The Philippines

The Study for the Introduction of Credit Risk Database (CRD) in the Philippines

Final Report

March 2019

Japan International Cooperation Agency (JICA)

Japan Economic Research Institute Inc.

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Abbreviation

ADB	Asian Development Bank
BIR	Bureau of Internal Revenue
BPI	Bank of the Philippine Islands
BSP	Bangko Sentral ng Pilipinas
CB	Credit Bureau
CDA	Cooperative Development Authority
CIC	Credit Information Corporation
CPA	Certified Public Accountant
CRD	Credit Risk Database
DBP	Development Bank of the Philippines
DOF	Department of Finance
DPA	Data Privacy Act
DTI	Department of Trade and Industry
FINEX	Financial Executives Institute of the Philippines
FRSC	Financial Reporting Standards Council
F/S	Financial Statements
GCG	Governance Commission for GOCCs
GOCC	Government Owned or Controlled Corporation
LDP	Land Bank of the Philippines
McSS	Management consulting Support System
MORB	Manual of Regulations for Banks
MSMEs	Micro, small and medium enterprises
PCCI	Philippine Chamber of Commerce and Industry
PFRS	Philippine Financial Reporting Standards
PIDS	Philippine Institute for Development Studies
PSA	Philippine Statistics Authority
SBC	Small Business Corporation
SEC	Securities and Exchange Commission
SMEs	Small and medium enterprises
CTB	Chamber of Thrift Banks
TRAIN	Tax Reform for Acceleration and Inclusion
T/C	Technical Cooperation
UPSS	University of the Philippines, School of Statistics
WG	Working Group

1. Outline of the Study

1.1 Background of the Study

The Philippines has achieved rapid economic growth recently and more importance has been given to small and medium enterprises (SMEs) in employment and production. The government of the Philippines has supported the growth of the SME sector through the “The Micro, Small, and Medium Enterprise Development Plan 2011-2016” and its updated plan for 2017-2022. However, the SME sector in the Philippines did not become significant enough to support domestic economic activities.

One of the main issues for SMEs in the Philippines is funding. This seems primarily due to the inability of SMEs to prepare sufficient information for loan appraisals, making it difficult for financial institutions (FIs) to capture the credit risks of such SMEs. As a result, the outstanding loan balance to SMEs as of end 2017 was only PHP 213.8 billion, or only 3.3% of the total loan balance in the banking system (PHP 6,438.3 billion[1]).

In Japan, certain efforts have been made to address such funding problems of SMEs. Efforts include policy-based financing and a credit guarantee system. Credit Risk Database (CRD) is another recent initiative that aims to facilitate SME financing.

CRD is a database which contains financial statement (F/S) information and default information of borrowers, collected from banks and credit guarantee associations on an anonymized basis. It has been utilized by FIs to measure and analyze the credit risks of borrowers. At the same time, it has been used by the financial regulator to monitor credit risks at a macro level (see Table 1).

CRD, which was developed in Japan, is also expected to contribute to the enhancement of the credit risk management of the banking sector in the Philippines and to contribute to the improvement of the financial environment for SMEs.

In order to establish CRD in the Philippines, a vast amount of data, such as financial and non-financial information and default information of borrowers, is essential. Therefore, it is necessary to (i) examine whether it is possible to obtain sufficient amount of data with sufficient quality in the Philippines, (ii) identify the institutions which can provide data, and (iii) set up an operating body of CRD.

This Study was therefore conducted to examine the feasibility of introducing CRD in the Philippines by reviewing these issues.

[1] Total loan amount including loans to the medium enterprises is PHP 537.6 billion, 8.4% of the total loan outstanding. Government enacted the Magna Carta for Micro, Small and Medium Enterprises (RA No. 9501, Magna Carta in brief) requiring banks to extend 10% of total loan outstanding to MSMEs – 8% to micro and small and 2% to medium enterprises.

Table 1 Examples of usage of CRD in Japan

Users	Way of use
Private FIs	- Judge the management capability and level of credibility of borrowers (default probability, risk analysis) - Evaluate and review their in-house scoring models - Determine loan conditions, such as interest rates and terms of loan based on the scoring results - Give managerial advice to borrowers
Public FIs	- Judge the default probability and evaluate asset quality of SME loans when securitizing such loans
Credit Guarantee Associations	- Determine guarantee fee applied to borrowers upon issuing credit guarantees
Bank Supervision Authority	- Analyze the risk level and distribution of loan portfolio of FIs - Analyze dispersion of credit risk and the fund mobilization of SMEs - Evaluate the appropriateness of scoring models of FIs
Rating agency	- Use CRD evaluation results as benchmarks

1.2 Purpose of the Study

This Study was conducted to determine the feasibility of introducing CRD in the Philippines. Introduction of CRD as a public good is expected to facilitate SME access to finance. It is also expected to help financial authorities develop the financial infrastructure of the Philippines by expanding the information source to grasp the borrowers' business situation. It will further provide foreign enterprises, including Japanese firms actively doing business in the Philippines, with additional source of information to help identify credible business partners. Main researches of this Study are as follows;

- Review the actual application of the risk-based lending in the Philippines and identify issues
- Identify appropriate stakeholders for the establishment of CRD
- Conduct preliminary data examination to review the feasibility of CRD establishment, and
- Consider the operating body of CRD and prepare its operating plan
- Review the actual preparation and utilization of F/S in the Philippines and identify issues

1.3 Outline of the Study Implementation

This Study was implemented based on the "Minutes of Discussion on the Study for the Introduction of Credit Risk Database (CRD) in the Philippines between Japan International Cooperation Agency and Department of Finance" signed in June 2016 between the Philippines' Department of Finance (DOF) and the Japan International Cooperation Agency (JICA), under the supervision of, and in consultation with, the Philippine Working Group (WG), members of which are DOF, Bangko Sentral ng Pilipinas (BSP), Securities and Exchange Commission (SEC), and Department of Trade and Industry (DTI), with University of the Philippines, School of Statistics (UPSS) as an observer-member. The WG was established to: (i) monitor the progress and results of the study project, (ii) mediate related government organizations and private organizations while implementing the study, and (iii) give advice or suggestions to solve problems that might arise from legal regulations or data collection.

The contents of the Study are as follows;

Table 2 Work Schedule

Term / Activities		2017												2018												2019		
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
(1) Pre-survey, explanation and discussion about Inception Report to WG		■																										
(2) Review on the actual application of the risk-based lending		■	■	■		■	■	■	■	▲			▲															
(3) Identification of the appropriate stakeholders for the establishment of CRD			■										■															
(4) Preliminary data examination																												
(Phase 1) Verify the feasibility for collecting data, request 3 GFIs to provide customer data, and enter into the confidentiality		■	■	■	■	■	■	■	■	■	■	■	■	■														
(Phase 2) Assist three banks for dataset formation, examine collected data and define the default concept								■	■	■	■	■	■	■	■	■												
(Phase 3) Create the indexes from the data items examine correlation												■	■	■	■	■												
(Phase 4) Consider the combination of variables and perform the scoring trial by CRD model															■	■												
Summarize preliminary data examination result																■												
Review existing efforts for the enhancement of credit risk based lending																	▲									▲		
(5) Consideration of the operating body of CRD and preparation of its operation plan													■				■									■		
(6) Estimation of the effects of introduction CRD			■	■	■	▲ ■	■	■		▲	■	■	▲															
(7) Review on the preparation and use of financial statements			■	■	■	■	■	■	■	■		▲		■												▲		
(8) Preparation of the Progress Report (P/R)															■													
(9) Preparation of the Draft Final Report (DF/R)																	■			■					■	▲		
(10) Submission of the Final Report (F/R)																											■	■
Working group meetings		★			★					★			★													★		

■ Activities ▲ Reports ★ WG Meetings

Table 3 Contents of the Study

(1) Pre-survey, explanation and discussion about Inception Report to WG
- Conduct pre-survey and prepare inception report - Explain inception report to WG
(2) Review the actual application of the risk-based lending
- Review related documents - Select financial institutions (FI) to be surveyed - Interview survey with selected FI - Prepare report and submit to WG for discussions
(3) Identify the appropriate stakeholders for the establishment of CRD
- Study and discuss the stakeholders for establishing CRD - Confirm existence of competing organizations/functions - Prepare report and submit to WG for discussions
(4) Conduct Preliminary Data Quality Examination for the establishment of CRD

- Phase 1
    - Confirm data availability
    - Request to 3 GFIs to supply data
    - Conclude data secrecy agreement with 3 GFIs
- Phase 2
    - Assist 3 GFIs to compile data for CRD
    - Data verification
    - Study appropriate definition of default
- Phase 3
    - Compile indicators using the supplied data
    - Verify co-relationship among data
- Phase 4
    - Identify appropriate data set
    - Trial of scoring using Japanese CRD model
- Prepare report on Preliminary data examination
- Explain and discuss the contents of report

(5) Consider the operating body of CRD and prepare its operation plan
- Prepare plan to establish operating body of CRD - Explain plan to WG for discussions
(6) Estimate the effects of introducing CRD
- Prepare plan for the research - Analyze the effects of introducing CRD - Prepare report and explain result to WG for discussions
(7) Review the preparation and use of financial statements
- Review related documents - Conduct interview survey on preparation and use of F/S by enterprises - Identify obstacles and find solutions - Prepare recommendations to provide necessary conditions based on the survey for promotion of risk-based lending - Prepare report and submit to WG for discussions
(8) Progress Report
- Prepare and submit progress reports
(9) Draft Final Report
- Prepare the draft final report and explain it to WG for discussions
(10) Final Report
- Prepare and submit the final report

The study progress was shared with stakeholders through working group (WG) meetings.

The main agenda and discussion points of the WG meetings are as follows (The minutes of WG meetings are attached as Annex 1).

[1st Working Group Meeting (WGM)]	January 23, 2017
- Team explained about the Inception Report and the Work Plan and confirmed the schedule of the WGM. - JICA explained preparation process of the project and the importance and expected outcomes of this project. ✓ JICA Study Team explained about the project components and implementation schedule, and requested full cooperation from the Philippine WGM. Strong support for the project implementation was given by the WGM members. ✓ Team explained the outline of CRD, and data collection methodology. Team also explained details of CRD system to BSP, each of 3 GFIs and SEC at the request of WGM.(Team also informed each of them about the opinion given by a local law firm that the supply of anonymized data was not considered a violation of Data Privacy Act (DPA). Three GFIs required to have a clear confirmation from BSP and a letter from DOF requesting them to cooperate with the project implementation.)	
[2nd WGM]	April 9, 2017
- Team reported the result of the Review on the Risk-Based Lending in the Philippines. ✓ WGM participants shared their observations about the current situation of risk-based lending and discussed the contents of the report. The Chairperson of the WG commented that the introduction of CRD in the Philippines would contribute to the strengthening of the credit risk management of small and medium financial institutions and that the result of the report should be shared not only among policy makers but also with private financial institutions. ・Team explained the progress of other components. ✓ BSP commented that it would be necessary to consider inviting more FIs if data collected from 3 GFIs would not be enough for the creation of a database.	
[3rd WGM]	September 5, 2017
- Team requested WGM members to confirm the current status of submission of the Request for Technical Cooperation for year 2018 by the Philippine Government. ✓ Japan side reported that the Request for Technical Cooperation of the Project for introduction of CRD in the Philippines was not yet received although it was still ahead of deadline. Philippine side answered that they needed to confirm a clear output from the Preliminary Data Examination by CRD to make a decision. Both sides agreed to continue discussions about the submission of the request. ✓ Japan side explained the delay of necessary data collection and requested to revise the project implementation schedule. Philippines side agreed with the revision. - Team explained details about the situation of data collection from 3 GFIs. - WGM discussed about the implementation body and the plan for introducing CRD in the Philippines. ✓ Mr. Lester of DOF requested to postpone the related discussion until the next WGM, citing that that Philippine side was not ready to submit the request for technical cooperation to JICA. - Team explained the progress of the survey on economic impact of the introduction of CRD. ✓ UPSS reported the progress of economic impact analysis. BSP commented that it might be useful to try to analyze the current situation of loan extension by FIs to the so-called “missing middle.” - Others ✓ Team repeated the request to WGM members to send comments on the report of the Review on the Risk-Based Lending in the Philippines. ・ The Request for Technical Cooperation for year 2018 was signed by Undersecretary Mr. Beltran and sent to the Japanese Government based on the discussion between BSP and DOF after this WGM.	
[4th WGM]	December 6, 2017
- Report on the results of Preliminary Data Examination by CRD ✓ CRD Business Support Ltd (CRD-BS) made the interim report on the results of Preliminary Data	

Examination. CRD reported that construction of applicable model was possible although data used for the preliminary examination was limited.

- Discussion about the issues to be studied for the technical cooperation was made.
  - ✓ WGM discussed the structure of the body and the plan for implementing the technical cooperation project to establish CRD in the Philippines. Philippines side explained that budget allocation in the Government had been already finalized and that the budget necessary to implement the project was not included. Alternative ideas were discussed, including asking banking associations to be the tentative body in starting the project. WGM members decided to continue to study and discuss who shall be the operating body.
- Interim report about the Economic Impact Analysis was made.
- WGM agreed about the schedule ahead for implementing the remaining contents of the project.

[5th WGM]	January 25, 2019

- At the beginning, JICA HQ explained the evaluation progress on the request for the Technical Cooperation for CRD introduction submitted by the Philippine Government.
- Explanation about the outline (table of contents) of the draft final report
- Presentation on the result of the Preliminary Data Examination
  - ✓Although the data supplied was limited, the result revealed the probability of building a CRD model and its usability for credit analysis
  - ✓A participant from SEC requested for information on the necessary number for compiling a CRD model and the possibility of cooperation with CIC for data collection. Japan side explained that basic philosophies of the two approaches were completely different.
- Presentation on the result of "Research on the preparation and utilization of financial statements"

✓After the explanation of major findings of the research, DOF added that the research was implemented based on the needs to identify what organizations were involved in data collection and what kind of data was being collected.

- Other contents of the draft final report

✓Explanation and discussion about the operating body for preparing the full-scale implementation were done. DOF presented a basic concept of the body.

✓Philippine side also asked JICA the possibility of TC from JICA. It was agreed that the Philippine side would continue to study the selection of Project Manager (PM) and possible source of finance in the Philippine side.

- The schedule after this study

✓ The draft final report will be distributed to WG members on January 31 and comments will be submitted by February 8.

2. The Study Result

2.1 Review on the Actual Application of Risk-based Lending in the Philippines

In this Study, the actual applications of the risk-based lending (lending without collateral and guarantee) were reviewed and analyzed through interview surveys with 21 financial institutions (FIs) in the Philippines.

Throughout the research, it was identified that larger FIs, such as universal banks and commercial banks, actively provided unsecured loans based risk assessment results in general, while smaller FIs, such as thrift banks and rural banks, provided loans based on collateral, mainly because they were focused on loans for household consumptions.

The main findings and issues identified by the research are summarized as follows;

Table 4 Findings and issues in risk-based lending in the Philippines

	Larger FIs	Smaller FIs
Loan balance	- The loan balance has increased rapidly from PHP 4.2 trillion in 2013 to PHP 5.9 trillion in 2016. - The loan balance to "production by economic activities" has increased significantly from PHP 4.0 trillion to PHP 5.4 trillion, while the loan balance to "household consumption" has increased only slightly from PHP 0.2 trillion to PHP0.4 trillion. This is because larger FIs focus on loans to "production by economic activities," while their subsidiary FIs focus on loans to "household consumption."	- The overall loan balance of smaller FIs (rural banks) has slightly decreased from PHP 143 billion in 2013 to PHP 128 billion in 2016. - The loan balance to "production by economic activities," such as retail sales, wholesale and real estate business, has decreased from PHP 132 billion to PHP 95 billion while the loan balance to "household consumption" has increased from PHP 11 billion pesos to PHP 30 billion pesos. This is because smaller FIs tend to avoid providing loans to "production by economic activities" due to their credit risks. This is also because larger FIs mainly provide loans to "production by economic activities" while smaller FIs focus on loans to "household consumption."
Loan attitude	- Larger FIs are expanding unsecured loans to their customers (borrowers). - The portions of unsecured loans differ among FIs. For example, the proportion of unsecured loans of the Bank of the Philippine Islands (BPI) was 38.14% in 2015, while that of Security Bank was 83.2%. - The portion of secured loans of large FIs is comparatively decreasing, because the amount of collateral that FIs can take is also decreasing due to fierce competitions among FIs, in spite of the increase in overall loan balance.	- Smaller FIs, in general, show more conservative attitude in providing unsecured loans to borrowers. A rural bank answered that the portion of its secured loans was 70%, which was much higher than those of universal and commercial banks (20-60 %.) - Their loans both to "production by economic activities" and "household consumption" are mainly backed by immovable assets. Some loans for household consumption are repaid from the borrower's salary income.
Loan	- All of the larger FIs interviewed have	- About half of the smaller FIs

appraisals	their own internal rating system or credit scoring model (empirical model) and use them in loan appraisals. Some of them purchased scoring models from vendors and customized them to reflect the characteristics of their borrowers. The date of introduction of such models differs from bank to bank. Some FIs introduced such scoring models more than 10 years ago while other banks introduced them very recently. - After credit scoring or internal rating, FIs carry out detailed credit reviews, analyzing such factors as borrowers' financial status and situation, quality of management, quality of borrowers and their market conditions, in addition to the scoring results. Upon loan appraisal, FIs emphasize capturing the "real" financial status of borrowers.	interviewed answered that they did not have internal rating system or scoring model because of they had limited human resources to develop such systems. - Many smaller FIs are eventually unable to provide unsecured loans to their borrowers. The key determinant in loan decisions, appraisals and monitoring is the human relationships with borrowers.
Issues in risk-based lending	- Because the financial statements of borrowers do not always reflect reality, FIs need to estimate the sales and profits of borrowers using their account transaction records and inventories. As a result the transaction cost of loan appraisals tend to be big. - Some FIs, which do not have sufficient capacity, tend to provide loans to borrowers only because other FIs provided loans to the same borrowers. Thus, the improvement in scoring method is expected to enhance the credit risk management of such FIs.	- There are many smaller FIs that cannot capture credit risks of borrowers because they do not have internal rating systems or credit scoring models developed following financial regulations (e.g. Circular 855) (see Annex 2, p. 26). The introduction of CRD is expected to improve the credit risk management of smaller FIs, and thus, increase risk-based lending. - The borrowers of smaller FIs, especially micro and small businesses, cannot prepare documents necessary for loan applications, including financial statements.

(Note) Large banks include 21 universal banks and 15 commercial banks, middle banks include 70 thrift banks and small banks include 566 rural and cooperative banks.

The findings of the interview surveys with FIs in the Philippines were compiled in a report, which also include the Japanese experience in risk-based lending. The survey results were presented in the 2nd WG meeting in April 2017. The report was also presented in the WG meeting in September 2017 for final review.

"Review on the Risk-Based Lending in the Philippines" is attached as Annex 2.

2.2 Identification of Appropriate Stakeholders for the Establishment of CRD in the Philippines

This Study examined and identified the appropriate stakeholders for the establishment of CRD in the Philippines by taking the following steps:

(1) Explain the expected services and outputs of CRD to WG members, government organizations, financial institutions, auditing firms and academic institution, and get their comments

The expected services and outputs of CRD were explained in the 1st WG meeting in January 2017, with the participation of government organizations, GFIs and an academic institution. The participants then made discussions based on the explanations.

The expected services and outputs of CRD were also explained to 21 FIs in the interviews for risk-based lending, as well as two accounting firms and four government organizations.

Table 5 Major comments received during the interview survey

	Positive comments	Negative comments
21 Financial Institutions		
Government banks (3)	- CRD will be effective for evaluating the credibility of candidate borrowers with more objective scoring results. - It will contribute to improving the scoring results and also evaluating objectively the appropriateness of own scoring model currently used. - It will contribute to shortening loan evaluation period. - It will contribute to the optimization of interest rates and guarantee fees. - It will supply information to improve business management using such output as comparative analysis of financial situation of clients.	- The submission of borrowers' data might violate the data confidentiality obligations. - The analytical results of CRD might not be accurate because the quality of F/S submitted is not high. - In case CRD is managed by a public body, the operation of CRD might not be flexible enough. - Data stored in CRD should include those of non-banks.
Universal & commercial banks (large 6)	- CRD will be effective for improving own scoring models. - As the data coverage of SMEs is not sufficient in general, the outputs by CRD will give deeper analysis of SMEs. - CRD will be useful for industrial analysis, which will then contribute to determining loan policies.	- CRD might not be necessary because banks have their own scoring models (although they showed interest in the outputs of CRD). - BSP might use CRD outputs for bank supervision. - The analytical results of CRD might not be accurate because the quality of F/S of SMEs is not high. - As CRD is developed in Japan, outputs might not fit the situation in the Philippines. - In order to secure the confidentiality of

		the data, the operating body should either be a public body or a third party organization.
Universal & commercial banks[2] (middle ranked 4)	- CRD will be useful for evaluating the appropriateness of own scoring models. - CRD might be useful if it gives benchmark information for identifying the status of customers.	- Having confidence in their own scoring model, they are not so much interested in using CRD. - It is not sure how qualitative information is reflected in the analysis by CRD and whether the analytical results of CRD is accurate because the quality of F/S is not high. - Information, such as the operating body and the cost, should be given for them to determine if they would be part of CRD. - It is necessary to examine if the analysis by CRD can reflect the local characteristics of borrowers.
Thrift & rural banks (8)	- The outputs of CRD would be useful to improve their loan screening.	- The analytical results of CRD might not be accurate because the quality of F/S of SMEs is not high.
6 Government organizations and other related associations		
SEC	- Risk-based lending is expected to be encouraged as a result of the introduction of CRD. - CRD is expected to contribute to the industrial or regional analysis through its statistical information.	- The level of data coverage and the selection of the operating body should be carefully examined.
CIC	- CIC might be able to support data collection and is interested in the expected outputs. - CRD might supplement the information supplied by CIC.	- The amount of the data collected from FIs might be limited. - The cost of human resources for data input and analysis might be big.
PCCI & industry association (3)	- Anonymized data collection would encourage FIs to provide their customer data. - Objective credit analysis based on statistical analysis would change the loan attitude of FIs and SMEs would be able to have better access to credits. - The outputs of CRD will contribute to the improvement of access to finance by SMEs.	- The analytical results of CRD might not be accurate because the quality of F/S of SMEs is not high. - The costs that SMEs have to pay for loans might increase after the introduction of CRD. - Small financial institutions would need subsidies for joining CRD. - The operating body of CRD should include representatives from private sector.

[2] Large banks are those ranked within top 10 in terms of size of total assets amount.

Accounting firms & CB (3)	- CRD might contribute to the enhancement of land registry, especially in local areas as a result of the increase in risk-based lending. - The quality of the existing data stored at CIC is not reliable. It is desirable if CRD can provide sufficient data by which sector analysis can be conducted.	- The data collection from financial institutions would require considerable time and effort, as they are not willing to provide such data in view of data confidentiality obligations. - The data being collected by FIs should be utilized more efficiently from the social benefit point of view. - Government organizations should consider interconnection among existing database.

(Source) JERI based on the interview survey results.

As is shown in the table above, majority of FIs were interested in the use of CRD. Universal and commercial banks considered that the CRD will be useful in evaluating the objectivity of their own scoring models. Meanwhile, thrift and rural banks expected to use the scoring results of CRD to improve their loan appraisal procedures.

Although many banks were concerned that providing data to CRD might be against Data Privacy Act and Manual of Regulations for Banks (MORB) of BSP, the consulted local law firm[3] confirmed that as it is not the information of individual borrowers but the statistical data, there is no need to worry about the violation of the regulations. It will be necessary to explain to each financial institution about this observation when inviting them to join the CRD in the near future.

Many banks also expressed concern that outputs of CRD, which were to be built based on unreliable F/S of the enterprises in the Philippines, might not be credible either. Thus, it will be necessary to explain to them that the use of the data analytical outputs of CRD will be acceptable as they are calculated based on statistical theory, such as the Law of Large Numbers.

(2) Collect information of the data availability at the potential data providers

In the Philippines, Credit Information Corporation (CIC), which was established[4] by "An Act establishing the Credit Information System, and for Other Purposes" in 2008, has been collecting borrowers' data from FIs on mandatory basis.

CIC operates a database that stores about six million datasets. CIC is tasked to collect credit data (positive and negative credit data) from all financial institutions, as well as other potential sources of credit information, including retail, trade utility and other service and product providers. CIC provides such information to several Special Accessing Entities (SAEs) or accredited credit bureaus for which CIC allows access to the collected data and information of each borrower. SAEs then provide credit reports or credit scoring of borrowers to FIs.

Although CIC stores "credit data" of corporate borrowers (including financial data, such as

[3] SyCip Salazar, Hernandez & Gatmaitan.
[4] Credit Information System Act of 2008 (RA9510)

income, expenses and assets) and "negative information", such as past due or defaults, the credit data of corporate borrowers do not necessarily include very detailed information of F/S. Hence, it was concluded that the datasets of CIC do not provide many financial indicators of corporate borrowers that are necessary for the establishment of the CRD scoring model.

Therefore, at the beginning of this Study, the Study team approached financial institutions, such as universal and commercial banks, as potential data providers. However, it was also considered difficult to collect borrowers' data from private financial institutions, as they were reluctant to provide data of their borrowers even on an anonymized basis. Then, the Study team expected three GFIs as the main data providers upon conducting this Study.

At the same time, the Study team continued explaining the expected services and outputs of CRD to the FIs other than the GFIs in the Philippines, as they can still be potential data providers in the future.

The Study team also collected information from these FIs, such as the number of borrowers, outstanding loan balances and availability of financial and non-financial information of borrowers.

Through interviews, it was identified that each larger FI stored more than 10,000 data sets of borrowers in their database while the number of borrowers at each smaller FI was about 1,000. FIs store the information of borrowers in the form of paper documents.

It was also noted that some large FIs were reluctant to provide data to CRD mainly because they had their own scoring models. In contrast, medium and small-sized FIs were more willing to be a member of CRD and provide their borrowers' data, because many of them did not have reliable scoring models.

However, the volume of borrowers' data at smaller banks was limited. The number of data sets at thrift banks ranged from 2,000 to 10,000 while that of middle-sized universal and commercial banks were 5,000–10,000. Therefore, it would be necessary to invite many banks to be members of CRD before it would be officially introduced.

Many interviewees asked the study team to clarify (i) the methodology of data anonymization, (ii) details of feedback information from CRD, and (iii) member fee or charge to be paid for the use of CRD outputs.

(3) Identify the conditions under which data providers can/cannot provide data

[Legal issues in data provision]

In this Study, compliance with the "Data Privacy Act[5]" (Republic Act No. 10173) was assumed to be the biggest barrier for potential data providers (refer to DPA, Section 19 and its Implementing Rules and Regulations, Section 37).

[5] An act signed by the president as of August 15, 2012 protecting individual personal information in information and communications systems in the government and the private sector.

DPA prohibits FIs to disclose data related to the individual borrowers (Section 3, 4), except for the purpose of academic research or statistical analysis (Section 19, and Implementing Rules and Regulations of Republic Act No.10173).

In Japan, such data is collected on an anonymized basis and information by which borrowers can be identified is not included in the data. In order to avoid the violation of DPA and other data confidentiality regulations, it was decided that data provided by the three GFIs to CRD was anonymized (the information by which borrowers were identified are deleted). However, the GFIs requested JICA for a legal opinion to confirm whether providing anonymized data would not violate any rules.

The Study team then requested a lawyer in the Philippines for its legal opinions on the Data Privacy Act and data confidentiality, asking whether it was against acts, rules and regulations to provide anonymized information of borrowers to CRD. The lawyer[6] then answered that it was not against such acts, rules and regulations, mentioning as in the box below.

GFIs also expressed their concern about violating BSP rules (MORB[7], Section X304.12, in particular) by which FIs are required to keep borrowers' data confidential. Through consultations, BSP confirmed that providing anonymized data to CRD did not violate confidentiality rules described in MORB.

Some GFIs were also concerned that taking the data out of the Philippines for the trial construction of a scoring model might also be against the rules.

In addition, GFIs were concerned that it might be possible to identify the names of borrowers from anonymized data, using information such as figures of F/S and address. In response to these concerns, the Study team explained the details of the anonymization method. The Study team did not include some companies' data, which FIs considered inappropriate to provide to CRD, in the database. It was further agreed that CRD would not disclose even the processed data without the prior approval of FIs.

As a result, GFIs agreed to provide data to CRD in this Study.

Data Privacy Act (DPA) protects only "personal information," Thus, the DPA does not apply to information regarding corporate entities. Considering that once anonymized, the information will no longer be sufficient to enable the identification of an individual.

[Other issues in data provision]

In the meeting with FIs, the Study team explained that members of CRD in Japan are required to supply data and pay a fixed annual membership fee, in exchange for the use of a

[6] The same law firm as the footnote 3.
[7] Manual of Regulations for Banks, issued by the BSP.

variety of services, including scoring services and statistical analytic outputs of borrower enterprises.

However, many larger FIs in the Philippines expressed their reluctance to provide data to CRD, saying that the benefits they could enjoy from CRD seemed limited compared to smaller FIs, as they provide more data than smaller ones[8].

Therefore, when establishing CRD in the Philippines, it seems necessary to explain the following options;

(ii) In case membership fees are the same among financial institutions, the unit cost of scoring is lower for large data-supplying FIs than small data suppliers.

(iii) It might be possible to lower the annual membership fee for large data suppliers.

(iv) The membership fees can be determined based on the services used by financial institutions.

(v) It would be possible to expand the loan market by using more appropriate data on interest rates, guarantee fees or pricing information of SME loan securities based on analytical data to be supplied by CRD.

(vi) Large financial institutions can also benefit from CRD by using tools such as McSS[9], allowing them to expand credit amounts, improve risk management, and increase profit.

(4) Review of similar efforts in the Philippines

One of similar efforts to establishing CRD is CIC, which collects financial and non-financial information of borrowers (individuals, corporations, partnerships and cooperatives), and stores such information in its database. CIC provides information of borrowers to several Special Accessing Entities (SAEs) or accredited credit bureaus (CIBs) for which CIC allows access to the collected data and information of each borrower. SAEs then provide credit reports or credit scoring of borrowers to FIs.

However, it should be noted that CIC is a database which is constructed based on a different concept from that of CRD.

CIC provides the credit information of individual borrowers based on the credit data and negative data collected from financial institutions. On the other hand, CRD is a database which provides a scoring model constructed based on statistical analysis on the financial, non-financial and default data of borrowers. Using CRD, it is possible to estimate the default probability of borrowers, but it does not give credit or overdue information of individual borrowers.

CRD also provides a variety of services using analytical outputs of financial data. Analytical

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8 This is a problem recognized as a "concern about free riders". But it could be solved by limiting the usage of data only to those that participate in the system as a member, by charging different fees reflecting the difference of volume of source data supplied.

9 McSS: Management consulting Support System prepared by CRD-BS as a tool for diagnosis of financial situation of SMEs

outputs include the risk analysis of borrowers and their comparative analysis by business sector, by region and by size of business.

The table below explains the differences in types of credit information system.

Table 6 Comparison of CIC, CIB and CRD

Organization	CIC	CIB	CRD
Legal background of data collection	CISA in 2008 (CISA under Republic Act 9510)	Accreditation by CIC	Nil
Objective	Minimize the probability of default and NPL	Same as CIC	Facilitate the supply of risk-based lending
Collected data	Individual data with name (existing and additional data provided by FIs based on CISA)	Same as CIC, including loan amount and NPL amount F/S data collection is rather limited.	Anonymized data provided by members based on agreement, including F/S data in detail which is linked with default information
Access to the data	Data access is permitted to users, including individual data with name. Borrowers are also permitted to review his/her individual data saved in the database. Aggregated data is supplied on anonymized base.	Users are allowed to access data being put in reference by CIC, but with strict rules for the utilization.	Users cannot access individual data of borrowers. (Only anonymized data is stored in the database.)
Products/ services	Credit report with credit profile and scoring result Scoring is made based on the qualitative analysis and credit history. Default information is also available.	Same as CIC Credit report and/or scoring information about each company in question is used for credit risk control. Default information is available. Rating information of certain major enterprises is supplied for bond issuance purpose.	Credit rating/scoring model is supplied based on the accumulated F/S data, non-F/S data, default data, etc. Thus, default probability linked with analytical results of F/S data and credit rating is supplied. Various type of financial statement analysis or risk analysis, such as by industrial sector, by region, by size of

			enterprises are available.
Other characteristics	Special law exempts CIC from the obligation imposed by the Data Privacy Act. Some difficulties in data collection are still observed.	4 CBs mentioned below are allowed access to CIC data as Special Accessing Entities (SAEs), namely, CIBI, Compuscan, TransUnion and CRIF.	Flexible usage of analytical outputs is possible as no particular regulation on data secrecy is imposed.

(Source) JERI based on reports by ADB Working Paper Series No.547 October 2015, "Role of the Credit Risk Database in Developing SMEs in Japan: Lessons for the Rest of Asia" by Satoshi Kuwahara, Naoyuki Yoshino, Megumi Sagara, and Farhad Taghizadeh-Hesary.

(5) Identify institutions that will participate in the establishment of the CRD

In this Study, it was necessary to collect borrowers' data from financial institutions in order to conduct preliminary data examination.

Although CRD was established in Japan by collecting a huge amount of data from credit guarantee associations, the Study team could not identify a single company or institution which can provide such borrowers' data in the Philippines.

It was also considered difficult to collect borrowers' data from private financial institutions, as they were reluctant to provide data of their borrowers even on an anonymized basis.

Then, through prior JICA discussions with DOF and BSP, three GFIs (DBP, LBP and SBC) were confirmed as the core data providers for the CRD construction[10]. The three GFIs are also expected to be the core members when CRD is established.

In this Study, no private financial institutions, which are potential members of CRD, were identified. The provisional CRD operating body to be established by WG would take necessary preparatory processes for the full-scale and permanent operation. The processes would be as follows:

(i) WG determines the provisional operating body (or the technical cooperation (T/C) implementing agency in case a T/C project is conducted)

(ii) The provisional operating body (or the T/C implementing agency) explains the benefits and usability of CRD to relevant industry associations using the results of preliminary data examination.

(iii) WG (or the new WG of the T/C project in case a T/C project is conducted) will identify the pros and cons of each option of the operating body, narrowing down the view on the formation of the permanent operating body.

[10] The share of total loan amount extended by two of the GFIs, namely LBP and DBP, was 11% of total loan amount of the Philippine banking sector as of end 2017.

(iv) The operating body (or the T/C implementing agency) invites major private banks who have fairly large number of customers' data as founding members of CRD.
(v) The body (or the T/C implementing agency) starts the operation of CRD, in cooperation with three GFIs and founding members.
(vi) The body (or the T/C implementing agency) organizes seminars with the support of WG members and other bankers and FIs association to invite more private FIs to be CRD members.

When inviting private FIs, it is essential to use the result of preliminary data examination. This report would explain to FIs that it is possible to estimate the default probability of borrowers using their financial and non-financial data. Service tools, such as McSS, by which FIs can carry out the financial or sector analysis of borrowers, are also useful to convince private FIs to participate in CRD.

2.3 Preliminary Data Examination

Preliminary data examination was carried out by CRD Business Support Ltd. (CRD-BS) in order to review the feasibility of CRD establishment in the Philippines.

CRD-BS collected 3,440 datasets of F/S and 133 sets of default data from the three GFIs. Data analysis was made after checking the quality of data, examining the diversification, insufficiency and consistency among items.

In the preliminary data examination study, logit single regressions found 14 continuous variables and 39 discrete variables to have statistically significant relation with default data. Furthermore, multiple logit regression incorporating such continuous and discrete variables return several models with high Accuracy Ratios.

Through the preliminary data examination, it was confirmed that:

(i) It was feasible to construct a scoring model based on the financial data of borrowers in the Philippines as the result of logit analysis.
(ii) It was necessary to reorganize the scoring model used in Japan to reflect characteristics of data in the Philippines, such as the low reliability of the F/S.
(iii) The feasibility of the analytical outputs of the model might be improved if factors, including year of the data, difference of industrial sector, type of enterprises and business area/region where enterprises had been doing business, could be included in addition to financial data.
(iv) It was necessary to collect as much data as possible to increase the credibility of the analysis by eliminating the insufficiency of number of data, limited number of default data in particular. If more data could be collected, analysis by industrial sector or by region could be available and the discrete method of analysis could become more precise, allowing for

the construction of more stable model.

The Preliminary Data Examination Report is attached as Annex 3.

2.4 Consideration of the Operating Body of CRD and Preparation of its Operation Plan

(1) Operating body of CRD in the Philippines

The preferred candidates for the operating body of CRD as a public good in the Philippines are either (i) non-profit organizations, (ii) educational organizations or public research institutes that are not prohibited from the use of individual data by DPA, or (iii) government organizations or agencies.

In case of (i), the operating body would be a non-profit organization, such as non-stock corporation or cooperative, run by bankers' association with partial capital participation by the government and majority by financial institutions. The candidate operating bodies in case of (ii) are research bodies such as the University of the Philippines, School of Statistics (UPSS), while the candidates in case of (iii) are Government Owned or Controlled Corporations (GOCC) under the control of government organizations such as SEC. A comparison of the three candidates as operating bodies is as follows;

Table 7 Comparison of the candidates of operating body for full-scale implementation

	Non-profit organization	Educational or research institute	Government organization
Expected type of Organization	- Non-stock corporation or cooperative or organization established with government capital participation (but less than 50%) - The organization is established by bankers' associations, such as Chamber of Thrift Banks.	- UPSS or PIDS (or any other organization jointly established by member banks, information corp., accounting offices, consultants, and/or media)	- Established as a Government Owned or Controlled Corporation (GOCC) by SEC (CIC) or other agencies based on a special law with majority of capital being held by the Government
Legal backbone of collecting data from financial institutions	- Based on private contracts among participants - Subject to Corporate Code, DPA, etc.	- Based on private contracts among participants - Subject to Corporate Code, DPA, etc.	- Based on a special act on the GOCC
Budget and cost sharing	- Revenue mainly from membership fees and service charges	- Revenue from membership fees and service charges in addition to government subsidiaries	- Budget of the Government or SEC
Staffing	- Staff members are recruited using the budget mentioned above.	- Existing staff members of educational or research institute are assigned to the organization.	- Staff members are dispatched in principle from government organizations such as SEC.

Advantages	- It is easier to establish the operating body compared to the GOCC. - The operating body is expected to provide more useful analytical tools responding to the various demands of member FIs.	- It is not necessary to establish a new operating body (because the existing bodies implement CRD), - The operating body has a specialty in data processing, data collection and statistical analysis.	- It is possible to utilize the data stored at SEC and thus, the data collection costs are smaller. - The operating body can have a legal mandate to collect data from FIs based on its special act. - Financial constraints are smaller, as the operating body receives budgetary support from the government. Thus, the membership fees can be lower.
Disadvantages	- It is necessary to secure sufficient financial resources by annual membership fees and user charges to cover personnel expenditures and other expenditures.	- The revenue from membership fees and user charges has to be clearly separated from other revenue of the research institute. - It is necessary to establish an independent implementing organization, which is separately established from the institute to implement full-scale services.	- It will take time to prepare the special law and to establish the operating body. - It might be difficult for the operating body to provide services flexibly, corresponding to the demands of FIs. - In terms of collection of data, the same difficulties that CIC has experienced might happen.

(Source) JERI based on ACCIS "The evolution of credit bureaus in European countries" by Anna Matuszyk and Lyn Thomas and explanation by CRDBS.

As is shown in Table 7, a government organization has advantages in terms of data collection and operational costs. However, because a new legal foundation is required, it would take time to set up the government organization as the operating body[11]. In addition, it might be difficult for the operating body to collect data of borrowers from FIs, even though it has a mandatory power. This is because FIs would be reluctant to bear the additional burden of data submission.

In case of non-profit organization, such as a non-stock corporation, establishment procedures are much easier. Such organization is expected to be more flexible in responding to various demands of member FIs. However, securing sufficient amount of members and operational budget is one of the big issues for the non-profit organization, as such organization is supposed to finance its operational expenses by the revenues from membership fees and user charges.

Research institutions, such as UPSS, are also candidates. One of the advantages of such research institutions is that they have strong expertise in statistical analysis. However, it will be

[11] When establishing a GOCC, the ministry/agency in charge of the establishment shall prepare and submit a proposal for it to the Governance Commission for GOCC (GCG) and having the endorsement from GCG, apply registration of the GOCC to SEC (RA No. 10149, Chapter VI, Sec.27)

necessary to set up a separate operating body when CRD is operated on a full-scale and permanent basis.

(2) An idea of CRD Implementation plan for a permanent operating body

In this section, the report presents the functions of the CRD operating body and its financial plans after CRD has started full-scale operations under the assumption that full-scale operation of CRD will be done by a non-profit organization. This is a preliminary idea for one of the options on the permanent operating body. The description and figures used here are just for illustrating the possible features and the actual plan, and may not be necessarily confined to the description and figures stated.

1) Functions of CRD

The CRD operating body collects data from member FIs and provides them with scoring models. The operating body also provides a variety of services to members.

Table 8 Major functions of the CRD operating body

Routine works	- Maintenance of the database - Data management, including data collection, data cleansing and inputs
Non-routine works	- Verification and revision of the database - Periodical verification and improvement of the scoring model - Revision and modification of service tools
Business activities	- Marketing activities to increase the number of new member FIs - Advertisement activities, including the implementation of seminars and awareness campaigns of CRD

(Note) These are the hypothetical functions of the CRD operating body prepared based on the functions of CRD Association in Japan.

2) Organizational structure and financial plan of the CRD operating body.

After CRD has started full-scale operations, the CRD operating body would finance its operational budget with the revenue from membership fees and user charges and in principle, it may not be required to receive any governmental budget support or subsidy.

The main revenue sources of the CRD operating body after the start of full-scale operations would be the membership fees and user fees for the CRD services, while the main expenditures are the personnel expenditures and IT system operational costs.

The personnel/staff of the CRD operating body at the preliminary operational stage may be as follows:

- Chairperson (permanent): 1
- Board members (part-time): 2
- Officers / experts (permanent)
  - Experts for database management, operation and development of service tools: 3
  - Marketing specialist: 1
  - Administrative officers for accounting, HR, and other general issues: 2

Two board members may be assigned from the government or member FIs. The CRD operating body pays only per diem[12] to the board members.

