." This is critical not only in laying the foundation of the country's industrial base but is essential as well in attracting foreign investors.[10] In knowledge-based economies, SMEs are essential for the dynamism that precipitates into the formation of new industries.[11]

Across Asia, SMEs are defined differently across countries, either in terms of employment or asset size. **Table 1-3** indicates these differences. For example, in Thailand, the description of SMEs according to regulations of the Ministry of Industry (issued on Sept. 2002) states that the size of SMEs using the number of employment or the value of fixed assets that does not include land and consider the one that is lower. Hence there are different definitions of SMEs in the manufacturing, wholesale and retail, and services sectors.[12] In Japan and the US, the maximum thresholds for SMEs are 300 and 500, respectively.[13]. On the other hand, the World Bank defines an SME as an entity with less than 250 employees.[14]

The industry's performance is relatively significant and its potential holds promise. The numbers don't lie. In Hong Kong, small and medium firms account for over 98% of businesses and provide jobs to nearly 1.3 million people.[15] In India, they account for 50% of the country's exports. In Vietnam, SMEs employ 4.5 million workers while in China, 75% of jobs are SME-provided.[16] In the Philippines, SMEs represent at least 99% of all registered businesses in the country, employs nearly 70% of the labour force and account for 32% of GDP. In Malaysia, 99.2% of business establishments are SMEs, which employ around 5.6 million people and contributes 35% of GDP.[17] In Thailand, the number of SMEs has increased from by 95% from 1997 to 1,639,427 establishments in 2002.[18] Economic growth stemming from the agricultural and services sectors is especially helpful to SMEs since these firms are mostly operating in these sectors.

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[10]  VitecomBank (2006), Improving SME Access for Formal Finance.

[11] Ibid.

[12] OSMEP's White Paper [2002].

[13] VietcomBank [2006] report.

[14] See "The Credit Risk Data Management in the ASEAN Region."

[15] http://www.info.gov.hk/hkma/eng/viewpt/20041028e.htm

[16] http://www.iges.or.jp/APEIS/RISPO/spo/pdf/overall/3.5.2_sme.pdf

[17] The keynote address of Me. Mlhd Razif bin Abd Kadir at the SME Credit Bureau Seminar in Kuala Lumpur, Malaysia, on 27 May 2008.

[18] The Office of Small and Medium Enterprises Promotion's "White Paper on Small and Medium Enterprises 2002".

### 1.1.1   Indonesia

2006 figures put the number of micro, small and medium enterprises (MSMEs) at 48,936,840 firms, up from the 42.39 million total for 2003.[19] From these, nearly 49 million firms, 99.76% are classified as micro and small enterprises, while less than 1% (106,711 firms) are medium-sized. Overall, SMEs account for 53% of GDP[20] and provide employment to 85.4 million people or 96.1% of the country's total workforce.[21]

Support for Indonesian SMEs has evolved in the past 30 years.  From 1970s up to 1999, government policy for SMEs centered on technical assistance programs, small enterprise credit, reservation scheme to protect the market for SMEs and the administration of small scale industry and its linkages.  In the early years of 2000, SME promotion offices were put up, MTAP was put in place and a nationwide subsidized credit program (KUK) was established. After 2004, government's SME policy began to focus on the implementation of CGI plans and the opening of promotion measures for SME development from a central slant to a provincial (regional) perspective. The medium term action plan for SMEs (MTAP-SME) is anchored on the achievement of the following objectives: (1) improve the business environment to make it more conducive; (2) improve the access to productive resources such as funding access; (3) business development through the promotion of professional services, incentive schemes and bank networks for SMEs; and  (4) development of entrepreneurship and competitiveness through technology and capability building.

### 1.1.2   Malaysia

Support for SMEs is established by the National SME Development Council (NSDC) that was created in 2004 to set strategic direction for government policies on SME development and to ensure coordination and effectiveness of government programmes.  The NSDC developed the National SME Development Blueprint, an annual action plan for SMEs to ensure a more focused, holistic and effective SME development programs with greater collaboration between the ministries and government agencies involved.  Since its establishment in 2004, the strategy has focused on developing high-performing and resilient SMEs by capacity building and providing an enabling environment.  These are captured by strategies at strengthening enabling infrastructure, capacity and capability building and enhancing access to finance.

The National SME Development Blueprint 2006 identified 248 programmes, which involved a financial commitment of RM3.9 billion.  The National SME Development Blueprint 2007 introduced two new components: (1) Macro Performance Targets for 2006-2010 to provide

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[19] See APC 2004/SMEWG/003 document.

[20] Sedyadi, E. [2008], The Role of Bank Indonesia in Development of micro, Small and Medium Enterprises and Customer Due Diligence.

[21] http://www.unescap.org/tid/projects.protrade_s3aiman.pdf.

direction for SME development and monitor SME performance; and (2) an assessment of the progress of the key programs implemented in 2006. The Blueprint 2007 also targets to achieve higher SME contribution to GDP and employment by 2010.[22] Specifically, it aims for SME contribution to GDP to increase from 32% in 2005 to 37% in 2010 with the bulk of growth to come from the services sector, making up 23% of GDP contribution by 2010. Additionally, contribution to employment by SMEs is forecasted to increase from 56% in 2005 to 57% in 2010. Output-wise, share of exports by SMEs is to increase from 19% to 22% in 2010, with SMEs in the manufacturing sector contributing to 12% of the country's total exports.

### 1.1.3   Philippines[23]

Republic Act 8289 or the Magna Carta for SMEs embodies the promotion, development and rationalization of government assistance for SME development.  It has consolidated all government programs for SME promotion into a unified institutional framework.  It paved the way for the creation of Small Business Guarantee and Finance Corporation for SME financing needs and it is also this legislation that mandated all lending institutions to devote 8% of their total loan portfolio for SME financing (6% for small firms, 2% for medium firms).  Programs are carried out through the 14 offices and 20 line bureaus of the Department of Trade and Industry (DTI).  The Bureau for Small and Medium Enterprise Development (BSMED) is a "one stop shop" to guide SMEs to specialized support agencies and review SME policies and strategies for development.  The Center for International Trade Expositions and Missions (CITEM) is in charge of helping export-oriented SMEs.  The Product Development and Design Center looks after SME product quality and competitiveness.  The Philippine Trade Training Center specializes in SME export/import management, entrepreneurial development and trade exhibition management.  The Bureau of Export Trade Promotion taps SMEs that are suppliers of quality goods for export. On the technology side, the Department of Science and Technology (DOST) renders support through the Small Enterprises Technology Upgrading Program.

SME promotion is embodied in a number of major policies and programs.  For example, the 2004-2010 Medium Term Development Plan has defined the allocation of credit, technology and marketing support for the country's 3 million SMEs.  The 2002-2004 Philippine Export Development Plan promotes industry clustering for SMEs engaged in electronics, auto parts & components, wearables, coconut products, marine and aquatic products, food products, home furnishings, holiday décor and giftwares. The current SME Development Plan specifically targets credit provision and product development through the One Town-One Product (OTOP) Program.

Philippine SMEs are no stranger to the common breed of problems that hound similar industries in Asia.  Lack of financing access, lack of access to technology and skills and high cost of inputs

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[22] This section was culled from Malaysia's "Overview of the National SME Development Council", 2006.

[23] This section's information on Philippine SMEs were sourced mostly from Rafaelita Aldaba's  November 2008 presentation on SMEs in the Philippines to the 46th Annual Assembly of the Philippine Economic Society.

and supply chain problems are major issues that continue to challenge SME firms and the government and private sectors that support them. Despite positive performance in the past decade, SME activity has not been vigorous enough to boost SME engagement in the manufacturing sector. Backward linkages remain limited largely due to minimal subcontracting activities. Participation in global production networks is confined to labor-intensive assembly and testing phases, while exports are still import-dependent resulting to low value added. On the supply chain aspects, the unavailability/high cost of raw materials, unreliability of local suppliers and/or their failure to meet minimum quality standards exacerbates the challenge of raising value added and improving SME competitiveness. Future SME programs must center on designing a complete package that integrates technical assistance, training, availability of funding and access to such funding. An SME database must also be established to better map and address SME linkage problems in order to improve overall competitiveness and value added.

### 1.1.4  Singapore[24]

SMEs represent 99% of all establishments in this tiny cosmopolitan entrepot and employ more than half of the country's workforce. The sector's contribution is vital at approximately 40% of total GDP. Since 2003, the number of establishments has increased by 16%, from 127,000 firms to 148,000 in 2007. These firms are challenged by relatively higher operating costs (relative to China, Vietnam and India), the rising level of competition brought about by globalisation and the inherent limitation of the domestic market (Singapore is a small economy with 4 million population), both in terms of market size and the availability of skilled talent and professional human resources. Given these parameters, SME strategies have focused on the development of new products and services, the improvement of cost efficiency and productivity and the search of overseas markets. Singapore's SME development strategy is a representation of major collaborative efforts involving not only government agencies but also trade associations, chambers of comers and educational institutions. All of them are involved in enabling the SME sector, especially in the area of financial access.

The government arms involved in SME promotion include (1) the Economic Development Board (EBD Singapore), the lead agency responsible for planning and executing strategies to sustain Singapore's position as a compelling global hub for business and investment; (2) Spring Singapore, mandated to champion enterprise formation and growth; it works with the SME sector to nurture a pro-business environment and also helps build capabilities of enterprises and raise their access to markets and business opportunities; and (3) IE Singapore, which concentrates on helping Singapore-based companies to venture abroad and also helps position Singapore as a base for foreign businesses to expand into the region via partnership with Singapore-based companies.

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[24] Information on this section was obtained from a DBS material entitled "Financing SMEs – the Singapore experience" which was presented to the APEC High Level Meeting on Driving SMEs' Growth to Promote Local Development Seminar held in March 31 – April 1, 2008.

In the private sector, various business associations (ACE, ASME, Singapore Business Federation and SNEF), chambers of commerce (Singapore Chamber of Commerce and Industry, Singapore International Chamber of Commerce and Industry, Singapore Indian Chamber of Commerce and Industry and Singapore Malay Chamber of Commerce and Industry) and trade & industry associations (Singapore Food Manufacturers' Association, Singapore Metal & Machinery Association, and Textile and Fashion Federation) help provide opportunities for networking, skills upgrading, cross-industry partnerships, overseas ventures, joint business missions and assist members in gaining access to financing alternatives. SME-focused business enterprise centers are also in place.  Enterprise development centres (i.e. EDC@ASME, EDC@SMa, EDC@SCCCI, EDC@SMCCI) assist SMEs to develop their competencies and adopt best practices throughout their operations in order to be competitive both on the domestic and global fronts.  They also serve as one-stop centre for aspiring entrepreneurs and SME owners to gain access to a wide range of business consultancy products and services.   Regional development centers, on the other hand, provide access to comprehensive consultancy services and link-up to other SME-specific products and services.  They assist foreign business units that are looking to establish business in Singapore.  The SME Credit Bureau provides a central online database of credit-related information on participating SMEs in Singapore and is an invaluable tool to banks and participating SMEs in evaluating SME creditworthiness. Institutions of learning are also engaged in fostering entrepreneurship and supporting the foundation of SME development.

## 1.1.5   Thailand

In Thailand, there were 2,274,525 SMEs as of May 2008.[25]  These firms account for 76.7% of total employment, 39.4% of GDP (in 2006) and 29.1% of exports (in 2006).[26]  Prior to 2004, government policies supporting SMEs have included the enhancement of the SME Promotion Act (2002), the establishment of the Board of SMEs promotion and the Market for Alternative Investment, SME Venture Capital Fund, recapitalization of the Small Industry Credit Guarantee Corporation, establishment of the Office of Small and Medium Enterprises Promotion, the SME Bank, the Assets Capitalization Bureau To support SME development, and the setting and implementation of national plans for SME Promotion (2002-2006).[27]

The 1st SME Promotion Plan was targeted to (1) rehabilitate SMEs to become key economic and social mechanisms; (2) build and improve infrastructure and eradicate business obstacles; (3) reinforce SMEs to attain sustainable growth; (4) reinforce SMEs' export potential at international standard; (5) build and develop new entrepreneurs; and (6) enhance the potentials of community enterprises to regional areas.[28]  Results indicate it has achieved its targets in the areas of employment increase, labor productivity and export values.  The annual (number of) employee increase in 2006 was 410,244 (relative to a target of 180,000).  Labor productivity increase was

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[25] http://www.vdf.org.vn/Doc/2008/87WSPTHoang21May08Slides.pdf

[26] http://www.mimdes.gob.pe/apec/expo/12mayo/wln_petmanee_daowieng.pdf

[27] http://www.vdf.org.vn/Doc/2008/87WSPTHoang21May08Slides.pdf

[28] http://www.vdf.org.vn/Doc/2008/87WSPTHoang21May08Slides.pdf

4.4% in 2006, relative to a 2.5% target. Exports, which were expected to grow by at least 6% annually, actually increased by 9.3% in 2006. However, it fell short of its GDP contribution and 50,000 new entrepreneurs annual targets. The ratio of SME output to GDP was less than 40% in 2006 and there were only 49,534 new entrepreneurs in 2005 and 46,819 in 2006.[29]

The 2nd SME Promotion Plan is directed to achieve the following: (1) create new entrepreneurs and develop the capability of existing entrepreneurs; (2) upgrade productivity and innovative capability in manufacturing sector; (3) enhance efficiency and reduce disadvantage of trading sectors; (4) promote value creation and value added in service sector; (5) promote SMEs in regional and local areas; and (6) develop enabling factors and favorable business environment.[30]

After 2004, government policies on SMEs have focused on medium- to long-term plans in order to promote sustainable development. The government has begun easing its role as lead developer and has started to assume the role of a supporter. It has also reinforced the coordination between business and cluster systems especially for strategic SME sectors.[31]

## 1.2 Credit Information Infrastructure and SMEs

Despite its relevance and dynamic growth, the SMEs industry is never immune to problems. SMEs are hardest hit by economic crisis and other unfavorable market conditions such as unfair competition in the marketplace. Overlapping rules and complex administrative procedures exact economic and time costs to SMEs. Those who do not possess adequate resources to train their personnel are constantly beset by human resources problems. Limited or lack of access to technology limits their ability to innovate. But the persistent challenge to SMEs is access to financing, not only because the level of financing available in the developing economies in which these SMEs operate are relatively scarce to begin with, but "many financial support measures for SMEs have limited outreach at disparate costs." It also does not help that capital markets in the region are far from adequate for SME debt and equity financing.[32] The ADB (2002) acknowledged that a major barrier to the development of the SME sector is a shortage of debt and equity financing, as well as laws that inhibit, rather than encourage the development of new enterprise.[33]

The SME financing problem is rooted on the information asymmetry problem that face both lenders (mostly banks) and SME-borrowers, and is compounded by existing market imperfections and the nature of the financing transaction itself. As a demand and supply issue, financing may only be successfully consummated if the lender finds acceptable the risk it faces

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[29] Ibid.

[30] http://www.vdf.org.vn/Doc/2008/87WSPTHoang21May08Slides.pdf

[31] Ibid.

[32] Taken from the Final Report of Asasen, Asasen and Chuangcham (2003). The study called Credit Risk Data management in the ASEAN Region observes the same thing about the absence of an active bond market in ASEAN5 countries.

[33] ADB Final Report TA 3534-PRC (2002).

subject to a given promise of return by the borrower. This acceptable level of risk depends on the accuracy and timeliness of information that the borrower is able to present or convey to the lending bank.

From the bank's point of view, SMEs have the image of being a high-risk sector owing mostly to the general opacity of the SME sector and to the high transaction costs involved in obtaining information about them. Most SMEs have no business plans which most banks require and have poor financial reporting and information disclosure capabilities. In short, a serious and chronic lack of data and information about SMEs renders the financing gap to be a permanent problem of the SME industry.

It is also a problem for banks since by limiting their exposure to SME financing, they are effectively closing a rich door of opportunity to develop new financial products and tailor financial services for a vital economic sector. A 2005 study on Asian SMEs found that most banks are "generally keen" to lend to SMEs while some find lending to informationally opaque SMEs to be too risky; others do not have the skills to evaluate and service SME financing needs.

The development of credit infrastructure such as credit bureaus would serve both the lending banks and the borrower-SMEs by bridging the gap between these two parties. A credit information system is an indispensable infrastructure for credit market development. The provision of credit information helps lenders understand better the risk profile of their borrower-clients and enable them to expand their credit services. Recent availability of new technologies such as credit scoring has facilitated the ability of banks to service SMEs better. The information-capture platform of a credit bureau makes it possible to measure SME-borrowers in a number of ways. Since what gets measured gets managed, the metrics provided by credit bureau information serve the interests of both banks and SMEs. A World Bank study of 5,000 companies showed that, *without a credit bureau*, 49% of SMEs indicated facing high financing problems and the probability of getting a bank loan was 25 percent. With a credit bureau, the probability of getting a loan increases to 40 percent.[34]

The foundation for better credit granting and risk management is better information.[35] A credit bureau helps SMEs and complements government efforts to develop the sector in a number of ways. By disseminating captured information about SMEs and its suppliers, it assists SMEs in building track records. Even if these SMEs have no banking relationships, if their credit bureau record indicates a good credit standing among their suppliers, such information may be used to their favor to support financing applications when the need arises. SMEs with good track records may also be able to access credit on more favorable terms, and obtain faster decisions on their financing applications. The negative and (especially) positive data that a credit bureau has benefit SME loan applicants by providing a more balanced view of SME credit ratings, and have a relation to default rates (see **Figure 1-1**). By knowing how the credit bureau presents

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[34] The Credit Risk Data Management in the ASEAN Region, page 138.

[35] The keynote speech of Mr. John Palmer at the Credit Bureau Conference 2003 in November 2003.

information about them, SMEs (which were rejected by banks) gain better understanding of their financial deficiencies through the credit bureau reports and ratings. These reports also serve as "a convenient tool for SMES to carry out a self-evaluation to identify areas that need improvement and initiate adequate remedial actions to increase their competitiveness. SMEs are thereby empowered to improve their own profile, with correspondingly enhanced prospects for the SME sector as a whole."[36]

*What are the credit information infrastructures that support ASEAN SMEs and how do they impact on the ability of SMEs to manage the challenges they face in accessing financial services*? Below, we take up this crucial discussion, as it exists in the ASEAN GROUP we are studying.

## 1.2.1 Indonesia

Indonesia has the **Debtor Information System** (from Bank Indonesia Regulation No. 7/8/PBI/2005) that was established to assist reporting entities in expediting the process of provision of funds, facilitate the application of risk management and assist banks in identifying debtor quality for purposes of legal compliance. A Debtor Report is submitted by the reporting bank to Bank Indonesia and contains the following information:[37] (1) identity of the debtor[38]; (2) information concerning manager and owner of the corporation or unit consisting of name, address, taxpayer ID number, position and share of ownership; (3) information concerning the received fund provision facility by Debtor, encompassing the type of fund provision, the amount of given facility and collectibility, including the fund provision having written-off or settled by collateral take-over or settlement in court; (4) collateral information, including proof (status) of ownership, collateral value, name of collateral owner, collateral location and type of bonding; (5) guarantor information, consisting of the information on the guarantor identity such as the name, address and identity (KTP/corporation charter) of the guarantor and the percentage guaranteed share of the fund facility; and (6) information on the Debtor financial report for a corporation/unit as customer receiving a facility of fund of RP5 billion or more. The Debtor financial information comprises the data in a loss/profit balance sheet and the financial report position.

This information are submitted in the Debtor Information System by the head offices and branch offices of commercial banks as well as the branch offices and sub-branch offices of foreign banks operating in Indonesia. The compilation of information enables Indonesia to have a

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[36] The keynote address of Mr. Mohd Razif bin Abd Kadir at the SME Credit Bureau Seminar in Malaysia on 27 May 2008.

[37] This was sourced from Circular to Commercial Banks in Indonesia (No. 7/9/DPNP) dated March 31, 2005.

[38] In the Circular to Commercial Banks in Indonesia (No. 7/9/DPNP) dated March 31, 2005, individual debtor identity information shall consist of "name, ID card number, mother's maiden name, address and taxpayer ID number in compliance with applicable laws" while for corporations and business units, the debtor information shall consist of "name, corporation charter number, taxpayer ID number, and information related to debtor position, ownership, and financial relationship."

complete and comprehensive information system on debtor profiles and helps assuage the financial information gap between SMEs and lenders.

Specifically for SMEs, it has the Indonesian Business Information and Data (DIBI), which consist of, among others, the Small Business Development Information System (SIPUK) that is accessible to the public through Bank Indonesia. It is Internet based (www.bi.go.id) and is designed to support banks and financial institutions in providing MSME loans. It is integrated and user-friendly and contains the following sub-information: (1) Baseline Economic Survey Information system (SIB); (2) Export Oriented Agro Industry Information System (SIABE); (3) Lending Model Information System (SILM); (4) Decision Support investment Information System (SPKUI) and Loan Application Procedures Information system (SIPMK).[39]

The SME Policy of Bank Indonesia requires banks to allocate part of their extension of credit to MSMEs (discussed further below). In December 2007, the net credit expansion disbursed by banking systems to MSMEs reached IDR96.2 trillion from 2007 total business plan amounting to IDR86 trillion (an increase of 115%).

Indonesia's support to establish of a credit information infrastructure is one of the six pillars of the Indonesian Banking Architecture (API), a framework launched in January 9, 2004 that provides a comprehensive framework for Indonesian banking system, setting the direction, outline and structure of the banking industry for the next five to ten years.[40] Pillar V (Development of Banking Infrastructure) calls for the establishment of the Indonesian Credit Information Bureau (BIK), the central database on all bank borrowers. This is envisioned to benefit both the government and the public by (1) assisting in minimizing the problem of asymmetric information between creditor and debtor; (2) assisting in the management and supervision of national credit system; (3) enhancing the growth of MSMEs through a wider financing system; (4) reducing the credit provision of conventional collateral, i.e., credit record of a prospect debtor to serve as a complementary collateral; and (5) fostering market discipline in order to establish sound credit culture and an efficient credit system.

## 1.2.2   Malaysia

SME programs contained in the National SME Development Blueprint have demonstrated a promising record of success. In 2007, more than 286,000 SMEs received assistance through 189 key development programmes, involving an expenditure of RM4.9 billion. For 2008, 198 programmes are being implemented, involving an expenditure of RM3.2 billion.[41] In the area of expanding credit access, the share of SME financing has increased from 30% of the total financing of banking institutions in 1999 to 44% at end-May 2008.[42] In 2007, banks provided RM55.1 billion in new financing to more than 109,000 SME accounts. For the first quarter of

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[39] Senyadi [2008].

[40] *Ibid.*

[41] BIS Review 90/2008, pp. 2-3.

[42] *Ibid.*

2008, a total of RM12.4 billion in new financing was approved to more than 34,000 SME accounts. As at end-March 2008, SME financing outstanding by banks amounted to RM118.8 billion.[43] By the end of May 2008, this figure has increased to RM120.3 billion. In 2008, banks are projected to approve RM61 billion of financing to more than 115,000 SME accounts, increasing at an annual rate of 10 percent.

The SME Credit Bureau, a key initiative under the transformation plan of the Credit Guarantee Corporation, has officially commenced operations on 1 July 2008. It serves as a source of reliable credit information for both SMEs and their potential financiers. The Bureau will help SMEs develop track records and, in doing so, enhance their access to financing on more favorable terms, leading to faster credit application approval decisions and providing a more balanced profile of the credit standing of SMEs. They will also help promote a better understanding of SMEs' financial conditions through the reports the Bureau provides.[44]

## 1.2.3   Philippines

In the Philippines, the contribution of MSMES is estimated to be 32% of GDP and is the lowest relative to its ASEAN neighbors: Indonesia (57%), Malaysia (47.3%), Singapore (34.7%) and Thailand (38.9%). A policy advisory by the Philippine House of Representatives (Policy Advisory No. 2008-06) reports that the problem of financing affects all aspects of business of MSMEs and that despite government efforts to increase MSMEs access to finance (e.g., Magna Carta for SMEs, Agri-Agra Law), the estimated annual volume of unmet demand for loans stands at PhP67-PhP180 billion.

Banks perceive MSMEs to be less creditworthy than other types of business borrowers while MSMEs perceive banks to be "generally inaccessible due to their stringent requirements in the minimum loanable amount, quality of collateral, repayment terms, years of business experience and submission of business plans."[45] This is exacerbated by the lack of an SME credit bureau that could have helped banks in making well-informed decisions about the risks and returns of SME banking, and helps speed up the loan process, which can translate to lower loan transaction costs for SME-borrowers. A credit bureau may also encourage SMEs in the informal sector to formally register in order to avail of the advantages of credit bureau membership.

The country must endeavor to put into place an SME credit information infrastructure to address the persistent problem of financial information gap that deters MSMEs from expanding their businesses. Their Asian counterparts rated Philippine and Indonesian MSMEs as the least competitive, and both countries were rated with the lowest prospects for economic growth in the

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[43] BIS Review 67/2008.

[44] See Aziz [2008].

[45] Philippine House of Representatives Policy Advisory No. 2008-06. "Improving Access of MSMEs to Financing."

next three years. Lack of government support, access to funding and working capital and transportation infrastructure were also cited as the top three major SME hurdles. Despite the directive from the Bangko Sentral ng Pilipinas (BSP) for banks to provide mandatory credit allocation for SMEs and the reported over-compliance of banks to this directive[46], the ICF estimates an annual volume of unmet demand for MSME loans to be in the range of PhP67-180 billion. Furthermore, the IFC notes that 68% of SMEs have not had bank financing in the past 5 years. This supports earlier claims that MSMEs turn away from bank credit services primarily because of the documentation and collateral requirements of banks which most MSMEs lack. Instead they resort to the informal sector for financing.

The lack of reliable credit information hampers the smooth provisioning of credit to SMEs, resulting in higher intermediation costs and further isolating SME-borrowers from formal financing channels.[47] While there are credit bureaus in the country (CIBI and BAP Credit Bureau), they cater mainly to the needs of commercial banks. An SME credit information infrastructure must be established that not only contains a database of SME information; it should also provide educational modules on improving the institutional and managerial capacities of SMEs.

## 1.2.4 Singapore[48]

Singapore's SME Credit Bureau, launched in 21 March 2005, is a repository of credit information. It is the product of collaborative effort between D&B Singapore and the Association of Small and Medium Enterprises (ASME) and provides an online platform for members to share payment information, both payment promptness and delinquent payment behavior. The objective of the Bureau is to create a higher level of transparency in the local business arena by sharing information on payment behavior, associated with trade credit and credit facilities, of borrowers. Bureau members are given updated information they could use in assessing credit risk and making sensible business decisions to design portfolio compositions efficiently. SMEs are also able to gauge their own credit standing and perform self-evaluation of their financial creditworthiness. The following information is available online: company registry information, litigation/winding up information, previous credit inquiries, payment information summary, payment information details and default information.

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[46] The Policy Advisory (No.2008-06) reports "banks have lent an average of 13.6% or PhP143.9 billion of their total loan portfolio from 2001 to 2006 to small enterprises which is more than double the required 6%. Direct compliance or eligible loans to small enterprises comprised an average of 87.5% of the total funds set aside." Bank lending to medium-sized firms "also exceeded the minimum requirement of 2%, averaging 10.6% or PhP121.5 billion of the total funds set aside."

[47] ADB [2005]. Philippines: Moving Toward a Better Investment Climate.

[48] The information contained in this section was sourced from www.icdnb.com.sg/bureau/sme-c.htm and from the press release of D&B and Standard Chartered.

The SME Credit Bureau helps bridge the information asymmetry problem through the provisions of the following products that serve as indicative metrics of creditworthiness. The Payment Index (PI) is a computer-generated index that provides a quick assessment on the payment behavior of the subject company. The New Credit Risk Index (NCRI) provides a quick assessment of a business risk standing based on observed business failure of companies in Singapore while the Industry Risk Indicator shows the industrial average, in terms of NCRI, of companies across different industries in the Singapore context.

Singapore has also come up with a ranking of Singapore's top 100 small businesses in May 2008.[49] The ranking of SMEs was based on the ROE of their audited financial statements filed with the Registry of Companies or from the D&B database. Standard Chartered and D&B (Singapore), the major bodies behind this ranking event, stressed that the awards was meant to enable Singapore SMEs to realize their profile and also meet their transnational aspirations by helping SMEs venturing abroad to present a credit and creditworthy business to their transnational business and financial partners.

## 1.2.5 Thailand

The National Credit Bureau was established in 2003 with the aim of preventing the recurrence of the massive credit bubble of 1997. It has information on 46 million accounts of ordinary borrowers and 3 million corporate firms.[50] All clients are financial institutions. Under the law, these institutions regularly submit information about credit lines and payment histories to the NCB. Recently, it was observed that the current credit information provided by the NCB is not sufficient for banks to create a credible scoring system for all types of loans.[51] Lawmakers responded by indicating that laws on credit information and the NCB could be amended to allow greater collection of data on consumer credit and default patterns. At the same time, assistance must be given to borrowers who have been put on the blacklist so they could clean up their records and be allowed to return to the credit market.

One of the sectors that didn't seem too happy with long memory of NCB records of defaults is the property sector. The NCB keeps a record of default borrowers for 3 years for ordinary borrowers and for 5 years for corporate borrowers but land developers are asking the NCB to shorten the memory of its system.[52] The minimum 3-year history of the system on blacklisted

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[49] The ranking was prepared by D&B (Singapore) based on audited financial data and the following qualifications: (1) SMEs had to be registered with a local registry as separate legal entity (excluding branches of foreign companies); (2) Subsidiaries were ranked as a separate legal entity from its parent company; (3)sales/turnover between S$10-40 million; (4) total equity of more than S$1 million; (5) positive reserves; (6) profit for 2 consecutive years; (7) 3 years of operation; (8) fixed assets less than S$15 million; (8) at least 30% local equity.

[50] http://www.nationmultimedia.com/2007/05/21/business/business_30034705.php

[51] www.readbangkokpost.com/business/nonperforming_loans/credit_bureaus_in_thailand_par.php

[52] http://www.nationmultimedia.com/2007/05/21/business/business_30034705.php

debtors makes it hard for previous defaulters to obtain a bank loan, obstructing land developers' chances of selling residential units. The tendency of the credit bureau to retain blacklisted accounts for at least 3 years could cause banks to deny new credit and credit extension applications, producing a net negative effect in times of an economic slump when consuming and business sectors are more likely to demand greater credit.

The first step toward providing credit guarantees in Thailand was made when the Small Industry Credit Guarantee Fund (SICGF) was established in 1985. Subsequently, the Small Industry Credit Guarantee Corporation (SICGC), established under the SICGC Act of 1991 and renamed Small Business Credit Guarantee Corporation (SBCGC) in 2005, supplanted the SICGF. The SBCG is the only credit guarantee scheme in Thailand, and after recapitalization of the Ministry of Finance in 1999 had registered capital of BHT4.4 billion.

Have SMEs been able to better access bank loans with the presence of the NCB? Not quite. According to the Small Business Credit Guarantee Corporation (SBCG) of the BHT3 trillion (estimated) demand for small business loans, **only one-third** is being met through commercial bank lending.[53] The country has 560,000 registered companies with a combined equity of BHT8.6 trillion, of which 70% is accounted for by SMEs. The SBCG, which offers credit enhancements that allow SMEs access to credit markets, had outstanding credits of just BHT22 million as of October 2008, representing less than 0.4% of the estimated demand in the market. *The low level of loan uptake by SMEs is traced to the lack of collateral and/or guarantees, a gap that the NCB has been unable to bridge.* It also does not help that the country's dedicated bank for SMEs, the SME Development Bank, with outstanding loans of approximately BHT20 billion, have been plagued by bad loans and losses due to fraud in the past years. As at end-June 2008, the SME Bank has total losses of BHT1.3 billion and an NPL level of 50% of its loan portfolio. In the case of SBCG, accumulated losses were at BHT58.1 million as of June 2008 and non-performing guarantees accounted for 18% of its total loan guarantee portfolio.

In November 2008, Thai cabinet ministers approved plans to merge the SBCG and the SME Development Bank in order to improve efficiency in supporting state-supported SME financing. This would result to an increase in capital funds from BHT3.8 billion to BHT7.4 billion.

## 1.3     Developing Credit Information Systems for SMEs: Building Gaps, Bridging Opportunities

The development of SMEs and the credit information infrastructure are inextricably linked. SMEs are important for economic development of ASEAN, while credit information infrastructures are essential to financial development. SMEs cannot live without credit from banks, while banks cannot survive if they keep their credit reach to accommodate only premium

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[53] http://www.bankokpost.com/051108_Business/05Nov2008_biz40.php

borrowers. The information asymmetry problem that characterizes ASEAN SMEs' financing dilemma is as real now as it was before. The problem of financial access that plagues most SMEs persists despite developments in the credit information infrastructure of ASEAN countries.

The information gap between debtors and borrowers is long and wide, and more information bridges have to be built before ASEAN SMEs can be fully engaged in the formal financial sector. Apart from government directives to institute credit bureaus and other credit information collection agencies, the responsibility to reduce the information asymmetry problem also falls on the SMEs-borrowers and their creditors in the formal sector. The development of solutions to make credit information an enabling tool of finance and economics rests, to a large extent, on the depth of relationship that SMEs have with financial institutions and how both parties leverage on such a relationship.

In countries where commercial banks remain relatively risk-averse to SMEs, major stakeholders in SME development have to encourage banks to regularly interface with the various associations that represent SMEs to determine their most pressing financing needs and formulate solutions to address them. At the same time, banks must also communicate to SMEs the requirements expected of them. They should capitalize on their relationship-banking expertise to teach SMEs the value of due diligence in the preparation of basic business documentation and maintenance of financial records and coax SMEs into making this part of their business discipline.[54] For those which have existing SME banking services, they may choose to expand the provision of SME advisory services and identify SME customers that may be facing financial stress well before their conditions deteriorate. In this manner, loan defaults can be minimized and the NPL ratio kept within acceptable levels. SMEs are heterogeneous entities and while they all uniformly need credit, their ability to pay varies. Banks have to take this factor into consideration and are recommended to provide greater flexibility in structuring their financing facilities by customizing SME-borrowers' repayment periods within acceptable risk management levels.

On the part of the SMEs, it is imperative that they commit to cost- and production efficiencies to ensure their economic viability. They must find ways to streamline processes, minimize production waste, consolidate business activities and adopt new technology and energy-efficient processes. Experience-sharing sessions may also be organized for successful members to share their experiences in achieving cost efficiency and productivity improvements. SMEs also need to initiate their own measures to complement those undertaken by the government and the banks by committing to raise their level of value creation and finding new areas of growth while striving to achieve long-term competitiveness.

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[54] Wattanapruttipaisan [2003] notes that "the absence of proper financial accounting among many small and even medium-scale firms may be due to various reasons, ranging from the reluctance to reveal critical information to competitors to non-transparent practices to minimize the tax burden. Nevertheless, it precludes the establishment of long-term bank-client relationships which are part and parcel of the reputation collateral."

Lastly, while credit bureau information may be used for scoring SMEs and be a tool for risk management, this tool must be applied correctly and handled by well-trained risk managers who are not only familiar with SME banking but are adept in credit assessment systems for small and medium sized businesses. The availability of SME credit information which answers the 5 "C"s of credit – commitment, capacity, collateral, conditions and character will empower SMEs to have easier and better credit access.[55]

## 1.4    Conclusion

ASEAN countries are fully aware of the socio-economic contribution of SMEs in terms of output, employment and linkages.   Over the past decade the liberalization of markets, the forces of globalization and ICT efficiency effects have given birth to significant opportunities for export expansion and economic growth for economies in Asia. Related to this, concerted efforts for increased economic integration have been jumpstarted, resulting in higher-than-before levels of intra-ASEAN trade. Because of these evolving changes in the regional environment and the recognized potency of the SME sector as a significant driver of growth, governments of ASEAN economies have cemented their recognition and support for the SME sector with the acceptance of the ASEAN Blueprint for SME Development (APBSD).  Necessarily, the overriding intent is to arrive at solutions that would address the wide range of structural fiscal and non-fiscal issues that continue to challenge the SME sector through the APBSD framework.

The ASEAN Policy Blueprint for SME Development (APBSD) recognize the "need to create and promote a conducive business environment for SME development where both Government and the private sector assume synergistic and complementary roles; the Government acts as a facilitator, while SMEs themselves are the engine of growth." The APBSD supports one of the key issues of this research - the establishment of credit information systems specifically to cater to address the information asymmetry gaps that hound the financing access ability of SMEs.  In its policy action framework, the APBSD specified its focus programs and activities to improve SME access to financing.[56]

The first focus area involves engagement in capacity building in order to improve SME access to financing.  Critical to the attainment of this program's objective is the institutionalization of capacity building measures in the area of accounting and financial information reporting and maintenance. Related to this is capacity building in the preparation of business plans by SMEs. Without these documents, lenders would not be able to properly assess the creditworthiness of

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[55] The Credit Risk Data Management in the ASEAN Region.

[56] ASEAN Policy Blueprint for SME Development (APBSD) 2004-2014.

SME borrowers. Worse, they might be swayed by the formal sectors' perception bias against SMEs and reject more loan applications that they normally would had these SME firms presented traditional accounting documents for their lender's proper assessment.

The second focus area is financial institutional capacity building for improved SME financing. This calls attention to the level of development of a country's credit information system because it involves regional and sub-regional capacity building in credit rating system for SMEs as well the establishment and maintenance of credit information reference and referral systems with a focus on the special needs of SMEs. The program thrust of this area of focus involves the following activities: (1) the compilation and dissemination of best practices in setting up and sustaining credit rating, credit information reference and referral systems with special emphasis on SMEs; (2) identification and examination of integral elements and requirements of credit rating, credit information reference and referral systems; (3) setting up credit rating, credit information reference and referral systems with special emphasis on SME needs; (4) training of financial-sector staff in credit originating, appraisal, supervision and monitoring; (5) online, regional inter linkages for information sharing among national credit rating, credit information reference and referral systems.

The discussion in this chapter reveals that a having a reliable and relevant credit information system requires more than just information dissemination among the parties involved. Appropriate legal, regulatory and technological infrastructures must be in place to ensure that credit information is processed and handled properly. At the same time, relevant campaigns and information dissemination activities popularizing the necessity and advantages of the credit information systems must be pursued. Action must be taken not merely on the side of the government; in the private sector, there is much room for improvement in bank management and interaction with SME entrepreneurs. Further need also exists for SME entrepreneurs to realize the merits of keeping reliable and proper accounts, and to better understand the workings of credit institutions. Within the private sector, and between the private and public sectors, there is need for greater appreciation on the value of information sharing, for it on that basis that credit registries become effective, and information asymmetry can be reduced.

The third focus area is the widening and deepening of SME access to credit. Regionalization and sub-regionalization of financial schemes and alternative financial sources (credit guarantee scheme, seed and venture capital, inventory financing, equipment leasing, etc.) and external investor base during the period of the APBSD are envisioned to achieve the objectives of this focus area. Suggested activities to carry out these objectives include (1) compilation and dissemination of success stories, and of good and superior practices in the provision of supplementary credit with a focus on the special financing needs of SMEs within and outside the region; (2) conducting feasibility studies on the regionalization and sub-regionalization of financial schemes and supplementary financial resources (CGS, seed and venture capital, inventory financing and equipment leasing, etc.) and eternal investor base; (3) based on

feasibility studies, follow up consideration and preparations for the regionalization and sub-regionalization of selected financial and supplementary financial schemes; (4) promoting the listing of SMEs on the stock exchanges within the region.

### 1.4.1   SME Funding Programs and Best Practices in the Asian Region

The inspiration for funding SME programs can be traced to US schemes way back in the 1950s and 1960s.  Dubbed as the "old paradigm" of promoting small businesses, it involved mostly an integrated package of technical assistance, marketing, and financial assistance at subsidized rates, and often some amount of protected markets to some targeted small businessmen and farmers. This paradigm was eventually laid to rest because experience indicated that the effect on small businesses was too small relative to the costs involved in promoting them.  Furthermore, politicians and bureaucrats who used the SME platform to advance their own interests subjected to abuse much of the resources used to promote SMEs.  As a result, SMEs were left inefficient, uncompetitive and subjected to unfair and unsubsidized competition.  Banks, which served these SMEs, were left in financial ruins, the technical assistance organizations unpatronized, and many of the assisted SME closed.

Disenchantment with the "old paradigm," paved the way for a "new paradigm" of SME assistance    in which finance and services were to be provided at market rates or with very shallow and broadly based subsidy. The new paradigm concentrated on subsidizing the start up costs of eventually self-sustaining institutions, rather than on income subsidies to their clients. This new paradigm was introduced based on the contention that access was more important than price. Subsidies had to be specifically justified to meet identified market failures. It should be noted that the new paradigm based itself on the economists' comparative static cost benefit approach -- rather than politicians insights, which are often more concerned with symbolic impacts and the strategic, and effective, use of patronage.  The thrust emphasized financing above other inputs, having determined that finance was very important, at least as an object of public policy.  Despite the extent to which industrial technology is a factor in SME growth and thereby deserve subsidy as well, it was the area of finance and financial access that was granted primacy.  The succeeding paragraphs feature examples of best practices in SME development strategies in some of the more developed countries in Asia.[57]

In Japan, all government financial institutions provide financing to SMEs according to the New SME Basic Law.  Each government financial institution has its own financing target group and has the special skills to assess the credit standing of its borrowers.  Loan processing usually takes 1 to 2 weeks.  Credit guarantee with 100% coverage is available to SMEs with collateral credits and only the National Life Finance Corporation provides micro finance to small businesses without requiring collateral.  The key success factors of the SME industry development strategy are: (1) it used a structured approach to develop SMEs by ensuring proper coordination between

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[57] The write-up on the SME best practices in Japan, Taiwan and Korea were culled from the document REPSF Project 04/003: Final Main Report.  For the Philippines, it was culled from Best Practices of SME Innovation Policies in APEC.

all agencies; (2) there is only one ministry and agency overseeing SME development – the Ministry of Economy, Trade and Industry and the SME Agency; (3) SMEs maintain close relationship with the local chambers of commerce; (4) the Japanese government is strongly committed to upgrading the skills of operators and personnel of support groups for SMEs; (5) continuous education and training resulted in the greater acceptance and integration of technology into SME operations; (6) SMEs have long years of experience (around 15 years) before venturing on their own; (7) the Japanese work culture.

Four best practice SME programs in South Korea are the Small and Medium Industry Promotion Corporation (SMIPC), the Business Start-p & Incubation Programme, Training Programme and Structural Readjustment Program.   The SMIPC is a nonprofit autonomous organization established in 1979 via the Small and Medium Industry Promotion Act to implement programs to promote SMEs.  These programs include the provision of financial assistance and field services on a selective basis, industrial extension services concerning management and technology, industrial training services for management and technical manpower, collection, analysis, processing and dissemination of industrial information for SMEs, and internationalization support for industrial partnership with foreign counterpart industries.  Under the Business Start-up & Incubation Programme, aspiring SMEs are eligible to participate in the incubation center to receive comprehensive guidance on the creation of their business and the establishment of an environment to make their business succeed.  The Training Programme helps SMEs cope with rapid technology changes and produce specialized manpower that will constantly improve job-site conditions and update their technology. The Structural Readjustment Programme aims to help SMEs be more competitive through automation, informationalisation and the commercialization of new technologies.

A common success factor in the experiences of the SME development strategy efforts of Japan and Korea is having a central SME overseer.  This ensures the coordinated actions of all stakeholders in the SME development agenda and helps minimize the occurrence conflicts in interest and direction, which is what usually happens when two or more offices of authority handle SME development.  ASEAN countries are moving towards this direction. In the Philippines, the Magna Carta for Small Enterprises is considered a milestone legislation to promote a dynamic SME sector.[58] Grounded on the principles of reduced administrative burden with minimal set of rules and simplification of procedures, active private sector participation and coordinated effort, the Magna Carta has carved an impact in the direction and flow of financing access for SMEs. It led to the creation of the Small and Medium Enterprise Development (SMED) Council, the primary coordinating agency responsible for the promotion, growth and development of SMEs.  It also led to the creation of the Small Business Guarantee and Finance Corporation (SB Corp.), a government-owned firm that provides alternative modes of financing for SMEs.  It mandated the allocation of credit resources to small enterprises by requiring all lending institutions to set aside at least 6% and at least 2% of their total loan portfolio for small and medium firms, respectively. It also mandated that SMEs should have 10% share of the total

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[58] This law was enacted in 1991 (R.A. 6977) and revised in 1997 (R.A. 8289).

procurement value of goods and services supplied to the government. The financing policy of the Magna Carta is supported by measures such as the multi-agency SME financing program, SULONG and SB Corp.'s loan guarantee and direct loan programs. Since the Magna Carta deals only with debt financing, it is necessary to complement existing policy programs with equity financing to stimulate technology-based SMEs.

