2020

CRI WEBSITE USER GUIDE

Transforming Big Data into Smart Data

The Credit Research Initiative (CRI)
National University of Singapore

Updated on 28th December, 2020

Credit Research Initiative
National University of Singapore

CRI Website User Guide

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OVERVIEW

This document provides advice on how to make the most of the CRI website. We also value your views and heartily welcome your suggestions of improvements to the website services.

In this document, we aim to make an explicit navigation of the CRI website as easy as possible!

This page majorly provides a quick overview of this document, and some functions available without registering an account. In the '**Registering/Signing in An Account**' section, we exhibit the step-by-step way to register a CRI website account; In the '**General Access**' section, we illustrate several functions available after registering an account; In the '**Global Access**' section, we provide guidance on how to apply for Global Access, and further illustrate the additional functions available after applying for Global Access; In the '**FAQs**' section, we gather some frequently asked questions, and give answers to them.

*(Tip: If you have questions either about the website or the CRI, you may directly skip to the '**FAQs**' part and seek for help.)*

Before Registering An Account……

If you have not yet registered for an account, there is still a list of functions available for you to access easily.
You can – –

- See charts and download data from *Smart data* (only *CVI*, *CriSIFI* available[1]);
- Read complete documentations about *Methodology* (e.g. technical reports[2], white papers[3], etc.).
- Browse CRI research-related *Insights* (e.g. weekly credit brief[4], etc.)

Why do you need a CRI website account?

A CRI website account can help you access more CRI data (e.g. PD, AS, etc.) and services conveniently. It is very easy to register an account. We will show you how to do it in the next section.

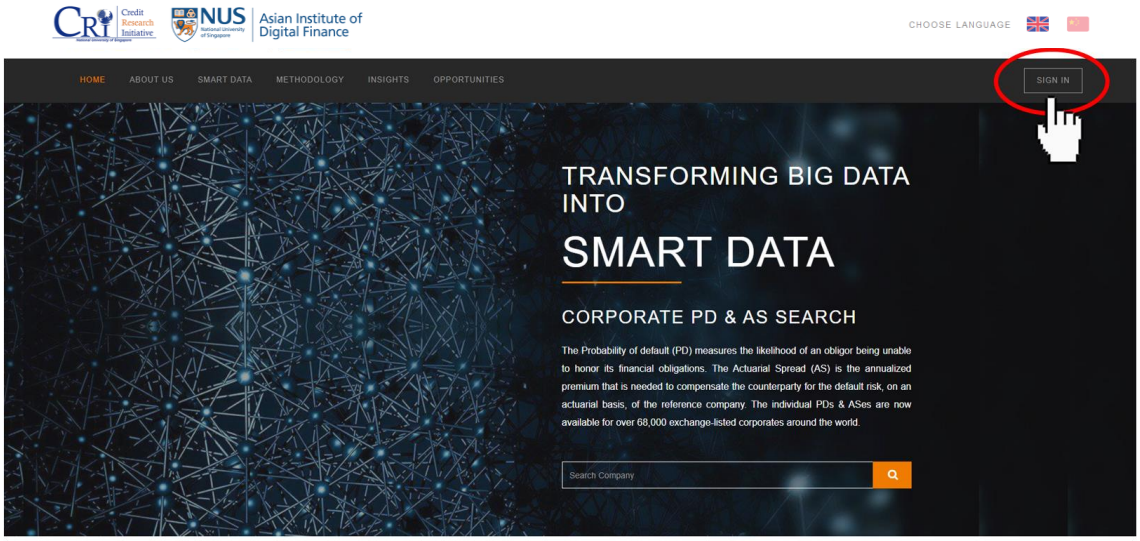
[1] Detailed user guidance of CVI and CriSIFI is in the 'General Access' section.
[2] https://www.nuscri.org/en/technical_document/
[3] https://www.nuscri.org/en/white_paper/
[4] https://www.nuscri.org/en/wcb/

Registering/Signing in An Account

To access more functions and data on our website, we encourage our website user to register an account. In this section, we provide detailed illustration about how to register and sign in an account on CRI website.

Step 1

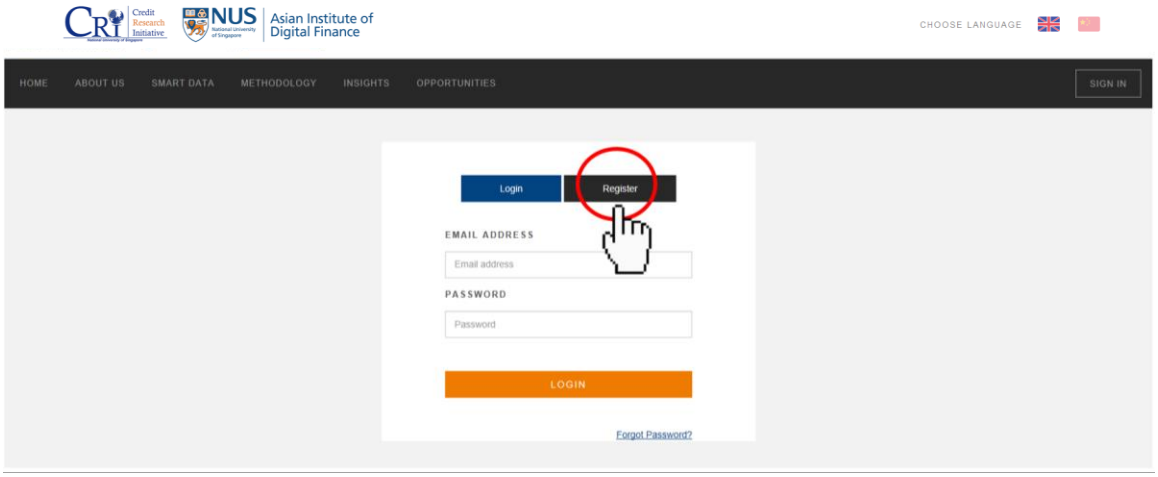
First, visit our official website (follow the link http://nuscri.org/). Click on the "**SIGN IN**" button on the upper right corner of the webpage shown below.



(You may choose either CRI English or Chinese website
by clicking on the flag icons on the upper right corner of the webpage.)