Table 9 Provisional annual financial plan of the CRD operating body

Expense items	Unit price (USD)	Quantity	Amount (USD)
Personal fee			
- Chairperson	52,124/year	1	52,124
- Data management experts	17,374/year	3	52,122
- Marketing specialist	15,432/year	1	15,432
- Administrative manager	17,374/year	1	17,374
- Administrative staff	6,885/year	1	6,885
IT System operation cost	5,000/month	12	60,000
Office rental fee	21/m^2/month	125m^2	31,500
Utilities cost	42/m^2/month	125m^2	63,000
Per diem for board members (maximum limit amount defined by GCG EO No.24[13])	2,255/year	2	4,510
Total annual fixed cost			302,947

(Note)This is a hypothetical annual financial plan of the CRD operating body immediately after establishment. This financial annual plan includes only minimum necessary expenses.

(Note) Personnel fee and office cost are based on the Comparative Research of Costs of Investment in Asia and Oceania by JETRO (as of March 2018), and office space/staff is calculated as 17.8 m^2 based on the data supplied by the Japan Facility Management Association (average of foreign enterprises).

Membership in CRD may be divided into three categories, considering their contribution to the supply of data to the CRD operating body: (i) founding members, (ii) official members and (iii) quasi members. If there are 30 members in total, they are going to share the total annual fixed

[12] Refer to GOCC Governance Act No. 10149 and GOG Executive Order No.24.

[13] GCG Execution Order No.24 (February 10, 2011), Section 9.

costs as the membership fees. As the total annual fixed cost is estimated to be USD 302,947, the membership fee per user is assumed to be USD10,000.

Table 10 Provisional member categories and fee levels

	Supply of data	Membership fee	Service charge per service use
Founding member	Yes	USD 10,000/year	None
Official member	Yes	USD 10,000 /year	USD 1.0 per use
Quasi member	No	USD 10,000 /year	USD 3.0 per use

(Note) Initial members will be three GFIs that have cooperated with this survey. In the case of CRD Japan, a one-time Admission Fee is waived for initial members and they pay an annual membership fee of USD 30,000. Official/Quasi members pay a one-time Admission Fee (USD 30,000) and annual Membership Fee proportionate to their data contribution. For all members, additional fees are required for consulting and other extra services.

Revenues from service charges would directly increase the profits of the operating body. Initial members are exempted from payment of service charges because of their contribution to the initial database formulation. Assuming that there are seven official members and 20 quasi members and official members use services 2,000 times a year and quasi members use services 1,000 times a year, total annual revenue will be USD 374,000. The profit may be reserved for future investment or large-scale of restructuring of database and service tools.

Table 11 Estimated annual profit

Revenue (a)	374,000
Membership fee	300,000
Service charge	74,000
Expenses (b)	302,947
Profit (a-b)	71,053

3) Action plan for the full-scale operating body of CRD

Before entering into full-scale implementation, it is essential to enhance the database as data is collected from financial institutions in addition to the three GFIs. Construction of scoring models and service tools is also necessary.

It is important to gain a sufficient number of members during the preparation phase, in view of the assumption that the operating expenses of the CRD operating body is going to be financed by membership fees and user charges after full-scale implementation has started.

The preparation phase is expected to take about three years as there are many financial institutions that have not yet stored the financial data of their borrowers into their database. Such financial institutions might not even collect some of the essential data of their borrowers.

Preparation phase

- Build a database and set up a data collection mechanism.
- Construct a scoring model and prepare service tools.
- Review and amend the database and the scoring model.
- Prepare a plan for establishing the CRD operating body.
- Gain and increase members.

Full-scale implementation

- Establish the CRD operating body.
- Continuously review and update the database.
- Successively revise and amend service tools.
- Review the scoring model.
- Enhance the operational structure of the CRD operating body.

4) Suggestion for technical support

The introduction of CRD is a new trial in the Philippines and quite a number of expertise will be required. Thus, it is desirable for the Government of the Philippines to build a consensus among stakeholders to establish an operating body and prepare the necessary infrastructure and framework for collecting data and compiling database, etc. and after that, request a Technical Cooperation (T/C) from Japan.

The Objective of the Technical Cooperation Project, expected results and major activities are shown in Table 12 below.

Table 12 An idea for the Project Outline of the Technical Cooperation

Project period	Three years
Project objective	The introduction of CRD in the Philippines
Overall goal	Credit Risk management capacity of FIs is enhanced and loan extension environment to SMEs by FIs is improved.
Outputs	Output 1: Database of CRD is built and data collection mechanism is established. Output 2: Prototype of scoring model is constructed and variety of service tools is prepared. Output 3: Renewal of the database and revision of the scoring model is implemented. Output 4: A plan for operating body to run CRD in long-term is built.
Activities	Activity 1; - Complete the business flow to collect data from member FIs successively. - Conduct campaign to invite new members to participate in CRD. - Establish the operational flow of collecting data successively from members. Activity 2: - Build a database.

	- Prepare a prototype scoring model using the data collected. - Develop a variety of service tools. Activity 3: - Renew and enhance database adding data collected from new members FIs. - Review the scoring model. Activity 4: - Assist the establishment of the operating body of CRD. - Draw management plan of CRD. - Prepare a provisional manual for maintaining the database and the procedure to include new dataset from new members and improve the database. - Prepare a provisional manual for reviewing and evaluating the scoring model.

2.5 Estimation of the Effects of Introducing CRD in the Philippines

The introduction of CRD in the Philippines is expected to result in the increase of loans granted to SMEs, especially the increase in loans without collateral. Effects of the introduction of CRD would be brought about through (i) the increase in loan balances or (ii) the increase in unsecured loans. However, quantitative analysis of such impact is very difficult, as it is not clear how many financial institutions will introduce CRD at this moment and how exactly financial institutions will change their behavior through the introduction of CRD.

Even in Japan that has been operating CRD for years, the outcomes have not yet been analyzed quantitatively. In Japan, it was confirmed that loan amount with credit guarantee accepted by the Credit Guarantee Association decreased significantly and the loan amount without collateral has increased. However, as other measures, such as the application of easy monetary policy, relaxation of credit guarantee extension, and implementation of SME promotion measures were implemented at the same time that CRD was introduced, the outcome could not be solely attributed to the introduction of CRD.

Thus, we mainly consider the qualitative outcomes rather than quantitative analysis. The estimated amount mentioned below shall be considered as the maximum figures because they are calculated with the assumption that all the Philippine banks will introduce CRD immediately.

The basic logic for estimation is as follows; (i) the quality of F/S of SME are not sufficient and the transaction costs of financial institutions are big and (ii) because of such constraints many banks are rather reluctant to provide loans to SMEs (due to information asymmetry problem). However, with the introduction of CRD, it becomes possible for banks to measure the probability of default of a company through scoring. As a result, information asymmetry problem will be addressed and banks are expected to increase their loans to SMEs.

For more details of the estimation, please refer to “Effects of Introducing Credit Risk Database in the Philippines (draft)” attached as Annex 4.

In “Review on the Risk-Based Lending in the Philippines” conducted in this study project[14], it is reported that small scale FIs have been refraining from extending risk-based lending and highly depend upon granting loans with collateral because they are weak in loan appraisal capability. In addition, since they have not yet complied with the requirement of Circular 855 of BSP to introduce a credit risk management mechanism, they are required to put in additional reserves to BSP, making them reluctant to extend loans without collateral.

If they use CRD and improve their capability of loan appraisal, as well as applying more appropriate interest rates in line with the calculated credit scores of borrowers, they will increase loans and reduce dependency on collateral when extending loans.

It is also reported that FIs expressed their intention to cooperate with the government policy to assist SMEs and would like to extend loans to bankable and profitable SMEs. Thus, if the appraisal capability of FIs is improved with the introduction and implementation of CRD, FIs could be more willing to extend loans to credible SMEs who do not have enough collateral to secure loan amounts. As such, the information asymmetry problem observed between banks and SMEs will be mitigated.

As smaller banks such as thrift banks and rural banks already meet the percentage required by the Magna Carta, their loan amounts to SMEs might not increase drastically. However, if the problem of information asymmetry is solved, there is higher probability that universal and commercial banks would be able to satisfy the requirement of the Magna Carta.

2.6 Review on the Preparation and Use of Financial Statements

In order for FIs to expand risk-based lending by utilizing CRD, it is essential for the borrowers (companies and single proprietorships) to prepare F/S.

Therefore, the Study team carried out a survey on the preparation and utilization of F/S of borrowers, through interviews with FIs, auditing firms and SMEs.

The draft report is attached as Annex 5.

(1) Preparation of F/S by business

In the Philippines, businesses are required to prepare F/S by several acts, codes, rules and regulations. As of January 1st 2018, the Tax Reform for Acceleration and Inclusion, RA No. 10963 (hereafter TRAIN) was enacted. SEC Memorandum Circular No. 5, Series of 2018 was issued as part of the Commission’s rules and regulations on financial reporting, not necessarily in

[14] Consultant team interviewed 21 financial institutions in 2017.

compliance with TRAIN. Financial Reporting Standards Council (FRSC) also recently introduced the Philippine Financial Reporting Standards (PFRS) for Small Entities that will be enacted from January 1st 2019. The table below explains core features of regulations in relation to the preparation and use of F/S in the Philippines.

Table 13 Regulations on the preparation of financial statements

Corporation Code	- A registered corporation must prepare an audited financial statement complying with international accounting standards and submit an annual report together with the financial statements to the SEC. - A stock corporation with paid-in capital of less than PHP 50,000 is allowed to prepare a financial statement under oath by the treasurer or any responsible officer of the corporation of the company instead of the independent auditor's certificate. - A single proprietorship is requested to renew its business registration (Business registry) with DTI in every five year-term. (It is not mandatory to prepare a financial statement).
Securities Regulation Code and analytical methodology	- All corporations issuing securities are required to submit audited financial statements. - Circular No.5 Series of 2018 requires that in principle, large entities shall comply with PFRS, medium entities with PFRS for SMEs and small entities, from the beginning of 2019, with PFRS for Small Entities. As for micro entities, they have the option to use as their financial reporting framework either the income tax basis or the PFRS for Small Entities, provided however, that the financial statements shall at least consist of the Statement of Management's Responsibility, Auditor's Report, Statement of Financial Position, Statement of Income and Notes to Financial Statements, all of which cover the two-year comparative periods, if applicable.
Revised National Internal Revenue Code	- All entities with gross annual sales amount exceeding PHP 3 million shall submit audited financial statements - Among the entities, large entities with total assets amounting over P350 million or total liability over P250 million shall fully comply with PFRS, medium size entities with total assets of P100-350 million or total liability of P100-250 million each shall prepare F/S in compliance with PFRS for SMEs. Small entities whose amount of assets and liabilities are both P3-100 million are going to be allowed to comply with PFRS for Small Entities.

(Source) JERI based on related legal documents and web-site information

The number of companies and single proprietorships, which can be identified by several statistics in the Philippines, are in the succeeding table.

Although numbers vary among statistics, it is estimated that there are 800,000–900,000 companies that were registered and submitted F/S.

At the same time, there are about 30 million individual taxpayers including 2.35 million single proprietorships, according to the Bureau of Internal Revenue (BIR), which submitted F/S or simplified F/S.

In addition to the SEC and BIR that are the designated by law to receive F/S, financial institutions, accredited CIBs, and insurance corporations also collect F/S from the clients when necessary. SEC collects F/S from about 644,000 entities in total covering all items of F/S. Data collected by SEC are available for the subscribed users (through SEC i-View), but the name of individual entities are not available except for listed companies.

BIR collects such documents as Income Statements, Cash Flow Statements etc. from taxpayers and keeps about 880,000 entities' data. PSA also gathers data on about 230,000 entities based on the Census survey of enterprises conducted once for every 5 years.

Table 15 shows number of F/S data collected by major organizations.

Table 14 Number of financial statements collected in the Philippines

1-1) Number of F/S prepared in the Philippines	949,819 corporations registered at SEC as of 2016; of which 643,637 were active. In principle all active corporations shall submit F/S to SEC; of which in total 192,782 entities ('about 30% of active entities) not covering single proprietorships (of which the registration and monitoring is under DTI).
- What kinds of entities need to prepare F/S?	F/S data shall be reported with company profile from, a) Stock corporations with paid-up capital stock of P50,000 or more; b) Non-stock corporations with total assets of P500,000 or more, or with gross annual receipts of P 100,000 or more; c) Branch offices of stock foreign corporations with assigned capital in the equivalent amount of P 1 million or more; d) Branch offices of non-stock corporations with total assets in the equivalent amount of P 1 million or more; e) Regional operating headquarters of foreign corporations with total revenues in the equivalent amount of P 1 million or more. (SRC Rule 68, Part I, 1, A)
1-2) Number of entities that prepare F/S by category of corporation	
- Numbers of F/S by nature of entities	351,321 stock corporations, 101,460 partnerships, and 4,209 foreign entities
- Numbers of F/S by the size capital amounts	911,768 MSMEs, (of which 820,795 micro, 86,955 small, and 4,018 medium) adding 4,209 large corporations, in total 915,726.
- Numbers of F/S categorized by the administrative regions	354,103 in National Central Region, 74,989 in Region 4A, 53,700 in Region 3, 40,618 in Region 7, etc.

2) Agencies that keep F/S and how many F/S are they keeping?	
- SEC	643,637 corporations; of which 351,321 are domestic corporations. It is said that the percentage of corporations that submit F/S audited by certified financial accountants are 192,782.
- CIC	Collects 6 million data sets from individuals and enterprises (majority is credit card information and the rest is on single proprietorships). Number of data on cooperatives is about 14,000 (about half of the existing cooperatives). In addition, it collects 161 data of financial institutions.
- PSA	915,726 establishments (number of registered ones): Collected F/S data shall be the same as that of DOF/BIR stated below. PSA conducts Census survey in every 5 years. As for 2014, PSA surveyed 6,653 establishments in the manufacturing sector; estimated number of mother group establishments is 225,245.
- BSP	587 FIs. (Note that BSP has the power to collect borrowers' F/S data via FIs when necessary but only for bank examination)
- DOF/ BIR	Total number of registered taxpayers is 29,752,723, of which 877,660 corporations (of which 645,255 enterprises, excluding tax exempted and non-resident foreign corporations which include 17,919,087 individual taxpayers, including 2,350,490 single proprietorships).
- CDA	Collects data from 14,000 cooperatives out of 28,000 in total and compiling database; 2/3 of the collected data is data from cooperatives and the rest from individuals, including farmers.
(Ref.) Financial Institutions (FIs)	Number of loan customers: 33.2% of enterprises have bank loan or line of credit (as of 3Q 2016), according to “WB Financial Inclusion in the Philippines, Dashboard” 2018 Q1.

(Source) JERI based on the web-site information and hearing surveys conducted by JERI. Data as of end 2016.

As single proprietorships are not required to submit F/S to the SEC, it is naturally estimated that smaller businesses did not prepare any F/S. Through interviews with FIs, it was pointed out that many single proprietorships did not even have account books and they did business on a cash basis.

It was also pointed out that businesses in rural areas had difficulties accessing auditors, although they needed their F/S audited before submitting these to the SEC or BIR, as accredited auditors are located only in urban areas.

FIs also pointed out the problems in the quality of F/S, mentioning that even audited F/S were not always reliable. This is mainly because businesses try to save on tax payments. Some FIs mentioned that F/S reflect only 30% of the “actual” sales, profits and assets.

(2) Recommendations for the preparation and utilization of F/S

As mentioned above, many single proprietorships and micro businesses do not prepare F/S and do not have access to bank loans.

Large entities have accounting units or accountants who prepare F/S using software. However, since SMEs do not have such units or accountants and owners do not have accounting expertise to prepare F/S, the quality of such F/S is not sufficient in many cases. Thus, authorities have been recommending SMEs to use IT software. SEC and BIR have been making efforts to simplify the regulatory requirements, reduce the reporting burden of entities or allow the representatives of entities to certify the honesty of F/S documents instead of certified accountants.

The Philippine Chamber of Commerce and Industry (PCCI) has introduced the mentor system to assist SMEs in preparing and submitting F/S in an appropriate manner. However, during the survey interview conducted by JERI team, a comment was made that the effect of the mentor assistance was limited as only few mentors were available and that some of them were giving assistance only to their business partners.

The BIR also introduced the Accredited Tax Agent System[15] to answer queries form taxpayers, and cooperated with the Philippine Institute of Certified Public Accountants (PICPA) or the Financial Executive Institute of the Philippines (FINEX) to increase public awareness on preparing reliable F/S.

In the Philippines, it would be necessary to further promote the preparation and management of F/S by SMEs by taking the following measures;

1) Institutional aspect - Establishment and dissemination of simpler declaration form

It has been mentioned that the BIR has been reducing the contents and pages of documents of tax return declarations and simplifying the contents of bookkeeping regulations for SMEs, as well as reducing corporate tax rates. The BIR, together with the FRSC/PIC and DTI, would have to reduce the burden of SMEs in preparing the F/S through further simplification of accounting requirements.

If banks accept simplified tax return declarations for loan appraisal, it would shorten and facilitate appraisal processes at banks. This will also work as a kind of incentive for SMEs when they apply for bank loans.

2) Introduction of third-party certification bodies and enhancement of the functions of BDS (Business Development Service) providers

In order to promote the preparation of F/S, DTI can study the introduction of a system that admits third parties to certify the credibility of F/S prepared by SMEs. In Japan, there are qualified third party bodies, such as SME Management Consultants and Business Management Specialists, in addition to CPAs and Tax Accountants. They also assist financial institutions to mitigate the "information asymmetry between banks and borrowers" acting as intermediators between SMEs and banks.

15 Tax Code, Section 6, G.

However, there are only few private corporations that actively play the role of BDS providers[16] in the Philippines. If the number of BDS providers increase and their capacity to support SMEs is enhanced, it will be beneficial for SMEs.

3) Enhancing monitoring function and providing incentives

In order to achieve sustainable development of economic activities through improving the transparency and reliability of SME management, it is necessary to boost the corporation's own efforts to strengthen corporate governance and transparency in accounting.

In addition to the effective utilization of third-party institutions in preparing the F/S, it will be necessary and useful for authorities such as the PSA, SEC and the BIR to provide corporation managers with wider range of analytical results and comparative information of F/S using the submitted/collected data.

It would be helpful if organizations such as PSA, SEC and BIR will cooperate to analyze collected F/S and make statistical and analytical feedback to enterprises based on the data, so that enterprises can improve their management capabilities.

2.7 Summary of the Study: Recommendation on the establishment of CRD in the Philippines

In "Review on the Risk-based Lending in the Philippines", it was identified that smaller FIs do not have sufficient capacity to develop their own internal rating system and credit scoring models. It was also identified that micro enterprises and single proprietorships have issues in preparing F/S and have difficulty in accessing credit risk-based lending.

Although it has been pointed owut that the quality of F/S is not necessarily high in the Philippines, the result of the "Data Quality Examination" conducted by CRD-BS with the cooperation of the government of the Philippines and GFIs, confirmed that the establishment of a scoring model using F/S data is fairly realistic. A robust scoring model, which reflects the characteristics of borrowers in the Philippines, is therefore expected to be established through further data collection.

Thus, we believe that the introduction of CRD in the Philippines will contribute to improving the loan appraisal capability and risk management capacity of banks, and that banks will extend more risk-based loans than before. Banks also expressed their interest in CRD, as CRD will also supply banks with additional outputs that can be used as business advisory service tools for client SMEs and contribute further to increasing financing to SMEs.

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[16] For example, Philippine Tax and Accounting Center, Inc. currently conducts financial statement preparation seminars and trainings for corporations in cooperation with accredited accounting firms. It would be a good idea to strengthen the training and grant third party certification authority to the graduate of the training programs.

To add, if F/S data submitted by MSMEs become more accurate, the scoring of borrowers will also become more accurate. The borrowers may then expect being granted more risk-based lending from banks. It would be better to implement the introduction of CRD side by side with the current initiative of promoting F/S.

(End)

Annex 1

Record of Discussions of Working Group Meetings

Record of Discussion of the 1st Working Group Meeting
The Study for Introduction of Credit Risk Database (CRD) in the Philippines

Date and Time	JANUARY 23, 2017/2:00 P.M.
Venue	4TH Floor, Conference Room, Department of Finance Building, BSP Complex, Roxas Boulevard, Manila.
Attendees:	
Department of Finance	Mr. Lester Jeff Pawid, Economist Ms. Irene Salazar, Technical Staff
Bangko Sentral ng Pilipinas	Ms. Concepcion Garcia, MSME Financial Specialist Group Mr. Maynard Mojica, Bank Officer, Inclusive Finance Advocacy Group
Department of Trade & Industry/SB Corporation	Mr. Marc Quincy S. Talagtag, CEO III, ERM Group, SB Corporation
Securities & Exchange Commission (SEC)	Mr. Ephyro Luis B. Amatong, Commissioner Mr. J.C. de Leon, Technical Staff Assistant Ms. Maria Teresa Bersabal, Staff Assistant
UP School of Statistics	Dr. Dennis S. Mapa, Dean of School of Statistics
Japan International Cooperation Agency(JICA)	Mr. Tetsuya Yamada, Senior Representative Mr. Jiro Tsunoda, Senior Advisor (Financial Sector) Ms. Megumi Omori, Deputy Assistant Director Mr. John Raymar Piscos, Philippines Office
CRD Association / CRD Business Support	Mr. Satoshi Kuwahara, President/COO Ms. Megumi Sagara, Director Business Planning Department
Japan Economic Research Institute Team(JERI)	Mr. Hisatsugu Furukawa Mr. Hirofumi Azeta Mr. Victor C. Abainza, ADFIAP Ms. Sandy I. Lim, ADFIAP

Results of discussion

1. Welcome Remarks and Introduction of Members

- Mr. Lester Jeff Pawid gave a welcome remarks on behalf of USEC Beltran who was absent in the meeting. The Chairman, Mr. Pawid, then requested everybody present to introduce themselves.
- Mr. Tsunoda of JICA then summarized the development since June 2016 to the working group members (hereafter the body).
- He explained that (i) three government financial institutions (GFIs, namely Development Bank of the Philippines, Land Bank the Philippines and Small Business Corporation) will be priority approached for the data collection in this Study, (ii) if data supply would be violate the Manual of Regulation for Banks (MORB) and other relevant rules is needed to be confirmed through the discussion with BSP, and (iii) items of data to be provided by three government banks should be discussed in detail.
- Ms. Concepcion (Ching) Garcia of BSP reported the body other discussions with Office of General Council (OGC) and Deputy Governor Nestor Espenilla Jr. on the above concern of the Study.
- She mentioned that the Deputy Governor said that BSP was supportive of the Study and was willing to provide the views and confirmation from the regulator's perspective for the project.
- She requested the Study Team to provide the list of data to be provided by 3 GFIs, so that BSP could accelerate the internal decision making.
- However, she mentioned that it would still be at the level of the 3 GFIs and/or PFIs that should decide on what data would be provided by them to the Study team.
- Since this was a technical issue, it was requested by the chair and approved by the body that a separate meeting between (i) BSP and the Study Team and (ii) between the 3 GFIs and the Study Team should be conducted on following days to discuss issues of data confidentiality more in detail.

2. Presentation on the Inception Report

- Based on the Inception Report, Mr. Furukawa explained the scope of the study, highlighting the proposed work plan, the schedule of the working group meetings and the proposed agenda of each meeting.
- The participants did not raise any questions about the scope of the project and the proposed work plan.

3. Presentation on the preliminary data examination

- Mr. Satoshi Kuwahara, President of CRD Business Support Ltd. made presentation on “Preliminary Examination for Establishing CRD in the Philippines”.
- He explained the work plan of preliminary data examination, dividing the work period into four phases; (i) Phase 1: Preliminary study and preparation for collecting data, (ii) Phase 2: Data quality check, (iii) Phase 3: Examination of correlation, and (iv) Consideration of variable combination and trial of scoring by CRD model. He also explained the detailed activities to be implemented in each phase.
- BSP asked whether several scoring models would be prepared for several sectors or not, and Mr. Kuwahara answered that it would depend on the volume of stored data and their statistical characteristics, but probably be a single model for the mean time for Philippines. He also added that a single model was the recent dominant trends and CRD Japan scheduled to change several industry specific models to the model for all type of industries except real estate sector and the real estate sector specific model.
- DOF mentioned that the database constructed with data supplied by 3 GFIs would be a showcase, and more financial institutions were expected to join after its launch.
- DOF also expressed its concern about the quality of data of the financial statement, referring to the large discrepancies between the audited financial statements and actual financial statements. Mr. Kuwahara answered that a statistical model could have meaningful results given that the financial statements were prepared with same biases.

4. Presentation on the outline of the study of Risk based lending (RBL)

- Mr. Furukawa presented to the body the outline of the Study of Risk Based Lending (RBL), referring to the study items such as (i) Current practices of lending at banks, (ii) how to shift from collateral based to risk based lending, (iii) expected benefits from risk based lending and (iv) experiences in Japan.
- He also explained that the Team started interviews with several banks and summarized the initial findings, such as (i) scoring model had been operated by all banks interviewed, (ii) concerns were expressed in the quality of financial statement, as well as (iii) the data confidentiality concerns in complying the BSP regulation even if data is supplied anonymously .

- BSP commented that the requirements of the audited financial statements were eased by BSP's circular and banks can use in-house financial statements for their loan appraisals.

5. Outline of the Economic Impact Study

- Dr. Mapa of the University of Philippines, School of Statistics made presentation about the outline of the Economic Impact Study to be produced by the introduction of Credit Risk Database (CRD), referring to the expected economic impacts of the CRD and study schedule. Dr. Mapa also explained that he conducted similar type of impact survey on SMEs before using Meta data.
- DOF appreciated the presentation made by Dr. Mapa, and suggested that the expected economic impacts could also include (i) the Change in lending behavior/culture of banks, (ii) Effects on SMEs, such as lowering the loan cost, and (iii) Reduction of default rate, in other words, cost benefit of the introduction of CRD.
- BSP agreed to this and added that the introduction of CRD would lead to the enhancement of the credit appraisal at banks and encourage banks to lend more to SMEs.
- SEC raised a question asking whether the access to finance was a demand side problem or supply side problem.
- BSP then answered that banks tended to depend on collateral due to the lack of confidence in extending loans to borrowers, and mentioned that the CRD would generate a favorable pricing effect in the financial market. BSP also emphasized that the introduction of CRD would change the behaviors of banks
- SEC also asked the Study team to have a separate meeting to have another introductory presentation on CRD, about the methodology in particular, and the Study team agreed to hold such meeting.
- SEC also asked the Study Team about the possibility of using financial statement data stored in SEC. The Study team emphasized the importance of the linkage between financial and non-financial statement data to default data, and mentioned that the data from 3 GFIs were the priority.

6. Conclusion of the WG meeting

The chair concluded the meeting summarizing the discussions as follows:

- The Study Team and BSP will hold a separate meeting to discuss the data confidentiality issue.

- The Study Team and SEC will hold a separating meeting for better understanding between each other.

Dr. Mapa of the University of Philippines, School of Statistics suggested DOF to use its moral suasion power over the GFIs and BSP to issue clearance on the confidentiality issue, in case the GFIs are unable to provide their data.

The meeting was adjourned at 3:00 P.M.

Record of Discussion of the 2nd Working Group Meeting
The Study for Introduction of Credit Risk Database (CRD) in the Philippines

Date and Time	APRIL 19, 2017/9:00 A.M.
Venue	4TH Floor, Conference Room, Department of Finance Building, BSP Complex, Roxas Boulevard, Manila.
Attendees:	
Department of Finance	Mr. Lester Jeff Pawid, Economist Mr. Jose Mari Layseg
Bangko Sentral ng Pilipinas	Ms. Concepcion Garcia, MSME Finance Specialist Group Mr. Maynard Mojica, Bank Officer, Inclusive Finance Advocacy Office
Department of Trade & Industry/SB Corporation	Mr. Marc Quincy S. Talagtag, CEO III, ERM Group, SB Corporation
Securities & Exchange Commission (SEC)	Ms. Luna Melanie, Examiner II Ms. Rodalice P. Cabe, Client Counsel
Japan International Cooperation Agency(JICA)	Mr. Jiro Tsunoda, Senior Advisor (Financial Sector) Ms. Megumi Omori, Deputy Assistant Director Mr. Akira Fukuyama, Philippines Office Mr. John Raymar Piscos, Philippines Office
CRD Association / CRD Business Support	Ms. Megumi Sagara, Director Business Planning Department
Japan Economic Research Institute Team(JERI)	Mr. Hisatsugu Furukawa Mr. Hirofumi Azeta Mr. Victor C. Abainza, ADFIAP Ms. Sandy I. Lim, ADFIAP

Results of discussion

1. Welcome Remarks and Introduction of Members
   - Mr. Lester Jeff Pawid gave welcome remarks and acknowledged the presence of the members of the Working Group.

2. Presentation on Risk Based Lending in the Philippines

- Mr. Hirofumi Azeta made presentation on the Risk Based Lending in the Philippines. In the presentation, he explained (i) Definition, benefits and conditions of “Risk Based Lending”, (ii) Risk Based Lending in Japan, (iii) Risk Based Lending in the Philippines, and (iv) Summary: Issues in Risk Based Lending in the Philippines.
- During the presentation on **(i) Definition, benefits and conditions of “Risk Based Lending”**, Mr. Tsunoda mentioned that Risk Based Lending was most important for borrowers during their emergency period to survive crises.
- In **(ii) Risk Based Lending in Japan**, Mr. Azeta explained that Financial Services Agency (FSA) of Japan encouraged financial institutions (FIs) to assess the future business prospects of borrowers, and Ms. Sagara pointed out that CRD has been equipped with a tool called as “Management consulting Support System” which enables banks to (i) conduct future financial simulation for improved management of SME clients and (ii) assess the future business potentials and prospects of borrowers without relying on collaterals and guarantees. Mr. Lester Pawid appreciated the forward looking aspects of CRD.
- Mr. Azeta also explained that FSA in Japan was a regulator of the financial market and at the same time the promoter or facilitator to grade up the financial intermediation functions of banks. Mr. Tsunoda also mentioned that the function played by FSA was essential for strengthening the financial intermediation and the development of RBL.
- Mr. Lester Pawid summarized that the new findings from the presentation were (i) CRD’s output has an aspect of not only backward looking such as probability of default but also forward looking such as assessing future business prospects, and (ii) the function of the supervising body was not only the financial supervision but also the promotion and the facilitation of financial market intermediation.
- During the presentation of **(iii) Risk Based Lending in the Philippines**, Mr. Azeta explained the correlation between the proportion of unsecured loans and the profitability (ROA) at FIs and that FIs which were trying to take more credit risks achieved higher profitability. BSP recommended to review the NPL ratio of FIs, because some FIs were willing to take more credit risks but were successful in reducing credit risks. BSP explained that the unsecured loan portion of BPI (the Bank of the Philippine Islands) was low but the profitability

was high, because BPI was selective and prudent in providing loans. BSP mentioned that BPI was able to increase the number of borrowers by its strong network with potential borrowers and by collecting their qualitative and quantitative information.

- SB Corporation expressed its concerns in the loan disbursement under P3 program (PONDO SA PAGBABAGO AT PAG-ASENSO), which is targeting on achieving affordable micro-financing to micro and small enterprises under the President's directive. It mentioned that the success on realizing the objectives for the the disbursement of PHP 18 billion could not be easily achieved due to the weak capacity of SMEs. BSP also mentioned that the capacity building of SMEs was the key issue.
- BSP, referring to the compliance with Circular 855 of smaller banks, mentioned that Circular itself is principle-based and is not prescriptive, giving FIs the flexibility to adopt appropriate credit risk management practices commensurate to their size, scale, complexity. Mr. Azeta answered that many smaller banks did not have capacity to comply with the circular (especially having limited human resources to set up credit risk management mechanism) without any technical supports. DOF then mentioned that CRD would be the tool to support small FIs to enhance their credit risk management, as CRD would help small FIs to set up their own internal scoring models, which provides borrowers risk rating system and loan classification mechanisms. Ms. Sagara also referred to the recent development of the CRD product, namely Credit Risk Information Superior (CRISP). CRISP calculates credit risk amount (loss amount) of financial institution's portfolio as well as measures credit risk amount by subgroups such as industry, branch, and other classifications.
- After the presentation on **4. Summary: Issues in Risk Based Lending in the Philippines**, BSP expressed its concern on the reaction of small FIs to the financial regulations, mentioning that NPL ratio of small FIs tend to be higher due to the lack of capacity in risk management. Mr. Azeta emphasized the importance of capacity building of credit risk management of small FIs, especially those who were willing to provide risk based lending to business sector.
- Mr. Lester Pawid summarized the discussions mentioning that the presentation was highly informative and provided updates on the banking situation in the Philippines. He commented that the RBL report needs to be

shared by the policy makers and private sector people, as required, for strengthening the credit management of the banking sector and monitoring capacity of the regulator. He also mentioned that the WG members renewed the motivation of setting up the CRD in the Philippines.

3. Update on each project component

- Mr. Furukawa summarized the recent development of each component of the study project. He also updated the Preliminary data examination, referring to the status of 3 governmental financial institutions (GFIs) and the schedule was experiencing some delays.
- BSP suggested the inclusion of more financial institutions into the study if data collected from the 3 GFIs for the preliminary data examination might not be enough.
- Mr. Tsunoda mentioned that any problems in the data examinations were going to be reported to the WGM and counteractions were to be determined.

4. Conclusion of the WG meeting

The chair concluded the meeting and mentioned that the next WG meeting was to be organized in August.

The meeting was adjourned at 11:00 A.M.

Record of Discussion of the 3rd Working Group Meeting
The Study for Introduction of Credit Risk Database (CRD) in the Philippines

Date and Time	September 5, 2017 14:00
Venue	4TH Floor, FPPO Conference Room, Department of Finance Building, BSP Complex, Roxas Boulevard, Manila.
Attendees:	
Department of Finance	Mr. Lester Jeff Pawid, Economist
Bangko Sentral ng Pilipinas	Ms. Concepcion Garcia, MSME Financial Specialist Group Mr. Maynard Mojica, Bank Officer, Inclusive Finance Advocacy Group
Department of Trade & Industry/SB Corporation	Mr. Marc Quincy S. Talagtag, CEO III, ERM Group, SB Corporation
Securities & Exchange Commission (SEC)	Mr. Ephyro Luis B Amatong, Commissioner Mr. Ulyssis San Juan, ERTD-ERSD
University of the Philippines, School of Statistics	Dr. Dennis Mapa, Dean Ms. Denise Jannah D. Serrano, University Research Associate II
Japan International Cooperation Agency(JICA)	Mr. Jiro Tsunoda, Senior Advisor (Financial Sector) Mr. Tetsuya Yamada, Senior Presentative, Philippines Office Mr. Akira Fukuyama, Philippines Office Mr. John Raymar Piscos, Philippines Office
CRD Association / CRD Business Support	Mr. Satoshi Kuwahara, President COO Ms. Megumi Sagara, Director Business Planning Department
Japan Economic Research Institute Team(JERI)	Mr. Hisatsugu Furukawa Mr. Hirofumi Azeta Mr. Victor C. Abainza, ADFIAP Ms. Sandy I. Lim, ADFIAP

Results of discussion

1. Welcome address
    - Mr. Lester Jeff Pawid gave welcome remarks and presented the agenda of the working group meeting as follows;

        1. Opening address
        2. Current status for data collection and analysis from 3 GFIs
        3. Estimation of the economic impact by the establishment of CRD.
        4. Introduction of Credit Risk Database (CRD) in Philippines as 2018 JICA project and the T/C application to be submitted to JICA
        5. Consideration on the operating body during the technical assistance
        6. Other project-related issues
        7. Whole schedule
        8. Closing address

2. Presentation on Current status for data collection and analysis from 3 GFIs
    - Mr. Satoshi Kuwahara from CRD Association made a presentation on the current status of data collection from 3 GFIs. In the presentation, he explained that "Phase 1: Preliminary study and preparation for collection data", which was originally planned to be done in February 2017, was estimated to be completed in October. He explained that the delay was due to the data format of financial statements and also to the discussion on legal issues in confidentiality agreements.
    - He also explained that the amount of datasets provided by 3 GFIs was expected to be approximately 30,000.
    - Ms. Garcia from BSP expressed her concerns about the work schedule, referring to the possibility in the further delays in data collection.
    - Mr. Kuwahara stated his intention to maintain the current work schedule on the best effort basis

3. Estimation of the economic impact by the establishment of CRD.
    - Dr. Mapa of University of the Philippines made his presentation of "Estimation of the economic impact by the establishment of CRD".
    - He explained that the analysis would estimate the possible increase in overall loan balance as a result of the introduction of CRD. He also explained that the increase in the overall loan balance were to be estimated in two approaches; (i) Input the aggregated financial information of the enterprises in the Philippines to

CRD Model in Japan to obtain possible additional loan amounts, and (ii) Compare the financial status of SMEs and large enterprises in the Philippines to estimate the possible increase in loan amounts of SMEs.

- Dr. Mapa also stated his intention to estimate the macroeconomic impacts generated by the introduction of CRD. He explained that the introduction of CRD might lead to the decrease in loan interest rates, which would then lead to the increase in domestic credits and the increase in the income and employment levels.
- Mr. Lester Jeff Pawid expressed his appreciation to the presentation and mentioned that the economic impacts were to be generated by the introduction of CRD through changing the behaviors of lenders.
- Mr. Kuwahara, referring to the second approach, mentioned that the increase in asset based lending (ABL) by the introduction of CRD was not realistic, as the model for ABL was currently being explored in Japan and significantly different from the conventional CRD model.
- Ms. Garcia from BSP suggested that the economic impacts would be generated more at the side of financial institutions. She also mentioned that CRD could be a significant approach to increase loans to “missing middle”.

4. Introduction of Credit Risk Database (CRD) in Philippines as 2018 JICA project and the T/C application to be submitted to JICA

- Mr. Tsunoda from JICA made a presentation on “Introduction of Credit Risk Database (CRD) in Philippines as 2018 JICA project and the T/C application to be submitted to JICA”. He explained that the deadline for the official application for a technical cooperation (T/C) was September every year and that the commencement of T/C would be delayed by one year if an application was not submitted in this September.
- Mr. Lester Jeff Pawid mentioned that the current study was pre-feasibility study (Pre F/S) and the following T/C project would be to examine the feasibility of the construction of a CRD model in the Philippines. Then, he emphasized that the result of the current pre F/S was essential for Under Secretary Mr. Beltran to submit the proposal of T/C application to the secretary.
- Mr. Kuwahara from CRD Association mentioned that the construction of CRD model by using 30,000 datasets was not possible and also mentioned that the current study (pre F/S) was intended to examine the quality of data.

- Mr. Tsunoda expressed his concerns about the possible one year gap to be generated by the delays in application. He also asked the working group members about the possibility in proceeding with official processes in T/C applications without waiting for the result of the current pre F/S.
- Mr. Lester repeated the necessity to show the results of the current pre F/S in order to proceed with application processes. He also expressed his concerns about the quality of financial statements of SMEs and suggested a necessity for the enhancement of financial literacy.
- Mr. Kuwahawa, referring to the Japanese history, mentioned that the quality of financial statement was expected to gradually improve.
- Mr. Yamada, Senior representative of JICA Philippines Office explained the flexibility in the official application processes, explaining that such applications could be accepted even after the deadline in September. Mr. Tsunoda then added that the Philippine side needed to convince the Japanese government upon submitting applications.
- Both Ms. Garcia from BSP and Mr. Lester Jeff Pawid repeated that the justification for the T/C through showing the tangible results by the current pre-F/S would be required.
- Mr. Tsunoda concluded the discussions mentioning that “the operating body during the technical assistance” was to be discussed in the following working group meeting.

5. Consideration on the operating body during the technical assistance
    - Mr. Lester proposed to postpone the discussion on this issue to the next working group meeting and participants agreed.
6. Other project-related issues
    - Mr. Hirofumi Azeta from Japan Economic Research Institute distributed the draft report on “Review on Risk Based Lending in the Philippines” and requested working group members to review the report. He also requested members to provide comments in writing by the end of September.
7. Whole schedule
    - Mr. Hisatsugu Furakawa from Japan Economic Research Institute presented the revised work schedule for the remaining period of the project.
    - Mr. Furukawa also asked the participants about the preferred dates for the 4th WG meeting. The working group members agreed that the meeting was to be arranged during the first week of December 2017.

8. Conclusion of the WG meeting

The chair, Mr. Lester Jeff Pawid, summarized the meeting that 1) Data collection from 3 GFIs were under process, 2) Economic impacts, which were to be analyzed in this study, could be generated by the change in the behavior of banks, 3) the application for a T/C would be discussed after tangible results were generated in the current study and CRD would be expanded from GFIs to other financial institutions in the next phase (T/C), 4) comments on RBL report were to be collected by the end of September and 5) the next working group meeting was to be organized in 1st week of December.

The meeting was adjourned at 16:00.

On the next day of the WG meeting, a senior-level discussion between DOF and BSP, was held and the Usec Beltran agreed to sign and submit the application for T/C 2018. The application was submitted to NEDA on 13 September 2017 (as per attached copy) and reached to the Embassy of Japan in October 2017.

Record of Discussion of the 4th Working Group Meeting
The Study for Introduction of Credit Risk Database (CRD) in the Philippines

Date and Time		December 6, 2017 15:30
Venue		7TH Floor, PDMSG Conference Room, Department of Finance Building, BSP Complex, Roxas Boulevard, Manila.
Attendees:		
	Department of Finance	Mr. Lester Jeff Pawid, Economist
	Bangko Sentral ng Pilipinas	Ms. Concepcion Garcia, MSME Financial Specialist Group Mr. Maynard Mojica, Bank Officer, Inclusive Finance Advocacy Group
	Department of Trade & Industry/SB Corporation	Mr. Marc Quincy S. Talagtag, CEO III, ERM Group (ABSENT)
	Securities & Exchange Commission (SEC)	Ms. Matilde Lim, Economist, ERTD Mr. Ulyssis San Juan, ERTD-ERSD
	Japan International Cooperation Agency(JICA)	Mr. Jiro Tsunoda, Senior Advisor (Financial Sector) Mr. Tetsuya Yamada, Senior Representative, Philippines Office Mr. Akira Fukuyama, Philippines Office Mr. John Raymar Piscos, Philippines Office (ABSENT)
	CRD Association / CRD Business Support	Mr. Satoshi Kuwahara, President COO Ms. Megumi Sagara, Director Business Planning Department Dr. Lan Hoang Nguyen, Senior Analyst,
	Japan Economic Research Institute Team(JERI)	Mr. Hisatsugu Furukawa Mr. Victor C. Abainza, ADFIAP Ms. Sandy I. Lim, ADFIAP
	(observer)	
	Japanese Embassy	Mr. Noburu Kageyama, Financial Attache

Results of discussion

1. Welcome address

- Mr. Lester Jeff Pawid gave welcome remarks and presented the agenda of the working group meeting as follows;
1) Interim presentation for data analysis
2) Further step of this study: Technical corporation and its implementation
3) Interim presentation for Economic Impact of CRD
4) Update of the schedule of this study
- He also gave a briefing about Logical Framework of CRD Project explaining about expected outcomes together with assumptions for the outputs.