In Thailand, the SME Development Bank was created in 2002 with the vision of building a Thai entrepreneurial society. Given the country's historical dilemma of having many low-income people with SME capability but very limited access to commercial lending, the Ministry of Finance established the SME Development Bank of Thailand to develop the grassroots economy, improve competitiveness and foster sustainable growth of SMEs through various financing schemes based on government policies such as OTOP loans and asset capitalization programs. As of end-2006, its assets were at US$1.7 billion and loans outstanding to approximately 15,195 borrowers were at US$1.26 billion. It serves Thailand's SME needs through 19 regional offices and 90 service centers.[59]

These examples of approaches and accomplishments in Asia should provide encouragement to those concerned with the policy and practices of SME sector development, and SME finance. Similar observations can be made with regard to the specific subject of credit registries. Here, both governments and private interests are active in improving the quality of credit information and increasing its use, so as to reduce information asymmetry and facilitate the mechanism of the credit market. In regard to credit guarantees, however, a lag is evident, and it is here where relatively strong results can be obtained through expanded cooperation among the countries of the region as well as increased participation by the international agencies.

### 1.4.2    Bilateral and Multilateral Exchange

There are a number of cases of bilateral relevant SME-finance activities or credit-related cooperation regarding credit improvement and credit data related entities by Asian governments or organizations, in and outside of the region (there are very many instances of broad-based SME-related cooperation but they are not taken up here). ASMIC is a central point, albeit modest in scale and purpose, for joint efforts at improving CGS. Activities relating to credit registries are as covered in last year's report. They include the following:

APEC organized an Initiative on Development of Securitization and Credit Guarantee Markets, involving visits by experts to interested countries and opening of policy dialogues. According to the report on the APEC Finance Ministers' Meeting held in September 2004 in Santiago,

> "... *China, Thailand, Mexico and Philippines have expressed interest to receive expert advice. The World Bank and six APEC economies, including China; Australia; U.S.A.; Thailand; Korea; and Hong Kong... China has sponsored experts. The roles of the panels of experts are (i) to assist member economies in*

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[59] Chewcharat [2008].

*establishing frameworks to review and identify potential impediments in their markets; (ii) to draw up feasible and economy-specific action plans to remove the impediments; and (iii) to monitor the implementation of the action plans...China and Thailand have established their interdepartmental taskforces and private sector advisory groups... A total of six panel visits have been made since June 2003, with two visits each to Thailand, China and Mexico. Panel visits to Thailand were launched in June 2003 and March 2004 respectively. The draft action plan has been commented by the interdepartmental taskforce and a progress report on the implementation of the panel's action plan has been submitted to the Ministry of Finance of Thailand... For China, the first panel visit was launched in July 2003 and the second one in July 2004. The experts have made recommendations to the interdepartmental task force suggesting changes to the tax, regulatory and legal regimes to facilitate the development of the securitization and credit guarantee markets in China. The action plan was being reviewed by the inter-departmental taskforce. The panel would prepare a second report to follow up on the recommendations and provide additional proposal on how to develop the markets.*"[60]

Policy dialogues were held in Seoul and Hong Kong. The term of the Initiative was through September 2004.

In October, 2005, the APEC Finance and Development Program AFDC and the World Bank Institute co-organized an APEC workshop on "Small and Medium Enterprises Credit Guarantee Systems in the Asia-Pacific Region," that was attended by 46 participants from 10 APEC economies and others.

Japan has sponsored among other activities, (1) the sharing of experience and know-how with Mexico, in 2002, by dispatching experts for a seminar on loan programs of governmental financial institutions servicing micro- and small enterprises, (2) the sharing of experience and know-how with Malaysia, on SME finance guarantee systems and the Japanese re-guarantee system, also in 2002 (high-level experts from the National Federation of Credit Guarantee, Japan Finance Corporation for Small Business (JFS) and JASMEC were dispatched; the Malaysian Central Bank and CGC were among the counterpart organizations); (3) JASMEC provided experts for meetings in Vietnam, also in 2002, on SME finance.[61]

### 1.4.3   Regional Framework for SME Funding Mechanisms

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[60]  APEC Initiative on "Development of Securitization and Credit Guarantee Markets. Summary Report." Given at the APEC Finance Ministers' Meeting, Sept. 2-3, 2004, in Santiago, Chile; at

www.apec.org/content/apec/documents_reports/finance_ministers_process/2004.MedialibDownload.v1.html?.../apec...initiatives/

[61] For details see

www.apec.org/apec/documents_reports/small_medium_enterprises_working_group/2003.MedialibDownload.v1.html?...1.

The promotion of ASEAN regional interests is, once again, in the spotlight. Now, more than ever, cooperation has become the buzzword in Asian regional circles, along with harmonization and expanding regional growth. The pivotal role of SMEs in ASEAN economies has become one of the common denominators in determining development blueprints and frameworks to invite greater commitment from ASEAN countries. Earlier discussions have outlined the region's vision of cooperation in promoting and developing SMEs' access to financial resources, with consideration for the differences individual countries use in strategizing SME development. Currently, SME funding mechanisms are unique to each ASEAN country although the concept of establishing an SME fund for the whole ASEAN region is no longer an alien idea. For example, one of the outcomes of the APBSD, which the ASEAN hopes to achieve by 2015 under the ASEAN Economic Community (AEC) is the establishment of a regional SME development fund that would be used as a financial source for SMEs doing business in the ASEAN region with the intention of promoting entrepreneurship on a regional level.[62]

Other ideas for SME funding are equity listing, bond issuance, securitization and setting up a regional credit guarantee mechanism to support SME funding options as well as contribute to the development of the region's capital markets. Theoretically, SMEs may raise funds through equities but in reality, this may be difficult to execute since most SMEs are not listed on stock exchanges to begin with. Private equity markets are underdeveloped in the region, so this is not a viable option. Similar constraint is faced when it comes to issuing bonds since SMEs are usually too small to acquire the credit ratings that would appeal to investors. Securitization and the improvement of credit ratings may help address this problem.

Securitization involves the repackaging of a series of assets to generate cash flows. The assets are sold to a stand-alone entity that sells securities in order to buy these securities. Under this process, the profile and value of the assets are distinct and separate from the profile of the original company that owned them. Hence they are free to be repackaged to adjust tranche amounts and term structure to suit the needs of investors. In addition, swaps, guarantees and reserve funds can be used to enhance the creditworthiness of the newly issued securities, making them more desirable for investors. Established securitization technology now allows SME loans to be pooled and repackaged into rated tranches that could be sold to investors. Related to this, Singapore has launched its SME Access Loan Scheme to enable SMEs to have access to capital markets by issuing bonds backed by SME loans. Similar collateralized loan obligations (CLOs) have been issued in Malaysia.[63] Elsewhere in the region, Korea and Japan have accumulated extensive experience with SME CLOs. One of the challenges to the promotion of securitization is the fragmented nature of ASEAN economies in terms of legal framework, currencies, regulatory environment and accounting standards. There is also the lack of technical expertise and manpower in the area of structured finance especially for new ASEAN member countries.

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[62] Ong [2007].

[63] Tay [2007].

Promoting securitization is not only an avenue for SMEs to get their foot in the door of the capital market; this development is also connected to the current thrusts of the ABMI and the APEC to "create an environment conducive to developing bond markets." This covers the provision of credit guarantees, improvement of the credit rating system, establishment of a mechanism for disseminating information, improvement of the settlement system and strengthening of the legal and institutional infrastructure for bond market development. Under the ABMI, the Working Group on Credit Guarantee and Investment Mechanisms (chaired by China and Korea) are focusing on ways to promote the use of CGS in Asia. The ADB also decided to contribute to the creation of a regional credit guarantee mechanism to support the development of domestic and regional bond market in ASEAN+3 countries. On the other hand, the APEC initiative to develop securitization and CGS involves high-level dialogues for APEC economies to exchange views on the use of securitization and CGS as well as identifying impediments and developing detailed action plans.

Oh and Park [2006] describe a two-tier securitization process as follows:[64] (1) GFIs or agencies in capital-importing countries would securitize loans or bonds issued by SMEs in local currencies; (2) a special purpose company (SPC) in a capital-abundant country could be established to securitize the underlying assets which are composed of senior tranches from the capital-importing countries; (3) the junior tranches are assumed by the local institutions in the capital-importing country, which select the firms eligible for securitization; (4) senior tranches may be sold to local investors but the remainder transferred to an SPC in capital-abundant countries; (5) senior tranches could be backed by CGS from local CGS agencies or government institutions in capital-abundant countries; in this manner, the newly created credit guarantee institution provides credit guarantees for senior tranches. Oh and Park further went on to say that the greatest demand for guarantees in Asia will be in the form of local currency-denominated asset-backed securities and infrastructure revenue bonds guarantees. There will also be a high demand for nontraditional ABS such as SMEs, CDOs, NPLs and near-investment grade and unrated issues for the mid-market. To meet these demands, regulatory and institutional infrastructures must be in place to handle currency, transfer and convertibility risks associated with the securitization process.

*What attributes should a regional credit guarantee institution for ASEAN countries possess?* A regional credit guarantee institution must be established to meet the following objectives: (1) development of regional capital markets for stable access to long-term funds to facilitate private sector and infrastructure development; (2) promotion of transparent and cash flow-based lending by facilitating securitization and bond issuance; (3) catalyzing investment by assuring investors through guarantees for new products and issuers; (4) providing cost savings to issuers in the region by sharing the reduction in spreads resulting from credit enhancement; (5) improving the liquidity of bonds through diversification of investment products; and (6) creating an environment in the capital markets conducive to accelerated development of economies and establishment of bond markets.

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[64] Oh and Park [2006].

The regional guarantee institution must be guided by the principles of independence and prudence in pursuing its business strategies and in providing credit risk guarantees, political risk guarantees and advisory and structuring services. Adequate pricing of services must be ensured to generate a stable and sufficient return on capital for the institution. The spread may be split between the institution and issuers to maintain an adequate level of demand for the business. The marketing strategy must focus on the production of continuous deal flows that meet strict underwriting standards and the objective of the investment portfolio would be to serve as a source of internal liquidity for the guarantee institution. The guarantee leverage shall be up to 20 times its capital, surplus and reserves. It is recommended that the guarantee institution be established as a multilateral institution to make it easier to enlist the participation of sovereign shareholders in the ASEAN+3 group. Moreover, in the sense that the mandate of the regional guarantee institution is partly developmental in that it would facilitate bond market development and grant SMEs

The BIS released a commentary on the Oh and Park proposals; in it Guorong Jiang raises the following questions regarding the proposed regional mechanism:[65]

➢ Whether the proposed regional credit guarantee agency would be financially viable, being possibly the only financial guarantor in the world that would insure a substantial sum of non-investment grade credits;

➢ Whether securitization can serve to narrow the credit quality gap between issuers and investors, thus mitigating the need for the credit guarantee agency to move down the credit spectrum;

➢ How realistic it is for the credit guarantee agency to mitigate its risk by diversifying its market coverage;

➢ How realistic some of the proposed risk mitigation options for the credit guarantee agency are; and

➢ How serious an impediment to bond market development the perceived credit quality gap between issuers and investors is.

There are also major institutional limitations that would make it difficult to establish a regional scheme, particularly, these are (1) differences in the legal framework for securitization, (2) differences in accounting standards and tax treatment for special purpose companies, and (3) insufficient time series data on loan performance.[66]

There are potential Asian regional bond issuers with high credit ratings, but the objectives of creating an Asian bond market must also include, as a long term objective, the facilitation of

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[65] Guorong Jiang, "Comments on Oh and Park's paper 'ASEAN+3 regional guarantee mechanism.'" *BIS Papers No 30 , page 241,* at http://www.bis.org/publ/bppdf/bispap30u.pdf.

[66]  United Nations ESCAP, "Meeting the Challenges in an Era of Globalization by Strengthening Regional Development Cooperation" (2002), at http://www.unescap.org/pdd/publications/regcoop/ch6.pdf, p. 118-121 and http://www.unescap.org/pdd/publications/regcoop/annex7.pdf

indirect finance for companies that otherwise could not easily tap capital markets. In such a case, credit supplementation, whether through guarantees or insurance, or counter-guarantees of sovereign origin, would be needed. Moreover, improvement and perhaps a degree of harmonization of the legal basis for debt recovery, that would involve property laws and other matters, is desirable. These formidable obstacles to progress clearly indicate the need for a long timeframe for planning and preparation. The same conditions would apply to the securitization of SME debt.

## CHAPTER 2. CREDIT GUARANTEE SCHEMES AND SME FINANCE IN ASEAN

A credit Guarantee Schemes (CGS) has the objective of absorbing part of the loss resulting from default of a bank loan. The guarantee reduces the risk of the lender and thereby serves to improve the supply of credit. It also facilitates smooth operation of the loan market. In particular, the guarantees are important when a prospective borrower has a viable project, workable business plan, or reasonable investment plan, but there is at least one deterring factor, in particular (1) lack of reliable and adequate information about the borrower (this may involve inadequate financial records, a preference for secrecy, or other matters), that is, lack of justification of creditworthiness such as can be provided by a credit history or (2) lack of collateral, as in the case of many start-ups.

Guarantee schemes have been devised and are in operation for businesses, for the farming/rural sector, and for exporters. The first schemes were mutual-help associations formed in Europe, as early as the mid-nineteenth century. Such schemes proved valuable in Europe after World War II; at this time, government participation became evident. Subsequently, as international development assistance began to increase during the 1970s and 1980s, schemes started to be created in developing countries, to compensate for flaws in and underdevelopment of national financial systems. Added attention has been given to credit guarantee schemes for the SME sector since the 1990s, in keeping with the increase in addition given to small business everywhere. Recent years have seen an increase in establishment and development of CGS in Africa, Asia and Latin America as well as transition economies in Europe.[67]

There is evidence that CGS is a preferred method of government intervention on behalf of promoting SME finance. Worldwide, there are more than 2,250 schemes in operation. Nevertheless, there are many issues at hand, such as whether a given CGS provides additionality (an increase in supply of credit that would not have taken place without the guarantee), and

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[67] In the transition economies this has been accomplished with assistance of the PHARE program of the European Commission. See Dr. Antal Szabó, " Microfinance and Credit Guarantee. Schemes - Experiences in the Economies In Transition." Paper prepared for the BSEC Workshop on Financing SMEs, Belgrade, Oct. 13-16, 2005. Accessible at: http://www.erenet.org/papers/szabo2005.pdf.

whether the benefits of a CGS justify the cost. There is great diversity among existing schemes, as shown by **Table 2-1**.

CGS[68] are primarily intended to relieve some of the risk burden on lending institutions, and bypass rather than overcome an information asymmetry problem. They partially substitute for collateral, and can be considered in a general, non-technical way to be a form of insurance for lenders. The value of CGS in offsetting weakness in ability to post collateral is of particular importance as problems related to SME collateral (including provision of proof of ownership, and murky property laws) are a major limitation on ability of SMEs to obtain bank loans.

Depending on the scheme, guarantees may be available to help finance fixed investments, working capital, or both. Schemes may target specific sectors or regions, startups or high-tech companies, companies owned by women, or companies working in specific fields, such as environmental preservation. Many schemes specialize in microfinance, for reasons including the large percentage of microfinance institutions that are not deposit-taking entities and are intrinsically weak in financial terms.

Other than the aggregate and comparative information developed by the present study there are only two recent international-scope studies of CGS that have been identified, and they surveyed the region's CGS as a side topic to the immediate research objective.[69] Thus, it is difficult to generalize. In one of the reports, the consultant's report to the ADB, for an Asia- (China) centered study, however, the following key lessons and common features were derived (and have been verified by research done during this study).[70]

There are very few examples of private or commercially based SME-oriented credit guarantee companies or institutions, and there are no known examples of privately run commercially based re-guarantee schemes internationally. The government heavily subsidizes all international models of credit guarantee and re-guarantees schemes, especially those from Northeast Asia and Europe. The countries with the strongest and largest credit guarantee institutions are those where SMEs receive the highest policy and program support priority and largest fiscal outlays from both national and local governments.

Where the strongest policy and fiscal support exists, the highest proportion of SMEs are serviced by guaranteed loans, e.g., Japan 38%, South Korea 20%, and Taiwan 20%. Most national credit

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[68] For an examination of theoretical aspects of CGS, see Patrick Honohan, "Partial Credit Guarantees: Principles and Practice." Institute for International Integration Studies Discussion Paper No. 244 (Feb. 2008), at

http://siteresources.worldbank.org/INTFR/Resources/Honohan_PCG-PrinciplesAndPractice.pdf. This paper was presented at a World Bank Conference in March 2008.

[69] Ian Davies, "People's Republic of China: Development of Small and Medium-Sized Enterprise Credit Guarantee Companies." Final Report for ADB Project 360p24 (TA 4350-PRC), cited hereafter as ADB [2007] at

http://www.adb.org/Documents/Reports/Consultant/36024-PRC/36024-PRC-TACR.pdf.

[70] *Ibid.*, p. 34f

guarantee schemes internationally, however, have little impact on the SME sector (they service only 1-2% of SMEs).

Almost all international major credit guarantee institutions operate under well-established and comprehensive laws and regulations and supervisory arrangements. Large-scale schemes tend to operate as financial institution legal entities and operate under national banking laws or laws specifically established for the guarantee industry, and are supervised by the Ministry of Finance or equivalent.

Almost all international major credit guarantee institutions and programs have been granted non-profit status and enjoy exemptions from paying income tax and Value-Added Tax. Almost all international credit guarantee institutions are heavily SME policy-oriented where national laws and regulations specifically focus on smaller scale SMEs or micro and small enterprises. They specify maximum loan amounts, specify strict criteria on SME and small enterprise eligibility, and deliberately focus most funding towards the lower end of the SME market – the small-scale enterprise. All international re-guarantee institutions and operations are heavily funded by national and local governments, and are supplemented by re-guarantee fees provided by the credit guarantee institutions.

Differences of opinion exist on the validity of CGS, but in recent years there has been an increase in the number of schemes in operation, and this trend is likely to continue, especially if the global credit problem that exists as of this writing penetrates to the level of SME finance. Whereas there are opponents of CGS, there is no final word on the relative value or desirability of a CGS compared to other measures on behalf of SME finance, and there is no one model suitable for all situations. Despite the arguments against CGS, they have grown increasingly popular during the past decade, and this implies that there are political or strategy considerations that override the academic arguments against the use of these schemes. Honohan concludes his general study of principles and practices with this:

> *"Credit guarantees have a natural place in the market. Where they are not sufficiently forthcoming, there may be welfare improvements from well-designed government-sponsored schemes - carefully targeted on currently excluded SME entrepreneurs and- with dynamic incentives for market-based lenders to acquire skills. Such schemes will, however, never substitute for reform of the underlying institutional requirements of an effective credit system."*[71]

He also warns that "guarantee schemes with large but hidden costs may be introduced mainly because of their political attractions." Regarding desirable practice at CGS, Honohan states: *To overcome the hazards of short-termist policy there should be: (i) clearly defined, precise and coherent welfare improvement goals; (ii) a reliable and realistic approach to accounting so that costs can become evident early; (iii) built-in data collection allowing prompt evaluation of*

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[71] Honohan, *op. cit.*, p. 15.

*outcomes; (iv) attention to scheme design that maximizes the chance of successful goal achievement.*[72]

## 2.1    General Profile and Typology of Credit Guarantee Schemes

A credit guarantee can be provided by an individual, or by a company, or other entity, but for present purposes we are concerned solely with guarantees provided by organizations that have that explicit function, that is, are operators of credit guarantee schemes (CGS).  They are also referred to as **partial credit guarantee** schemes, as the majority do not guarantee the full amount of a loan.

In this report, by "schemes" we refer to the credit guarantee organization, including its fund, and the external relations it has, principally with fund sources and borrowers or (in the case of re-guarantees or counter-guarantees) other directly related guarantors.

Credit guarantee schemes as a whole exhibit great variety in terms of their major features. To summarize findings from a 2008 World Bank paper[73] the following can represent the variety that exists; the review of Asian schemes in this report provides more examples.  The World Bank researchers contacted 60 countries and received responses from 46.

- ➢ Years of operation: Average, 27 in high-income nations, 13 in developing countries. (Most were established after 1990, and there was a surge in new establishments in the past four years.)  The average age in the Asian sample, where two well established Korean schemes were included, was 23.)
- ➢ Number of employees: 15 in high-income countries, 21 in middle/low income countries; 179 in Asia.
- ➢ Profit orientation: Forty percent of all are for-profit; 52% are subject to corporate tax. Tax exemption was more common in East Asia and the Pacific region.
- ➢ Objective: Most have specific objectives (defined by sector, type of business, or geographic area where loans can be guaranteed). Forty-two schemes have more than one restriction on eligibility of guarantee recipients.

Many schemes are primarily intended to rectify the problem SMEs have in providing collateral for a bank loan. SMEs tend to have problems in terms of the scale and nature of collateral, if they have any. However, for a lending institution to seize collateral in the case of a default, there must be appropriate legal and regulatory arrangements in place.  Thus, laws and regulations must be considered when the subject of the planning or performance of a CGS is taken up.  Needless to say, they are also important in the management of a scheme (as well as in managing a loan portfolio).

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[72] *Ibid.*, p. 16.

[73] Beck, Thorsten, Leora F. Klapper and Juan Carlos Mendoza, "The Typology of Partial Credit Guarantee Funds Around the World." World Bank Policy Research Working Paper No. 4771 (2008), at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1297810#.

CGS can be categorized in several ways, as follows.[74]  These are not mutually exclusive.

### 2.1.1   Types of Credit Guarantee Schemes

CGS may involve **direct or indirect guarantees**.  These collectively refer to the channel of guarantee supply. A direct guarantor is, essentially, a latent party to the transaction, as it agrees to pay a certain percentage of the loan in the event of default. In the second case, a third party between the fund supplier and fund recipient acts as administrator of the loan and as guarantor of a certain percentage.  These third parties provide **counterguarantees or re-guarantees**.  They are characteristic of Germany, Austria, and Denmark. In the case of a direct guarantee, arrangements are simple and clear, but in general loan administrative costs are high because the lender is obliged to maintain tight supervision or control.

The manner whereby a loan is guaranteed can be either according to an **individual model or a portfolio model**.  In the first case, the link between source of funds and borrower is direct, but the borrower is guaranteed by another entity, that collects a fee from either the borrower or the lender.  Either the aspiring borrower or the credit institution can contact the guarantor; the former is characteristic of Italy and Spain; the latter of France, Hungary and the Czech Republic.  The guarantor of the loan conducts a credit appraisal of the aspiring borrower.  Deals are on a loan-by-loan basis.  It is to be expected that companies seeking small-scale loans will tend to be given inferior treatment (made less welcome, etc.) by a guarantor, compared to a large-scale borrower; this would especially be the case at for-profit guarantors as opposed to government-run schemes. In the second case, the guarantor prescribes the conditions to be met by the borrower (e.g., determines what type of loans are eligible, etc.); these may include the amount of the loan or financial situation of the borrower prior to the loan.

A CGS may be **funded or unfunded**. A funded CGS is financed by the central bank, or banking institutions, of a combination of banking and non-banking institutions.   In an unfunded guarantee, the government funds the scheme, and pays off in the event of a default.  Banks do the loan administration and they determine if the loan is to be guaranteed and share part of the risk.

A scheme may be **open or targeted**, reflecting policy.  An open CGS is as implied by the name, not restricted to any type of business.  A targeted or closed scheme is available only to a specific group, such as companies in a certain industry, companies owned by women or an ethnic minority, or companies in a certain region.

The timing of the issuance of a guarantee provides another way to categorize CGS.  There are **ex-ante and ex-post schemes**.  In the former, a borrower whose plans have been approved by a guarantor applies for a loan from a participating institution, submitting the letter of intent from

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[74] Alvaro Ruiz Navajas, "Credit Guarantee Schemes: Conceptual Frame." GTZ/FONDESIF (2001), at http://www.microfinancegateway.org/files/3280_file_03280.pdf, and other sources.

the guarantor.  In the latter, the guarantee is sought after the loan is approved.  The approval would be conditional on the borrower's obtaining a guarantee.

By type of guarantor, or in terms of ownership, CGS can be **operated by governmental or quasi-governmental entities, or may be a private sector fund**, including in the former multilateral agencies and in the latter both for-profit and not-for profit entities.  A national government, a regional government, or a local government can operate a CGS, independently or in combination.  In the US, UK, and Canada, the national governments provide entire funding for the CGS for SMEs. Government has a majority or total share in schemes in other countries such as China, Japan and Korea in East Asia, as well as Thailand, the Philippines, France and Spain.

A CGS also can be organized as a **mutual guarantee association**, a type of non-profit institution. Italy, France, Spain and Germany in particular have many such associations.  Mutual associations or societies are categorized as follows:[75]

- ➢ Associations established on the basis of private rights whereby shareholders enter into a contractual agreement
  - o Mutual societies: Formed by a number of companies or company organization(s). They are based on shared responsibility, decision-making by peers, and compliance with the rules of a market economy. Some use public support.
  - o Corporate commercial societies: Subject to the commercial code; resources may be contributed by public or private sources.
- ➢ Guarantee programs
  - o Programs managed by institutions specializing in economic promotion or SME support, among other business activities
  - o Programs managed by a ministry or public service department, that manages the guarantee fund as an account

Mutual guarantee associations, being intrinsically different from government-run or –supported schemes, can be considered as having as basic principles voluntary membership, democratic control, political and religious neutrality (except when established within specific bounds, such as Islamic communities), limited interest on capital in order to serve members in lieu of seeking a profit, equitable distribution of earnings (income surplus) if any and equitable sharing of costs, and cooperative education and exchange of information.  Further, SME loans may be guaranteed by a government or the government may re-guarantee loans; the former is to be seen in North America and the UK and the latter in Japan, South Korea and Germany.[76]  Public funds in some cases are operated by private entities.  There also are corporate associations, where funding and operation is entirely by the private sector.

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[75] Pablo Pombo, in: André Douette, "Small and Medium-Sized European Enterprises and the Way They Are Financed / The Point of View of the Loan Guarantee Schemes," p. 28f. AECM (2006), at www.aecm.be/ENG/documents/EtudeEurop_PT.pdf,
[76] ADB [2007].

Another approach is to consider CGS as retail, portfolio, or wholesale schemes.[77] A **retail guarantee scheme** is essentially the same as an individual model CGS, or either an ex-ante or ex-post arrangement. Examples of retail schemes include the Europe-based NGO Fonds International de Garantie (FIG), Brazil's SEBRAE (Service of Support for Micro and Small Enterprises) and Chile's FOGAPE. A **portfolio CGS** is when the guarantor covers all loans (a pool of loans) taken out by a lender, subject to certain conditions, but there is no a direct relationship between the borrower and guarantor. It is a form of blanket guarantee. It is similar to a **wholesale CGS** wherein a local bank's loan or line of credit to (for example) a microfinance institution is guaranteed. This type of scheme can be called "automatic." A portfolio guarantee is characterized by lower transaction costs as less time and expense are required for screening.

A wholesale scheme is useful for lending institutions which do not have and do not want to bear the expense of acquiring technology for administering small loans, and transaction are low, to cite two characteristics. Good function of a wholesale scheme requires sound capability on the part of the guaranteed institution, based on detailed familiarity with the company served (their economics, finances, business, technology, management, etc.). It is also suitable when the lender is not a deposit-taking institution; such institutions are generally small and have limited capabilities. They are likely to welcome the lower transaction cost made possible by a wholesale arrangement.

A wholesale scheme is better than the others when the SME lenders are specialized. Specialized entities are typically small in scale; a GCS is generally larger and can provide guarantees to more than one small credit supplier. Because operation of the scheme is not difficult, it may be preferred for public programs. Guarantors will determine their conditions, such as the magnitude of loans, loan objectives, and required financial conditions of borrowers. Moral hazard may be more likely to arise.

In the case of retail guarantees the probability of moral hazard is lower, as is the default risk. Retail models are also called "individual-retail-selective models". Additionality is difficult to ascertain and there is a possibility of adverse selection. Additionality is easier to identify and the adverse selection problem may be present. Wholesale schemes are also called "intermediary" or "intermediary-wholesale models." In the case of FIG, this NPO guarantees up to 50% of a given loan to a microfinance lender, which in turn must provide 10% of the guaranteed amount as collateral. Thus, FIG, the microfinance entity, and the local bank all share the risk. Examples of portfolio schemes are Colombia's Fondo Nacional de Garantias (FNG) and in the US the Small Business Administration (SBA). Identified as wholesale schemes are the international NGO ACCION International Global Bridge Fund, the Swiss-based NPO RAFAD International Guarantee Fund, the Phoenix Fund Guarantee in the UK, and the global Women's World Banking.

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[77] Fan [2005]. See also Dale W Adams, "Are Loan Guarantee Programs Effective," at
http://info.worldbank.org/etools/docs/library/202074/dale_adams_Are_Loan_Guarantee_Programs_Effective.pdf.

Other than government-backed schemes and for-profit programs, and mutual guarantee associations, there are programs sponsored by **national development aid entities** (such as USAID), **multinational organizations**, and **non-governmental organizations**. There also are a few cases of **joint ventures or equity participation** from high-income countries in CGS in developing countries (such as the ADB investment in a Chinese CGS).

All of the above are basic types; schemes actually in operation are demonstrably more complicated as shown by examples in **Table 2-2**.

### 2.1.2 The Rationale for Credit Guarantee Schemes

Small businesses at times obtain guarantees from other companies (e.g., prime contractors) or through personal relationships; private sector entities in many countries provide guarantees; international aid providers often provide loan guarantee arrangements, and there are a number of international NPOs that provide guarantees. The role and participation of governments in credit guarantee schemes is, however, the most important, as it is an expression of policy, and indeed many governments operate CGS. The World Bank reports that out of 76 CGS recently studied, 55 have government involvement in one form or another.

Improvement of SME finance at the behest of government can be accomplished through several channels, as mentioned above: broad-based programs for improving management of SMEs, changes relating to the instruments for SME finance, regulation of financial institutions, improvement of information such as by oversight of auditing, the accounting profession, and financial accounting at the level of the firm, creation of specialized institutions, and improvement of financial infrastructure. These are not entirely mutually exclusive. **Creation of a credit registry is an infrastructure improvement, and also improves finance-related information.**

Broadly stated, CGS are attractive as means of correcting market imperfections (such as reluctance to lend to SMEs) or for achieving social objectives (such as creation of jobs).[78] The fundamental rationale of the first type is the difficulties that these enterprises have in obtaining funds, a problem that in good part is derived from the asymmetrical situation regarding information about the SMEs as potential borrowers. There are, however, also other reasons that are advanced for adoption of CGS. They include countering the problem of a lack of collateral or shortcomings of the collateral market (a particularly important issue[79]), ameliorating risk on the side of the lender, improving the profitability of SME lending, developing SMEs or the SME

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[78] For an earlier account of reasons for CGS, see Gudger, Michael, Credit guarantees : an assessment of the state of knowledge and new avenues of research." Rome: FAO [1998], FAO agricultural services bulletin 129,p. 50; accessible at www.fao.org/Ag/AGS/subjects/en/ruralfinance/pdf/CreditGuarantees_E.pdf, p. 1-4.

[79] Part of the collateral problem involves laws for seizure of collateral. In many countries, these laws and the way they are applied (e.g., slowly) are an impediment, especially for SMEs, that have less of a financial cushion and fewer financial options than larger companies in managing their own finances.

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sector as a matter of policy, fostering growth of enterprises by providing leverage, and the creation of additionality.[80] Further, as suggested by the above mention of microfinance, a CGS can strengthen the capacity of participating lending institutions, and the financial sector's capability, including in some cases surmounting regulatory barriers (e.g., a company may be barred from obtaining a loan from overseas, but if it is a two-step loan through a local institution, this restriction is overcome, and foreign exchange risk is eliminated for the borrower). That is, the existence of a CGS can help credit institutions to expand their retail business. In the case of the microfinance organization RAFAD, for example, "creation of relations between some informal economic sectors and local traditional banks" is among the accomplishments of this non-profit organization. Policy motivations can also include creation of employment opportunities, promotion of innovation, or other strategic objectives, that is, objectives of the second type. These may be considered to be desirable externalities.

Collateral-related problems include lack of collateral, lack of clear title to assets, and flaws or shortcomings of legal systems related to the posting of security and claims against it.

From another viewpoint, as the economic rationale for the CGS, (1) exploitation of information advantages of the guarantor, (2) value as a risk diversification tool, and (3) exploitation of regulatory arbitrage can be cited.[81]

The a priori rationale for establishing a CGS will vary from nation to nation (and at sub-national levels). The overall situation in this regard is summarized in **Table 2-3**.[82] Stated reasons (objectives) of ASEAN CGS are cited separately below.

### 2.1.3   Criticism of Credit Guarantee Schemes

There also is a case for opposing CGS.[83]  The basic reasons that have been given are as follows.

- ➢ The schemes waste development resources, or in other words they are only the second-best choice on the SME finance menu.[84]
- ➢ Results promised are not likely to be delivered, particularly meaning that additionality is difficult to measure.

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[80] Gudger, *op. cit.*,, p. 1-4.

[81] Beck and Feijen [2008].

[82] Miwako Nitani and Allan Riding, "Encouraging Entrepreneurial Activity Using Loan Guarantees: The Credit Supplementation System in Japan," Paper presented at the International Council for Small Business 47th World Conference, San Juan, Puerto Rico, June 16-19, 2002, accessed at http://sbaer.uca.edu/research/icsb/2002/auth_letter/pdf/082.pdf

[83] See Gudger, *op. cit.*, p. 4-8. Opposition to the provision of financial support to SMEs is expressed, inter alia, in Robert C. Cressy, "Funding Gaps: A Symposium," *The Economic Journal*, Vol. 112 (Feb. 2002), F1-F16 and David DeMarco, "Overlending?," *The Economic Journal*, Vol. 112 (Feb. 2002), F32-F53.

[84] Gudger, *op. cit.*, p. 4-8. Credit rationing by banks is well covered in economic literature, starting with, for example, J.E. Stiglitz and A. Weiss (1981), "Credit rationing in markets with imperfect information," *American Economic Review*, 73, p. 393-409.

- Banks are reluctant to lend to SMEs for reasons other than those mentioned above.
- Non-financial approaches should be given preference: changing regulations and practices in the financial sector to facilitate borrowing by SMEs, for example.
- Improving collateral-related matters such as land registration procedures, and improvement of property laws so that when justified property posted as collateral can be legally and relatively quickly seized.
- Moral hazard is promoted, as the presence of a guarantee (especially a full guarantee) could cause relaxation of standards and invite poor loan decisions by banks, or banks may not monitor loan performance satisfactorily; borrowers may be less dedicated to fulfilling obligations if a third party has given a guarantee.
- Costs are increased, to the detriment of borrowers' interests.
- Financial sector reforms should be given precedence.
- Credit guarantee schemes cannot operate at a level where administrative costs and losses on guarantees can be covered and hence are not suitable SME support mechanisms.
- Credit guarantee schemes cannot be justified on the basis of cost-benefit studies.

Since these criticisms were expressed, in 1998, much additional experience in establishing and operating CGS, and additional scholarly studies, has been accumulated. There have been some failures, in Latin America, in Indonesia, and elsewhere.[85] From both success and failure, however, lessons have been learned, older schemes have undergone refinements, and newer schemes are likely to function better than older ones. Credit guarantee programs are sponsored by prominent international institutions, and have been developed for application on behalf of microfinance. An international conference[86] and the ongoing activities of the Asian Credit Supplementation Institution Confederation (ACSIC)[87] testify to the current level of interest in CGS in the Asian region, and suggest that CGS will be assigned progressively higher attention in the near future.

Perhaps the most important observation to counter these criticisms is (1) the quality or performance of CGS management is of critical importance and there is no inherent guarantee that a given CGS will be operated and supervised properly, and (2) the design of a scheme alone can determine its success or failure, and that design must be modified over time in keeping with accumulation of experience, development of techniques including those for the utilization of quantitative information and in keeping with change in the operating environment.

Operational and academic evidence contrary to the opinion that CGS are not desirable exist. Taiwan, for example, from 1974 through February 2008 provided guarantees to more than

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[85] Shim [2006].

[86] The Workshop on SME Credit Guarantee Systems, in Shanghai Oct. 25-28, 2005. For conference papers, see http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/ICLP/0,,contentMDK:20713410~isCURL:Y~menuPK:4611 90~pagePK:64156158~piPK:64152884~theSitePK:461150,00.html.

[87] Limited information about ACSIC is at its website, http://www.acsic21.com/committee.php. ACSIC is supported by the Small Business Credit Guarantee Corporation (SBCG), of Thailand. Additional information about ACSIC is provided further below.

260,000 enterprises; more than NT$3.9 trillion was guaranteed.  Today there are more than 2,200 companies that had received guarantees and now have grown to be larger than the SME standard. Of those more than 500 are either listed or are having their shares traded by investors in the over the counter market.

There used to be strong arguments against CGS as an allocative avenue for credit especially for those who believe in the power of market forces to efficiently allocate capital to the sector that demonstrate the best risk-return profile.  But the imperfect market structure of the banking sector of most developing economies and the persistence of information asymmetry would leave small and medium sized borrower firms to the least attractive spectrum of the loan market if no government intervention (e.g., in the form of CGS) is established.  The information gap in credit quality is quite wide enough to discourage banks from voluntarily opening their loan market to the SME sector such that governments of developing economies have to issue credit allocation laws if only to push banks to be more inclusive in their credit granting strategies. This is the rationale for CGS. However, the argument against CGS, that it creates moral hazard by weakening the will and commitment of the borrowers to repay the loan in the presence of a guaranteeing institution, is difficult to refute.  There is also a moral hazard on the part of the lending banks, which might have less incentive to exercise prudence in supervising loans, or pursuing vigorously the collection of loan payments.  On the other hand, the moral hazard issue is watered down in the context of the banks wanting to protect their loan portfolio performance and market reputation; these banks will continue to seriously pursue loan repayment efforts in order to keep loan defaults to a minimum.

On the part of the guarantors, the moral hazard issue is likewise never absent.  Lenders do not automatically trust government-supported CGS because of the lack of confidence that the guarantees will be paid out quickly and with minimum dispute once the claim is made.  Disputes and rejections involving claims depend on how well defined the guidelines are for the respective roles and responsibilities of lenders and guarantors, the monitoring powers by guarantors of the lending institutions and the procedures for guarantee approval and claims.  Related to this, the legal system must allow the judicial process to be swift enough to handle the legal proceedings that a CGS may demand.

Another important element of the CGS is the risk-sharing element between the lending bank and the guarantor institution.  Guarantee coverage and the experiences associated with it vary.  In Latin America, the experience of FUNDES asserts "guarantees of less than 50% are of little interest to banks, and 100% invites abuse".[88]  Most schemes may indicate 70% to 80% coverage but in reality cover so much less.   One hundred percent coverage, though viewed as subject to greater moral hazard on the part of both the lending bank and the SME borrower, is present in countries where the financial system and banking sectors are truly developed such as in Canada and Japan.[89]

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[88] Levitsky 1997, citing Oehring 1996.

[89] Levitsky [1997].

## 2.2    Credit Guarantee Scheme Issues

### 2.2.1    Motivation

For purposes of this study, the motivation for establishing and operating a CGS (see the text table in the preceding section) is taken to be the improvement of SME finance, as suggested by the rationale items mentioned above.   However, both non-SME policy considerations and political considerations can be involved.   In such cases evaluation of CGS performance would include criteria relating to social goals, regional development, or industrial development, and there is a possibility that ulterior motives could be involved.

### 2.2.2    Sustainability; Costs and Benefits; Income and Pricing

The literature dealing with CGS includes various studies and papers;[90] some assert that CGS are too costly.[91]   There have been instances, moreover, when schemes became too costly for the governments to permit them to continue.   Other times, the schemes require the allocation of large sums by the government.[92]   Whereas costs can be determined reasonably well, benefits are more difficult to measure, so that it is difficult to conclude from examination of all available documents whether CGS are or are not too costly.

The costs of a CGS comprise start-up costs, the initial funding or endowment of the institution, replenishment of funds in the event of losses or the depletion of capital, routine operating costs, and transaction costs. These costs can be formidable, making it difficult to justify a CGS purely on financial grounds.

Benefits can be in terms either of additionality (see below) or other factors, such as spillover effects.   In the latter case, measurement problems are encountered, when an attempt is made to meaningfully quantify the creation of jobs: what time frame would be suitable?   In any event, measurement of additionality is difficult to do in a way that would be properly acceptable to objective policymakers who have responsibility for the use of public funds.

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[90] For example, Robert C. Vogel and Dale W. Adams, "The Benefits and Costs of Loan Guarantee Programs." (1996), at http://info.worldbank.org/etools/docs/library/202082/Vogel_and_Adams_the_benefits_and_costs_of_loan_guarantee_programs.pdf .

[91] Relevant works include Honohan, *op. cit.*

[92]  Tahara, Hiroshi, "Difficulties of Administering Guarantee Programs as Highlighted by the Experience of Other Countries." Orig. pub. March 2006 in *JASME Research Institute Bulletin.* Orig. at www.jasme.go.jp/eng/pdf/research_mar_2006.pdf; HTML version only is now available. The Japanese original is available.

**There are few CGS that pay their way**. **In one form or another, ongoing financial support from government is required.**[93]  Thus government support for a CGS, beyond initial supply of capital, calls for a medium- and long-term policy of commitment, annual budgets, oversight and monitoring of results, in addition to changes especially in administration or emphasis as may be required by external conditions in the economy, or political and social circumstance.  At times, the government may wish to increase its capital contribution in keeping with revision of the objectives of the CGS, or may have to do so because losses caused the CGS to burn up its capital (as in the case of one of the Korean schemes, introduced below), or because of extenuating circumstances such as a financial crisis. Apart from equity investment, government support can be in the form of subsidies, or the re-guarantee of schemes.

A CGS may be set up with the intention and provision for its not requiring continuous annual support. This would be the case if there was an original intention to convert a governmental scheme to a private one, or if the management of a scheme is to be the responsibility of a private sector entity. At present, however, such an approach does not appear to be promising.

Sustainability thus does not mean a CGS should be self-sufficient. Few are. However, in one way or another any annually recurring shortfall in funds, including the cost of any surge in defaults, must be justified. In principle, the greater the transparency of the rationale for annual, continuous support, the better. Political considerations, nevertheless, may intervene.

The cost components that a CGS must recover, even if not totally, are the cost of funds (initial capital, and any later addition), operational costs, and the cost of losses (defaults).[94] Writing in 1996, Vogel and Adams pointed out that most evaluations of schemes failed to report the entire costs of the schemes, in addition to failing to adequately document benefits or consider additionality.[95] The matter of costs of course is great importance. In this connection, the better the quality of a nation's credit database -- including bank borrower performance -- the safer the operation of a credit guarantee scheme. Losses on defaults may be attributed to causes such as poor management (its guidelines and policy as well as its operation), or external forces, such as a currency crisis, recession or natural or manmade disaster.

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[93] See André Douette, "Small and Medium-Sized European Enterprises and the Way They Are Financed / The Point of View of the Loan Guarantee Schemes." AECM (2006), p. 28f. Accessible at:  www.aecm.be/ENG/documents/EtudeEurop_PT.pdf.

[94] There has been at least one instance when payment of guarantees exceeded the fund's revenues and reserves (in Nigeria in the 1980s). Early failure of some schemes has been attributed to poor scheme design, poor management, lack of diversification of investment, and even corruption or political intervention. Meyer, Richard and Geetha Nagarajan, "*Evaluating Credit Guarantee Programs in Developing Countries.*" Paper presented at the meeting of the American Agricultural Economics Association held in San Antonio, July 1996, p. 6f.

[95] Vogel and Adams, *op. cit.*, p. 9.

In the case of the EU, public support is necessary in 25 countries.[96] Some CGS can cover guarantee losses from guarantee fee income. That is, the range of guarantee loss rates is from 1 to 5% of the outstanding guarantees in the EU, and the fee income ranges from 0.5 to 5% also of the outstanding guarantees. Processing fees, however, do not cover administration costs – at any EU CGS.    The most common mode for guarantee fees is a percentage of the annual amount outstanding. Ideally but rarely fees cover claims for default.