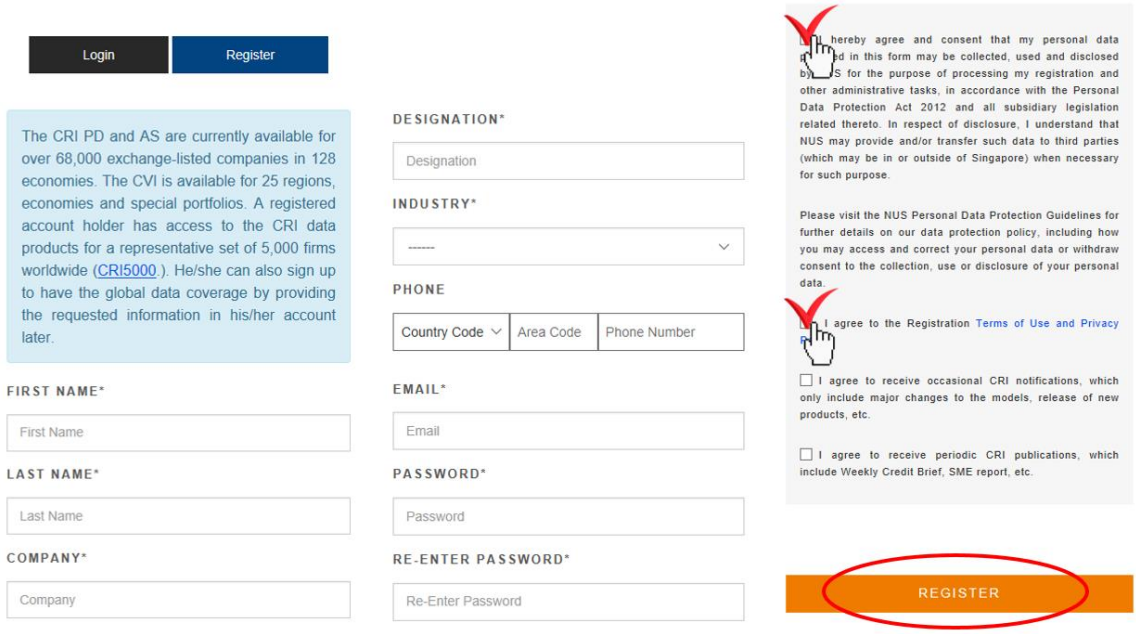
Step 2

Then, you will be directed to the “Login/Register” page:



If you already have a CRI account, please use your registered email address and password to log in.

If you are new to the CRI website, please click on the tab “**Register**” (highlighted by the red circle), which will direct you to the registration page:

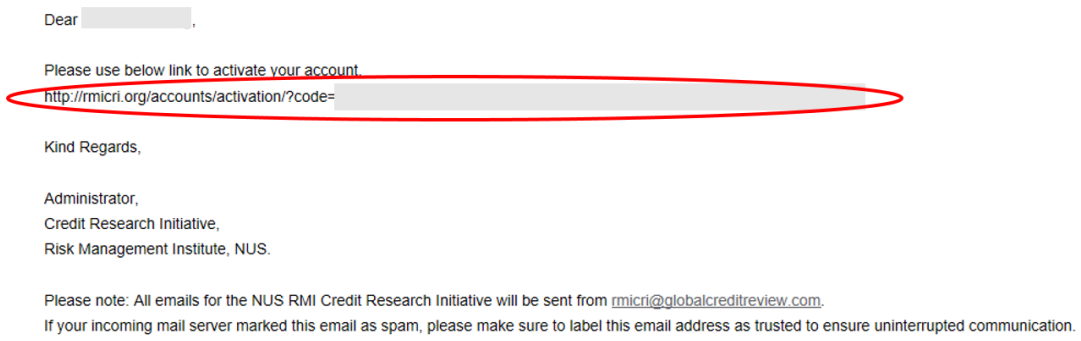


Please fill up the register form according to your real personal information. Note that you are required to **tick the first two terms** of the Terms and Conditions (shown above. The other two terms are optional – choose if you want to receive CRI notifications about major changes, and periodic CRI publications).

Once you finish, click on "**REGISTER**" to create a new account with us.

Step 3

Upon successful registration, an activation email will be sent to your registered email. Kindly **activate your account through the link** provided in the activation email (shown below), and you will be able to login to your CRI account and get your own data.



Dear ,

Please use below link to activate your account.
http://rmicri.org/accounts/activation/?code=

Kind Regards,

Administrator,
Credit Research Initiative,
Risk Management Institute, NUS.

Please note: All emails for the NUS RMI Credit Research Initiative will be sent from rmicri@globalcreditreview.com.
If your incoming mail server marked this email as spam, please make sure to label this email address as trusted to ensure uninterrupted communication.

If you have completed the registration but do not receive any activation email, please email us at: nuscri@nus.edu.sg .

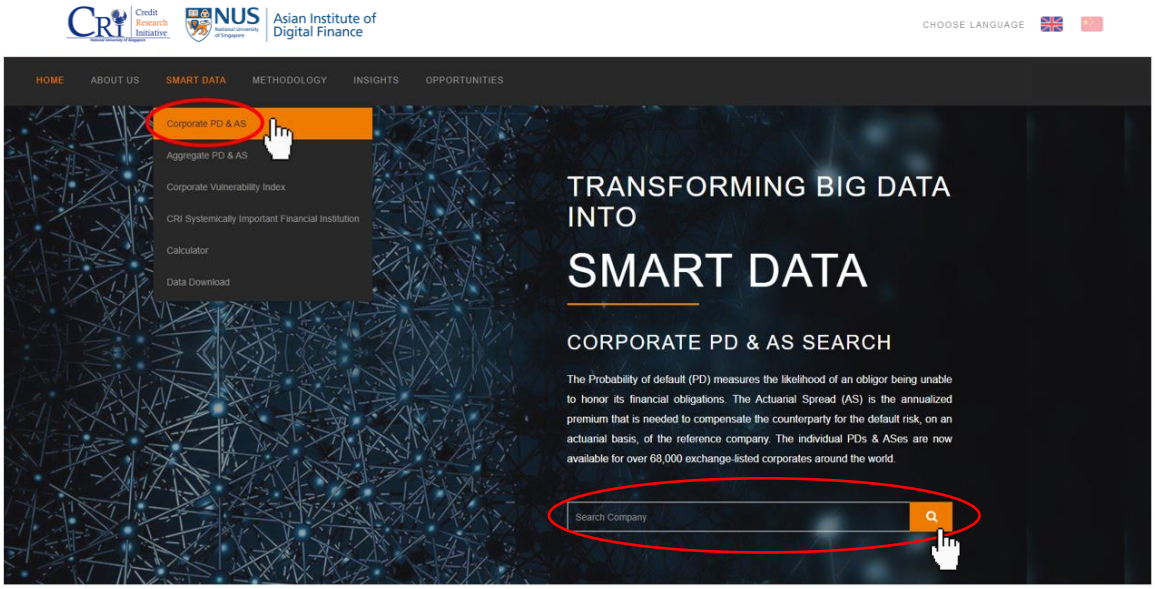
General Access

After successful registration or login on the CRI website, you will have a **General Access** to our database. The General Access will entitle you the right to access our daily updated data **of 5,000 listed firms** (firms that have been selected are the most representative companies for each economy by market capitalization) out of over 73,000 listed firms across the globe that has been covered in our database.