2. Presentation on data analysis

- Ms. Megumi Sagara from CRD Association made a presentation on the interim analytical results using the Philippine sample Dataset. In the presentation, she explained first, three analytical methods, 1) Single logistic Regression, 2) Multiple Logistic Regression and 3) Scoring Trial by CRD model, and findings from the analysis.
- She explained that, although the number of data for this analysis was limited (277 financial statements and 11 defaults), the possibility to create a statistical model with Philippine dataset was confirmed, because a) there were some financial indexes which were significant to detect default, b) the accuracy of "Simple model" combining such significant financial indexes are relatively high, and c) the accuracy of CRD model to Philippine sample dataset is reasonably well.
- Then she mentioned the differences of financial indexes' distribution between Philippines and Japan and explained these differences might bring that the accuracy of "Simple model" created from only Philippine data is higher than that of CRD model created from Japanese dataset and it will be expected to create more accurate and well fitted model to Philippines data by incorporating Philippine characteristics of financial statements/financial indexes into the model.
- Mr. Ulyssis of SEC asked confirmation of the details of dataset used for the analysis and how many enterprises included.
- Ms. Garcia from BSP expressed her concerns about the schedule saying that whether CRD could receive enough dataset for finalizing the analysis.
- Mr. Kuwahara explained that although the accuracy of this "Simple model" was high, this might be over fitted to this small dataset and we need much data in order to create more stable model.

- He mentioned that CRD was going to use full-scale dataset collected from 3GFIs until the end of January, analyze and compile a report in February and March.
-

3. Further step of this study: Technical corporation and its implementation
   - Mr. Tsunoda from JICA made a presentation on "Introduction of Credit Risk Database (CRD) in Philippines -JICA Technical Cooperation and its Implementation- ".
   - He explained the Technical Cooperation (T/C) implementation structure, referring to the Application Form for the Technical Cooperation for the proposed study on introduction of CRD in the Philippines, signed by USEC Mr. Beltran dated September 14, 2017. He invited WGM's special attention to the establishment of a Project Team (PT) by the Philippines, as the counterpart organization for implementing the next phase of T/C, and the necessity to allocate a Project Manager and a several data management staff with full time assignment to receive technical transfer from T/C for handling the database and the scoring model.
   - Mr. Tsunoda explained expected activities of PT as a Provisional Operating Body, functions to be borne by JICA Consultant Team and tentative T/C processing and transition schedule.
   - Mr. Pawid mentioned that the budget allocation for 2018 is already finalized and DOF did not allocate any budget for recruiting requested Data Management Staff. As for the Project Manager, he mentioned that current WGM members, for example he or Ms. Garcia of BSP might be functional for such position if nominated.
   - Ms. Garcia referred that BSP did not allocate budget for recruiting some permanent staff of PT neither and asked whether the employment of the consultants and staff were inevitable as a part of the Project. She mentioned that as there were no budget allocation for such employment it should be discussed among BSP, DOF and other WGM members including UPSS, if applicable. She also mentioned that the other option is talking to the private sector to take an active role in the project by inviting their participation in the proposed project organizational structure. She said that Deputy Governor Chuchi Fonacier is in exploratory discussions with the Chamber of Thrift Banks in the Philippines (CTB) on this possibility. She also pointed out that later, the project management could also be delegated to the Bankers Association of the Philippines (BAP) or some other NGO to be involved as an implementing organization if necessary.

- Mr. Fukuyama reiterated that JICA T/C needs the Government to prepare a counterparty team, namely PT for implementing the T/C. The Government has expressed its intention in forming up the counterparty team/PT in the application of this T/C submitted. JICA has sought the Government to take a strong initiative in forming up the counterparty team/PT and to assign the necessary talents for implementing required tasks at the next T/C.
- Ms. Garcia suggested that to raise awareness and interest of potential implementing organization, it would be necessary to clearly show the attractiveness of CRD package compared with other commercial scoring models.
- She asked if loan officer can use CRD models as a complete package without making any adjustment with regards to qualitative data.
- Mr. Kuwahara answered that although CRD models capture information provided by financial statements in which qualitative information is already included/reflected, the role of loan officers is still important as they need to adjust their owns bank loan portfolio.
- Ms. Sagara mentioned that it would be necessary to forward the project while concerning the practical usage method of scoring model for the internal rating of financial institutions and so on.
- Mr. Kageyama of Japanese Embassy strengthened that the application of T/C for next step was already accepted by the Japanese government and that the Japanese Minister of Finance would refer and confirm the implementation of the T/C at the Ministerial Meeting in the occasion of next ADB Annual Meeting to be held in Manila in May 2018.

4. Interim presentation for Economic Impact of CRD

- Mr. Furukawa made a brief explanation about the current situation of Economic Impact Analysis, making a reservation that as Dr. Mapa was not be able to attend today's WGM, the presentation material was just a tentative one and prepared by JERI alone.
- First 5 slides were copied, he mentioned, from Dr. Mapa's presentation material of last WGM with some additional remarks by Mr. Furukawa and latter 3 slides are the results of calculation of simple correlation ship between the two items shown in each chart with linear regression.
- Mr. Pawid expressed that he was most interested in the analytical result of Case 2, discussing specifically about the possible increase of RBL.

- Mr. Furukawa answered that Dr. Mapa considered to use the result from the analysis of the Philippine dataset under certain conditions and the final report of the impact analysis should be prepared and the result would be reported at the final WGM in March.
- With regards to the study on Risk Based Lending in the Philippines by JERI, Mr. Pawid mentioned that the initial draft of the study is with him and he has given his comments on the study. However, he has not disseminated the study to the other members of the WG because he thought that this should be the duty of JERI as the principal author of the study.
- BSP expressed desire to give their comments also to the study. Mr. Furukawa said that JERI, although distributed the draft for comments before, will request Mr. Azeta to provide all the members of the WG a copy of the final RBL Report for their review.

5. Other project-related issues
    - Mr. Furukawa briefly explained the schedule ahead of the project saying that the next final WGM would be held late March of in early April at the latest.
    - He also asked the WGM members' cooperation and support for preparing a research report on the preparation and usage of financial statements in the Philippines.

6. Conclusion of the WG meeting

The chair, Mr. Pawid, summarized the meeting that 1) the Philippine side would discuss and consider the allocation of part time and full time staff of the PT for implementing T/C, 2) the draft report of impact analysis would be finalized and circulated to WGM members before the final WGM to be organized in late March, and the FS research documents as well.

The meeting was adjourned at 18:00.

Record of Discussion of the 5th Working Group Meeting (Tentative)
The Study for Introduction of Credit Risk Database (CRD) in the Philippines

Date and Time	January 25, 2019 14:15
Venue	4TH Floor, CMIO Conference Room, Department of Finance Building, BSP Complex, Roxas Boulevard, Manila.
Attendees:	
Department of Finance	USEC Gil S. Beltran Mr. Lester Jeff Pawid, Economist
Bangko Sentral ng Pilipinas	Ms. Concepcion Garcia, Deputy Director, Financial Supervision Department VII Mr. Maynard Mojica, Bank Officer, Center for Learning and Inclusion Advocacy
Securities & Exchange Commission (SEC)	Mr. Ben Joshua A. Baltazar, Executive Assistant II Atty. Rachel Esther J. Gumtang-Remalante, Corporate Governance and Financing Department (CGFD) Mr. Armand Armando P. Carag, CGFD-Supervising Securities Specialist Ms. Melanie Luna, CGFD Security Examiner II
UP School of Statistics	Dr. Dennis S. Mapa, Dean
Japan International Cooperation Agency(JICA)	(Southeast Asia Division 5, Southeast Asia & Pacific Department) Mr. Fumiaki Ishizuka, Deputy Director Ms. Megumi Omori, Deputy Assistant Director (Industrial Development and Public Policy Department) Mr. Kenji Ishizuka, Assistant Director Mr. Jiro Tsunoda, Senior Advisor (Financial Sector) (Philippines Office) Ms. Kiyo Kawabuchi, Senior Representative Mr. Akira Fukuyama, Representative, Economic Growth Sector Ms. Yuki Kimura, Project Formulation Advisor, Program

	Group I
	Ms. Leah Penarroya, Section Chief, Economic Growth Sector
	Mr. John Raymar Piscos, Philippines Office (ABSENT)
CRD Association / CRD Business Support	Mr. Satoshi Kuwahara, President CEO
	Ms. Megumi Sagara, Director, Business Planning Department
	Dr. Lan Hoang Nguyen, Senior Analyst,
Japan Economic Research Institute Team(JERI) & ADFIAP	Mr. Hisatsugu Furukawa, Chief Consultant
	Mr. Victor C. Abainza, Senior Consultant, ADFIAP
	Ms. Sandy I. Lim, Executive, Membership Services & Events Management, ADFIAP
(observer)	
Japanese Embassy	Mr. Noburu Kageyama, Financial Attache

Results of discussion

1. Welcome address

- Mr. Fumiaki ishizuka of JICA HQ gave an opening remarks expressing appreciation for the cooperation given by WG member organizations in the Philippines. He mentioned that JICA Executives already gave positive evaluation for the request submitted from the Philippine Government for the Technical Cooperation for CRD introduction as the next step and was now waiting for the final decision by the Japanese Government.
- Mr. Lester Jeff Pawid gave welcome remarks, introduce the participants and presented the agenda of the meeting as follows;

1) The structure of the Draft Final Report and today's main point on the discussion
2) Presentation on the result of Preliminary Data Examination
3) Presentation on the result of "Research on the preparation and utilization of financial statements
4) Overall summary of the Draft Final Report (DFR)
5) Remaining work schedule and further.

2. Presentation on the structure of DFR

- Mr. Furukawa from JERI made a brief presentation on the DFR structure, saying that as the study result of item 2.1 "Research on the actual application of the risk based lending" has been already reported to WG and the contents were finalized after requesting comments from WG members as of January 2018, today's presentation will be on item 2.3 Preliminary Data

Examination by CRD, 2.5 “Research on the preparation and utilization of financial statements”. Other issues will be explained for discussion altogether, considering limited time of today’s meeting.

3. Presentation on Preliminary Data Examination

- Dr. Nguyen of CRD Association explained the results of the preliminary data examination based on the 3,440 observations and 133 defaults. She explained the results of examination of correlation between default and non-default data, variable combination for logit multiple regression, scoring trail using Japan model. As a conclusion, she said that the analysis found a high potentiality in establishing CRD database and scoring model by collecting data in the Philippines with reasonable accuracy. . She also added following findings in using Japan model, (i) there are very significant financial indexes but have adverse sign conditions from Japan, (ii) some financial variables are distributing differently from those in Japan, (iii) there are some differences among years, industry sector, etc. and it is possible to improve accuracy of the model by putting those differences into the model and that more data needed to create more accurate, robust and well fitted models to Philippine SMEs.
- Mr. Baltazar of SEC, who presented in place of Mr. Amatong, Commissioner of SEC, asked how many data will be necessary for CRD to get reliable analytical outputs.
- Mr. Kuwahara of CRD answered that at least 20,000 saying that in Japan CRD is using 2 million data. With 10,000 CRD can make model but bigger the better.

4. Presentation on Research on the preparation and utilization of financial statements

- Mr. Furukawa explained that the objective of this research is to identify what organization collects how many financial statements (FS) data as collecting FS data is one of the keys for the success of CRD introduction. Saying that no single organization collects business data including financial statements covering all the economic activities, he reviewed data collected by three major organizations, SEC, BIR and PSA, and efforts made by the Philippine government to promote preparation of FS and some additional efforts need to be considered for facilitation of the preparation of FS by SMEs.
- Mr. Lester of DOF added after the presentation that this research was requested to be done to have an overview of data usable by CRD as there is no single organization that collects business data including FS data and that. Collection of fairly good number of data is one of the key to the success of introduction of CRD in the Philippines.

5. Presentation on Overall summary of the Draft Final Report

- Mr. Furukawa explained three types of organization, non-profit organization, educational or research institution and Government organization (GOCC) as the candidate organization for full-scale implementation of CRD and expected action plan for full-scale implementation. And both side found the general findings and recommendations of the study sensible.
- USEC Beltran mentioned that Philippine side/GOP accepted in principle the recommendation of the study

The meeting was adjourned at 16:00.

Annex 2

The Study for the Introduction of Credit Risk Database (CRD) in the Philippines

Review on the Risk-Based Lending in the Philippines

Japan Economic Research Institute Inc.

Background of the survey

“Review on the Risk-Based Lending in the Philippines” was carried out as one of the components of “The Study for the Introduction of Credit Risk Database (CRD) in the Philippines”, which is started in January 2017, targeting on preparing a roadmap and a pre-feasibility study for introducing the CRD in the Philippines.

CRD is a database which store a vast amount of financial and non-financial data of borrowers, provided by participating financial institutions. Using the information stored in the database, CRD carries out statistical analyses and obtains the average default probability of borrowers in different regions and sectors. A CRD type model will have a higher accuracy ratio than the credit bureau type model due to its large sized database and more explanatory numbers of variables. It also will work as a tool to evaluate the business performances of borrowers whose financial statements are available. Financial institutions, which utilize CRD to assess the credit risks of borrowers, are expected to be more active in providing loans without too much depending on collaterals or credit guarantees.

The objective of “the Study for the Introduction of CRD in the Philippines” is to prepare a roadmap and pre-feasibility for introducing the CRD in the Philippines. Once CRD is constructed in the Philippines and financial institutions started utilizing it, they are also expected to enhance their capacities to assess the credit risks of borrowers and provide loans without relying too much on collaterals.

Therefore, this survey reviews the experiences in Japan and then reviews the lending practices of the financial institutions in the Philippines to examine the issues in facilitating risk-based lending in the Philippines.

This survey was conducted mainly through literature and interview surveys. The survey team had interviews with 21 financial institutions in the Philippines, including universal, commercial, thrift and rural banks.

1. Definition, benefits and conditions of “Risk-Based Lending”

1-1. Definition of Risk-Based Lending

Risk-Based Lending (RBL) is generally understood as “the loans made based on the measured credit risks of the borrowers, in which prices and collaterals are determined according to the amount of the measured risks” from the explanations in existing documents[1].

A “Risk” mentioned in “Risk-based lending” is understood as a “Credit Risk”. According to a Basel definition, “credit risk” is regarded as the “potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms[2]”.

When financial institutions (FIs) make loans based on collaterals, the borrowers which have sufficient amounts of assets will meet loan requirements. In this case, potential borrowers which do not have assets would not have chances to access finance, no matter how their businesses are promising.

In contrast, if FIs review the financial status, business outlook and other aspects of the potential borrowers to assess their credit risks when consider providing loans, FIs do not have to rely too much on collaterals.

1-2. Expected benefits by Risk-Based Lending

This section explains the expected benefits by RBL for (1) lenders and also for (2) borrowers.

(1) Expected benefits by Risk-Based Lending for lenders (FIs)

One of the characteristics of RBL is that FIs do not rely too much on collaterals when they provide loans. If FIs have strong credit risk management capacities[3], they can measure the amounts of credit risks of borrowers and then determine the loan amounts and conditions based on the measured credit risks. In this case, such FIs can achieve increasing their loan balances without increasing loan losses or credit risks, even if they do not take a lot of collaterals from borrowers.

Even though FIs provide RBL, they can maintain their capital adequacy at the sufficient level, if they have credit risk management capacities. In Basel 2 regulations, FIs need to meet minimum capital requirements and their capital adequacy ratios have to be more than 8%. The

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1 Lagua, B (2013), SBC’s Risk-Based SME Lending - Financing Best Practice, Available at: < http://mddb.apec.org/Documents/2013/SMEWG/SMEWG1/13_smewg36_016.pdf >

2 Basel Committee on Banking Supervision (1999), Principles for the management of credit risk, Available at < http://www.bis.org/publ/bcbs54.pdf >

3 Enhancement of the credit risk management capacity is essential for a financial institution to provide risk-based lending because expected loan losses from secured loans are smaller than unsecured loans or risk-based lending in general.

capital adequacy ratio of a FI is calculated as FI's core capital[4] divided by risk weighted assets. If the amounts of credit risks of a FI are small, the amounts of risk weighted assets included in the calculation of capital adequacy are small[5] and thus the capital adequacy ratio becomes higher. In other words, FIs can maintain high capital adequacy when providing RBL, if they can measure and minimize credit risks of borrowers.

Through providing RBL, FIs are also expected to take more interest margins[6]. This is because loan margins are bigger if the credit risks are bigger. Compared to the collateral-based lending or secured loans, credit risks of RBL tend to be bigger as they are not secured by collaterals.

(2) Expected benefits by Risk-Based Lending for borrowers

RBL is beneficial also for borrowers, mainly because borrowers can secure necessary funding throughout their "life stages", such as (i) Start-up period, (ii) Growth period, (iii) Crisis period and (iv) Stable period.

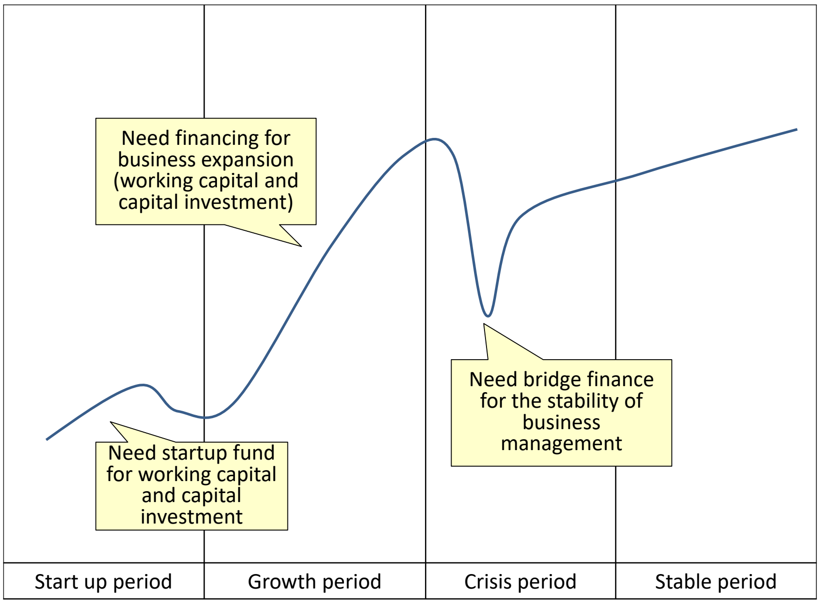

Figure 1-1 Necessary financing for a business during its life stages

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[4] Tier 1 capital and Tier 2 capital. Tier 1 capital is calculated as (paid up capital + statutory reserves + disclosed free reserves) - (equity investments in subsidiary + intangible assets + current & brought-forward losses). Tier 2 capital is a) Undisclosed Reserves + b) General Loss reserves + c) hybrid debt capital instruments and subordinated debts.

[5] In case the credit rating of a borrower is very high (AAA or AA), 20% of such loan assets are included in the calculation of capital adequacy. Therefore, if the amount of loans to the borrowers with higher credit rating is bigger, the amount of risk weighted asset of the bank is smaller, and thus the risk-based capital adequacy ratio of the bank is bigger.

[6] However, the loan interest rates by FIs are significantly lower than the loan interest rates by informal money lenders.

During (i) Startup period, a business needs start-up funds for working capital and capital investment. If the business can obtain financing based on its business prospects (if FIs provide RBL evaluating the business prospect of the borrower), it can secure sufficient financing to survive its Startup period and to shift to (ii) Growth period. However, the funding of a business basically depends on self-financing, as it has neither sufficient business history not assets for collateral.

During (ii) Growth period, a business needs financing for capital investments and working capital. In Growth period, a business expands production or logistic facilities and thus requires funds for capital investments. It also needs more working capital to fully utilize its expanded facilities. Therefore, if the business has access to RBL, it can secure financing for such capital investment and working capital to achieve business growth. During this period, a business accumulates assets, business experiences, and banking transaction history. It also improves its capacity to prepare financial documents too. Thus, it starts financing its working capital and capital investments through unsecured and secured loans.

RBL is also critical during (iii) Crisis period and (iv) Stable period. No matter if a business entered into Stable period, it might fall into a crisis, due to economic turmoil, for example. In Crisis period, a business will face a downturn in sales and profits and thus shortfalls in cash. If the business has access to RBL, it is possible for the business to fill the shortfalls in cash and survive the crisis period to move to Stable period.

1-3. Conditions for successful Risk-Based Lending

RBL is beneficial both for lenders and borrowers as described in the previous section. However, in order for the successful RBL, certain conditions need to be met. This section explains the necessary conditions for successful RBL from both lenders' and borrowers' viewpoints.

(1) Conditions for successful Risk-Based Lending for FIs

(a) FIs can obtain necessary information to measure credit risks of borrowers

Information of borrowers is most essential for FIs to provide RBL. Without sufficient information of borrowers, it is impossible for FIs to assess credit risks of borrowers and also to provide RBL.

In order for FIs to assess the credit risks of borrowers, FIs need sufficient amounts of financial and non-financial information. Financial information include;

- Financial status (balance sheets, income statements and cash flow statements) and
- Repayment capacities.

Non-financial information is any other information but financial information, including;

- Business outlook and prospects
- Characteristics of business
- Management capacities
- Collateral values and conditions7,
- Repayment status of existing loans, and
- Credit history

Box 1: The information which FIs in Japan emphasize in loan appraisals
(Interviewed with 3,010 FIs) - Financial status : 99.0% - Stability and growth in business: 94.1％ - Characteristics and management capacity of managers: 76.9% - Amounts of assets: 63.8% - Track records : 59.4% - Relationships with customers: 21.6% - Business plans : 21.4% (Source : White Paper on Small and Medium Enterprises, 2016, The Small and Medium Enterprises Agency Japan)

(b) FIs can analyze and capture the credit risks of borrowers

Based on the information provided by borrowers, FIs assess the amounts of credit risks of borrowers throughout credit appraisal processes. Therefore, one of the necessary conditions for FIs to provide RBL is that FIs have sufficient capacities to assess the credit risks of borrowers.

In order to assess the credit risks of borrowers, FIs carry out credit scoring or internal rating of borrowers based on information such as financial status, management capacities of borrowers and market conditions. Therefore, FIs also need to have such credit scoring or internal rating systems.

(c) FIs accept credit risk of borrowers

As mentioned above, in order to provide RBL to borrowers, FIs need to obtain the information of borrowers and then analyze the credit risks of borrowers. However, a “risk appetite” or the attitude of FIs to take credit risks is one of the determinants for FIs to provide RBL. FIs would take more credit risks when they try to increase loan balances and incomes from loan

[7] Even though FIs provide loans to borrowers without taking any collateral, they still examine collateral values. One of such reasons is that FIs review the borrowing or repayment capacities of borrowers through examining collateral values.

interests. Instructions by a financial supervising body might be one of the factors which encourage the risk appetites of FIs.

Therefore, another condition for FIs to provide RBL is to accept credit risks of borrowers to some extent, securing the credit risk by higher interest margins. In other words, FIs need to change their mindsets from "low risk – low return" to "Middle risk – Middle return", when providing RBL. In many cases, FIs face such necessity when they face competitions with other FIs.

In order for FIs to take more credit risks, it is essential for FIs to capture the credit risks of borrowers. In other words, the enhanced credit risk measurements would give FIs more confidence to provide risk-based lending. The enhancement of the capacities of FIs would therefore encourage the RBL by FIs.

(2) Conditions for successful Risk-Based Lending for borrowers

The conditions for the successful RBL for borrowers, which are quite similar to the conditions for FIs, include;

(a) Borrowers can provide necessary (and reliable) information to FIs; and

(b) Borrowers are creditworthy enough (e.g. the profitability of the borrower is high, the business stability of the borrower is high, the business efficiency is high[8] and business outlook of the borrower is promising)

As mentioned above, borrowers need to provide FIs with information such as financial status, business outlook and others to show that they are creditworthy enough. Naturally, if borrowers are not creditworthy enough, FIs would not take any credit risks to provide RBL.

1-4. Roles and Responsibilities of financial supervising bodies to promote Risk-Based Lending

For the successful RBL, financial supervising bodies play important roles.

Naturally, one of the major functions of financial supervising bodies is to secure the stability of the financial system and the financial soundness of FIs, by issuing banking regulations and also by giving instructions to FIs. Through ensuring the stability of the financial system, supervising bodies also protects depositors, insurance policyholders, and investors.

Another role that a financial supervising body plays is "Grading up the financial intermediation function" or "Facilitating the financial system". As a part of such functions, a financial supervising body sometimes issue rules or instructions for FIs so that FIs can enhance credit risk management capacities or increase the amounts of RBL. In some countries (such as in

[8] The business stability is usually measured by the level of liquidity ratio or capital adequacy ratio, while the business efficiency is measured by asset turnover.

Japan), financial supervising bodies issue rules or give instructions to FIs so that FIs can direct more funding to SMEs.

2. Risk-based lending in Japan

This section explains the RBL practices in Japan. This section first explains the historical backgrounds in Japan and then explains the current RBL practices in Japan, focusing on the functions of the financial supervising body in the promotion of RBL.

2-1. Historical background of business financing in Japan

(1) Up to early 1990s

From mid-1950s to early 1970s, Japan enjoyed rapid economic growth and achieved 10% of annual GDP growth on average. Demands for capital investments by private companies were huge and they financed such investments mainly by bank loans.

During this period, the interest rates were regulated by the government and they were controlled at the very low levels. Because FIs could not determine loan margins according to the level of credit risks of borrowers, FIs generally provided loans based on collaterals, such as lands and buildings, in order for the security of loans. As a result, FIs emphasized (i) appropriateness of loan applications (e.g. whether loan purposes, loan terms and loan repayment plans are appropriate or not), and (ii) quality of collaterals, mainly because they were more focused on the security of loans.

During 1980s, especially in late 1980s, Japan saw a decrease in interest rates and increase in the real estate prices. FIs then expanded their loan balances following the appreciated real estate prices. Naturally, more funding flowed into real estate investments, and this led to a further increase in real estate prices. Borrowers, who owned real estates, took more loans from FIs and made investments to expand their business.

When the Japanese government tried to control the real estate price increase and tightened the financial and fiscal policies, real estate prices dropped significantly. As a result, in early 1990s, Japanese economy entered into a severe economic downturn (which is called as a “bubble-burst”) and many FIs suffered from the sharp increase in non-performing loans.

(2) After 1990s

Following the economic downturn in early 1990s, the amount of non-performing loans at banks significantly increased.

In reaction to this, FIs started emphasizing the security of loans and FIs became very conservative in providing RBL. As a result, many businesses had shortfalls in cash flows, as it became difficult for them to have loans from FIs.

During this period, FIs also started enhancing credit risk management. For example, FIs started emphasizing the monitoring of existing loans. In this connection, FIs also started considering how to assess the creditworthiness of borrowers, using their financial data.

One of the efforts by the government in reaction to this situation was "Financial Revitalization Program" in 2002, targeting on the "Economic Revitalization through solving NPL problem of major commercial banks".

In 2003, the government of Japan (Financial Service Agency) set up "Action program on the enhancement of Relationship Banking" under "Financial Revitalization Program[9]". The action program targeted on solving NPL problem of small and medium local FIs and also on improving access to finance of small and medium enterprises.

This action program also emphasized the importance of RBL, mentioning that "FIs are encouraged to enhance loan review processes and also utilize credit scoring models, so that FIs can provide loans to borrowers based more on their business cash flows, without relying excessively on collaterals or credit guarantees".

At the same time, construction of "Credit Risk Database (CRD)" was started in 2001 under the initiative of the government of Japan in order to facilitate SME financing through enhancing the measurement of the credit risks of SMEs. CRD is a database which stores a vast amount of financial statement and default data of borrowers provided by member FIs and credit guarantee associations. CRD provides members with scoring models by which members can review the on-going business status of existing and potential borrowers.

(3) Recent trend

NPL problems of FIs which happened after the bubble burst in early 1990s was mostly solved, and the overall loan balance in the country is showing increasing trend. However, the interest incomes of FIs are decreasing, due to the decrease in loan margins. The loan margins are decreasing as the demand for loans are still limited.

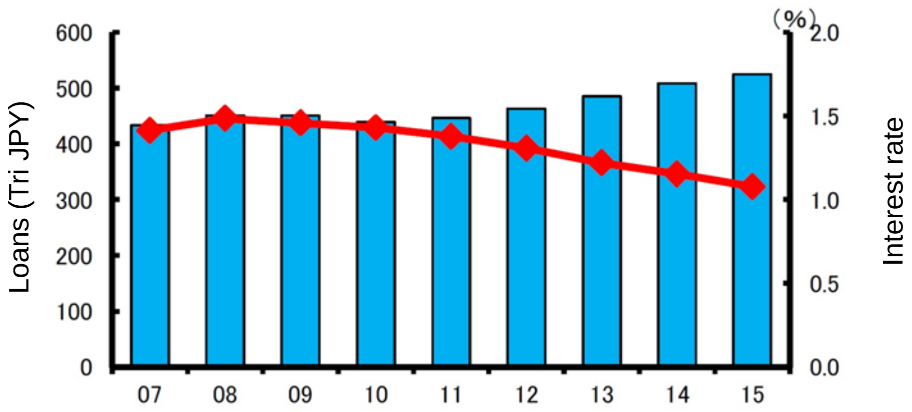


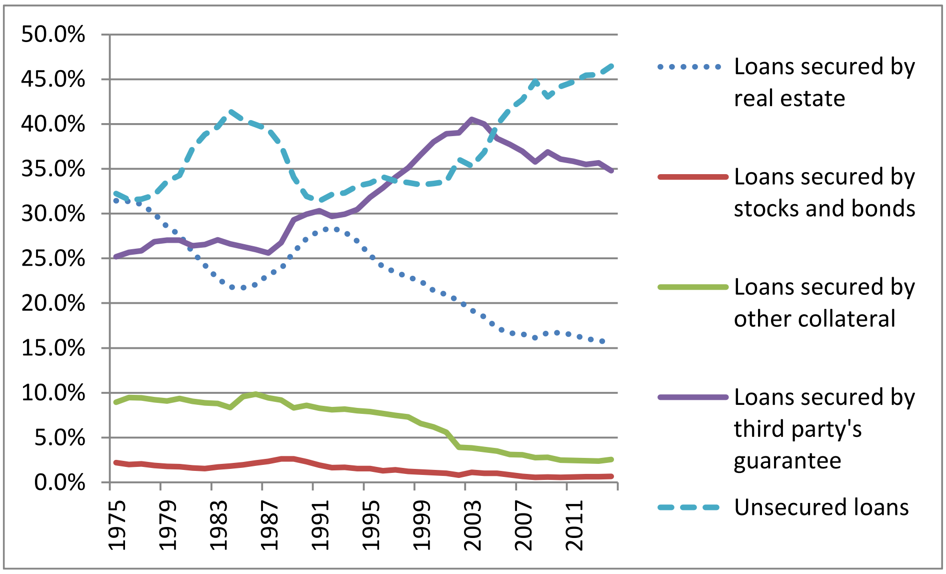
Figure 2-1 Trend in loan balance and interest margin

9 Financial Services Agency (2002), Financial Revitalization Program, Available at: <http://www.fsa.go.jp/news/newsj/14/ginkou/f-20021031-1.pdf> [Published in Japanese]

In non-urban area, mainly due to the decreasing trend of population in their regions, FIs operated in non-urban areas (called as "Local banks") are foreseeing decrease in the loan balance in the future.

2-2. Trend in Risk-based lending by Financial Institutions in Japan

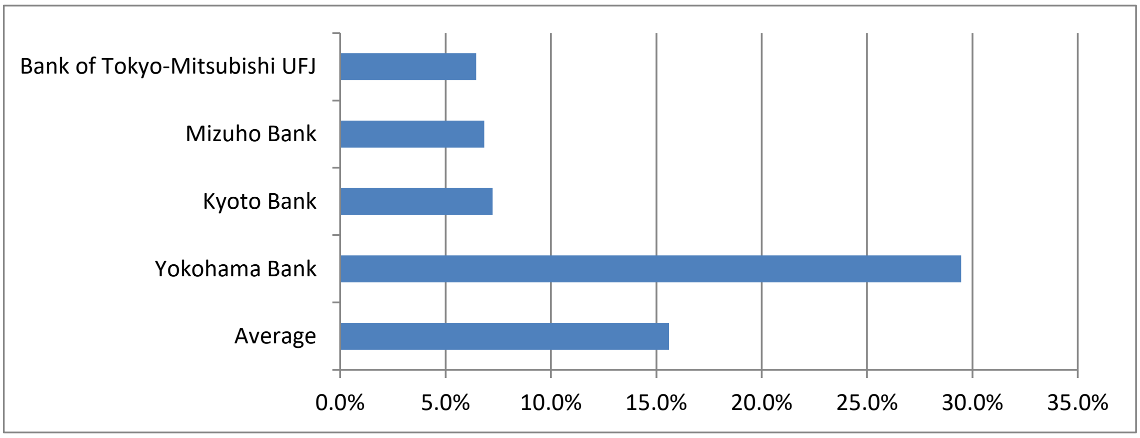
The level of RBL, which can be measured by the proportion of unsecured loan, has been increasing in Japan. The proportion of unsecured loans, which was about 30% in the early 1990s, reached up to 45% in 2010s.



(Source: Bank of Japan Statistics)

Figure 2-2 Trend in secured and unsecured loans in Japan

The level of RBL differs among banks. In general, major banks operated in urban areas tend to provide more RBL to borrowers. This can be clearly illustrated by the following table, which shows the proportion of loans secured by real estates.



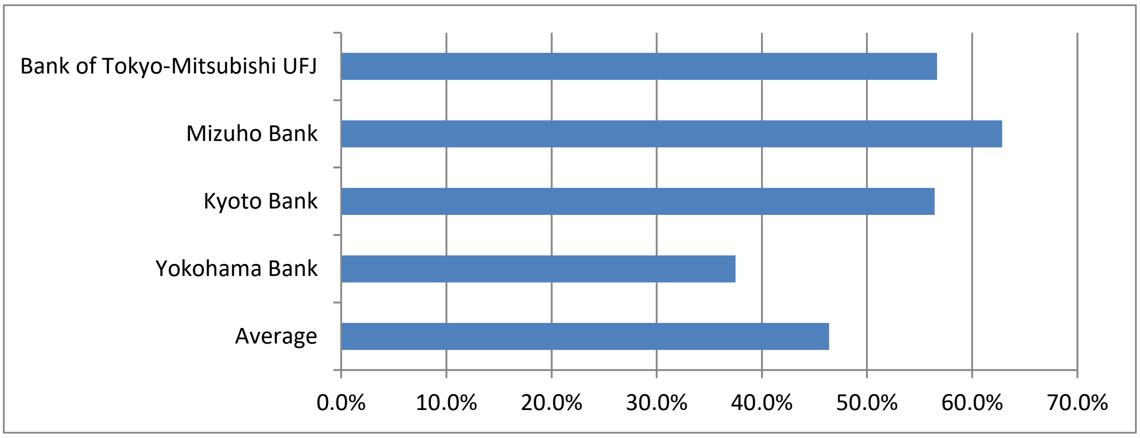
Source: Bank of Japan Statistics and annual reports of banks

Figure 2-3 Proportion of loans secured by real estates

This figure shows that the proportion of secured loans by real estates is smaller at major commercial banks. The proportions of secured loans covered by real estate at Bank of Tokyo Mitsubishi and Mizuho Bank are 6.4% and 6.8% respectively, and these are much lower than the average (15.6%).

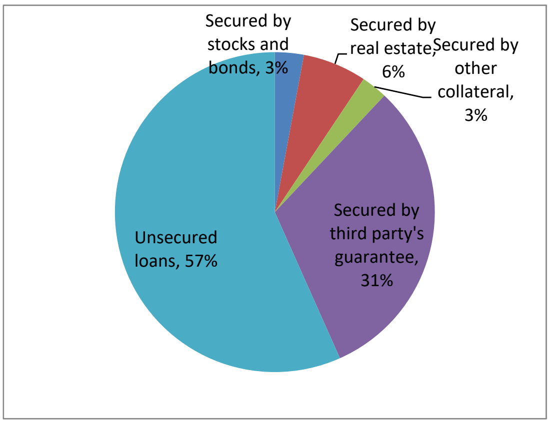
The proportions of the secured loans at local banks differ among banks, probably due to competitions in regions and the management policies of banks. The proportion of secured loans at Yokohama bank is 25.2%, whereas that of Kyoto bank is 7.2%.

The proportions of the unsecured loans of these banks show similar trends with secured loans. The proportions of unsecured loans at commercial banks are higher than average, while the proportions of local banks differ among banks.



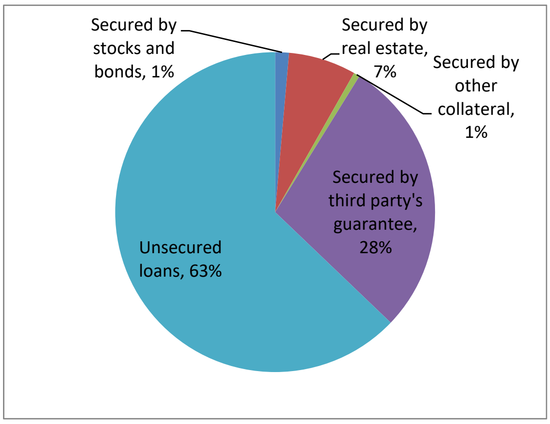
Source: Bank of Japan Statistics and annual reports of banks

Figure 2-4 Proportions of unsecured loans



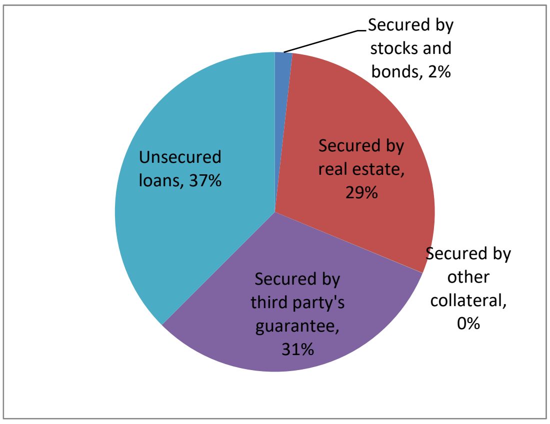
(Source: Mitsubishi UFJ Financial Group, Disclosure 2016)

Figure 2-5 Proportion of Loans by Collateral Type, Bank of Tokyo - Mitsubishi UFJ (2016)



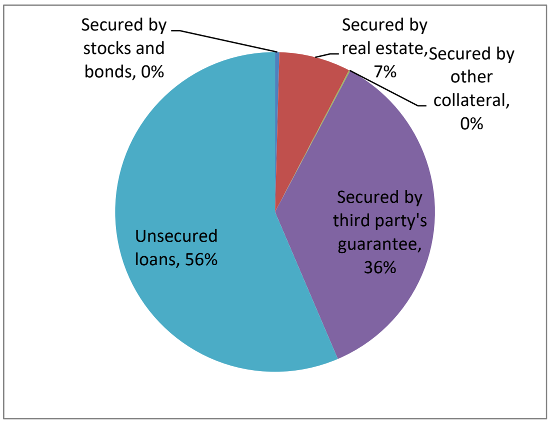
(Source: Mizuho Financial Group, Disclosure 2016)

Figure 2-6 Proportion of Loans by Collateral Type, Mizuho Bank (2016)



(Source: Yokohama Bank, Disclosure 2016)

Figure 2-7 Proportion of Loans by Collateral Type, Yokohama Bank (2016)



(Source: Kyoto Bank, Disclosure 2016)

Figure 2-8 Proportion of Loans by Collateral Type, Kyoto Bank (2016)

2-3. Initiatives by the financial supervising body

The financial supervising body in Japan (Financial Service Agency, FSA), targeting on fostering new industries and promoting local industries, started encouraging FIs (especially local banks) to put more emphasis on the assessment of business outlook of borrowers during loan appraisals, rather than relying too much on collaterals or credit guarantees.

At the same time, FSA has significantly changed its bank supervision approaches in 2016.

Before 2016, FSA, as a financial supervising body, was more concentrated on monitoring the financial soundness of FIs through "asset quality review". In the asset quality review, FSA examined the appropriateness of loan classifications carried out by FIs through on-site inspections. However, it was pointed out that FIs became reluctant to take credit risks, as the result of strict inspections by FSA.

Therefore, FSA changed its policy in the on-site inspections and started giving more freedom to FIs. After the change in policy, FIs carry out loan classifications as before, but FSA picks up only a limited number of large sized borrowers in the inspections.

At the same time, FSA started encouraging FIs to provide loans based more on the business prospects of borrowers. In this connection, FSA launched several initiatives as follows;

(1) Promotion of loan appraisals based on future business prospects of borrowers

In September 2014, FSA of Japan started encouraging FIs to put more emphasis on the assessment of "future business prospects" of borrowers in loan appraisals (under "Financial Monitoring Policy[10]").

Based on this policy, some FIs prepared a format for the assessment of a business outlook of borrowers. For example, Japan Finance Corporation (a governmental financial institution specialized in SME finance) prepared a "Management Vision Sheet" in which borrowers fill their business vision, strength and weakness, business strategy to achieve the mission, summary of business and business development plan.

Using the information indicated in the sheet, FIs review and analyze the business prospects of borrowers in loan appraisals.

[10] Financial Services Agency (2014), Financial Monitoring Policy for 2014-2015 (Policy for Supervision and Inspection), Available at: <http://www.fsa.go.jp/en/news/2014/20141225-1/01.pdf>

Management Vision sheet

1. Management Motto

1. Management Motto	

2. Strength and Weakness

	Strength	Weakness
Production		
Purchase		
Processing		
Sales		
Organization		
Finance		
Equipment's		
Human resources		
Others		

3. Business Vision

Vision 1	
Vision 2	
Vision 3	

4. Actions to achieve business visions

	Actions
Vision 1	
Vision 2	
Vision 3	

5. Business outlook (of the loan applications）

Contents	
Purpose	
Timing	
Issues	

Source: Japan Finance Corporation

Figure 2-9 Management Vision Sheet of Japan Financial Corporation (extract)

(2) Review on the loan appraisals based on future business prospects

As a part of the efforts to encourage FIs to carry out loan appraisals based on the business prospects of borrowers, FSA started reviewing (i) how FIs assess the business outlook of the borrowers and (ii) what FIs need to do to improve the business management of the borrowers, through the in-depth dialogues with senior management of FIs.

(3) Establishment of benchmark indicators on "financial intermediation" functions of FIs

Similarly, in order to monitor the effects of the loan appraisals based on a business outlook, FSA established a wide range of benchmark indicators on "financial intermediation" functions of FIs.