It is important to mention that a recovery process follows default. Recovery, however, may be achieved in the following fiscal year or even later than the fiscal year when the guarantee was provided. For this and other reasons, defaults must be taken into account when preparing annual budget. Here then is another reason the existence of a CGS is an argument in favor of strengthening the national credit information system in its content and functioning. Writing in 1997, Levitsky mentions that Canada's scheme for small business obtained its entire operating budget from post-default recoveries.[97]

When a guarantee has been paid following a default, the credit guarantor takes over the debt for collection; this process is called **subrogation**. For this aspect of CGS operation to function well, it is important that laws and regulations be appropriate to the general circumstances, and also important the administration and legal procedures function smoothly and swiftly.

Operational costs are easily controlled and anticipated for budgeting and other purposes.  The cost of funding the CGS will include one-time start up costs as well as the capital base of the fund.  The funding may be entirely governmental, or, often, partially governmental and with the residual coming from participating financial institutions. Equity participation by international agencies (e.g., the IFC and the ADB), foreign governments, or foreign NPOs (a Swiss investor in a Chinese CGS).  Non-financial private-sector participation is theoretically possible but much more difficult to justify and be accepted, and unlikely to account for more than a very small share of equity.

Scheme income can be derived from guarantee fees, income from other activities or services, and income from managing the capital base.  The fee mechanism is most commonly 1.5 to 2.0% p.a. on the outstanding guarantee[98] but there are various other approaches used, in countries including Korea, China and Taiwan.[99]   Fees may include a registration or application fee in addition to the annual fee.  Fees will be keyed to the level of interest rates and in their adjustment can also reflect policy.  Fees are conventionally paid to the lending institution, and passed back to the guarantee scheme or other guarantor.

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[96] Helmut Dorn, "Practices and Policies in Credit Guarantee Programs in the EU." Accessible at:
http://info.worldbank.org/etools/docs/library/202079/Helmut_Dorn_Practices_and_Policies_in_Credit_Guarantee_Programs_in_the_EU.pdf.
[97] Levitsky [1997], p. 16
[98] ADB, [2007], p. xix.
[99] *Ibid.*

In practice, guarantee fees can be said to include a subsidy to guarantee seekers, justified by the policy objectives of the scheme in question. In exceptional cases such as in Korea in general and at a specific CGS in China, however, the fee structure is risk-sensitive (variable).

### 2.2.3  Funding; Government Participation and Involvement

While there are CGS operated on a for-profit basis, or by non-profit organizations (notably, the mutual guarantee associations), and either public, public-private, or private interests, they are few. In Europe fee income has not proved to be sufficient to cover all costs. Government support is normally required. There do not appear to be any significant instances of an SME-oriented CGS that has continued in operation for a reasonably long period of time on the basis solely of fees. [100] The nature of government involvement maybe any one of: ownership in entirety, subsidization, or re-guarantee. [101] Mutual guarantee associations operate without direct government support, but these are small in scale. A CGS may offset a loss in its guarantee business by higher profits from in non-guarantee operations. Nevertheless, it is evident that in order to succeed, a CGS must rely on government for capital and annual operating costs. This support can come from either the central or local governments. Note that there are some instances of equity participation in CGS by international organizations (e.g., the ADB, the ILO and the IFC). Similarly, government regulation of CGS shows no one pattern.[102] There are some CGFS in Europe that are essentially self-regulated. The legal basis may be in SME-related legislation, or financial-sector legislation. There may or may not be a law specifically for CGS. It follows then that the branch of government charged with oversight responsibility for a CGS will vary country to country.

Overall, while funding and CGS management tend to be dominated by the government, private-sector lending institutions generally do the function of credit application review and loan recovery.[103] On occasion of calamities such as earthquakes, the government may add funds to a CGS to help SMEs recover; this was the case, for example, after the 921 Earthquake on Taiwan; NT$2 billion was provided to SMEG for emergency use in the stricken area.

### 2.2.4  Additionality

Similar to the matter of costs, the benefit of additionality is not a subject on which there is a consensus.   Additionality (sometimes called incrementality) is an important implicit aspect of the underlying rationale for many CGS schemes.  Simply stated, it refers to the extent that loans are made (i.e., incremental loans) solely because of a CGS.

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[100] ADB [2007] p. 35.

[101] ADB [2007] p. 38-41 *et passim.*

[102] ADB [2007], p. 42-47.

[103] Access Finance.

Additionality is a slippery concept. Because of its importance in justifying credit guarantee schemes, a definition is needed. One is that of Robert Vogel and Dale Adams: *more lending than would have occurred without the guarantee expressed either in terms of number of clients, number of loans, or volume of funds lent for targeted purposes*.[104] Gudger suggests "*additional volumes of credit and/or credit on more favorable terms to a target group which has confronted difficulties in accessing credit markets or has been charged a high "risk premium" for access to credit markets.*"[105] Meyer gives as characteristics of additionality (1) providing credit where it otherwise might not be granted; (2) providing credit on more favorable terms (maturity, interest rate, governance); (3) providing credit on a more timely basis than otherwise; (4) facilitating a working relationship between a firm and a lending institution; (5) providing for a broader financing package.[106]

These do not exhaust the alternative definitions, and it is to be noted that to the extent that there will be national differences in defining the concept (if indeed national definitions are adopted), it will be difficult to unify regional rationales for credit guarantees in order to create a regional guarantee scheme. Specifics of any definition will hinge on the mission of the scheme, as indicated by a comparison from Canada, where the alternate designation, incrementality, was used (see **Table 2-4**).

Determination of additionality relies almost exclusively on information from credit institutions. The Canadian study found that researchers have most commonly used the following methods to investigate additionality:
  ➢ Analysis of bank data and surveys of lenders;
  ➢ Analysis of guarantee program files, (the most commonly used method);
  ➢ Structured and semi-structured interviews with borrowers and/or lenders (the second most commonly used method); and
  ➢ Analyses of lending activity under loan guarantee programs as compared to lending activity to SMEs in general

Thus, there are challenges in defining the concept, and in measuring it.[107] Honohan states that "most evaluations rely on the qualitative assessment of bankers and SME insiders or on only moderately convincing imputations."[108] One aspect of the measurement problem is quantification of activities foregone by competing borrowers who did not obtain a guaranteed loan. Efforts to utilize econometric analysis have been few. Taken from a political point of view, a CGS that

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[104] Vogel and Dale in *The Financier*, 1997, p. 22-29.

[105] Gudger [1998], p. 50.

[106] Richard L. Meyer and Geetha Nagarajan, in "Evaluating Credit Guarantee Programs in Developing Countries," a paper presented at the American Agricultural Economics Association meeting in San Antonio July 1996, at http://aede.osu.edu/programs/RuralFinance/PDF%20Docs/Publications%20List/Papers/96P07.pdf

[107] Meyer and Nagarajan, *op. cit.*

[108] Honohan, *op. cit.*, p. 10

had the objective of providing credit supplementation to a specific group may be said to produce not additionality but to be functioning "as a political instrument to direct credit flows to politically important groups [i.e., the target group] almost irrespective o(f) their creditworthiness."[109]

Additionality can be taken as having either an institutional aspect or an economic aspect. Most discussions of additionality refer to the sense of the expression "additionality made a difference" from the point of view of both lender and borrower (in cases when the loan was proved and made). This does not mean, however, that the loan was well made or better made than other non-guaranteed loans. It also does not guarantee that the borrower will meet his obligations.

**Economic additionality** corresponds to fringe effects or externalities to acceptance of a guarantee. This is not limited to direct effects on the lender-borrower relationship (see the paragraph below on "graduation"), nor the future creditworthiness of or borrowing by the creditor. It includes the increment if any to improved business planning (the plan would be reviewed by the CGS prior to the bank review), project planning or financial accounting and record keeping, for example. If a loan is used to buy new equipment that increases profitability or enables introduction of a new product or entry to a new market, or acquiring a major new customer or changing the production method so as to greatly increase productivity, these too are additional benefits. Some CGS are operated with the specific purpose of guarantee is such as for innovation. In such cases, and to an extent others were the eligibility is limited to specific groups, such as women entrepreneurs or a specific local industry, this economic additionality is in the forefront and it should be possible to monitor results.

In a widely referenced study published in 1998, Gudger asserted that "The U.S. experience clearly demonstrates that guarantees, if they have not produced additionality in and of themselves, certainly were part of the process of extending additional credit on significantly better terms to 'low end' borrowers, a process which has resulted in additionality."[110] While Gudger gives the development of mortgage insurance as a factor behind this, the tragic reality is that there also was scandalous mortgage marketing by banks, propelled by the securitization of the loans, lack of adequate oversight by the industry and government, and foolish behavior by many private citizens, culminating in the subprime loan debacle. Adams provided four cases to demonstrate the difficulty of dealing with additionality (see **Table 2-5**).[111]

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[109] ADB [2007], p. 5. Of course, it is certainly possible that even in this case decisions took into account creditworthiness.

[110] Gudger, *op. cit.*, p. 50.

[111] Adams, Dale W., "Are Loan Guarantee Programs Effective?" Presentation at Workshop on SME Credit Guarantee Systems, Shanghai, Oct. 26-28, 2005, slides 12-18; at:

http://info.worldbank.org/etools/docs/library/202074/dale_adams_Are_Loan_Guarantee_Programs_Effective.pdf

One other measure of the effectiveness of credit guarantees has been proposed: graduation.[112] This refers to the number or rate of credit applicants who received a loan with the aid of a guarantee and subsequently became a "normal" customer of the credit institution -- meaning that a guarantee was not required. For example, we can postulate the case of an SME who used a guarantee to obtain the company's first bank loan, and subsequently (perhaps after repayment) was given another loan by the bank. But there can be various reasons for the granting of a second loan, and it may be difficult to isolate the effects of the initial guarantee from other factors. Between the first and second loan, for example, the company may have improved its management, or profitability, quite unrelated to the first loan.

A possible problem regarding determining if graduation has taken place (or there is an impediment to it) is that if a borrower has availed itself of a guarantee, and has satisfactorily discharged the debt, the borrower may feel that using a guarantee a second time, even when not necessary, would be desirable as a risk reducing measure.

If, after a guaranteed loan has been made, an SME has no further need to borrow from a bank, there is no graduation, but it certainly can be that the company has improved itself (regardless of external changes in the credit environment), so the absence of graduation doe snot necessarily reflect poorly on the borrower.

Other measures of CGS performance are the number of loans guaranteed compared to the total number in the target group, and degree of dependence on subsidies.[113]

### 2.2.5   Scheme Design

The design of a scheme is considered one of the most critical aspects determining whether the scheme will succeed or fail. Elements that determine the design are, primarily, funding, fees (these two are discussed above), eligibility standards, leverage, risk sharing arrangements, ceilings on guarantees, collateral policy, claim procedures, and guarantee recovery procedures. Rigidity is dangerous. The history of schemes shows over and over that adjustments and refinements must be made over time.

Necessarily, each scheme defines the criteria for guarantee eligibility. As stated above, a fund may have a relatively specific purpose, such as supporting innovation, or supporting businesses operated by women, or in a certain industry or region. In the section on Asian schemes below, a summary of eligibility standards is provided. Guarantee ceilings may be determined on the basis of funds available within the scheme.

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[112] Linda Deelen and Klass Molenaar, "Guarantee Funds for Small Enterprises," ILO (2004), at http://www.ilo.org/public/english/employment/finance/download/guarfund.pdf.

[113] Dale Adams, "Are Loan Guarantee Programs Effective?" N.d.; at info.worldbank.org/etools/library/latestversion_p.asp?objectID=202074&lprogram=18. See Note 102.

**Leverage** is also referred to as gearing and gear ratio. It means the ratio of the amount of loans made relative to the capital in the guarantee fund. Prudent management would require that the ratio reflect historic default rates on SME loans, and the ratio can be higher when there is a partial guarantee. Leverage can be increased from early years of CGS operation, as experience and a database are accumulated and built up.

In some instances, loans are fully guaranteed, meaning that the lending bank bears no risk at all. Most of the time, however, up to half of the risk is borne by the credit institution, that is, there is a partial guarantee. The extent that a scheme is willing to take on risk is a matter of fundamental policy for the scheme and a key part of scheme design.

Risk assessment necessarily precedes risk sharing for any given loan. Overall, not many CGS price loans on the basis of risk, risk here being calculated by referring to the aspiring borrower's record of repaying previous loans. In the case of start-ups and microenterprises, as well as many newer SMEs, this basis for calculating risk may not exist. Also, it is possible that the aspiring borrower simply has not had any previous need to borrow money. Information asymmetry is a pertinent issue in this connection when SMEs are involved, as they tend to have weaker documentation of their financial status and practices and poorer business plans demonstrating the intended use of the borrowed funds.

### 2.2.6   Moral Hazard

By being a *partial* guarantee, a scheme's guarantee embodies a degree of mitigation of moral hazard. Because a third party has guaranteed part of a bank loan can nevertheless encourage a borrower to be less careful in managing the loan and meeting repayment obligations, so some moral hazard remains. There are practices and conditions that can mitigate this danger, such as access to a registry where the credit record of the borrower can be seen. Related issues include bankruptcy law and property law. The social stigma of a default is one aspect of non-financial influences on borrower behavior. Hazard can also exist at the credit institutions, in that the existence of a partial guarantee may encourage them to lend in the face of high risk, or not monitor loan performance rigorously.

### 2.2.7   Scheme Operation and Practices

**Table 2-6** shows recommended scheme practices is one starting point for consideration of the operation and practices of schemes. First and foremost, however, any scheme is expected to satisfy the objectives upon which it has been founded. This is a matter of scheme management (and management capability), and scheme oversight or supervision, and results also depend on external conditions and the scheme's ability to cope with difficult challenges.

Schemes will deal with more credit institutions than borrowers, and relationships with the banks are important. The extent that a scheme will bear the risk of the lender is often determined by the

scheme's charter, and is fait accompli, but this is not the case in the event of a default. How well (how quickly) a CGS handles a claim thus is one key determinant of how it performs as an intermediary in the financial marketplace. Recovery of assets in the case of default consumes time and incurs expense.

Any CGS must devise standard application procedures (paperwork and processing), and methods of contacting and communicating with SME entrepreneurs. If the scheme will be approaching credit institutions with and on behalf of a loan applicant, the CGS must have the ability to evaluate the company in terms of its financial health, outlook, management and planning ability, the nature of fund requirements (working capital or investment capital, or start-up funds, etc.), so as to assess risk.

The schemes must be conscientious in developing business relationships with lending institutions, and over time seek to earn their trust. Once the scheme has decided to offer a guarantee, it must issue a document or certificate of its position. This would be in combination with signing an agreement with the aspiring borrower.

Parameters of the scheme become important in connection with this: the guarantee limits, the term, maximum amounts, fees and payment practices are among the matters that are involved. Some of these items are predetermined or fixed; others are negotiable or flexible. If a loan is subsequently made, the CGS must, through the good offices of the bank, monitor its servicing. If the borrower defaults, and the bank claims guarantee payment, the scheme must, after determining that the claim is well founded, pay, and then seek to recover what it can from the borrower. It is necessary that the procedures including time factors for payment against claims be clearly set forth in advance.

Guarantee schemes for SMEs has been a subject of some interest to UNIDO, which has prepared a manual, "Credit Guarantee Schemes for Small Enterprises: An Effective Instrument to Promote Private Sector-Led Growth" (SME Technical Working Paper No. 10), by Anke Green.[114] In it (p. 56f) is provided a guide to good practices at a CGS, with reference to the design and implementation of the scheme (see **Table 2-6**). It serves as a guide to the major features of any CGS, as well as provides benchmarks or proposed benchmarks.

### 2.2.8  Eligibility

One of the most important aspects o scheme design is the determination of the eligibility of borrowers for receiving guarantees. In the case of mutual association, the criteria will reflect the nature of the members. In other types of schemes, eligibility will start with basic policy-driven criteria, such as a limitation to a certain region, or certain industry, or companies owned by women, or high-tech ventures and so on.

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[114] Online at http://www.unido.org/fileadmin/import/18223_PSDseries10.pdf.

### 2.2.9 "Success" of Credit Guarantee Schemes

The basic issue of whether the functioning of a CGS yields greater benefits than its costs, has not been adequately resolved as a general issue or a specific one. In the latter case, this is because of government policy considerations that underlie investments and budget allocations. Similarly, there is no good answer to the question of whether the resources that have been deployed in CGS would yield greater benefits if used in another way. Also, there is no one-size-fits-all answer to the question of how to judge the success of a scheme. Here are some examples of what has been done or discussed.

In 2005, Great Britain ordered a review of its CGS, the Small Firm Loan Guarantee organization; the study was reported in what is called the Graham Review.[115] As one consequence of the study, the government required clear criteria for measuring the take-up and performance of SFLG loans. They are: (1) a positive effect on the national economy, (2) effective use of SFLG allocations by lenders, (3) lenders must stay within their allocations, (4) there must be an increase in the number of lending institutions and individual lenders within institutions participating in SFLG activities, (5) default rates must decline, and (6) lenders must plan for strategic and innovative uses.

In an early study, these six pre-conditions were identified as contributors to the success of a CGS:[116]
> ➢ A market where banks do not meet demand for SME borrowers
> ➢ A guarantee law which covers provisioning, capitalization and tax incentives
> ➢ Bank supervision recognition of guarantees as adequate security
> ➢ Available credit resources
> ➢ Second tier reinsurance to absorb some risks
> ➢ Bank loans to SMEs must be sufficiently profitable at reduced risk

More recently, the following conditions were given on the basis of experience in Taiwan:
> ➢ The risk sharing principle should be applied to the mechanism to assure the financial institutions' prudent use of the credit guarantee schemes.
> ➢ The rate of the credit guarantee fee needs to be carefully designed to reflect the aim of a credit guarantee program.
> ➢ A firm commitment of the processing efficiency regarding claims of credit guarantee institutions will raise its credibility.
> ➢ The collecting recoveries process should be cautiously arranged to stimulate financial institutions to retrieve recoveries from their debtors in default.

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[115] www.hm-treasury.gov.uk/graham. See also "Small Firms Loan Guarantee / Annual Report for Financial Year 2007/08." Capital for Enterprise Limited (July 2008). Accessible at www.berr.gov.uk/files/file47204.pdf.

[116] Oehring, cited in: Jacob Levitsky, "SME Guarantee Schemes: A Summary." *The Financier* 4:1 & 2 (Feb./May 1997), p. 7.

> ➢ Takes advantage of financial institutions' branch networks and experienced personnel to conduct the credit guarantee service, e.g., the Authorized Approach (whereby banks are fully authorized to determine their own lending provided that such lending is within certain guidelines set by the SMEG)
> ➢ Provides different guarantee coverage percentage to banks according to the performance of their guaranteed loans.

An international study done in Great Britain also developed a list of factors that were behind the success, or failure, of CGS. These are as shown in **Tables 2-7-1 and 2-7-2**.

Some of the setbacks of CGS are internal to the CGS operation itself. For example, premiums and guarantee fees cover only a small portion of the cost of the credit guarantee programs, as is the case elsewhere. This means that for the CGS bodies to continue to exist, heavy subsidies are necessary to cover their operating costs. There is also the danger of moral hazard especially if the coverage is up to 100%. This is the reason for the popularity of partial guarantee schemes. Financial prudence might be set aside knowing that these loans are backed by the government anyway hence possibly resulting in high NPLs.

Lastly, in evaluating whether CGS is successful or not, it is crucial to remember that promoting CGS for financial development is not the same as promoting SME development. If the overall objective is to promote SME development via tools such as CGS and other financing schemes, governments must be ready to support CGS firms in times of distress so as not to fail to achieve the overriding goal of promoting SMEs. Supporting initiatives such as the establishment of credit bureaus and credit rating agencies for SMEs will help CGS expand its reach and maximize its impact.

## 2.3 SME Financing and the State of Credit Guarantee Systems in the ASEAN Region

Strengthening the SME sector has become the imperative of governments in ASEAN countries, owing to the output and employment contribution of small and medium enterprises. This is particularly more pronounced in Indonesia and Malaysia where there is also the socio-political objective of increasing the participation of indigenous businesses in the economy. Financing SMEs has also given birth to a new breed of financial products and services from the formal sector and has added a new management dimension to the risk-return landscape of banks.

As far back as 1980s, it was envisioned that financial sector reforms would eventually make the markets open up for small borrowers, given the right interest rate and funds competition scenarios. But by the 1990s, there was "little evidence that access to commercial banks had widened significantly for SME borrowers as a result of the reforms."[117] Despite the large amounts of funds from donors and support projects in the 1970s and 1980s, most of these went to microfinance programs with little economic impact on job creation and export contribution,

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[117] Levitsky, J. [1997:4]

while no such credit lines were made available to formal SMEs in the 1990s. The World Bank observed the persistence of this financing gap, and the renewed interest in credit guarantee schemes is viewed to help minimize this gap.

To date, SME constraints such as skills shortage, scarcity of capital goods, poor management, lack of comprehensive information on the sector, marketing difficulties are still overshadowed by the problem of inadequate financing facilities. The World Business Environment Survey covering 4,000 firms in 54 countries found that SMEs find inadequate access to finance as their primary obstacle to growth. Existing information asymmetries about this sector, high search costs on the part of the creditors, and high information and processing costs make the SME sector an unattractive segment to service from a purely commercial and profit-oriented point of view.

It doesn't help that commercial banks seem to have an inherent aversion to SME lending since they are perceived to be not as creditworthy as their corporate counterparts and their limited ability to raise collateral to back up their loans give banks a foggy picture of the ability of these enterprises to generate enough cash flows to repay their loans on time. If no deliberate intervention in SME financing had occurred, the process of financial intermediation would have broken down and collapsed for the SME borrowers a long time ago. Thankfully, such was not the case. All over the world, governments have established CGS to bridge the financing gap.

### 2.3.1 SME Financing Channels Amidst the Credit Gap

In **Indonesia**[118], the development of SI-PUK (Sistem Informasi Pengembangan Usaha Kecil or Integrated Information System for Small-Scale Enterprise Development) is closely related to the policy and strategy of Bank Indonesia (BI) in promoting the development of small enterprises, which has been carried out since 1978 under the implementation of Act No. 23/999. According to this Act, Bank Indonesia is not allowed to provide direct financial support in terms of KLBI to business entities including small enterprises. Rather, the role of BI is to provide indirect support through the maintenance of a stable exchange rate, establish a healthy banking system, support the Islamic banking system, regulate loan policy and provide technical support and facilities.[119]

As part of its commitment to improve access of MSMEs to financing resources, the government set forth to improve the institutional and financial access capacities of MSMEs by expanding the investment credit scheme and enhancing the effectiveness of the function and role of Bank Partner Fiscal Consultant (BPFCBPFC-KKMB). It is also strengthening the MSME credit insurance system by enhancing land certification, enhancing the role of credit insurance institutions and by developing a warehouse receipt system as financing instrument. To optimize

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[118] This section on Indonesia made use of findings and information contained in a GTZ study: Dr. Martin Godau, Dr. Wolfram Heimann and Stefan Jansn, "SME Finance in Indonesia/ A Financial Sector Development Program." Jakarta, Bangkok, Berlin, Denpasar (Aug. 2004), accessible at www.red.or.id./index=php?option=com_docman&task_download&gid=39.

[119] http://www.bi.go.id/sipuk/en

the utilization of nonbank funds to empower MSMEs, it is enhancing the effectiveness of using the rotating fund of the APBN (State Budget) and restructuring the PKBL fund management at state-owned enterprises.[120]

Total bank loans channeled out to the MSME sector (in 2005) were IDR354.9 trillion or as much as 51.02% of overall bank loans utilized for working capital (40.19%) and consumption (50.50%).[121] A special type of credit institution has been established to provide loans from IRP100 million to IRP1,000 million in scale. Called PVCCs, ("Provincial Venture Capital Companies") they offer speedy processing of loan applications, speedy disbursement of approved loans, and are flexible in making collateral-related decisions. Thus, although rates are higher than at commercial banks, the PVCCs are an SME–friendly institution, for startups.

There is a problem on the credit supply side, however, as banks are reluctant to do business with SMEs despite the requirement to maintain a KUK-ratio.[122] BKI, the fourth largest bank, has a ratio of 36%, much of which is micro loans. The same problems as found elsewhere are here: it is too costly to process small loans, for example, in addition to which many banks do not have a good grasp of their own processing costs, and opt for charging higher interest rates to compensate for poor internal information derived from weak management. The banks are funded short term, making them reluctant to lend investment capital. On the demand side too, are familiar problems. It is estimated that one-third of small businesses do not keep records. Banks and their personnel are said to have installed or permitted cultural barriers to discourage interaction with prospective SME customers. Many enterprises are not registered, many do not have business plans that a loan officer would agree to review, collateral is absent or insufficient, and there is a lack of familiarity with the routines of applying for a bank loan. Moreover, transaction costs are relatively high for SMEs; some of those costs are determined by government regulations that in the details may or may not be favorable to SME entrepreneurs. The large number of unbanked SMEs and the large number of SME startups mean that they are inherently a stream of new customers for banks, and it is always more expensive to do business with a new as opposed to an existing or repeat customer. Thus, there are some factors that are working at both sides of the table, to make SME finance more difficult.

The SMEs have in common, nonetheless, need for funds. And yet, as revealed by a Technical Assistance study for the ADB, 33% of the SMEs in the sample studied (equal to 48% of those that said they needed a loan) had never applied for a loan. A recent study disclosed that the reasons for constraints on obtaining bank loans, in the opinion of entrepreneurs, was (1) high interest rates, (2) complicated bank rules and (3) restrictive collateral requirements, followed and

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[120] http://www.kbriwina.at/downloads/EK_enterprises.pdf

[121] http://www.profi.or.id/index.php?option=com_docman&task=doc_view%gid=183

[122] KUK, or Kredit Usaha Kecit ("Small Business Loans") since 1990 must comprise 20% of the loan portfolio of banks, but after the Asian financial crisis this was not enforced. In 2001, however, banks were made obliged to publish the amount of their KUK loans every quarter, and those banks requiring assistance were enabled to seek assistance from the central bank. Nevertheless, the KUK ratio averaged 16.7% in 2001-2003.

of lesser importance by (4) limited access to or missing client relationship with a bank, (5) incomplete legal documentation and (6) lack of a business plan.

As noted in the consultant's report to the ADB, **Indonesia does not have a credit registry and there is no use of credit scoring**.  Commercial banks had planned to start operating a credit bureau in early 2005, but at present there still is only the Debt Information System operated by the central bank.  Also cited are the following conditions which influence the supply, use and functioning of SME credit: (1) Credit guarantees (and credit insurance) has not been assigned the status of a policy instrument, and there has not been an attempt to concentrate such programs or schemes on achieving objectives for specific sectors, regions or target groups.  (2) Legal proceedings are costly and lengthy; by nature Indonesians prefer peaceful settlements over open confrontations. This is an important part of the infrastructure for credit supply based on collateral or guarantees.  (3) Government regulations are often inadequate on paper and in application.  (4) Portfolio management techniques at banks are underdeveloped and staff training should be improved.  (5) Credit guarantees or insurance is not priced to cover costs.  (6) Credit guarantees or insurance is not always based on a clearly worked out contract, creating potential for disputes (and loss of confidence in the scheme).  (7) Present arrangements are such as to invite moral hazard.

In **Malaysia**, where there are many types of financing available for SME developments, one of the countries where the majority of SME financing is from banks.  At the end of 2007, RM128 billion had been financed for more than 625,000 SME accounts by commercial and development banking institutions  Financial programs for SMEs come in the form of soft loans, grants, equity financing, venture capital, guarantee scheme and tax incentives in order to strengthen workforce skills, develop entrepreneurship and address the needs of SMEs in the areas of marketing and promotion, product development and quality accreditation, technology development and debt restructuring.  The Ministry of Entrepreneur and Cooperative Development (MECD) and the Ministry of Science, Technology and Innovation (MOSTI) are involved in these financial programs as well as a large number of agencies.[123]

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[123] They are Amanah Ikhtiar Malaysia (AIM), Bank Kerjasama Rakyat Malaysia Berhad (BKRMB), Bank Negara Malaysia (BNM), Bank Pembangunan Malaysia Berhad (BPMB), Bank Pertanian Malaysia Berhad (Agrobank), Bank Perusahoon Kecil & Sederhana Berhad (SME Bank), Commerce Asset Ventures Sdn Bhd., Credit Guarantee Corporation Malaysia Berhad (CGC), ERF Sdn Bhd (ERF), Export-Import Bank Malaysia Berhad (EXIM Bank), Majlis Amanah Rakyat (MARA), Malaysian Biotechnology Corporation Bhd (MBC), Malaysia Debt Ventures Berhad (MDV), Malaysia External Trade Development Corporation (MATRADE), Malaysian Industrial Development Authority (MIDA),  Malaysian Technology Development Corporation Sdn Bhd (MTDC), Malaysian Timber Industry Board (MTIB), Malaysian Venture Capital Management Berhad (MAVCAP), Malaysian Industrial Development Finance Berhad (MIDF), Mayban Ventures Sdn Bhd, MIMOS Berhad (MIMOS), Multimedia Development Corporation (MDeC), Perbadanan Nasional Berhad (PNS), Perbadanan usahawan Nasional Merhad (PUNB), Small and Medium Industries Development Corporation (SMIDEC) and Yayasan Tekun nasional (YTN). Source: http://www.smeinfo.com.my/index.php?ch=2&pg=3&ac=62$lang=#62.

The SME Bank provides loans for startups (up to RM10 million), for aspiring franchise operators (up to RM3 million), for the professional (services) sector (up to RM10 million), for procurement of capital goods and other costs of improving competitiveness as original equipment manufacturers or vendors to large or multinational firms (up to RM50 million), and for overseas expansion (up to RM50 million).

In the **Philippines**, there are 21 local and 14 foreign commercial banks but not all of these have SME banking.  **Table 2-8** lists the SME financing programs that are available at various institutions. Under the SSS Special Financing Program, for example, SMEs with not more than PhP200 million in asset size may qualify for financing provided that the loan amount does not exceed PhP50 million and will be used either for working capital or fixed asset acquisition.  The rates range from 6% to 9% per annum (for participating financial institutions or PFI) and 10% to 13% per annum for the borrower.  Loans are payable for up to 10 years and any collateral that is acceptable to the PFI may be presented.

Another financing program is the SME Unified Lending Opportunities for National Growth (SULONG) where government financial institutions [124] have allocated funds for SMEs in additional to these GFIs' existing financial services. It is designed to provide SMEs with financing access to both short- and long-term funds. Since it started in 2003, loan availment has reached PhP143.9 billion, with most of the financing coursed through the Land Bank of the Philippines and the Development Bank of the Philippines. [125] Eligible borrowers under the SULONG Program include firms from all industries except those engaged in the trading of imported goods, liquor and cigarettes and extractive industries.  These firms may borrow up to PhP5 million for fixed asset acquisition and to raise working capital.  Interest rates for PFIs depend on the prevailing rate of treasury bills or bonds of similar tenor, while for the borrowers the rate is set by the PFIs. Loan term is 1 year for short-term loans and up to 5 years for long-term loans. Collateral may be in the form of REM, CM, Assignment of LC/PO and guarantee cover.

The Philippines has no credit registry that is officially sanctioned, but there are private-sector entities, introduced later in this chapter.  In 2005, the ADB approved, as part of an SME assistance package, a US$1 million investment in a planned Credit Information Bureau that would be set up by the central bank, that would own up to 49% of the shares of the new entity. In 2006, the central bank developed a credit scoring system, and the legislation to support the creation of a credit information system (Credit information System Act) had been passed recently. The package also provided for US$18.4 million for creation of a partial credit guarantee facility. Thus, the Philippines has started improving the credit information infrastructure for SME finance.

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[124] These GFIs are the Land Bank of the Philippines, Development Bank of the Philippines, Small Business Guarantee & Finance Corporation, Philippine Export-Import Credit Agency; Quedan and Rural Credit Guarantee Corporation, National Livelihood Support Fund and SSS.

[125] Taken from document Policy Advisory No. 2008-06.

In **Singapore**, SME financing programs include: (1) Bridging Loan Programme, a financing program offering loans of up to S$500,000 to local enterprises; (2) Business Angels Scheme - for innovative Singapore-based start-ups below five years old, an entrepreneur can get a matching dollar from SPRING for every dollar invested by the Business Angel Fund, up to S$1million; (3) Enterprise Investment Incentive Scheme through which start-ups can attract more investments as investors can deduct up to S$3 million of loses against their taxable income; (4) SPRING Startup Enterprises Development Scheme -  for innovative Singapore-based start-ups below three years old, an entrepreneur can get a matching dollar from SPRING for every dollar an investor puts into the business up to S$300,000; (5) Young Entrepreneurs Scheme for Startups that provides youths with grants of up to S$50,000 to start their innovative business;  (6) Young Entrepreneurs Scheme for Schools that provides schools with grants of up to S$100,000 to support structured entrepreneurial learning activities; and (7) Dealflow Connection, a platform to match entrepreneurs and funding sources.

Government incentive financing for SMEs include (1) Local Enterprise Finance Scheme (LEFS), a fixed interest rate financing program, the LEFS is designed to assist local enterprises with upgrading and expanding current operations. This scheme offers the five loan facilities for factory, machine term, machine hire purchase, working capital and factoring; (2) Micro Loan Program, specifically tailored to very small businesses. Loan amounts often do not exceed S$50,000; (3) Resource Productivity Scheme (RPS), an incentive scheme that provides fixed-rate loans for investments that utilize scarce resources such as labour, water and land; and (4) Loan Insurance Scheme II (LIS II), a variable-cost financing scheme aimed at meeting short-term financial needs of local SMEs.

In **Thailand**, the SME Development Bank of Thailand, the Bank of Agriculture and Agriculture Cooperatives, the Government Savings Bank and the Export-Import Bank of Thailand offer SME banking facilities.[126] The SME Bank has as its legal mandate support for the SME sector through (1)) granting of loans, (2) providing guarantees,(3) making joint investments, and (4) providing consulting and other services.  The SME Bank is essentially government-owned; the Ministry of Finance has 92% of its shares and only 5% is held by the private sector. Established in 1991 by the *Small Industry Credit Guarantee Corporation* Act, it is successor to the *Small Industry Credit Guarantee* Fund.   It is a deposit-taking institution that also is involved in collaborative financing for the rural sector, with other government-affiliated financial institutions. It has a Venture Capital Fund, in operation since 2002.

The SME Bank prices its loans on the basis of credit risk ratings, for which purpose it relies on the Small Industry Credit Guarantee Corporation (SICGC).  Plans to merge the SBCG and the SME Development Bank in order to improve efficiency in supporting state-supported SME financing were approved by the Thai Cabinet ministers in November 2008. This would result to an increase in capital funds from BHT3.8 billion to BHT7.4 billion.

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[126] http://www.gmsbizforum.com/dmdocuments/SME%20Finance%20-%20SME%20Bank%20Role.pdf

### 2.3.2 The Overall View of CGS in Asia

There is at present no comprehensive document describing CGS in Asia as a whole. At the Shanghai conference on SME Credit Guarantee and Credit in APEC (2005), it was pointed out "there is no comprehensive data base to compare finance and credit guarantee arrangements for SMEs in APEC." The World Bank credit reporting system database is skimpy when it comes to Asian nations. At the World Bank CGS conference in 2008, the comprehensive research paper, based on empirical findings, examined 76 schemes in 46 countries, but of those representing countries germane to the present study there were only Korea (two CGS) and Thailand (other Asian funds included were from India, Macau, Sri Lanka, and Taiwan). The first draft of the paper with this information[127] (later information is not publicly available at this time) did not include disaggregated data that could be reported here. In the study by the British Department for International Development, capsule data was collected for candidate countries for case studies.[128]

While primarily concerned with case studies of CGS failures in Singapore and Korea, an article in the *BIS Quarterly Review* contained some comparative information. The best information available for present purposes is contained in the Technical Assistance Consultant's Report to the ADB for a project in China; this was released in 2007. Relevant information from this source is provided below. In the future, it may become possible for the Asian Credit Supplementation Institution Confederation (described below) to compile information but this is still a new organization without a permanent secretariat, and only an annual conference and annual training program as its current activities. Nevertheless, completed questionnaires submitted by some members for the organization's annual conference in 2008 are available via the Internet,[129] and information from them, supplemented by referring to member websites, is provided below (**Table 2-9**).

SME financing is gaining strides in Indonesia. The country's success in microfinance is well recognized as an international best practice model. But this same success has yet to be replicated for financing to SMEs. Information asymmetry remains because even if Bank Indonesia maintains the Debtor Information System, its coverage of SMEs is limited. Bank personnel also lack an in-depth understanding of the SME business and they do not have the skills to evaluate SME risks. Hence many banks still demand collateral. Legal constraints also compound SMEs' access to finance particularly the lack of legal proof of land ownership, the lack of Registry of

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[127] Beck, Klapper, and Mendoza, *op. cit.*

[128]  For two Chinese, two Indonesian and one CGS each from Korea, the Philippines and Thailand, the year established, scale, number of participating banks, international or other sources of capital, target group, size of fund, guarantee percent and terse comments are provided (e.g., "Gigantic scheme, controversial, culturally opaque and not suitable for methodology").

[129] At http://www.acsic21.com/news-show.php?nid=36. There is no hot link to this from the ACSIC website.

Charges for banks to legally perfect floating charges and the undue length of time to complete default enforcement proceedings.[130]

In **Thailand**, the credit guarantee mechanism has been especially helpful to SMEs affected by the post-crisis period. A study that measured the potential effects of CGS on the employment levels and financial cost of SMEs revealed that additional credit to SMEs via the CGS might indirectly produce positive impact on employment. Loans guaranteed by SBCG might also have lower interest rates compared to loans without guarantees. When a new credit guarantee product, Risk Participation, was introduced, financial institutions were initially reluctant to participate, as they were not willing to accept 50% risk participation on losses. Consequently, the SBCG increased its risk participation in three steps to 80% (in the fourth, fifth and sixth year of a loan), and this worked to eliminate the resistance. Further, inasmuch as the SBCG is mandated to support SMEs, the majority of participating lenders are government entities, and as such has certain constraints on their practices and carries a high level of non-performing loans. To make it easier for these institutions to avail themselves of SBCG services, the Bank of Thailand ruled that SBCG guarantees could be included in their provisioning to the extent of 90% of the guarantee amount. Despite these changes, credit institutions were underutilizing Risk Participation, so in 2005 the SBCG started a Loan Guarantee Scheme, that raised the maximum amount that could be guaranteed from BHT3 million to BHT10 million (for loans of up to five years). The Thai experience in operating a CGS demonstrates the need to strengthen the financial foundations surrounding the credit guarantee framework, to boost the recovery mechanism in case of SME loan defaults, and to make modifications to ensure the services offered are utilized.

The SBCG has identified its constraints and challenges. Some are these. Personal guarantees are not accepted and after payment of claims to lending institutions there is no longer collateral coverage. Second, liability periods are long in duration because the guarantees cover the entire projects. The scheme lacks in-house ability to evaluate risk or the feasibility of a project.

In the **Philippines**, one of the factors behind the success of the CGS was the commitment of the government to increase the number of financial institutions using credit guarantees. This commitment is also evident in the experiences of Thailand and Malaysia where credit guarantees are gaining popularity as a financing adjunct. It also helped that an increasingly competitive banking environment has encouraged banks to expand their client base by tapping the SME sector through the guarantee mechanism. SMEs and CGS also thrive in economic environments where there is sufficient liquidity and stable interest rate regimes that allow the appropriate pricing of risk and returns to credit.

The range of government involvement in Asian CGS extends from zero in Malaysia to 100% in Japan. **Table 2-10** summarizes the government relation, paid-up capital and net worth of ACSIC

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[130] This information was from Appendix 2 of SME Access to Financing: Addressing the Supply Side of SME Financing.

members from some of the ASEAN group. On the whole, there is very strong government involvement.

To the extent that CGS have somehow influenced some Asian banks' lending behavior by encouraging them to make SMEs part of their market and therefore develop SME-focused financial products and services, CGS may be said to have indirectly promoted financial sector deepening, albeit to a limited degree. In this context, financial sector deepening refers to a phenomenon characterized by "increasing access to financial services for those who previously has restricted or no access, and increased provision by financial institutions to such clients of products and services relevant to their needs."

Consonant with deep government involvement, ASEAN schemes tend to have a specific mandate to contribute to the accomplishment of policy objectives, as shown by their own statements of purpose, summarized in **Table 2-11**.

The following summarizes in additional detail the CGS experience of selected ASEAN countries.

### 2.2.3 CGS in Indonesia[131]

There are four corporate credit guarantee institutions and one export credit insurer in Indonesia. The CGS present a mixed picture: one is owned by the government and the central bank and one is entirely in the private sector. Sarana Pengembangan Usaha, or Perum SPU (Public Enterprise for Development of Cooperative Finance), is the oldest, having been founded in 1970. PT Asuransi Kredit Indonesia (ASKRINDO) was established in 1971. The Central Bank of Indonesia owns 55% and the remainder is owned by the Ministry of Finance (see **Figure 2-1**). Perum Sarana Pembangunan Usaha (PSPU) is a 100% state owned company established in 1995. It is a continuation of the Penjaminan Kredit Koperasi or Cooperative Credits Guarantor established in 1970, and dominates credit guarantee activities. PT Penjaminan Kredit Pengusaha Indonesia (PKPI) is a private firm (60% owned by the Indonesian Chamber of Commerce and 40% owned by individual entrepreneurs) established in 1996. The target amount of initial capital could not be raised, and soon thereafter the Asian financial crisis prevented realization of the objectives of establishing PKPI. This CGS receives no support from the government. Of lesser importance is Asuransi Ekspor Indonesia, Ltd., (PT ASEI), or Indonesia Export Credit Insurance.

PT Askrindo and PSPU have a conditional automatic cover of 70% on outstanding loans while for PKPI it ranges from 50% to 80%. On a case by case basis, PT Askrindo may cover 60% to 100%, while for PSPU and PKPI the coverage is anywhere from 60% to 80% only. Administrative fees for screening guarantee application is at 0.5% for all the three firms. Guarantee fee for the three CGS firms is equal to a certain percentage of the credit ceiling but the

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[131] Information in this section was obtained from documents available at
http://www.planetfinance.be/img/PDF/Slides%20Guarantee%20Fund.pdf.

percentage varies depending on the nature of the business of the borrowing firm (see **Table 2-12** for comparative details). The history of credit guarantee schemes in Indonesia is summarized in **Table 2-13**.[132]

Currently there is no law or regulation that specifically regulates loan guarantee issues and guarantee institutions. In mid 2005, the State Ministry for Cooperative and SME, Bank Indonesia, PNM and related stakeholders proposed a draft on law to establish a credit guarantee institution for MSME credits ("Credit Guarantee for Cooperatives and Micro, Small and Medium Businesses). The draft law defines the loan guarantee as a third party agreement in which the Guarantee Institutions "bind itself to the Guaranteed so that the Guaranteed can obtain a loan from the Guarantee Holder, and will pay compensations to the Guarantee Holder if the Guaranteed cannot fulfill its obligation to repay the loan as promised." The Guarantee institution is a corporate body in financial services and may be a public corporation regional corporation, limited corporation or cooperatives. The source of the guarantee fund maybe the GoI (central or regional), the banking sector, nonbank financial institutions, cooperatives, retained earnings of state-owned enterprises, chamber of commerce, thru a grant or other lawful sources of guarantee funds. The size of the guarantee institutions are (1) National CGF: minimum paid up capital of IDR100 billion; (2) Provincial CGF: minimum paid up capital of IDR50 billion; and (3) Regency CGF: minimum paid up capital of IDR10 billion. Different types of schemes (portfolio, individual, institution oriented, unfunded and mutual schemes) are under evaluation.

Evident need to improve the infrastructure for SME finance was behind the above-mentioned Technical Assistance project for the ADB.[133] The project recommendations advocated creating a combined Indonesian Credit Insurance and Guarantee Company. This would put an end to the fractured arrangement that now exists. In addition to this consolidation, the consultant recommended strengthening the participation of local banks, and of regional governments, and improving coordination with Bank Indonesia. It was further pointed out that regulations would have to be reviewed and governmental programs and schemes would have to be adjusted. The matter of regional CGS was examined, and it was concluded that this might be viable for some regions but not others, depending on, inter alia, whether ASKRINDO was already servicing the region. Caution was expressed concerning the adverse effects of competition (lowering of the scale of operations at relevant institutions), and the financial viability of regional schemes being open to question, combined with the need to assure good management of the schemes, were given as arguments for a go-slow approach to regional schemes. Thus, inclusion in the 2005 draft law of provision for regional schemes may be based on political realities rather than solely

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[132] This is from the ACSIC questionnaire prepared in 2008 by ASKRINDO. A somewhat different history is in the ADB report {ADB 2007], p. 11f.