In this section, we will explicitly illustrate the data querying process under General Access.

Query *Corporate PD & AS*

After login to your account on the CRI website, click on "**SMART DATA**" for the dropdown menu and then choose "**Corporate PD & AS**" (shown as below). Or, you may type in the company name in the searching bar and query its PD & AS data directly.



Then, you will be directed to our *Corporate PD & AS* interactive interface.

By using this interactive searching system, you will be able to obtain company-specific PD and AS term structure and historical time series data as well as visualized graphs.

What is CRI PD & AS?

The **CRI PD (Probability of Default)** is the likelihood that an obligor is unable to honor its financial obligations. It is computed from the CRI's forward intensity model with 16 common and firm- specific risk factors in general. It has prediction horizons, or "term structures", ranging from 1 month to 60 months.

The **CRI AS (Actuarial Spread)** is the annualized premium that is needed to compensate the counterparty for the default risk, on an actuarial basis, of the reference company. It is equivalent to the physical CDS par spread. It has contract terms from 1 year to 5 years.

(Please refer to technical report or white paper for in-depth explanation)

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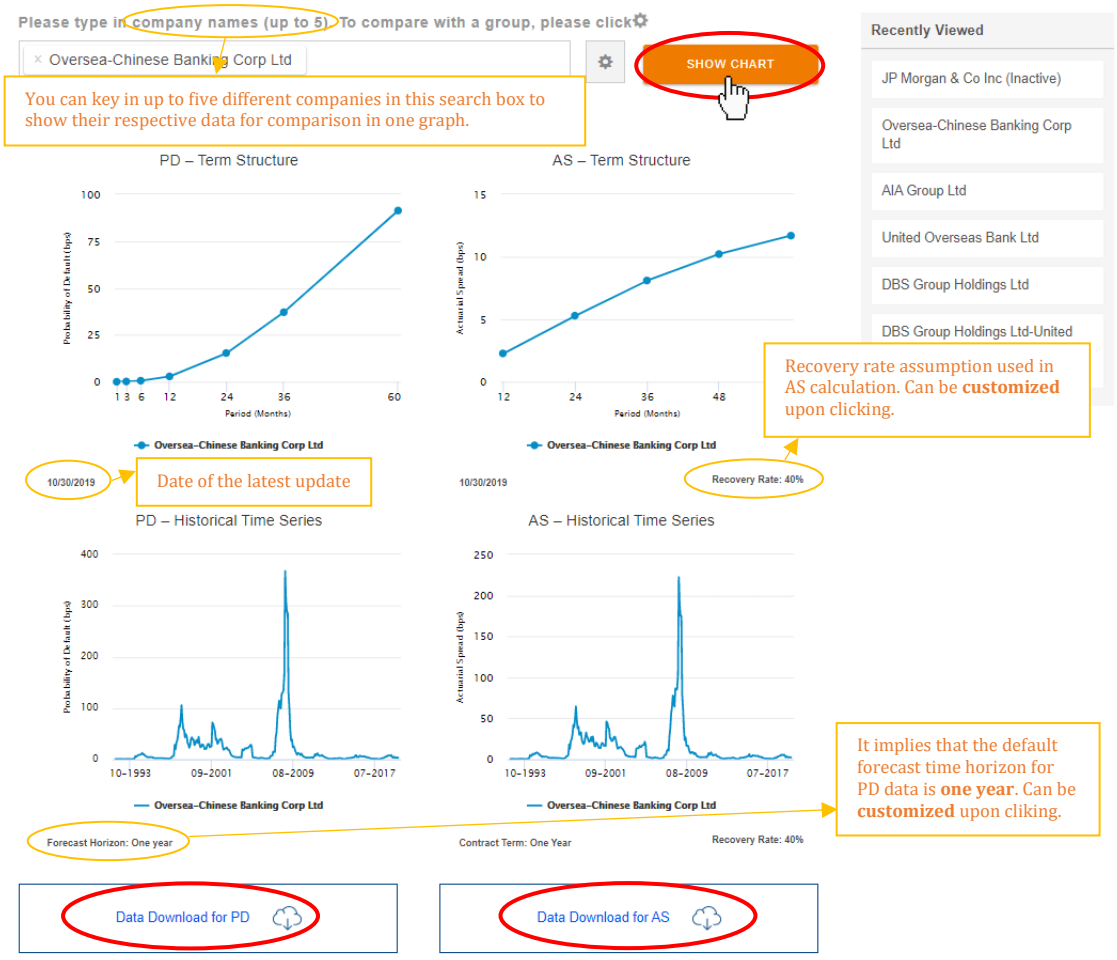
There are two ways to query a company's PD & AS forecast and historical data:

Method 1. Query directly from the search box

Key in the company's name in the search box, and click on "**SHOW CHART**" button to view the graphs of the latest **term structure** and **historical time series** of this company's PD and AS (shown as below).