Such indicators include;

- Numbers and amounts of loans made based on the assessment of borrowers' future business prospects
- Numbers of clients whose business performances have improved by such loans
- Differences in the interest rates between ordinary loans and the loans made based on the assessment of business prospects, and

- Numbers of start-ups the bank supported

FSA is also encouraging FIs to disclose the achievement of such indicators. In reaction to this, many local banks started disclosing the information on indicators in their annual reports.

CRD provides supports to member FIs in relation to the initiatives by the financial supervising body. One of such supports is called as Management consulting Support System (McSS).

McSS, which was originally launched in 2006 by CRD Association, supports member FIs to evaluate the financial statements of borrowers and also to carry out diagnostic analyses of borrowers by comparing to the financial data of about one million companies stored in CRD. The functions of McSS were enhanced in 2013 so that member FIs can support their borrowers to set up business plans and also to monitor the implementation progresses of such plans.

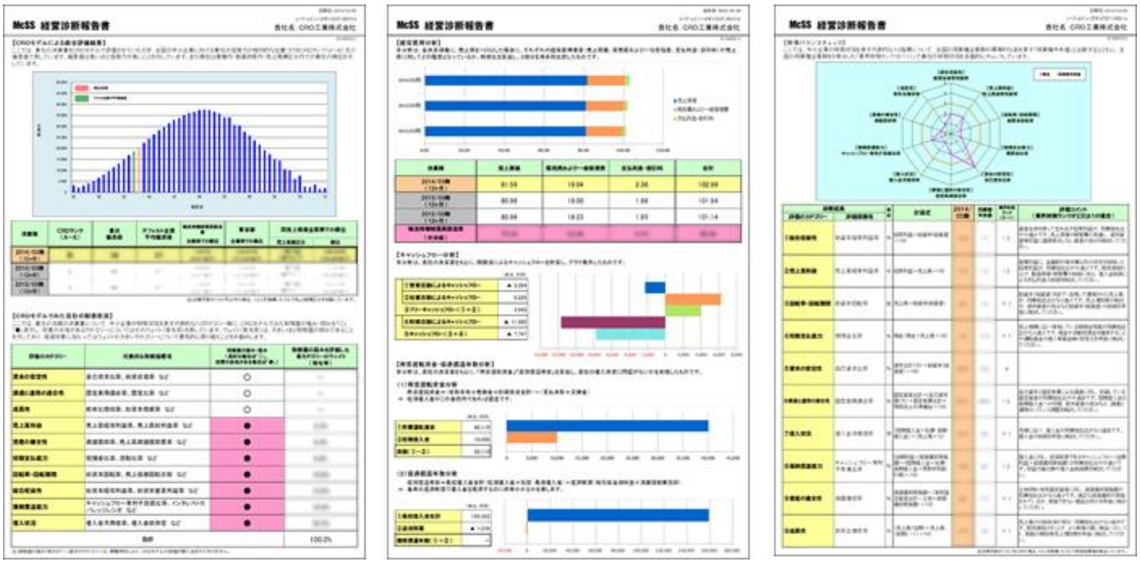


Figure 2-10 Example of the output by McSS

McSS provides member FIs with;

- Analytical results on the creditworthiness of borrowers,
- Ranks of borrowers in provinces and in industrial sectors,
- Analytical results of the strength and weakness of the financial status of borrowers,
- Sales and cost structures of borrowers (e.g. proportion of costs of goods sold and components of general and administrative expenses),
- Analysis on actual cash flows, and
- Estimated necessary working capital amounts and repayment capacities of borrowers.

McSS_Simulation, which was released in 2014, is equipped with more functions, such as a “future simulation function”, by which member FIs can establish management support plan of SMEs.

McSS_Simulation is also equipped with other functions, for example, to prepare the benchmark indicators mentioned above and other related financial indicators. McSS_Simulation also provides data entry sheets corresponding to “loan appraisals based on future business prospects” mention above, interview sheets for the managements of different industries and the operation manuals for loan appraisals based on future business prospects.

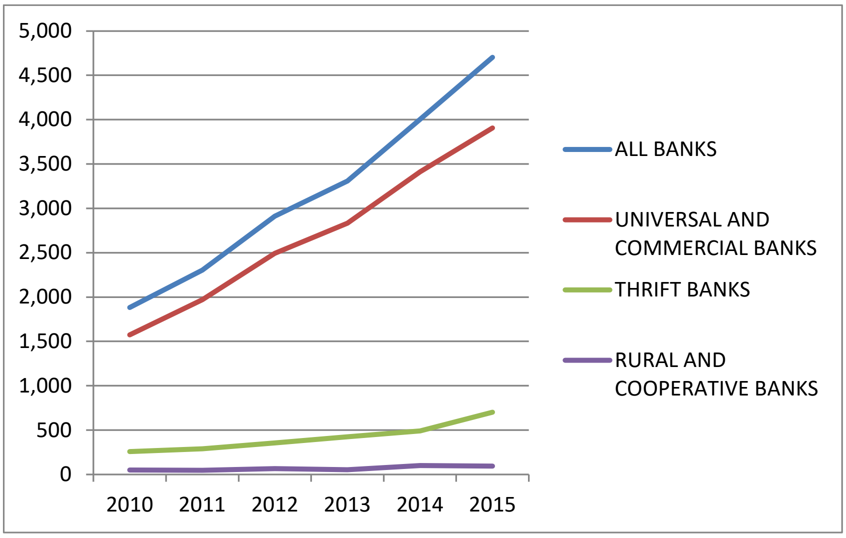
3. Risk-based lending in the Philippines

3-1. Background of the Risk-Based Lending in the Philippines

(1) Trend in the loan balance in the Philippines

The loan balance in the Philippines shows rapid increased for the last ten years. During this period, the Annual increase in loan balance was 15-20% per year.

However, the increase in total loan balance is mostly from the increases at universal and commercial banks. The loan balances at thrift banks also shows increase, but not as sharp as the increases at universal and commercial banks. The loan balances of rural and cooperative banks do not show any increases.

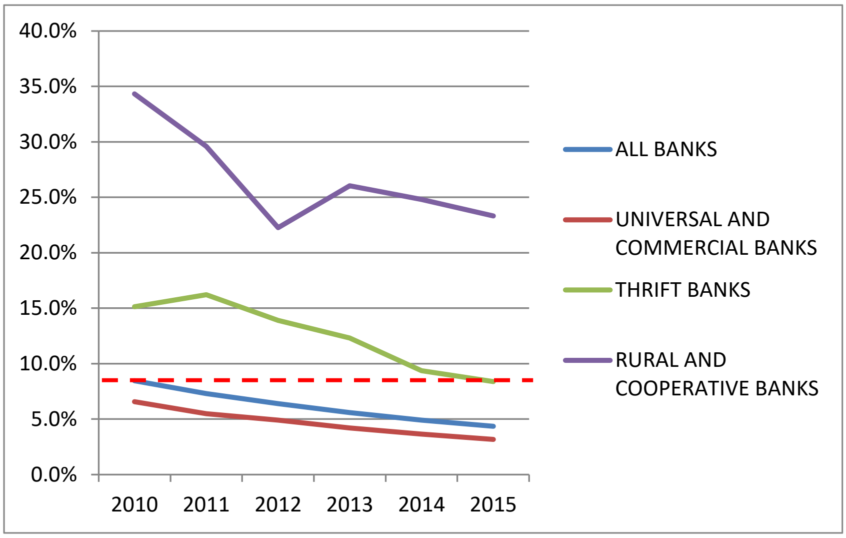


Source: Bangko Sentral ng Pilipinas Statistics

Figure 3-1 Trend in loan balance by category of FIs

By "Magna Carta for Micro, Small and Medium Enterprises" issued in2008, FIs in the Philippines are mandated to allocate more than 8% of the total loan balances for micro and small enterprises (MSMEs) and 2% for medium enterprises. However, most FIs, especially universal and commercial banks do not comply with this. The loan balance for MSMEs by universal and commercial banks is about 4% of the total loan balance.

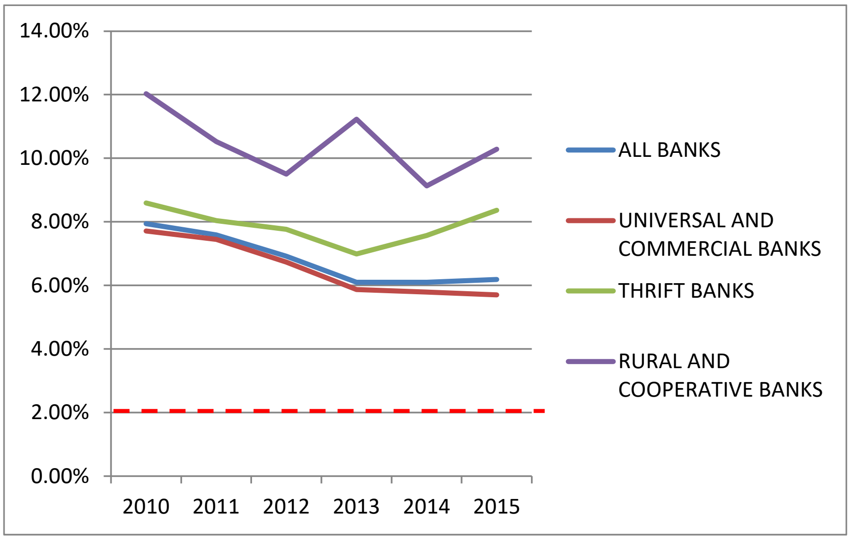
The proportions of loans to micro and small enterprises have been decreasing in all categories of FIs, as the loans to MEMEs has not increased as fast as the total loan balances.



Source: Bangko Sentral ng Pilipinas Statistics

Figure 3-2 Proportion of loans to micro and small enterprises by category of FIs

The proportion of the loans to medium enterprises also shows a decreasing trend. The proportion of loan balance to medium enterprises still exceeds the target by Magna Cart (2%).

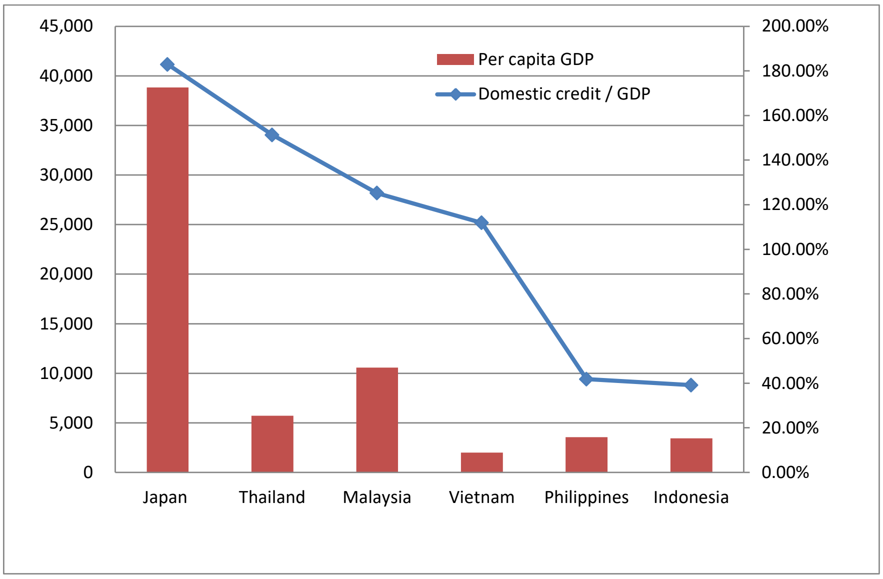


Source: Bangko Sentral ng Pilipinas Statistics

Figure 3-3 Proportion of loans to medium enterprises by category of FIs

Although, statistical information on RBL in the Philippines is not available, the amount and proportion of RBL is estimated to have increased and continues to increase according to the economic growth.

In general, there is a positive correlation between the level of per capita Gross Domestic Product (GDP) and the ratio of domestic credit to GDP. In other words, if the per capita GDP of the Philippines increase, the amount of domestic credit will further increase. If the per capita GDP and domestic credit to GDP ratio reach up to the levels of Malaysia, the domestic credit in the Philippines would be 3 times bigger.



Source: World Bank

Figure 3-4 Comparison of Domestic credit to GDP ratio among surrounding countries

RBL in the Philippines is expected to increase according to the increase in the domestic credit in the future. The increase in the domestic credit in the Philippines led to the severer competitions among FIs, which made it difficult for FIs to take collaterals from borrowers. Then, when FIs provide loans to borrowers, they would depend more on the assessment of credit risks of borrowers rather than collaterals[11].

(2) Policies on the enhancement of the financing for SMEs in the Philippines

1) Magna Carta for Micro, Small and Medium Enterprises

Magna Carta gives mandates on FIs to allocate more than 8% of the total loan balances to MSMEs and 2% to medium enterprises. FIs are also required to submit reports on the achievement of the targets set in Magna Carta periodically to BSP (Bangko Sentral ng Pilipinas). BSP publishes reports on the level of achievement on its website. As mentioned above, most universal and

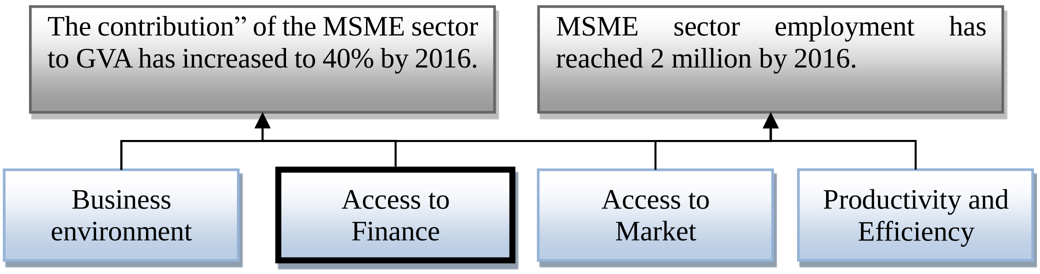
[11] It should be also noted that there are other banks which provide loans to borrowers without taking collaterals simply following other banks without measuring credit risks in detail.

commercial banks have not achieved the targets because they could not increase loans to MSMEs as fast they increase loans to larger enterprises.

2) The Micro, Small and Medium Enterprise Development Plan 2011-2016 (MSMEDP)

MSMEDP targeted that "the contribution of the micro, small and medium enterprise (MSME) sector to Gross Value Added (GVA) has increased to 40%" and "MSME sector employment has reached 2 million".

One of the strategies to achieve these targets was "Access to Finance (A2F)", as depicted in the following diagram.



Source: The Micro, Small and Medium Enterprise Development Plan 2011-2016

Figure 3-5 Structure of MSMEDP

3) Actions against informal lending

Private informal lenders[12] in the Philippines (which are normally called as "5 - 6") give loans to micro businesses which do not have access to banks loans. The interest rates of such loans tend to be significantly high compared to formal lending, and they sometimes reach up to 20% per day.

In the interviews conducted in this study, some rural and thrift banks, which are regarded as micro financing institutions, mentioned that there were some micro businesses which shifted from formal lending (e.g. bank loans) to informal lending. The main reasons why such borrowers shifted to informal lending were that such borrowers cannot prepare necessary documents, such as financial statements, mayors' permits, and sometimes birth certificates of business owners. The fact that the business owners do not have land titles of their assets is also one of the reasons why such micro businesses do not have access to formal lending.

In reaction to this, the government of the Philippines started its effort to remove such informal money lenders under the initiative by President Duterte,

One of such actions is made by Securities and Exchange Commission (SEC). SEC issued

[12] Formal lenders include financial institutions, such as banks, financing companies, cooperatives, microfinance NGOs and lending companies with proper secondary licenses. Informal lenders are those which are not regarded as formal lenders.

an advisory which says “it is illegal to act as a lending company or lending investor unless registered as a corporation with the SEC”. Violators will face a fine of P10,000 to P50,000 or imprisonment of six months to 10 years or both.

4) PONDO SA PAGBABAGO AT PAG-ASENSO (P3)

Actions to encourage the shift from informal lending to formal lending were as also launched very recently by the government, which is called as “PONDO SA PAGBABAGO AT PAG-ASENSO” or P3.

This is a financing program for micro businesses, which is in line with the President’s directive to achieve affordable micro-financing. Small Business Corporation, in collaboration with Department of Trade and Industry, started providing micro loans to micro and small enterprises.

(3) Rules and regulations related to Risk-Based Lending

One of the most important rules and regulations regarding RBL in the Philippines is “Circular 855: Guidelines on Sound Credit Risk Management Practices”, which is a guidelines published in 2014 on credit risk management.

Based on this guidelines, FIs have to “establish well defined credit granting criteria and under wiring standards (X178.7). In order to fulfill this requirement, FIs need to “use, to the extent available, credible audited financial statements and other relevant document and sources” (X178.7c).

Based also on this circular, FIs have to “adopt sound and appropriate risk management measurement methodologies which provide a framework to control and monitor the quality of credit as well as total loan portfolio (X178.13)”. FIs also need to “develop and utilize an internal risk rating system (X178.13a)” and also to “establish comprehensive policies and procedures on effective validation of the rating system (X178.13d)”. FIs also have to “have in place a reliable credit classification system” on the basis of Internal credit risk rating system, including payment delinquency status (X178.17)”.

FIs that do not “justify a more sophisticated loan loss methodology” need to follow “Basic guidelines in setting up of allowance for credit losses” in Appendix 18. This is an alternative minimum standard of allowance applied to FIs which do not have loan loss methodologies such as an internal risk rating system. In this case, loan classifications are determined mainly by “number of days of missed payments” and security (collateral). However, it is pointed out that FIs are instructed by Bangko Sentral ng Pilipinas (BSP) to make the loan classifications more conservative (and thus the loan loss allowances are bigger than the banks which have “risk management measurement methodologies”).

The levels of compliance with Circular 855 differ among banks. Bigger banks with sufficient capacity comply with the circular, while many smaller banks cannot.

Bigger banks already have risk management measurement methodologies, such as internal risk rating or credit scoring systems. They give ratings or scores to borrowers and reflect the results into their loan decision processes. For example, if the internal rating or scoring results of borrowers are very low, banks decline loan applications in general. Many banks also determine the amounts of loan loss allowance based on ratings and payment delinquency status of borrowers.

Many smaller banks have not constructed risk management measurement methodologies yet, although some banks utilize credit scoring systems. This is mainly because smaller banks do not have capacities (e.g. human resources and technical skills) to construct such methodologies. Their loan appraisals mainly depend of the values of collaterals or personal relationships.

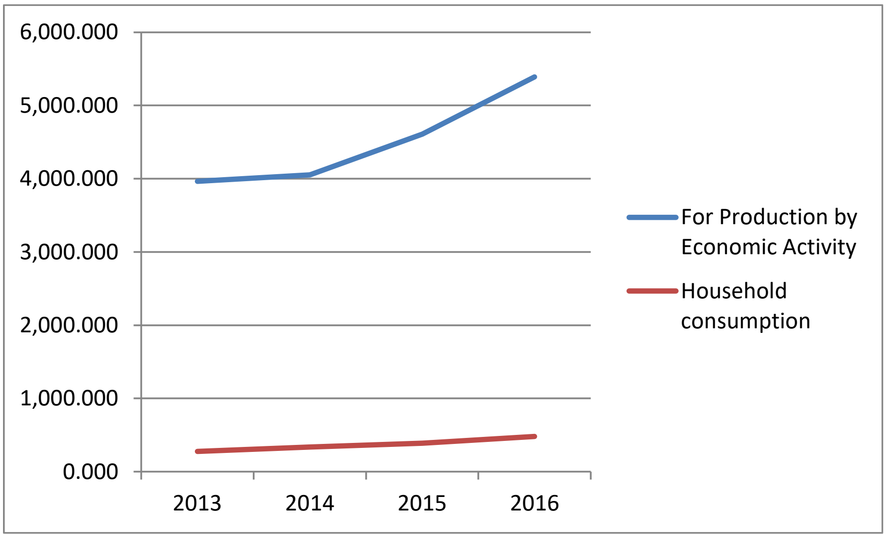
3-2. Risk-based lending at banks

(1) Risk-based lending at Universal and Commercial banks

1) Trend in the loan balance and unsecured loans

Large sized financial institution, such as universal and commercial banks have increased their loan balances very aggressively, and some of them have achieved 20 – 40% increase in loan balances per year.

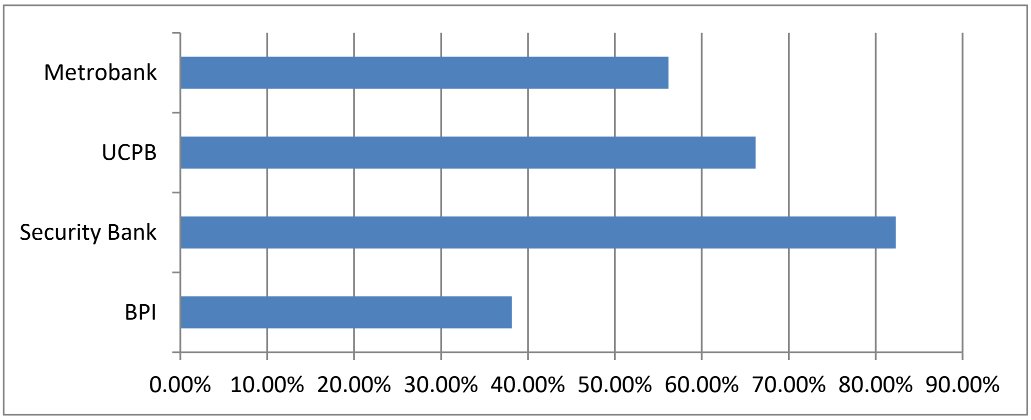
Universal and commercial banks are very active in increasing loans for “Production by economic activities” (business loans) rather than loans for “Household consumption” (consumer loans). It is pointed out that universal and commercial banks have thrift and rural banks under their umbrellas and such smaller banks are more specialized in consumer loans.



Source: Bangko Sentral ng Pilipinas Statistics

Figure 3-6 Loan balances of Universal and Commercial banks by types

The levels of unsecured loans differ among banks as described in the following table. For example, the proportion of unsecured lending at Bank of the Philippine Islands (BPI) is 38.14% as of 2015, whereas that of Security Bank is 83.20%[13].



Source: Annual report or disclosure report of each bank

Figure 3-7 Proportion of unsecured loans at selected banks

In the interviews, universal and commercial banks mentioned that collateral coverage ratios are decreasing. This is because the overall loan balance is rapidly increasing, but the amount of

[13] The proportion of unsecured lending at these banks in the Philippines is significantly higher than the Japanese average (46.4%). However, it should be noted that the definition of unsecured lending in the Philippines and in Japan might not be same, as the definitions are not mentioned in any documents.

the collaterals is not increasing as fast as the loan balance. This can be depicted as in the following diagram.

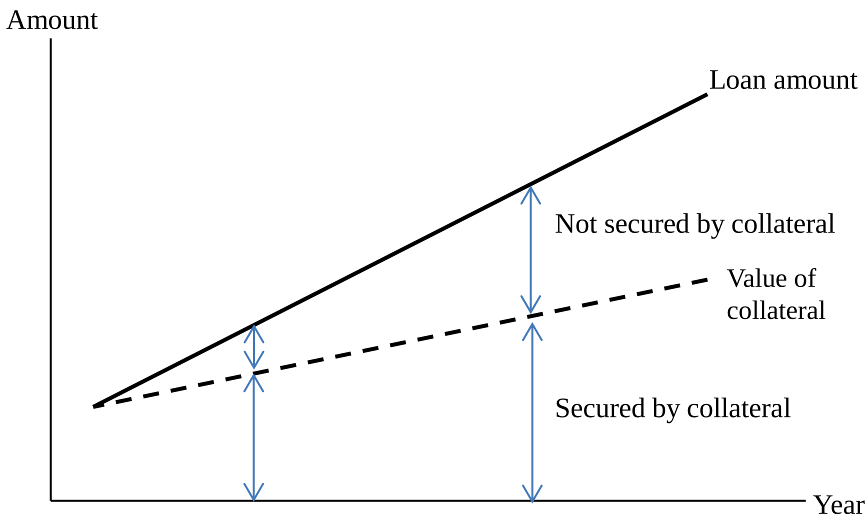


Figure 3-8 Relative decrease in the collateral coverage

Banks also mentioned that it was getting more difficult to secure loans by collaterals because of severe competitions with other banks. In other words, the increase in the loan balance in the country stimulated the competitions among banks, and this led to the decrease in the collateral coverage. However, it should be noted that the competitions are severe only in urban areas where many banks exist.

2) Credit risk assessment at Universal and Commercial banks

All interviewee universal and commercial banks have their own internal rating or credit scoring systems and use them for loan appraisals. Some banks develop their own credit scoring model not based on statistical analysis on probability of default but on their experiences. There are others banks which purchase scoring models from vendors and modified them reflecting their borrowers' characteristics. In general, the qualities of such models are not as good as the models developed based on statistical analysis.

If the rating or scoring result of a borrower is not satisfactory, banks decide not to extend loans to such borrowers in many cases. If the rating or scoring result of a borrower is not satisfactory, banks carry out more detailed loan appraisals before they make loan decisions, examining financial aspects, management qualities, market conditions and other issues of borrowers.

In the loan appraisals, banks carefully examine the “real” financial status of borrowers which do not necessarily appear in financial statements. Because financial statements of borrowers are understated in many cases, banks try to capture the actual sales, profits and assets, reviewing the amounts of inventories and transactions of bank accounts.

Traditionally, the main borrowers of universal and commercial banks have been large sized SMEs (medium enterprises). However, some banks are trying to provide loans smaller enterprises in rural areas recently to expand their potential market. Such banks are targeting on increasing loans margins and also to avoid competitions with other banks.

3) Issues in Risk-Based Lending at Universal and Commercial banks

As mentioned above, the amount of unsecured loans at universal and commercial banks are increasing and they are less dependent on collaterals. Banks can also assess credit risks of borrowers using their own internal rating or credit scoring systems. Therefore, it is possible to say that universal and commercial banks are more active in providing RBL.

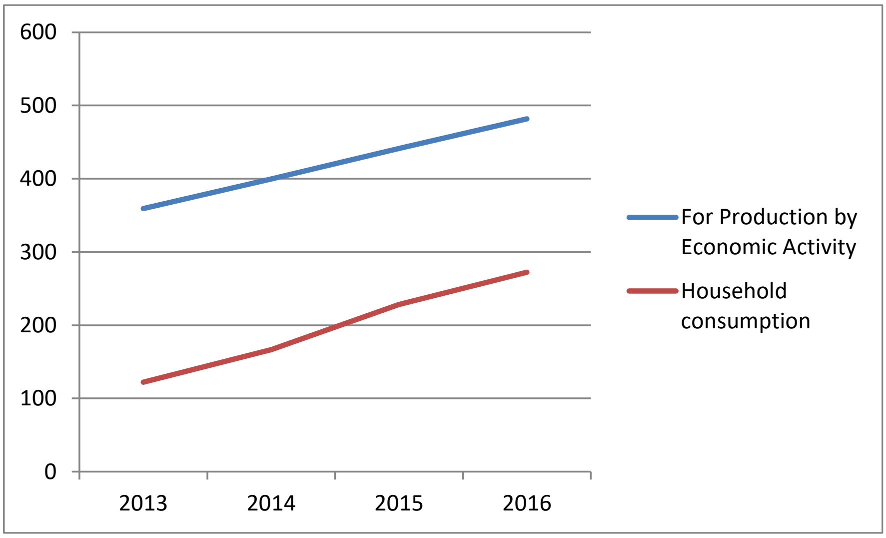
However, many banks pointed out that the main issue in increasing RBL is **“the quality of financial statement of borrowers”**. In many cases, the financial statements (including audited financial statements) of borrowers are understated and banks estimate that only 30% of actual sales, profits and assets are reported in the financial statements of borrowers. Therefore, it is essential for banks to capture the real financial status of borrowers, such as real volumes of sales and profits and real values of assets, in order to measure the real credit risks of borrowers. As a result, **transaction costs for loan appraisals** become larger.

It would be also necessary to understand the underlying risks of the loans made based on the real financial statements. Although many banks extensively examine the actual financial and business status of borrowers, there are some banks which provide loans only by following other banks, without examining the credit risks of borrowers in detail. This is because such banks do not have sufficient capacities to examine the actual financial status of borrowers and also because they try to reduce the transaction costs. Such banks would suffer from sharp increases in NPL ratios due to such lax loan appraisals, in case of an economic downturn. Improvements in the qualities of financial statements of borrowers are necessary for the sustainability of the banking sector too.

(2) Risk-based lending at smaller banks (Thrift bank, rural bank and cooperative banks)

1) Trend in the loan balance and unsecured loans

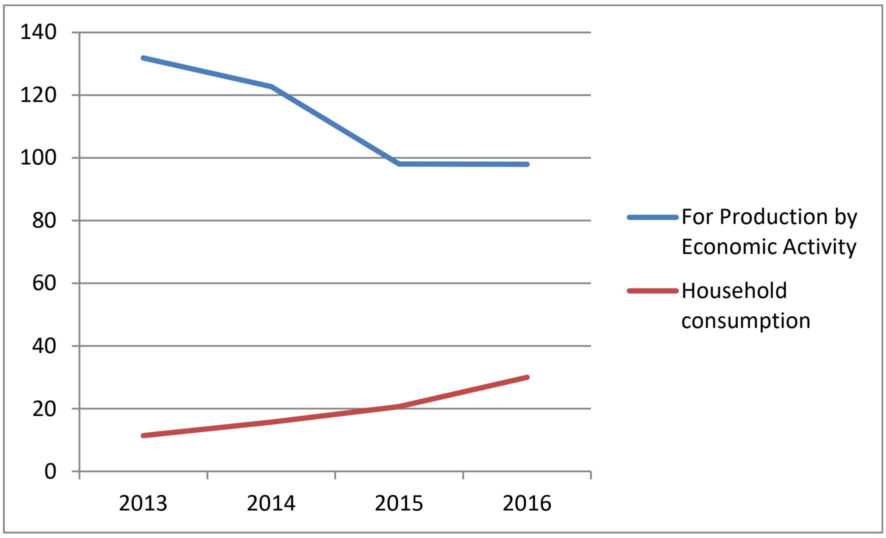
The loan balance of thrift banks is increasing at 10% per year. However, this increase is not as big as the increase at universal and Commercial bank (15 - 20%).



Source: Bangko Sentral ng Pilipinas Statistics

Figure 3-9 Loan balance of Thrift banks by types

The loan balances for production activities of rural and cooperative banks are decreasing, while the loan balances for household activities are increasing.



Source: Bangko Sentral ng Pilipinas Statistics

Figure 3-10 Loan balance of Rural and Cooperative banks by types

Many rural and cooperative banks put more emphasis on consumer loans (e.g. salary loans) rather than business loans, as they can secure sufficient interest incomes from such consumer loans without taking a lot of credit risks. However, there are some rural and cooperative banks which actively provide unsecured loans to the business sector[14].

It should be also noted that many rural banks are under the umbrellas of large sized banks, and such rural banks are concentrated in consumer loans rather than business loans, while parent (large sized) banks are more focused on business loans.

The attitudes of the smaller banks on unsecured loans are not clear because they do not publish financial information including unsecured loan amounts. During interviews, it was observed that such smaller banks are more conservative in taking credit risks and they tend to be more dependent on collaterals. One of the interviewee rural banks, which was more active in provide unsecured loans, mentioned that the collateral coverage ratio (collateral value / loan balance) is about 70%. This is still higher than that of universal and commercial bank, which vary from 20 - 60%.

2) Credit risk assessment at smaller banks

Many smaller banks do not have their own internal rating systems or scoring models. Smaller banks, which have their own credit scoring systems, mentioned that consultants they hired constructed them. Such credit scoring models are constructed based not on statistical analyses on probabilities of default but on their experiences.

The attitudes towards RBL vary among banks. Although some banks utilize credit scoring model in their loan appraisal processes, they do not provide any unsecured loans. In contrast, other banks which do not have credit scoring model were very active in providing unsecured loans. Such banks minimize the credit risks through close monitoring of borrowers based on strong human relationships with borrowers.

3) Issues in risk-based lending at smaller banks

As mentioned above, it was observed during interviews that smaller banks are more conservative in providing unsecured loans to borrowers. One of the main reasons would be that such smaller banks are more focused on consumer loans. Because the credit risks of consumer loans are minimal and banks can secure sufficient interest margins, many smaller banks do not have any motivations to provide unsecured loans.

Another reason is the competitions among banks. In rural area, competitions among banks are not as severe as in urban area. As smaller banks in rural area then do not face any pressures from borrowers, they continue providing loans securing by collaterals.

Nevertheless, there are several small banks which are active in providing unsecured loans

[14] Such rural and cooperative banks are regarded as micro financing institutions and they join a network organization of micro financing institutions called as "Microfinance Council of the Philippines, Inc." as regular members.

to businesses. Such banks have provided micro-financing to individuals and micro businesses and expanded their markets to small businesses. Issues in RBL especially for such smaller banks which have tried to provide RBL to businesses are explained as follows;

i) Compliance with financial regulations (especially Circular 855)

There are many smaller banks which have difficulties in fully complying with “Circular 855: Guidelines on Sound Credit Risk Management Practices” issued in 2014. Most typically, they have not constructed risk management mechanisms (e.g. an internal rating or credit scoring systems).

Many smaller banks have not constructed risk management measurement methodologies yet, although some banks utilize credit scoring systems. Their loan appraisals mainly depend of the values of collaterals or personal relationships.

This is mainly because such smaller banks do not have sufficient human resources to construct risk management mechanisms. Many of them would not have extra funds to hire consultants for the construction of risk management mechanisms or to purchase systems from vendors either.

It is pointed out that the amounts of loan loss reserves of banks are bigger if they do not have risk management mechanisms, following Circular 855 and the instructions by BSP. Due to such regulations, smaller banks (which do not have risk management mechanism) tend to be less active in providing RBL to small businesses unless they construct risk-based mechanisms. Therefore, technical supports for such smaller banks would be essential in order to enhance RBL in rural areas. Enhancing credit risk management through installing CRD would be one of such technical supports.

ii) Preparation of financial statements and documents by borrowers (micro and small enterprises)

Borrowers of smaller banks are micro and small enterprises in general. One of the main issues for such micro and small enterprises in applying loans is the preparation of loan application documents, especially financial statements.

For such micro and small enterprises, it is not easy to prepare financial statements. Many of them do not even have simple cashbooks.

In reaction to this, some banks have supported borrowers to prepare financial statements. As a result, transaction costs of banks for such borrowers are bigger and the interest margins that banks try to secure are also bigger. Interest rates of such loans tend to be about 12- 15% per year, reflecting the transaction costs.

Other documents which micro and small enterprises find difficult are mayor’s permits or business plans. It is pointed out that because some borrowers are unable to prepare such documents, they are making shifts from formal lending (bank loans) to informal lending.

3-3. Summary: Issues in promoting risk-based lending in the Philippines

(1) Quality of financial statements of borrowers (medium enterprises)

Universal and commercial banks provide RBL very actively to medium enterprises. The main issue in providing RBL to medium enterprises is the qualities of financial statements. As such financial statements of the borrowers are understated, the transaction costs of loan appraisals at banks are large.

Borrowers would also miss the chance to have finance from banks because the internal rating or credit scoring results made based on the "understated" financial statements might be very low, and banks might decide not to provide loans.

Therefore, the improvement in the quality of financial statement of such borrowers would be essential and beneficial for both lenders and borrowers. The improvement in the quality of financial statements would be achieved in the collaboration with the tax authority.

(2) Preparation of necessary documents by micro and small enterprises

Micro and small enterprises have difficulties in preparing financial statements. Many of them do not even prepare simple cashbooks. Such micro and small enterprise tend to feel that obtaining official documents (e.g. mayor's permit and business licenses) is a heavy burden too.

It should be noted that many micro and small enterprises tend to shift from formal lending (bank loans) to informal lending, as the interest rate of informal lending is very high, but the obtaining loans is very easy.

Therefore, it would be necessary to consider (i) simplifying the process to obtaining official documents and (ii) supporting FIs to give financial education to borrowers, in order to include more borrowers into formal lending.

(3) Compliance with financial regulations of smaller banks

Although many smaller banks provide loans only based on collaterals, there are some banks which are active in providing RBL.

For such smaller banks, the compliance with financial regulations (especially Circular 855) is the main issue. Such banks have difficulties in complying with the regulations (e.g. establishment of risk management mechanism) mainly due to the lack of capacity. As a result, stricter rules on loan loss allowance are applied to such banks and their financial costs tend to be bigger.

Therefore, supports for such smaller banks in complying with such financial regulations would be needed.

Annex 3

The Study for the Introduction of Credit Risk Database (CRD) in the Philippines

Data Quality Examination Report

CRD Business Support Ltd.

Table of contents

Tables and Figures

I Introduction

This paper summarizes the preliminary feasibility study results for the project "The Study for the Introduction of Credit Risk Database (CRD) in the Philippines". Credit Risk Databases that collect financial statements data are unique to Japan where there are four large databases[1] currently in operation. Similar database, to the best of our knowledge, does not exist in the Philippines or in any other countries.

CRD run by CRD Association outperforms other databases to become Japan's current largest credit risk database in terms of size with an accumulated data volume of 20 million financial statements. On a monthly basis, 59 items (or a minimum of 26 items) from balance sheets, 26 items (or a minimum of nine items) from income statements and default information data are submitted to CRD association. Fifty-one (51) CRD members, including credit guarantee corporations (CGCs), government-affiliated organizations and private financial institutions, are major data contributors to the database. CRD principally builds statistical scoring models to assess creditworthiness of borrowers and offers these models and related services as one package to members.

CRD's large-scale database has drawn international attention and its application has been discussed in seminars held by the Asian Development Bank Institute (ADBI) and other institutions across ASEAN countries. OECD (2017) and Federal Reserve Bank of San Francisco (2018) introduced CRD as an example of novel financial infrastructures for SMEs.

Information asymmetry is generally known to exist between financial institutions (fund providers) and companies (fund receivers). This problem is more critical for SMEs than for larger corporations as information of SMEs is generally more difficult to obtain. Financial institutions attempt to solve the problem by setting high interest rates on SME

[1] Credit Risk Database (CRD) run by CRD Association is the largest database in terms of data quantity. The other three databases are CRITS run by the Regional Banks Association of Japan, SDB run by the Shinkin Central Bank Research Institute, and RDB run by the Japan Risk Data Bank Ltd. Company. RDB was established relatively early in April 2000 as a private limited company jointly financed by 22 regional financial institutions. Slightly before its establishment, in FY1999, the Second Supplementary Budget was passed to form an SME-focused credit risk database (CRD) and from April 2001, the CRD Management Council, which was later renamed as CRD Association, started operation.

loans and taking obligatory collaterals, but such solutions have proven to exert negative effect on the facilitation of SME financing.

The model constructed by CRD helps solve this asymmetry problem via effective utilization of financial data. The CRD model allows financial institutions and credit guarantee corporations to make scientifically accurate judgment about borrowers' creditworthiness and strategically set risk based pricing. Borrowers with lower credit risk will be able to access to finance at lower interest rates (lower guarantee rates), while borrowers with higher credit risk have a chance to borrow if they pay the equivalent interest rates (guarantee rates). CRD serves as an effective evaluation tool that helps channel resources to SME.

In the Philippines, as well as in Japan, SME access to finance is far from a fine-tuned process regardless of the SMEs' strong presence and important role in the economy. Introducing CRD helps to appropriately evaluate SMEs' credit risk, introduces them to new funding sources and brings along general economic improvement.

In such context, this feasibility study examines whether CRD establishment, including collecting financial data, creating database and constructing a scoring model, is feasible in the Philippines. The study collects and analyzes actual data from Philippine financial institutions.

II Background of the Preliminary Feasibility Study

II－1 Credit Risk Database (CRD)

- Background of CRD establishment

In the 1980s, Japan employed a lending system that heavily relied on real estate collateral. Soaring real estate prices in the financial bubble meant the collateral worth, although unhealthily, was increasing drastically. Financial institutions, therefore, conveniently tapped into the information asymmetry problem that persisted between them and the borrowers by securing collateral for every loan. However, this system was soon challenged when the financial bubble burst. The sudden plunge of real estate prices, caused banks to suffer from non-performing loans backed by overpriced real estate. To face this challenge, a new method of risk hedging to replace collaterals was urgently required; yet traditional collateral-taking financial institutions were unprepared to respond. As a result, banks became less willing to give loans, especially to SMEs whose cost-effectiveness for information gathering is generally lower than large companies. This led to a nation-wide credit crunch/credit squeeze that made capital even more difficult to obtain for vulnerable SMEs.

In order to cope with such situation, Japan's Small and Medium Enterprise Agency instructed the introduction and implementation of a novel financial data-based methodology in order to evaluate SME creditworthiness in a most effective way. The "Small Business Credit Risk Information Database Development Project" was initiated under the FY1999 Second Supplementary Budget, receiving strong cooperation from credit guarantee corporations, government-affiliated financial institutions and private financial institutions.

From FY2000, regular meetings among CGCs, six government-affiliated and private financial institutions were held to concretize the construction of CRD. In FY2001, the CRD Management Council was established to oversee the development of CRD. In FY2005, CRD acquired corporate status and started full-fledged operations. The Small and Medium Enterprise Agency asked 52 nationwide CGCs[2] (currently 51 CGCs) to be the initial members. Nowadays, CRD provides services to 174 members, including 51 CGCs, financial institutions and five government agencies, including Bank of Japan, SME Agency and Financial Services Agency.

CRD was established through government initiative with an initial operational budget of 1.3 billion yen. The subsequent budget was covered by membership fees from CRD members who joined voluntarily from 2001.

Financial institutions opt to become CRD members and contribute data to the CRD database voluntarily without being obliged by any laws. It is noteworthy that the CRD database is comprised of anonymous financial statement data used for loan screening and guarantee evaluation. This data is often more reliable as it has been validated by bank officers. Furthermore, CRD data covers and captures characteristics of all regions in Japan due to the wide range of members' regional backgrounds.

・ Application of CRD

Examples of how CRD members use CRD models for appraisal are discussed in detail in Kuwahara et al. (2016).

CRD bank members use CRD scoring models for loan inspection and for appraisal of internal scoring model. For small banks whose accumulated SME data is

[2] Previously, each of the 47 prefectures, Yokohama City, Kawasaki City, Nagoya City, Gifu City and Osaka City have their own CGCs. The merger of Osaka prefecture and Osaka city corporations decreases the total number of CGCs to 51.

insufficient to construct an internal model, the CRD model is a cost-efficient and qualified alternative. For large banks, the CRD model is a useful reference for the internal rating system. If the internal system produces continuous mismatches with CRD scoring, it would get the banks' attention on how and why such differences happen.