[133] See Wolfram Hiemann and Tika Noorjaya, "Background Report / Credit Insurance and Credit Guarantees as Instruments to Enhance Market Based Lending." Jakarta: ADB Technical Assistance, SME Development, State Ministry for Cooperatives and SME (Dec. 2001), accessible at:
http://www.bappenas.go.id/index.php?module=Filemanager&func=download&pathext=ContentExpress/&view=180/credit%20insurance.pdf.

on CGS-based issues. The final recommendation was that the Indonesian government should in no way support a private competitor in the loan guarantee market.

Credit guarantees in Indonesia were also the subject of a study report released in late 2006, for the European Commission as part of the EU EuropeAid Cooperation Office activities.[134] The EU's counterpart organization was Yayasan Bina Usaha Lingkungan (YBUL) , a rather specialized organization as it works at promoting renewable energy in many regions in Indonesia, so its interests are in the area of microfinance.

### 2.3.4   CGS in Malaysia[135]

The Credit Guarantee Corporation of Malaysia (CGC) was established in July 1972 as a limited company under the Malaysian Companies Act 1965, with BNM and all the commercial banks at as its shareholders and with an authorized capital of RM3 billion. Total assets as of December 2005 were at US$1.32 billion.  In 2007, CGC credit guarantees totaled RM4.6 billion and the number of SMEs serviced was more than 13,000.  In terms of year-to-year growth, these numbers represent 73% and 53% growth rates, respectively. The objective of CGC is to assist SMEs without collateral or with inadequate collateral, and have no track record, to gain accessibility to credit facilities from finance institutions. It also supports the government's efforts in promoting and developing business sectors, which are important to the economy. It is the only credit guarantee entity in the country, making it a monopoly and it is also classified as a Development Financial Institution (DFI). It is owned by Bank Negara Malaysia (76.4%) and commercial banks and finance companies (23.6%).

It has introduced several loan schemes for SME promotion. These are the New Principal Guarantee Scheme (NPGS/SJUB), Direct Access Guarantee Scheme (DAGS/SJLT), Flexi Guarantee Scheme (FGS/SJA), Islamic Banking Guarantee Scheme (IBGS/SPI)[136], Franchise Financing Scheme (FFS/SPF) and Small Entrepreneur Guarantee Scheme (SEGS/SJUK). These schemes are designed to enable new entrepreneurs to access financing even if they do not have the necessary collateral.

The objective of the New Principal Guarantee Scheme (NPGS) is to assist SMEs in obtaining loans for business purposes especially for those who do not have collateral, has insufficient collateral or has no track record.  It is designed specifically to promote the growth and

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[134] Yayasan Bina Usaha Lingkungan, "Overview of Formulation of Credit Guarantee Fund Facility in Indonesia / An Indonesian-EU Partnership and Institutional Capacity Building on Micro-Finance." Accessible at:
www.planetfinance.be/img/PDF/EU%20**Indonesia**%20WG%20Microfinance%20Brussels.pdf

[135] Information of the credit guarantee schemes of Malaysia was sourced from
http://www.pbebank.com/en/en_content_business/sme/cgc.html

[136] The IBGS has a maximum funding of up to RM10 million and a guarantee cover ranging from 30% to 90%. Guarantee fee is between 1% and 1.25%.  it operates on the Islamic banking concept and the financial institution is free to quote their profit rate under this scheme.

development of viable SMEs through its loan facilities such as fixed loan, overdraft or trade bills in loan amounts of up to RM10 million. Eligible firms are those with annual sales turnover of up to RM25 million or with fulltime workers of up to 150 workers. There is no commitment fee for overdraft facility where the total NPGS credit facility is RM500,000 and below. It provides guarantee cover for the entire duration of the fixed loan and for up to 3 years for overdraft and trade bills. Guarantee fees are 1% of the secured portion of the loan and 1.25% of the unsecured portion.

The Small Entrepreneur Guarantee Scheme (SEGS) assists small entrepreneurs who have viable business plans to obtain loans at reasonable rates from financial institutions. It targets to help Malaysian-owned companies to raise working capital and acquire assets for business expansion through fixed loan or overdraft facilities. Eligible companies are Malaysian companies registered under the Companies Act 1965, the Cooperatives Societies Act 1993 and entrepreneurs registered with the Companies Commission of Malaysia or any other authoritative bodies, provided that these companies have no adverse loan records with any government agency or financial institution. Loan amount can be up to RM50,000 with a maximum cover of 80% of the facility and a maximum guarantee period of up to 5 years. Guarantee fee is 1.25% per annum and the lending rate is BLR plus 1.5%. There is no commitment fee for overdraft facility.

The Flexi Guarantee Scheme (FGS) provides guarantees for Malaysian-owned firms to assist in business expansion and working capital. It offers the following loans: Fund for Small and Medium Industries 2 (FSMI2), New Entrepreneur Fund (WEF2) and the Rehabilitation Fund for Small Businesses (RFSB). FSMI2 was set up to help small and medium industries raise working capital to expand production. Most firms, except those in money-exchange activities, are eligible. Loans at attractive rates can be had for up to RM3 million and a tenure of up to 3 years. NEF2 was designed to stimulate the growth of wholly owned Bumiputra businesses in all sectors by helping them raise working capital. Loans of up to RM5 million are available with tenure of up to 8 years. The RFSB is aimed at helping Malaysian-owned firms raise working capital through loans in amounts of up to RM1.5 million with tenure of up to 5 years. Interest is capped at 5% annually and CGC provides a guarantee cover of up to 80 percent. The bank shoulders the annual guarantee fee and is calculated based on the guarantee cover issued. It ranges from 0.75% to 1.5% per annum for the unsecured portion and 0.5% to 1.25% per annum for the secured portion.

The Direct Access Guarantee Scheme (DAGS) was established to provide direct access to SMEs hereby they could approach CGC directly in obtaining guarantee and subsequently the required financing. The eligibility criteria for DAGS are: (1) companies with paid up capital of up to RM10 million for manufacturing and RM5 million for other sectors; (2) Malaysian owned and controlled companies; (3) viable businesses; (4) firms with no adverse record with the CGC or any bank or any firm listed under the BMC; (5) start-up companies that demonstrates repayment capacity of at least 1.5 times. The credit limit is set at RM1 million per customer and the types of facilities include fixed/term loan, overdraft, tradeline or any other credit facilities determined from time to time by the corporation. The guarantee cover ranges from 30% to 100%, the interest

rate is between 1% and 1.75%. Guarantee fee is between 0.75% to 1.5%, and a processing fee of RM200 is charged for successful applications.

The Special Relief Guarantee Facility (SRGF) is a relief facility set up by Bank Negara Malaysia to aid SARS-affected Malaysian businesses particularly those in the fields of tourism and tourism-related industries. Loans are available for up to RM2.5 million and tenure of 2 years. Guarantee fee is waived.

A movement has begun among Islamic nations to establish a joint credit guarantee facility (discussed further below) that would service banks operating under Islamic principles. Malaysia is a major center for issuance of sukuk, or Islamic bonds. Of the world total of US$62 billion of outstanding sukuk (as of the end of 2007), 68.9% had originated in Malaysia. Befitting this position, the CGC in January 2008 initiated Enhancer-i to further enhance small and medium enterprises' access to Islamic financing. Enhancer-i is an enhanced version of CGC's Islamic Banking Guarantee Scheme (IBGS), which is the first Islamic guarantee scheme, and was introduced in 2003. Malaysia thus is expected to play a major role in any pan-Islamic move to establish a CGS.

Further, Malaysia also has iGuarantee, an Internet-based facility from where SMEs applying for a loan may complete the application form online. Once the application is submitted, a CGC credit officer will assess the information and then invite participating financial institutions to bid on the application, auction-style. Once the bids are assessed, the FI whose bid is the best match for the applicant will be awarded the auction. All parties will be notified and the process is completed.

The diversification of services is one characteristic of the CGS in Malaysia. Deserving mention in this connection is the efforts by the CGC to develop securitized products. The scheme participated in the country's first synthetic securitization of an SME loan portfolio, in 2007. Apart from this move towards involvement in the national capital market, also suggestive of desirable practices recommendable to other CGS is that the scheme has established a multiple number of domestic and international alliances, with the purpose of improving in terms of both technique and launch-platform capability.

Malaysia has had a **Credit Bureau** since 1982 - this is part of the Bank Negara Malaysia. The Credit Bureau is one of the finest in Asia; it includes negative and positive data, has a database fed by input from more than 50 financial institutions, and has the power of government behind its collection of data.[137] There also is a private company that sells commercial credit reports and similar products, but it is relatively small. To this, however, CGC has added another entity: the

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[137] The Credit Bureau in Malaysia was established under the Central Bank of Malaysia Act of 1958. It has been in operation since 1982. The information reported to the Credit Bureau is housed in a computerized database system known as the Central Credit Reference Information System (CCRIS).

SME Credit Bureau, created in 2008. In starting this, CGC made use of a cooperative arrangement with Dun & Bradstreet.

### 2.3.5   CGS in the Philippines[138]

There are three financial institutions operating as credit guarantee firms. Small Business Guarantee Corporation (SBCG; SB Corporation; URL: http://www.sbgfc.org.ph/index/htm) is attached to the Department of Trade and Industry and was mandated to provide financing and credit guarantees to SMEs. It was created in January 1991 through Republic Act No. 6977 or the Magna Carta for Small Enterprises and later amended by R. A. No. 8289 in May 1007. In November 2001 (thru Executive No. 28), the Guarantee Fund for Small and Medium Enterprises (GFSME) and the SBGFC were consolidated to form the new SB Corporation (SBCorp.). The Guarantee Program of SBCorp. operates on the basis of a risk sharing with accredited financial institutions (AFIs) composed of commercial, development, rural and thrift banks. It guarantees loans of against risk of non-payment of borrowers.

Quedan Ruran Credit and Guarantee Corporation (Quedancor) is attached to the Department of Agriculture and is mandated to accelerate the flow of investments and credit sources to the countryside to promote rural productivity growth and development. Quedancor's programs concentrate mostly on targeting agri-fishery and other related activities to sustain and intensify agricultural production, especially grain commodities, fisheries and aquaculture, livestock and poultry, high value commercial crops, agri-forestry projects and other livelihood projects. It introduced an innovative credit mechanism that is collateral-free to give farmers better access to means of improving agricultural production, yield and farm incomes.

The Trade and Investment Development Corporation (Tidcorp) was established on January 31, 1977 as the Philippine Export and Foreign Loan Guarantee Corporation (Philguarantee) via Presidential Decree No. 1080. It was renamed and granted expanded function by R.A. No.8494 on February 12, 1998. It was officially designated as the Philippine Export-Import Credit Guarantee Agency (Philexim) via Executive Order NO. 85 in March 18, 2002. It is attached to the Department of Finance.

### 2.3.6   CGS in Thailand

The credit guarantee system in Thailand started with the establishment of the Small Industry Credit Guarantee Fund (SICGF) in 1985. In 1991, the Small Industry Credit Guarantee Corporation (SIGC) was established under the SICGC Act A.D. 1991.In September 2005, it changed its name to Small Business Credit Guarantee Corporation (SBCG), the sole credit guarantee institution in the country with a registered capitalization of BHT4.4 billion and was given a fresh injection of funds equal to BHT2 billion in 2006. The main objective of SBCG is to

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138 This section that contains information on the 3 credit guarantee firms in the Philippines was sourced from Hector Olmedillo's (2005) APEC Economy Presentations on Credit Guarantee Program: Credit Guarantee Programs in the Philippines.

assist SMEs that seek a guarantee for the unsecured portion of loans in obtaining adequate credit from financial institutions.  For a history of Thailand's CGS, see **Table 2-14**.

SBCG has 3 main types of CGS: (1) Normal guarantee, where SBCG provides a guarantee on the non-collateralized portion of a loan with a maximum guarantee of 50% of the total loan provided loans do no exceed BHT40 million; (2) Automatic guarantee, a pre-approved credit guarantee given to participating financial institutions; it facilitates faster credit guarantee approval with less paperwork; the maximum guarantee amount on the unsecured portion of the loan is BHT3 million; and (3) Risk participation scheme, launched in May 2004, that allows the SBCG to share the guarantee risk with the financial institution.  The maximum guarantee amount is up to BHT40 million.  This scheme accounted for 97% of total guarantee approvals in 2005. There has been a great take-up of credit guarantees.  Outstanding commitment has increased from BHT1.327 billion in 1999 to BHT17 billion in 2005. This reflects that the CGS in Thailand has helped SMEs benefit in the form of having additional working capital and funds for business expansion.

SBCG charges fee of 1.75% per annum of the guaranteed amount, and has the fee collected by the lending institutions in advance for remitting to the scheme. The leverage ratio (maximum) is five times its capital, so the limit is BHT22 million. Recent performance of the SBCG is shown in **Table 2-15**.

### 2.3.7   The Asian Credit Supplementation Institution Confederation

There is an international organization created by credit guarantee schemes, the Asian Credit Supplementation Institution Confederation (ACSIC).  It has a counterpart in the Association Européenne du Cautionnement Mutuel  (ACEM; in English, European Mutual Guarantee Association).[139] The latter is extremely active and has a substantial history.  There does not appear to be any comparable organization to these in Latin America or Africa.

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[139] For a PowerPoint presentation in 2007 by José Fernando Figueiredo, president of ACEM, see www.redegarantias.com/boletines/achivo.asp?idarchivo+314. It includes simple profiles of several members and information on credit guarantee related aspects of the EU. ACEM, established in 1992, now has 34 active members in 18 countries. It was established as an international NPO and has its head office in Brussels, selected because that city is the capital of the EU. It has as its mission the representation of its members' political interests (to the EU and international agencies), the promotion of mutual guarantee associations, the support of cooperation among its members, and the stimulation of information exchange on behalf of SMEs. Its activities, consequently, are concentrated in contact with the EU and other international bodies (concerning, inter alia, prudential regulation, states' aid rules and competition policy, financial instruments within the EU, and so on); promotion of credit guarantees as a financial instrument or instrument supplement (to the business sectors, bankers, etc.); and fostering the exchange of information and best practices among the members (through publications, studies, seminars and the like).

In 2007 ACEM had an important role of organizer of the Global Summit of SME Guarantee Organizations, held in 2007 in Lisbon. See http://www.aecm.be/ENG/documents/4_Programme-Global-Summit-SME-Guarantees-09-Oct-2007.pdf for the program and statement of objectives and discussion topics. A Declaration was issued at Lisbon, by the signatories, that (1) guarantees need

From an initial get-together in Nagoya, Japan, in 1987, what has become the Asian Credit Supplementation Institution Confederation (ACSIC)[140] now has 16 members from 11 countries, as identified below (**Table 2-16**). Despite the name of the body, credit guarantees are the most important element in member activities. The organization describes its objective simply as "to promote the sound development of credit supplementation system for SMEs in the Asian Region." This is done primarily through an annual meeting of members, and training programs, held annually since 1990 (except in 2005). The host for the organization is the Small Business Credit Guarantee Corporation of Thailand, in Bangkok. At the most recent meeting, in November 2008, the subject of a permanent secretariat was discussed but the conclusion was that it was not needed at the present time. Several of the member organizations have recently experienced serious difficulties, and this may have been a reason for demurring on this matter. It appears that without outside funding it would be difficult to have a permanent secretariat and to expand activities.

## 2.3.8  CGS in Other Countries

**China** presents a special situation and one of considerable interest with regard to CGS. As is found elsewhere, difficulty in obtaining bank finance has been the leading problem afflicting SMEs in China. The background conditions have been rapid economic growth, rapid growth of the SME sector, rapid increase in the number of schemes in operation, and in terms of policy the decision to make government-sponsored schemes central while relegating mutual guarantee associations and wholly private guarantee companies to subordinate positions. The schemes became important vehicles for local governments to assist their SME sectors, but many problems arose. Specifically, they were (1) need to properly manage extensive government intervention, (2) lack of satisfactory prudential supervision and regulation, and (3) issues of interest rate control.[141]

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to be an important item on the global agenda of policy makers; and (2) the existence of an alliance between the SME, the Banking sector and the state is of utmost importance and concluded that they will report to their respective governments, and to multilateral organisms, on the importance of the existence of a sustained, consistent and permanent public policy supporting SME guarantee schemes. They will also report on the need for a strategic partnership between SME, the Banking sector and the State, with the objective of promoting the guarantee instrument at a global level as one of the best ways to leverage public policies aimed at SME and entrepreneurship development.

The activities of ACEM to date provide ample encouragement for an expansion of activities in Asia, by ACSIC, and greater international interchange also by the latter body.

[140] The URL for the ACSIC website is www.acsic21.com. For the ACSIC Charter, see http://www.c.jfc.go.jp/jpn/jasme/chartere.html . The contact person for ACSIC is Mrs. Niramol Tawee, Vice President, Office of the International Affairs, SBCG; telephone: +66-2-3082741 ext.122; mobile: +66-81-8146737; e-mail: niramol@sbcg.or.th. The 2009 Conference will be held in Taiwan.

[141] See Mu, Yubin, "Impediments to SME Access to Finance and Credit Guarantee Schemes in China." (2002). Accessible at: http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan031253.pdf.The author was then with the World Bank. See also Davies, *op. cit.*

In **Bangladesh**, in 2005, the media reported that the government would establish a credit guarantee arrangement for SMEs centered on the Bangladesh and Cottage Industries Corporation, the Bangladesh Bank and public and private sector insurance companies. Since then, however, no progress has been made and most recently, in 2007, the government's Policy Analysis Unit recommended that the government consider a scheme, as well as the use of credit scoring.[142]

In **Pakistan**, the State Bank initiated a credit guarantee scheme in December 2008It will guarantee 40% of funds borrowed from banks by microfinance institutions. The scheme is part of a State Bank program that is supported by the Financial Inclusion Program of the British government and the ADB's Improving Access to Financial Services program (in which there is a provision of $2.o million from the Japan Special Fund).[143]

**Sri Lanka** is a member of ACSIC, as noted above. In that country there had been an announcement of assistance for a CGS in an IFC program (The SouthAsia Enterprise Development Facility).[144]

# CHAPTER 3. CREDIT INFORMATION SYSTEMS IN JAPAN

## 3.1    The Role of SMEs in the Japanese Economy

In Japan like many other countries in Asia, SMEs play an important role in the economy, particularly in creating employment. They employ close to 80 percent of the total labor force of non-primary industries, whereas large enterprises employ around 20 percent. The share of small enterprises (with less than 20 employees for manufacturing and less than 5 employees for wholesale and retail) is 25 percent, which is larger than the share of large enterprises. The share of SMEs for the manufacturing industry is around 50 percent both in terms of the value of shipment and of the value added.   Its share in the annual sale is higher for the wholesale and retail industries than for the manufacturing industry: 66 percent for wholesale and 71 percent for retail.

SMEs are also one of the sources of business dynamism in the economy. Among SMEs, innovative new companies with good prospects are being created, while old companies with poor

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[142] Naima Nazneen Rikta, "Institutional Lending and Financial Policy for SMEs in Bangladesh." Dhaka: Bangladesh Bank Research Department Policy Analysis Unit, Policy Note Series PN 0804 (Dec. 2007), p. 8f, at http://www.bangladesh-bank.org/research/policynote/pn0804.pdf.

[143] "Microfinance Credit Guarantee Launched," *The News*, Dec. 20, 2008, at http://www.thenews.com.pk/daily_detail.asp?id=152734. For the ADB program, see http://www.adb.org/projects/project.asp?id=39492.

[144] SEDF is dedicated to support of SMEs in northern Asia.An undated report (a www.sedf.org/highlight/php) gives information about achievements in the area of SME finance in Bangladesh, but has no information about Sri Lanka.

performance are disappearing constantly. In a way, they are the driver of creative destruction, which adds dynamism to economic activity. Until the mid-1980s , the entry rate of SMEs had been higher than the exit rate. Thus, the number of SMEs had been increasing on a net basis. However, since the mid-1980s , the exit rate has been higher than the entry rate, leading to the shrinkage of the number of SMEs. For example, the number of SMEs has been decreasing from 4.7 million enterprises in 2001 to 4.2 million enterprises in 2006. There are various factors behind this reversal of the relationship between these two rates. The difficulty that SMEs face in their financing can be pointed out as one factor.

## 3.2 Financing of SMEs

Despite the importance of SMEs in the economy, their financing is more unstable than the financing of large enterprises and susceptible to the credit cycle due to the higher extent of asymmetric information. Particularly in the post-bubble period, financial institutions became cautious about their lending, an d SMEs increasingly faced difficulty in their fund-raising. ln view of such a situation, the government took various measures to facilitate SME financing and increase loans to SMEs.[145]

However, SMEs are often required of double guarantees when they borrow from financial institutions due to high credit risk resulting from asymmetric information. They usually need to give financial institutions the personal guarantee of the presidents to minimize moral hazard. Furthermore, they often have to provide financial institutions with tangible collateral like property and/or guarantees by the third party. According to the survey by Tokyo Shoko Research (TSR) in 2007 , a large number of SMEs complained about the burden imposed by the collateral and guarantees, and demanded more flexible treatment of the security and guarantees from financial institutions.

Financial institutions, whether large or small, came to pay more attention to the evaluation of credit risk of SMEs when they extend loans to them. In the New Action Program launched by the Financia1 Services Agency in Japan in 2005 , one of the measures was "promoting loans without excessive reliance on collateral and guarantees." Thus, how to facilitate the fund-raising of SMEs with promising future but without eligible collateral or guarantees by the third party became an important policy agenda in Japan. In addition, the introduction of Basel II made financial institutions aware of the need for more rigorous evaluation of credit risk, as Base1 II required that they must examine their own risk management in an objective manner.

## 3.2 Credit Information Systems

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[145] Measures include the creation of the Safety and Guarantee and Loan System in December 2000 and the Receivables-secured Loan Guarantee System in December 2001.

In Japan, there are two major privately managed credit-reporting agencies: Tokyo Shogun Research (TSR) and Teikoku Databank (TDB). TSR was established in 1892 as the first credit-reporting agency in Japan.[146] It has 86 branches nationwide and 1,460 employees as of the end March 2007. 1t has the credit information on 1.2 million corporations. TDB was established in 1900. It has 83 branches and approximately 1,500 field researchers. It has the credit information on 1.75 million corporations. Both of them collect information through interviews and investigations by their own staff and make them available to their customers upon request.

The credit information provided by these rating agencies is mainly that of larger corporations. As small-scale corporations have become increasingly more competitive thanks to the progress i. information and computer technology as well as financial innovation, facilitation of the fund-raising of SMEs has become an important policy agenda. The establishment of credit information database on SMEs as the financial infrastructure has been called for. At the same time, the use of scoring models has become widespread as financial institutions make efforts to expand loans to SMEs and at the same time to reduce costs of evaluating their credit risk. Statistical construction of scoring models requires a large amount of quantitative credit information. Such need has also promoted the establishment of credit information database.

A credit information database has two functions: one is to collect and manage a large amount of data; and the other is to provide aggregate credit risk information and risk evaluation tools including scoring models. An organization that manages the credit information database has the following common features:[147] (1) It collects the detailed financial information of borrowers from its member financial institutions in an anonymous form; (2) it does not provide member institutions with the credit information of individual borrowers; and (3) it makes the data available in principle only to its member institutions.

There are four major organizations for the credit information database of SMEs in Japan. These are the database provided by the Risk Data Bank of Japan (RDB), Credit Risk Database (CRD) managed by the CRD Association, CRITS by the Regiona1 Banks Association of Japan and SDB by the Shinkin Centra1 Bank.

The Risk Data Bank and the CRD Association include various types of financial and non-financial institutions, whereas CRITS and SDB are the database of a certain segment of financial institutions. These four organizations are briefly described below.

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[146] In 2007, TSR established a joint venture company. D&B TSR, with Dun and Bradstreet. This joint venture company provides ratings and financial access scores of individual companies, using TSR's database and D&B's statistical models.

[147] The organization for credit information database is quite different from credit reporting agencies like Tokyo Shoko Research and Teikoku Databank. Credit reporting agencies collect the credit information directly from the borrowers. They provide credit information of individual borrowers. And, they are available to any lender upon request.

### 3.2.1 Database Provided by Risk Data Bank (RDB)

The Risk Data Bank of Japan was established in the year 2000 by 22 financial and nonfinancial institutions, including mega banks and regional banks as the first consortium of credit information database in Japan. Its aim was to collect the credit information from its member institutions to construct credit risk models as part of business process re-engineering. As the re-engineering advanced the establishment of objective credit standards, the reviews of collateralized loans, and the efficiency improvement of evaluation activity, its membership expanded to 61 institutions as of the end of January 2008. The credit information data covered 550,000 corporations and sole proprietors, out of which the default data covered about 157,000 corporations and sole proprietors. They include not only SMEs and sole proprietors but also large corporations.

RDB provides member institutions with the database for the credit information and the default data as well as scoring models. It began to offer the data on credit information for corporations, both large and small, in 2000; that for sole proprietors in 2002; and the data related to the loss given default in 2006. It started to provide member institutions with credit scores, the estimated profitability of default and relative credit rankings. In collaboration with Standard and Poor's, RDB began to offer scoring models for SMEs in 2003, and the rating services for SMEs in 2005. The rating services targeted at domestic SMEs were the first of the kind in the world. Ratings were considered to improve the transparency of SME creditworthiness and facilitate their monitoring.

### 3.2.2 Database Provided by Credit Risk Database (CRD)

The CRD Association was established in 2001, at the initiative of the Ministry of Economy, trade and Industry (METI) and the Small and Medium Enterprise Agency (SMEA) by 52 credit guarantee corporations as well as financial and non-financial institutions. Its aim was to facilitate te fund-raising of SMEs and improve their operational efficiency. With the increasing importance attached to the fund-raising of SMEs, the membership increased from 73 institutions at the end of March 2002 to 221 institutions at the end of June 2008. The CRD database provided by the Association exclusively covers SMEs. It covered 2.4 million corporations and sole proprietors as of the end of May 2008, which was more than 50% of all SMEs in Japan. The database for default covered 271,000 corporations and sole proprietors. It is by far the largest database for SMEs in Japan.

The CRD Association received active support not only from the private sector but also from the public sector, which contributed partly to its success. For example, the SMEA makes the representative of the CRD Association a member of government councils. Such treatment gives the CRD Association an opportunity to promote its activity and increase its membership. Credit guarantee corporations and private financial institutions use the CRD database when they created

a joint guarantee scheme. Furthermore, before the CRD database was formally established, the government invested JPY1.3 billion from the supplementary budgets for fiscal years 1999 and 2000 to finance the construction of CRD computer system and other operational costs.

The CRD Association provides the sample data and statistical information as well as scoring services. Member financial institutions use scoring models to enhance the efficiency of credit evaluation, check the validity of internal based rating system, and make loan pricing in line with credit risk. In addition, the CRD Association provides the consulting services for SME management support. These services have been developed based on the thinking that the improvement of SME management will contribute to the reduction of credit risk for member financial institutions and to strengthening the business operation of SMEs. They have also been offered to member financial institutions to help them promote the implementations of Basel II.

### 3.2.3 Database Provided by Credit Risk Information Total Service (CRITS)

The Regiona1 Banks Association of Japan established CRITS in 2004. All 64 regional banks are the members of CRITS. They supply the credit information of their borrowers to CRITS, which generates the pooled database. Since regional banks face various restrictions due to their size and business area, they find it difficult to obtain the necessary and sufficient data to effectively and objectively evaluate the credit risk of their borrowers in the region. CRITS makes it possible for regional banks to obtain such data by pooling the data of all regional banks. The aim of CRITS was to provide member regional banks with the comprehensive database as well as the statistical information required under the Base1 II framework.

The database if CRITS has a two-tier structure: the database available to all member banks and the database available to individual banks. Such two-tier structure makes it possible for member banks to use the database in a flexible manner. As of end-December 2007, the database available for all member banks includes 679,000 corporations. The total database, including those available for individual banks, amounted to 1.4 million corporations and sole proprietors.

CRITS provides member banks with the database for credit information, scoring models and portfolio analyses. The database is relatively less expensive as it is available through high-speed broadband circuits so that member banks will be able to receive the data by personal computers without setting up a special server. Scoring models are primarily used to estimate the one-year probability of default, which is required in the internal ratings-based approach under the Basel II framework. The models are jointly developed with Financia1 Technology Research Institute.[148] They are tested regularly to check the compliance with the requirement under Basel II. The

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[148] Financial Technology Research Institute is a 100% subsidiary of Rating and Investment information, Inc. (R&I), which is a rating company. Its main business is the evaluation and quantitative analysis of the financial anc credit risk of corporations.

"CreditGauge" makes the portfolio analyses available.[149] It utilizes the Monte Carlo method to analyze the distribution of losses in conjunction with credit portfolios, which is also required in the internal rating based approach under the Base1 II framework.

### 3.2.4   Database Provided by Shinkin Data Bank (SDB)

The Shinkin Central Bank established SDB in 2004, primarily in response to the Action Program Concerning Enhancement of Relationship Banking Functions announced by the Financial Services Agency in 2003. At the end of January 2008, the membership included 278 Shinkin banks out of the total 281 Shinkin banks in Japan. SDB is expected eventually to become the financial infrastructure for improving the credit risk management of a11 Shinkin banks. The credit information database generally covers smaller corporations than CRITS of regional banks. As of end-January 2008, the database covered 684,000 corporations.

SBD provides member Shinkin banks with the statistical information calculated from their data, reports about the risk and portfolio management, and scoring models.  The statistical information covered financial indices and the probability of default by various categories, which is useful for the business of Shinkin banks. The reports deal with the issues closely related to the nature of Shinkin bank operations.  Scoring models are used to estimate the one-year probability of default. The Shinkin Central Bank Research Institute developed these scoring models. Furthermore, it supports member Shinkin banks in dealing with regulatory guidelines, improving the risk management, and strengthening the management capacity.

Among the four credit information databases in Japan, the CRD database in by far the largest and also specializes in SME credit information. It is a successful case of establishing an information sharing system.   An understanding of the background of its success and the problems it encountered could provide useful tips for developing and emerging countries to strengthen the financial infrastructure, which assists SME financing.  The following section describes the CRD in more detail.

### 3.3   Credit Risk Database (CRD) in Japan

The CRD Association, which manages the Credit Risk Database (CRD, was established as an organization to collect the information regarding SMEs and construct the credit information database to improve the environment for fund-raising of SMEs.It started as a voluntary association composed primarily of 52 credit guarantee corporations which played an important role to lay the foundation of the CRD database. Credit guarantee corporations in Japan operate regionally, and  it is natural for the financial condition of their customers to differ from region to region. There is the need on the part of credit guarantee corporations to make an appropriate and objective evaluation of the creditworthiness of their customers, using the database of customers

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[149] The "CreditGauge" is a package software that measures the credit risk of portfolios, developed by Mizuho-DL Financial Technology.

of all credit guarantee corporations in Japan. So, there is an incentive for credit guarantee corporations to provide the credit information of their customers to the CRD database.

### 3.3.1 Database

As of end-May 2008 the number of corporations included in the database was 1,689,000; that of sole proprietors was 753,000. The total number of SMEs covered was over 2.4 million, which was more than 50 percent of the total number of SMEs in Japan. 0ne of the key features of the CRD database is that it covers a substantial portion of smaller corporations and sole proprietors among SMEs. For example, in 2006 almost 50 percent of corporations covered by the database showed the annual sale of less than 100 million yen. The information on default for corporations reached 184,000 cases and that for sole proprietors reached 87,000 cases, totaling 271,000 cases. In terms of financial statements accumulated since 1995, the amount of data for corporations was 8.9 million and that for sole proprietors was 2.2 million. The total number of accumulated financial statements exceeded 10 million. Close to 60 percent of corporations have financial statements with the length of five consecutive years or more.

The CRD Association collects three kinds of data: financial data, non-financial data and the information on default. For corporations, the financial data cover the items of the balance sheet the items of the profit and loss statement and a number of footnote items (e.g., notes receivable discounted, notes receivable endorsed). For sole proprietors, the financial data, which are largely based on the financial statements attached to tax returns, cover the items of the balance sheet the items of the profit and loss statement and the footnote item (the number of employees at the end of the period). In the case of SMEs, non-financial data are as important as, if not more important than financial data. They include such items as the date of establishment, the geographical location, and the month and year when financial statement is made.

The information on default in the CRD database is more detailed than that of other databases as it includes arrears as well. It includes four types of borrowers: (1) borrowers with three months or more arrears;(2) de facto bankrupt borrower; (3) bankrupt borrowers; and (4) borrowers surrogated by credit guarantee corporations. In Apri1 2003, it added two additional types of borrowers: (5) suspended borrowers (borrowers with special mention); and (6) possibly bankrupt borrowers.

### 3.3.2 Mechanism

The basic mechanism of the CRD database is as follows (see **Figure 2-2**):
(1) Member institutions provide the CRD database with the financial and non-financial data as well as the data on default of their customers;
(2) The CRD database stores the provided data, construct the database conduct statistical analyses using the database;
(3) Provides member institutions with scoring models, which are statistically derived from the database; and

(4) It also provides member institutions with the sample data and statistical information about SMEs in a form which preserves the anonymity of individual customers.

In order to construct a consistent database it is necessary to cleanse the data received from member institutions because these data are not 100 percent free of defects. The CRD database regularly checks for anomalous data values and eliminates them. Such cleansing is conducted twice: the first cleansing occurs when the CRD database receives the data from member institutions and the second cleansing occurs when the CRD database transforms the received data into the data usable for member institutions.

The CRD Association can gather such a large volume of data because it pays particular attention to the anonymity of data when collecting them. Financial institutions are usually reluctant to release the credit information of their customers to the third party. If the information released is made anonymous, they will become less unwilling to provide the information. So in order to increase the number of data, it is important to find the way to construct the data collection system in which individual customers cannot be identified from the data collected, which is the issue of anonymity.

There are two problems when ensuring anonymity. One problem is to prevent customers from being identified when their data are provided to the CRD database by member institutions. The CRD database needs to consolidate the data on the same customer, which are provided by multiple member institutions order to construct the consistent database. So the problem boils down to maintain a balance between anonymity and effective data consolidation. The CRD database conducts the data consolidation by using the attributes of individual customers. Furthermore, the collected attributes are scrambled and encrypted to achieve the maximum anonymity possible.

Another problem is to prevent customers from being identified in the database created for the use by member institutions. In providing the sample data, the following measures are taken to maintain anonymity: the attributes which are scrambled and encrypted are not available for member institutions; and the data by detailed categories are not available either. For example, the information on default is divided into six detailed categories when collected by the CRD database, but only two categories (non-default and default) are available when provided to member institutions. In providing the statistical information, the minimum number of data is set so that anonymity will be maintained. Since anonymity of the database is secured, the CRD database *is not regulated* under the Law for the Protection of Computer Processed Personne1 Data held by Administrative organs.

Anonymity is important not only for collecting a large volume of data but also for legally protecting the CRD Association from any liabilities for the damage caused by the data collection. Member institutions need to obtain the consent of respective customers if they can be identified when they provide the CRD Association with their data. Obtaining the consent of respective customers each time when member institutions provide the data to the CRD database would be

costly and time-consuming. So in the case of the CRD database, member institutions provide the data without the consent of respective customers as long as anonymity is guaranteed. Extra care is being taken to maintain anonymity of the data so as to protect the CRD Association from being involved in any potential lawsuits in relation to the collected data.

### 3.3.3 Services

The CRD Association provides member institutions with three basic services: sample data services; statistical information services; and scoring services. In the sample data services, the data in an anonymous form by industry, size and location are offered to member institutions. Using the data, member institutions will be able to construct their own models. They can make use of the sample data to calculate the distribution of the probability of default by location and industry when developing new financial instruments, check their own models and examine their internal rating system.

In the statistical information services, various kinds of information compiled from the database are made available to member institutions. For example, the distribution of the probability of default and the transition matrix of creditworthiness can be used to analyze the financial features of the region where member institutions are located.

In the public policy area using the CRD database, the SMEA began to publish the report on "Financial Indicators of SMEs" in 2005. For example, in its most recent report for 2007, the financial data of 822,647 SMEs compiled by the CRD database were used for the analysis. Financial indicators of SMEs for profitability and financial soundness were calculated by industry, location and size. A comparison of financial indicators over three years from 2003 through 2005 was made possible by using the CRD database of 620,875 SMEs, which were available in all three years.

In scoring services, the CRD Association offers two types of models: (1) score calculation models; and (2) default probability calculation models. Score calculation models, using the financial data, evaluate the SME management by scores from o to 100 points. These scores are used in evaluating the approval of loans and guarantees. Default probability calculation models tell the likelihood that customers will default within a certain period of time by percentages. They can be used to make a credit evaluation more efficient and improve the quality of internal rating based approach and other methods of credit risk management. There are two kinds of default probability calculation models, one for corporations and the other for sole proprietors.

In addition to the basic services, the CRD Association offers SME Management Support Services. These services are intended to provide the common basis for the consultation between member institutions and their SME borrowers. They have been developed based on the thinking that the improvement of SME management will contribute to the reduction of credit risk for member institutions. The services include the SME Revitalization Support System (CSS) and the

SME Management Diagnosis System (MSS). CSS helps member institutions in evaluating revitalization plans of SMEs in trouble and recommending the most appropriate plan by examining their financial condition and creating financial simulations under various future scenarios, with MSS providing the evaluation and simulation of the financial condition of SME customers, member institutions can strengthen the support for these customers.

Furthermore, in 2008, the CRD Association began to offer a new service called Credit Risk Information Superior (C.R.I.S.P). It is a more sophisticated system to calculate the total amount of credit risk of member institutions. Its nature is that the correlation of default across industries can be calculated from the CRD database. With this, the parameters to quantify the credit risk have become available both nationally and regionally. The service can also be used for stress analyses. It is Excel-based and easy and less costly to make data inputs and obtain results.

Recently, the CRD database is used not only for the credit evaluation at the time of making loans but also for the management of customers and loans after loans are extended. For example, financial institutions can give detailed advice to SMEs with the tools provided under the Management Support Services. They can confirm the improved result with the use of simulation, which is also available under these Services.

They can also manage loan assets. Another example is that financial institutions are directed by the Financial Services Agency to make the necessary provisioning in line with the amount of credit risk calculated by internal ratings. In this case, scoring models can be used not only when financial institutions decide the internal rating for SMEs but also when they estimate the amount of credit risk.

To further expand the services, the CRD Association established the CRD Research Institute in 2008 to make consulting services another pillar of its businesses. This is in response to the recent challenges that consultations with, and enquiries from member institutions, have increased and become diversified. The CRD Research Institute provides such services as the evaluation and construction of internal based rating system, the provision of CRISP and the risk management of housing loans.

### 3.3.4 Governance and Security

In response to the legal change which stipulated the establishment and strengthening of corporate governance to maintain the appropriate conduct of business activities, the CRD Association established the guideline for internal control in 2007.The guideline was established not only as being complied with the legal requirement but also, more fundamentally, as providing the basis for confidence in the data system like the credit information database. The guideline covers both compliance and the risk management system. In compliance, the code of conduct is strongly enforced. In the risk management system, protecting the security of the CRD database is made the top priority and all the necessary measures are taken to that end. For example, to prepare for

the disaster, the auxiliary system is constructed to preserve the CRD program and database, whose back up is regularly being updated.

## 3.4    SME Financing and Credit Information Systems

The credit information database like the CRD database has been increasingly used in facilitating and promoting SME financing as well as in designing public policy related to SMEs. It is useful not only in the relationship lending but also in the transaction-based lending. The relationship lending which is the traditional lending to SMEs is mainly based on the "soft" information like their future growth prospect the managerial quality of the CEOs, and the morale of their employees. Recently, "hard" information like the credit information database has become available and can be used as a complement to the soft information. As the quality of hard information improves, the transaction-based lending has become more prevalent and enabled SMEs to diversify their fund-raising including the fund-raising in capital markets. This section examines three areas where the credit information database is utilized: (1) relationship lending; (2) transaction-based lending; and (3) credit ratings for SMEs.

### 3.4.1    Traditional Lending

In the traditional relationship lending, member financial institutions can use the credit score derived from the CRD database to increase efficiency and reduce costs in credit evaluation. They compare the creditworthiness of a borrower based on the CRD credit score with their internal assessment of the financial conditions of that borrower. If the CRD credit score is high (that is, the credit risk is low) and the internal assessment is high, that borrower can be safely classified into a low risk category. Then, member institutions will be able to simplify the credit evaluation process, thereby reducing costs and allocating resources for a credit evaluation more efficiently. If both the CRD credit score and the internal assessment are low, then that borrower can be assigned into a high-risk category and member institutions will make a credit evaluation with more caution, by employing necessary resources. Such combination of the CRD credit score and internal assessment will be effective if applied to the evaluation of loans to SMEs, which leads to streamlining of the credit evaluation process.

The CRD database is also useful in the credit guarantee system. When a SME borrows from a member financial institution, it will often obtain the guarantee for the loan, either directly or indirectly through the financial institution, from the credit guarantee corporation in the region where the SME is located. The credit guarantee corporation will use, among other things, the CRD credit score when it conducts an evaluation for credit guarantee. The reasons why credit guarantee corporations use the CRD scoring model are:
(1) The model is based on the uniform standards in Japan;
(2) All 52 credit guarantee corporations use the model;
(3) The CRD database covers all users of the credit guarantee system, thus being able to generate reasonably accurate credit scores; and

(4) Credit scores are derived in a fair and appropriate manner, because the CRD database is managed by a neutral, semi-public organization.

SMEs pay fees to a credit guarantee corporation when they receive the credit guarantee. Since 2006, the variable Credit Guarantee Fee System based on the credit risk of SMEs has been introduced. In the old system unti1 2006, the uniform rate of 1.35% had been levied to a11 SMEs as fees. Since then, the scale of credit guarantee fees has been divided into nine categories, ranging from 0.5% to 2.2%. The creditworthiness of SMEs who apply for the credit guarantee are evaluated based on the credit score calculated by the CRD database together with the qualitative assessment by the credit guarantee corporation. This new system is only applicable to SMEs who submit financial statements. The old fee of 1.35% will be applied to those SMEs if they do not submit financial statements. The largest decline of credit guarantee fees from the old to the new system is 0.85 percent. This can work as incentive for SMEs to prepare financial statements and improve their business management.[150]

### 3.4.2 Transaction-based Lending

Since the late 1990s, the non-performing loan problem has made Japanese financial institutions cautious about lending which sometimes led to the condition like the credit crunch. SMEs in particular have been hit very hard by such lending attitude. The need for new methods of fund-raising has become stronger among SMEs. Against the background that the progress in financial innovation has made it less costly and easier to quantify various risks and that the financial infrastructure has been improved, such as the establishment of the Guidelines on the Accounting of Small and Medium Enterprises, lending based on the hard information has become more widespread.

One of the early innovations based on the hard information is the credit score lending. This lending is based not on the credit risk of an individual borrower, but on the average credit risk of a portfolio which consists of a large number of small=lot loans to SMEs. Financial institutions can overcome the asymmetric information problem in SME lending by using the Law of Large Numbers to pool many small-lot loans as one portfolio. Such lending by credit scores is made possible by the large credit information database like the CRD database to evaluate the credit risk of the pooled loans. It has a number of positive effects on SME financing: (1) large part of credit evaluation can be automated and a quick loan disbursement becomes possible; (2) loan pricing is more in line with the credit risk involved; and (3) the need for collateral and/or guarantee is significantly reduced.

The credit score lending was first introduced as a "small-lot, non-secured, and non-guaranteed loan" by a regional financial institution in the late 1990s and then became widely used partly due to strong encouragement by the Financia1 Services Agency to promote loans without excessive

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[150] In addition, 0.1 percent discount applied to the SMEs if their financial statements meet certain requirements regarding accounting standards, e.g., the "Guidelines on the Accounting of Small and Medium Enterprises" established in August 2005.

reliance on collateral and guarantee. The amount of credit score lending disbursed by regional financial institutions was JPY392 billion in 2002 and increased more than six times to JPY2.6 trillion in 2005.[151]

Another innovation is the  Collateralized Debt obligation (CDO), which includes  the Collateralized Loan Obligation (CLO) and  the Collateralized  Bond Obligation (CBO). CDOs are the kind of securitization. In this scheme, a number of loans or bonds owed by SMEs are pooled to create one portfolio. Then, the securities are issued against the cash now of the portfolio composed of pooled loans or bonds. Finally, these securities are sold to investors. CDOs are similar to the credit score lending in the sense that what matters is not the creditworthiness of each loan or bond but the average credit risk of the portfolio. In this regard, the credit information database like the CRD database is critical to estimate the average credit risk to evaluate the creditworthiness of pooled debt.