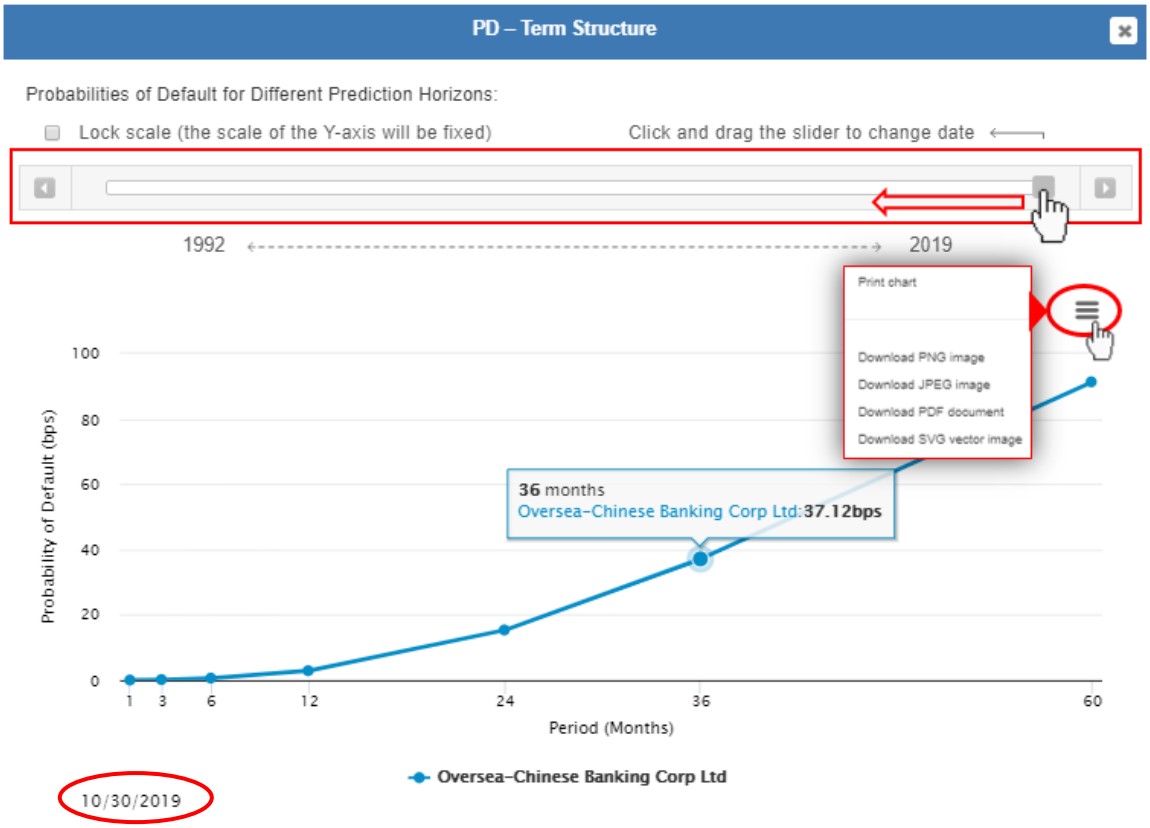


(See the orange rectangle above for more details.)

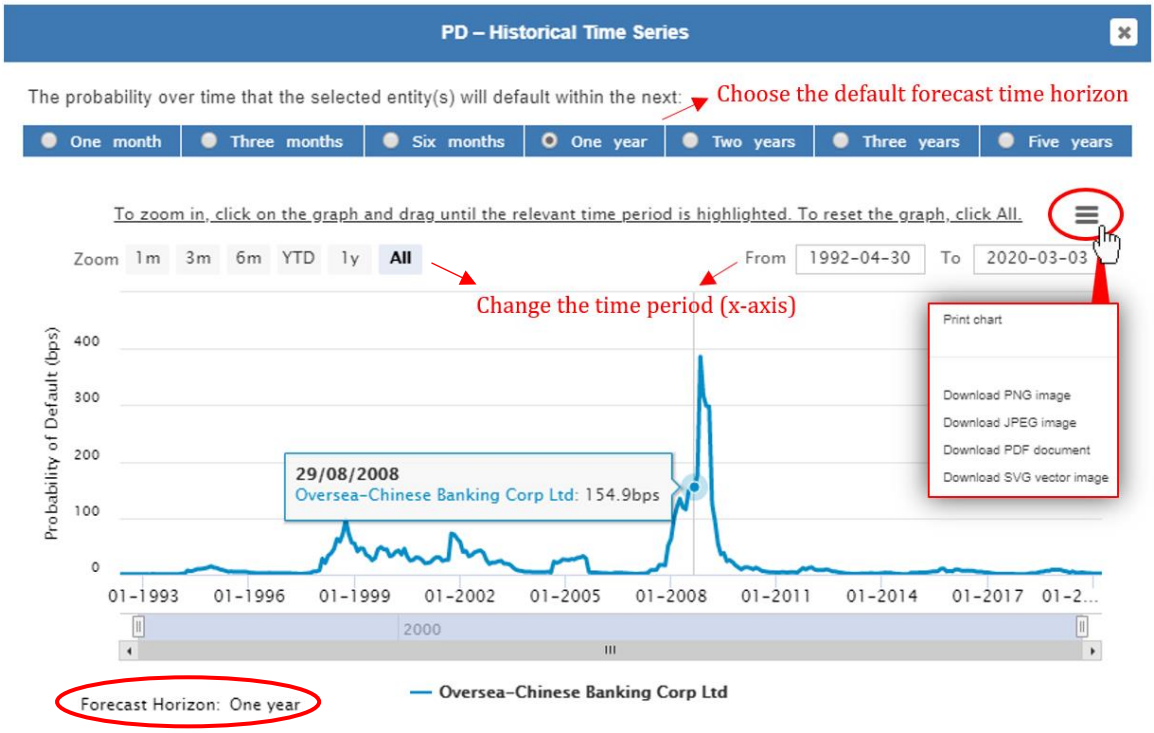
You can download the historical time series data of PD or AS by simply clicking on the buttons. (If you find problems in doing so, see "FAQs")
To see more details about each graph, simply click on the graph for the pop-up window:

"PD – Term Structure"

(How to interpret PD's term structure? For the below example, it can be interpreted that on 2019 Oct 30, the cumulative probability of default from 2019/10/30 to 36 months in the future, is 37.12bps, or 0.37%.)



"PD – Historical Time Series"



"AS – Term Structure"

(How to interpret AS's term structure? For the below example, it can be interpreted that on 2020 Mar 30, the annualized premium to compensate the default risk which is calculated with PD's term structure, i.e. the probability of default from 2020/03/30 to 36 months in the future, is 6.55bps, or 0.0655%.)