CGCs have used the CRD model to determine guarantee rate since the enactment of the Credit Enhancement System in April 2006. The guarantee rate, which used to be universal at 1.35%, now adapts a flexible scheme of nine guarantee rate ranks corresponding to valuation assigned by the CRD model. Low-risk groups pay less guarantee fees and interest while high-risk groups pay higher fees and interest in exchange for financing opportunities. This nine-rank scheme is also used as a common benchmark for product design among CGCs and financial institutions.

Another practical utilization of the CRD Model is its application in improving the Collateralized Loan Obligation (CLO) market's liquidity. CLOs (i.e. securitized SMEs loans) are first pooled and then partitioned into tranches based on their ratings to appeal to different buyers. With the creation of tranches, banks are able to disperse risks among a larger number of investors who find new investment incentives in the newly created tranches that offer wider investment options. In this process, the CRD model helps with the standardization of embedded securitized loans, the overall evaluation of pooled securitized loans and the partition of tranches. Furthermore, the CRD model valuation is a useful reference source for potential investors.

II − 2 Introduction of CRD to the Philippines

Generally, financial institutions develop internal borrowers' database for credit rating purpose. A nationwide database for credit scoring purpose is rare or non-existent, except in the case of Japan where there are four organizations entitled to collect large-scale borrowers' data.

In the Philippines, Credit Information Corporation (CIC), a nationwide database of personal credit information and payment history, was established under the Credit Information Systems Act (CISA) in 2008 and began to collect credit information of individuals and companies.

CIC fundamentally differs from CRD in the nature of the collected data. CRD collects anonymized financial data for statistical use while CIC is comprised of specific personal attributes and historical transactions data. CRD is a database for statistical analysis while CIC functions as a referencing source for credit lending using real names of individual debtors. Furthermore, the CRD model is capable of providing statistical predictions of default tendency and defaulters' characteristics owing to the statistics model built upon its large-scale database. In the CRD model, aspects of stability, profitability, efficiency and growth are all taken into consideration. On the other hand, database of personal attribute and historical transaction data could also be made into models to predict an individual's future behavior; it is, however, very difficult to use such models to appraise the current performance of a company. Note that CIC-like databases mainly consist of only black-listed bad debtors.

Following a series of discussions, Philippine governmental agencies, including the Department of Finance (DOF), Bangko Sentral ng Pilipinas (BSP), Department of Trade and Industry (DTI), Securities and Exchange Commission (SEC), have expressed understanding for the need for a large-scale financial database to accomplish qualified evaluation of SME creditworthiness.

In June 2016, DOF and JICA signed the "Minutes of Discussion on The Study for the Introduction of Credit Risk Database (CRD) in the Philippines" after the TOR of CRD introduction study was approved by DOF, BSP, DTI, SEC and University of the Philippines School of Statistics (UPSS).

Following this series of events, the first working group meeting with DOF, BSP, DTI, SEC and UPSS (as an observer) was held in January 2017 to officially commence "The Study for the Introduction of Credit Risk Database (CRD) in the Philippines". In February, BSP and JICA met with three government-affiliated financial institutions (Small Business Cooperation, Land Bank of the Philippines and Development Bank of the Philippines) whose subsequent submission of financial and default data of Philippine companies contributed largely to the project. During this meeting, concern was raised about the submission of anonymous data, but was cleared as such submission has no conflict with BSP regulations.

Thereafter, an official cooperation request letter was issued by DOF (Mr. Gil S. Beltran, Undersecretary) and JICA to the three government-affiliated financial institutions. After receiving approval from the management committee (MANCOM) of each bank, each financial institution and CRD Association signed a bilateral confidentiality agreement which officially allowed the transfer of data.

III Data Collection

・Anonymization

CRD Japan members submit data with anonymous corporation names/individual names (sole proprietorship). We applied the same policy to the Philippine data. Scrambling tool for data anonymization and handling instruction were provided by CRD to financial institutions. Since scramble logic was originally created for the Japanese language, CRD developed and distributed a separate tool for English language.

Specifically, the tool encrypts borrower ID and in combination with three key fields[3], creates a scrambling code that could uniquely identify borrowers. Anonymization process is completed by financial institutions and attached with all respective data. As a result, the recipient of data (CRD) does not directly handle borrower's real identity, but is still capable of matching data of the same borrower.

・Data Collection

CRD provides a list of desired data fields to each financial institution with reference to the actual layout of CRD Japan database. Looking at this list, CRD individually discusses with each institution the availability and accessibility of their data.

Data provided by financial institutions generally consists of: ① financial statement data (balance sheet statement, income statement and cash flow statement), ② default related data (monthly data, corresponding period with financial data), and ③ non-financial data. For non-financial data, data fields may differ as each institution has its own collection method.

In addition, while ② default-related data and ③non-financial data are encoded and stored in the headquarters' database, ① financial statement data is only partially encoded while the rest is available in the form of paper-based documents or Excel spreadsheets individually managed by lending officials at lending units (one spreadsheet for one borrower).

For the paper-based statements, CRD arranges for the encoding of the statements in the Philippines. This arrangement is to assure a functioning database with sufficient amount of observations and data items. For the FS in Excel spreadsheets, CRD

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[3] Three fields consist of foundation year, first letters of company name and postal code, subject to slight modification.

creates computer programs to retrieve data from some Excel files and manually inputs others.

IV Dataset

The following section provides a summary of the dataset.

IV－1 Dataset summary

Each financial institution designs its dataset following the CRD-suggested format. CRD subsequently cleans and links monthly default-related data (past-due data and loan classification data) with yearly financial and non-financial data. Furthermore, the following data cleaning and check are performed to increase data quality. After the procedure below, the dataset consisted of 3440 observations, including 133 default cases.

・Check for consistency in financial statements

From the viewpoint of financial statement consistency, data corresponding to the following are deleted:

（1）Duplicated data
（2）Missing “Total Assets”/missing “Total Liabilities and Equity”
（3）Negative asset and its components/ negative liability and its components
（4）“Total Current Assets” being 0
（5）Negative “Common Stock Capital”
（6）Missing balance sheet data/ missing income statement data
（7）Missing, negative or zero “Sales” data
（8）Negative expenses data.

In addition, the following corrections are made to conform to generally-accepted accounting principles.

（1）If there is a “Current Assets” component but “Total Current Assets” is missing, calculate “Total Current Assets” from the components.

（2）If “Total Liabilities” is missing, fill in by subtracting “Total Equity” from “Total Assets”.

（3）If “Fixed Liabilities” is missing, fill in by subtracting “Current Liabilities” from “Total Liabilities”.

（4）If “Total Liabilities and Equity” is missing, fill in by summing “Total Liabilities and Total Equity”.

（5）Depreciation and amortization expenses are transferred to SG & A expenses.

（6）If “Total Other Current Assets” is missing, fill in by subtracting “Cash and Cash Equivalents”, “Notes Receivables”, “Account Receivables”, “Total Inventory”, “Marketable Securities” from “Total Current Assets”

Ⅳ－2　Financial Ratios

By combining financial items from dataset, CRD creates financial ratios which later become candidates for explanatory variables. Thirty-eight financial ratios used for analysis and modeling are as follows:

1. Profitability ratios: ratios that can evaluate management performance from the Balance Sheet and Income statement.

・v301 "Operating Profit to Total Assets Ratio"= Operating profit/Total Assets*100
・v302 "Ordinary Profit to Total Assets Ratio"＝Ordinary Profit/Total Assets*100
・v303 "Return on Assets ROA"＝Net Income/Total Assets*100
・v304 "Return on Equity ROE"＝Net Income/Total Equity*100　（Total Equity＞０）
・v305 "Operating profit per capita"＝Operating profit/Number of employees【peso】

2. Sales profitability ratios: ratios that can evaluate profitability from income statement

・v306 "Gross Margin Ratio"＝Gross Profit/Sales*100
・v307 "Operating Margin Ratio"＝Operating profit/Sales*100
・v308 "Ordinary Income Margin Ratio"＝Ordinary Income/Sales*100
・v309 "Net Margin Ratio"＝Net Income/Sales*100
・v310 "SGA Ratio"＝Selling and General Administrative Expenses/ Sales * 100
・v311 "Labor Cost to Sales Ratio”＝Labor Cost (in SGA)/Sales*100

3. Turnover ratios/turnover periods: ratios to understand and evaluate activities of invested capital by viewing balance sheets Item in terms on sales.

・v312 "Total Assets Turnover Rate"＝Sales/Total Assets【times】
・v313 "Account Receivable Turnover Days"＝Account Receivables/Sales*365【days】

・v314 "Inventory Turnover Days"＝Total Inventory/Sales*365【days】
・v315 "Fixed Assets Turnover Rate"＝Sales/Total Fixed Assets【times】
・v316 "Account Payable Turnover Days"＝Account Payables/Sales*365【days】
・v317 "Cash Conversion Cycle "＝(Account Receivables + Total Inventories－Account Payable)/(Sales/12)【Months】

4. Short-term liquidity: ratios that evaluate short-term repayment ability by analyzing the source of funding and its applications

・v318 "Current Ratio"＝Total Current Assets/Total Current Liabilities*100
・v319 "Quick Ratio"＝（Cash and Cash equivalents＋Accounts Receivables + Accounts Payables）/Total Current Liabilities*100
・v320 "Reserves Ratio"＝Cash and Cash equivalents/Total Current Liabilities*100
・v321 "Cash to Sales Ratio"＝Cash and Cash equivalents/Sales*100

5. Stability: ratios that analyze the stability of equity capital from the viewpoint of funding procurement.

・v322 "Equity Ratio"＝Total Equity/Total Assets*100
・v323 "Total Equity to Common Stock Ratio"=Total Equity/Common Stock 【times】

6. Funding and funding utilization: ratios that evaluate conformity between liabilities and equity (funding) and fixed assets (funding utilization)

・v324 "Fixed Assets to Fixed Liabilities and Total Equity"＝Fixed Assets/(Total Equity + Fixed Liabilities)*100 （Total Equity＋Total Fixed Liabilities＞ 0 ）
・v325 "Fixed Assets to Equity Ratio"＝Total Fixed Assets/Total Equity*100 （Total Equity＞ 0 ）

7. Solvency - credit condition: ratios that reflect credit and funding condition[4]

・v326 "Debt Dependency Ratio" = (Short-term Debts + Long-term Debts)/Total Assets*100
・v327 "Debt Capacity Ratio" ＝(Short-term Debts＋Long-term Debts)/(Cash and Cash Equivalents＋Total Fixed Assets）*100

[4] To handle missing data in v326, v327, v328, v329 and v331, we replace the sum of Short and Long-term debts by Total Liabilities. The new variables are v339, v340, v341, v342, v343, respectively.

・v328 "Cash to Debt Ratio"＝Cash and Cash equivalents/(Short-term Debts＋Long-term Debts)*100
・v329 "Debt to Sales Ratio"＝（Short-term Debts＋Long-term Debts）/(Sales/12)【times】
・v330 "Interest Expenses to Sales Ratio”＝Interest Expenses/Sales*100

8. Solvency - debt repayment ability: ratios to evaluate ability to repay interest-bearing debt.
・v331 "Cash-flow to Interest-bearing Debt Ratio"＝(Net Income＋Depreciation)/（Short-term debt＋Long-term debt）＊100
・v332 "Interest Coverage Ratio"＝(Operating profit＋Interest income + Dividends）/（Interest expenses）【times】
・v333 "Years of Debt Redemption"＝(Long-term Debts + Short-term Debts－Cash and Cash equivalents)/(Operating profit ＋ Depreciation) 【times】（Operating profit＋Depreciation）＞0

9. Assets condition: ratios for assets condition assessment
・v334 "Depreciation Rate"＝Depreciation/(Fixed Assets-Land＋Depreciation)*100
・v335 "Depreciation Expense to Sales Ratio"＝Depreciation/Sales*100
・v336 "Other Current Assets Ratio"＝Total Other Current Assets/Total Current Assets*100

10. Growth: ratios to evaluate growth potential by comparing with previous period performance.
・v337 "Sales Growth Rate"＝((Sales(this period)/Sales(last period)－１)*100
・v338 "Assets Growth Rate"＝ ((Total Assets(this period)/Total Assets(last period)—１)*100

Ⅳ－3 Default Information

Binary dependent variable of default events takes value of either 0 or 1 (1 for default and 0 for non-default).

・Past-due

Past-due dataset is created from monthly past-due reports submitted by each financial institution. The reports give information on when and how long borrowers have been late for their payments. From the data of *first past-due date* and *observed date*, we create three binary variables: one-month, two-month, and three-month past-due default flags. To be more specific, a borrower is given one-month, two-month and three-month past-due status when *the length of past-due*, the time lag between first past-due date and the observed date, is one month, two months and three months, respectively. In other words, if a borrower misses his payment by just one day, he is classified as one-month past-due borrower (one-month flag=1). If he fails to repay within thirty days, he is further given two-month past-due status (two-month flag=1). If he fails to repay within sixty days, he is further given three-month past-due status (three-month flag=1). These default statuses then get matched with financial statement data.

・Loan classification

Following Bangko Sentral ng Pilipinas (BSP)'s regulatory update on loan classification, the three financial institutions design their credit risk management frameworks to accommodate BSP-recommended classification categories of Pass, Especially Mentioned (EM), Substandard, Doubtful and Loss. Each institution's framework may slightly differ from one another, but could still be combined together as all frameworks refer to BSP's regulatory classification. In this analysis, we set independent variable, default, as 1 when a borrower falls from Pass to lower categories, i.e. Especially Mentioned, Substandard, Doubtful and Loss, and 0 if otherwise.

・Default definition

In this analysis, a borrower is defined as default if he/she is given one month or more past-due status or fallen from Pass to other loan classification. In other words, borrowers are classified as default if they are given either past-due default status of 1 or loan classification default status of 1. This default definition increases the number of default observations in the dataset. For borrowers that have a time series of financial statements, financial statements after the year of default are deleted from the dataset. This practice is to observe the transition from a normal condition to default, instead of observing a one-time default event.

・ Category data and default correlation

We observed some correlation between default and non-financial categorical data. Financial year, ownership structure, industry sector and location all are correlated with default. However, these data are partial and thus may not necessarily represent the overall trend. In subsequent analysis when more data is collected, these correlations may change and an alternative method to control for such correlations may be needed.

➢ Financial year and default correlation

The figure on the left depicts default rate and the figure on the right depicts the number of defaults. In terms of number, defaults peaked in FY 2013, followed by FY 2015; the default rate was, however, particularly high in FY 2015 (whose default observation period is 2016).

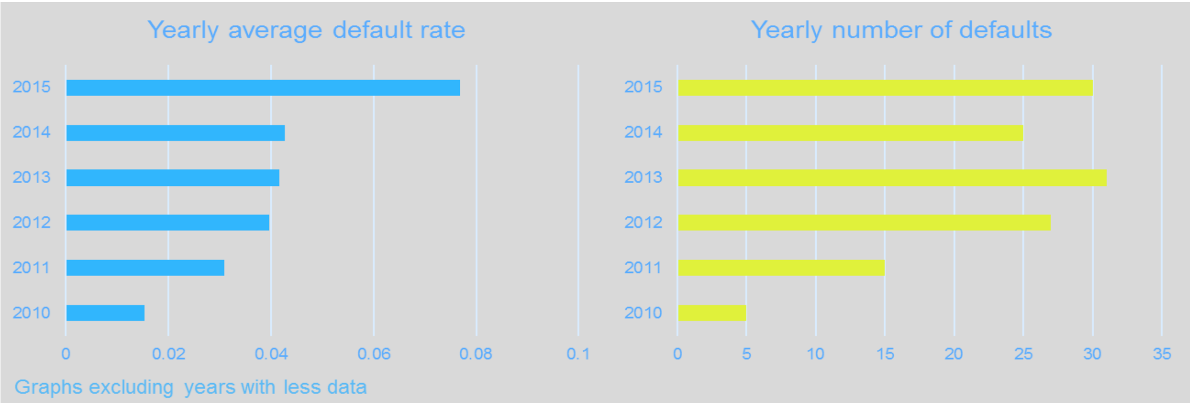


Figure 1: Financial year and Defaults

➢ Ownership structure

In term of both average default rate and number of defaults, sole proprietorships have a higher default tendency than other ownership structures.

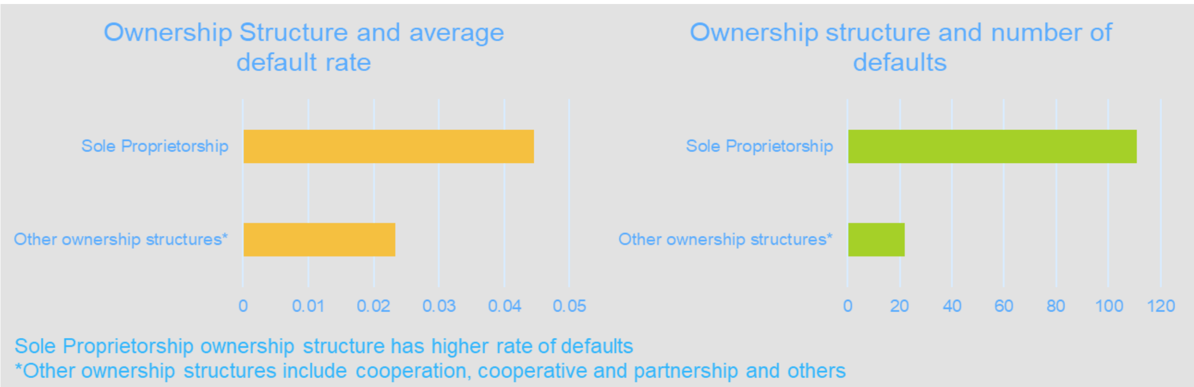


Figure 2: Ownerships Structure and Defaults

➢ Industry sectors

The manufacturing sector has the largest number of defaults and the largest default rate. Construction and agriculture sector default rates follow closely in second and third place.

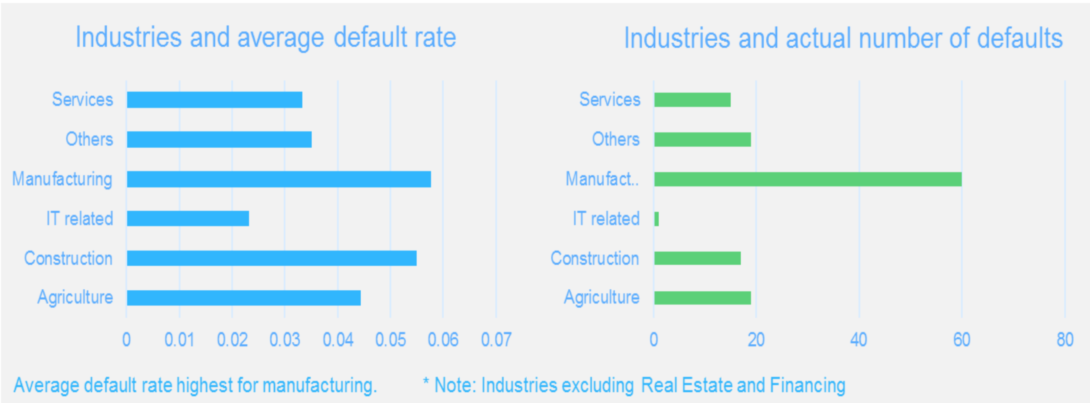


Figure 3: Industries and Defaults

➢ Location

The Luzon area leads, not only in terms of number of defaults, but also in terms of the default rate. The Mindanao area also has a high default rate.

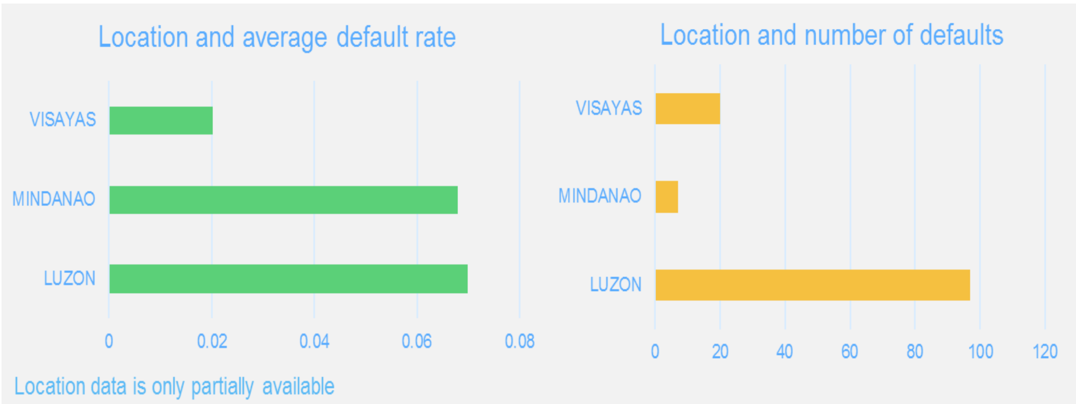


Figure 4: Location and Defaults

IV－4　Data distribution

This section discusses the distribution of financial statement items as well as financial ratios. Histograms of v57 Total Current Assets, v90 Total Assets, v109 Total Liabilities, v110 Total Equity, v118 Gross Profit, v136 Ordinary Profit are presented in the following.

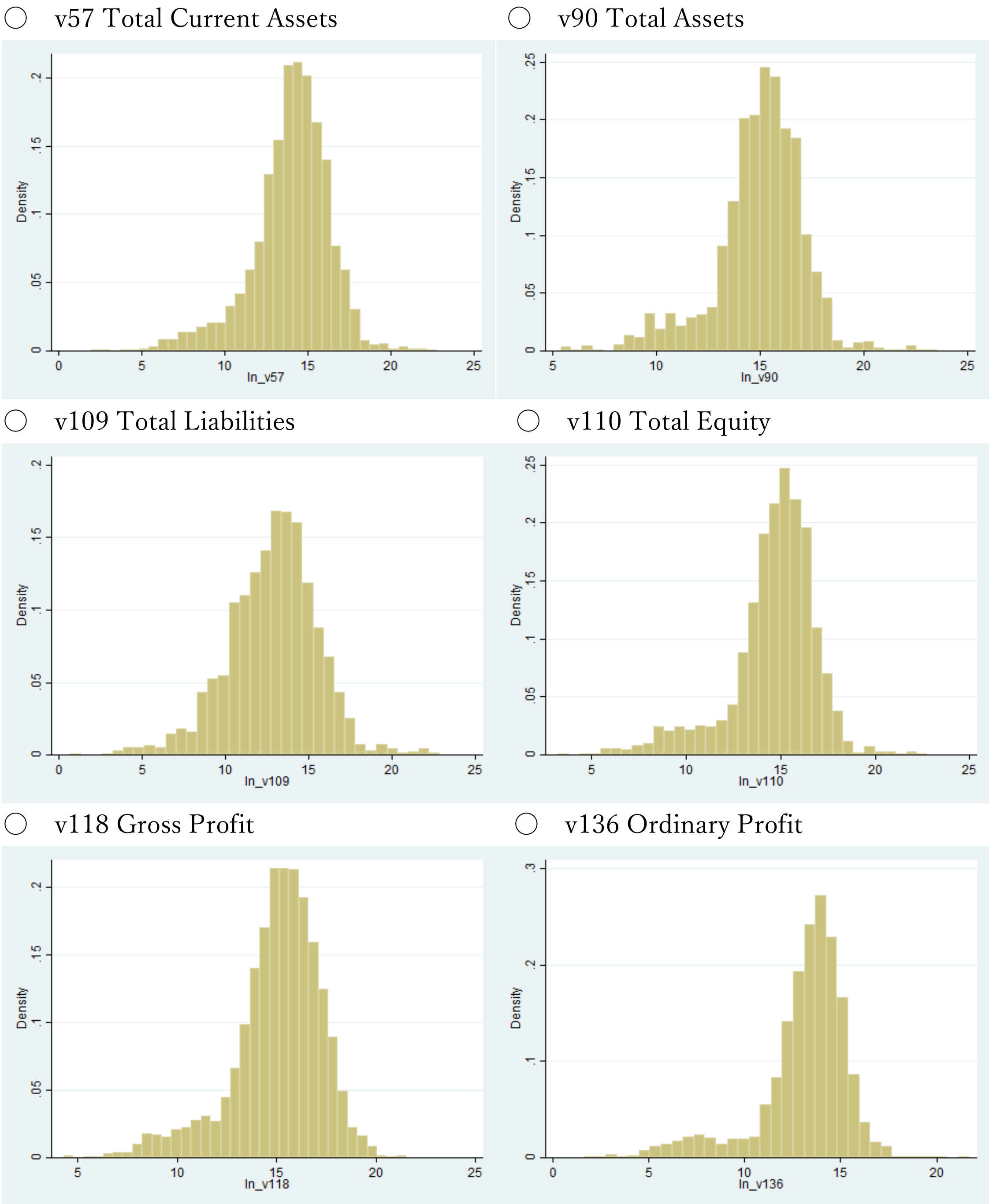


Figure 5: Variables Distributions

It is noteworthy that default group and non-default groups have different distribution, as depicted in Figure 6, Figure 7 and Figure 8. The graphs include logarithm transformation of v306 Gross Margin Ratio, v314 Inventory Turnover Days, v90 Total Assets, v109 Total Liabilities and v110 Total Equity.

For the density distribution, the blue line depicts non-default group and the red dotted line depicts default group. For the box graph, the left hand-side graph (0) represents non-default group and the right hand-side graph (1) represents default group.

○ v306 Gross Margin Ratio

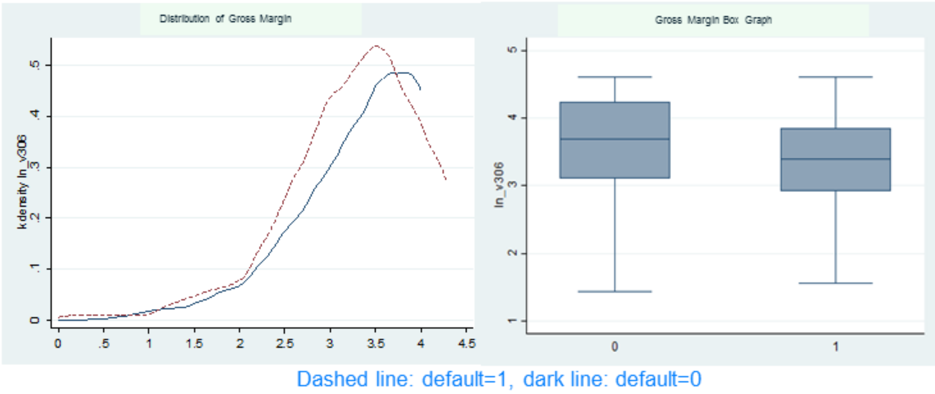


Figure 6: Gross Margin Ratio: distribution by groups

For Gross Margin Ratio, distribution of default group tends to be lower and to the left side of the non-default group. The box graphs also show that the default group has a lower 25th percentile, median and 75th percentile compared to the non-default group.

○ v314 Inventories Turnover Days

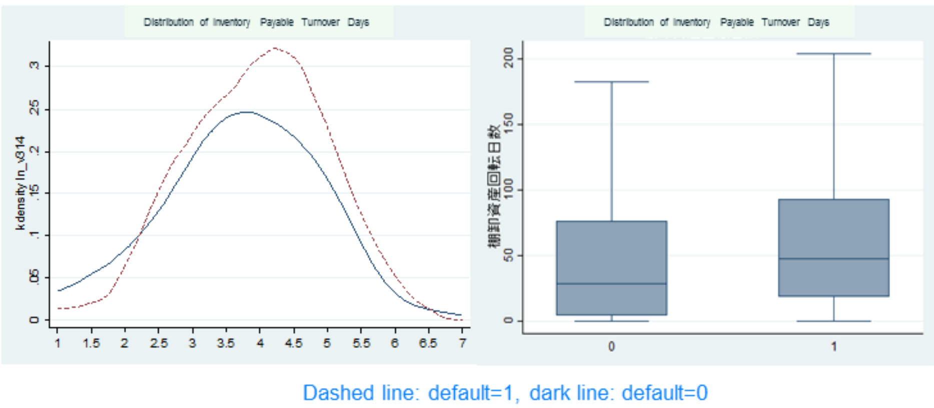
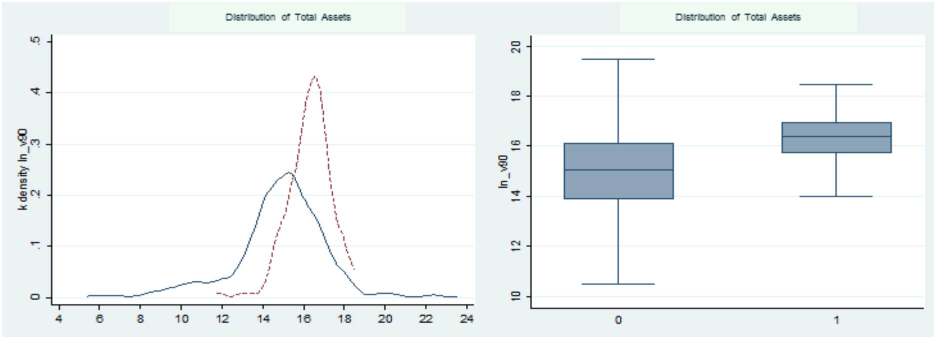


Figure 7: Inventories Turnover Days: distribution by groups

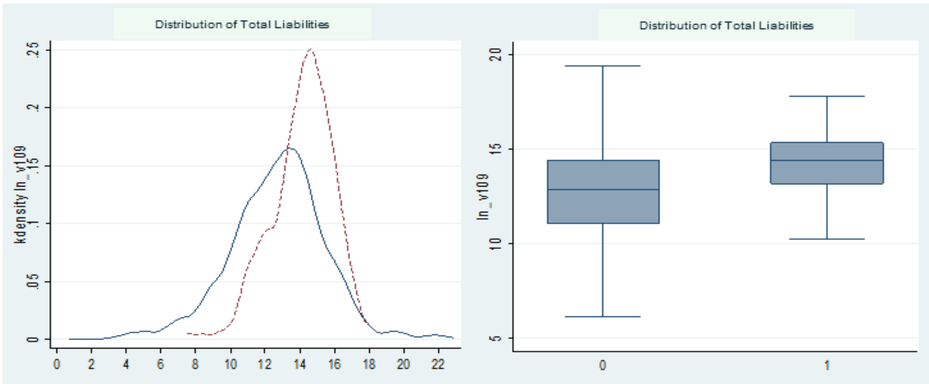
Inventories Turnover Days are higher for the default group as predicted, judging from the two groups' distribution and box graphs. Inventories tend to take longer to be sold for default companies than non-default ones.

For the following three financial items, the default group's distribution generally stays on the right side of the non-default groups. The same results can be derived from the box graphs in which default group (x-axis=1) generally has higher 25th percentile, median and 75th percentile than the non-default group (x-axis=0). As default group distributes within a relatively narrow range, their dispersion tends to be smaller.

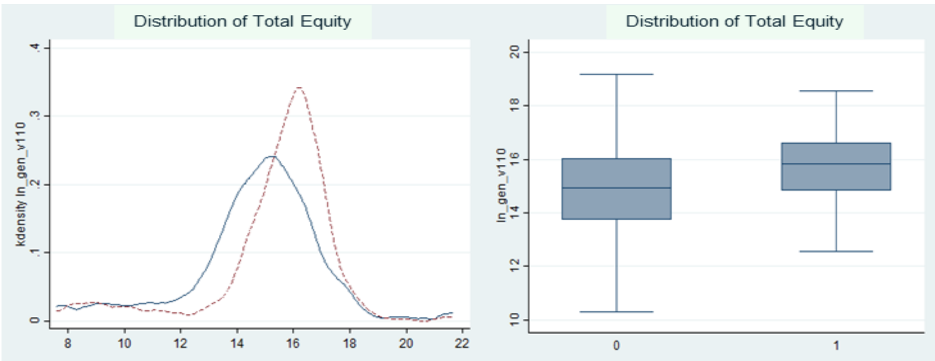
○ v90 Total Assets



○ v109 Total Liabilities



○ v110 Total Equity



Dashed line: default=1, dark line: default=0

Figure 8: Total Assets, Total Liabilities and Total Equity: distribution by groups

V　Analytical Results

In this chapter, we use logit single regressions to pick up variables that are strongly and rationally correlated with defaults in order to identify candidates for subsequent multiple regressions. Next, we use Accuracy Ratio (AR) as the guideline for model selection and identify the optimal combination of variables through logit multiple regression. The optimal model should combine a balanced and well-explained set of significant variables that produce a relatively high AR. Finally, scoring trial of the dataset using CRD Japan model gives a clear indication of the need for an independent CRD Philippines model.

V－1　Single Logit regression

Logit single regression tests the financial ratio's ability to distinguish default group from non-default one. In the following logistic regression, y equals 1 for default group and 0 for non-default group. α and β are estimated from regressing y on each of x(38 financial ratios) to testify their explanatory power towards y.

$$y = \frac{1}{1+e^{z}} \qquad (1)^{5}$$

$$z = \alpha + \beta \cdot x \qquad (2)$$

α : constant　β : coefficient (parameter)　x : explanatory variables

Identified significant predictors of default are candidate for multiple logit regression. We run single regressions for previously mentioned 38 financial ratios, total equity, total assets and several other variables.

Data is processed in both continuous and discrete form. In comparison with continuous data, discrete data is less affected by outliners, but is less informative as the latter is created by dividing the former into limited ranks whose number and structure can be varied depending on valuating method.

V－１－１　Continuous data

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[5] e is the base of natural logarithm, a mathematical constant approximately equals to 2.71828182845...

Continuous data includes both data in level and data in logarithm transformed format. For variables that have negative values, we use negative logarithm transformation techniques as logarithm transformation is undefined.

The following table records financial ratios that significantly correlate with defaults in logit single regressions. All significant results (10% significance level or below) are listed in the below table regardless of the sign of the corresponding coefficients.

Table 1: Single regression summary for continuous variables

Variables		Level		Log-transformed	
		Coefficient	P-value	Coefficient	P-value
v305	Ordinary Profit per capita			0.765	<0.001
v306	Gross Margin Ratio	-0.001	0.096	-1.825	<0.001
v310	SGA Ratio	-0.015	0.001	-0.285	0.001
v313	Account Receivables Turnover Days			0.198	0.006
v314	Inventory Turnover Days			0.200	<0.001
v315	Fixed Assets Turnover Rate	2.20E-07	0.088	0.135	0.003
v317	Cash Conversion Cycle (Months)			0.208	0.005
v322	Equity Ratio			0.425	0.039
v324	Fixed Assets to Fixed Liability+Equity Ratio	-0.006	0.019	-0.132	0.012
v325	Fixed Assets to Equity Ratio	-0.006	0.003	-0.143	0.004
(v326) v339	Debt Dependancy Ratio			0.126	0.019
(v327) v340	Debt Capacity Ratio			0.119	0.005
(v328) v341	Cash to Debt Ratio			0.089	0.010
v330	Interest Expenses to Sales Ratio			-0.169	0.028
(v331) v343	Cashflow to Interest Bearing Debt Ratio	-8.E-05	0.097		
v332	Interest Coverage Ratio			0.214	0.005
v333	Years of Debt Redemption			-0.384	<0.001
v335	Depreciation Expenses to Sales Ratio	-0.070	0.016	-0.196	0.005
v336	Other Current Assets Ratio			-0.054	0.029

Coefficient (β) and P-value are estimation results of equation (2).

V－１－２　Discrete data

The above result shows that continuous variables have performed relatively well without transforming to their discrete form. However, for discrete variables' merit of insensitivity to outliners and distribution, we take advantage of this merit and attempt to analyze them in the following section.

Explanatory variables are divided into discrete variables of 3 ranks, 5 ranks and 10 ranks as the number of data for each rank being equally divided. We find a large number of significant discrete variables even with simple variables transformation and there is a possibility to evolve scoring model by improving a discrete transformation method.

Table 2: Single regression summary for discrete variables

Variables		rank3		rank5		rank10	
		Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
v305	Ordinary Profit per capita	0.883	<0.001	0.536	<0.001	0.271	<0.001
v306	Gross Margin Ratio	-0.444	<0.001	-0.260	<0.001	-0.114	<0.001
v310	SGA Ratio	-0.362	0.001	-0.212	0.001	-0.108	0.001
v311	Labor Cost to Sales Ratio	-0.213	0.075	-0.141	0.041	-0.067	0.048
v313	Account Receivables Turnover Days	0.462	<0.001	0.334	<0.001	0.161	<0.001
v314	Inventory Turnover Days	0.492	<0.001	0.224	0.001	0.119	<0.001
v315	Fixed Assets Turnover Rate			0.127	0.048	0.063	0.044
v317	Cash Conversion Cycle (Months)	0.519	<0.001	0.326	0.000	0.159	<0.001
v318	Current Ratio			0.119	0.068	0.053	0.096
v319	Quick Ratio			0.109	0.093	0.054	0.092
v321	Cash to Sales Ratio	-0.229	0.037	-0.131	0.038	-0.053	0.091
v322	Equity Ratio	-0.196	0.070	-0.136	0.030	-0.062	0.041
v323	Total Equity to Common Stock Ratio	-0.189	0.037	-0.102	0.039	-0.048	0.037
v324	Fixed Assets to Fixed Liability+Equity Ratio	-0.296	0.007	-0.180	0.004	-0.087	0.005
v325	Fixed Assets to Equity Ratio	-0.287	0.009	-0.188	0.003	-0.095	0.002
(v326) v339	Debt Dependancy Ratio	0.213	0.052	0.137	0.030		
(v327) v340	Debt Capacity Ratio	0.283	0.010	0.153	0.016	0.077	0.018
(v329) v342	Debt to Sales Ratio	0.310	0.005	0.130	0.040	0.068	0.035
v330	Interest Expenses to Sales Ratio	0.826	<0.001	0.440	0.028	0.187	0.016
v332	Interest Coverage Ratio	0.583	<0.001	0.366	<0.001	0.168	<0.001
v333	Years of Debt Redemption	0.234	0.036				
v338	Assets Growth Rate	0.225	0.036			0.053	0.081

Coefficient (β) and P-value are estimation results of equation (2).

V－2　Multiple Logit regression

V－2－1　Continuous data

Explanatory variables are selected from logit single regressions to be included in multiple logit regression model. Since there are more than 20 candidate variables, stepwise selection procedure (bidirectional elimination)[6] is used to determine which independent variables will be included in the model. The selection procedure finds a few

[6] Stepwise procedures include forward selection, backward elimination and bidirectional elimination. Forward selection adds significant variables to the model one by one to create a set of most significant variables. Backward elimination starts with a full set of variables and starts dropping insignificant variables. Bidirectional elimination is a combination of the forward selection and backward elimination techniques. Forward selection adds candidate variable that has the most significant power to the model. After a variable is added, all candidate variables are checked to see if their significance has been reduced below a specified tolerance level. If a non-significant variable is found, it is then removed from the model by backward elimination.

different models, but the following three patterns are those that have both high accuracy and good balance. The models' dependent variable y (default/or non-default) is defined as follows:

$$y = \frac{1}{1 + e^{z}}$$

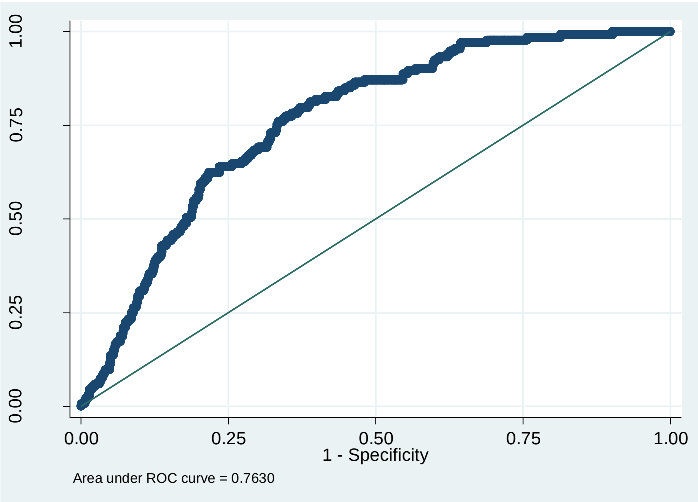
$$z = \alpha + \beta_1 \cdot x_1 + \beta_2 \cdot x_2 + \cdots + \beta_y \cdot x_y$$

α : constant β_i : coefficient (parameter) x_i : explanatory variables $i = 1, 2, \cdots, y$

Stepwise selection procedure selects from a set of continuous variables and form the following model, Contiuous-1 (C-1).

Pattern C-1 consists of three credit condition ratios, namely ① Debt Dependency Ratio, ②Gross Profit Margin Ratio and ③Total Equity; one funding and funding utilization ratio, namely ④ Fixed Assets to Equity Ratio; and one assets utilization efficiency ratio, namely ⑤Inventory Turnover Ratio. These variables are all significant at a 5% significant level or lower.

Pattern Continous-1 (C-1)



AR=0.526

Figure 9: Pattern Continuous-1 (C-1) ROC Curve

Table 3: Pattern Continuous-1 (C-1) multiple logit regression

	Variables	Coefficient	P-value
ln_v339	① Debt Dependency Ratio II	0.159	0.011
ngl_v306	② Gross Profit Margin Ratio	-1.850	<0.001
ln_v110	③ Total Equity	0.387	<0.001
ln_v325	④ Fixed Assets to Equity Ratio	-0.111	0.045
ln_v314	⑤ Inventory Turnover Days	0.113	0.038
_cons	Constant	-8.830	<0.001

The overall explanatory power of the model could be summarized by the Accuracy Ratio (AR)[7]. AR is an unbiased measurement of model accuracy that takes value from 0 to 1. The closer AR to 1, the more accurate the model becomes. AR for Pattern C-1 Model takes value of 0.526. Similar to AR, area under the ROC curve, as depicted in Figure 9, is another summary index of overall accuracy of scoring model. A scoring model is the better the larger the area under the ROC curve is.

It is noteworthy that the signs (direction of relationship) of the explanatory variables ③Total Equity and ④Fixed Assets to Equity Ratio are reversed in comparison with the signs supposed to be in Japan.

Let us see what may cause the sign differences in ③Total Equity. Firstly, in this dataset, there are 24 cases in which ③Total Equity is negative and among those, none has actually defaulted. Comparing this condition with the Japan case in which more than 30% of SMEs have negative capital, we may infer that companies in the Philippines tend to maintain larger portion of their own capital. Secondly, in this dataset, borrowers with small Total Equity do not necessarily have large Liability; they instead have small Total Assets. Total Equity, therefore, may represent the size of the balance sheet and whether lean management is intact, rather than representing capital structure health. In other words, for this Philippine dataset, the smaller (larger) total equity, the smaller (larger) the company's assets become and the smaller (higher) the chance it has to default (positive relation).