In Japan, CDOs are actively used by municipalities to facilitate the fund-raising of SMEs, either in the form of loans or bonds. Tokyo Metropolitan Government was the first municipality to issue CLO. In March 2000, Fuji Bank and a number of Shinkin banks made small-lot loans to 1,715 SMEs. The total loans of JPY69 billion were guaranteed by the credit guarantee corporation. The average size of loans was JPY40 million, which was quite small. The loans were pooled and sold to the trust bank. The trust bank in turn issued the trust beneficiary note and sold it to a special purpose company. The special purpose company issued the securities back by the trust beneficiary note, and sold them to investors. Since then, 9 CDOs had been issued until March 2008 with the accumulated amount of JPY700 billion involving around 16,000 SMEs. Osaka and Fukuoka prefectures followed Tokyo Metropolitan Government and other smaller municipalities began to issue CDOs.

The advantages for SMEs when CDOs are used are as follows: (1) SMEs can diversify the fund-raising by indirectly accessing to investors; (2) they can prepare themselves for a future access to capital markets; (3) they can raise relatively stable unsecured funds in the longer term; and (3) they can enhance their status and creditworthiness when they use CBOs.

Mizuho Research Institute conducted the survey in 2006 and obtained the following observations on transaction-based lending.[152] First, they are more likely to use the credit score lending and CDOs for smaller SMEs. The creation of one portfolio with the pooled loans or bonds alleviates the economies of scale in SME financing with reduced costs of credit evaluation and monitoring. Second, they are more likely to use the credit score lending and CDOs for SMEs with higher credit risk. Third, they tend to make the transaction-based lending to SMEs, which have transactions with many financial institutions and do not put much emphasis on the geographical proximity to these institutions. The transaction-based lending tends to facilitate SME financing.

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[151] Regional financial institutions include regional banks, second-tier regional banks, Shinkin banks and credit cooperatives.

[152] "*Chuken-chusho kigyou muke transaction-gata kashidashi no kettei yoin*" (Determinants of transaction-based lending to SMEs), Mizuho *Sohen Ronshu*, Vol. IV, 2007.

To promote such lending, the creation of a large volume credit information database is critically important.

### 3.4.3   Credit Rating for SMEs

Credit ratings for SMEs in Japan have been gradually spreading and are still at an early stage. Currently, there are three major rating companies, which conduct credit ratings for SMEs: Standard and Poor's (S&P) Rating and Investment Information(R&I) and Japan Credit Rating Agency (JCR). S&P began its credit ratings for SMEs in December 2005, which was the first time for such ratings to be offered in Japan. Combining the SME data collected by the Risk Data Bank and the credit model developed by S&P generates ratings. These models determine them statistically, and analysts are not involved in the process of rating determination. Ratings for SMEs are divided into seven categories from the highest "aaa" to the lowest "ccc" which are different from the regular categorization of ratings. JCR, which began its credit ratings for SMEs in April 2008, adopted the similar method to the one used by S&P. It uses the CRD database, and estimates the probability of default by the credit risk evaluation model it has developed. The final determination of ratings is made primarily based on the statistical evaluation.[153]

On the other hand, R&I adopted a combination of quantitative and qualitative evaluation, when it began to offer its credit ratings for SMEs in October 2006. Although its database is not disclosed, it seems to use the large-volume credit database and conducts a quantitative evaluation using the scoring mode1. Unlike S&P, the final determination of ratings is made after analysts conduct an evaluation based on the qualitative information.

There are numerous advantages for SMEs to obtain credit ratings. First, credit ratings are the effective tool for public relations, particularly in recruitment of new employees. Particularly for SMEs challenged by hiring good quality human resources, credit ratings can be  used  to attract these  people  by  publicizing  the creditworthiness of SMEs in an objective fashion. Credit ratings can also be used as a management target so that employees may be motivated to work harder to achieve higher credit ratings.

Second, credit ratings are useful for the diversification of fund-raising.  They can be used as a reference of the creditworthiness of SMEs not only in bank borrowing but also in the capital market such as the private placement of bonds and participation in collateralized loan obligation. For example, R&I explicitly claims that financial institutions will find SMEs with the credit rating of  "BBB" or above worthwhile to make loans.

Third, credit ratings are the potent tool for the expansion of business relations. With credit ratings, SMEs can show their own creditworthiness to their business counterpart without disclosing the detailed financial information. Moreover, they can use the credit ratings of potential business partners as one of the tools for screening them.  All three rating companies

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[153] JCR divides the ratings into nine categories from the highest "aaa" to the lowest "ccc".

(S&P, JCR and R&I) emphasize the importance of a large-volume database as credit ratings for SMEs heavily depend on the statistical evaluation. There makes for a strong case for creating a large database similar to the CRD database.

## 3.5 Lessons and Insights from Japanese Experience

SMEs are expected to continue playing the key role in the employment creation and economic growth. Improving the environment for SME financing is an important policy agenda. The main obstacle in facilitating SME financing is the information gap between lenders and SMEs as borrowers. The establishment of credit reporting agencies, like Tokyo Shoko Research and Teikoku Databank, is one way to reduce such a gap for an individual borrower. These agencies collect the credit information of SMEs whose size is above a certain threshold. They do not collect the credit information of small to micro enterprises due to smaller size of financing in relation to higher costs of information collection and monitoring.

Under the Basel II framework financial institutions are required to adopt either the standardized approach or the internal rating based approach in their risk management. Only a limited number of financial institutions such as mega banks and a few regional banks have adopted the internal rating based approach, mainly because this approach requires a large number of human resources and time to estimate the amount of credit risk according to the method stipulated by the internal rating based approach. Other smaller financial institutions have basically adopted the standardized approach. However, they receive the guidance from the authorities that they should conduct the strict internal ratings for SME in credit evaluation and internal management. Along with this kind of guidance, an increasing number of smaller financial institutions have adopted scoring models. This creates the demand for large-volume credit information database.

Furthermore, progress in the credit evaluation methods together with the information and computer technology has made it possible for financial institutions to develop the credit score lending and collateralized debt obligation (CDO) schemes for financing of SMEs, particularly of small and micro enterprises. The key technology is how to estimate the average credit risk of a portfolio (pooled debt), not the credit risk of the individual borrower. If a large volume of credit information can be collected, the credit score lending and CDO schemes will become more readily available for small and micro enterprises.

One answer to these issues is the establishment of the CRD database in Japan. Its success reveals that there indeed exists the demand for such database. If the credit information database is managed on the private basis it will need public support since the database is part of the financial infrastructure and hence is a public good. In order to collect a large volume of data, anonymity and data protection are crucial if conducted by the private sector.

A large-volume credit information database can be created by the public sector as well. In fact, some central banks in Asia do manage such database. They do not find much difficulty in collecting a large volume of data from financial institutions and usually function as the credit

bureau, responding to enquiries about the credit information of an individual borrower. However, if they want to support financial institutions in adopting the internal rating based approach and developing new methods for SME financing they will need to provide additional services to evaluate the credit risk of the pooled data, while paying due attention to the data protection like anonymity.

As in the case of Tokyo Metropolitan Government, CDOs with the guarantee of the public sector are the potent investment to facilitate SME financing by way of bundling many small-lot loans extended to SMEs. Securitization is not very popular in the current global financial crisis triggered by the misuse of securitized instruments. However, it should be made dear that securitization itself is useful, and what went wrong was how it was used.

CDOs, if well managed, are effective tools for intermediating savings and investment on a regional basis. For example, CDOs in Japan can be sold to the Japanese, which effectively intermediate the savings and investment in Japan. In a similar manner, Korean and Japanese governments introduced the first pan-Asian bond market Japanese yen-denominated primary CBOs. Bonds were issued by 46 SMEs in Korea, and various investors in Asia purchased CBOs. [154] Establishing a large volume credit information database and having a common understanding of such database will promote the cross-border SME financing.

Other financial infrastructures are important for facilitating SME financing. Infrastructures such as legal systems, accounting and audit standards, and document standardization should be improved. Transparency and disclosure should be further promoted. Efforts to improve financial Infrastructures at home will make positive effects on SME financing. If efforts are coordinated regionally, these effects will certainly be larger.

## CHAPTER 4. CONCLUSION, POLICY REMARKS AND RECOMMENDATION

### *Collaboration for Regional SME Development*

Having sufficiently liquid and well-functioning bond markets to effectively channel the region's abundant savings for its increased investment needs is at the core of the ABMI paradigm. To ensure the achievement of the target outcomes of the ABMI on the occasion of its fifth anniversary, the 11th ASEAN+3 Finance Ministers' Meeting in Madrid (5/2008) agreed on the new ABMI Roadmap. The objectives of this new comprehensive ABMI Roadmap are for

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[154] This CBO is part of the efforts to implement the Asian Bond Market Initiative. It involved the issuance by a special purpose company (SPC) in Korea of the three tranches of securities based on the underlying assets of a portfolio of yen-denominated corporate bonds issued by 46 korean SMEs. The subordinated tranche was subscribed by the Small Business Corporation, and the mezzanine tranche by SMEs that issued the underlying assets. The senior tranche was credit-enhanced with a credit guarantee from the Industrial Bank of Korea and subscribed by another SPC established in Singapore. The SPC in Singapore issued senior notes that were further credit-enhanced with a guarantee from the Japan Bank for International Cooperation.

member countries to make voluntary efforts to further develop local currency-denominated bond markets, and through such efforts of the individual country and concerted efforts of ASEAN+3 countries as a group, to seek to develop a regional bond market which is more accessible for both issuers and investors. In addition, efforts are to be made to identify areas where institution building is necessary, and to devise solutions accordingly. To achieve these objectives, four key issue areas have been identified:

(1) Promoting the issuance of local currency-denominated bonds (supply-side);
(2) Facilitating the demand for local currency-denominated bonds (demand-side);
(3) Improving the regulatory framework; and
(4) Improving the related infrastructure for the bond markets.

The new ABMI Roadmap also finds it crucial to ensure voluntary efforts of the countries in developing their local currency-denominated bond markets. In this regard, member countries will be sought to develop "references for self-assessment", which will serve as their benchmarks. Through the Self-Assessment process and a kind of peer pressure, it is expected that each country is development.[155]

Bridging the role and impact of SME financial access and actual SME output growth through the establishment of a credit information infrastructure is not exactly alien to the key objectives of the new ABMI. Directing the aspect of SME development that centers on financing access to eventually integrate these firms into capital market activities may be treated as a parallel means of supporting the thrusts of the ABMI. In particular, two of ABMI's key areas (improvements in the regulatory framework and accompanying developments in infrastructure development for bond markets, in which credit information infrastructure is a part) will impact on SMEs as well. Previous chapters have discussed just how the establishment of a credit information infrastructure (e.g., credit bureaus) and credit guarantee systems with special focus on SMEs would enable this sector to reach into a wider range of resources to fund their business needs. The following sections shall discuss policy-related ideas on how the development of credit information and credit guarantee systems will affect SMEs' capability to be drivers of economic growth and, together with existing efforts to improve domestic bond markets, to be future participants in capital market development through the bond markets.

### SMEs as Drivers of Regional Growth

Promoting SMEs is on every Asian country's must-do list, just as the development of their respective local bond market (and further on towards a regional level) is on the agenda of every ASEAN country. How could the SME industry help drive the development of the bond market, given the existing differences and gaps in their current stage of development? As diverse as these small and medium firms are, the respective bond markets in ASEAN countries vary just as well in depth and volume of activities.

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[155] These objectives and issue areas were obtained from "ASEAN+3 New ABMI Roadmap."

Necessary to the ability of SMEs to take part in the development of a regional bond market as espoused by the ABMI framework is their success and sustained growth. It means these firms have to be successful to such an extent that enables them to have operations large enough in scale to demand, encourage and justify financing through bond issuances and not just through the local arteries of commercial bank lending. The success of SMEs necessarily confirms the success of the development platform on which these firms were nursed. But such hinges on a number of factors.

First, SMEs must be competitive and to breathe life to such spirit of competitiveness, governments must help establish a level playing field that helps SMEs compete on a more equal basis. To do this, regulations must be designed and implemented with due consideration for the fact that, relative to their corporate counterparts, compliance with regulations put a disproportionate burden on SMEs, especially those that have just started operations and have yet to put their grip on the market.

Second, financing SME-focused programs necessarily means using public money and in Asia where such resources are scarce, the effective use of such resources must be ensured. Strategies for SME development must consider equity and efficiency as distinct and separate objectives. In most cases, the general rationale for SME development always partly latched to the goals of poverty alleviation and the upliftment of living standards. On the other hand, specific programs to drive such rationale are almost always directed towards industrial efficiency and greater levels of competitiveness among SMEs. These objectives must always be kept from overlapping and the measures used to attain them must be implemented separately and treated distinctly. Public expenditure should be confined to those strategies that are directed towards the under-served and marginalized sections of the market and for which the necessity of providing public goods or promoting enterprise equity considerations are overriding.

Third, greater access to institutions, structures and instruments appropriate to SME needs must be provided. More attention and work must be poured towards the development of private markets for services suitable for SMEs to narrow access issues on both the demand and supply side, particularly on the matter of information. SMEs do have more international opportunities than ever before, but their contribution to direct exports is a far cry than might be expected in an increasingly globalized economy. This is due in part to the lack of reliable and accurate database on SME international activities, as well as to trade barriers. While APEC and WTO have addressed most of these barriers so far, they tend to favor larger firms and do not address the more specific non-border non-trade impediments that challenge SMEs when operating across borders. These impediments need to be identified and addressed more aggressively. And since a considerable proportion of domestic market-focused SMEs are encouraged to look towards the export market to boost their sales potential, establishing a pro-business environment is imperative and can be accomplished via increased access to finance, infrastructure, trainings and marketing activities such as trade fairs and seminars. The presence of good infrastructure and logistics lower production cost and facilitates the easy supply chain management through

reduced power and communication costs, having sufficient port systems, reduced travel time, among others, ultimately contributing to SMEs' efficiency and competitiveness. Private sector participation in infrastructure and services provision must be allowed and encouraged, together with continuing fiscal reforms, to enable governments to invest more in physical infrastructures and utilities. Rising on the spirit of the ABMI, bonds may be issued to finance SME-related infrastructure such as transport, warehousing and logistics facilities as well as information technology.  These practical measures would help SMEs step up to the plate, despite their lack of ability to realize economies of scale or other internally generated expertise, which remain confined to larger businesses.

Finally, there is also the need to create a separate office for export-oriented high-tech SMEs in the manufacturing industry and those in the traditional lines of SME businesses, under the umbrella of a single SME center. This is to address the differences in the nature of needs and problems that confront traditional (food and home decors) and nontraditional (high-tech) SME firms. Related to this, in some ASEAN countries, the responsibility for SME development lies on the shoulders of usually more than one government agency, resulting in overlapping lines of authority, not to mention conflicting and fragmented policy responsibility and implementation structure.  However in such countries as Thailand and Malaysia, SME responsibilities are concentrated in one office to ensure better coordination and greater coherence and consistency in SME policies and regulation. A single SME center that houses separate offices for traditional and nontraditional SME firms is ideal. Aside from operational advantages, this set-up may facilitate the easier introduction of the concept of bond financing as an alternative to commercial bank financing. Nontraditional high-tech SMEs may take to this option of bonds with greater interest than traditional SMEs and having a single SME center could help package the bond financing needs to these firms more effectively.   Equally important is the need to upgrade the skills and knowledge levels of people handling SME programs.

*Developing Credit Information Systems and Credit Guarantee Schemes for ASEAN SMEs*

Information and money are two important ingredients for ASEAN SME industries to really take off and make significantly sustainable contributions to the region over the long term.   Accurate and timely information about market opportunities, financial assistance and access to technology is crucial for SMEs to compete and grow in an increasingly global market environment. Opportunity for financial access is an especially important catalyst for SMEs to have the resources they need to gain a foothold in the market.

All these require the establishment of an information database system that is relevant to the evolving character, performance and needs of SMEs, a system that could capture the footprint of SMEs not only in terms of creditworthiness but more so in terms of inter-firm competitiveness and efficiency scale, a system that could be a well of information from which SME resource providers could dip into to assess these firms' financial viability and market benchmark scores and eventually help these firms overcome their top three major hurdles of survival: lack of access to finance, technology & skills, and inputs & supply chain  problems.

Either the public or private sector can establish an SME credit information database. Unlike in advanced countries where credit information sharing has been practiced for decades, emerging economies face greater challenges and resistance in establishing such databases. The major issues are (1) privacy considerations and banking secrecy law and (2) unwillingness of major creditors to share credit information to maintain competitive edge over their competitors.

Countries that do not yet have an SME credit bureau may want to consider a public sector or central bank-driven approach to developing credit bureaus. The advantages of this approach are that it ensures participation of all regulated financial institutions, and therefore the comprehensiveness of the database. It is also leveraging on the central bank's creditability and supervisory powers to allay concerns over data privacy, security and potential abuses of the database, and its expertise and resources, which the private sector in many emerging and developing economies may lack. However, there are certain drawbacks. To maintain objectivity as a regulator, central banks cannot provide risk management solutions or assessment of the creditworthiness of specific borrowers. Hence, central bank-operated credit bureaus typically provide only raw data, and leave it to the credit providers to develop their own credit management solutions (e.g. internal credit rating) to process these data.

The ASEAN Policy Blueprint for SME Development (2004-2014) has one (out of seven) objectives that is directed towards the development of information systems specifically for SMEs: "to enhance the competitiveness and dynamism of ASEAN SMEs by facilitating their access to information, market, human resource development and skills, finance as well as technology." However, the APBSD also recognizes the rivers of differences in which these ASEAN SMEs operate, and, as such, recommended activities and indicative outputs with due acknowledgment for the variations in the regulatory, legislative and market-inducing environments in which these SMEs exist and thrive. Hence, its recommendations for capacity building for improved SME access to financing, financial institutional capacity building for improved SME financing, and widening and deepening SME access to credit contain a range of implementing activities that may be carried out regardless of the country of origin of the SME, rather than a boxed set of one-size-fits-all recommendations. Besides, diversity is the middle name of ASEAN economies and due consideration for this characteristic is essential to avoid making sweeping generalizations at the policy level.

In the context of establishing a template for a regional information sharing mechanism, it is best to concentrate efforts first on the getting off the ground the establishment (and development) of reliable and robust credit information systems in all ASEAN10+3 economies. Once operating, their best practice features can be added to the typical requisites of a credit information infrastructure and, once fine-tuned to incorporate the unique characteristics of ASEAN markets, can provide the basic framework for a regional credit information sharing mechanism that puts into place the following elements:
(1) The legal and regulatory frameworks for credit reporting;
(2) The technology platform that would support such regional information sharing mechanism;

(3) The providers and users of data;

(3) The kind and quality of data to be collected and distributed;

(4) The support for an advocacy program for credit reporting discipline, outreach and education;

(5) Institutional arrangements that would govern the collection and use of credit information across borders; and

(6) Policy guidelines for the use of regional credit information to benchmark how financial institutions rate in terms of credit reach to formal industries, with special interest to SMEs.

The legal and regulatory elements are anticipated as most critical and challenging among all the elements mentioned because of the existing differences in the judicial system and market regulatory set-up of ASEAN countries.[156] Laws and regulations surrounding creditor rights and enforcement, corporate insolvency, credit risk management, debt recovery and enterprise workout practices and privacy laws would have to be leveled off to give way to an environment that could give birth to a set-up for information sharing benefiting all thirteen economies in the ASEAN landscape. Issues pertaining to data security and privacy are easier to manage if the credit database is operated by government agencies or central banks. Where such database is managed by the private sector, member countries should consider implementing the necessary laws and framework to regulate the activities of private credit bureaus. Such laws should cover, among others:

(1) Licensing or registering of credit bureau

(2) Subject matters' consent for the collection and/or dissemination of credit information

(3) Data security and integrity issue

(4) Permissible use and users of credit information (e.g. by credit providers for assessing the creditworthiness)

(5) Prohibited use of certain information for credit decision (e.g. race, age, gender – depending on the social norms and objectives in each jurisdiction)

(6) Consumer protection and redress mechanism (e.g. right of subject matter to access their own reports for the purpose of verifying accuracy and the right to make corrections)

An important utility that can be generated by the regional information sharing system is that, by encouraging the discipline of information collection and credit reporting, it would now be possible to create an index benchmarking how banks actually expand, if at all, financial access to industries, especially SMEs. A corollary benchmark for SME creditworthiness (credit ratings) on a per country basis may also be possible as the volume of SME information increases. Cross-country comparisons on SME performance vis-à-vis SME access to finance may also be created to establish metrics linking financial access to expanded abilities enabling small and medium

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[156] The sharing of credit information across national boundaries may be complicated by the fact that banking secrecy and privacy laws differ across jurisdictions. The Japanese approach of providing individual but anonymous (i.e. with identity removed) data may be a workable approach to enable the data to be used for developing statistical analysis at sectoral level. However, with the removal of borrowers' identities, the data cannot be used for assessing the creditworthiness of specific borrowers. Given that SMEs typically only have access to domestic credit providers, this may not be a major issue.

firms grow and sustain their operations. In countries where the level of financial inclusion for smaller businesses is low, the SME credit database should also source information from other sources, e.g. utilities providers, suppliers, trade creditors etc. to facilitate the building of track record by small businesses that are good paymasters but may not have a long credit record with financial institutions.

The study should also cover the feasibility of including these information in the SME database By fostering an enabling environment for comparability, it would then be possible to identify groups of SMEs that are most operationally and financially viable and have the greatest potential to be access funds from the capital market through bond issuances. These possible outcomes and developments could create a multiplier effect in terms of having the appropriate and necessary infrastructures in place and in good working, underscoring the link between the financial sector and the real sector. As a result, it would provide the impetus to incorporate the SME industry into the fold of the ABMI, which seeks to develop capital markets across the region through regional bond market development.

In the context of establishing a regional credit guarantee mechanism, there exists an ADB ABMI regional credit guarantee and investment mechanism proposal that seeks to align both ABMI and ADB policies to provide:
(1) Guarantees for bond issuances;
(2) Guarantees for swap transactions;
(3) Loans and loan guarantees;
(4) Equity investments in financial infrastructure that lead to the development of bond markets; and
(5) Technical assistance funding to provide funds for countries to assist in practical and targeted forms of capacity building to enable the issuance of bonds and to reduce risks.

The proposed mechanism is envisaged to have the following structural characteristics:
(1) ADB ABMI Guarantee Facility Support Fund;
(2) ADB ABMI Guarantee Facility;
(3) ADB ABMI Guarantee Facility Life; and
(4) ADB ABMI Equity and TA Fund.

An ADB ABMI Guarantee Facility Support Fund is seen as the most efficient way of leveraging ADB's guarantee capabilities that will allow the Guarantee Facility guarantee more volume and different instruments. It will be leveraged by (X) times to determine the eventual ADB ABMI Facility size. Creating a separate ADB ABMI Equity and TA tranche under the ADB ABMI RGIM manner will also be very beneficial as it could provide bridge loans, equity investments and TA funding in/to projects that have a clear capital market development impact.[157]

Credit guarantees schemes (CGS) have played an important role in Asian economies. The CGS

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[157] See ADB ABMI Regional Guarantee & Investment Mechanism [ADB proposal].

experience of ASEAN countries demonstrates the importance of guarantors having sufficient capitalization and prudent risk management practices since guarantees are vulnerable to concentration risk. The proposal for the ADB for a new regional credit guarantee entity aims at avoiding the problems that led to the failure of Asia Ltd, the first regional credit guarantee company in Asia. The new regional credit guarantee entity will have a bigger capitalization than Asia Ltd to obtain AAA rating. It may also be either housed within the ADB or set up as an independent multilateral organization with clear procedures for recapitalization.[158] In the context of SME participation in bond markets, the securitization of SME bonds plus a credit guarantee on those bond issues could render it more attractive to investors.

### *SMEs in the Bond Market: The Way Forward*

Financial deregulation coupled with domestic reforms in the financial sector of ASEAN economies has increased opportunities for bond financing. Advocates of a regional bond market mechanism claim that developing bond markets in the region would eventually transform the bank-dominated financial system that characterize Asian economies into a more balanced system where the bond market plays an active role in the corporate financing needs of Asian firms.

Over time, it is estimated that the availability of a greater variety of bond instruments would help improve the risk-return profile of the asset portfolios of institutional and private investors. More importantly, proponents of a regional bond market argue that, by stabilizing capital movements, a regional bond market will guard against crisis-inducing speculative currency attacks. This is because market participants in the regional bond market have better access to information and more data on the macroeconomic status and corporate standing of firms in the region, thereby minimizing tendencies for irrational panic and bank run attacks. They will also be cautious of pulling off their investments in the region since they are aware that a massive withdrawal of funds will set off a crisis that could victimize their home economies.

Theoretically, a regional bond market could run well given the presence of well-developed regional systems of payment, clearing, settlement and depository services that ensure real time gross settlement with delivery versus payment for cross-border bond transactions. The presence of established regionally specialized credit rating firms in the region is also essential in grading corporate issues. In reality, however, individual Asian bond markets are still relatively but collectively, at over US$2.7 trillion, they are noteworthy. Asian economies are already closely inter-linked with intra-Asian trade increasing 5 fold within the last 15 years, compared to 3.5 times in NAFTA and just 2 times in the EU. These economic linkages can provide synergy for our bond markets. However, to attract international issuers and investors, ASEAN has to offer a different set of value propositions other than sheer size - the basic prerequisites of a strong legal system and governance, tax exemptions, eliminating capital flow restrictions and an efficient and reliable settlement infrastructure must exist. This will encourage more investors and the presence of a large investor base, both local and foreign, would in turn draw issuers.

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[158] Shim [2008].

Current efforts to establish credit information systems in ASEAN countries where such infrastructures were previously absent is a move in the right direction. This will improve the quantity and quality of market information and help present better portfolio investment profiles. It will also improve the efficiency of domestic credit rating agencies and render possible the establishment of regionally specialized credit ratings firms that rate Asian corporate bonds. Hopefully, the development of credit information infrastructure would generate a critical mass of SME information and spur the creation of SME-focused credit rating agencies and related market entities, which are essential in helping SMEs that opt for bond financing. To date, basic market infrastructure and market-supporting institutions to encourage SME participation in capital markets are still in the process of being built. These include a strong legal framework to protect investors in the face of a credit event, credible credit rating agencies to provide informed assessments of issuers, good financial reporting and accounting practices to ensure accurate and timely information, transparent price information, a pool of liquidity and viable hedging instruments, and individual and group performance benchmarks for SME firms. The rates of progress of SME development agendas in ASEAN countries remain heterogeneous and domestic bond markets continue to be works in progress. Some capital markets are relatively more advanced than others, but regional initiatives and ongoing drive to promote regional bond market help steer ASEAN countries to move in the same direction.

On the SME front, the following need to be part of SME discipline to prepare them for their entrance in capital market activities --- continuous disclosure of information on company's financial and operational profiles, aligning company procedures and outcomes with best business practices; establishing track record and related footprint in business transactions; tapping the support of broking community; obtaining knowledge as to the requirements and costs of listing, underwriting and funding; possessing and upholding sound principles and business ethics surrounding company management, governance, integrity, accountability, transparency, credibility to reliable information, and discretion for directors and management. Through these disciplines, ASEAN SME culture would learn to be more comfortable and trusting of capital market activities and encourage SMEs to be more transparent about their activities. Different types of SME debt instruments must be developed to cater to different types of issuers. SME loans can be bundled, securitized and together with a regional credit guarantee mechanism be made more attractive to investors. Infrastructure projects that promote technology injection, transport and logistics efficiency and operational competitiveness among SMEs can also be securitized in bonds.

Over the long run, given that the population of SME firms is concentrated on small rather than medium-sized firms, the ultimate metric of success of SME financing access and development programs is one that would indicate how many of these firms have eventually graduated from being originally small firms to become medium-sized corporate enterprises. Research on methodologies to develop such metrics, apart from developing SME scorecard with cross-country comparability features, is recommended.

**Policy Recommendations**

SME lending used to based on an experienced banker's intuition. Unfortunately, SMEs are not evaluated by statistical analysis like large corporations due to lack of data. SMEs are sometimes mistreated by lack of enough information. SME database can reduce information asymmetry between SMEs and banks. Due to the lack of SME data in many countries, SMEs tend to pay higher interest rates to banks compared to corporations. The establishment of a database could reduce excess costs paid by SMEs to formal sources of finance.

(1) SMEs have to have incentives to disclose their truth data. In Japan, SME data are collected nationwide by Credit Guarantee Corporations, which have 47 offices in all the prefectures in Japan. When SMEs want to borrow from banks, they are often asked to put credit guarantee on their loans. This is because SMEs are perceived to be much riskier than large corporations. In this manner, SMEs have the incentive to disclose their financial data to the Credit Guarantee Corporation so as to be able to borrow money from banks. Since ASEAN countries have different financial and SME lending systems, the kind of organization to collect SME data in each country must be studied well.

(2) An institution that is mandated to collect SME data while looking after the confidential and trustworthiness interests of the SMEs in its database must be established. This institution, which may either be a government agency, a government-affiliated institution or an independent organization of banks should not be compromised to divulge or disclose information in its SME database to tax-collecting agencies or other related agencies. At the same time, its profitability and self-financing capacity must be achieved.

(3) Once the organization to collect SME data is set up, the government must spend for the initial cost of its establishment to help get its operations off the ground. The cost must be as minimum as possible. At the same time, it must have its own revenue source. In Japan, CRD (credit Risk Database) collect fees from financial institutions by selling data and by providing the computation of default risks. Consultation of data analysis with various banks is another source of income from CRD.

(4) The SME database should be a repository of both financial and non-financial SME data. In Japan, the data collected by CRD includes sales, operating profits, ordinary profits, investment in plant and equipment, investment in P&E (excluding investment in software), increase in inventories, ratio of operating profits to sales, ratio of ordinary profits to sales, ratio of net worth, liquid assets, inventories, fixed assets, deferred assets, total assets, liquid liabilities, fixed liabilities, net assets, interest expense and personnel expenses. For ASEAN countries which are just in the process of establishing an SME-dedicated information agency, it has to study what kind of data are appropriate to be collected in order to analyze well the SME business profile.

(5) Statistical analysis is required to compute the default risk ratio of SMEs. The database institution can then provide statistical analysis to its member banks.

(6) If SME data are collected in various Asian countries, cross border comparison becomes possible for SME credibility. SME loans can be securitized based on the accurate database, which can widen the opportunity for SMEs to raise funds from the capital market. SMEs can start to issue CPs and corporate bonds as a group. The information contained in the SME database can help reduce the risks of SME bond and the pooled SME bonds can be used to diversity the risks of investors.

Continuous efforts need to be made to improve the kind of data to be collected in each country so as to ascertain the exact situation of firms in the SME industry. Credit risk models can be developed and improved with the use of various SME data. The development of SME database will contribute to the enhancement of the Asian bond market by allowing SMEs to issue SMe bonds. If SME data sets were disclosed in Asian countries, and under the auspices of the ABMI, capital flow among Asian countries will be enhanced.

# REFERENCES

**Aldaba, Rafaelita** [2008]. SMEs in the Philippines: Meeting the Globalization & Development Challenges.    Available at http://www.phileconsociety.org/portals/0/46th%20meeting/a2.3-pes_aldaba2.pdf

**Anuchitworawong, Chaiyasit, Thida Intarachote and Pakorn Vichyanond** [2006]. The Economic Impact of Small Business Credit Guarantee. TDBI quarterly Review: (June).

**APEC** [2004]. Financing Entrepreneurship.  Available at http://www.apec.org/apcc/documents_reports/small_medium_enterprises_working_group_ kinggroups/smewg/mtg/2004/word.Par.0062.File.v1.1

**Asasen, Chompoon, Kanchana Asasen and Nataya Chuangcham** [2003]. A Proposed ASEAN Policy       Blueprint for SME Development 2004-2014. REPSF Project 02.005. Final Report.

**ASEAN Economic Community Blueprint**.

**ASEAN Policy Blueprint for SME Development** (APBSD) 2004-2014. Available at http://www.aseansec.org/pdf/sme_blueprint.pdf

**ASEAN+3 New ABMI Roadmap**. Available at http://www.asianbondsonline/adb.org/documents/080731_ABMI_Roadmap_Publication_ Final.pdf

**Asia Bond Indicators** at http://www.asianbondsonline.adb.org/scripts/bondsdatabase

**Asian Bankers' Association** [2005]. Developing Regional Mechanisms to Promote Securitization in the Asia Pacific. Position Papers 2005. September 7.

**Asian Development Bank** [ 2008]. Asian Bond Markets Key Source of Funds for Governments During Turmoil, says ADB. http://www.adb.org./media/printer.asp?articleID=12708

**Asian Development Bank** [2005].  Philippines: Moving Toward a Better Investment Climate.

**Asian Development Bank** [2002]. Development of SME Financing Support system, Asian Development  Bank TA 3534-PRC Final Report.

**Aziz, Zeti Akhtar** [2008]. Enhancing SMEs' awareness on access to financing. BIS Review 90/2008. Available at. www.bis.org/review/r080716d.pdf

**Aziz, Zeti Akhtar** [2007]. Strengthening the financial infrastructure for SMEs in Malaysia. BIS Review 13/2007. http://www.bis.org/review/r070209c.pdf

**Bank Indonesia Regulation Number 7/8/PBI/2005 Concerning The Debtor Information System**.

**Bank Indonesia Circular Letter (No.7/9/DPNP) to All Commercial Banks in Indonesia**

**Bank for International Settlements** [2008]. BIS Review 8/2008.

**Bank for International Settlements**. Indonesia's banking industry: progress to date. BIS Papers No. 28.

**Bank Negara Malaysia** [2007]. Deputy Governor's Speech at the Signing of Strategic Alliance Agreement    between Credit Guarantee Corporation Malaysia Berhad (CGC) and Dun   and Bradstreet (D&B) Malaysia Sdn Bhd.
http://www.bnm.gov.my/index.php?ch=9&pg=15&ac=253&print=1

**Bank Negara Malaysia** [2002]. Central Credit Reference Information System (CCRIS) Explanatory Notes to  Customer Credit Reports. October 17.

**Bin Abd Kadir, Mohd Razif** [2008]. SME credit bureau in the financial landscape of Malaysia. BIS Review 67/2008.

**Bolanos, Guillermo** [2000]. Establishment of a Credit Bureau in Mindanao.

**Building Sustainable SMEs.**  Available at
http://www.smedsep.ph/Download/SS%FS%20v4%2010Dec07.pdf.

**Center for Financial Industry Information Systems** [2008]. *Zaimu Shinyo Jyoho Database no Saishin Doko to Kinyu Kikan ni okeru katsuyo* (Recent development of Credit Risk Information Database and Its Use by Financial Institutions). *Kinkyu Joho System* (295):90-110. Spring.

**Central Institute for Economic Management, Bank of Foreign Trade of Vietnam** [2006]. Improving SME Access to Formal Finance.

**Chaipravat, Olarn** [2003]. Asian Bond Status Report. Fiscal Policy Research Institute (Thailand).    Avaialable at http://www.us-asean.org/finance/AsianBondFund.pdf

**Chaitrong, Wichit** [2007]. Blacklist of borrowers questions.  The Nation, 21 May 2007 issue. Available at    http://www.nationmultimedia.com/2007/05/21/business/business_30034705.php

**Chewcharat, Pongsak** [2008]. Regional Finance in Recent Period and the Way Forward: SME Development Bank of Thailand. http://www.fsa.go.jp/frtc/kenkyu/event/20080430/08e.pdf

**Chopra, V. K. Innovations in SME Financing**. Available at http://www.ficci.com/media-room/speeches-presentations/2004/sep/banking/ Session%205/V%20K%20Chopra.pdf

**Chudasri, Darana** [2008]. Local loan Demand Unmet. Available at
http://www.bangkokpost.com/051108_Business/05Nov2008_biz40.php

**Chudasri, Darana** [2007]. Banking Credit Bureau Law Debated. Bangkok Post. Available at
http://www.radbangkokpost.com/business/nonperforming_loans/credit_bureaus_in_thailand_par.php

**Credit Bureau Malaysia**. www.bankinginfo.com.my/_system/downloadables/credit_bureau.pdf

**Credit Guarantee Corporation**. *Credit Guarantee System in Japan 2008*.

**DBS Bank Ltd** [2008]. Financing SMEs – the Singapore Experience. Available at http://www.apecovop.tw/objstore/forum/25/Financing SMEsTheSingaporeExperience.pdf

**De Ramos, Abe**. When Seeing is Believing. http://www.cfoasia.com/archives/200207-06.htm

**De Zuniga, Juan and Nestor A. Espenilla** [2004]. Trends and Developments in Insolvency and Risk Management in the Philippines. http://www.oecd.org/dataoecd/49/4/33938272.pdf

**Dell'Ariccia, Giovanni and Robert Marquez** [2001]. Flight to Quality or to Captivity: Information and Credit Allocation. IMF Working paper WP/01/20.

**Department for International Development** [2005]. Do Credit Guarantees Lead to Improved Access to Financial Services? Recent evidence from Chile, Egypt, India and Poland. Policy Division Working Paper. February.

DOLE extends support to SME development [28 April 2007].   Available at http://www.dole.gov.ph/news/print.asp?id=N000002060

**Dun&Bradstreet and Standard Chartered**. Standard Charatered and Dun&Bradstreet unveil Singapore's top 100 small businesses.

**Dun&Bradstreet and Standard Chartered**. Standard Charatered and Dun&Bradstreet unveil top 100 SMEs in Singapore.

**ESCAP** [2008]. ESCAP note on the outcomes of regional consultations on the implementation of the Asia-Pacific region of the Monterrey Consensus on Financing for Development. Available at http://www.un.org/esa/ffd/regionalcommissions/doha/ESCAP_outcome.pdf

**European Commission** [2007]. Roundatable between bankers and SMEs: SME Securitisation Final Report   2007. Available at http://ec.europa.eu/enterprise/entrepreneurship/financing/docs/roundatable_securitisation_2007.pdf

**Fan, Emma Xiaoqin and Akiko Terada-Hagiwara** [2003]. Changing Bank Lending behavior and Corporate Financing in Asia – Some Research Issues. ERD Working Paper No. 49. December.

**Frequently Asked Questions on DB Credit Bureau**. www.dpgroup.sg.com/services/Frequently%20Asked%20Questions%20on%20DP%20Credit%20Cureau.pdf

**Getting Credit in Singapore: Legal Rights and Credit Information**.

**Ghon Rhee, S.** [2004]. Developing an Asian Bond market: Rationale, Concerns and Roadmap. A PECC Finance Forum Report on Institutions-buildig in a World of Free and Volatile Capital Flows  Stemming from the PECC Finance Forum Work 2002-2004.

**Gualberto, Celeste** [2007]. The story behind Philippine rural finance.  Available at http://www.rural21.com/uploads/media/ELR_engl_51-53_02.pdf

**Hall, Chris** [2002]. The SME Policy Framework in ASEAN and APEC: Benchmark comparisons and analysis.  16th Annual Conference of Small Enterprises Association of Australia and New Zealand 28 September – 1 October 2003.

**Heng Swee Keat** [2006]. Developing Asian Bond markets – the Next Phase.  *Keynote address delivered at the Asian Bond Markets Summit* on 14 November 2007.

**Hoang, Pham Truong** [2008]. SMEs in Thailand and Indonesia: Development, Policies and Experiences.   Presented at *VDF's Workshop on SME Development* on 21 May 2008. Available at http://www.vdf.org.vn/Doc/2008/87WSPTHoang21May2008slides.pdf

**Husain, Ishrat** [2005]. SME financing – issues and strategies. BIS Review 37/2005.

Improving environmental performance of small and medium-sized enterprises (SMEs) [2006]. Available at    http://www.iges.or.jp/APEIS/RISPO/spo/pdf/overall/3.5.2_sme.pdf

**International Monetary Fund** [2007]. Indonesia Staff Report for the 2007 Article IV Consultation.

**Izumi, Yasuo** [2006]. Improving Demand Size of SME Financing.  *ADBI Seminar on SME Finance*.

**Japan Small Business Research Institute** [2008]. *White Paper on Small and medium Enterprises in Japan*.

**Kang, Kenneth** [2006]. Unfinished Agenda for Reforms: Further Financial Corporate restructuring to Strengthen Investor Confidence. Available at http://imf.org/external/country/KOR/rr/2006/013006.pdf

**Leano, Rhodora M**. [2006]. SMEs in the Philippines. CACCI Journal 1.

Lending to small and medium sized enterprises [2004]. Available at http://www.info.gov.hk/hkma/eng/viewpt/20041028e.htm

**Levitsky, Jacob** [1997]. Credit guarantee shemes for SMEs – an international review. Small Enterprise Development 8 (2): 4-17.

**Lim, William**. 2006. Data Issues. 5th World Consumer Credit Reporting Conference 2006.

**Maehara, Yasuhiro and Daisuke Tsuruta** [2006]. Information sharing in SME Financing.

**Meisner, Harald** [2007]. Financing small and medium enterprises in Germany – Targets for the future.

**Mizuho Research Institute** [2006]. *Tayoka fa susumi tsutsu aru chuken chusho kigyo no shikin chotatsu* (Diversification of SME Financing). *Mizuho Report*.

**Mohan, Rakesh** [2008]. Innovation and growth – role of the financial sector. BIS Review 36/2008. Available    at http://www.bis.org.review/r080401e.pdf

**Mu, Yubin** [2002]. Impedients to SME Access to Finance and Crdit Guarantee Schemes in China. http://unpan1.org/intradoc/groups/public/documents/apcity/unpan031253.pdf

**Nagano, Mamoru** [2008]. Corporate Finance and the Asian Bond Market. Journal of International Economic Studies (22):87-96.

**Naima, Nazneen Rikta** [2007]. Institutional Lending and Financial Policy for SMEs in Bangladesh. Nhaka: Bangladesh Bank Research Department Policy Analysis Unit, Policy Note Series PN 0804, age 8f at http://bangladesh-bank.org/research/policynote/pn804.pdf

**National SME Development Council** [2006]. SME Annual Report 2006.

**Noda, Akihio, et al**. [2007]. Determinants of transaction based lending to SMEs in Japan: Borrower Characteristic Evidences fro the MHRI Survey. *Mizuho Research Paper* (July).

**Olmedillo, Hector** [2005]. APEC Economy presentations on Credit Guarantee Program: Credit Guarantee Programs in the Philippines.

**Oh, Gyutaeg and Jae-ha Park** [2006]. Creation of a regional credit guarantee mechanism in Asia. BIS Papers No 30.

**Ong Keng Yong** [2007]. Doing more for SMEs in the ASEAN Economic Community. Available at http://www.aseansec.org/21018.htm

**Pacific Economis Cooperation Council** [n.d.]. Financing Small and Medium Enterprises Challenges and Options. Issues@PECC.

**Palmer, John** [2003]. Data Driven Strategies: A New Frontier. Keynote speech at the Credit Bureau Conference 2003, 14 November 2003.

**Park, Jae-Ha** [2006]. Securitization for SMEs.

**Park, Yung-Chul and Daekeun Park** [2003]. Creating Regional Bond Markets in Asia: Rationale and Strategy. The 2nd Annual Conference of PECC Finance Forum. Available at http://www.pecc.org/finance/forum2003/Session3-Park-Park.pdf

**Philippine House of Representatives** [2008]. Improving Access of MSMEs to Financing. Policy Advisory No.   2008-06.

**Progress Report of the Asan Bond Markets Initiative** [2005]. Available at

**RAM Consultancy Services Sdn Bhd** [2005]. SME Access to Financing: Addressing the Supply Side of SME Financing. REPSF Project 04/003 Final Report.

**Reichmuth, Markus** [2006]. Reflections on the Instrument of Loan Guarantee (LG).

**Sakai, Koji, IIchiro Uesugi and Tsutomu Watanabe** [2005]. Firm Age and the Evolution of Borrowing Costs: Evidence from Japanese Small Firms. *RIETI Discussion Paper Series 05-E-026.* September.

**Salazar, Melito, Jr. and Quintin Tan** [n.d.]. Strengthening Capabilities of Philippine SMEs for Doing Business with EU Companies. Available at

**Sedyadi, Endang** [2008]. The Role of Bank Indonesia in Development of Micro, Small, and Medium Enterprises (MSMEs) and Customer Due Diligence (CDD).  Presented at the Workshop for Enhancing Effectiveness of Bilateral Remittance Transfers in South East Asia, World Bank, Denpasar, 9-11 June 2008.