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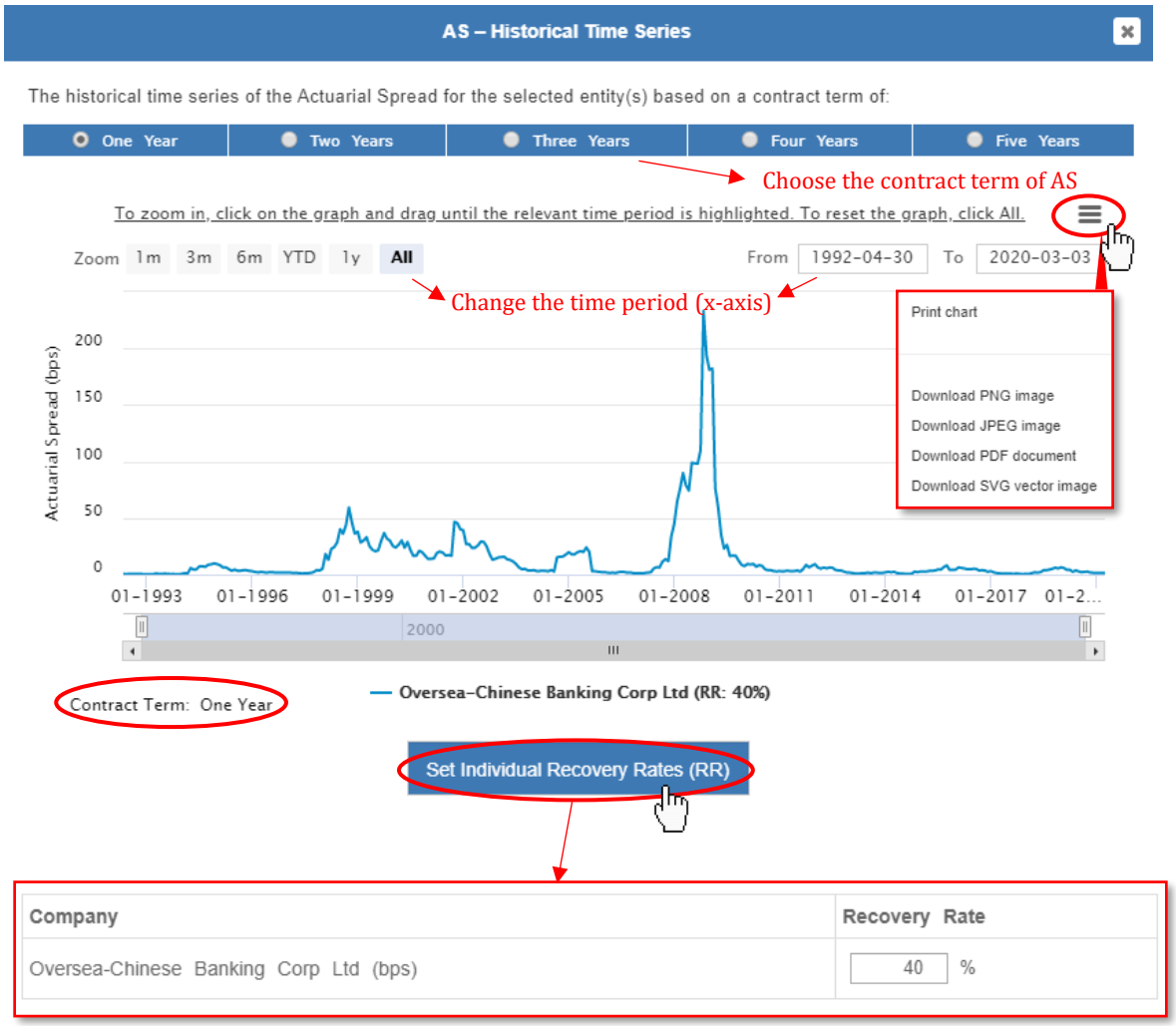
"AS – Historical Time Series"

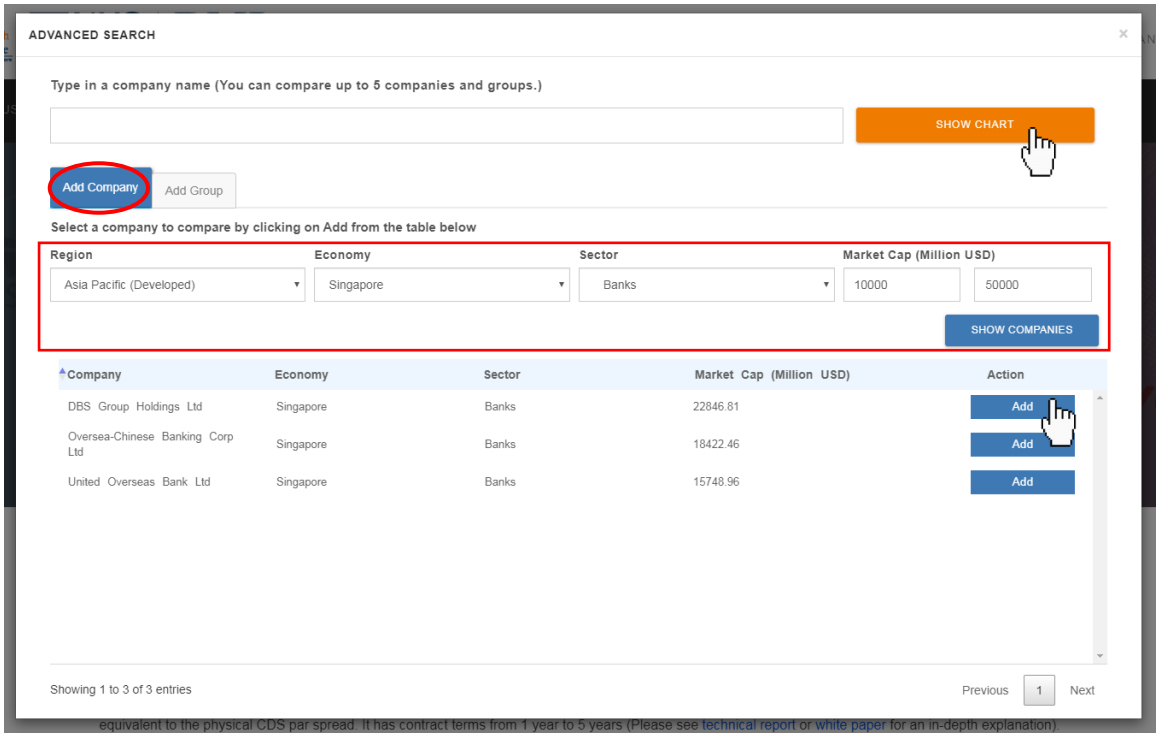


Method 2. Add desired companies using the gear menu

Click on the gear menu, and then you will see a pop-up window for "**ADVANCED SEARCH**" (shown as below).