Let us now see the differences for ④ Fixed Assets to Equity Ratio. The ratio is calculated by dividing Total Fixed Assets to Total Equity to attest if fixed assets have become redundant due to excessive capital investment or loss-driven shrinking equity. From this calculation, the ratio is generally the smaller and the better in Japan case. C-1 and the following models, however, show a different story for the Philippines: the larger the Fixed Assets to Equity Ratio, the less likely it is to default (negative correlation). SMEs with generally larger equity capital tend to invest more in machine and other fixed assets in order to generate future cash flows. As a result, future-oriented SMEs with higher Fixed Assets proportion to Total Equity have higher chance of survival.

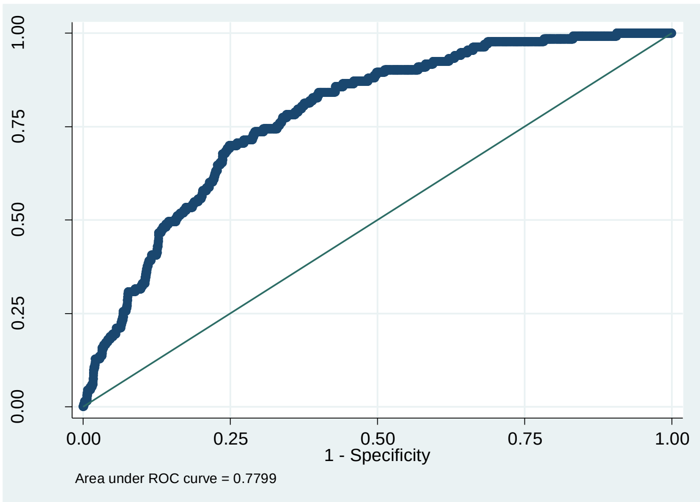
Since ④Fixed Assets to Equity Ratio is calculated by dividing Total Fixed Assets by Total Equity, a higher ④Fixed Assets to Equity Ratio can be achieved by raising Total Fixed Assets or lowering Total Equity. From pattern C-1, lower ③Total Equity associates with lower default probability. Lower ③Total Equity may therefore affect

[7] Further details on AR and ROC curve are available in BOX: ROC Curve and AR

default probability directly through its own coefficient (positive correlation) or indirectly through the coefficient of ④ Fixed Assets to Equity Ratio (negative correlation). To see if collinearity[8] poses a modeling problem, we take a look at the correlation between ③Total Equity and ④Fixed Assets to Equity. The correlation coefficient is only -0.12 indicating weak relationship between the two ratios, thus the model may include both ③Total Equity and ④Fixed Assets to Equity Ratio as explanatory variables.

In the next part, we attempt to create two models with higher accuracy by combining attribute data (categorical variables). First of all, we create Continuous-2 (C-2), which adds 2015-year-flag to Continuous-1 (C-1). A 2015-year-flag is created to reflect the fact that FY 2015 observes a noticeable high level of default rate. This variable takes value of 1 for FY 2015, and 0 if otherwise. Adding this year-flag results in a model with all regressors being significant at a 5% significance level.

Pattern Continous-2：



AR＝0.560

Figure 10: Pattern Continuous-2 (C-2) ROC curve

[8] A condition in which highly correlated variables produce biased and inconsistent estimation

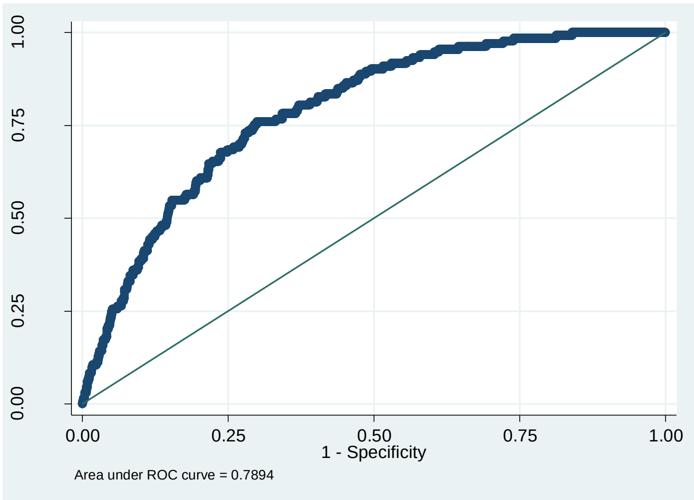
Table 4: Pattern Continuous-2 (C-2) multiple logit regression

Variables		Coefficient	P-value
ln_v339	① Debt Dependency Ratio II	0.145	0.020
ngl_v306	② Gross Margin Ratio	-1.928	<0.001
ln_v110	③ Total Equity	0.389	<0.001
ln_v325	④ Fixed Assets to Equity Ratio	-0.126	0.024
ln_v314	⑤ Inventories Turnover Days	0.115	0.036
year_flag	Year-flag (2015)	1.009	<0.001
_cons	Constant	-8.918	<0.001

Overall assessment of the model explanatory power, accuracy ratio AR, rises to 0.56, an improvement from Continuous-1.

Furthermore, in order to reflect the difference of default rate among ownership structures, we include ownership-structure flag (btype) to C-2 to create Continuous-3 (C-3). Sole proprietors take value of 1 for this flag, while other ownership structures take value of 0.

Pattern Continous-3：



AR=0.579

Figure 11: Pattern Continuous-3 (C-3) ROC curve

Table 5: Pattern Continuous-3 (C-3) multiple logit regression

	Variables	Coefficient	P-value
ln_v339	① Debt dependency Ratio II	0.261	<0.001
ngl_v306	② Gross Margin Ratio	-1.374	0.007
ln_v110	③ Total Equity	0.438	<0.001
ln_v325	④ Fixed Assets to Equity Ratio	-0.139	0.012
ln_v314	⑤ Inventory Turnover Days	0.088	0.114
year_flag	Year-flag (2015)	1.089	<0.001
btype	Ownership-structure flag	1.110	<0.001
_cons	Constant	-10.892	<0.001

Adding the ownership-structure flag lowers P-value of ⑤Inventories Turnover Days to 11% level but raises other variables' P-value to a high level of 1%. As a result, overall AR increases to 0.579.

We also attempt to add the manufacturing-industry flag as an explanatory variable to the above combinations. Although AR rises to 0.587, this combination excludes ⑤Inventory Turnover Days, a situation we assume undesirable due to an unbalanced combination of ratios. As a result, we choose to not include a manufacturing-industry flag into the final model for continuous data. For this dataset of mainly sole proprietors, pattern C-3 with AR of 0.579 is a fairly satisfactory outcome.

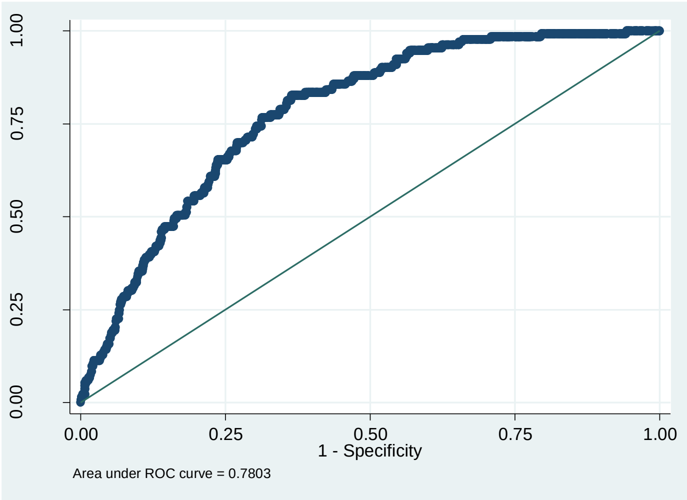
V－２－２　Discrete data

Although models of continuous variables have returned relatively good AR, we attempt to improve them further by transforming continuous data to discrete data. The merit of discrete data includes avoiding distribution and outliner problems. As previously mentioned, explanatory variables are divided into discrete variables of 3 ranks, 5 ranks and 10 ranks. Single regressions for rank variables return significant results for most variables, which in turn, will be used in multiple logit regressions.

The Discrete-1 (D-1) below is the result of a stepwise selection procedure. Similar to the case of continuous variables, we have picked out the ones with high accuracy and good balance. D-1 consists of financial variables only.

As depicted in Table 6, all variables are significant at 5% significance level or below, and the overall accuracy ratio AR is 0.561. While variable combinations may differ, D-1 models generally perform better than C-1 and produce better AR.

Pattern Discrete-1：



AR＝0.561

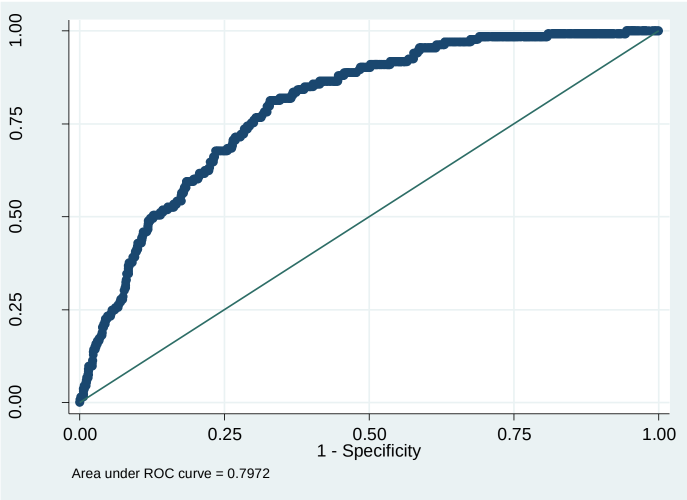
Figure 12: Pattern Discrete-1 (D-1) ROC Curve

Table 6: Pattern Discrete-1 (D-1) multiple logit regression

Variables		Coefficient	P-value
v306_r5	① Gross Profit Margin Ratio	-0.174	0.012
v330_r3	② Interest Expenses to Sales Ratio	0.413	0.029
ln_v90_r5	③ Total Assets	0.661	＜0.001
v317_r5	④ Cash Conversion Cycle (Months)	0.170	0.031
v325_r10	⑤ Fixed Assets to Equity Ratio	-0.073	0.048
_cons	Constant	-5.281	＜0.001

The following model combines Pattern D-1 of only financial variables with a 2015-year flag. P-value of ②Interest Expenses to Sales Ratio worsens to 10% significance level, but other variables stay at 3% or below, producing an overall AR of 0.594.

Pattern Discrete-2 (D-2)：



AR＝0.594

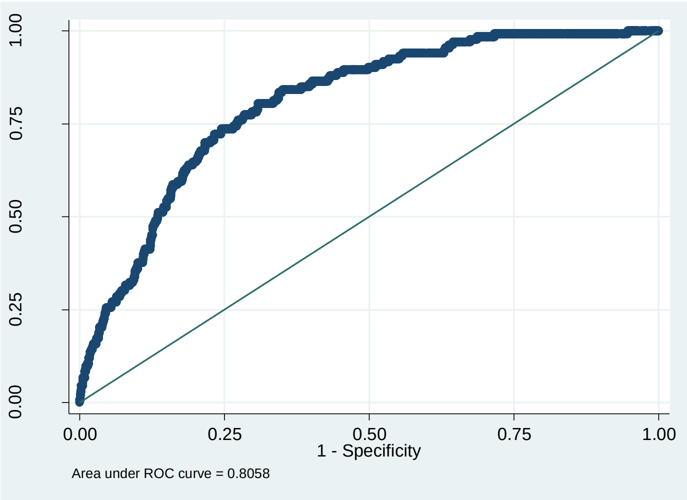
Figure 13: Pattern Discrete-1 (D-2) multiple logit regression

Table 7: Pattern Discrete-1 (D-2) multiple logit regression

Variables		Coefficient	P-value
v306_r5	① Gross Margin Ratio	-0.180	0.009
v330_r3	② Interest Expense to Sales Ratio	0.320	0.095
ln_v90_r5	③ Total Assets	0.683	<0.001
v317_r5	④ Cash Conversion Cycle (Months)	0.175	0.027
v325_r10	⑤ Fixed Assets to Equity Ratio	-0.082	0.028
year_flag	Year-flag (2015)	1.039	<0.001
_cons	Constant	-5.340	<0.001

We attempt to further increase AR though inclusion of other discrete variables, but there is a limitation to improve by using only year-flag. On the contrary, AR increases to a higher level if another categorical variable, i.e. manufacturing-industry flag, is added to the model. The results below of Pattern Discrete-3 show that ②Interest Expenses to Sales Ratio has a P-value of 6%, the other ratios are significant at 5% and below. AR rises to 0.612, a level that rises above the 0.6 threshold. For a dataset of mainly sole proprietors, this AR is a very positive outcome. On a side note, adding ownership-structure flag does not increase AR as it does in the case of adding manufacturing-industry flag for continuous data.

Pattern Discrete- 3 (D-3)：



AR＝0.612

Figure 14: Pattern Discrete-3 (D-3) ROC Curve

Table 8: Pattern Discrete-3(D-3): multiple logit regression

Variables		Coefficient	P-value
v306_r5	① Gross Margin Ratio	-0.169	0.018
v330_r3	② Interest Expenses to Sales Ratio	0.367	0.058
ln_v90_r5	③ Total Assets Ratio	0.706	<0.001
v317_r5	④ Cash Conversion Cycle (Months)	0.160	0.047
v325_r10	⑤ Fixed Assets	-0.087	0.023
year_flag	Year-flag (2015)	1.089	<0.001
manu_dum	Industry-flag (Manufacturing)	0.710	<0.001
_cons	Constant	-5.718	<0.001

This dataset consists of approximately 3,440 observations, among which only 133 default cases are specified. The results presented above are case-specific and employ a limited number of financial variables. With more data added to the database, we are convinced that a stable and consistent model is achievable.

If we add an ownership-structure flag to Pattern D-3, AR rises to 0.624. P-value for ①Gross Margin Ratio, however, worsens to 11% and ④Cash Conversion Cycle (Months) to 7%. We therefore choose to keep D-3 as the final model. The results below are for reference purposes only.

Table 9: [Reference] multiple regression of three categorical variables

	Variables	Coefficient	P-value
v306_r5	① Gross Margin Ratio	-0.120	0.114
v330_r3	② Interest Expenses to Sales Ratio	0.437	0.026
ln_v90_r5	③ Total Assets	0.752	<0.001
v317_r5	④ Cash Conversion Cycle (Months)	0.147	0.073
v325_r10	⑤ Fixed Assets	-0.095	0.017
year_flag	Year-flag (2015)	1.146	<0.001
manu_dum	Manufacturing industry-flag	0.604	0.001
btype	Ownership structure-flag	0.748	0.004
_cons	Constant	-6.537	<0.001

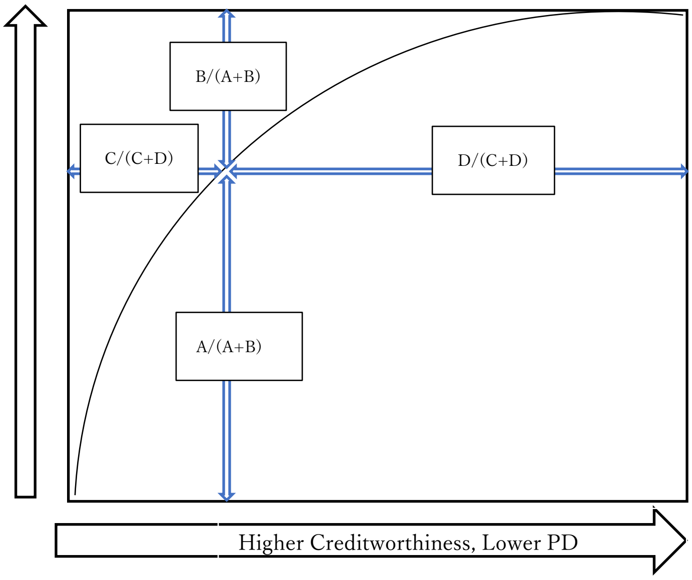
BOX: ROC Curve and AR

・ Receiver Operating Characteristic (ROC) Curve

ROC Curve illustrates the predicting power (accuracy) of a scoring model. As scoring model gets more accurate, ROC curve expands toward the upper left. To evaluate a scoring model, the following graph can be drawn by setting a threshold (cut-off point) at which "non-default" and "default" borrowers are categorized accordingly. For example, if we set the threshold of PD at 5%, "default" borrowers with PD of 5% or above who actually defaulted (correctly specified) are categorized as A and those who did not actually default (incorrectly specified) are categorized as C. In the same manner, "non-default" borrowers with PD of less than 5% who actually did not default (correctly specified) are categorized under D and those who did default (incorrectly specified) are categorized under B.

In the graph below, the horizontal line that crosses the cut-off point illustrates a set of "non-default" borrowers (C+D), in which some were correctly predicted (D/C+D) and some were wrongly predicted (C/C+D)). The vertical line that crosses the cut-off value depicts the set of "default" borrowers (A+B), in which some actually defaulted as predicted (A/A+B) and some did not default as predicted (B/A+B). ROC Curve is created by moving this cut-off value (i.e. PD) from the highest to the lowest. The coordinates of the cut-off point are C/(C+D) (rate of wrong prediction) and A/(A+B) (rate of correct prediction). The more precise the model, the more the ROC curve expands to the upper left.

$$\frac{Number\ of\ Defaults\ correctly\ predicted\ with\ the\ cut-off\ value}{Total\ Number\ of\ Defaults}$$



$$\frac{Number\ of\ Non\ Defaults\ not\ correctly\ predicted\ with\ the\ cut-off\ value}{Total\ Number\ of\ NonDefaults}$$

		Actual	
		Default	Non-Default
Predicted	Default	A[1]	C[2]
	Non-default	B[2]	D[1]

[1] Number of borrowers correctly predicted

[2] Number of borrowers wrongly predicted

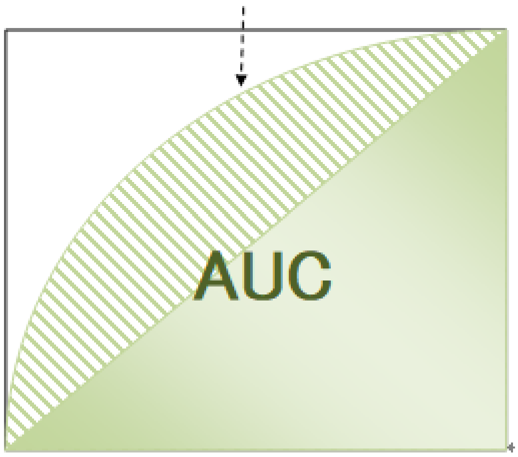
- Accuracy Ratio (AR)

AR is a powerful index for model validation of discriminatory power which is tested by sorting borrowers by PD and examining if the borrowers with high PD actually default. AR takes value from zero to one--the close AR is to one, the more precise the model is.

AR is calculated from ROC curve's Area Under the Curve (AUC) using the following formula. Yamashita et al. (2003) and Basel Committee (2005) discuss AR and other validation indexes in further detail .

$$\mathrm{AR} = 2 \times (\mathrm{AUC} - 0.5)$$

ROC Curve



From the formula, AR is twice the shaded area (the Area Under the Curve (AUC)-green triangular shape). A curve extending to the upper left represents larger AR. For a non-performing random model, slanted area equals 0; for a perfect model, this area equals 0.5. Accordingly, AR equals 0 for a non-performing model and 1 for a perfect model.

V－3　Scoring Trial

In this section, we performed a scoring trial of borrowers in the dataset using CRD Japan models.

CRD Japan has developed a number of models since its establishment. The original Model 1 and Model 2 generally share a similar model structure, except for some differences in explanatory independent variables. After Model 1 and Model 2, subsequent models are separated into models for Corporations and models for Sole Proprietors in order to boost model performance.

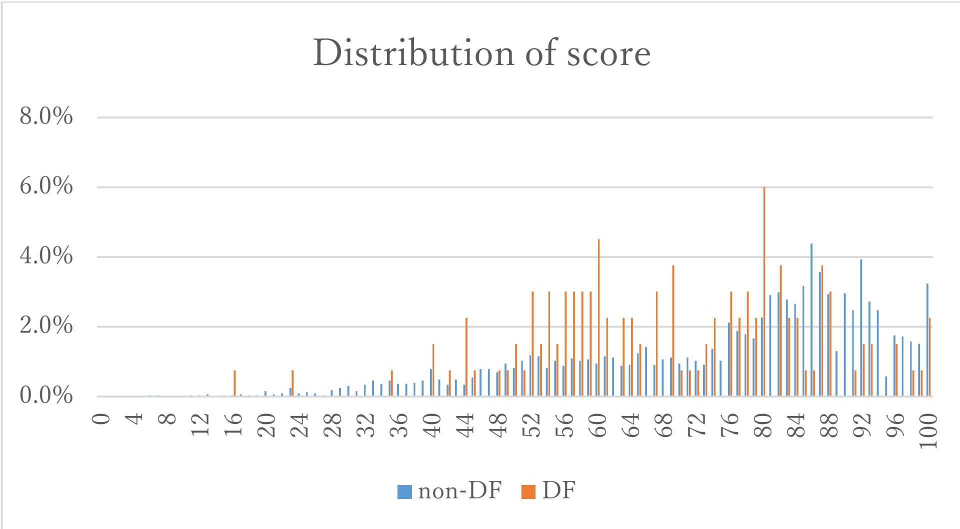
Although this dataset consists mainly of sole proprietors, we chose to use the CRD corporate model for scoring trial. There are two reasons for this selection. Firstly, the CRD corporate model uses data from financial statements that is similar to this dataset. The CRD sole proprietors model, on the other hand, uses data based on tax reports. Secondly, the CRD corporate model is more complex and has historically performed better than sole proprietors model.

The dataset is first transformed into a CRD-designated-scoring format. We then use the corporate model to dedicate a score to each borrower in the dataset. The resulting AR is 0.248, a low level compared to the above newly developed models (multiple logit regression).

By looking at the dataset distribution in Figure 15, the mean of default group and non-default are 69 and 81, respectively. Both groups distribute toward a high score zone and there is not an obvious gap between the two groups. Almost no default falls in the low score zone while many defaults distribute along the high score zone. This indicates appraisal problems in scoring this dataset.

The CRD Japan model used for the scoring trial is composed of 27 financial ratios as independent variables. These variables were transformed to discrete ranks, which are designed to specifically fit each ratio's distribution and highly related to actual default rates.

We could point out several reasons why scoring results using the CRD Japan model are not as high. Firstly, the independent variables used in the CRD Japan Model could not be calculated using data available in the Philippines dataset. The CRD Model has 27 ratios, four are size ratios, 13 are safety ratios, two are profitability ratios, four are efficiency ratios and the remaining four ratios are growth and stability ratios. Safety ratios, such as capital adequacy ratio, cash ratio, interest expense to sales ratio (ability to pay interest) and growth ratios (size and growth rates) have high predicting power.



	Min	5th percentile	25th percentile	Median	75th percentile	95th percentile	Max
非DF	6	39	63	81	89	98	100
DF	16	44	57	69	82	96	100

Figure 15: Distribution of PD Scores by default and non-default groups

Secondly, distribution of the commonly available variables are also different. Unlike the Japan dataset, the Philippines dataset observes that larger SMEs have higher probability of default. Furthermore, equity ratio in the Philippines dataset is very high compared to that of Japan (median of default group and non-default group is 86.69% and 90.08%, respectively). As the two groups' median is different, the ratio itself can be used to distinguish defaults. However, the CRD Japan model gives both groups a high score as the median of both groups could easily be placed on the highest rank of the twenty-rank evaluation system for equity ratio.

Thirdly, growth ratios that have good predicting power are difficult to calculate due to data limitation. Growth ratios generally need at least two consecutive periods of data.

In short, applying the CRD Japan model to Philippine data is limited to a relatively low AR as presented above.

VI Conclusion

In this paper, as a part of "The Study for the Introduction of Credit Risk Database in the Philippines", we examined the possibility of building financial data-oriented CRD scoring models for the Philippines. The dataset used in this paper was voluntarily provided by three government-affiliated financial institutions under the supervision and initiative of JICA, DOF and BSP.

The main findings and related discussions are as follows:

～About the data～

- Financial statements of small and medium enterprises (SMEs) are partially stored at the headquarters' database. The remaining are archived at lending units in the form of Excel spreadsheets or hard copies. For this study, we needed to encode hard copies and merge Excel spreadsheets in order to create the dataset since data available at headquarters was not sufficient.
- Default-related data can be retrieved from a central database. However, since the database is not designed for CRD usage, there is a need to modify and clean the existing data to use for this analysis.
- For future formal database construction, a methodology to assist banks build their dataset submissions is necessary.
- The contents and number of non-financial data items are principally different among financial institutions, thus there is a need to standardize the data items before adding to the database. Even data from the same institution has shortcomings, such as a large number of missing values.
- Data cleaning is inevitable even though it decreases the number of observations in the database.

～About analysis～

- Logit single regression returned the following significant continuous variables and discrete variables:
  - ―10% and below significant level: 14 continuous variables and 39 discrete variables
  - ―5% and below significant level: 12 continuous variables and 35 discrete variables.

(The above results do not include significant variables with puzzling and inexplicable signs which are shortlisted from Table 1 and Table 2)

・We found a large number of significant discrete variables even with simple variable transformation due to data limitation. In the future, if more complex variable transformation becomes likely, further improvement in model accuracy could be expected.

・Multiple logit regression returned models of high AR for both continuous and discrete variables. The models consisted of a relatively well-balanced combination of financial ratios. Similar to the case of single regressions, discrete models seemed to perform better than continuous models.

・The paper presented qualified and balanced combinations of continuous and discrete variables that appraise dthe same criteria.

Table 10: Summary of independent variables

Criteria	Continuous variables	Discrete variables
① Profitability, as depicted in Income Statement	Gross Profit Margin Ratio	
② Efficiency, as depicted in financial conditions	Inventory Turnover Days	Cash Conversion Cycle (Months)
③ Investment, in terms of Capital	Fixed Assets to Equity Ratio	
④ Adequacy, leverage (debt) condition	Debt Dependence Ratio	Interest Expenses to Sales Ratio
⑤ Balance Sheet Size	Total Equity	Total Assets

・In Japan, firms with large balance sheets tend to be more stable and have made V-shaped recovery from the 2008 Global Financial Crisis. On the contrary, in the Philippines' case, larger firms tend to lack lean management and thus fail to perform. These firms' efficiency (as seen from efficiency ratios) is not enough for making profits.

・Both countries' models share a characteristic of having a leverage (debt) condition that is powerful in predicting defaults.

・The sign of Fixed Assets to Equity Ratio, being negative for the Philippines' case, reflects a condition in which firms that tend to make more investment are less likely to default. Although this sign is opposite to that of Japan's case, it reflects the background in which Philippine firms have a larger proportion of own equity than their counterparts in Japan. Further analysis of cash flows may verify this point further.

・Scoring trial for the Philippines' dataset using CRD Japan models did not return as good results as multiple logit regressions. One reason is the difference in selection of used data (financial ratios). Second, and more important, is the difference in data distribution and condition. This result implies a limitation in applying the CRD Japan model to the Philippines dataset and a need for an original Philippine model that reflects the country's data condition.

・By adding a year flag, industry flag and ownership-structure flag to the combination of financial ratios data, we were able to increase the accuracy of the model. For part of the data, adding a location-flag (Luzon) may also increase the model's performance.

・By including more data and more financial ratios, categorical variables, such as industry and location, could be replaced by financial ratios only. We can further build models for each category if data is sufficient.

・In this paper, we have studied the feasibility of creating a qualified credit risk scoring model for Philippine firms. From the results of the study, we positively confirm its feasibility and recommend the introduction of CRD, in which larger dataset could lead to more concise and robust models.

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Annex 4

The Study for the Introduction of Credit Risk Database (CRD) in the Philippines

Report on the Effects of Introducing CRD in the Philippines

Japan Economic Research Institute Inc.

1. Analytical Background of the Effects of Introducing CRD in the Philippines

(1) Overview of the Philippine Banking Sector

The banking sector in the Philippines is composed of universal banks, commercial banks, thrift banks, and rural banks (including rural cooperative banks).

Universal and commercial banks are permitted to be engaged in various banking operations, such as deposit affairs, loans businesses, issuance of letters of credit, foreign exchange businesses, trust businesses, and security investments (with some limitations), while only universal banks are allowed to be engaged in security underwriting, stock trading and investments in nonfinancial businesses. Government-owned banks such as Development Bank of the Philippines (DBP), which provides medium and long term financing and guarantee for major industries in the Philippines and the Land Bank of the Philippines (LBP) which was established to promote farmland reform, are regarded as universal banks.

Thrift banks, such as savings and mortgage banks, stock savings and loan associations, and private development bank, mobilize small amounts of savings from individuals and provide salary and housing loans. Rural banks, including cooperative banks, are responsible for providing basic financial services in rural areas.

Universal and commercial banks play major roles in the banking system and their loan amount consists of about 90% of the total outstanding loan amount in the Philippines.

Table 1 Structure of the Philippine Banking System (as of end 2017)

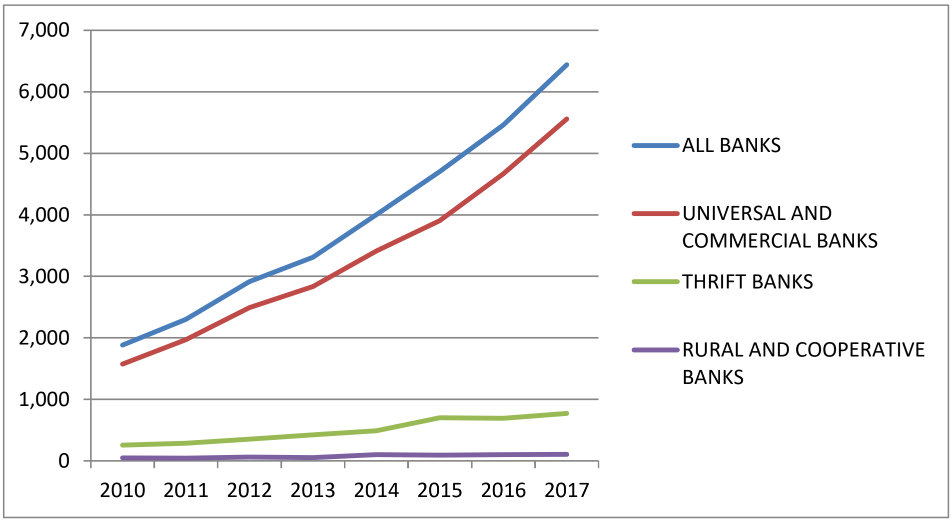
	Number of banks		Total Assets (billion pesos)	Loans outstanding (billion pesos)	Share (%)
	2010	2017			
Banking system Total	698	587	15,166.2	8,613.6	100.0
Universal banks	19	21	13,763.3	7,617.1	88.4
Commercial banks	19	22			
Thrift banks	73	55	1,168.2	858.2	10.0
Rural banks	647	489	234.7	138.2	1.6

Source: Japan Economic Research Institute Co., Ltd. (JERI) based on the data published by the Bangko Sentral ng Pilipinas, Annual Report 2011, Report on the Philippine Financial System 2nd Semester of 2017 and BSP financial statistics 2017. Total Assets and Total Loan Portfolio are gross amount (exclusive of IBL), from Balance Sheet, Philippine banking system, Selected Accounts published by BSP.

1) Stagnant loan growth to micro, small and medium enterprises[1]

The loan balance in the Philippines has shown a rapid increase for the last 10 years. During this period, the annual increase in loan balance was 15-20%.

However, the increase in total loan balance is mostly achieved by universal and commercial banks. The loan balances of thrift banks have increased to some extent, but the increase was not as sharp as that of universal and commercial banks. The loan balances of rural and cooperative banks did not show any increases.



Source: Bangko Sentral ng Pilipinas Statistics

Figure 1 Trend in loan balance by type of FIs

The "Magna Carta for Micro, Small and Medium Enterprises" issued in 2008 mandates banks in the Philippines to allocate more than 8% of the total loan balances for micro and small enterprises (MSMEs) and 2% for medium enterprises[2]. However, most banks, especially universal and commercial banks, have not complied with this.

The proportions of loans to MSMEs have been decreasing in all categories of banks. This is because the loans given to MSMEs have not increased as fast as the total loan balances.

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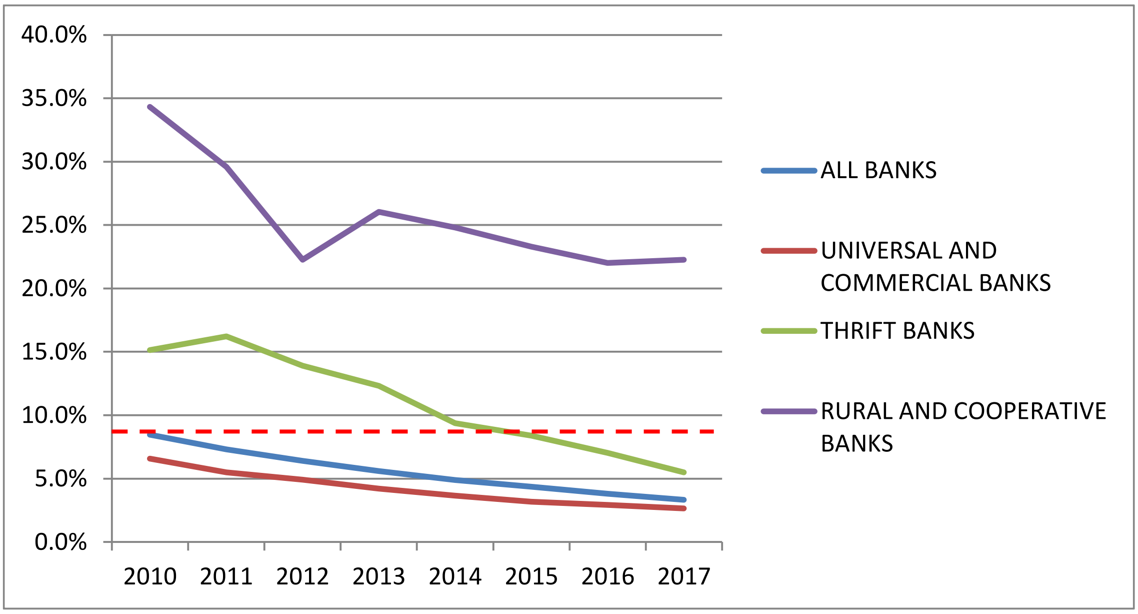
1 For details please refer to the report on "Review on Risk Based Lending in the Philippines" prepared for this JICA project.

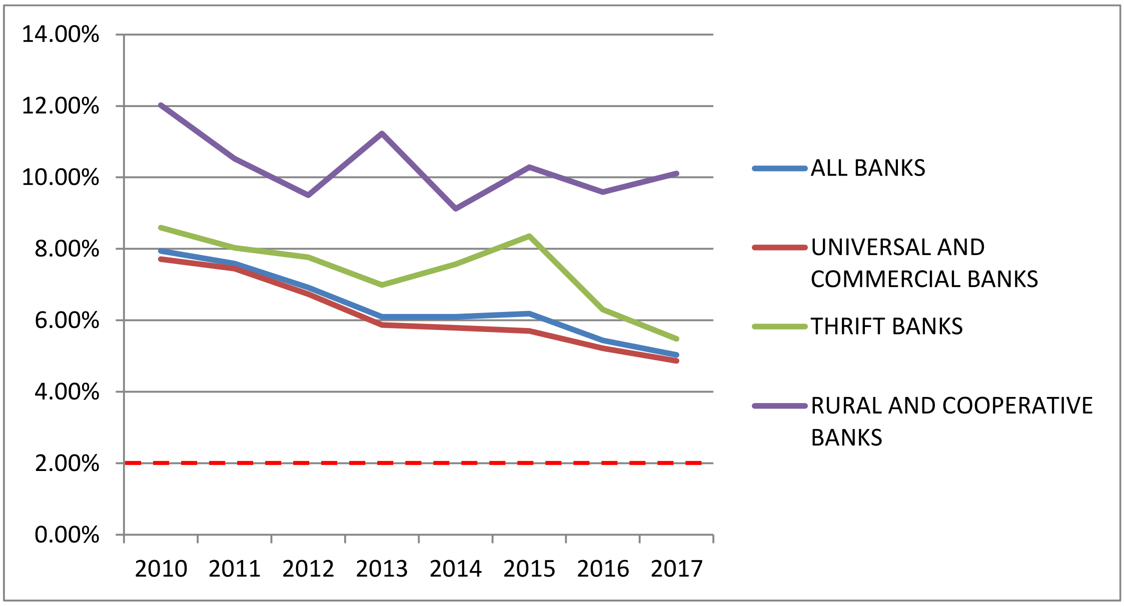
2 Magna Carta for Micro, Small and Medium Enterprises: Republic Act (RA) No. 6977 enacted in 1991, amended by RA No.8289 and further amended by RA No. 9501, Section 3 defines as follows: An enterprise with total assets not more than 3,000,000 pesos is micro; small is with between 3,000,001 and 15,000,000 pesos; and medium with 15,000,001 and 100,000,000 pesos.



Source: Bangko Sentral ng Pilipinas Statistics

Figure 2 Proportion of loans to MSMEs by category of banks

The proportion of the loans to medium enterprises also shows a decreasing trend, although the proportion of loan balance to medium enterprises still exceeds the target by Magna Carta (2%).



Source: JERI based on the data published by Bangko Sentral ng Pilipinas Statistics

Figure 3 Proportion of loans to medium enterprises by category of banks

2) Collateral based lending by smaller banks

Smaller banks, such as rural banks and cooperative banks, tend to give more priority on consumer loans, such as salary loans, rather than business loans, mainly because they can secure sufficient interest revenues from consumer loans without taking much credit risk.

They are very conservative about providing unsecured business loans in general and they tend to secure 100% of their loans by collateral.

There are some rural banks which are active in providing unsecured loans. However, the proportion of unsecured loans of such rural banks is about 30% and this is much lower than that of universal and commercial banks (40-80%).

(2) Credit risk assessment by the banks in the Philippines

1) Credit risk assessment by universal and commercial banks

All universal and commercial banks that the Study team interviewed have their own credit scoring systems and use them for their loan appraisals. Their scoring systems or models are roughly divided into (i) a scoring model developed based on their loan experiences or (ii) a scoring model purchased from vendors and modified reflecting the characteristics of their borrowers.

However, there are some issues in such scoring models. One of the issues is that such scoring models have not been developed based on the results of statistical analysis and it is not possible to say that such scoring models can accurately estimate the default probability of borrowers. Another issue is that such scoring models are outdated. Thus, as scoring models were introduced more than 10 years ago, some indicators used might not reflect the recent trends.

In addition, many banks admitted that they make adjustments to the scoring results, as they do not believe that financial statements of borrowers reflect reality (e.g. the sales or profits amounts are understated in many cases).

As a result, many universal and commercial banks do not make use of the scoring results in the loan appraisals and they make loan decisions only after they carried out more detailed loan assessments, including the review of the actual financial performances, quality of corporate management and market trends.

In this situation, the transaction costs of loan appraisals of MSMEs are bigger in general. This could be one of the reasons why the proportion of loans to MSMEs is decreasing[3].

Banks use information available from CIC, such as outstanding loan balances at other banks and loan repayment records. However, banks cannot fully capture the credit risks of borrowers using CIC information, mainly because CIC information do not include detailed financial data of borrowers.

[3] Many interviewed banks commented that they were forced to spend much time and cost to identify actual situation of MSMEs by conducting on-site investigation and interviews as the outputs of the scoring they were using did not always reflect the actual status of the clients.

2) Credit risk evaluation by smaller banks such as rural banks

As explained above, many smaller banks, such as rural banks and cooperative banks, tend to focus on consumer loans (salary loans, for example) and are reluctant to extend business loans. This is because they try to avoid taking much credit risk.

In addition, majority of smaller banks have not yet complied with Circular No. 855 of BSP, which requires banks to "place a sound, comprehensive and clearly defined credit policies, processes and procedures"[4]. If such smaller banks provide unsecured loans without complying with the circular, they are instructed by BSP to account for additional loan loss provisions. As a result, smaller banks are more reluctant to extend unsecured loans.

In addition, as many MSMEs or single proprietorship have difficulties in preparing credible financial statements, it is difficult for smaller banks to assess the credit risks of such borrowers.

2. Expected effects by the introduction of CRD in the Philippines

As explained above, the reasons why loans for MSMEs are limited in the Philippines are summarized as follows;

- Banks in the Philippines cannot assess the credit risks of borrowers using the existing scoring models, and thus tend to focus on large enterprises whose credit risks are considered rather small.
- Banks tend to avoid providing loans to MSMEs as their financial statements are not reliable (because of "information asymmetry" problem) and it is time-consuming and costly to examine actual business and financial status of such MSMEs.
- As a result, banks (especially smaller banks) provide loans to MSMEs only when they can secure the loans 100% by collateral.

Although many banks in the Philippines do not make use of scoring results in credit appraisals because such scoring results are not trustworthy, "The Preliminary Study for Introduction of Credit Risk Database (CRD) in the Philippines- Data Quality Examination" which examined the feasibility of the construction of CRD in the Philippines using the 3,440 data sets (of which 133 data sets are those of defaulted borrowers) concluded that it was feasible to create a scoring model in the Philippines based on a statistical analysis. When such scoring model is established in the Philippines, it is possible for banks to estimate the default probability of borrowers.

[4] Circular No.855: Guideline on Sound Credit Risk Management Practices issued by BSP in 2014.

Then, by the introduction of CRD, banks are expected to extend more loans, especially unsecured loans.

However, it is not clear how much the outstanding loan balance would increase as a result of the introduction of CRD. This is because it is not clear how many banks will actually introduce CRD in the Philippines and also because there are no succeeding studies which looked into the quantitative effects of CRD.

In Japan, it was observed that the total amount of credit guarantees with collateral decreased and the credit guarantees without collateral increased after CRD was introduced. However, it is not possible to say that this was achieved only through the introduction of CRD, because other policy measures, such as monetary easing, relaxation in credit guarantee application conditions, and other SME promotion measures, were implemented by the government during the same period.

Therefore, this Study will estimate the qualitative effects of the introduction of CRD. Quantitative effects estimated in this Study, such as the increase in loans to SMEs and increase in unsecured loans, will only show the maximum possible increase.

The introduction of CDR is assumed to deliver qualitative (and quantitative) effects by addressing several issues in MSME finance, such as (i) larger banks are reluctant to provide loans to MSMEs and (ii) smaller banks are reluctant to provide unsecured loans.

(1) Increase of loan to MSMEs by smaller banks

"Review on Risk Based Lending in the Philippines" conducted in this Study reported that smaller banks, such as thrift banks and rural banks, tend to provide loans based on collateral. It also reported that the proportion of unsecured loans (loans without collaterals) at universal and commercial banks varied between 40 to 80%, while that of smaller banks was between 0 to 30%.