**Senate of the Republic of the Philippines**. Committee Report No 13.

**Senate of the Republic of the Philippines** [2004]. Spot report on the pubic hearing conducted by the Committee on Banks, Financial Institutions and Currencies, Re: Establishing a Credit Information    Bureau System (SBN 1843) and the Corporate Recovery Act (SBN 208 and 1847) held on Friday, 26 November 2004 at 9 a.m., Sen. Lorenzo Tanada, Philippine Senate. Available at http://www.senate.gov.ph/13th_congress/spot_reports/Banks%20Nov%2026%202004.pdf

**Shim, Ilhyock** [2006]. Corporate credit guarantees in Asia. BIS Quarterly Review (December).

**Sikano, Yoshiaki** [2008]. *Nihon no Chuso Kigyo* (SMEs in Japan). Toyo Kezai, Inc. February.

**Sinha, Anil** [2003]. Experience of SMEs in South and South-east Asia. SEDF Research Paper.

**Singh, Inderjit**.  SMe Financing Landscape in Singapore.

**Small and Medium Enterprise Agency** [2007]. *Chusho Kigyo no Zaimu Shihyo* (Financial Indicators of SMEs). September.

**Small Business Credit Guarantee Corporation** [2005]. Credit Guarantee System in Thailand. Presented at    the Workshop on SME Credit Guarantee Systems in Asia-Pacific Region in Shanghai, China in    October.

**SME Credit Bureau** (Singapore). www.icdnb.com.sg/bureau/sme.htm

**Su Ning** [2007]. The evolution of a credit information system for China. BIS Review 121/2007. Available at    http://www.bis.org/review/r071026g.pdf

**Tambunan, Tulus** [2006]. Development of Small- and Medium-scale Industry Clusters in Indonesia. Kadin-Indonesia-Jetro 2006. http://www.kadin-indonesia.or.id

**Tanabe, Toshinori** [2004]. Evolution of Small Business Financing Based on Database Utilization (in Japanese). *FRI Research Report No. 194*. Fujitsu Research Institute. March.

**Tay Bee Bee** [2007]. Speech by Ms. Tay Bee Bee, Director, Monetary Authority of Singapore at the Derivative FitchGlobal Structured Credit Conference on 14 may 2007 at the pan Pacific Hotel   Singapore.

**The Asian Banker** [2006]. Singapore Credit Bureau not catching on? Available at http://www.profitera.com.article.php?story=20060317102047924

**The Credit Risk Data Management in the ASEAN Region**. Available at http://www.mof.go.jp/jouhou/kokkin/tyousa/0712asiancompany12.pdf

**The News** [2008]. *Microfinance Credit Guarantee Launched*. Available at http://www.thenews.com.pk/daily_detail.asp?id=152734

**Tsukahara, Osamu** [2008]. SME Financing in Japan. JASME. Available at http://www.fsa.go.jp/frtc/kenkyu/event/20080430/03e.pdf

**UNCTAD** [2005]. Information Economy Report 2005.  UNCTAD/SDTE/ECB/2005/1.

**Wattanapruttipaisan, Thitapha** [2003]. Four Proposals for Improved Financing of SME Development in ASEAN.  Asian Development Review 20 (2): December. Available at http://www.aseansec.org/15658.pdf

**White Paper on Small and Medium Enterprises** [2002]. Office of Small and Medium Enterprises Promotion.

**Xinhua Finance** [2008]. Xinhua Finance releases Credit Risk Report on China's Banking Industry.  http://www.xinhuafinance.com/uploadedFiles/media-center/news-and-events/press-releases/2008/PR200811192_en.pdf

**Websites:**

http://www.adb.org/projects/project.asp?id=39492

http://www.unescap.org/tid/projects.protrade_s3aiman.pdf

http://www.bi.go.id/sipuk/en

http://www.kbriwina.at/downloads/EK_enterprises.pdf

http://www.ifc.org/ifcext/spiwebsite1.nsf/1ca07340e47a35cd85256efb00700cee/32D6D53550C0886585256FE700785189

http://www.lippobank.co.id/document/ir_press020608_eng.pdf

http://www.pecc.org/finance/forum2003/Session4-Rudjito(presentation).pdf

http://www.profi.or.id/index.php?option=com_docman&task=doc_view%gid=183

http://www.smeinfo.com.my/index.php?ch=2&pg=3&ac=62$lang=#62

http://www.business.gov.sg/EN/ResourceLibrary/OnlineArticles/asme_financing.htm

http://www.vdf.org.vn/Doc/2008/87WSPTHoang21May08Slides.pdf

http://www.mimdes.gob.pe/apec/expo/12mayo/wln_petmanee_daowieng.pdf

http://www.gmsbizforum.com/dmdocuments/SME%20Finance%20-%20SME%20Bank%20Role.pdf

http://www.creditbureau.com.sg/CBS_BoardofD5.htm

http://www.smebank.com.th/download/annual50_en/23.pdf

http://www.pbebank.com/en/en_content/business/sme/cgc.html

http://www.planetfinance.be/img/PDF/Slides%20Guarantee%20Fund.pdf

**TABLES AND FIGURES**

| Table 1-1. GDP Growth Scenarios, 2005-2020 | | | |
|---|---|---|---|
| | **Actual 1999-2005** | **Low** | **High** |
| ASIA | 3.9 | 4.0 | 4.6 |
| Japan | 1.3 | 1.6 | 1.8 |
| China | 8.5 | 6.6 | 7.3 |
| India | 6.3 | 5.5 | 6.2 |
| NIEs | 5.2 | 4.9 | 5.6 |
| ASEAN-5 | 4.7 | 4.7 | 5.4 |
| Notes: NIEs include Singapore, South Korea, Hong Kong and Taiwan.  ASEAN5 refers to Indonesia, Malaysia, Philippines, Thailand and Vietnam. Source: Petri, Peter A. (2007).  Financing Asia's Future. www.adbi.org/files/cpp.financing.asias.future.petro.pdf. | | | |

| Table 1-2. Domestic Financing Profile in ASEAN5 Countries (%, as of March 2008) | | | |
|---|---|---|---|
| ASEAN5 | Domestic Credit | LY Bonds | Equity |
| Indonesia | 37 | 19.20 | 43.80 |
| Malaysia | 33.08 | 26.17 | 40.75 |
| Philippines | 34.14 | 26.74 | 39.11 |
| Singapore | 64.73 | 15.05 | 20.22 |
| Thailand | 32.58 | 25.34 | 42.09 |
| Source: http://www.asianbondsonline.adb.org/scripts/bondsdatabase | | | |

| Table 1-3. Definition of SMEs in Asia | | |
|---|---|---|
| **Country** | **SMEs Classification** | |
| | **Employment** | **Asset** |
| Indonesia | | SMEs<RP200 million (excl. land and buildings) where US$1=RP9,310 as of 12/14/04 |
| Malaysia | SMEs<200 employees | RM15 million, where US$1=RM3.80 as of 14/12/04 |
| Philippines | Small 10-99 employees Medium 100-199 employees | Small PhP1.5-15 million Medium PhP15-60 million |
| Singapore | SMEs<200 employees | S$15 million where US$1=s$1.64, as of 14/12/04. |
| Thailand | Small <50 employees (manufacturing) <50 employees (service) <25 employees (wholesale) <15 employees (retail) Medium 50-200 (manufacturing) 50-200 (service) 25-50 (wholesate) | Small <BHT50 million <BHT50 million <BHT50 million <BHT30 million Medium BHT50-200 million BHT50-200 million BHT50-100 million |
| Source: Culled from Table 3.5-11 of the February 2006 document entitled "Improving environmental performance of small and medium-sized enterprises (SMEs) found at http://www.iges.or.jp/APEIS/RISPO/spo/pdf/overall/3.5.2_sme.pdf. | | |

Fig. 1-1. Public Credit Registry Positive Information, and Default Rates
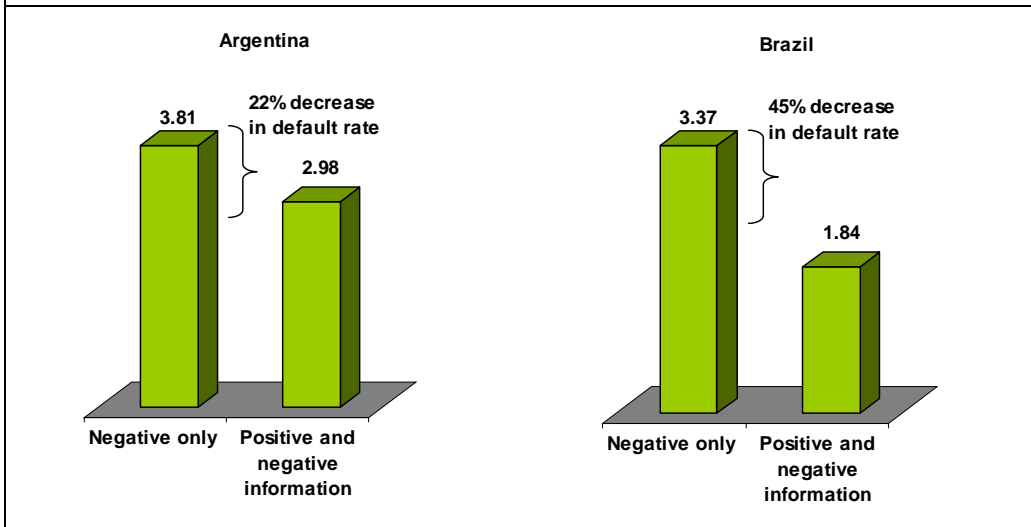
Source: Presentation by www.planetfinancegroup.org. Estimates are based on information on large loans from public credit registries in Argentina and Brazil. Graph represents predicted default rates at 60% approval rate. Based on Majnoni, Miller, Mylenko and Powell (2003) "Public Credit Information Systems: Evaluating Available Information," World Bank. Default rates: from the IFC's Global Credit Bureau Program.

| Table 2-1. Comparison of Credit Guarantee Programs | | | | | |
|---|---|---|---|---|---|
| | UK SFLG Program | USA SBA PLP, Express | California SBLG Program | Korea KCGF | Japan JASME | EU EIF Loan G'tee |
| **Guarantee** | 75% | SBA PLP 75% SBA Express 50% | 100% up to g'tee, which may be 90%; in practice 50% | 100% of g'tee, which varies from 50% to 100% | 100% of g'tee (JASME is lender) | Negotiated by loan portfolio |
| **Maximum size of loan** | $567,500 | $2.36 mil, $295,,000 for SBA Express | $590 000 | $2.24 mil, with exceptions to $8.7 mil | $1.17 mil to $7 mil depending on approval process and end use | Unspecified, but average is $205 000 |
| **Cost of loan guarantee (paid by borrower)** | 2% p.a. paid directly to SFGL office (government) | Registration is 0.25% under 1 year maturity, over 1 year 2%-3.75% based on size, plus 0.55% PA admin fee | Allowable as per SBA, but usually not charged | 0.5-2% PA based on risk Large firms charged 0.5% surcharge | Set by JASME | NA. Loan portfolios are assembled by financials and sold to EIF |
| **Interest rate** | Fixed by lender (No set maximum) | Prime plus 2-2.75% depending on term | Varies with % g'teed up to prime +3% | Fixed by lender (No set maximum) | Fixed by JASME, reviewed every 5 yrs | As set by lender |
| **Length of loan** | 10 years | 7-10 years SBA Express 7 years | 7 years | Length of loan g'tee matches length of underlying loan | Up to 15 years (average is 10 years) | 10 years |
| **Target firms (All need to be in jurisdiction)** | Firms <$12.7 mil in revenues and <5 years old | Firms with <100 employees | Firms with <100 employees | Unspecified, but 99% of lending is to SMEs | Aimed at SMEs, but several sectors excluded | Growth-oriented SMEs <100 employees. |

Source: http://www.ic.gc.ca/eic/site/csbfp-pfpec.nsf/eng/h_la00374.html#s5

| Table 2-2. Two Credit Guarantee Schemes | |
|---|---|
| The Dutch national guarantee scheme, for example, can be characterized as an un-funded, non-mutual portfolio guarantee scheme in which ex-post guarantees are delivered to enterprises. | The International Guarantee Fund based in Geneva, on the other hand, can be characterized as a funded, non-mutual individual guarantee scheme that offers ex-ante guarantees to institutions rather than to individual entrepreneurs. |
| Source: Linda Deelen and Klass Molenaar, Guarantee Funds for Small Enterprises, ILO (2004), at http://www.ilo.org/public/english/employment/finance/download/guarfund.pdf | |

| Table 2-3. Differences Among Nations' Rationale for Establishing CGS | |
|---|---|
| France | "guaranteeing the financial operations of SMEs"<br><br>"the scheme is especially geared towards new firms and take-overs"<br><br>"to support businesses which are in the most vulnerable stages of development, i.e., creation and transfer of ownership"<br><br>"to strengthen the financial structure of firms and support investments made by SMEs. Particularly those businesses producing highly innovative products" |
| Germany | "to strengthen small and medium sized companies in economy"<br><br>"to target small businesses with viable business projects, who lack the adequate security necessary to obtain finance" |
| Netherlands | "to grant loans to SMEs who have 'satisfactory future prospects' but are unable to receive a conventional loan due to a lack of collateral" |
| UK | "to facilitate the supply of finance to viable small firms where conventional loans are not available, possibly due to lack of security or track record"<br><br>"to give the lender experience of lending to businesses which have a viable proposal but do not satisfy normal banking security criteria, the objective being to encourage more emphasis on the appraisal of<br><br>business projects" |
| Canada | "to increase the availability of loans for the purpose of the establishment, expansion, modernization and improvement of small business enterprises"<br><br>"to bridge the gap between small, new firms and the type of secured lending traditionally sought from institutions"<br><br>"to encourage lenders to provide debt financing to SMEs that the lenders would otherwise consider too small or risky" |
| US | "to increase the access of small businesses to credit and in so doing to stimulate growth in the small business sector" |
| Japan | "to contribute to the smooth flow of funds for SMEs by guaranteeing loans that advanced to SME by banks or other financial institutions"<br><br>"to discover SMEs that are seeds of growing businesses and build bridges between those SMEs and private financial institutions" |

| Table 2-4.  Additionality: Two Rationales, Two Definitions | | |
|---|---|---|
| | Small Firms Loan Guarantee Scheme (SFLGS) of the U.K. Department of Trade and Industry | Results-Based Management and Accountability Framework for the Core Program, under the Canada Small Business Financing Act (CSBFA) |
| Rationale for the program | The Wilson Committee (1979) recommended there was a need for a scheme to aid the provision of finance to small businesses under two conditions: if sufficient funds were not available on reasonable terms; and if the public return from activities of small firms were greater than the private benefit, e.g., job creation. | There are two key objectives set out for the CSBF Program. The Program objective is: Incrementality - i.e., that the loans made under the core program would not have been made in the absence of it or would have been made under less favorable terms. The financial objective is: Cost recovery - i.e., that the Program be self-sustaining (revenue neutral). |
| Definition of incrementality | Full finance additionality – when a firm would not have been able to obtain any finance through alternative sources; and  Partial finance additionality – when a firm would have been able to obtain some of the finance provided through other sources, but not the full amount borrowed through the SFLGS.  Economic additionality: firms being in receipt of an SFLGS loan resulting in extra (additional) employment or sales, which is solely attributed to the SFLGS. | Incrementality has been defined under the CSBF Program as follows:  - Provides credit where otherwise credit might not be granted;  - Provides for a loan on more favorable terms (maturity, interest rate, governance) than would otherwise have been granted;  - Provides for credit on a more timely basis than otherwise;  - Facilitated or initiated the working relationship between a business borrower and a lending institution; or  - Provided for a broader financing package than would otherwise have been available. |
| Source: Methodological Review: Review of Loan Incrementality Studies for the Canada Small Business Financing Act - Chapter 2- About Loan Guarantee Programs and Incrementality, at http://www.ic.gc.ca/eic/site/sbrp-rppe.nsf/eng/rd00936.html. | | |

| Table 2-5. Four Sample Cases of Additionality |
|---|
| Case A<br>- Objective: increase loans to SMEs<br>- Bank X made 100 loans to this group before program, total value US$ 100,000<br>- With guarantee program same bank made 100 new guaranteed loans + 100 regular loans to SMEs, total value US$ 200,000<br>- 100% additionality in number and value |
| Case B<br><br>- Same objective as Case A<br><br>- Before program Bank X makes loans to 100 SMEs for total value of US$ 100,000.<br><br>- With guarantee program, Bank X shifts 50 of its riskiest SME loans to guarantee, and makes 50 SME loans without guarantee. No change in total value of SME lending.<br><br>- Zero additionality for number of loans and value<br><br>- Bank shifts the most risky SME borrowers to guarantee in order to capture risk subsidy (adverse selection).<br>- Most evaluations of loan guarantee programs ignore the additionality problem and assume that all loans guaranteed = additional loans made because of the program. This results in substantial overestimates of the benefits of these programs. |
| Substitution Problems : Case C<br><br>- Same objective as Cases A and B<br><br>- Bank X makes 100 SME loans worth US$ 100,000 before guarantee program<br><br>- Bank Y makes no SME loans before guarantee program<br><br>- After subsidized guarantee program for Bank Y makes 100 SME loans for US$ 100,000, on more favorable terms than Bank X, Bank Y takes all of Bank X's SME clients<br><br>- No additionality in SME lending, although 100 loans are guaranteed<br><br>- Ignoring substitution results in overestimate of benefits |
| Attribution Problems: Case D<br><br>- What would the lender have done over time without the loan guarantee program?<br><br>- Isolating the effect of the guarantee program on lender behavior from the effects of other changes in the economy over time is difficult.<br><br>- Same as Case A, except no loan guarantee program.<br>- Economic reforms increased the profitability of economic activities of SMEs and lenders voluntarily decide it is good business to expand lending to this group.<br>- Some of the additional lending associated with the guarantee program may be due to other factors.<br><br>- Attributing all increases (over time) in lending to SMEs to a loan guarantee program, also overestimates the benefits of the guarantee program. At least some of the changes in lending might have occurred without the guarantee. |
| Source: Adams,  Dale W., "Are Loan Guarantee Programs Effective?"  Presentation at Workshop on SME Credit Guarantee Systems, Shanghai, Oct. 26-28, 2005,  slides 12-18; at:<br>http://info.worldbank.org/etools/docs/library/202074/dale_adams_Are_Loan_Guarantee_Programs_Effective.pdf |

| Table 2-6.  Good Practices in Scheme Design and Implementation | |
| --- | --- |
| *Indicator* | *Good Practice* |
| Government Institution vs. Legally Separate Entity | Creation of a legally separate agency. |
| Funding | Establishment of a fund from public as well as private sources to obtain income from investment. |
| | Majority ownership should eventually be transferred to the private sector. |
| Staff & Management | Experienced local staff and representatives of borrowers and lenders in the scheme's management. |
| Centralization vs. Decentralization | Decentralization of the scheme, if possible through the branch network of participating banks. |
| Profit vs. Not-for-Profit | Operation on a profit-making basis without the explicit requirement to pay taxes and dividends. |
| Selective vs. Portfolio Approach | For new schemes: adoption of the selective approach. |
| | For longer established schemes: adoption of a combination ... and the selective approach for all other enterprises eligible for a guarantee. |
| Target Groups | Determination of the target sector with respect to size, age, ownership and location of firms, while ensuring that beneficiaries have viable projects. |
| | Micro enterprises targeted only if scheme can be adapted to their specific needs. |
| Type of Finance Targeted | Restriction of the purpose to which guaranteed credit is put. If possible: extension of guarantees for working capital, funds for investment and leasing. |
| | Definition of maximum loan sizes and limits on exposure to any single borrower and lender. |
| Marketing | Marketing efforts to lenders and borrowers to achieve recognition and participation. |
| Risk Distribution | Distribution of risk among all participating parties (guarantor, lender and borrower). |
| | Lender Risk: Guarantee coverage of 60% - 80%, applying to loan principal and unpaid interest for up to 90 days after a missed payment. |
| | Whether the guarantee is issued as a first or second liability depends on a country's legal system and whether the guarantor or borrower is charged with loan loss recovery. |
| | Borrower Risk: Requirement to put up as much collateral as possible, including personal property or guarantees from family and friends. |
| | Requirement to purchase shares of the guarantee scheme if the guaranteed |

|  | loans exceed a specified amount. Shares may only be sold once all liabilities are extinguished. |
|---|---|
| Additional Services | Training and consulting for borrowers. |
|  | Bank-staff training in small-scale lending. |
|  | Possibly, outsourcing of services. |
| Screening & Monitoring | Clear division of responsibility between guarantor and lender, preferably retaining the main screening and monitoring functions with the lender. |
| Fees | Application fee in addition to annual fee. Adaptation of fees to risk. |
| Defaults & Claims | Claims rate of 2% - 3%. |

Source: Anke Green, "*Credit Guarantee Schemes for Small Enterprises: An Effective Instrument to Promote Private Sector-Led Growth* (SME Technical Working Paper No. 10), http://www.unido.org/index.php?id=o18252. Slightly abridged.

| Table 2-7.  SME Financing Programs in the Philippines (Excluding MSME loan programs of commercial banks) | |
| --- | --- |
| Institution | Example of Program |
| Asia Trust Bank | Short term loan; discounting line; receivables discounting |
| Department of Science and Technology | Small Enterprises Technology Upgrading Program |
| Development Bank of the Philippines | Credit line for MSMEs; Sustainable Logistics Development Program |
| Foundation for a Sustainable Society, Inc. | Fund for Sustainable Civil Society – Start-up Eco Enterprise Development Program |
| Government Service Insurance System | GSIS Special Financing Program |
| Land Bank of the Philippines | Easy Pondong Pang-Asenso; Special Financial Assistance to Small and Medium Exporters |
| National Livelihood Support Funds | Isang Bayan, Isang produkto, Isang milyong Piso |
| Philippine Business for Social Progress | Small and Medium Enterprise Credit Program |
| Philippine Export-Import Credit Agency | Special Credit Facility for Export Development; Short Term Direct Lending Program |
| Philippine National Bank | Small Business Loan |
| Planters Development Bank | Revolving Credit Line |
| Quedan Corporation | Urban and Rural Poor Program; Small Retail Enterprise |
| Small Business Corporation | SME Funding Access for Short Term Loans; SME Financing Reach for Exporters thru Network Development |
| Social Security System | Special Financing Program; Industry Loan Program |
| Source: After the table in the Annex of the document Policy Advisory No. 2008-06 released by the Philippine Congressional Planning and Budget Department. | |

## Table 2-8-1. Factors Contributing to Success, or Failure, of a Credit Guarantee Scheme (1)

| | Factors for Success | Factors for Failure |
|---|---|---|
| **Macro [Enabling Environment] Factors** | | |
| 1 | an open, competitive banking environment wherein there are a number of independent banks, a majority of which are interested in expanding their client base, establishing niche markets, or protecting market position; | • a thin banking sector that is controlled by a few powerful vested interests, in which banks are sufficiently profitable with their existing, limited clientele to support the financial and/or political ambitions of those controlling interests; |
| 2 | a dynamic and/or expanding business sector within which viable opportunities are available for exploitation by new entrants including MSMEs; | • a thin business sector that is not under pressure to change or reform, in particular to become more inclusive; |
| 3 | a policy environment wherein initiatives are coordinated and reinforcing and other government or donor initiatives do not crowd out market-driven initiatives, in particular through provision of competing subsidized credit or other below-market financial products and services, including (but not limited to) credit guarantees; | • a policy vacuum or a fragmented policy environment where clear signals are not conveyed about the importance of the SME sector and the means by which it is appropriate to promote and develop it, and where a multiplicity of competing or conflicting approaches can therefore exist at the same time; |
| 4 | a monetary and regulatory environment that is conducive to lending to SMEs, in particular with sufficient liquidity and stable interest rates that allow for appropriate risk/return pricing; | • restricted liquidity for SME lending and/or excessive interest rate risk that discourages opening up new markets; |
| 5 | a framework for business (political, policy, legal, regulatory and social) that, in its application as well as its theory, is supportive of enterprise in all its forms including MSMEs; | • endemic corruption and/or incompetence that distorts and/or restricts the operation of market forces and discourages MSMEs from entering the formal economy; |
| 6 | support from a competent agency (such as the Ministry of Finance, or more usefully the central bank and/or banking supervisory authority) that takes an imaginative, positive and well-informed interest in the SME sector and its financing problems and which works to enhance the enabling environment for SMEs; | • interference from an ill-informed government agency that takes an ad-hoc approach to problems in the financial sector and uses the financial sector as a tool to address policy issues; |
| 7 | a credit bureau that provides effective and efficient access to credit information on SMEs that helps improve the ability of banks to assess risk of lending to SMEs. | • no available credit information on SMEs or partial or unreliable information that does not help banks to assess risk. |

Source: Financial Sector team, DFID, "Do Credit Guarantees Lead to Improved Access to Financial Services? Recent Evidence from Chile, Egypt, India and Poland" (2005), p.ii, at http://www.ruralfinance.org/servlet/CDSServlet?status=ND0yODc3LjIwNDY0JjY9ZW4mMzM9ZG9jdW1lbnRzJjM3PWluZm8~

**Table 2-8-2. Factors Contributing to Success, or Failure, of a Credit Guarantee Scheme (2)**

## Micro [CGS] Factors

| | | |
|---|---|---|
| 1 | emphasis on promoting dynamism through fostering of competitive behavior among participating lenders, including a high degree of transparency with respect to participating bank performance. | • lack of transparency or competition; low expectations of the potential of partner lenders to effectively address the needs of the SME sector. |
| 2 | a "financial sector" approach to CGS design that focuses on the goal of achieving a permanent deepening of the financial sector; | • a "social sector" approach that focuses exclusively on a short-term goal of pushing finance to the SME sector and the use of financial institutions as conduits for that purpose; |
| 3 | an understanding of and empathy with market forces, particularly for providers of financial intermediation services; | • an emphasis on the social obligation of lenders or compliance with laws, regulations or policies |
| 4 | continual client (bank) focus and emphasis on innovation to deliver improved and expanded benefits, including provision of information to help banks assess the risk of lending to SMEs; | • a focus solely on provision of increased numbers of guarantees without a broader objective of financial deepening; |
| 5 | a long-term approach that emphasizes institutional and financial sustainability, with objectives directly related to financial sector deepening, even if project interventions are short or medium term in duration; | • a project approach that focuses on short-term objectives that are limited to the period of the project intervention, rather than directly related to long-term financial sector deepening; |
| 6 | a participative approach that achieves a balanced partnership between donors, CGS and lenders for achievement of agreed objectives; | • a paternalistic approach that imposes a CGS project on reluctant lenders who do not understand or do not agree with the state objectives; |
| 7 | "ownership" (in the sense of active interest and participation) by lenders of the CGS stemming from clear and significant benefits to lenders in terms of assistance to open up new markets for profitable commercial exploitation; | • coercion of lenders through a "carrot" (non-transparent benefits unrelated to financial sector deepening) and/or "stick" (pressure from political or regulatory authorities) approach; |
| 8 | during its establishment stage, an influential "champion" (or champions) within the lender(s) who actively promotes the CGS for appropriate commercial reasons; | • lack of support or lack of understanding of the commercial logic of the CGS within the lender(s); |
| 9 | extensive transfer of appropriate lending "technology" in terms of policies, procedures, methodologies and systems through carefully focused technical assistance; | • reliance on targets for achievement of project lending objectives without regard for the ongoing sustainability of institutional processes; |

Source: Financial Sector team, DFID, "Do Credit Guarantees Lead to Improved Access to Financial Services? Recent Evidence from Chile, Egypt, India and Poland" (2005), p.ii, at http://www.ruralfinance.org/servlet/CDSServlet?status=ND0yODc3LjIwNDY0JjY9ZW4mMzM9ZG9jdW1lbnRzJjM3PWluZm8~

| Table 2-9. Characteristics of Selected Asian Corporate Credit Guarantee Institutions | | | | |
|---|---|---|---|---|
| | *Institution* | *Coverage ratio* | *Guarantee fee[1]* | *Maximum (actual) leverage ratio[*]* |
| Japan | JASME | 70–80% | 0.87% | No maximum (19.1, March 2005) |
| | CGCs | 100% | 1.25%,[2] 1.35%[3] | 35–60 (18.6, March 2005) |
| Korea | KCGF | 70–90% (usually 85%) | 0.5–2% (risk-based) | 20 (9.8, end-2005) |
| | KOTEC | 70–90% (usually 85%) | 0.5–2 % (risk-based) | 20 (14.4, end-2005) |
| Indonesia | Perum Sarana | Max 75% | 0.5–1.5% (risk-based) | 20 (22.2, end-2004) |
| | Askrindo | 50–70% | 0.8–2% | (6.9, end-2004) |
| Malaysia | CGC | 30–100% | 0.5–2% | No maximum (4.3, end-2005) |
| Taiwan | SMEG | 70–100% (usually 80%) | 0.75%, 1%, 1.25%, 1.5% (risk-based) | 20 (20.6, end-2005 |
| Thailand | SICGC | Maximum 50%, or 50% of actual loss[4] | 1.75% | 5 (4.6, end-2005) |

1 Per annum. 2 With collateral. 3 Without collateral. 4 Depending on facilities.
*Leverage ratio: Ratio of credit guarantees outstanding to the amount of the institution's capital.
Source: Ihyock Shim, "Corporate credit guarantees in Asia," *BIS Quarterly Review* (Dec. 2006), p. 85 (http://www.bis.org/publ/qtrpdf/r_qt0612i.pdf?noframes=1), after ACSIC questionnaires; individual annual reports; BIS calculations.

| Table 2-10. Relation to Government, Capital, and Net Worth, Selected ASEAN Schemes | | |
|---|---|---|
| | Relation to Government | Source, Amount of Paid-in Capital; Net Worth |
| Indonesia: Perum Jamkrindo | Owned by gov't | Capital (12/07): IRP945.6 bil |
| Indonesia: PKPI | None, except for being licensed by MOF | Shareholders are members of Indonesian Chambers of Commerce; paid-in capital (12.05): IRP 10.175 mil |
| Indonesia: PT Askrindo | 1. Gov't-owned (82.4%; Central Bank, 17.6%) 2. Competent authority: MOF Insurance Bureau | IRP1,850 bil, after IRP850 bil injection in 12/07 |
| Malaysia: CGC | 1. No direct financial assistance from central gov't. 2. Bank Negara Malaysia is largest shareholder. 3. Supervision by Bank Negara Malaysia | Bank Negara Malaysia, US$404.9 mil; financials, US$105.7 mil. Net worth US$846.1 mil (12/31/07) |
| Philippines : SBGFC | Minor share | National gov't, 45%; 5 state banks and insurance company, 55% |
| Thailand: SBCG | 1. Government owned 2. Supervised by MOF; most of board is from MOF; chairman is representative of MOF | 1. Capital, BT4,400 mil, 93% from MOF, 3.6% from private banks 2. Last capital increase, 2000 3. Net worth, BT3402.39 mil |
| Source: Compiled by the author. | | |

| Table 2-11.  ASEAN Credit Guarantee Scheme Objectives | |
|---|---|
| Malaysia: CGC | 1. To assist SMEs, especially those with inadequate collateral or without collateral gain access to financing from the participating financial institutions at a reasonable cost.<br>2. To complement the Government's efforts in promoting and developing identified business sectors |
| Philippines: SBC | 1. To offer a wide range of financial services, specifically for small and medium enterprises engaged in manufacturing, processing, agribusiness (except crop level production) and services (except trading).<br>2. These financial services include among others guarantee, direct and indirect lending, financial leasing, secondary mortgage, venture capital operations and the issuance of debt instruments for compliance with the mandatory allocation provision. |
| Thailand: SBCG | To provide credit guarantee for viable small enterprises which do not have enough collateral to enable them to obtain sufficient credit from the financial institutions in order to :<br>1. Increase credit extension from financial institutions to small enterprises.<br>2. Strengthen the confidence of financial institutions in providing credit to small enterprises.<br>3. Accelerate the dispersal of credit extension to small enterprises throughout the country.<br>4. Promote industrial development to achieve the target of the National Economic and Social Development Plan. |
| Indonesia: PT Askrindo | To give an easier access for SMEs to get financial assistance<br>**Specifically regarding credit guarantees:**<br>- MSMEs Loan Guarantee (Micro and Small Enterprises Loan Guarantee): Guarantees for the cash loan amount < IDR 500 million.<br>- Middle Market Loan Guarantee: Askrindo as the guarantor gives a guarantee for the cash loan over IDR 500 million.<br> - Others: credit Insurance & surety: trade credit Insurance, surety bond, customs bond,  re-guarantee for banks' construction guarantees |
| Source: Compiled by the author. | |

| Table 2-12. Comparison of Indonesian CGS Guarantees | | | |
|---|---|---|---|
| Character of Guarantee Scheme | Guarantee Coverage % of Loss | | |
| | PT ASKRINDO | PSPU | PT PKPI |
| Conditional Automatic Cover (CAC) on outstanding loan | | | 50% - 80%*) |
| o Credit ceiling conventional system | IRP500 M = 70% | IRP 100 M = 70% | |
| o Credit ceiling stop loss system | IRP 500 M = 70% | IRP 100 M = 70% | |
| Case by Case (CBC) | 60% - 100% | 60% - 80% | 60% - 80% |
| Administrative Fee (for screening guarantee application) | 0.5% | 0.5% | 0.5% |
| Guarantee fee % of credit ceiling | Fee p.a. | Fee p.a. | Fee p.a. |
| o Agriculture business | 1.5% | 1.5% | 1 – 1.5% Subject to additional collateral |
| o Non agriculture business (flexible coverage) | 1.5% | 0.5% - 1.35% | |
| o Non agribusiness (fixed coverage + 50% collateral) | | 1.35% | |
| o Non agribusiness (fixed coverage + 50-70% collateral) | | 1.30% | |
| o Non agribusiness (fixed coverage + >70% collateral) | | 1.25% | |

*) PT PKPI appraised the borrower directly = 80% coverage, only bank appraisal = 50% coverage.

Source: Yayasan Bina Usaha Lingkungan, "Overview of Formulation of Credit Guarantee Fund Facility in Indonesia / An Indonesian-EU Partnership and Institutional Capacity Building on Micro-Finance." Accessible at: www.planetfinance.be/img/PDF/EU%20Indonesia%20WG%20Microfinance%20Brussels.pdf , after Bulletin Ekonomi Moneter dan Perbankan, March 2005.

### Table 2-13. Evolution of CGS Policy and Schemes in Indonesia

| Relevant Period | Changes of System and Policy |
|---|---|
| (1) 1971-1990 Compulsory System Period | In this period, the credit insurance was compulsory. All banks in Indonesia were obliged to insure their SME's credit portfolios to Askrindo. The objective of this scheme was to stimulate credit disbursement for SMEs. The government subsidized the credit liquidity, which insured by Askrindo. The premium rate was 3% per term of credit, which 50% of this rate premium was paid by the Indonesian Central Bank and the rest of it was paid by bank. During the period of 1982 to 1986, Askrindo continually suffered from the loss. The premium rate was considered lower than the risk. Therefore the premium rate was evaluated and the result was that in1987, the government increased the premium rate to 6% per term of credit, which 1,5% was paid by bank and 4,5% was subsidized by the government. |
| (2) 1990-1993 Market Mechanism | In January 1990, Indonesian government issued the new policy named Paket Januari or the January Package; the compulsory system was changed into the Market Mechanism system. Most of government credit subsidized was abolished and bank was obliged to disburse the credit to SMEs at least20% of their portfolio. Bank had option whether to insure their credits to Askrindo or not. The premium rate also was not determined by the government but it was decided by Askrindo and bank. Askrindo set up the premium rate at 0.6% per annum. This premium rate depended on the risk's level and not longer depended on the exposures. However within the time, the premium rate at 0,6% per annum was considered too low. In year 1992/1993 Askrindo suffered from huge claim as the impact of government policy which caused the interest rate rose at very high. As the loss was extremely huge so that Askrindo legally was considered bankrupt.<br><br>In September 1993, Askrindo halted all the credit guarantee agreement with all banks. |
| (3) 1994-1995 – Review Period | After a huge of claim submitted by banks in 1992 and 1993, on early September 1993, Askrindo stopped all credit guarantee agreements with all banks. Since then, Askrindo re-evaluated the guarantee business and proposed the new scheme of guarantee agreement. The new premium rate was 1% - 2% per annum. The term and condition of the Credit Insurance Agreements (CIA) become tighter and the coverage of Askrindo was limited to the maximum of 70% of |

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|---|---|
| | the ceiling credit. This system was called the Conventional Credit Insurance System. This change caused difficulties in offering the credit insurance services. In this period, Askrindo also started to develop the product diversification by entering the new business such as surety bond and trade credit insurance. To diversify the Conventional CIA, Askrindo developed the Credit Insurance Business based on the Stop Loss System. The basic principle of the second system was that the liability of Askrindo in indemnifying the claim strictly limited up to the premium received by Askrindo plus the result of investment from this earned premium. The system was based on the break event formula. The mechanism of the two systems above such as:<br><br>• Conventional System. Askrindo will indemnify 70% of the losses, without any limitation to the total loss of the banking portfolio. This method is very well accepted by the banking sectors, however Askrindo always find difficulties to extrapolate the possibility of total loss that might occur. Askrindo successfully signed Credit Insurance Agreements with 48 banks.<br><br>• Stop Loss System. Askrindo will indemnify 70% of the loss. However, the total accumulation of claim is limited to certain percentage of the banking credit portfolio. This method gives larger benefits to Askrindo but it is difficult to be accepted by the banking sector due to the limitation of claim indemnification. There is only one bank which agreed and signed the credit guarantee agreement with stop loss system that is Bank BNI46. The other banks refused. |
| (4) 1996 - 2008 Expansion of Diversification Products Period | In developing their businesses, the SMEs do not always need cash loan. SMEs in the other side also need the non-cash loan for their operation. For examples; SMEs need a letter of credit to import raw material; SMEs in construction sectors also need bank guarantee for the completion of its project; SME in distribution company need also payment guarantee in order to get goods from their suppliers, furthermore this distributors also need a product that is able to secure their receivable from the risk of non payment. Pertaining to the needs of the SMEs, Askrindo realized that the role of Credit Supplementation System is not only limited to the cash loan from banking sectors. Therefore Askrindo developed some types of guarantee to the SME. This guarantee could be the L/C Guarantee; Counter Bank Guarantee and Surety Bond for the Construction Sector; Payment Guarantee to help the SME getting goods from suppliers; and Trade Credit Insurance to secure the risk of non- |

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| | payment from the receivable of a company. The entire new product has been applied individually on case-by-case system and Askrindo managed and controlled the entire risk in house. |
| (6) 2007 - People's Business Credit (Kredit Usaha Rakyat – KUR) | In June 2007, Indonesian government issued the Presidential Decree No. 6/2007 about the policy of fostering the riel sector development and empowering the SMEs. Through this policy, the government is encouraging the bank to deliver the credit to SMEs. This credit namely Kredit Usaha Rakyat – KUR (People's Business Credit). Askrindo and Perum Jamkrindo (former name was Perum SPU) have been assigned by the government to provide the credit guarantee for the above specific scheme of credit. The credit guarantee premium rate of this scheme was decided by government, which is 1.5% per annum and is paid by the government. To strengthen the credit guarantee capacity of both Askrindo and Perum Jamkrindo, the government had put the additional capital as much as IRP850 billion to Askrindo and IRP600 billion to Perum Jamkrindo. |
| Source: ACSIC questionnaire prepared in 2008 by ASKRINDO. | |

| Table 2-14. History of the Small Business Credit Guarantee Fund of Thailand | |
|---|---|
| Sept 1993 | -Increased the maximum loan limit from BHT 10mil to BHT 20mil in which guarantee amount shall not exceed BHT5 mil for each enterprise. |
| Aug 1994 | -Increased guarantee fee from 1.5% to 2.0% p.a. of the guaranteed amount, in advance. |
| Dec 1994 | -Requested personal guarantee to SBCG for all cases. |
| Mar 1995 | -Increased maximum limit of fixed assets of enterprises which are eligible for SBCG's service from BHT20 mil to BHT50 mil. |
| Dec 1996 | -Extended service coverage to wholesale & retail trade, service, export and import, in addition to small industries.<br>-Increased the gearing ratio (Total guarantee outstanding / total capital fund) from 3:1 to 5:1 in order to support future operations. |
| Mar 1998 | -Put off claims payment from upon the final verdict to upon end of auction process after guarantor's collateral was sold. |
| Nov 1998 | -Increased guarantee fee from 2% to 3% p.a. of the guaranteed amount, in advance. |
| Mar 1999 | -Shortened claims payment from upon the final verdict and end of auction process after guarantor's collateral was sold to upon the final verdict with attachment of all collateral of borrower and guarantor. |
| Apr 1999 | -Reduced guarantee fee from 3% to 2%, 2.5% and 2.75% of the guaranteed amount depending on the size of the guarantee amount as follows: Up to BHT1 mil: 2% p.a. ; BHT 1,000,001 – BHT5 mil: 2.5 % p.a.; BHT5,000,001 – BHT 10 mil: 2.75 % p.a. |
| Aug 1999 | -Enlarged the maximum guarantee limit for each single enterprise from BHT10 million to BHT20 million.<br>-Reduced guarantee fee from 2.00-2.75% to 1.75% p.a. of the guaranteed amount, in advance.<br>-Shortened claims payment from the final verdict with attachment of all collateral of borrower and guarantor to once law suit was filed against borrower. |
| Sep 1999 | - Set up the Fund Investment Committee and the NPLs Management Committee. |
| Oct 1999 | -Set up the Audit Committee.<br>-Set up claim and collection department, regional office administration department and planning and data processing department.<br>-Increase the maximum limit of fixed assets of enterprises which are eligible for SBCG's service from BHT50 mil to BHT10 mil. |
| Dec 1999 | -Started business with two non-shareholder financial institutions i.e. , Export-Import Bank of Thailand and the Bank for Agriculture and Agricultural Cooperatives. |
| Apr 2000 | -Initiated the Automatic Credit Guarantee Scheme to shorten lending approval period as a mean to better facilitate borrowers who request SICGC to guarantee loan up to BHT10 mil.<br>-Initiated guarantee scheme for high potential SMEs with NPL borrowers with cooperation from the Bank of Thailand. |
| Jul 2000 | -Injected new BHT4 bil capital. |
| Oct 2000 | -Extended the Automatic Credit Guarantee Scheme service to Industrial Finance Corporation of Thailand |
| Feb 2001 | -Extended the Automatic Credit Guarantee Scheme service to SMEs Development Bank of Thailand. |
| Mar 2001 | -Enlarged the maximum guarantee for each single enterprises from BHT20 mil to BHT40 mil.<br>-Increased the maximum limit of fixed assets of enterprises which are eligible for SBCG's service from BHT100 mil to BHT200 mil.<br>-Allowed borrowers with 3-year lease contract on the premises for up to BHT5 mil guaranteed by SBCG. |
| May 2001 | -Extended the Automatic Credit Guarantee Scheme service to Bank of Asia. |

| | |
|---|---|
| | -Introduced risk participation scheme to five banks and SME Bank. |
| Nov 2001 | -Extended the NPL scheme to April 7, 2004. |
| Dec 2001 | -Increased the maximum guarantee amount for SMEs with 3-year lease contract on the premises from BHT5 mil to BHT10 mil. |
| Jun 2002 | -Joined other specialized financial institutions to establishing the "One Stop Shop." |
| Feb 2004 | -Revamped risk management practice by separating low-NPL financial institutions from high-NPL financial institutions. More focused on strategic clusters i.e., food , vehicle , fashion and tourism. |
| May 2004 | -Revised the guarantee amount for Normal Scheme and Automatic Scheme: Normal Scheme: BHT10-40 mil per case; Automatic Scheme: BHT 3mil per case; Reconditioned the Risk Participation Scheme. |
| Dec 2004 | -Introduced Credit Guarantee for Enterprises Affected by the Tsunami in the Six Southern Provinces. <br>- Existing customers: waive the guarantee fee for one year. <br>-New customers: reduce the guarantee fee from 1.75% to 0.5% p.a. in the first year with the maximum guarantee amount up to BHT 5mil. |
| Feb 2005 | -Extended the Loan Guarantee Scheme service to financial institutions. |
| Sep 2005 | -Change of name from 'Small Industry Credit Guarantee Corporation : SICGC' to 'Small Business Credit Guarantee Corporation: SBCG.' |
| May 2006 | -Increase gearing ratio from five times to seven times of the capital. |
| Feb 2007 | -Terminated the Automatic Credit Guarantee Scheme service to the contacted financial institutions. |
| Source: Abridged from the ACSIC questionnaire. | |

| Table 2-15. Thailand's SBCG Performance, 2001-2005 | | | | | |
|---|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2004 | 2005* |
| Guarantee approvals | | | | | |
| Amount, BHTmil | 2,506 | 4,113 | 4,358 | 4,647 | 4,626 |
| No. of projects | 795 | 1,109 | 1,980 | 3,875 | 2,129 |
| Guarantees outstanding | | | | | |
| Amount, BHTmil | 4,148 | 7,454 | 10,026 | 12,555 | 15,749 |
| No. of projects | 1,663 | 2,531 | 4,099 | 5,524 | 7,208 |

* As of September 2005.