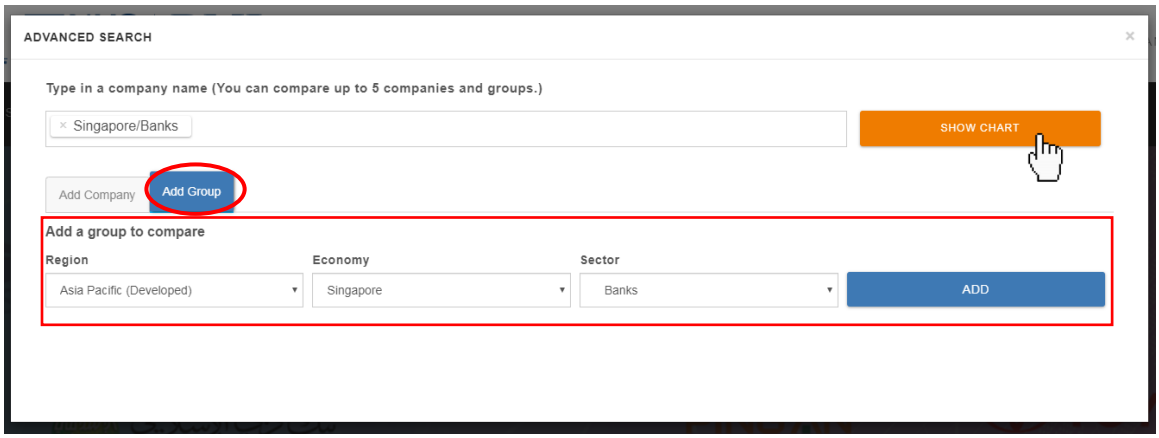
On this pop-up window, you can either typing in the name of the company (or companies, **up to 5**), or using the encapsulated buttons "**Add Company**" or "**Add Group**" to manually add company or groups for searching.

After selecting the company of your interest, click on "**SHOW CHART**" for the graph.



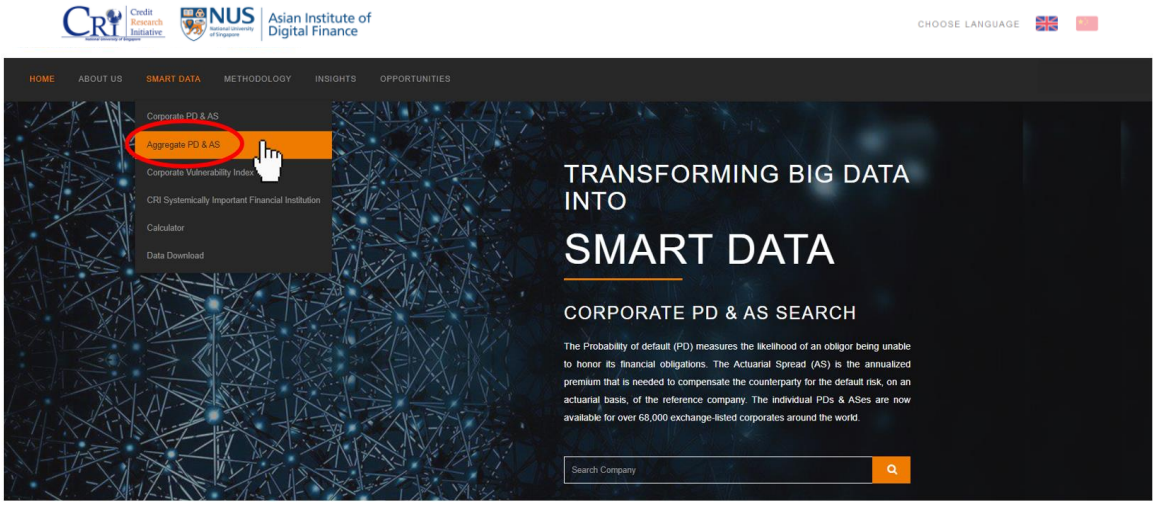
Using the "**Add Company**" button, you can filter the companies by conditions of your interest, and add the companies to the searching box.

Using the "**Add Group**" button (see the graph below) allows you to compare the performance of individual companies to the whole region, economy or sector.



Query *Aggregate PD & AS*

After login to your account on the CRI website, click on "**SMART DATA**" and choose "**Aggregate PD & AS**" (shown as below).



Then, you will be directed to our *Aggregate PD & AS* interactive interface.

On this webpage, you will be able to obtain region-, economy-, or section-level PD and AS term structure and historical time series data as well as visualized graphs.

What is CRI PD & AS?

The **CRI PD (Probability of Default)** is the likelihood that an obligor is unable to honor its financial obligations. It is computed from the CRI's forward intensity model with 16 common and firm- specific risk factors in general. It has prediction horizons, or "term structures", ranging from 1 month to 60 months.

The **CRI AS (Actuarial Spread)** is the annualized premium that is needed to compensate the counterparty for the default risk, on an actuarial basis, of the reference company. It is equivalent to the physical CDS par spread. It has contract terms from 1 year to 5 years.

What is Aggregate PD & AS?