One of the underlying reasons for this would be the fact that small banks such as thrift banks and rural banks do not have sufficient loan appraisal capacity compared to larger banks. In addition, smaller banks cannot evaluate the credit risks of borrowers as they have not introduced scoring models.

In addition, smaller banks were instructed by BSP to account for more loan loss provisions if they provide unsecured loans without complying with Circular No.855 of BSP. Because of this, such smaller banks are more reluctant to provide unsecured loans.

Therefore, once smaller banks introduce CRD, they will improve their loan appraisals using credit scoring results. They are then expected to be more active in providing business loans, especially in providing unsecured loans.

Box1 Increase of unsecured risk-based lending by thrift and rural banks

As mentioned above, smaller banks, such as thrift banks and rural banks, are expected to increase unsecured loans to MSMEs as a result of the introduction of CRD. However, it is not clear how much such smaller banks will increase unsecured loans.

Currently, the proportion of unsecured loans of such smaller banks is between 0 to 30% of their outstanding loan amount (in average about 15% on average). Assuming that the proportion of unsecured loans of smaller banks increases up to 40% (the lowest level of unsecured loan proportion among universal and commercial banks)[5], the unsecured loan amounts of thrift banks and rural banks will increase as shown in the table below.

Table 2 Expected increase of unsecured loans of Thrift and Rural banks as the result of introduction of CRD (billion pesos)

	End of 2017		After the introduction of CRD		Increase of unsecured loan amount
	Loan portfolio	Estimated unsecured loan amount: 15%	Loan portfolio	Estimated unsecured loan amount 40%	
Thrift banks	772.8	115.9	1,094.8	437.9	+322.0
Rural banks	106.5	16.0	150.8	60.3	+44.3
Total	879.3	131.9	1,245.7	498.3	+366.4

Source: JERI based on the data published by Bangko Sentral ng Pilipinas Statistics, Supervisory Data Center, Supervision and Examination Sector, "Compliance with Magna Carta for Micro, Small and Medium Enterprises". Note that the figures are different from the gross data indicated in Table 1.

According to the financial statistics by BSP, the outstanding loan amounts of thrift banks and rural banks is 879.3 billion pesos, which is 13.7% of the outstanding loan amount (643.8 billion pesos) of all banks in the Philippines as of end of 2017.

Based on the assumptions explained above, the outstanding amount of unsecured loans of thrift banks and rural banks will increase to 40% of their outstanding loan amount after the introduction of CRD. Thus, the outstanding loan amounts of thrift banks and rural banks will increase by 322 billion pesos and by 44.3 billion pesos, respectively. The total increase in the outstanding loan amounts of thrift banks and rural banks will be 366.4 billion pesos and this will increase the total outstanding loan amount of all banks in the Philippines by 5.7%.

Please note that these are the maximum amounts of the loan increase based on the assumption that all thrift banks and rural banks in the Philippines will introduce CRD.

(2) Increase of loan to MSMEs by universal and commercial banks

By “Magna Carta for Micro, Small and Medium Enterprises” issued in 2008, banks in the Philippines are mandated to allocate more than 8% of the total loan balances for MSMEs. However, banks other than rural banks have not fulfilled this mandate at the end of 2017.

The reason is that banks cannot assess the credit risks of borrowers through their existing scoring models and that the scoring results are not reliable due to the low quality financial statements of MSMEs.

Although many universal and commercial banks are active in extending loans to MSMEs, the proportion of the loans to MSMES are decreasing due to the “information asymmetry” problem. Because banks cannot obtain reliable information of MSMEs, the transaction costs of such loan appraisals are bigger (for example banks need to carry out on-site investigations upon loan appraisals).

Banks use the information available at CIC to examine the credit histories of borrowers. However, as CIC information does not contain detailed financial information of borrowers, CIC cannot calculate their default probability through statistical analysis. Banks cannot compare the financial status of their potential borrowers to any benchmark data either. Therefore, CIC cannot be the single tool to address the “information asymmetry” problem.

Once CRD is introduced in the Philippines, banks would be able to obtain the scoring results or default probability of their potential borrowers, calculated by the “CRD model” which is to be constructed based on the statistical analysis of (i) financial data, (ii) non-financial data and (iii) default data of borrowers collected from member financial institutions.

Therefore, if CRD is introduced in the Philippines, banks would be able to assess the credit risks of the borrowers more objectively and efficiently. Banks would also be able to provide loans to their potential borrowers which are credible but which do not have sufficient assets for collateral. Even if the credit risks of some potential borrowers are high, banks would still be able to provide them with loans but at higher loan margins. Therefore, the introduction of CRD is expected to address the “information asymmetry” problem.

Once the “information asymmetry” problem is addressed by the introduction of CRD, it is expected that universal and commercial banks, rather than smaller banks, will increase the loans to MSMEs. This is because smaller banks, such as thrift banks and rural banks, are almost

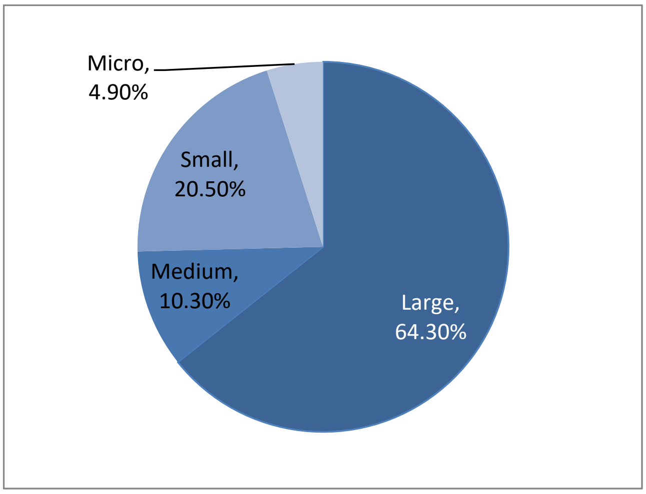
[5] It is pointed out that main clients of thrift banks and rural banks that are smaller enterprises by size prepare and supply banks with FS that have very low credibility. In fact, such banks explain this is the main reason they are hesitant to provide risk-based lending (unsecured loan) to SMEs. In this paper, we assume that the introduction of CRD will allow such banks to supply risk-based lending based on the scoring data using such FS.

compliant with the requirements set by the Magna Carta as they already have sufficient amounts of outstanding loans to MSMEs.

Box2 Possibility of increase of loan amount for MSMEs

It is not clear how much the loans to MSMEs will increase as a result of the introduction of CRD.

However, it is fair to say that banks would meet the requirements of the Magna Carta (more than 8% of the outstanding loans are for SMEs) once CRD is introduced in the Philippines and the information asymmetry problem is addressed, considering the fact that 25.4% of the value added is from micro and small enterprises in the Philippines (Figure 4).



Source: JERI based on the data published by Philippine Statistics Authority

Figure 4 Share by size of enterprises in total value added

Table 3 shows the loans outstanding to micro and small enterprises as of end of 2017 and Table 4 shows the expected increase in the loans to micro and small enterprises as a result of the introduction of CRD.

Table 3 Loans outstanding to MSMEs

(as of end 2017, in billion pesos)

	Total Loan portfolio	Minimum amount required to be allocated	Loan portfolio	Share to loan portfolio (%)	Excess or deficit
	(a)	(b)= (a)x8%	(c)	(c)/(a)	(b)-(c)
All banks	6,438.3	515.1	213.8	3.3%	-301.2
Universal and commercial banks	5,559.0	444.7	147.7	2.7%	-297.0
Thrift banks	772.8	61.8	42.4	5.5%	-19.5
Rural banks	106.5	8.5	23.7	22.2%	15.2

Source: the same as Table 2

Table 4 Expected increase in the loans to MSMEs through the introduction of CRD

(in billion pesos)

	Loan portfolio to MSMEs as of end 2017	Expected amount of loan portfolio to MSMEs after introduction of CRD	Amount of increase of loan portfolio
Universal and commercial banks	147.7	444.7	+297.0
Thrift banks	42.4	61.8	+19.5
Rural banks	23.7	8.5	0
Total	213.8	515.1	＋316.5

Source: the same as Table2

As rural banks have already achieved the target of 8%, it is assumed that they will not increase loans outstanding to MSMEs even after the introduction of CRD. In contrast, universal and commercial banks will increase loans by 297 billion pesos (5.3% increase in their total loans) and thrift banks will increase their loans by 19.5 billion pesos (2.5% increase in their total loans). As a result, the outstanding loan amount of all banks in the Philippines is expected to increase by 316.5 billion pesos (4.9% increase in total loans).

Please note that these are the maximum amounts of the loan increase based on the assumption that all banks in the Philippines will introduce CRD.

(End)

Annex 5

The Study for the Introduction of Credit Risk Database (CRD) in the Philippines

Review on the Preparation and Use of Financial Statements in the Philippines

Japan Economic Research Institute Inc.

1. Preparation of Financial Statements

(1) Changes in Rules and Regulations related to the preparation and submission of Financial Statements (F/S) in the Philippines

Until mid-1990s, American accounting standards were generally applied in the Philippines. When the International Accounting Standards (IFRS) were introduced and became common, the Government of the Philippines established the Philippine Accounting Standards Council (ASC) in 2000 and decided to introduce the Philippine Financial Reporting Standards (PFRS) in 2005 which were established in line with the IFRS.

The ASC was then succeeded the following year by the Financial Reporting Standards Council (FRSC) under the Implementing Rules and Regulations of the Philippine Accountancy Act (Republic Act No.9298) of 2004. The FRSC then set up the Philippine Interpretation Committee (PIC) in 2006 to establish and improve financial reporting standards in the Philippines.

Since the FRSC / PIC revised the PFRS on January 1, 2012, there have not been major differences in the IFRS and PFRS. After 2012, the FRSC / PIC has been updating the PFRS according to the updates in the IFRS.

In the Philippines, there are four major laws, rules and regulations on accounting, preparation, submission and auditing of financial statements (F/S), namely:

- **Corporation Code**
- **Securities Regulation Code** (RA No. 8799)
- **National Internal Revenue Code** (Republic Act (RA) No.8424), and
- **Revised Accountancy Law**

The National Internal Revenue Code was revised by RA No. 10963 (Tax Reform for Acceleration and Inclusion, TRAIN) on December 19, 2017.

In line with this revision, the FRSC introduced the PFRS for Small Entities on December 13, 2017. The PFRS for Small Entities, which was approved by the Board of Accountancy and Professional Regulation Commission, was announced to be officially implemented starting January 1, 2019[1].

As some of the related regulations and rules are under preparation, this report will discuss mainly the contents of the TRAIN and Securities and Exchange Commission (SEC) Circular No.5 dated March 26, 2018.

[1] Published in the Official Gazette dated February 26, 2018.

(2) General obligation to prepare Financial Statements

In the Philippines, the Corporation Code mandates all corporations to prepare financial statements (F/S).

Registered corporations must prepare audited F/S that comply with international accounting standards and submit annual reports including audited F/S to Securities and Exchange Commission (SEC) (cf. Corporation Code, Title XVI, Section 141)[2].

In accordance with the revised National Internal Revenue Code, all residents, including foreigners, corporations and individuals, are required to make tax registrations at tax authorities (cf. Tax Code, Title IX, Chapter III) and pay tax for incomes generated by domestic resources in the Philippines (Chapter II, Sec. 23). All corporations are subjected to 30% of income tax (Chapter IV, Sec. 27).

Under the National Internal Revenue Code, taxpayers are obliged to prepare necessary documents including F/S (cf. Title I).

Before the Code was revised, corporations whose quarterly sales were smaller than 50,000 pesos were allowed to prepare simplified F/S approved by the Minister of Finance, while those whose quarterly sales were more than 150,000 pesos were required to submit F/S audited by independent auditors (CPAs) every year and prepared in compliance with the Account Information Form (AIF) as prescribed by the Bureau of Internal Revenue (BIR). Their accounting books are also required to go through auditing.

Under the revised Code, only corporations whose annual sales, earnings, receipts or output exceed 3 million pesos (750,000 pesos every quarter) are now obliged to submit audited F/S prepared under AIF and to also undergo auditing of accounting books. All other taxpayers, including corporations, companies, partnerships or individuals are required only to “keep and use relevant and appropriate set of records” authorized by the Secretary of Finance.

Financial institutions are also required to submit audited F/S to SEC, as well as the Bangko Sentral ng Pilipinas (BSP) under the Banking Act (Republic Act No. 8791) and Manual of Regulations for Banks, MORB: Sec.X190, Sec. X 191.3, Sec. X 192, Sec. X 425, Sec. X 426, etc.)[3].

Insurance corporations are required to submit F/S to SEC and publish them under the Insurance Code (Republic Act No. 10607 amending Presidential Decree No.612, Chapter III, Title

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[2] Application of accounting standards and qualification requirements, responsibilities, and supervision etc. related to the CPA are also prescribed by the Accountancy Law.

[3] MORB requires financial institutions to appraise the credit worthiness of borrowers based on the F/S, etc. as well as implementation of risk evaluation (Sec. X 178.7, 179.4, Sec. X 191.3, etc.): as a matter of fact financial institutions shall be obliged to duly keep appraisal documents.

7, Sec 223-231). They are also required to keep all accounting books and documents according to the Insurance Code.

Box 1: Obligation of company registration

Under the Corporation Code, all corporations[4] (including associations) are required to register their business at SEC. They also have to acquire corporation numbers and taxpayer numbers.

They are then required to acquire "Barangay Clearances"[5] or business permits. Then, they register at the BIR and other related government institutions, such as the Social Security System and the Philippines Health Insurance Company.

In case of Single Proprietorships, they are required to register at Department of Trade and Industry (DTI) to receive business licenses.

Depending on the attributes of registered companies or individuals and types of registrations, the departments in charge of registrations are different, as follows;

Table 1 Departments in charge of registrations

Department in charge	Attribute and type of registration
SEC	Partnership and / or Corporation
CDA (Cooperative Development Authority)	Cooperatives
DTI	Single Proprietorship
IPO (Intellectual Property Office)	Trademark

All corporations are required to submit audited F/S to SEC[6] (Corporation Code Section 141).

Corporations whose paid-in capital is smaller than 50,000 pesos are allowed to prepare F/S certified under oath by treasurers or any of the officers who can represent the corporations instead of securing independent auditor's certificates (cf. Title VIII, Section 75).

Single Proprietorships are required to renew their business registrations (business registry) at DTI every five years.

[4] A corporation is an artificial being created by operation of law, having the right of succession and the powers, attributes and properties expressly authorized by law or incident to its existence (Corporation Code, Title I, Section 2)

[5] Corporations are required to acquire Barangay Clearance from the authority (city or regional government) where the corporation is going to run business before starting business activities.

[6] The obligation to submit the audited F/S is also applicable to share issuers pursuant to the provisions of the Securities Regulation Code 17.2.

(3) Obligations to prepare financial statements by type of corporation

In the past, all corporations in the Philippines were obliged to apply the Philippine Financial Reporting Standards (PFRS) which were prepared based on International Financial Reporting Standards (IFRS), while corporations whose total assets were smaller than 250 million pesos or total liabilities were smaller than 150 million pesos were allowed not to apply some of the criteria.

After the International Accounting Standards Board (IASB) announced the international financial reporting standards for SMEs (IFRS for SMEs) in September 2009, the Philippine Financial Reporting Standards for Small and Medium-sized Entities (PFRS for SMEs) were also introduced in the Philippines in December 2009. With the introduction of the PFRS for SMEs, reporting standards for small and medium enterprises (SMEs) were relaxed.

Currently, entities listed below are required to submit F/S compliant with the PFRS or the PFRS for SMEs to SEC, based on the Security Regulation Code (SRC), Rule 68 (Part I, 1. A)[7]:

a) Stock corporations with paid-up capital stock of 50,000 pesos or more,
b) Non-stock corporations with total assets of 500,000 pesos or more, or with gross annual receipts of 100,000 pesos or more,
c) Branch offices of stock foreign corporations with authorized capital in the equivalent amount of 1 million pesos or more,
d) Branch offices of non-stock corporations with total assets in the equivalent amount of 1 million pesos or more, and
e) Regional operating headquarters of foreign corporations with total revenues in the equivalent amount of 1 million pesos or more.

As mentioned above, the PFRS for SMEs, which was prepared in compliance with the IFRS for SMEs in the Philippines, was introduced by the FRSC in October 2009. It was then made effective from the fiscal year beginning after January 2010[8] in lieu of PAS 101.

In addition, the FRSC also revised financial reporting standards for micro and small entities. The FRSC published the PFRS for Small Entities on December 13, 2017, which will be made effective from January 1, 2019.

Micro, small and medium enterprises (MSMEs) are thus required to prepare F/S, either based on the PFRS, the PFRS for SMEs or the PFRS for Small Entities. The types of financial reporting regulations applied to each entity is determined based on SEC En Banc Resolution as of August 13, 2009 and SEC Memorandum Circulation No.5 dated March 26, 2018[9].

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[7] Small Entities will be required to use the PFRS for Small Entities as stated in SEC Memorandum Circular No.5.

[8] August 12, 2015, the FRSC decided to introduce the same revision and it was applied from January 1, 2017. At the same time the SEC revised the definition of SMEs.

[9] Accounting standards similar to domestic companies are applied to foreign-funded enterprises.

1) Medium-sized Entities

Medium-sized entities, which fall under the following criteria are required to prepare F/S in compliance with the PFRS for SMEs.

- Have total assets of between 100 million to 350 million pesos or total liabilities of between 100 million to 250 million pesos[10] (if the entity is a parent company, the said amounts shall be based on the consolidated figures),
- Are not required to file F/S under Part II of SRC Rule 68,
- Are not in the process of filing their F/S for the purpose of issuing any class of instruments in a public market, and
- Are not holders of secondary licenses issued by regulatory agencies.

However, entities that will meet with more than one of the following conditions have options to apply the full PFRS[11];

i) An SME which is a subsidiary of a parent company reporting under the full PFRS;

ii) An SME which is a subsidiary of a foreign parent company which will be moving towards International Financial Reporting Standards (IFRS) pursuant to the foreign country's published convergence plan;

iii) An SME, either as a significant joint venture or associate, is part of a group that is reporting under the full PFRS;

iv) An SME which is a branch office or regional operating headquarter of a foreign company reporting under the full IFRS;

v) An SME which has a subsidiary that is mandated to report under the full PFRS;

vi) An SME which has a short-term projection that shows that it will breach the quantitative thresholds set in the criteria for an SME. The breach is expected to be significant and continuing due to its long-term effect on the company's asset or liability size;

vii) An SME which has a concrete plan to conduct an initial public offering within the next two (2) years;

viii) An SME which has been preparing F/S using the full PFRS and has decided to liquidate;

ix) Such other cases that the Commission may consider as valid exceptions from the mandatory adoption of the PFRS for SMEs.

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[10] Circular No.5 gives definition that entities with Total assets of more than 350 million pesos or total liabilities of more than 250 million pesos shall be Large and/or Publicly-accountable Entities.

[11] In case that a SME applies the PFRS, it is required to make notes in the footnotes that corporation is applying the PFRS and not the PFRS for SME.

2) Small Entities

Small entities that meet all of the following criteria are allowed to apply the PFRS for Small Entities based on the approval by SEC.

i) Have total assets of between 3 million to 100 million pesos or total liabilities of between 3 million to 100 million pesos[12] (if the entity is a parent company, the said amounts shall be based on the consolidated figures),
ii) Are not required to file F/S under Part II of SRC Rule 68,
iii) Are not in the process of filing their F/S for the purpose of issuing any class of instruments in a public market, and
iv) Are not holders of secondary licenses issued by regulatory agencies.

However, small entities that have operations or investments outside the Philippines with different functional currencies have the option to apply the full PFRS or the PFRS for SMEs.

In addition, in case such small entities fall under the conditions i) to vi), viii) and ix) of medium-sized entities, they have the option to apply the full PFRS.

Micro Entities that meet all following criteria are allowed to apply the PFRS for Small Entities.

i) Total assets and liabilities are below 3 million pesos,
ii) Are not required to submit F/S under Part II of SRC Rule 68,
iii) Are not in the process of filing their F/S for the purpose of issuing any class of instruments in a public market; and,
iv) Are not holders of secondary licenses issued by regulatory agencies.

In addition, such micro entities are allowed to submit only income tax returns or F/S prepared based on the PFRS for SMEs.

In case micro entities apply different accounting standards from the PFRS, it will be acceptable in light of the nature of the company, the purpose of the F/S and related laws and regulations.

[12] Circular No.5 defines entities with "Total assets of more than 350 million pesos or total liabilities of more than 250 million pesos as Large and/or Publicly-accountable Entities.

2. Outline of criteria for preparing financial statement

(1) PFRS (Philippine Financial Reporting Standards)

As mentioned above, in the Philippines, the American accounting system and standards had been applied until the mid-1990s. However, following the International Financial Reporting Standards (IFRS), the Philippine Accounting Standard Council (ASC) was established in 2000[13] and introduced the Philippine Financial Reporting Standards (PFRS) in 2005.

Since the FRSC / PIC revised the PFRS on January 1, 2012, there have not been major differences in the IFRS and the PFRS. Since 2012, the FRSC / PIC has been updating the PFRS according to the updates in the IFRS.

The PFRS are now applied to stock corporations, public and private corporations, partnerships, foreign capital enterprises, and individual business operators.

The major characteristics of the Philippine general accounting standard are as follows;

1) Compliance with International Accounting Standards: The PFRS complies with the IFRS, with some exceptions.
2) Statutory Audit: Legal audits by independent accountants are required even for corporations with relatively small capital of 50,000 pesos and more. In addition, according to the provisions of the tax code, corporations whose quarterly sales amount exceeds 150,000 pesos are required to attach audited F/S to the declaration of final return.
3) Audited F/S are submitted together with the declarations of annual tax return to the BIR by the 15th day from the settlement date on the fourth month (within 105 days), and within 120 days to SEC. In addition, accounting books and records/vouchers are kept for 10 years from the filing date of the declaration (by paper for the first 5 years and by electronic file storage allowed for the subsequent 5 years).
4) Correlation between the accounting and the taxation: In the Philippines, as in Japan, the accounting system and the taxation system are differentiated. The main differences in the taxation treatment are as follows.

<Cost depreciation>

It is not necessary to make the depreciation method for taxation consistent with the accounting depreciation standards (straight-line method is adopted by taxation)

<Inventory>

Inventories are valued at cost or at the lower cost of market. As of October 1984, all

[13] In November1981, the Philippine Institute of Certified Public Accountants (PICPA) established the ASC and succeeded by the FRSC under the Implementing Rules and Regulations of the Philippine Accountancy Act (RA No. 9298) of 2004.

manufacturers that adopted the last-in, first-out method were required to change to the moving average method.

<Allowance for doubtful accounts and bad debt loss>

Regarding the allowance for doubtful accounts and loan losses, it is natural to post an allowance for doubtful accounts in the course of accounting, but for tax purposes, only those that actually become bad are allowed to be written off as tax deductions in the tax year and the deferment is not accepted.

<Deficit loss>

As for the deficit loss, deferral processing is permitted for three years from the fiscal year of occurrence, but no carry back is allowed.

In the meantime, the PFRS requires following accounting principles to be applied;

i) Revaluation of assets is based on fair market price (implemented not for part of assets but for overall assets).
ii) Frequency of revaluation of tangible fixed assets is carried out periodically every three to five years.
iii) It is required to periodically verify the expected useful life and depreciation method of the asset.
iv) As for impairment of assets, impairment is evaluated at the end of the period in accordance with the criteria for determining the impairment value. Evaluation losses are recognized as the higher of recoverable amounts of assets, either net selling price or usage.
v) Evaluation of intangible assets also includes pre-operation expenses, and the depreciation period is a maximum of 20 years.

(2) PFRS for SMEs

The PFRS for SMEs, to reduce the burden on SMEs, minimized reporting items, simplified some accounting methods and reduced disclosure obligations.

The documents included in the “complete set of F/S” are also reduced to the following:

- Statement of Financial Position (former Balance Sheet)
- Either (i) Comprehensive Income, or (ii) an income statement and a statement of comprehensive income (former Profit and Loss Statement)
- Statement of Changes in Equity (former Distribution of Net profit)
- Statement of Cash Flows

- Notes

Items to be stated in the Statement of Financial Position are as follows;

- Cash and equivalents
- Receivables
- Financial assets
- Inventories
- Property, plant, and equipment
- Investment property at fair value
- Intangible assets
- Biological assets at cost
- Biological assets at fair value
- Investment in associates
- Investment in joint ventures
- Payables
- Financial liabilities
- Current tax assets and liabilities
- Deferred tax assets and liabilities
- Provisions
- Non-controlling interest
- Equity of owners of parent

The accounting standards applied to SMEs were also simplified from the general accounting standard[14], as follows;

i) Simplification of reports: Some reports, such as earnings per share, interim financial reports and segment reports are not required. Comprehensive income statements are required only when there are net foreign exchange gains and losses from foreign investments or operations.

ii) Asset valuation: Under the general criteria, the cost method (fair value) is applied in principle and present values or feasible values can also be accepted. In case of SMEs, acquisition costs are applied unless the fair value can be obtained more easily. In particular, while financial assets and liabilities are measured at amortized costs or fair values in general, SMEs are allowed to value assets at amortized costs (costs accrued from the acquisition costs in the past or costs recognized as revenue in the past). In case

[14] While the original document of the IFRS was 2300 pages, the IFRS for SMEs shown from the IASB in 2009 was only a 230-page document.

of evaluation of buildings, factories and facilities, only the cost method can be applied for SMEs, although both cost method and revaluation method are generally used. Non-financial assets are valued at cost and non-financial liabilities are measured at liquidation cost. Amortization is made based on the useful life general criteria, but goodwill is allowed to be included for SMEs.

iii) In principle, amortization for intangible fixed assets can be made for 10 years. Inventory-related losses are treated in principle as inventory write-downs in the general principle, whereas it is treated as impairment in case of SMEs.

iv) Borrowing costs and research and development expenses are regarded as expenses and not as assets. Real estate can be depreciated, excluding when fair values can be easily obtained. As mentioned above, financial assets are recorded at acquisition prices and no fair value valuation is required. With regard to government grants, accrual is not required and provisional accounting for unrealized gains or losses is not required either.

v) Financial statements other than cash flow statement are prepared in accrual basis, and in principle offsetting of assets and liabilities, revenues and expenses are not allowed.

vi) Disclosure obligation: The number of items required by the PFRS is about 3,000 while that of the PFRS for SMEs is only about 300 items.

On the other hand,

vii) Statutory audits by independent accountants are required for corporations with relatively small capital of 50,000 pesos and more. In addition, according to the provisions of the tax code, corporations whose quarterly sales exceed 150,000 pesos are required to attach the audited financial statements to the declaration of final return.

In addition, corporations who opt for the PFRS for SMEs are exempted from the application of some provisions required by the PFRS, such as earnings per share and segment reports[15].

(3) PFRS for Small Entities

The FRSC reviewed financial reporting standards for small entities and introduced the PFRS for Small Entities on December 13, 2017. Based on the approval by the Board of Accountancy and Professional Regulation Commission on February 20, 2018[16], it was decided that the PFRS for Small Entities became effective from January 1, 2019. Aligned with this announcement, SEC also announced on April 4, 2018 the application of the PFRS for Small Entities after January 1st, 2019.

15 Evaluation change of assets, factories/equipment, investment, exemption of capital such as borrowing cost, etc.
16 Public comments were also invited by January 15, 2018.

The PFRS for Small Entities was adopted by the FRSC and SEC in response to requests by small entities and based on the recommendation of the Association of Certified Public Accountants in Public Practice (ACPAPP).

Major revisions made by the introduction of the PFRS for Small Entities are as follows:

- Inventories are valued at the lower of cost and by the market value method (i.e., the probable selling price to willing buyers as of reporting date).
- Investment properties are valued either by cost method or at fair value, depending on the choices by entities.
- No concept of "finance lease" and all lease receipts (payments) are recognized as income (expense) as earned (incurred).
- No accounting for onerous contracts
- For equity-settled share-based payment transactions, an entity is required to measure the goods or services received, and the corresponding increase in equity, with reference to the net asset value of the equity instruments granted, to be calculated dividing the total assets of the entity less any liabilities by the number of shares outstanding at measurement date.
- For defined benefit plans, an entity is required to use the accrual method in calculating benefit obligations in accordance with RA 7641, The Philippine Retirement Pay Law, or company policy (if superior than RA 7641).
- Entities are given a choice not to recognize deferred taxes in the financial statements.
- Biological assets can be valued either at cost or at current market price, depending on the policy choice made by the entity.
- Prior period adjustments are just captured in the opening balance of the current year.

In addition to the simplification of accounting rules mentioned above, the contents of documents to be prepared and filed by small entities are also reduced to the following five kinds of documents;

- Statement of Financial Position (balance sheet)
- Statement of Income
- Statement of Changes in Equity
- Statement of Cash Flows
- Notes (a summary of significant accounting policies and other explanatory information)

(4) Accounting audit obligation

As a general rule, F/S to be submitted to SEC must have been audited by an independent certified public accountant (Corporation Code, Title XVI, Section 141; Amended SRC Rule 68, Part 1. 3. A. (i); Securities Regulation Code, Chapter V, Section 17, etc.). However, as previously mentioned, the F/S of small entities can be certified under oath by treasurers or any responsible officers of the entities (Corporation Code, Title VIII, Section 75).

In the Philippines, there are 607 domestically certified independent auditors (of which 420 are certified by SEC) and 165 certified public accounting firms (of which 99 are registered with SEC) (source: SEC Annual Report 2016).

As of the end of 2016, the number of authorized auditing firms registered in SEC / Office of the General Accountant (OGA) is at 540, and the breakdown is shown in the table below.

However, since audit costs are rather high (refer to Note 4 on page 18 of this report), the use of certified auditors by SMEs is limited.

Table 2 Number of accredited audit organizations

Type of Entity	Accredited as of CY 2016
1. External Auditors	424
2. Audit Firms	102
3. Asset Valuers	12
4. Credit Rating Agencies	2
Total	540

(Source) SEC Annual Report 2016, p 92 Table 16. Type and Number of Entities Accredited by the OGA as at December 31, 2016.

The top five auditing firms in the Philippines, all of which are partners of International Audit Corporations (in parentheses), are as follows;

i) SGV and Company (Ernst and Young PA)
ii) Manabat Delgado Amper & Company (Deloitte Touche and Tohmatsu)
iii) Isla Lipana and Company (Pricewaterhouse Coopers (PwC)
iv) Manabat, San Agustin and Company (KPMG)
v) BDO Alba Romeo and Company (BDO International)

In the actual audit, auditors extract the transaction records randomly to check whether they are properly processed (sample survey). Then, "fairness opinions" made by the auditors include a reserve such as "not responsible for any material misstatement or fraud" in many cases.

In case of Japan, upon tax returns, third-party private corporations (in particular TKC[17]), which provide accounting systems (software), sometimes issue certificates for the timeliness of account data entry. Financial institutions also recognize such certificates[18].

In the Philippines, there is no such practice as giving some tax incentives to those who receive certificates by private third party organizations like TKC in Japan. In some cases, financial institutions (FIs) facilitate their loan appraisal procedures only after they receive the opinions of assigned auditing firms or certified public accountants.

Table 3 Examples of utilization of third-party institutions in Japan

	Contents checked	Outputs or effects
Tax accountants	- Guidance for timely and accurate book entry, - Monitoring of forecasts and achievements, - Guidance on depreciation, - Guidance on accounting for reserves	- Securing the credibility of financial statements, - Confirmation that the accounting conforms to the rule of 'Small Business Accounting Procedure' of Japan, - Supporting the formulation and revision of the business plans
Financial institutions	- Encourage timely and accurate guidance, - Monitor forecasts and achievements, - Pursue and review monthly trial balance	- Evaluation of the credibility of financial statements, - Confirmation that it conforms to the rule of the 'Small Business Accounting Procedure' - Supporting the formulation and revision of the business plans, - Proposal of solutions to achieve the business plan, - Development of preferential interest rate products
Third party organizations (such as TKC)	- Utilization of finance / accounting system (software)	- Issuance of certificate of timeliness of the accounting for the corporation

Financial statements prepared by SMEs and submitted to SEC are supposed to have been audited by independent accountants or verified by internal auditors (or representative authority). However, despite efforts to reduce the burden of reporting obligations and accounting standards requirements for SMEs, many FIs and governmental organizations still do not trust the reliability and credibility of F/S submitted by SMEs.

[17] TKC is a private stock corporation established in 1966 with the purpose of assisting accounting firms and tax accountants by collecting/supplying information related to accounting, conducting research and staff trainings, etc. together with supporting public services by local governments. It also develops IT software for accounting work.

[18] In Germany as well, the Commercial Code amended in 1985 requires the mandatory external audit for medium-sized capital corporations, and Article 18 of the Credit System Law also requires corporations to attach the "certificate of preparation of annual accounts with probability evaluation" to the financial statement presented to financial institutions to be submitted at the request for loans. The licensed tax accountants are also recognized as the rating consultants (Ratingberter) for SME lending.

One of the underlying reasons for this is that costs for the preparation of F/S are huge. For example, it is difficult for SMEs to value some assets based on present value or fair value methods, as stipulated in the PFRS for SMEs. Similarly, accounting procedures and bookkeeping procedures based on international financial reporting standards are still difficult for SMEs and thus, they tend to make mistakes in documentation. As a result, the quality of financial documents prepared by SMEs is not very high and this is one of the reasons why the tax authority cannot secure sufficient tax revenue.

In response to this issue, the DOF/BIR has simplified the documents for Income Tax Return (ITR) through the revised National Internal Revenue Code. The documents now consist of a maximum of four pages in paper or electronic form containing only the following information.

- Corporate profile and information
- Gross sales receipts or income from services rendered or conduct of trade business, except income subject to final tax as provided under the Tax code
- Allowable deductions under the Tax Code
- Taxable income as defined in the Tax Code
- Income tax due and payable

In Japan, authorities deem as acceptable some divergence from the IFRS for SMEs in light of the fact that many SMEs are active mainly in the domestic market and are not necessarily in a position to prepare F/S conforming to the international comparison requested by international investors. In other words, the preparation of F/S in Japan is easier and the financial status of company owners are easily understood.

Thus, it is possible to say that recent amendments to Philippine tax and accounting laws have made them more similar to regulations in Japan.

If we compare the outline of the financial reporting standards of ASEAN countries based on the survey results by the Organization for Small & Medium Enterprises and Regional Innovation, Japan (SMRJ) in March 2006, major characteristics are as shown in the table below.

The financial reporting standards in the ASEAN region are generally “harmonized” with the IFRS, and the gaps among the financial reporting rules of ASEAN countries are diminishing. However, due to differences in historical background and the economic and industrial structures of each country, the level of “harmonization” is not as high as in the European Union (EU).

Especially for SMEs, as the level of understanding of the compilation methodology of F/S is low and the burden of preparing F/S in compliance with the IFRS standards is still very large, the level of compliance with the IFRS is not sufficient.

Table 4 Comparison with major neighboring countries on the framework of financial reporting standards for SMEs

	IFRS introduced in	Length to preserve books, number of annual reports to be created	Valuation method of assets	Roles of CPA	Treatment of SMEs
The Philippines	2001(amended in 2005)	10 years, 6 kinds	- Valued with historical cost-depreciation - impairment model. Impairment at the end of accounting year.	In principle all enterprises are required mandatory audit. Tax code defines both accounting standards and income tax declaration method.	PFRS for SME shall be applied except for a certain exception.
Thailand	2000	5 years (10 years if there are issues under discussion with revenue agency)	- Historical cost, inventories shall be valued by lower of cost or market method. - Depreciation of fixed assets by straight line method. - Differed depreciation allowed for intangible assets.	All enterprises shall be audited. Certified auditors are allowed to act as agent for both tax declaration and book keeping of enterprise.	Studying to apply different standards from IFRS.
Malaysia	2006 (MPERS)	7 years, 5 kinds	- MPERS applies fair value valuation (OERS is valuation at cost). R&D cost is added up to expenses. - Loan cost also added up in expenses. Functional currency introduced.	All shall be audited by external auditors. Auditors are prohibited to act as agent of book keeping.	IFRS applied but with some exceptions.
Indonesia	1995 (PSAK in 2000)	10 years, 4 kinds of audited FS	- For fixed assets depreciation methods other than straight-line and declining balance are also allowed. R&D cost is included in expenses. - Historical cost is allowed as	No requirements for local enterprises with total assets size of less than 25 billion RP（except for enterprises that have borrowing from banks)	Almost in compliance with IFRS, but SMEs are allowed to submit FS to tax authority on voluntary basis.

			exceptional cases. Pensions are valuated with market value		
Singapore	2003	5 years 4 kinds	- Apply IFRS	SMEs that are nonpublic entities and whose annual sales amount are 5 million S$ or less are exempted from audit obligation.	IFRS is mandatorily applied to all enterprises.
[for reference] Japan	application started from 2010 on voluntary basis	7 years, 5 kinds including notes	- Fixed assets shall be valued in principle with acquisition cost and depreciated by diminishing balance method, straight-line method or like, and intangible fixed assets shall be by straight-line method.	Tax accountant, public organization such as TKC corporation are allowed to assist SMEs for creating F/S and tax declaration, in addition to CPA	Different standards are allowed for SMEs.

(Source) SMRJ "Survey on Actual Condition of Accounting System in ASEAN Countries as of March 2006", partly modified by JERI.

The table below explains major differences in the preparation of F/S in Japan and in the Philippines.

Table 5 Preparation of F/S - Comparison between Japan and the Philippines

Item	Japan	Philippines
Principle	Bylaw-principle (specifying numerical standards), emphasis on profit and loss statements and adopting its own accounting standard. It is considered not to be affected by international accounting standards from the viewpoint that already applied standards can be used continuously and stably).	Principle-based (no numerical standard), emphasis on balance sheets, and adopting global standards. However, corporations that do not have public accountability are allowed to comply with Philippine accounting standards before 2005. The PFRS for Small Entities will be applied from January 1st, 2019.
Statement of financial position	Balance sheets	Financial statement report
Inventory	In principle, it is recorded at cost, and evaluation standards are cost or the lower of cost or market. The evaluation methods are based on the individual	Evaluated at the lower of cost or market. Some expenses are on a first-out basis or a moving-average method.

	method, the first-in first-out method, the total average method, the moving average method, the final purchase cost method, the selling price reduction method, etc. In addition, when the market price significantly falls below the acquisition cost, an evaluation loss shall be recorded, unless it is judged that there is a likelihood of recovery.	Procurement costs, transportation costs, etc. are expensive.
Securities	In principle, recorded at cost, but as for securities held for trading purpose, it shall be stated at market value. Evaluation method is selective among the total average method, moving average method, etc. In addition, when the market price significantly declined from the acquisition cost, unless it is judged that there is a prospect of recovery, an impairment loss can be posted.	The initial recognition amount is the transaction price (acquisition cost). However, in the case of financial transactions, it is posted at present value. Pricing of debt financial instruments are generally at amortized cost. Calculation of amortized cost of financial assets or liabilities shall be the effective interest method.
Fixed assets	Classified as tangible fixed assets (buildings, machinery and equipment, land, etc.), intangible fixed assets (software, leasehold rights, patent rights, goodwill etc.) and investment and other assets, and in principle shall be recorded at acquisition cost. Tangible fixed assets are depreciated according to the declining-balance method, straight-line method, etc., and intangible fixed assets are depreciated using the straight-line method in principle. The useful life of fixed assets shall be the appropriate period of use, such as the period prescribed in the Corporation Tax Law, and if a significant decline in asset value is found due to disasters or other reasons, an impairment loss will be recorded.	For tangible fixed assets only historical cost - depreciation - impairment model is applied. PAS reevaluation model is not allowed. For small entities initial recognition shall be measured at cost. The remaining value after the reduction of the residual value is subject to amortization. It is required to periodically verify the expected useful life and depreciation method of the asset. Only when there is significant value fluctuation, the review of the evaluation method is allowed. All research and development expenses are treated as expenses. Intangible fixed assets procured separately, such as free of charge and asset exchanges, are amortized over the usable remaining period. Goodwill is evaluated at fair value (small entities shall initially measure goodwill at its cost) and amortized.
Allowance for doubtful accounts, credit loss	When the claim has been legally extinguished due to bankruptcy procedures etc., the amount is recorded as bad debt. For uncollectible receivables in view of	Only limited cases are allowed with provision. In addition, for tax purposes only those that actually became bad are written off

	the debtor's asset status, payment capacity, etc., the uncollectible amount is recorded as bad debt. For loans that are likely to be uncollectible, the estimated uncollectible amount is recorded as an allowance for doubtful accounts.	as tax deductions in taxable years. Deferrals are not allowed.
Impairment	Before comparing the carrying amount of the asset and the recoverable amount, compare the book value with the undiscounted cash flow, and if the latter is not less than the former, no need to calculate the recoverable amount.	As for impairment of assets, evaluate the impairment at the end of the period in accordance with the guidelines for judging the impairment value. Compare the book value of the asset with the recoverable amount.

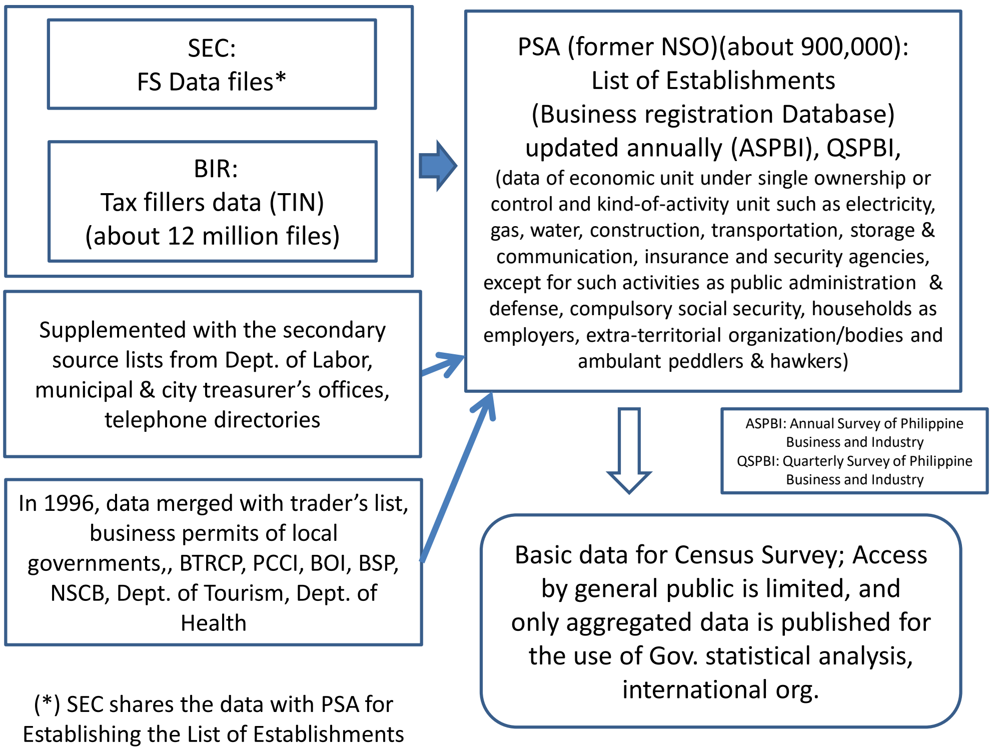
3. Actual data collection of F/S and its usage by related organizations

Based on the Corporation Code, all corporations are obliged to submit F/S to SEC. In addition, the BIR, the Credit Information Corporation (CIC), financial institutions, credit information agencies (accredited CBs), insurance companies (including reinsurance companies) also receive F/S in accordance with related rules or operational needs. This section will summarize the F/S data collection by major institutions.