Source: "Credit Guarantee System in Thailand," presentation by Niramol Tawee at the Workshop on SME Credit Guarantee Systems in Asia --Pacific Region, Shanghai, Oct. 26-28, 2005, at
http://info.worldbank.org/etools/docs/library/202081/niramol_tawee_credit_guarantee_system_in_thailand.pdf

## Table 2-16.  ACSIC Members

**India**
 Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)
**Indonesia**
 Perusahaan Umum Sarana Pengembangan Usaha (Perum Sarana)
 PT. Asuransi Kredit Indonesia (PT ASKRINDO)
 PT. Penjamin Kredit Pengusaha Indonesia (PKPI)
**Japan**
 Japan Finance Corporation (JFC)*
 National Federation of Credit Guarantee Corporation (NFCGC)
**Korea**
 Kibo Technology Fund (KIBO)
 Korea Credit Guarantee Fund (KODIT)
 Korea Federation of Credit Guarantee Foundations (KOREG)
**Malaysia**
 Credit Guarantee Corporation Malaysia Berhad (CGCMB)
**Nepal**
 Deposit & Credit Guarantee Corporation (DCGC)
**Papua New Guinea**
 Small Business Development Corporation (SBDC)
**Philippines**
 Small Business Guarantee & Finance Corporation (SBGFC)
**Sri Lanka**
 Central Bank of Sri Lanka (CBSL)
**Taiwan**
 Small and Medium Enterprise Credit Guarantee Fund of Taiwan (Taiwan SMEG)
**Thailand**
 Small Business Credit Guarantee Corporation (SBCG)

Notes
* JFC, newly created in a consolidation of governmental financial institutions, absorbed JASME, the National Life Finance Corporation (NLFC), and other institutions, as of October 2008.
Source: ACSIC website, http://www.acsic21.com/about.php.

Figure 2-1. Indonesia's ASKRINDO and Its External Relations

Source: ACSIC Questionnaire.
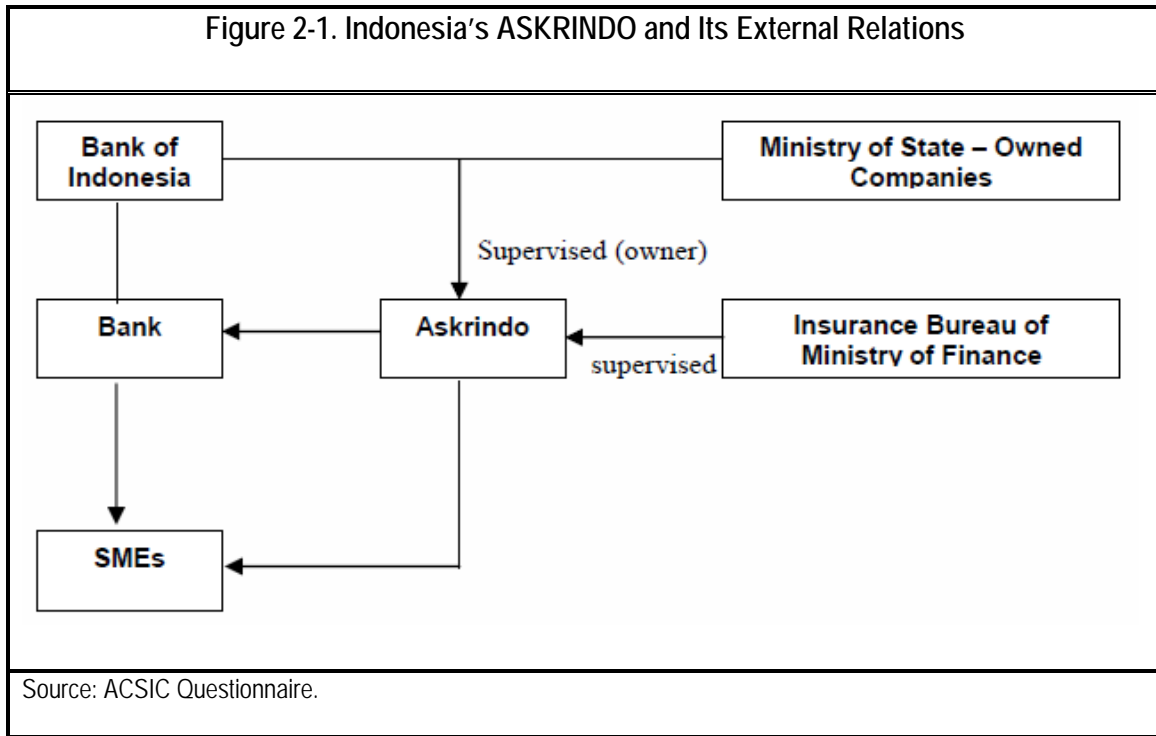
**TABLE 3-1 OVERVIEW OF SMES IN JAPAN**

| | SMEs | Small | Medium |
|---|---|---|---|
| No. of Employees* | 41,984 | 13,836 | 28,148 |
| ('000) | (77.8) | (25.6) | (52.2) |
| No. of Enterprises* | 4,198 | 3,777 | 421 |
| ('000) | (99.7) | (87.1) | (12.6) |
| Value of Shipment* | 150,107 | 21,453 | 128,653 |
| (Manufacturing, billion yen) | (47.7) | (6.9) | (40.9) |
| Value Added* | 57,293 | 10,473 | 46,821 |
| (Manufacturing, billion yen) | (53.3) | (9.7) | (43.5) |
| Annual Sale2** | 267,426 | 23,108 | 244,319 |
| (Wholesale, billion yen) | (66.0) | (5.7) | (60.3) |
| Annual Sale2** | 95,151 | 21,057 | 74,093 |
| (Retail, billion yen) | (71.4) | (15.8) | (55.6) |

Note: 1) SMEs are business establishments with 300 or fewer workers; 100 or fewer in wholesale and services; 50 or fewer in retail, and eating and drinking places.

2) Small shows business establishments with 20 or fewer workers; 5 or fewer in wholesale, retail, eating and drinking places, and services.

3) * for 2006; ** for 2004.

4) Shares in the total in parentheses, percent.

Source: White Paper on Small and Medium Enterprises in Japan 2008.

## FIGURE 3-1. TRENDS IN ENTRY AND EXIT RATES FOR ENTERPRISES IN JAPAN
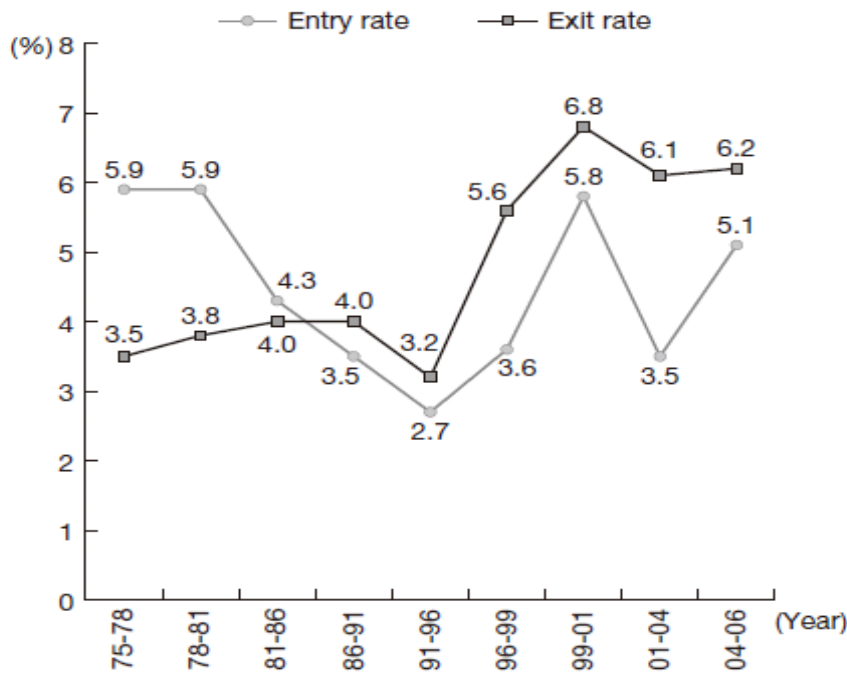


Source: MIC, *Establishment and Enterprise Census of Japan.*
Notes: 1. Up until 1991 the census was carried out as *Establishment Census*, in 1994 the census was carried out as *Establishment Directory Maintenance Survey*.
2. For method of calculating entry and exit rates, refer to Notes in Supplementary statistical data Table 4.

**FIGURE 3-2 MECHANISM OF CRD DATABASE**

## Mechanism of CRD Database
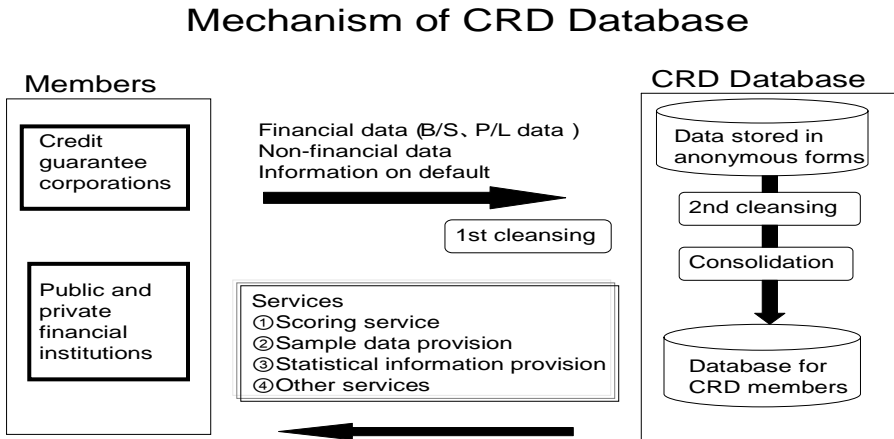
## APPENDIX

## Current State of Small- and Medium Enterprises in Japan and SME Credit Risk Model by Use of the CRD Database

### By Xin Fei and Naoyuki Yoshino (Keio University Discussion Paper)


## 2A-1 Introduction and Background

### 2A-1-1  Small- and Medium-sized Enterprises in Japan

(1)  Size of Small and Medium Enterprises (SME) in Japan and Its importance

In case of Japan, either the number of employees is up to 300 or the capital is up to 300million yen is regarded as SME in manufacturing, construction, transportation and other industries. As for number of workers at SME compared to large business companies are shown in Table 1. About 75% of workers are employed in SME among manufacturing industries. Transportation and real estate sectors show much higher SME ratios in Japan.

## Table 2A-1, Number of employees in Japanese SME (various sectors)

| Industry | Year/Item | Small and medium business establishments | | Of which small business establishments | | Large business establishments | | Total | |
|---|---|---|---|---|---|---|---|---|---|
| | | No. of workers | % of total | No. of workers | % of total | No. of workers | % of total | No. of workers | % of total |
| Mining | 2001 | 44,262 | 94.1 | 25,427 | 54.0 | 2,795 | 5.9 | 47,057 | 100.0 |
| | 2004 | 36,101 | 96.1 | 21,912 | 58.4 | 1,448 | 3.9 | 37,549 | 100.0 |
| | 2006 | 31,744 | 94.8 | 19,760 | 59.0 | 1,753 | 5.2 | 33,497 | 100.0 |
| Construction | 2001 | 4,778,737 | 96.7 | 3,024,411 | 61.2 | 164,874 | 3.3 | 4,943,611 | 100.0 |
| | 2004 | 4,240,384 | 96.8 | 2,764,947 | 63.1 | 142,029 | 3.2 | 4,382,413 | 100.0 |
| | 2006 | 4,012,030 | 96.8 | 2,639,034 | 63.7 | 132,007 | 3.2 | 4,144,037 | 100.0 |
| Manufacturing | 2001 | 8,137,677 | 74.3 | 2,964,485 | 27.1 | 2,819,073 | 25.7 | 10,956,750 | 100.0 |
| | 2004 | 7,455,508 | 75.0 | 2,629,993 | 26.5 | 2,484,941 | 25.0 | 9,940,449 | 100.0 |
| | 2006 | 7,365,782 | 74.2 | 2,512,611 | 25.3 | 2,555,465 | 25.8 | 9,921,247 | 100.0 |
| Electricity, gas, heat supply, and water | 2001 | 148,979 | 71.1 | 14,473 | 6.9 | 60,414 | 28.9 | 209,393 | 100.0 |
| | 2004 | 126,933 | 67.2 | 13,013 | 6.9 | 61,981 | 32.8 | 188,914 | 100.0 |
| | 2006 | 120,781 | 66.8 | 12,614 | 7.0 | 59,959 | 33.2 | 180,740 | 100.0 |
| Information and communications | 2001 | 774,407 | 54.9 | 142,895 | 10.1 | 636,829 | 45.1 | 1,411,236 | 100.0 |
| | 2004 | 740,757 | 53.6 | 129,919 | 9.4 | 641,559 | 46.4 | 1,382,316 | 100.0 |
| | 2006 | 813,004 | 51.1 | 145,044 | 9.1 | 779,101 | 48.9 | 1,592,105 | 100.0 |
| Transport | 2001 | 2,650,382 | 90.7 | 609,310 | 20.8 | 272,756 | 9.3 | 2,923,138 | 100.0 |
| | 2004 | 2,544,003 | 90.1 | 578,465 | 20.5 | 278,171 | 9.9 | 2,822,174 | 100.0 |
| | 2006 | 2,603,782 | 90.7 | 591,920 | 20.6 | 266,829 | 9.3 | 2,870,611 | 100.0 |
| Wholesaling/retailing | 2001 | 10,587,887 | 79.7 | 3,202,982 | 24.1 | 2,690,686 | 20.3 | 13,278,573 | 100.0 |
| | 2004 | 9,747,677 | 79.8 | 2,845,464 | 23.3 | 2,471,142 | 20.2 | 12,218,819 | 100.0 |
| | 2006 | 9,766,305 | 79.0 | 2,754,800 | 22.3 | 2,600,285 | 21.0 | 12,366,590 | 100.0 |
| Wholesale trade | 2001 | 3,559,465 | 82.6 | 643,366 | 14.9 | 751,982 | 17.4 | 4,311,447 | 100.0 |
| | 2004 | 3,338,697 | 83.5 | 624,883 | 15.6 | 660,723 | 16.5 | 3,999,420 | 100.0 |
| | 2006 | 3,227,175 | 83.6 | 585,777 | 15.2 | 633,177 | 16.4 | 3,860,352 | 100.0 |
| Retail trade | 2001 | 7,028,422 | 78.4 | 2,559,616 | 28.5 | 1,938,704 | 21.6 | 8,967,126 | 100.0 |
| | 2004 | 6,408,980 | 78.0 | 2,220,581 | 27.0 | 1,810,419 | 22.0 | 8,219,399 | 100.0 |
| | 2006 | 6,539,130 | 76.9 | 2,169,023 | 25.5 | 1,967,108 | 23.1 | 8,506,238 | 100.0 |
| Finance and insurance | 2001 | 1,391,465 | 84.6 | 548,181 | 33.3 | 253,199 | 15.4 | 1,644,664 | 100.0 |
| | 2004 | 1,201,074 | 83.9 | 469,052 | 32.8 | 230,066 | 16.1 | 1,431,140 | 100.0 |
| | 2006 | 1,176,527 | 82.4 | 461,147 | 32.3 | 251,921 | 17.6 | 1,428,448 | 100.0 |
| Real estate | 2001 | 962,574 | 96.4 | 761,033 | 76.3 | 35,468 | 3.6 | 998,042 | 100.0 |
| | 2004 | 929,534 | 96.2 | 725,871 | 75.2 | 36,293 | 3.8 | 965,827 | 100.0 |
| | 2006 | 968,727 | 95.9 | 751,234 | 74.4 | 41,295 | 4.1 | 1,010,022 | 100.0 |
| Eating and drinking places, accommodations | 2001 | 4,586,932 | 89.8 | 1,573,881 | 30.8 | 520,805 | 10.2 | 5,107,737 | 100.0 |
| | 2004 | 4,365,775 | 90.6 | 1,427,037 | 29.6 | 450,947 | 9.4 | 4,816,722 | 100.0 |
| | 2006 | 4,394,520 | 90.3 | 1,358,690 | 27.9 | 474,320 | 9.7 | 4,868,840 | 100.0 |
| Medical, health care, and welfare | 2001 | 2,359,179 | 65.3 | 361,838 | 10.0 | 1,252,297 | 34.7 | 3,611,476 | 100.0 |
| | 2004 | 2,719,112 | 65.4 | 368,181 | 8.9 | 1,437,124 | 34.6 | 4,156,236 | 100.0 |
| | 2006 | 3,196,264 | 66.3 | 403,959 | 8.4 | 1,626,170 | 33.7 | 4,822,434 | 100.0 |
| Education, learning support | 2001 | 997,008 | 76.0 | 222,789 | 17.0 | 315,616 | 24.0 | 1,312,624 | 100.0 |
| | 2004 | 1,027,798 | 75.1 | 219,074 | 16.0 | 339,944 | 24.9 | 1,367,742 | 100.0 |
| | 2006 | 1,102,771 | 69.4 | 224,660 | 14.1 | 486,600 | 30.6 | 1,589,371 | 100.0 |
| Compound services | 2001 | 312,603 | 77.8 | 46,864 | 11.7 | 89,225 | 22.2 | 401,828 | 100.0 |
| | 2004 | 278,431 | 78.3 | 41,212 | 11.6 | 77,350 | 21.7 | 355,781 | 100.0 |
| | 2006 | 445,372 | 63.0 | 76,754 | 10.9 | 261,151 | 37.0 | 706,523 | 100.0 |
| Services (not otherwise classified) | 2001 | 5,972,172 | 76.2 | 1,955,353 | 25.0 | 1,862,290 | 23.8 | 7,834,462 | 100.0 |
| | 2004 | 5,763,217 | 74.1 | 1,880,993 | 24.2 | 2,015,881 | 25.9 | 7,779,098 | 100.0 |
| | 2006 | 5,986,477 | 71.2 | 1,883,851 | 22.4 | 2,425,863 | 28.8 | 8,412,340 | 100.0 |
| Non-primary industry total | 2001 | 43,704,264 | 79.9 | 15,453,922 | 28.3 | 10,976,327 | 20.1 | 54,680,591 | 100.0 |
| | 2004 | 41,176,304 | 79.4 | 14,115,133 | 27.2 | 10,668,876 | 20.6 | 51,845,180 | 100.0 |
| | 2006 | 41,984,086 | 77.8 | 13,836,078 | 25.6 | 11,962,719 | 22.2 | 53,946,805 | 100.0 |

(Note) Even though more than 60% of value added are produced by large companies, SME exceeds far larger than large companies in employment (Table1) and in the number of companies.

## 2. Various types of financial institutions which provide loans to SME

Table 2 presents various financial institutions whose loan amount to SME is summarized. Total amount of lending by financial institutions are about 259 trillion yen (and GDP of Japan is about 500 trillion yen). There are two types of financial institutions in Japan. One is private financial institutions and another is government affiliated financial institutions (such as Shoko Chukin

Bank, JASME (Japan Association of Small and Medium Enterprises) and NLFC (National Life Financial Corporation) are government affiliated which provide loans only to SMEs). Government affiliated financial institutions provide about 10% of all loans to SMEs. Credit associations and credit cooperatives are private financial institutions which provide loans entirely to SMEs.

In year 2002, the government banks provided 27.6 trillion yen to SMEs, however in year 2007, it declined to 22.4 trillion yen. In October 2008, JASME, NLFC, JBIC (Japan Bank for International Corporation) and AFC (Agricultural Financial Corporation) were merged together and JPFC (Japan Policy Financial Corporation) was created.

**Table 2A-2: Loan to SMEs in Japan**

| Financial institution | 2002 Mar. | 2002 Jun. | 2002 Sept. | 2002 Dec. | 2003 Mar. | 2003 Jun. | 2003 Sept. | 2003 Dec. | 2004 Mar. | 2004 Jun. | 2004 Sept. | 2004 Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City banks | 93.9 | 92.8 | 89.9 | 90.0 | 89.3 | 83.4 | 83.1 | — | — | — | — | — |
| Regional banks | 71.5 | 68.8 | 68.2 | 68.8 | 67.8 | 66.0 | 66.4 | — | — | — | — | — |
| Member banks of the Second Association of Regional Banks | 26.3 | 25.4 | 25.2 | 25.5 | 24.4 | 23.2 | 23.2 | — | — | — | — | — |
| Other | 20.7 | 13.0 | 13.3 | 12.7 | 12.5 | 11.1 | 11.9 | — | — | — | — | — |
| Domestically-licensed banks' banking accounts total | 212.4 | 200.0 | 196.6 | 197.0 | 194.0 | 183.7 | 184.6 | 180.5 | 186.0 | 176.4 | 179.1 | 178.6 |
| Domestically-licensed banks' trust accounts, etc. | 2.0 | 1.8 | 2.1 | 1.9 | 2.3 | 1.8 | 1.7 | 1.6 | 1.6 | 1.4 | 1.5 | 1.6 |
| Credit associations | 43.5 | 42.4 | 42.3 | 43.0 | 41.5 | 41.0 | 41.2 | 41.8 | 40.5 | 40.0 | 40.5 | 41.1 |
| Credit cooperatives | 11.9 | 10.5 | 9.7 | 9.3 | 9.2 | 9.1 | 9.2 | 9.2 | 9.1 | 9.0 | 9.1 | 9.2 |
| Private-sector financial institutions total | 269.8 | 254.7 | 250.6 | 251.2 | 246.9 | 235.5 | 236.7 | 233.1 | 237.3 | 226.9 | 230.3 | 230.5 |
| Private-sector financial institutions total (excluding trust accounts, etc.) | 267.8 | 252.9 | 248.5 | 249.3 | 244.7 | 233.7 | 235.0 | 231.5 | 235.7 | 225.5 | 228.8 | 228.9 |
| Shoko Chukin Bank | 10.5 | 10.4 | 10.2 | 10.3 | 10.1 | 9.9 | 9.9 | 10.0 | 9.8 | 9.7 | 9.7 | 9.8 |
| JASME | 7.5 | 7.5 | 7.5 | 7.6 | 7.5 | 7.5 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| NLFC | 9.6 | 9.5 | 9.4 | 9.5 | 9.2 | 9.2 | 9.1 | 9.2 | 8.9 | 8.9 | 8.8 | 8.8 |
| Government-affiliated financial institutions total | 27.6 | 27.4 | 27.1 | 27.3 | 26.8 | 26.6 | 26.7 | 26.8 | 26.3 | 26.1 | 26.1 | 26.2 |
| Total outstanding lending to SMEs | 297.4 | 282.1 | 277.8 | 278.5 | 273.7 | 262.1 | 263.4 | 260.0 | 263.6 | 252.9 | 256.3 | 256.7 |
| Total outstanding lending to SMEs (excluding trust accounts, etc.) | 295.4 | 280.2 | 275.7 | 276.6 | 271.5 | 260.3 | 261.7 | 258.3 | 262.0 | 251.5 | 254.8 | 255.1 |

| Financial institution | 2005 Mar. | 2005 Jun. | 2005 Sept. | 2005 Dec. | 2006 Mar. | 2006 Jun. | 2006 Sept. | 2006 Dec. | 2007 Mar. | 2007 Jun. | 2007 Sept. | 2007 Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City banks | — | — | — | — | — | — | — | — | — | — | — | — |
| Regional banks | — | — | — | — | — | — | — | — | — | — | — | — |
| Member banks of the Second Association of Regional Banks | — | — | — | — | — | — | — | — | — | — | — | — |
| Other | — | — | — | — | — | — | — | — | — | — | — | — |
| Domestically-licensed banks' banking accounts total | 179.4 | 171.7 | 175.9 | 177.7 | 181.6 | 177.8 | 185.2 | 186.2 | 186.4 | 182.0 | 183.8 | 184.2 |
| Domestically-licensed banks' trust accounts, etc. | 1.6 | 1.7 | 1.6 | 1.9 | 1.9 | 1.9 | 1.7 | 1.6 | 1.5 | 1.6 | 1.5 | 1.4 |
| Credit associations | 40.4 | 40.1 | 40.8 | 41.5 | 40.8 | 40.5 | 41.5 | 42.1 | 41.7 | 41.3 | 41.9 | 42.3 |
| Credit cooperatives | 9.2 | 9.1 | 9.2 | 9.3 | 9.3 | 9.3 | 9.4 | 9.4 | 9.4 | 9.3 | 9.4 | 9.5 |
| Private-sector financial institutions total | 230.6 | 222.5 | 227.5 | 230.4 | 233.6 | 229.5 | 237.7 | 239.3 | 239.0 | 234.2 | 236.5 | 237.4 |
| Private-sector financial institutions total (excluding trust accounts, etc.) | 229.0 | 220.8 | 226.0 | 228.5 | 231.7 | 227.6 | 236.1 | 237.6 | 237.5 | 232.6 | 235.1 | 236.0 |
| Shoko Chukin Bank | 9.6 | 9.5 | 9.5 | 9.6 | 9.4 | 9.3 | 9.3 | 9.4 | 9.3 | 9.3 | 9.2 | 9.3 |
| JASME | 7.5 | 7.4 | 7.3 | 7.2 | 7.0 | 6.9 | 6.8 | 6.7 | 6.4 | 6.3 | 6.2 | 6.0 |
| NLFC | 8.4 | 8.3 | 8.2 | 8.2 | 7.8 | 7.7 | 7.6 | 7.5 | 7.2 | 7.1 | 7.0 | 7.0 |
| Government-affiliated financial institutions total | 25.5 | 25.2 | 25.0 | 24.9 | 24.3 | 23.9 | 23.7 | 23.5 | 23.0 | 22.7 | 22.4 | 22.4 |
| Total outstanding lending to SMEs | 256.0 | 247.8 | 252.5 | 255.3 | 257.9 | 253.3 | 261.4 | 262.8 | 262.0 | 256.9 | 259.0 | 259.8 |
| Total outstanding lending to SMEs (excluding trust accounts, etc.) | 254.5 | 246.1 | 250.9 | 253.5 | 256.0 | 251.4 | 259.7 | 261.2 | 260.5 | 255.3 | 257.5 | 258.3 |

### 3. Difficulty of SME to borrow during the period of economic recess

Table 3 shows four lines. Business sentiment by large companies, all SME industries, manufacturing (SME) and non-manufacturing (SME). Large companies always show the highest business sentiment. Manufacturing SME shows the lowest business sentiment during the downturn of business cycles. Non manufacturing SME recently underscores all other industries in their business sentiment.

**Table 2A-3: Business Sentiment by industries**
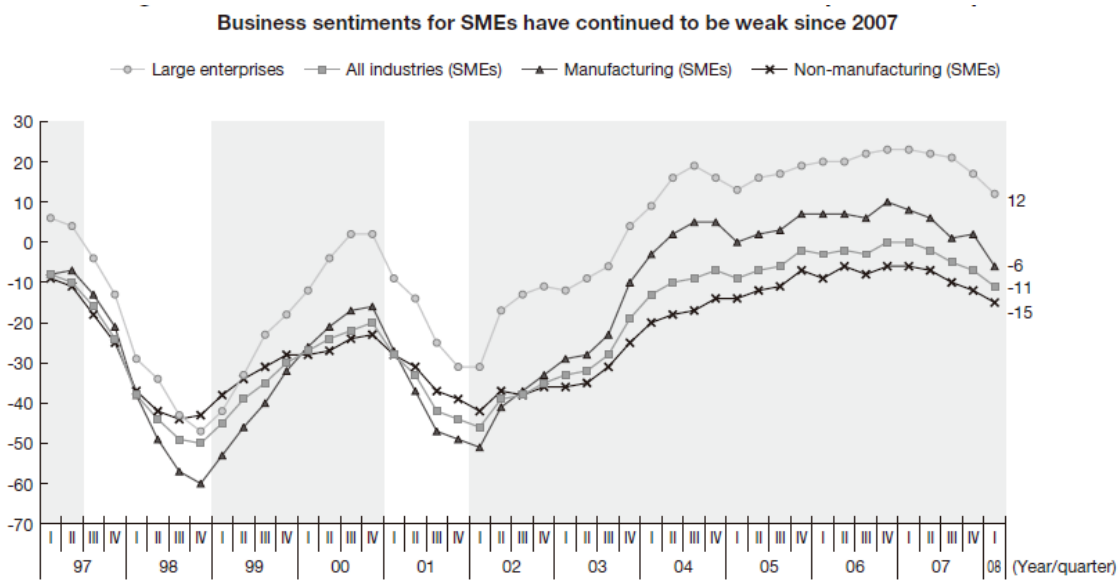


Source: Bank of Japan (BOJ), *National Short-Term Economic Survey of Enterprises in Japan (Tankan).*

Especially in long lasting recession, SMEs face with bankruptcies. Number of bankruptcies increased after 1998 financial crisis of Japan.

## Table 2A-4: Number of bankruptcies by SMEs in Japan



After entering the present economic recovery, rates had decreased for about three years, but have turned upward since about 2006
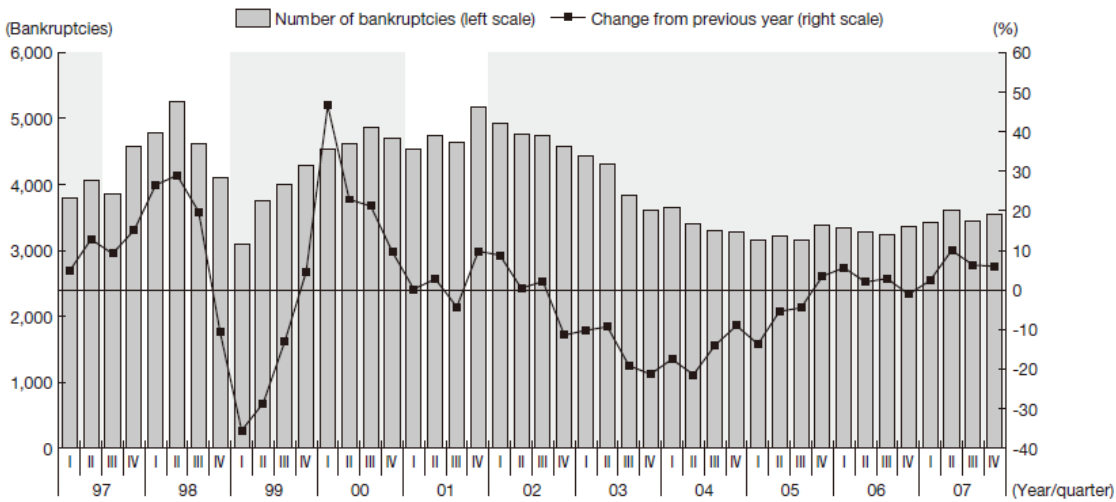
Source: Tokyo Shoko Research, Ltd., *Business Failure News (Monthly)*.
Note: Before 2000, enterprises with capital of less than ¥100 million are classed as SMEs.

Bankruptcy ratio by SME is larger than large companies which show vulnerability of SMEs.

## Table 2A-5: Profit Ratios of large companies versus SMEs



Profit ratios for enterprises with capital of less than ¥10 million remain low as the gap with large enterprises with capital of ¥100 million or more has expanded
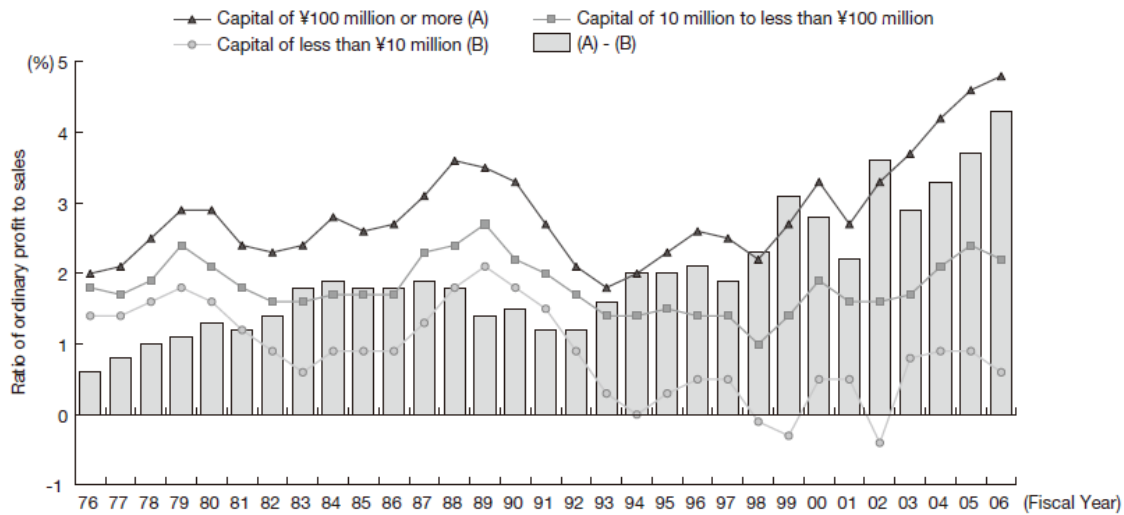
Table 5 shows the wide gap between large companies and small businesses in terms of profit ratios. The gap between large companies (A) and the small companies (B) widened in recent

period which is shown by bar chart. Especially when the business conditions of large companies are improved, the profit gaps between two groups widen.

Table 6 summarizes new lending products being developed by financial institutions. Syndicated loans (2nd line, Table 6) and Credit Scoring finance (7th line, Table 6) can be seen growing in recent period. Credit Scoring model is already used by 34.1% of all financial institutions in the survey and 23.6 % are thinking of using the model. Therefore the collection of SME data and its analysis are important.

**Table 2A-6: Growing Importance of Credit Scoring Finance**



New lending products being developed by financial institutions too

Source: RIETI (conducted by Tokyo Shoko Research, Ltd.) (2006), *Survey of the Financial Environment of Small and Medium Enterprises.*
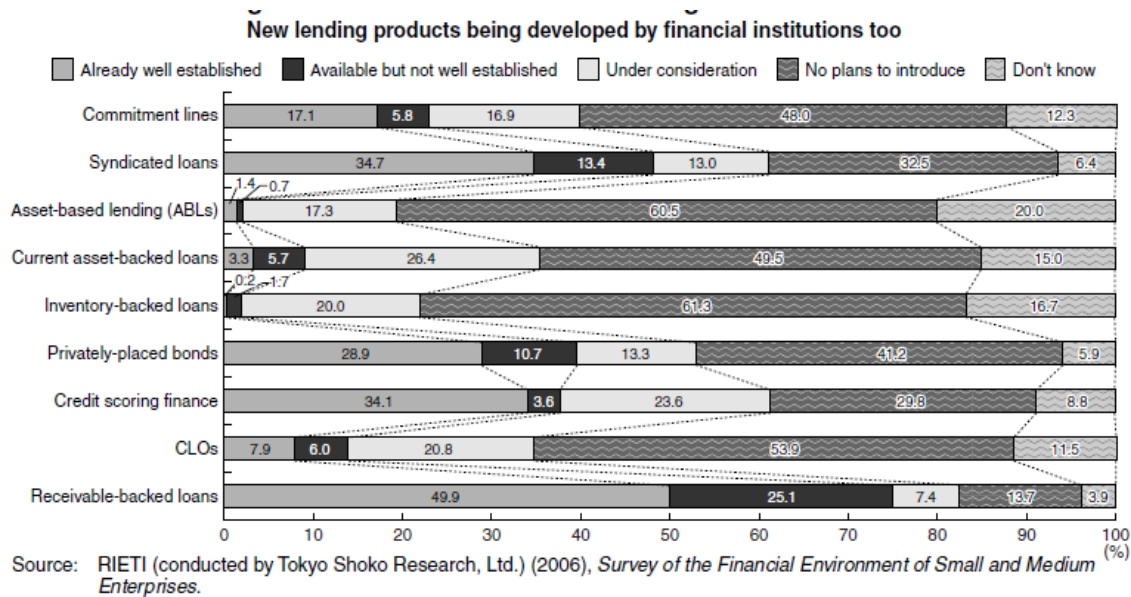
Table 7 summarizes the top management based on their background. For small enterprises, more than 71% are coming from founder or their relatives. On the other hand, to management comes from internal promotion in large enterprises. Even in Japan, top management from external personal is quite limited among large enterprises. It suggests that small and medium sized enterprises show much weaker corporate governance compared with large enterprises.

**Table 2A-: Origin of Top Management**
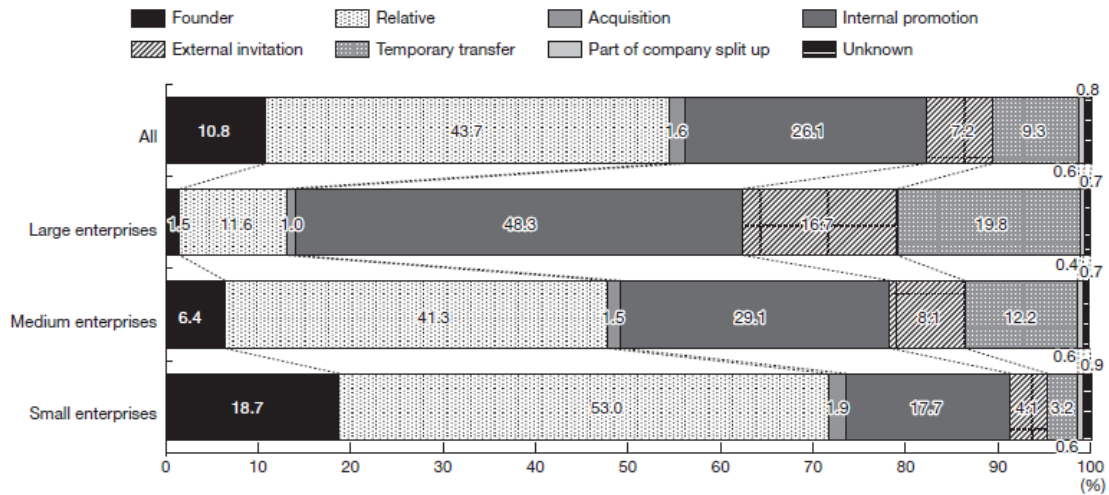


Source: Recompiled from Teikoku Databank, Ltd., *Corporate Profile Database*.
Notes: 1. Data as of the end of 2006 and data as of the end of 2001 were compared, and data was compiled on the processes of appointing presidents with regard to enterprises which have changed presidents.
2. Middle enterprises refer to SMEs minus small enterprises.

Table 8 denotes high reliance on bank borrowing by small enterprises and their higher solvency rations. Smaller the size of enterprises, more and more difficult to raise money from the market due to lack of availability of financial and non-financial information.

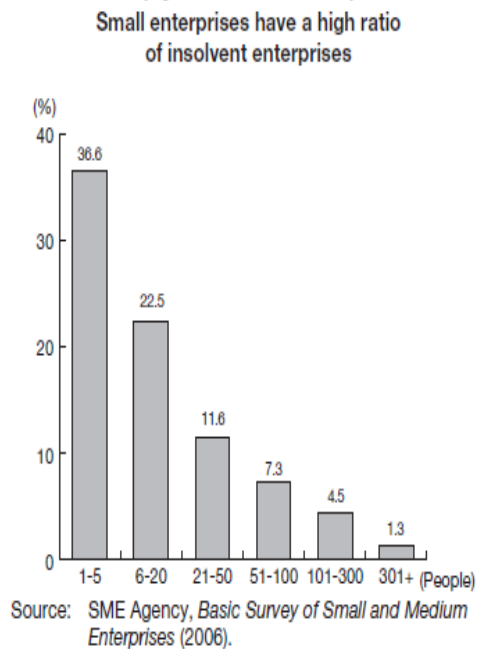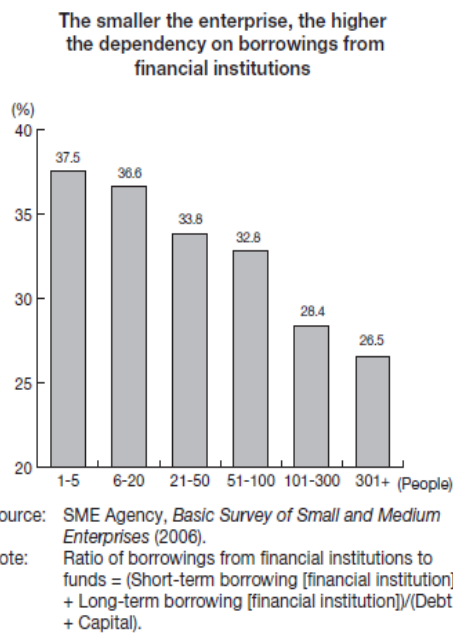**Table 2A-8: Size of enterprises and their financing, insolvency**

Table 9 summarizes the expected role of financial institutions by SMEs. Stable provision of funds is the top priority, understanding of business and prospects are the second priority and management consulting is the third priority. SME often relies various consultation to financial institutions.



Financial institutions give importance to aspects of business other than transaction terms, such as stable provision of funds, understanding of client's business, and management consulting
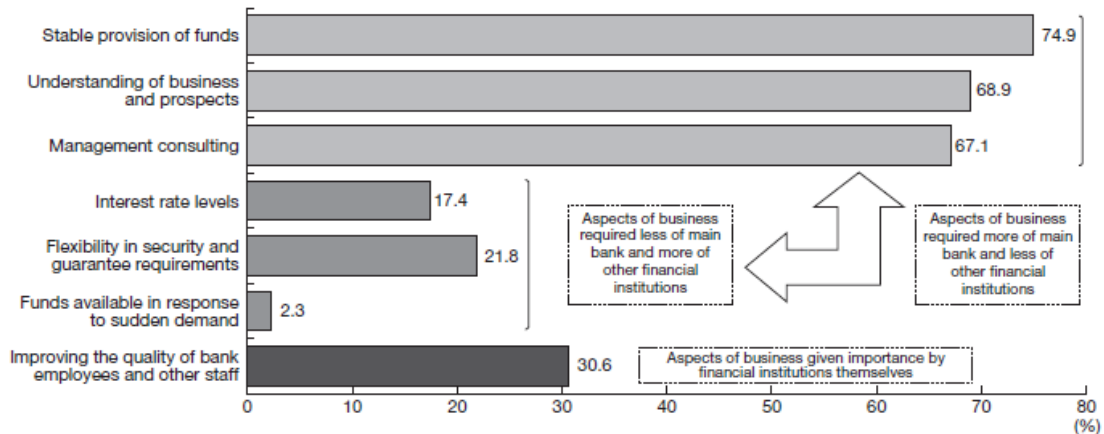
Source: Tokyo Shoko Research, Ltd., *Survey on the Transaction Environment with SMEs* (December 2006).
Notes: 1. Due to multiple responses, the total exceeds 100.

## 2A-1-2 Background of the Research and Analysis

Prediction of corporate credit risk such as financial distress, bankruptcy and so on, is a phenomenon of increasing interest of banks, borrowing firms and investors. How to manage credit risk is also an important topic in these days by financial regulators. Not only credit risks of large companies but also credit risks of SME are important to the economy, since share of SMEs are very large in many countries. In this paper we would like to make deeper study in the credit risk measurement of SME .

The credit risk measurement includes both quantitative analysis and qualitative calculation of related risk factors. The aim of the credit risk analysis is to confirm the riskiness of the borrowers and to give reason for further decision. It will be the focus of credit management and will affect seriously the following work such as risk prevention and the cost of risk control. During the long development of credit analysis, so many methods and models were produced.