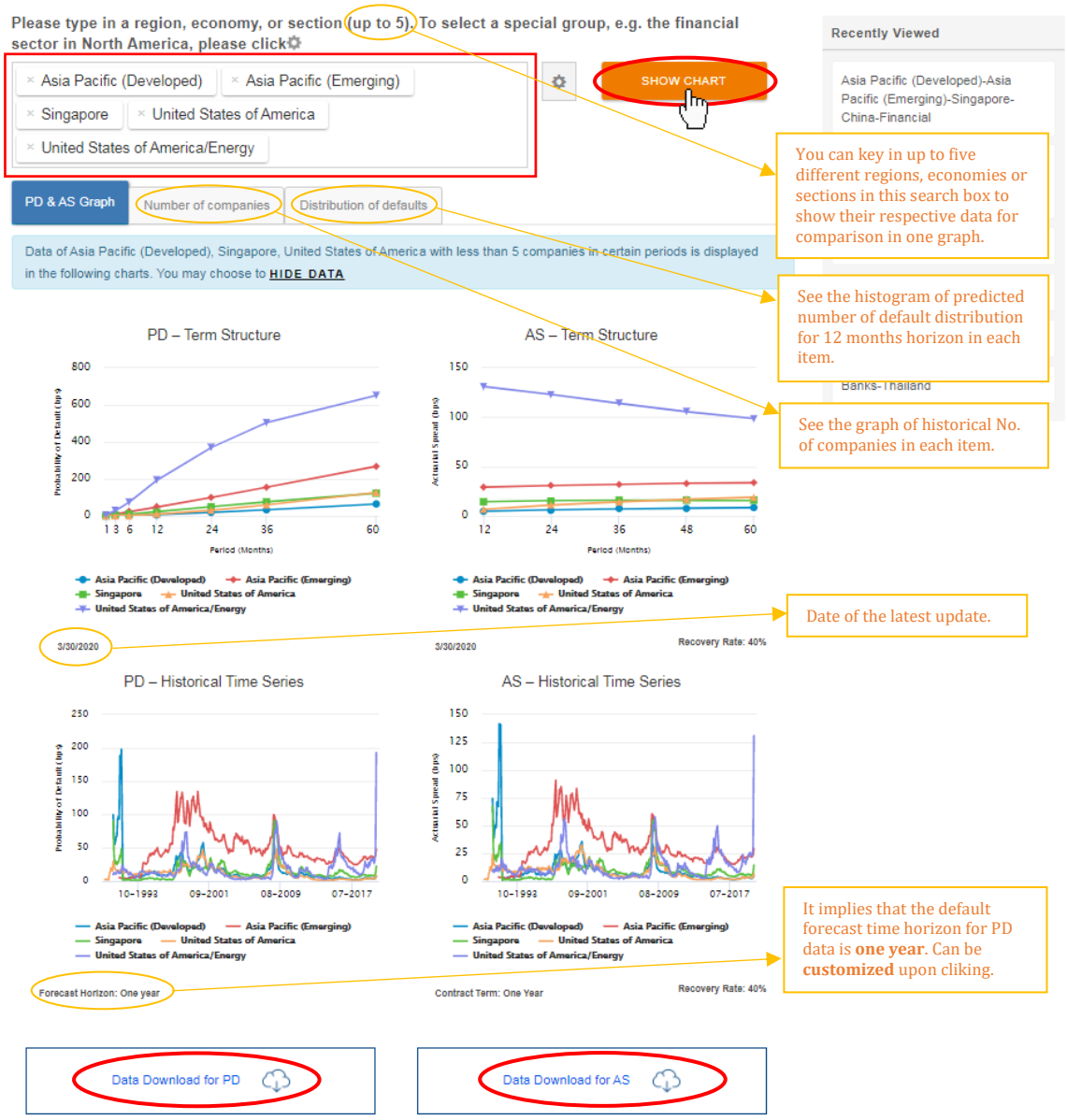
The Aggregate PD & AS are the **median** of the PD & AS of a region, economy or sector.

(Please refer to technical report or white paper for in-depth explanation)

There are two ways to query aggregate forecast data, similar to how you query corporate forecast data:

Method 1. Query directly from the search box

Key in the region, economy or section of your interest in the search box, and click on "**SHOW CHART**" to view the graphs of the latest term structure and historical time series of aggregate PD and AS (shown as below).

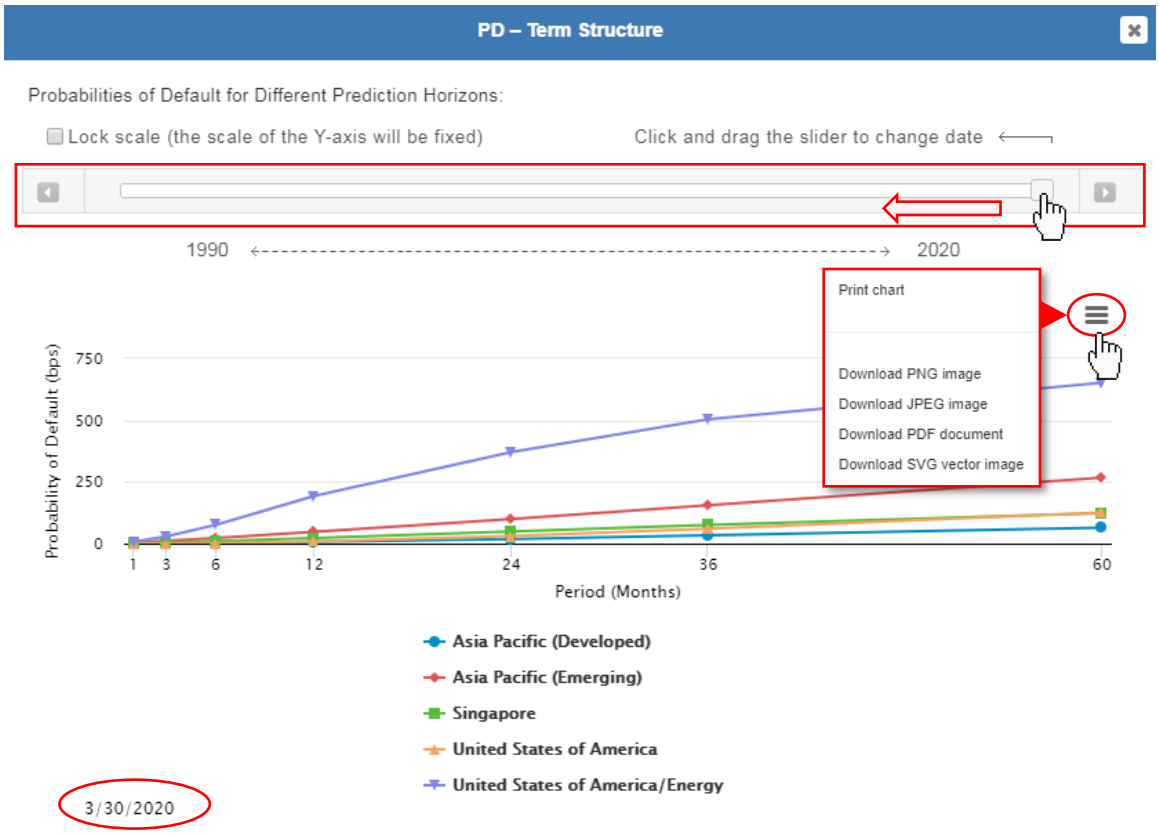


(See the orange rectangle above for more details.)