In the Philippines, there is no single organization that collects business data including financial statements covering all the economic activities.

Among several institutions, the Philippine Statistics Authority (PSA) has the biggest database of enterprise registration data.

The PSA updates the database annually and quarterly, collecting data from SEC and the BIR. Such data flow is depicted in the figure below[19].



(Source) Prepared by JERI based on the UN SIAP (Statistical Institute for Asia and the Pacific) information paper.

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[19] In the past SEC published aggregated data of selected F/S items for ''Top 25,000 corporations' (ex. 2011 edition). The BIR publishes the name of' Top 500' tax payers, too.

(1) SEC (Securities and Exchange Commission)

As of the end of 2016, the number of active corporations[20] registered at SEC is 643,637, including 351,321 domestic capital corporations (breakdown by type of entities is shown in the table below), which includes partnerships and associations. Public utilities are excluded even if they are large corporations.

Among them, 192,782 corporations (30% of the total) submitted audited financial statements to SEC.

Table 6 Number of registrations by type of entity

Type of Entity	Number
Domestic Entities	537,968
a) Stock Corporations	351,321
b) Non-Stock Corporation	186,647
Partnerships	101,460
a) General	87,750
b) Limited	10,668
c) Professional	3,042
Foreign Entities	4,209
a) Stock Corporations	3,921
b) Non-Stock Corporations	252
c) Partnerships	36
Total	643,637

(Source) SEC Annual Report p 88, Table 11. Number of Active Entities Registered as of December 31, 2016.

By region, there are 354,103 corporations in the National Capital Region (NCR); 74,989 corporations in Region 4-A (CALABARZON) and 4-B (MIMAROPA); 53,700 in Region 3 (Central Luzon); and 40,618 in Region 7 (Central Visayas).

Please note that the regional statistics are based on 987,975 corporations reported in SEC website as of August 2017.

[20] Total number of registered entities was 949,819 as of 2016.

Box 2: Comparison of the numbers of corporations between Japan and the Philippines

According to the Financial Statements Statistics of Corporations by Industry published by the Ministry of Finance of Japan (MOFJ), the number of corporations in Japan is 2.84 million, of which 2.81 million corporations are SMEs[21] with capital of less than 100 million yen. The Ministry of Finance Japan collects F/S data from 70% of the said SMEs.

Comparing the criteria for the preparation of F/S as applied to SMEs in the two countries, Japan allows the application of simpler standards not necessarily compliant with the international standards[22], whereas in the Philippines, it seems that compliance with the IFRS (PFRS) is required in a wider range.

It can be concluded that allowing SMEs to use simplified F/S would result in higher reliability and usability of F/S.

(2) BIR (Bureau of Internal Revenue)

The BIR also requires business entities and individuals to prepare and submit several accounting documents, such as F/S, income statements and cash flow statements based on the National Internal Revenue Code. The coverage of collected data is wider than SEC with data on about 790,000 taxpayers (Refer to the Annex, Sheet1).

According to BIR taxpayer statistics[23], the number of tax returns filed was 29,752,723 as of the end of 2016, of which 877,660 were corporations (including 221,159 corporations that were exempted from tax payment and 11,246 nonresident foreign corporations)[24] and 17,919,087 were individual taxpayers which includes 2,350,490 single proprietorships.

It also said that the BIR is currently promoting the submission of tax declaration forms via websites. If the system is completed, it would improve the coverage of data collection and compilation of related statistics in the near future.

(3) PSA (Philippine Statistics Authority)

In addition to these organizations, the PSA has been also conducting the Enterprise Census Survey every five years and collecting data from about 230,000 entities. Between the census

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[21] Among the 3.82 million corporate enterprises, 3.8 million are SMEs (99.5% based on the number of employees). Including private business owners, total number was 5.93 million, of which 5.55 million (95%, same) are regarded as small and medium business entities.
Japanese definitions of SME are: (i) for Manufacturing, Construction, Transportation industry and other industries (excluding (ii) to (iv) below), the size of capital is 300 million yen or less and employees count is 300 people or less; (ii) for wholesale business, up to 100 million yen or less, and 100 people or less, (iii) for service industry, 50 million yen or less and 100 people or less, and (iv) for retailing, 50 million yen or less and 50 people or less.

[22] There exist two types of guidelines on accounting in Japan; "Guidelines for accounting of SMEs" and "Basic Procedures concerning accounting of SMEs".

[23] BIR, Annual Report 2017 Table 7: Comparative Number of Registered Tax Payers;

[24] Total number of corporations excluding tax exempted and nonresident foreign corporations is 645,255, which is bigger than the number of registered corporations at SEC by 1,618. The difference might be due to the inclusion of public corporations, but no specific explanation was given.

surveys the PSA supplements corporation F/S data with data supplied from the BIR to review business activities of corporations.

The PSA compiles the data and publishes them by type of industry or by region, although the data publicly provided is in principle only for the top 1000 companies. The aggregate amount of main items of F/S are published in the Statistical Year Book issued by the PSA[25].

If anyone wishes to refer to more detailed data for statistical analysis and research, they are allowed to access the data after signing a confidentiality agreement with the PSA.

According to the statistics (List of Establishments)[26] published by the PSA in 2016, the number of corporations nationwide is 915,726 among which 911,768 corporations (99.6% of the total number) are micro, small and medium enterprises (MSMEs).

By size, the number of micro enterprises is 820,795 (89.6%), small enterprises is 86,955 (9.5%) and medium enterprises is 4,018 (0.4%). The number of large corporations is only 3,958 (0.4%)[27].

Looking at the breakdown of MSMEs by type of industry, PSA statistics reported that there were 420,638 (46.1%) corporations in wholesale and retailing businesses, 119,718 (13.1%) in the food & beverage industry, 115,748 (12.7%) in the manufacturing industry, 56,466 (6.2%) in other services, and 39,925 (4.4%) in the financial and insurance industry.

By region, 190,166 (20.9%) are in the metropolitan area (National Capital Region: NCR), 131,011 (14.4%) in Region 4-A (CALABARZON), 100,880 (11/.1%) in Region 3 (Central Luzon), 53.218 (5.8%) in Region 7 (Central Visayas), and 47,996 (5.3%) in Region 1 (Ilocos). These five regions accounted for 58.4% of the MSMEs.

(4) CIC (Credit Information Corporation)

The CIC, founded under the supervision of SEC in 2008, has the mandatory power (Credit Information System Act, RA 9510, 2008) to collect data including some F/S items from corporations. The F/S collected by the CIC is supposed to be the same as those submitted to SEC.

In addition, the CIC collects individual information related to consumer loan users, thus coverage of data is wider than SEC[28]. However, it is said that data collected by the CIC does not

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[25] PIDs and the Asian Institute of Management etc. also provide unique questionnaire surveys about F/S data and analyze corporate business development and financial situation from time to time.

[26] LE (List of Establishments): data is of economic units under a single ownership and kind-of-activity unit including electricity, gas & water, construction, transportation, storage and communication, insurance, security agencies and real estate developers. Data items collected are name of establishments, address, and description of economic activity, economic or legal organization, total employment and number of paid employees.

[27] By number of employees MSMEs employ 4,879,179 (63.3%), and by size of value added MSMEs account for 35.7% of total value added.

[28] Contents of data collected by the CIC are (i) Attributes (date of establishment, project purpose, number of years of operation, business location, TIN / SSS number, representative name), (ii) Revenue / asset related (average annual income in the past two years, expenditure per month, pretax profit, banks, other assets, approval by the Board of

yet cover all the target bodies, and the CIC is continuing its efforts to raise awareness of related organizations, entities and individuals in major cities throughout the country.

(5) Other agencies

In addition to SEC, the BIR, the PSA and the CIC, other institutions, such as the BSP and Cooperative Development Authority (CDA) also collect F/S data.

BSP requests financial institutions to submit the F/S of borrowers similar to what was submitted to SEC[29] in accordance with the bank supervision requirements. Naturally, the F/S collected at BSP would overlap, to some extent, with those collected by the CIC.

Table 7 Actual collection and publication of F/S data in the Philippines

SEC	643,637 corporations, of which 351,321 are domestic corporations. It is said that the percentage of corporations that submit F/S audited by certified financial accountants are at most about half this number.
CIC	N/A
PSA	915,726 establishments (number of registered ones): F/S data collected shall be the same as that of DOF/BIR as stated below. The PSA conducts Census survey every five years. In the Census conducted in 2014, the PSA estimated data of 225,245entities and carried out analysis of the manufacturing sector using 6,653 sets of collected sample data.
BSP	587 FIs (note that BSP has the power to collect borrowers' F/S data via FIs when necessary)
DOF/ BIR	26,138,028, of which 877,660 are corporations (645,255 enterprises, excluding tax exempted and nonresident foreign corporations)
CDA	Collected data from 14,000 cooperatives out of 28,000 in total and compiled the database. 2/3 of the collected data came from cooperatives and the rest were from individuals, including farmers
Financial Institutions (FIs)	Number of loan customers: 33.2% of enterprises has bank loan/line of credit (by WB Financial Inclusion in the Philippines, Dashboard, as of 3rd Q 2016); In principle, F/S related to all the corporate loan clients shall be collected by each FI.
CIBs	Use CIC data as accredited credit bureau in addition to the data collected information from own sources. Now in the process of compiling time series data for a 10 year-period for producing rating information of enterprises (target about 50,000). Support several universal and commercial banks to build their in-house credit scoring models.
Others	N/A

(Source) JERI based on the website information and hearing surveys conducted by JERI.

Directors on borrowing), (iii) liabilities (types of liabilities, types of transactions, account numbers, account opening dates, dealing parties, repayment methods (delinquency data).

[29] MORB：Sec.X190, Sec. X191.3, Sec.X192, Sec.X425, Sec.X426, etc.

(6) Usage of F/S

SEC publishes aggregated data and analysis of several financial items such as income (sales), revenues, assets and liabilities of top 1,000 corporations[30]. The PSA also publishes aggregated data.

The F/S data is used by the BSP and financial institutions, as well as by credit information and rating agencies mainly for the purpose of credit analysis of potential borrowers.

Accounting or auditing firms such as SyCip (SGV & Co.)[31], FITCH, PwC, and KPMG, also collect F/S data. However, the data collected by accounting or auditing firms are those of their clients and mainly large-sized listed companies. Therefore, the level of data coverage of SME data is not high.

The PSA data is also used by universities and research institutes for statistical analysis. Information of registered corporations (List of Enterprises) can be requested by other third parties, but available data is limited to information such as name of corporation, address, business area, registration date and time.

As for the CIC data, four accredited credit bureaus (or Special Accessing Entities) have access to the CIC database and they provide the credit status reports of borrowers and "credit scores" to financial institutions.

[30] SEC Annual Report, p106,"The Top 1000 Corporation: Managing through Difficult Times (2014 Edition)", etc.
[31] SyCip Gorres Velayo & Co. (SGV & Company).

4. Initiatives being undertaken to promote the preparation of F/S by SMEs

(1) Specialization of accounting work and simplification of financial reporting rules

F/S preparation by SMEs is different from corporation to corporation. Large corporations and listed corporations have internal special units for accounting and financial reporting.

However, SMEs, which do not have such internal special units, tend to make mistakes in accounting procedures and in the preparation of F/S.

Thus, SMEs are recommended to (i) appoint and specify a person who is specialized in accounting work and/or to (ii) use accounting software.

As described above, authorities such as SEC and the BIR, have been trying to reduce the burden of SMEs for the preparation of F/S. For example, instead of the audits by independent accounting auditors, authenticity signatures by persons having representation rights are now allowed.

In addition, DOF/BIR amended Tax Code RA No. 10963 to reduce the taxpayers' burdens for tax declaration. Such measures include:

(i) Reduction of pages and contents of ITR documents,
(ii) Simplification in the account book audits and storage rules,
(iii) Increase in the minimum sales and income conditions of financial audit, and
(iv) Simplification of ITR procedures including electronic declaration.

(2) Support activities to prepare credible F/S

The Philippine Chamber of Commerce and Industry (PCCI) has introduced a mentoring system to support SMEs in the preparation of F/S[32]. However, such activities have not yet involved many SMEs other than the contractors of subcommittee members.

In addition to the mentor system, the BIR also started a consultancy network named the Accredit Tax Agent system[33], and is supporting corporations to deepen understanding of accounting rules and tax return declaration procedures in cooperation with such organizations as CPA Association and Financial Executive Institute of the Philippines (FINEX).

Such network has been gradually expanding, but the coverage is still limited to the urban area and the guidance is given only for documentation of tax return declaration. Thus, the functions of the tax agents are rather narrower than those of Japanese licensed tax accountants.

[32] Interviews with Mr. Roberto C. Amores, PCCI Director for SMEs and Export Services, Chairman, Agriculture Committee.
[33] Tax Code, Section 6, G.

(3) Promotion on use of IT system

Authorities, such as SEC and the BIR, have been promoting the use of an IT system and have been providing related information, business registration forms and ITR formats[34] through their websites.

In addition, many companies started using accounting and financial reporting software available in the market. The government has also recommended the use of such software.

However, according to the PCCI, SMEs are still claiming that it is burdensome to fully comply with the documentation requirements of tax declarations.

The BIR mentioned that it would continue efforts to increase awareness of SMEs in cooperation with CPA Association and other related organizations through seminars and training courses on bookkeeping and accounting software.

(4) High cost of Auditing

Unlike large corporations which receive management support or account auditing from accredited CPAs or consultants, SMEs are unable to tap into this resource because of the large cost of getting CPAs or consultants.

In case of corporations with an asset size of 50,000 to 500,000 pesos, it is reported that it takes one to three months for preparation work of F/S and more than 1 million pesos per year for requesting year-round audits.

In case of smaller single proprietors or individual business owners, the cost may be around 50,000 pesos per year (cf. audit cost for large corporations subject to consolidated closing is several millions of pesos).

It was noticed during the interview surveys[35] that SMEs complained about the numerous documents that banks generally require. These include F/S, business plans, business licenses, and registrations of collateral properties, etc. Producing these documents was cumbersome and costly for them.

As a result, these SMEs give up taking loans from banks and shift to micro financing and informal FIs.

Meanwhile, banks pointed out that they are required to bear the additional work of reviewing the actual situation of SMEs, mainly because the quality of financial information and documents

[34] RA No. 10963 stated that within five years from the affectivity of the Act and upon establishment of a system capable of storing and processing the required data, taxpayers engaged in the export of goods and services, and under the jurisdiction of the large taxpayers services are required to electronically report their sales data to the BIR through the use of electronic point of sales system and that “the machines, fiscal devices and fiscal memory devices shall be at the expense of taxpayers”.

[35] Hearing surveys were conducted in Manila Metropolitan area between January and August 2017 together with the survey on the credit risk-based financing practices in the Philippines.

of SMEs is very low. In order to cover such additional costs and potential risk of SME borrowers, banks tend to charge higher interest rates[36] and require more collateral and guarantee compared to large corporations[37].

[36] Banks explained that actual interest rates (annual interest) applied to SMEs were around 12-15% whereas the prime interest rate applied to large enterprises was about 10%.
[37] Several thrift banks and rural banks mentioned that the coverage ratio of collateral for large enterprises was 20 to 60%, whereas for small and medium enterprises was 70% or more.

5. Issues for discussion

(1) Institutional aspect - Establishment and dissemination of simpler declaration form

Improvement in the credibility of the F/S would be one of the primary issues for the promotion of SMEs in the Philippines.

In order to address this issue, the FRSC/PIC and DTI would have to continue joint efforts to reduce the burden of SMEs in preparing the F/S through further simplification of accounting requirements. Such measures would include the simplification of the evaluation methods of fixed assets, exempting receivables and payables denominated in foreign currencies from revaluation, easing standards for allowance for doubtful receivables[38], allowing special deductions and depreciation on capital expenditure deductions and carryover deductions[39].

As noted, the PFRS for Small Entities will be applied from 2019 to simplify the preparation of financial statements by SMEs.

In addition to simplifying the documentation processes of tax return declaration, it would be useful to grant incentives such as giving (i) subsidies for sending their staff to training courses organized by accredited organizations such as PICPA, or (ii) discounts on auditing fees. If banks accept simplified tax return declarations for loan appraisal, it would shorten and facilitate appraisal processes at banks. This will also work as a kind of incentive for SMEs when they apply for bank loans.

It has been mentioned that the BIR has been reducing the contents and pages of documents of tax return declarations and simplifying the contents of bookkeeping regulations for SMEs, as well as reducing corporate tax rates. The BIR would have to continue taking the lead of further simplification, for example by increasing eligible assets for depreciation on capital investments or by introducing extra amortization method. Giving subsidies to SMEs for auditing fees would be another way to promote the use of external auditors. Introducing some grants or tax exemption schemes for training expenses of personnel in charge of accounting in SMEs would also work as incentives for SMEs. The BIR would also have to ask for the cooperation of FRSC/PIC, PCCI and other related industry associations for organizing such training courses for accounting personnel of SMEs at lower cost.

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[38] When calculating annual income, deficit amount can be allowed to be accounted in several years after, as well as allowing netting out with profits recorded if any during the period. Introduction of a tax refund system for the preceding year if the corporation registered deficit in this year after paying income tax for the preceding year may be another idea.

[39] Special depreciation that allows depreciation expenses to be recorded more than usual and special deduction to deduct corporate tax by a certain amount when company conducts certain capital investment and human resources investment.

Preparation of more accurate and reliable F/S by SMEs will also benefit the management of SMEs through the following results:

i) Enhancement of decision-making capacity: Management can confidently utilize the F/S for decision-making and financing.
ii) Expansion of financing: SMEs can gain more trust from FIs and can receive loans more smoothly. It also becomes possible for SMEs to obtain lower interest rates on loans.
iii) Improvement in reliability: SMEs can gain more confidence of public agencies, such as tax offices. Relationships with creditors and business partners could be also developed.
iv) Improvement in transparency: Accountability to investors and employees, as well as the business relationships with customers, will improve.

Thus, SEC and DTI would have to continue carrying out awareness-raising campaigns for improving the credibility of financial statements as well as improving the transparency of corporate governance of SMEs, together with the Financial Executive Institute of the Philippines (FINEX).

(2) Introduction of the third-party certification bodies and enhancement of the functions of BDS providers[40]

In order to promote the preparation of F/S, DTI, in cooperation with the BIR and the FRSC/PIC, can study the introduction of a system that admits third parties to certify the credibility of F/S prepared by SMEs.

In Japan, there are qualified third party bodies, such as SME Management Consultants and Business Management Specialists, in addition to CPAs and Tax Accountants. They have been supporting SMEs in accounting, F/S preparation and tax declarations. They also assist financial institutions to mitigate the "information asymmetry between banks and borrowers" acting as intermediators between SMEs and banks.

However, there are only few private corporations that actively play the role of BDS providers[41] in the Philippines. If the number of BDS providers increase and their capacity to support SMEs is enhanced, it will be more beneficial not only for SMEs but also for authorities. DTI, together with PCCI, FINEX and industrial associations, should consider efficient utilization of BDS providers.

[40] Business Development Services providers mainly supply to SMEs advisory services other than direct financial assistance, giving advice, and training when necessary, on corporate and production management, improvement of production efficiency, tax declaration, better access to finance, etc.

[41] For example, Philippine Tax and Accounting Center, Inc. currently conducts financial statement preparation seminars and trainings for corporations in cooperation with accredited accounting firms. It would be a good idea to strengthen the training and grant third party certification authority to the graduate of the training programs.

One of good examples of the use of BDS providers can be seen in Vietnam[42] where the Japan Bank for International Cooperation (JBIC), as well as JICA, provided two-step loan assistances by supporting the development of BDS providers in the country. In Thailand and Indonesia, governments introduced business development service (BDS) provider systems and enhanced their functions as business management advisors. The International Labour Organization (ILO) also support BDS development in many developing countries[43].

In the Philippines, if banks accept such F/S or tax return declarations with the aforementioned third party certifications, SMEs can reduce the burden of preparation of loan application documents required by banks for appraisal. This will then accelerate loan appraisal procedures. As a result, SMEs would be able to enjoy reduced loan interest rates and guarantee fees. They will then be able to access to larger financing for expanding their business opportunities.

Box 3: BDS development system in Japan

i) SME Management Consultant[44] (SMEC, certified qualification by the government)

SME Agency of Japan (government agency) organizes an annual examination for the selection of eligible persons to be certified as the SMEC. In addition to the examination, the qualification is given to those who graduated from the SME University under the supervision of the SME Agency of Japan, and to those who finished the training course organized by the Japan Productivity Center.

Contents/subjects of examination are Economics, Finance & Accounting, Theory of Corporation Management, Operation Management, Legal operations, SME Policy, etc.

The consultants initially worked as public servants who gave advice to local SMEs, but their main objectives have shifted to the development of private BDS providers who specialize in consulting corporate business activities.

SMECs are registered at the Ministry of Trade and Industry Japan and support SMEs as experts working as advisers that belong to the local Chamber of Commerce and Industry or Associations of Commerce and Industry in each region.

Japan Finance Corporation makes it a condition for micro corporations who apply for special loan scheme without collaterals and guarantee to seek advisory services from a SMEC.

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[42] The borrower of the concessional loans was Vietnamese MOF and the implementing agency was the State Bank of Vietnam.

[43] The assistance started in the 1970s and given to more than 100 countries. Variety of organizations were engaged as implementing agencies. In the Philippines, DTI and/or PCCI might be the suitable organizations to promote BDS providers.

[44] http://www.j-smeca.jp/

ii) Business Management Specialist (BMS, privately given qualification)

Japan Business Management Specialist Association (JBMSA, non-government organization) approves the qualifications of those who successfully finished the courses before being certified as qualified business advisors (BMS).

Those who have enough experience in assisting business corporations are also considered qualified. The qualified person needs to be registered at the JBMSA and work as a consultant for SMEs or lecturer during seminars organized by the association.

(3) Enhancing monitoring function and providing incentives

In order to achieve sustainable development of economic activities through improving the transparency and reliability of SME management, it is necessary to boost the corporation's own efforts to strengthen corporate governance and transparency in accounting.

In addition to the effective utilization of third-party institutions in preparing the F/S, it will be necessary and useful for authorities such as the PSA, SEC and the BIR to provide corporation managers with wider range of analytical results and comparative information of F/S using the submitted/collected data.

It will surely serve to improve understanding about the business situation of each corporation. In Japan, analytical outputs supplied by the CRD Model have been helping Japanese FIs improve not only the level of risk management of borrowers but corporate management.

It is expected that the introduction of CRD model in the Philippines would allow Philippine authorities and banks to enjoy the same outcomes and improvements in terms of corporate management.

(End)

(Appendix) Financial Statements collected by organizations

Security and Exchange Commission (SEC)

1. Data collection by Government ministries/agencies	
Number of entities covered for collection of F/S data	949,819 corporates registered as of 2016 (cf. number of corporates registered as of end 2015 was 900,914); o/w 643,637 are active: among which 351,321domestic stock corporations, and 186,647 domestic non-stock corporations) +101,460 partnerships +4,219 foreign entities.
Accounting Standards required to be used by nature of entities	**LARGE AND/OR PUBLICLY-ACCOUNTABLE ENTITIES** shall use the Philippine Financial Reporting Standards ("PFRS") as adopted by the Commission. However, a set of financial reporting framework other than the PFRS may be allowed by the Commission for certain sub-class (e.g., banks, insurance companies). **MEDIUM-SIZED ENTITIES** shall use the Philippine Financial Reporting Standards for SMEs ("PFRS for SMEs") except for the cases that shall be exempted from the mandatory adoption of the PFRS for SMEs and may instead apply at their option the full PFR. **SMALL ENTITIES** shall apply the PFRS for Small Entities as adopted by SEC. But, small entities that have operations or investments that are based or conducted in a different country with different functional currency shall not be required to apply the framework and should instead apply the full PFRS or the PFRS for SMEs. **MICRO ENTITIES** have the option to use either the income tax declaration or the PFRS for SMEs. If different accounting standards from the PFRS are applied, it will be acceptable in light of the nature of the company, the purpose of the financial statements and related laws and regulations.

Kind/contents of data collected by size of entities	F/S data with company profile from, a) Stock corporations with paid-up capital stock of P 50 Thousand or more; b) Non-stock corporations with total assets of P 500 Thousand or more, or with gross annual receipts of P 100 Thousand or more; c) Branch offices of stock foreign corporations with assigned capital in the equivalent amount of P 1Million or more; d) Branch offices of non-stock corporations with total assets in the equivalent amount of P 1Million or more; e) Regional operating headquarters of foreign corporations with total revenues in the equivalent amount of P 1Million or more. Financial Statements include: (a) Current assets, noncurrent assets, current liabilities, noncurrent liabilities (for specialized industries in which classified balance sheets or statements of financial position are normally not presented, information shall be provided as to the nature and amount of the major components of assets and liabilities); (b) Net sales or gross revenues, gross profit (or, alternatively, costs and expenses applicable to net sales or gross revenues), income or loss from continuing operations and net income or loss (for specialized industries, other information may be substituted for sales and related costs and expenses if necessary for a more meaningful presentation).

Data filing requirements by size of entities	(i) **LARGE AND/OR PUBLICLY-ACCOUNTABLE ENTITIES**: those that meet any of the following criteria:(1) Total assets of more than P350 Million or total liabilities of more than P250 Million; or (2) Are required to file financial statements under Part II of SRC Rule 68; or(3) Are in the process of filing their financial statements for the purpose of issuing any class of instruments in a public market; or (4) Are holders of secondary licenses issued by regulatory agencies.(ii) **MEDIUM-SIZED ENTITIES**: (in principle) those that (i) Have total assets of between 3 million to 350 million pesos or total liabilities of between 3million to 250 million pesos (if the entity is a parent company, the said amounts shall be based on the consolidated figures); (ii) Are not required to file financial statements under Part II of SRC Rule 68; (iii) Are not in the process of filing their financial statements for the purpose of issuing any class of instruments in a public market; and (iv) Are not holders of secondary licenses issued by regulatory agencies. (iii) **SMALL ENTITIES**: those that will meet with all of the following criteria: (i) Have total assets of between 3 million to 100 million pesos or total liabilities of between 3 million to 100 million pesos (if the entity is a parent company, the said amounts shall be based on the consolidated figures);(ii) Are not required to file financial statements under Part II of SRC Rule 68;(iii) Are not in the process of filing their financial statements for the purpose of issuing any class of instruments in a public market; and (iv) Are not holders of secondary licenses issued by regulatory agencies. (iv) **MICRO ENTITIES**: those that meet all following criteria: (i) Total assets and liabilities are below 3 million pesos, (ii) Are not require financial statement submission under Part II of SRC Rule 68,(iii) Are not in the process of filing their financial statements for the purpose of issuing any class of instruments in a public market; and, (iv) Are not holders of secondary licenses issued by regulatory agencies.
Number of data collected	N/A
Industrial sectors covered with the data	In principle all industry
Data categorization by administrative regions	All the country, to be aggregated by region
Timing of data collection/submission	Annually, in principle within 105 days after the end of the most recently ended fiscal year

Time series of the data collected (from year X to Y, annually or monthly, etc.)	2 years prior to the most recent ended fiscal year
Among F/S collected, how many (or about how many percentage) are audited F/S	In total 192,782 entities submitted audited F/S in 2016 not covering sole proprietorships of which the registration and monitoring is under DTI
2. Data availability / usage	
Availability (published or limited members only, or need to pay a fee to refer, etc.)	Several F/S data/items are available with request and paying a fee defined by SEC; Registrants can use information about registration procedure, list of registered corporates and security market information via web-site and SEC Records Management System (RMS)
Analytical outputs and method of data feed back	Annual report; and web-site Publication of the Top 1,000 Corporations in the Philippines (provides an overview and insights on the financial performance of these corporations)
3. Law or regulation allowing the data collection /submission *(refer Sheet 2 for more details)*	Commonwealth Act (CA) 83 (Securities Act) (1936), Revised Security Act, (Section 141); SRC Rule 68 (2015), etc. and Corporation Code, SEC Memorandum Circulation No.5 dated March 26, 2018

Credit Information Corporation (CIC)

1. Data collection by Government ministries/agencies	
Number of entities covered for collection of F/S data	Compulsory participation of an entity which provides credit facilities such as, Banks (universal, commercial, thrift banks, including their trust department, rural banks), quasi-banks, their subsidiaries, life insurance companies, mutual benefit associations, credit card companies, financing companies, trust entities, investment houses, NGO engaging micro financing, government lending institutions, cooperatives engaging in lending activities, and other entities that provide credit facilities, are required to submit **basic credit data** and updates on a regular basis and may include other credit providers to be subject to compulsory participation. (As for the number of financial institutions, refer to the column of BSP.)
Accounting Standards required to be used by nature of entities	Data in the possession of the submitting entities for not more than last 5 years prior to the effectively of the Act.
Kind/contents of data collected by size of entities	Company profile (subject, address, employment. historical data, etc.), finance data (detail of installment, guarantees, detail of credit card data, etc.); Credit information, especially about small and medium companies to directly address the need for reliable credit information concerning credit standing and track record of borrowers, in the form of Credit Report (information attribute to the borrower, detail of credit contract, historical data (track records), etc.), positive and negative credit information provided by a borrower to a submitting entity in connection with the application for and availability of a credit facility and any information on the borrower's creditworthiness in the possession of the submitting entity and other factual and objective information related or relevant thereto in the submitting entity's data files or that of other sources of information. The CIC can also access credit and other relevant information from government offices, judicial and administrative tribunals, prosecutorial agencies and other related offices, as well as pension plans administered by the government
Data filing requirements by size of entities	Data to be submitted is differ between individual, corporation, partnership, cooperatives, and exposure profile data and credit card data.For example,

	Corporation are required to submit following data: date of incorporation, primary purpose or business, term of existence, principal place of business, TIN/SSS No., directors and officers, number of employees, average gross income for the last 2 years, monthly expenses, net taxable income, banks where accounts are maintained including types of accounts, other assets both real and personal, and Board Resolution authorizing the borrowing of fund from a credit institution/submitting entity.
Number of data collected	N/A
Industrial sectors covered with the data	All industry
Data categorization by administrative regions	All the country
Timing of data collection/submission	Each time when financial institutions extend credits to its clients (in practice on monthly basis)
Time series of the data collected (from year X to Y, annually or monthly, etc.)	All credit data for the last 5 years prior to the effectivity of CIC circular No.2015-2 possessed by credit card issuers, universal & commercial banks, thrift banks, rural banks and entities with quasi-banking license issued by BSP Negative information on a borrower as contained in the credit history of borrowers should stay in the database of the corporation unless sooner corrected, for not more than three (3) years from and after the date when the negative credit information was rectified; which shall be corrected and updated within 15 days from the time of payment, liquidation or settlement or debts
Among F/S collected, how many (or about how many percentage) are audited F/S	N/A
2. Data availability / usage	
Availability (published or limited members only, or need to pay a fee to refer, etc.)	Authorized to release consolidated basic credit data on the borrower, subject to the provisions of Section 6 of this Act; Submitting entities, special access entities, data subjects and outsource entities have access to basic credit data. The borrower, for a reasonable fee, shall have, as a matter of right, ready and immediate access to the credit information pertinent to the borrower.

Analytical outputs and method of data feed back	Database is used for providing credit ratings for smaller enterprises and individuals by financial institutions and rating companies.
3. Law or regulation allowing the data collection /submission *(refer Sheet 2 for more details)*	Credit Information System Act (CISA) (RA 9510, 2008)

Philippine Statistics Authority (PSA)

1. Data collection by Government ministries/agencies	
Number of entities covered for collection of F/S data	915,726 establishments (number of registered ones): F/S data collected shall be the same as that of DOF/BIR. 2014 Census Survey covered 6,653 manufacturing establishments; annual data (statistical year book) available for 225,245 establishments (as of 2013) by 18 major industry groups By region, the top three regions accounted for almost three-fourths (73.9%) of the total or 4,914 establishments. The top three regions are all located in Luzon as follows: National Capital Region (NCR) with the highest number of 2,477 establishments or 37.2 percent of the total, followed by CALABARZON with 1,623 establishments (24.4%) and Central Luzon with 814 establishments (12.2%). Among the regions in the Visayas area, Central Visayas registered 661 establishments or 9.9 percent of the total. While in Mindanao, Davao Region recorded 234 establishments with a share of 3.5 percent of the total. (2014 Census)
Accounting Standards required to be used by nature of entities	In line with the PAS, data recorded in the tax declaration form are accepted.
Kind/contents of data collected by size of entities	Revenue/Sales, Total cost, value added, changes in (and gross) inventories, gross addition to fixed assets, subsidies, total compensation, number of establishments and employees (number of paid employees), foreign investment by major industry sector About 300,000 samples surveyed ; covered establishments engaged in 18 economic sectors classified under the 2009 PSIC, namely: o Agriculture, Forestry and Fishing (A) o Mining and Quarrying (B) o Manufacturing (C) o Electricity, Gas, Steam, and Air Conditioning Supply (D) o Water Supply; Sewerage, Waste Management and Remediation Activities (E) o Construction (F) o Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles (G)

	o Transportation and Storage (H) o Accommodation and Food Service Activities (I) o Information and Communication (J) o Financial and Insurance Activities (K) o Real Estate Activities (L) o Professional, Scientific and Technical Activities (M) o Administrative and Support Service Activities (N) o Education (P) o Human Health and Social Work Activities (Q) o Arts, Entertainment and Recreation (R) o Other Service Activities (S) Top 1000 corporates data stored and aggregated; several F/S and Income statements items are inputted and aggregated in the database; aggregated data is available for research and statistical analytical purpose.
Data filing requirements by size of entities	MSME survey 2015 reported that 896,839 are MSMEs, 99.5% out of 946,988 establishments: distribution of MSMEs were 190,166 in National Capital Region, 131,011 in Region 4-A (Calabarzon), 100,880 in Region 3 (Central Luzon), 53,218 in Region 7 (Central Visayas), 47,996 in Region 1 (Ilocos), etc.
Number of data collected	N/A
Industrial sectors covered with the data	All industry
Data categorization by administrative regions	All countries, by region and by industry
Timing of data collection/submission	Census survey in each 5 year term , and annual data published in Statistical Year Book
Time series of the data collected (from year X to Y, annually or monthly, etc.)	Long term time series data available (more than 10 years)
Among F/S collected, how many (or about how many percentage) are audited F/S	N/A
2. Data availability / usage	

Availability (published or limited members only, or need to pay a fee to refer, etc.)	By publications, CD-ROMs and On-line Statistical Service through the Internet
Analytical outputs and method of data feed back	Provides services through information centers, online statistical service, coordination of subnational statistical system, coordination of inter-agency concerns, statistical survey review and clearance system, international data requests, designation of statistics, technical services, interactive statistical databases, advocacy for statistical awareness and media services.
3. Law or regulation allowing the data collection /submission *(refer Sheet 2 for more details)*	Philippine Statistical Act of 2013 (Republic Act No. 10625)

Bangko Sentral ng Pilipinas (BSP)

1. Data collection by Government ministries/agencies	
Number of entities covered for collection of F/S data	All the banks and financial institutions under the supervision of BSP. Number of the entities shall be the same as the number of borrowers of banks under the supervision of BSP. (as of 2014, 31.3% of Filipino adults own a formal account at banks, but only 4.4% have accessed banks as a source of borrowing: according to the BSP NBSFI Survey 2015) There are in total 28,711financial institutions including head offices and branches of banks and non-banks (as of September 2017). Number of head offices is 6,210 of which that of banks is 592 (Universal & commercial banks 43, thrift banks 57, and rural banks 492). There are 613 operating banks with a network of 10,411 branches/other offices (as of end 2016). Percentage of enterprise with bank loans/line of credits: large 48.1%, medium 38.9%, small 22.6% (as of 2015: World Bank Enterprise Survey)
Accounting Standards required to be used by nature of entities	All the data submitted to SEC shall be accessible if necessary, from all the banks under the supervision of BSP.
Kind/contents of data collected by size of entities	Loan and receivables by production and by economic activities, by household consumption, by category of banks; Loan outstanding for production and household consumption by economic activity and by type of loan (credit cards, motor vehicle loans, and salary based consumption loans) by category of banks; F/S data of banks with detail of items of F/S, default data, past due amount, NPL, loan reserve, liquidity amount, etc. with ratios. Under FRP format (from Dec.2001), classification was by economic activity, by household consumption (loans for household needs such as food, education, household appliances, family cars, among others) and by residency of transaction (loans by individuals or institutional units whose center of economic interest is outside the economic territory of the Philippines). In addition to the data above,

	Data and information of borrowers shall be available but only internally for bank supervision purpose.
Data filing requirements by size of entities	Loan amount of Large & MSME (medium and micro and small) by size of borrowers and by category of banks,
Number of data collected	N/A
Industrial sectors covered with the data	All the financial institutions (and all industries as their clients)
Data categorization by administrative regions	All countries and by region and city, and by category of banks
Timing of data collection/submission	In principle monthly, quarterly, and annually, but submission of data will be required anytime when BSP deems it necessary
Time series of the data collected (from year X to Y, annually or monthly, etc.)	Monthly, annually etc. for years
Among F/S collected, how many (or about how many percentage) are audited F/S	(At least the same as that of SEC.)
2. Data availability / usage	
Availability (published or limited members only, or need to pay a fee to refer, etc.)	Available by publication and via web-site (monthly and annually); Data in CSOC format during 1993-Nov. 2001and in FRP after Dec. 2001
Analytical outputs and method of data feed back	Periodical reports and statistics
3. Law or regulation allowing the data collection /submission *(refer Sheet 2 for more details)*	General Banking Act, MORB, etc.

Department of Finance (DOF) /Bureau of Internal Revenue (BIR)

1. Data collection by Government ministries/agencies	
Number of entities covered for collection of F/S data	In principle the same as the number of tax payers: 29,752,723 including 877,660 corporations (of which 232,405 are tax exempted or non-resident) and 17,919,087 individual tax payers including 2,350,490 single proprietorships (as of end 2016).
Accounting Standards required to be used by nature of entities	In principle all of the above mentioned entities submit required documents and F/S.
Kind/contents of data collected by size of entities	All the data of eligible taxpayers, but aggregated by kind of tax and by type of tax payer (company, individual, other); name and amount paid of top 500 taxpayers are published; Data related to the Income Statement such as Gross Sales/ Revenues, Receipts/ Fees (Less: Sales Returns and Allowances, Sales Discounts), Net Sales/ Revenues Receipts/Fees (Less: Cost of Sales/ Services/Direct Costs), Gross Profit From Operations (Add: Non-operating Income, Gain from Sales/Exchanges of Real Property, Gain from Sales/Exchanges of Other Fixed Assets, Scrap, etc., Fund Utilization (For Exempt Activity of Exempt Corporation), Salaries and Allowances, Fringe Benefits, SSS, GSIS, Medicare, HDMF and Other Contributions, Commission, Outside Services, Advertising, Rental, Insurance, Royalties, Repairs and Maintenance, Representation and Entertainment, Transportation and Travel, Fuel and Oil, Communications, Light and Water, Supplies, Interest, Taxes and Licenses, Losses, Bad Debts, Depreciation, Amortization of Intangibles, Depletion, Charitable Contribution, Research and Development, Amortization of Pension Trust Contribution, Miscellaneous, Total Expenses), Net Income/(Loss); And data related to the Balance Sheet, such as ASSETS: Current Assets (Beginning & Ending): Cash on Hand and in Banks, Marketable Securities, Accounts Receivable - Trade (Less: Allowance for Bad Debts), Net Accounts Receivable - Trade, Other Receivables, Inventory (Finished Goods/ Merchandise, Goods in Process, Raw Materials, Supplies), Total Inventory, Prepayments, Total Current Assets; Long-Term Investments (Stocks & Bonds, Real Estate, Others), Total Long-Term Investments; Fixed Tangible Assets (Land, Building (Less Accumulated Depreciation), Net Book Value - Other Depreciable Assets, Fixed Asset - Appraisal

	Increase (Appraisal Increase (Less Accumulated Depreciation Appraisal Increase), Net Book Value-Fixed Assets- Appraisal increase), Total Fixed Tangible Assets); Intangibles Assets; Other Assets; Total Assets; LIABILITIES AND STOCKHOLDERS' / PARTNERS' EQUITY: Current Liabilities (Accounts Payable – Trade, Other Payables, Total Current Liabilities); Long-Term Liabilities (Long-Term Debts); Deferred Credits / Other Liabilities (Deferred Credits/Other Liabilities, Total Liabilities); Stockholders' Equity / Partner's Equity: Stockholder's Equity (Capital Stock, Premium (Discount) on Capital, Retained Earnings/(Deficit), Appraisal Capital, Donated Capital, Treasury Stock, Total Stockholder's Equity, Partners' Equity); Total Liabilities and Stockholders' / Partners' Equity
Data filing requirements by size of entities	MSMEs are allowed to submit simplified declaration forms.
Number of data collected	The same as the number of tax payers mentioned above
Industrial sectors covered with the data	All sectors
Data categorization by administrative regions	All the country
Timing of data collection/submission	In principle annually
Time series of the data collected (from year X to Y, annually or monthly, etc.)	Two (2) years-current and previous year (Data filled in annual Tax Declaration form attached with audited F/S).
Among F/S collected, how many (or about how many percentage) are audited F/S	(At least the same as the number of SEC or more.)
2. Data availability / usage	
Availability (published or limited members only, or need to pay a fee to refer, etc.)	Top 500 taxpayers names and amount paid, both corporates and individuals are published in the web-site of DOF
Analytical outputs and method of data feed back	In principle, annual report on Government Revenue; Aggregated data in the Statistical Year Book published by the PSA

3. Law or regulation allowing the data collection /submission *(refer Sheet 2 for more details)*	National Internal Revenue Code 1997 with its amendments (Republic Act No. 8424) by Republic Act No. 10963 (Tax Reform for Acceleration and Inclusion, TRAIN)