In the early stage, classical credit analysis (Caouette et al, 1998) was mainly qualitative. And the quantitative model of credit risk can be traced back to 1930s. After 1960, this field became hotter and lots of methods appeared. Between the classical credit analysis and modern multi-variate method, there was a stage of univariate analysis. Fitzpartrick (1932) may be the earliest

researcher and Beaver (1967) gave further development. Along with the development of statistics, the limit of univariate analysis was broken through. Altman (1968) firstly applied Multiple Discriminant Analysis (MDA) into the study of corporate failure and got the classic model named Z-Score model. Altman et al (1977) improved the Z-Score model and established ZETA model. During that period MDA became the popular, see (Altman et al , 1981), (Madalla, 1983) and (Myers & Forgy, 1963) method in this field. At the beginning of 1980s, Zmijewski(1980) and Ohlson(1989) gave Probit model and Logit model by the nonlinear regression. In some respect, the Logit model (Ohlson,1980, Barth et al, 1989, Gothe, 1990) may be more practical and welcome due to its distribution hypothesis. During the following decades, many new technologies and methods have been tried on the credit risk measurement, such as neutral networks (Tam & Kiang, 1992), Probabilistic Neural Net-works(Tyree & Long, 1995), nonparametric method(Lundy, 1993) , expert system(Spence, 1991) , multi-agent system(Zhang et al,2002) etc.

With the development of modern finance, especially credit derivatives, there are many new analysis models or systems established. One famous model is Credit monitor model of KMV(KMV, 1993) which is based on options pricing theory. Although the idea of applying options pricing theory on debt evaluation can be retrospected to Merton (Merton, 1974), KMV model is still a new creature. Another one is CreditRisk+ (CSFP, 1997) which is a trademark of Credit Suisse Financial Products (CSFP). Besides, there are other models full of creativity, such as the Credit Portfolio View[159], Mortality model (Jackson, & Perraudin, 2000) etc.

The models and methods on credit risk measurement mentioned above are all great contributions to the study in this research field. And they were all worth ingenious contribution on their being proposed. But two points must be emphasized here, i.e. the assumption inside the models and the requirements of the models.

Many models are based on the probability theory. And their aim is to minimize expected average loss. This kind of models has good theoretical ground, but their limitation is also apparent due to the special properties of credit data. As we all know, the credit applications have already been screened by some credit officers. The resampling error or resampling bios seems unavoidable (even if there is not removal of variables) to pre-censored credit risk record data as in-house data or bank-specific data. Even if credit risk data are collected from many banks into a big sample, the resampling problem can not be explained clearly because of the basic records. What's more, the credit data, especially loan data are very scarce due to the long term of contract. Therefore,

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[159] Credit Portfolio View is a risk measurement model developed by Wilson (1997a, 1997b) and proposed by McKinsey.

the assumptions on distribution and representative sample etc[160] are not fully supported by the existing character of credit risk data.

Different models are based on different kind of data. Although the models based on options pricing theory and modern portfolio theory have perfect system structure, the related market data are not always available, especially for SMEs, even if the market would be purely efficient. Other existing models such as Credit Portfolio View which can utilize the accumulations of experts and empirical data, are based on the rating data of top credit rating companies. However, only a part of all enterprises have credit rating. Most SMEs do not necessarily obtain credit rating. So the applicability of those models is limited, especially for SMEs. Even if models are arbitrarily applied with many assumptions, the performance test of those models will be difficult (Jackson & Perraudin, 2000).

Our model here is aimed to try to remedy above two problems. The General Parametric Discriminant Model (GPDM) affords more freedom for us. If we are sure that the pre-sensored data sample is representative, we can deduce detailed models like traditional ones. And if not, we can calculate the credit degree based on the information of the sample which is also compatible to statistic model which will be proved later. As for the data in the general model no limitation is made about the data source or variables. Any type of data (including discrete variables) that decision makers think useful in discriminant analysis can be used.

The remaining of this Appendix is as follows. In section 2, our main result, called as the general modedl is given firstly which is the most general and looks very simple. Then it will be explained by specilization, which is the characters of general models and may be different to the detailed models. In section 3, we make an empirical study on big sample from CRD (Credit Risk Database) in Japan. Since general model is derivated theoretically, this part should not be regarded as a test of the general. In fact it is still a explanation of general by demonstrating. Section 4 gives the conclusion. The final summary explanation of the general model is also presented.

## 2A-2 General Parametric Discriminant Model

### Description of the general model

The general parametric discriminant model (GPDM) includes objective, constraint and general discriminant function. The decision maker or user can set the objective of the model according to their own aim. In the following part, the analysis of embodiment of the model will show that not

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[160] Of course, the propriety on some cases is not excluded.

only most existing models can be deduced from the general parametric discriminant model (GPDM) but also new exploratory models can be developed from it.

Objective of the general model :

$$z^i \in [-\infty, +\infty], i \in I, I_0 \cup I_1 = I :$$
$$\min_\theta \{\sum_{i \in I_1} \rho^i (1 - \psi(z^i)) + \sum_{i \in I_0} \rho^i (\psi(z^i))\} \qquad (1)$$

where ,

$$\psi(\bullet), \rho^i(\bullet), \psi(-\infty) = 0, \psi(+\infty) = 1$$

$$\psi(\bullet), \rho^i(\bullet) \text{ increase strictly}$$

$$\rho^i(\bullet), i \in I$$

z can be a vector of high dimension.

Here the meanings of the parameters are not detailed and they will become very clear in the specific models which are deducted from the general model. The form of the General Parametric Discriminant Model is compact and simple, but it's full of embodiment, which means that different setting of each part of the model can deduce many current models and new credit risk measurement models can be general by specially setting according to the special need and special hypothesis. The model's extension includes three aspects, such as basic embodiment called semi-general models, applied embodiment called specific models (existing models and exploratory models). The relation is showed in Figure 1.

As to the parameters, in general models every parameter mainly has its mathematical meaning, which means that its detailed meaning is not limited. For example, although I, $I_0$ and $I_1$ are often used respectively as the total cases of credit data, the failed and unfailed cases[161] inside. $z^i$ is often used to represent the calculation result of each borrowing record, for example the credit

---

[161] Even for "failed", one can choose different definition, such as bankruptcy or closure and so on, according to his need.

score. $\psi$ can be defined as different meaning and type in existing detailed models such as distribution function. For example, in Logit model and Pobit model, $\psi$ is the distribution function Logistic Distribution and Normal Distribution. And $\psi$ even be defined completely new.

$\rho^i(\bullet)$ is some transforming function and is defined differently in different specific models. The minimum calculation serves for the optimal decision, for example the user can find what the lowest cost is. It is the same to other parameters and the constraint. Thereby we call the model as general model. All these will be explained in the following examples.

Constraint of the model R;

$$\varphi(x^i, \theta) - z^i = 0, z^i \in [-\infty, +\infty], i \in I \tag{2}$$

Where $\varphi$ is named as general parametric discriminant function with parameter $\theta$, and $x^i$ is the borrowing record, which can be regarded as the financial data of each borrowing record.

*Types of general parametric discriminant function*

From the attribute of programming model, the general parametric discriminant function can be summarized as the following four types:

D1  $\varphi(x^i, \theta) = \varphi(X, A, B, C, \ldots) = A + BX + X^T CX + \ldots.$,
     which is a linear function of X

D2  $\varphi(x^i, \theta) = \varphi(X, B, C, \ldots) = \pm 1 + BX + X^T CX + \ldots.$
     which is a linear function with a fixed constant 1 or -1.

D3  nonlinear to at least one of the parameters $\theta$, and homogeneous in at least one of the parameters but not homogeneous of degree zero

D4  nonlinear to at least one of the parameters $\theta$, and not homogeneous in all the parameters
     Where X is the vector of $x^i$, and A, B, C…. are all the elements inside parameter $\theta$.

## 2A-3  Embodiment of the general model

### 2A-3-1  Semi-general models

As shown in Figure 1, this kind of embodiment comes from the establishment of the model. Various detailed objective functions and discriminant functions can be used to fit different risk measurement problem. Here just two examples are given as followings:

(1) Signum function discriminance

Let

$$\text{sgn(m)}=\begin{cases}1, m > 0,\\0, m \leq 0.\end{cases} \tag{3}$$

Objective $O_1$

$$z^i \in [-\infty,+\infty], i \in I, I_0 \cup I_1 = I :$$
$$\min_{\theta}\{\sum_{i\in I_1}\rho^i(1-\text{sgn}(z^i)) + \sum_{i\in I_0}\rho^i(\text{sgn}(z^i))\} \tag{4}$$

where all the parameters and functions are defined the same as Function 1.
Constraint $R_1$ is as follows just like as Function 1,

$$\varphi(x^i,\theta) - z^i = 0, z^i \in [-\infty,+\infty], i \in I. \tag{5}$$

(2) Reverse maximum discriminance

Objective $O_2$

$$z^i \in [-\infty,+\infty], i \in I : \max_{\theta,z}\{\sum_{i\in I_1}\rho^i(\psi(z^i)) + \sum_{i\in I_0}\rho^i(1-\psi(z^i))\},$$
$$\psi(\bullet), \rho^i(\bullet), \psi(-\infty) = 0, \psi(+\infty) = 1 \tag{6}$$

Constraint $R_2$

$$\varphi(x^i,\theta) - z^i = 0, z^i \in [-\infty,+\infty], i \in I. \tag{7}$$

The change of minimum to maximum in the model looks very minor, but the meaning is great. In the existing models, the calculation is always aimed to the lowest risk of credit lending. However, we have deduced the general model (GDMP) from existing models, and then we are able to naturally come across with the maximum problem. In fact, in the real world, the maximum of profit, transaction volume of credit guarantee and bank lending etc is also important in the credit transaction besides the minimization of risk. That is the theoretical contribution in this paper.

**2A-3-2  Specific models (Existing specific models)**

For notation convenience, we use ($M_{i,j,k}$) to denote the model with objective ($O_i$), constraint ($R_j$)and discriminant function($D_k$), where i, j and k equal to 1, 2 or 3 and so on. And we denote the original constraint R by $R_1$ (see Equation 2).

We can find that many popular models can be deduced from the general parametric discriminant model by setting the model in specific form. The examples of specific models such as Logit model, Probit model and Neural Network model are given as followings:

(1) Logit model

($M_{1, 1, 1}$) with the following setting equals to Logit model.

$\varphi(\bullet)$ belongs to the first type (linear function with constant)

$$
z^i = \varphi(x^i, \theta),
$$
$$
\psi(z) = \frac{1}{1 + e^{-z}}, \tag{8}
$$
$$
\rho^i(\bullet) = \ln(\bullet).
$$

(2) Probit Model

($M_{1, 1, 1}$) with the following setting equals to Probit model.

$\varphi(\bullet)$ belongs to the first type (linear function with constant)

$$
z^i = \varphi(x^i, \theta),
$$
$$
\psi(z) = \frac{1}{2\pi} \int_{-\infty}^{z} e^{-\frac{1}{2}t^2} dt, \tag{9}
$$
$$
\rho^i(\bullet) = \ln(\bullet).
$$

(3) Extended feed forward neural networks (NN) with hidden layer and single output
 ($M_{1, 1, 3}$) with the following setting equals to NN model.

$$
z^i = \varphi(x^i, \theta),
$$
$$
\psi(z) = \frac{1}{1 + e^{-z}}, \tag{10}
$$
$$
\rho^i(\psi(\bullet)) = \alpha^i * \psi(\bullet), \alpha^i \psi(\bullet)^2, \alpha^i \ln \psi(\bullet)..., \alpha^i > 0.
$$

**2A-3-3  Specific models--sharp sigmoid function (new Exploratory model)**

Sigmoid function is widely used in many models, such as Logit model and NN model, especially models based on Bayesian theory. Here we introduce a different kind of sigmoid function named

as sharp sigmoid function. This will be a beneficial exploration, because it will improve the model's discriminant ability around the cut-off point (so called gray area). Due to the Genetic Algorithm we used, all these kinds of models can be solved successfully. Figure 1 gives a basic explanation about sharp sigmoid function. Point a, b, c, d, especially the slope of line ab can be set by the model user or decision maker. In the later empirical study, a detailed sharp sigmoid will be used.
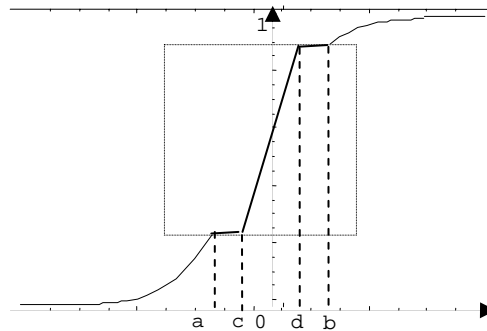


Figure 1 sharp sigmoid function

## 2A-4  Further discussion

## 2A-4-1 Improvement of general discirminent function

The above discussion of embodiment mainly focuses on the objective function either minimization or maximization. Functional forms also can be changed. In fact, although there are so many standby types of function for the general discriminant function, we can do more improvement on the discriminant function such as the combination of several obtained functions by convex combination.

## 2A-4-2  Credit degree function

The establishment of general model gives new space to further measure the credit risk, instead of being the end of analysis. Here a new concept named degree of credit is introduced.

Under the traditional frame of credit risk measurement, default probability used to be the end-result (of course not the end of risk analysis). Many studies emphasize the concept of default loss

or risk loss etc, but two points should be made clear. Firstly, the probability like the default probability forms the basis of risk loss value directly or impliedly. Secondly, the prediction of expected loss will be very sophisticated with so many subjective factors and maybe induces a much harder topic.

Just as mentioned above, credit risk measurement based on the probability and distribution function contains many hypotheses which may be far away from the reality. So we use the degree of credit as the general measurement[162].

Definition of credit degree function  For one general discriminant function $\varphi$ which is calculated from the general parametric discriminant model, sort $\varphi$ according to all sample observations, denoted by $\Phi_{(1)}$ , $\ldots \Phi_{(n)}$ , then：

$$S_n(x) = \begin{cases} 0, \varphi \le \Phi_{(1)}, \\ \dfrac{i}{n}, \Phi_{(i)} < \varphi \le \Phi_{(i+1)}, i = 1, \cdots, n-1, \\ 1, \Phi_{(n)} < \varphi \end{cases} \tag{11}$$

is called credit degree function。

　　　Credit degree function appears in Figure 2 ：

Figure 2 credit degree function



sample value of discriminate function

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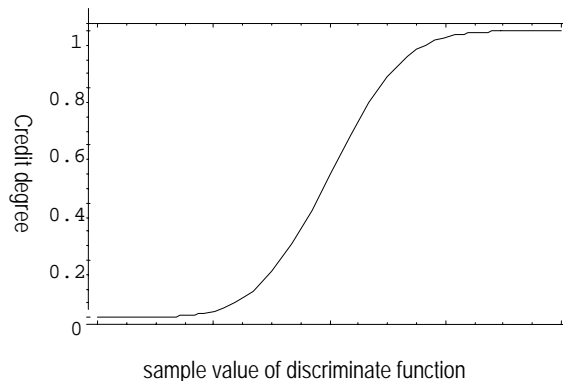
[162] From the analysis of embodiment, we can find that our model also includes the probability and loss rate or misclassification cost if some statistic hypothesis is given.

After the credit degree function is calculated according to the sample data, we can figure out the credit degree of any new SME which is out of the initial sample. That is, the new individual's credit risk can be measured by $S_n(x)$ which is on the basis of the information of sample data instead of any assumption. Although credit degree does not depend on any statistic assumption necessarily, later we will see that it can be compatible with statistic mode.

**2A-4-3  Credit risk analysis of general credit risk measurement method**

After the calculation of the model, beside the traditional credit risk analysis on the basis of discriminate function, further analysis can be made on the platform of credit degree function. One type of that analysis is the setting of ex post cut-off value, while we call the cut-off generated from the calculation of the model as theoretical cut-off. Because the general credit risk measurement model is not established on the statistic assumption, we can choose the cut-off point comparatively freely, which is called the setting of ex post cut-off. That means that our aim is not limited to the statistic hypothesis but to explore the most information of the sample so as to support the decision maker better to decide from different aspects.

Two types of error rates (i.e. Type 1 error and Type 2 error) are denoted by $c_1$、$c_2$, then we can select ex post cut-off point according to the following rule:

Minimize（$c_1+c_2$）

- Keep $c_1/c_2$ as some constant
- Keep $c_1$ as some constant
- Keep $c_2$ as some constant
- Minimize the loss rate

Maybe the similar analysis can be found in other studies (Altman, 1968), but in fact they are essentially different. In order to get satisfying practical efficiency, traditional models are also following with the ex post cutoff setting. But that kind of artificial adjustment is far from their theory basis.[163]

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163 The analysis here is also different from Altman (1977) [5] . In that kind of models concerning prior probability, ex post cutoff can be revised according to the prior probabilities of group membership or cost estimates of classification error, but the adjustment is still limited to something ungrounded.

**2A-4-4 Compatibility with statistic mode**

Glivenko-Cantelli Theorem (Glivenko, 1933) let $\{X_n, n \geq 1\}$ be the independent random sample of size n of the same distribution $F(x)$, and $F_n(x)$ be the empirical distribution function generated from $X_1, \cdots, X_n$ $n = 1, 2, \cdots$, then

$$P(\lim_{n \to \infty}[\sup_{-\infty < x < +\infty} |F_n(x) - F(x)|] = 0) = 1 \tag{12}$$

In fact, credit degree function is an empirical distribution function from some transformation of the original sample.

The convergence in probability can be deduced from the above theorem. That is, if there is a distribution of population, we can use the credit degree function to estimate the population distribution and this function from the sample will tend, with probability one, to the underlying population distribution. That is the statistic meaning of credit degree function and the necessary hypothesis is apparently not strong.

**2A-5 Empirical study by use of CRD data**

1, SME data collected by CRD database
    Classification

1 Sales

2 Operating profits

3 Ordinary profits

4 Investment in plant and equipment

5 Investment in P&E(excluding investment in software)

6   Increase in inventories

7   Ratio of operating profits to sales

8   Ratio of ordinary profits to sales

9   Ratio of net worth

10 Liquid assets

11   Inventories

12 Fixed assets

13 Deferred assets

14 Total assets

15 Liquid liabilities

16 Fixed liabilities

17 Net
   assets

18 Sales

19 Interest expense

20 Personnel expenses

2,Sample and data characteristics

Area: Kantou area

● Industry: manufacture including food manufacturing industry, beverage and feed stuff manufacturing industry, textile industry and furniture manufacturing industry.

● Time of financial statements：From 1995 to 2003

● Scale of the sample：41591 altogether, including 41408 normal cases and 183 cases failed to repay the debt on time
● Basic distribution of the sample data

Figure 3 and Figure 4 show the distribution of total assets and total liabilities. From the histogram, we can find the distribution is far from the distribution like normal distribution, so one can feel confident that traditional hypothesis maybe not suit for credit risk dada of big sample sizes.

In fact the distribution here still should not be regarded as the more accurate type of the "real distribution". The data of credit especially borrowing data are always the result of selection. Even the bias can not be estimated properly due to the scarcity of credit data and the complicated procedure of selection. Then what's the reason of statistic assumption? So we'd rather measure credit risk from the sample instead of being limited to any statistic assumption. Just like the general risk measurement model, statistic modes are included and hypothesis can be utilized as a tool instead of necessary condition. Even if we just pay attention to SMEs whose credit data are comparative abundant, the collecting result will be subjective after several rounds' selection.
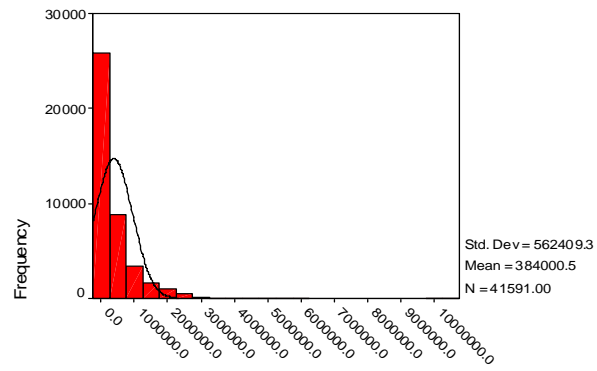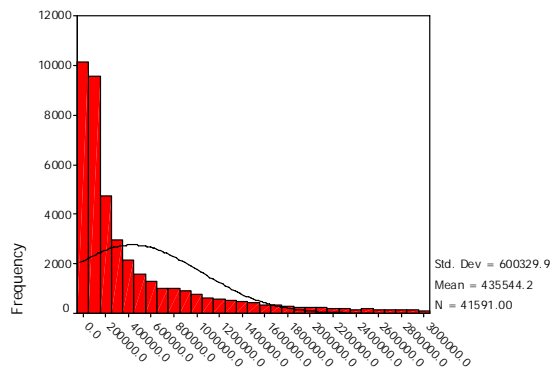


Figure 3 sample distribution of total assets    Figure 4 sample distribution of total liabilities

3, Selection of variables

For the comparison with traditional method, we select variables in traditional way. A number of financial item and ratios have been found in the other studies including the study on SMEs (Edmister, 1972). On the ground of past research on SME credit risk including the research of CRD, we select the relative variables.

Many studies on Japanese SMEs' credit risk (Goto, 1989) are around the following 8 categories: sales & total assets or total capital; non-operating expenses & net non-operating income; current total profit & ordinary profit ; liquid assets & accounts receivable; inventory; current liabilities; accounts payable; total liability & remained earnings.

Concerning the characteristics of CRD data, we select the following variables[164]:

accounts receivable $X_1$ inventory $X_2$, total assets $X_3$, current liabilities $X_4$, total liabilities $X_5$, total capital $X_6$, non-operating income $X_7$, non-operating expenses $X_8$, ordinary profit $X_9$, current total profit $X_{10}$, self-owned capital ratio $X_{11}$, dependence on debt $X_{12}$, total assets turnover rate $X_{13}$. See Independent Samples Test in appendix

4, General discriminant model application

(1) Sharp sigmoid function

As mentioned above, in order to improve the discriminant power of the function, we introduce the concept of sharp sigmoid function[165]. In this study we just use the following simple type of sigmoid function:

Let a, b be two constants and $a < 0, b > 0$

$$\psi(x) = \begin{cases} \dfrac{1}{1+e^{-x}}, x > a, or, x < b \\ \dfrac{1}{1+e^{-a}}, 0 < x <= a \\ \dfrac{1}{1+e^{-b}}, 0 <= x <= b \end{cases} \tag{13}$$

With a view to compare with traditional methods, herein we select variables and sample according to the need of traditional method. Especially we just use linear discriminant function, which is the simplest type of general discriminant function.

The basic configurations of the genetic algorithm list as follows:
- Encoding of the problem in real number.
- Scale of initial population is 300
- Fitness value for each subject depends on the distance to the optimum.

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164 self-owned capital ratio: total capital/ total of liabilities and capital
    dependence on debt: interest-bearing debt/ (total of liabilities and capital+ repurchase of notes receivable discounted+ repurchase of notes receivable endorsed)
    total assets turnover rate: sales/ total of liabilities and capital
    165 The genetic algorithm we used in solving general measurement method takes advantage in calculating this kind of function.

- Selection of the subjects is according to their share in the population global fitness and the scale of population is changing.

- The probability of genomes crossover is 0.8 and the probability of mutations is 0.08.

In order to improve the global search power, we design the mutation operator by stepwise approaching on the basis of uniform mutation.

Here we just use linear discriminant function and simple sigmoid function, but the result is satisfied. Furthermore, the evolution was stopped before final convergence although there are several local extremum on the way.

(2) Comparison

Here we compare general model with two popular methods, i.e. MDA (based on distance) and Logistic model The most common performance measure used to evaluate credit risk models is the intuitively appealing"number of correct predictions." Default risk models can err in one of two ways. The model can indicate low risk when, in fact, the risk is high, which is called as Type I error. And Type II error is on the contrary. Generally, success at minimizing one type of error necessarily comes at the expense of increasing the other type of error. Although there are so many techniques to valuate the discriminant models (Lachendruch & Mickey, 1968), the apparent error rate has been a commonly used estimator of the actual error rate in credit risk discriminant analysis since Altman (1968). For comparison with traditional methods, the apparent error rate is also used. Furthermore, one can find the average discriminant level of traditional models in Altman et al (1997) as in the following table (although some result looks good, detailed information is not given which is called as black box, for example model England-1).

Table Survey of international application of some main models

| Country | Model | Type I error rate (%) | Type II error rate (%) | Overall CR (%) |
|---------|-------|------------------------|-------------------------|----------------|
| Japan | 1 | 0.0-16.7 | 0.0-52.8 | |
| | 2 | | | 82.9-90.8 |
| Germany | 1 | | | 90.5 |
| | 2 | | ≥20 | 89 |
| | 3 | 5 | 16.3 | |
| | 4 | | 16.2 | 88.9 |
| England | 1 | | | 96 |
| | 2 | | Unacceptably high | 93 |
| | 3 | | | 64,54 |
| | 4 | | Unacceptably high | 83.3 |
| Netherlands | 1 | | | 70-80 |

| | | 2 | 5 | 10 | |
|---|---|---|---|---|---|
| France | 1 | | | | 87 |
| Finland | 1 | | 33-29 | 15-14 | |
| Spain | 1 | | | | 84,70 |
| | 2 | | | | 80-85 |
| Italy | 1 | | 4.9 | 9.7 | |
| | 2 | | 19 | 3.2 | |
| Austria | 1 | | 5.9 | 10.4 | |
| Greece | 1 | | 3.3 | 13.3 | 91.7 |
| | 2 | | 16.7 | 10 | 86.7 |
| Brazil | 1 | | 13 | 11.4 | 88 |
| India | 1 | | 12.9 | 13.4 | |
| Korea | 1 | | 2.9 | 22.8 | |
| | 2 | | 3.4 | 25 | |
| Singapore | 1 | | 22.7 | 6.5 | 86.8 |
| Uruguay | 1 | | 2 | 15 | |
| Turkey | 1 | | | | 97 |

Table 1 shows the comparison of different models' results. Although the overall percentages are above 90%, the correct rates of failed cases are all low[166]. However, the result of general model looks better.

Table 1 Classification Table

| | | | Predicted | | | |
|---|---|---|---|---|---|---|
| | | | WY[167] | | Correct % | |
| | Observed | | .00 | 1.00 | | |
| MDA | WY | .00 | 41199 | 209 | 99.5 | |
| | | 1.00 | 164 | 19 | 10.4 | |
| | Overall Percentage | | | | 99.1 | |
| Logistc model | WY | .00 | 40170 | 1238 | 97.0 | |

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[166] There will be a great change when we use paired sample design later.

[167] WY here is a variable of default which have tow values 1(default) and 0 (normal).

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 1.00 | 136 | 47 | 25.7 | |
| | Overall Percentage | | | | 96.7 | |
| (Wald stepwise) | WY | .00 | 40249 | 1159 | 97.2 | |
| | | 1.00 | 142 | 41 | 22.4 | |
| | Overall Percentage | | | | 96.9 | |
| Based on GPD model | WY | .00 | 37399 | 4009 | 90.3 | |
| | | 1.00 | 94 | 89 | 48.6 | |
| | Overall Percentage | | | | 90.1 | |

(3) Problem of Paired Sample design

In traditional credit risk empirical study, the sampling method named paired sample design was widely used since Beaver (1966) and Altman (1968). As is discussed in Ohlson (1980) it is not known what is really gained or lost by different matching procedures. Based on the empirical test on big sample, we find that sample selection problem like subjectivity may exist in paired sample design due to the "matching" procedures. The difficulty with consciousness maybe evades the objectification required by science. It is known that the failed cases are scarce in the real world, while the normal cases are everywhere. When the failed cases are obtained, there will be a big freedom for researcher to select the corresponding normal cases to complete the paired sample design, during which the subjectivity would be hardly avoided. Apparently, this kind of subjectivity will influence the result of empirical to some extent. This kind of influence will be exhibited in the following study.Here we just simply pair cases at random (randomly select 217 normal cases to match the 183 failed cases) and do not do any further artificial adjustment of the data sample. However, the changes of the traditional methods' results are apparent (see Table 2), which should be attributed to the paired sample design method rather than the traditional methods themselves.

Table 2 Classification Table of paired sample design

| | Predicted | | | |
|---|---|---|---|---|
| | WY | | Correct % | |

| | Observed | | .00 | 1.00 | | |
|---|---|---|---|---|---|---|
| MDA | WY | .00 | 166 | 51 | 76.5 | |
| | | 1.00 | 45 | 138 | 75.4. | |
| | Overall Percentage | | | | 76.0 | |
| Logistc model | WY | .00 | 183 | 34 | 84.3 | |
| | | 1.00 | 49 | 134 | 73.2 | |
| | Overall Percentage | | | | 79.3 | |
| (Wald stepwise) | WY | .00 | 181 | 36 | 83.4 | |
| | | 1.00 | 49 | 134 | 73.2 | |
| | Overall Percentage | | | | 78.8 | |
| Based on GPD model | WY | .00 | 183 | 34 | 84.3 | |
| | | 1.00 | 44 | 139 | 76.0 | |
| | Overall Percentage | | | | 80.5 | |

5, Ex post analysis

Credit degree function curve can be drawn after calculation as Figure 5. Due to too many cases in one figure, a zoomed out figure by cutting the middle part is given as Figure 6. For further analysis, we can draw the graph of ex post analysis. ex post figure is drawn as Figure 7, Figure 8. Similar figures can be drawn under paired sample design as Figure 9-11. (The three lines display the two types of error rates and credit degree.)

The decision maker can select the ex post cut-off on their special need to analysis the credit degree of each enterprise including new cases. Then there are two kinds of strategy to determine whether a case is "good" or "bad", furthermore how good or bad it is. One is to determine the credit degree according to the result of discriminant function. And the other is to find the credit degree of a certain case directly on the credit degree function or find its position on the credit function by introducing one kind of distance. Apparently, due to the diversiform

embodiment of the general model, the default probability analysis of traditional methods is just one example of the first strategy.
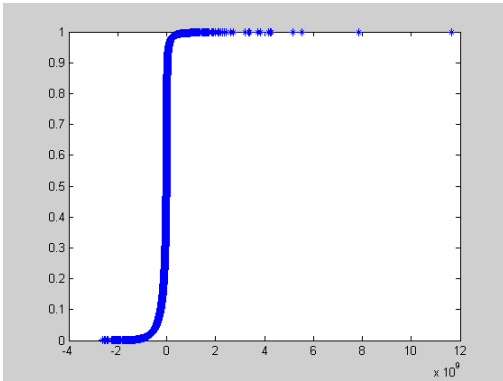



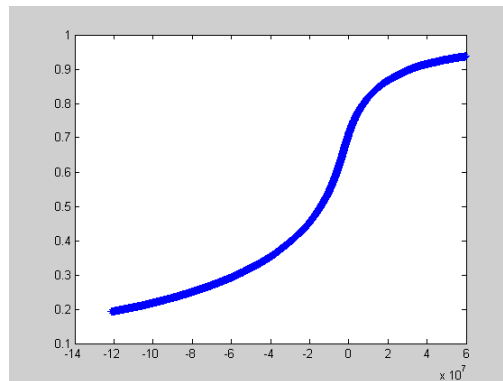Figure 5 calculated credit degree curve      Figure 6 the middle part of credit degree curve
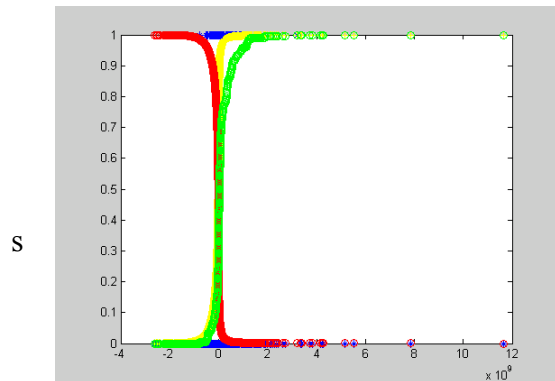
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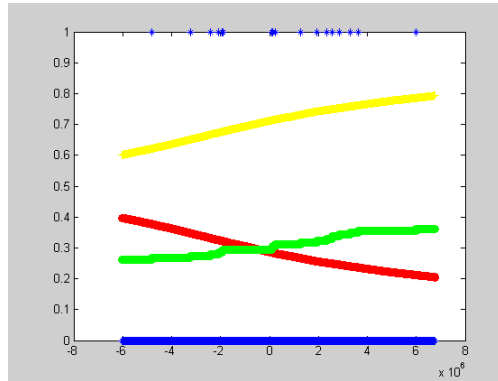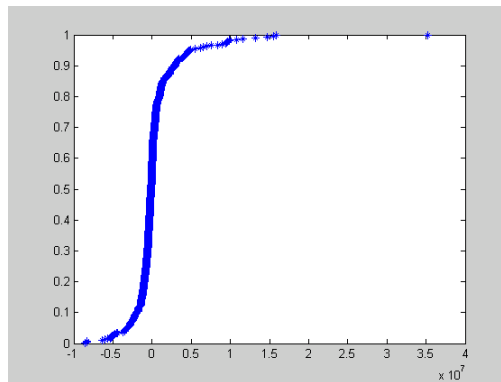Figure 7  ex post figure                    Figure 8  middle of ex post figure



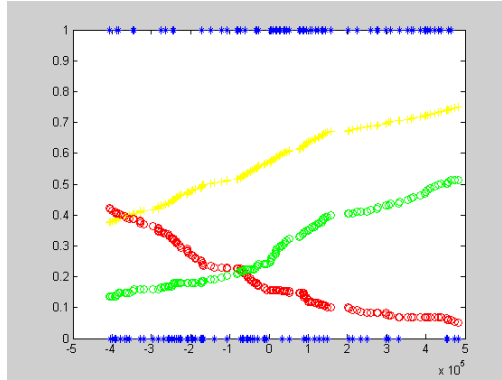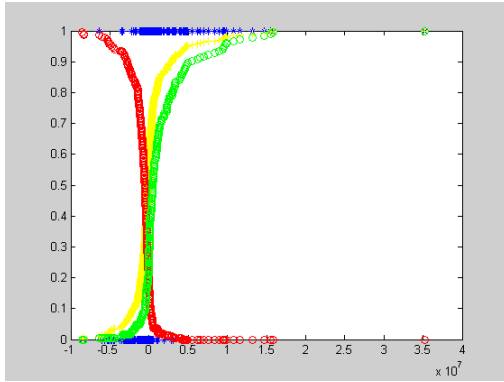Figure 9 calculated credit degree curve (Paired sample design)

Figure 10 ex post figure (Paired sample)     Figure 11 middle part of ex post figure

**2A-6  Conclusion**

We are devoted to improve the credit risk measurement models for SMEs, since it is important to SMEs' financing. On the basis of summarizing the existing models, this study establishes one new model or framework on credit risk measurement. Based on this framework, one can make traditional analysis given tradition assumption or explore the information of data owned without limit to any assumption. The new system may imply the common basis of methods at present and provides wide prospect for future development.

We can summary the model and the study mainly from the following aspects.

1. Suitable for SMEs

General Parametric Discriminant Model has the following advantages to SMEs' credit risk:

(1)  Quantitative analysis method by mathematic model and computer

  Although the mathematic model research on credit risk has existing more than half a century, we propose this model from the view that SMEs credit risk analysis and mathematic model match each other. The number of SMEs is huge and the credit risk data are abundant, which will benefit the establishment of mathematic models. And the mathematic models will speed up the lending work to SMEs, the number of which is big while the amount of each one is small.

(2) Strong adaptability without superfluous requirement of sample distribution and model variables

The model can be customized to kinds of dada source due to its embodiment, while the data of SMEs have the characteristics of great difference and low veracity.

(3) Low data requirement

Many existing credit risk models require the data of share price or the rating result of some rating organization, which are hardly available to SMEs.

(4) Diversiform embodiment

So many existing models can be included and new models can be deduced. This characteristic affords different decision makers (commercial banks, SMEs, guarantee organizations etc) not only wide selection space but also one common plat which will improve their cooperation around the SMEs financing.

2. Empirical test on large sample

Up to now empirical test of credit risk measurement on big sample is seldom. Our test finds some proof against distribution of credit risk data and the paired sample design method. Although the test carried out with sample from CRD is not perfect, the general model empirically exhibits its advantage.

3. Particular credit degree analysis

Instead of focusing on the probability and distribution, we propose the concept of credit degree which is based on the information of data sample and also compatible with statistic mode to some extent. Accompanied with ex post analysis, the credit degree analysis will enlarge the credit risk analysis and make more sufficient use of valuable information, which will approach more closely to the practice.

**References**

Altman E. I., "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankrupt," The Journal of Finance, vol.23 (September 1968), No.4, pp.589-610

Altman Edward I, R. G. Haldman, and P. Narayanan, "Zeta Analysis:A New Model to Identify Bankruptcy Risk of corporations," Journal of Banking and Finance, vol.1(1977), pp.29-54

Altman E, Eisenbeis R. A and Sinkey J, "Applications of classification techniques in business," Banking and Finance, JAIPress, 1981

Altman, Edward I. "Measuring Corporate Bond Mortality and Performance," The Journalof Finance, (Sep-1989), pp. 909-922.

Altman Edward I. and Narayanan Paul, "An International Survey of Business Failure Classification Models". Financial Markets, Institutions and Instruments, vol. 6, No. 2, 1997

Barth J. R et al, "Thrift institution failures: estimating the regulator's closure rule," Research in Financial Services (1989)

Beaver W. H., "Financial Ratios as Predictors of Failure," Empirical Research in Accounting,

Selected Studies, 1966, Supplement to vol. 4, Journal of Accounting Research, 1967, pp. 71-111.

Caouette,J.B., E.J.Altman,and P.Narayanan, "Managing Credit Risk: The Next Great Financial Challenge". John Wiley & Sons, New York, 1998.

Credit Suisse Financial Products, "CreditRisk+: A Credit Risk Management Framework". Credit Suisse, 1997

Edmister, Robert 0, 1972,"An Empirical Test to Financial Ratio Analysis for Small Business Failure Prediction," The Journal of Financial and Quantitative Analysis, Vol. 7, 1477-1493.

Fitzpartrick P. J, "A Comparison of Ratios of Successful Industrial Enterprise with those of Failed Firms," Certified Public Accountant, vol. 2(1932), pp.598-731

Glivenko V I "determinazione empirica di probabilita", Giornale dell'Instituto Italiano degli Attuari (4) , Sulla ,1933.

Gothe P, "Cedit bureau point scoring sheds light on shades of gray," The Credit World (May-June 1990), pp.25～29

Jackson,P.&W.Perraudin,2000,regulatory implications of credit risk modeling , Journal of Banking &Finance 24, p1-14

Jitsuo Goto, Analysis of Companies' Default and Their Accounting Information, Chikura Shobo Publishing Company, 1989

KMV, Credit Monitor Overview. San Francisco, KMV Corporation. 1993(mimeo)

Lachendruch, P. A., and Mickey, M. R. (1968) "estimation of error rates in discriminant analysis" Technometrics, 10, P.1.

Lundy M, Cluster analysis in credits coring. Crecit Scoring and Credit Control, NewYork: Oxford University Press, 1993

Madalla G. S, Limited-Dependent and Qualitative Variables in Econometrics, Cambridge: Cambridge University Press, 1983

Merton, R. C., "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates", Journal of Finance 29 (1974), 449-470

Myers J. H, Forgy E. Q, "The development of numerical credit evaluation systems," J.American Associate (1963),vol. 58, pp.789～806

Ohlson J. A, "Financial Ratios and the Probabilistic Prediction of Bankruptcy," Journal of Accounting Research (Spring 1980), Vol.18, pp.109-131

Robert O. Edmister, "An empirical test of financial ratios for small business failure prediction", the Journal of Financial and Quantitative Analysis Vol 7 No.2 Supplement: Outlook for the Securities Industry (Mar.,1972) 1477-1493

Spence S. R. et al, "Margin credit evaluation system," International Conference on Artificial Intelligence Applications on Wall Street, IEEE Computer society Press, 1991

Tam K. Y and Kiang M, "Managerial applications of neural networks: the case of bank failure predictions," Management Science (1992),vol. 38, pp.927～947

Tyree Eric W and Long J. A, "Assessing financial distress with probabilistic neural networks," proceedings of the Third International Conference on Neural Networks in the Capital Market,1995

Wilson, T., 1997a. Portfolio credit risk I. Risk Magazine, September.

Wilson, T., 1997b. Portfolio credit risk II. Risk Magazine, October.

Zhang Taowei, Mao Junhua, Zhou Zhizhong "Applications of Multi-Agent System for Credit Risk Management" Paper presented at Global Finance Conference 2002, Beijing, Peking University Press

Zmijewski M. E, "Methodological Issues Related to the Estimation of Financial Distress Prediction Models," Supplement to Journal of Accounting Research (1984), pp.59-82

Appendix Independent Samples Test

| | | Levene's Test for Equality | t-test for Equality | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

| | | of Variances | | of Means | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| $X_1$ | Equal variances assumed | 33.945 | .000 | 3.836 | 41589 | .000 | 29875.5603 | 7788.70638 | 14609.53685 | 45141.58373 |
| | Equal variances not assumed | | | 2.607 | 182.738 | .010 | 29875.5603 | 11460.86152 | 7262.92825 | 52488.19233 |
| $X_2$ | Equal variances assumed | 129.126 | .000 | 7.695 | 41589 | .000 | 89104.4946 | 11579.19432 | 66409.03743 | 111799.95173 |
| | Equal variances not assumed | | | 3.661 | 182.358 | .000 | 89104.4946 | 24340.48106 | 41079.30915 | 137129.68001 |
| $X_3$ | Equal variances assumed | 40.779 | .000 | 6.482 | 41589 | .000 | 288135.4828 | 44453.70088 | 201005.32198 | 375265.64370 |
| | Equal variances not assumed | | | 5.027 | 182.964 | .000 | 288135.4828 | 57319.05000 | 175044.16740 | 401226.79828 |
| $X_4$ | Equal variances assumed | 178.614 | .000 | 10.603 | 41589 | .000 | 245237.7870 | 23129.82942 | 199902.84935 | 290572.72466 |
| | Equal variances not assumed | | | 4.974 | 182.347 | .000 | 245237.7870 | 49301.52434 | 147962.97508 | 342512.59893 |
| $X_5$ | Equal variances assumed | 111.518 | .000 | 11.378 | 41589 | .000 | 473330.9212 | 41602.06570 | 391790.02345 | 554871.81888 |
| | Equal variances not assumed | | | 7.004 | 182.604 | .000 | 473330.9212 | 67582.75587 | 339987.41373 | 606674.42860 |
| $X_6$ | Equal variances assumed | 107.037 | .000 | -12.065 | 41589 | .000 | -185195.0963 | 15349.83007 | -215281.07652 | -155109.11616 |
| | Equal variances not assumed | | | -5.801 | 182.365 | .000 | -185195.0963 | 31923.21022 | -248181.42940 | -122208.76328 |
| $X_7$ | Equal variances assumed | 4.223 | .040 | 1.962 | 41589 | .050 | 2854.7822 | 1454.89984 | 3.14882 | 5706.41559 |
| | Equal variances not assumed | | | 1.951 | 183.593 | .053 | 2854.7822 | 1463.39539 | -32.45223 | 5742.01664 |
| $X_8$ | Equal variances assumed | 78.134 | .000 | 8.373 | 41589 | .000 | 12702.6102 | 1517.13501 | 9728.99462 | 15676.22578 |
| | Equal variances not | | | 3.976 | 182.356 | .000 | 12702.6102 | 3194.75315 | 6399.17604 | 19006.04436 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | assumed | | | | | | | | | |
| $X_9$ | Equal variances assumed | 125.263 | .000 | -9.265 | 41589 | .000 | -32560.7216 | 3514.24265 | -39448.70889 | -25672.73429 |
| | Equal variances not assumed | | | -3.508 | 182.224 | .001 | -32560.7216 | 9282.72473 | -50876.16747 | -14245.27570 |
| $X_{10}$ | Equal variances assumed | 237.660 | .000 | -10.351 | 41589 | .000 | -49111.8416 | 4744.76225 | -58411.67249 | -39812.01080 |
| | Equal variances not assumed | | | -4.403 | 182.284 | .000 | -49111.8416 | 11155.36933 | -71122.09350 | -27101.58979 |
| $X_{11}$ | Equal variances assumed | 4.179 | .041 | -3.489 | 41589 | .000 | -.4129 | .11834 | -.64483 | -.18093 |
| | Equal variances not assumed | | | -6.591 | 187.872 | .000 | -.4129 | .06264 | -.53645 | -.28931 |
| $X_{12}$ | Equal variances assumed | 1.810 | .178 | 3.394 | 41589 | .001 | .3558 | .10484 | .15033 | .56132 |
| | Equal variances not assumed | | | 6.533 | 188.103 | .000 | .3558 | .05447 | .24838 | .46327 |
| $X_{13}$ | Equal variances assumed | 11.236 | .001 | -4.448 | 41589 | .000 | -.8296 | .18650 | -1.19511 | -.46401 |
| | Equal variances not assumed | | | -12.327 | 195.005 | .000 | -.8296 | .06730 | -.96228 | -.69684 |