You can download the historical time series data of aggregate PD or AS by simply clicking on the buttons. (If you find problems in doing so, see "FAQs")

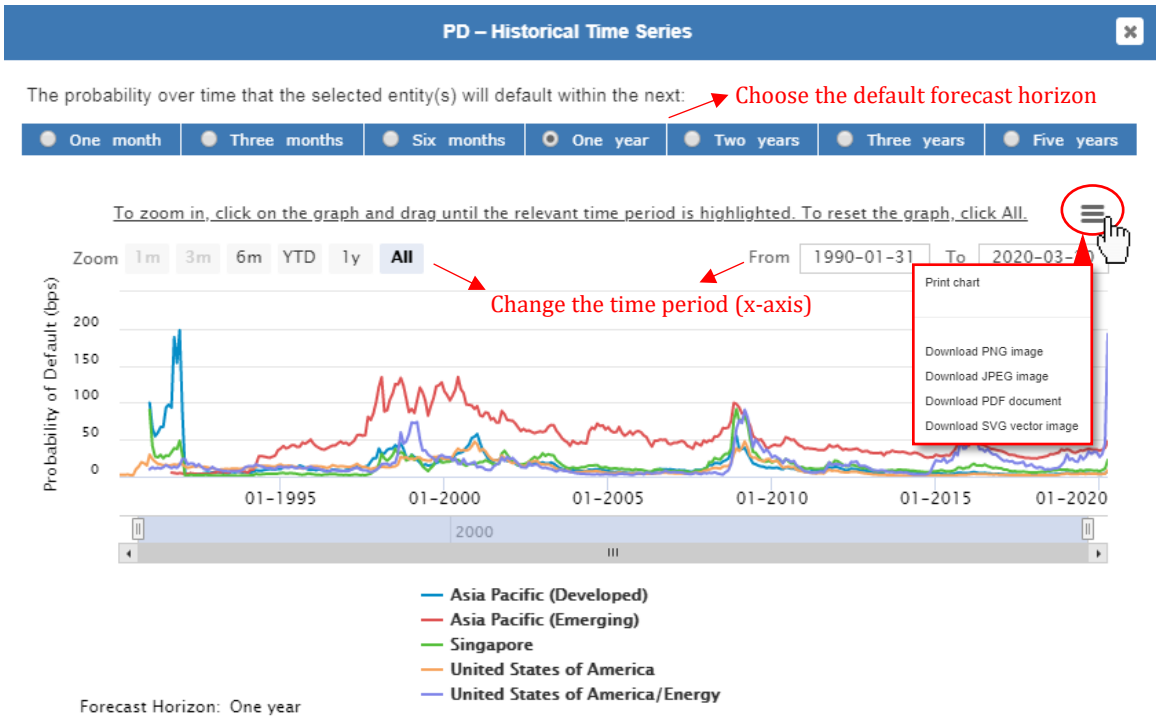
To see more details about each graph, simply click on the graph for the pop-up window:

"PD – Term Structure"

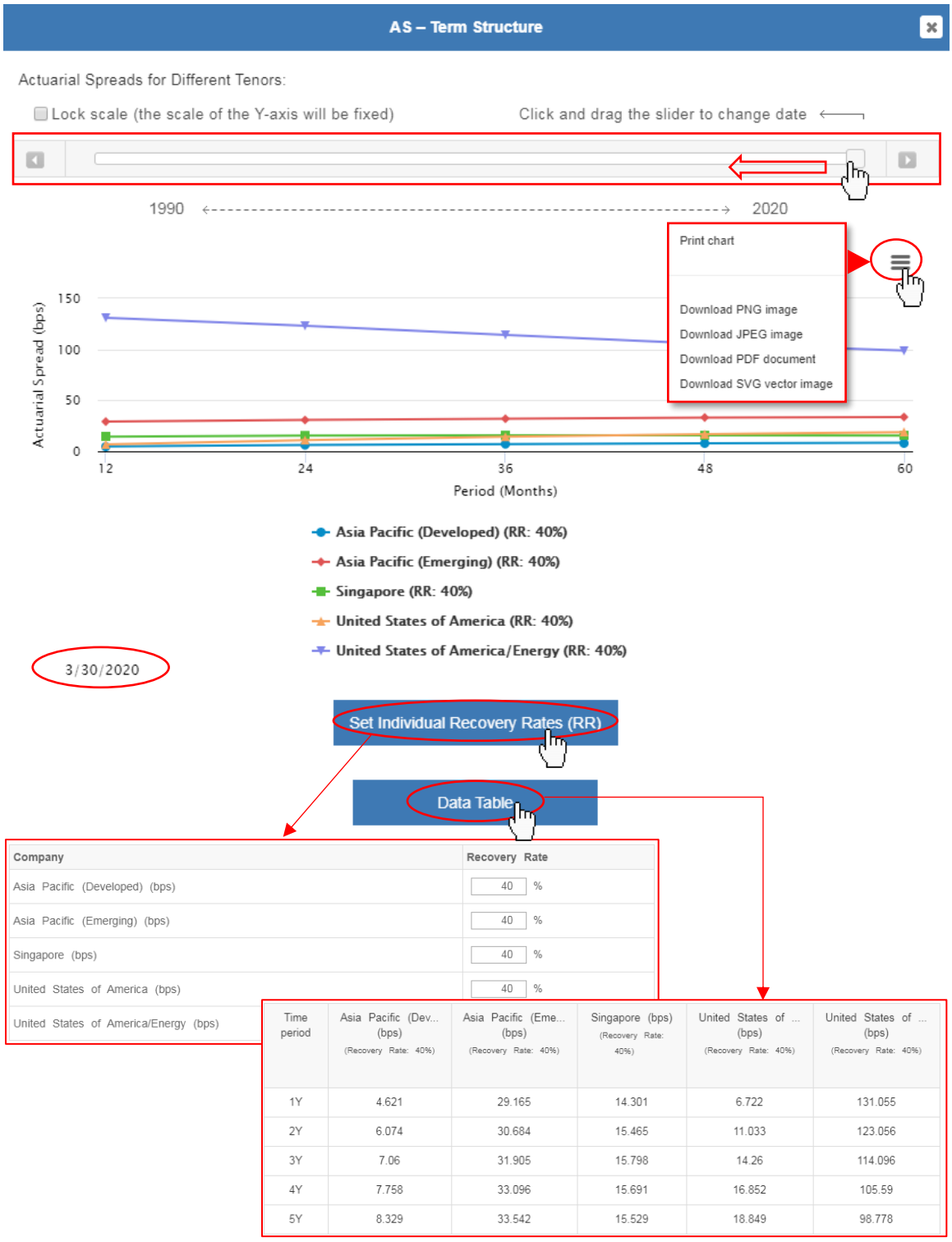


Time period	Asia Pacific (Dev... (bps)	Asia Pacific (Eme... (bps)	Singapore (bps)	United States of ... (bps)	United States of ... (bps)
1M	0.32	3.59	1.22	0.12	7.41
3M	1.09	11.02	4.06	0.59	29.22
6M	2.6	22.83	9.34	2.05	75.81
1Y	6.76	47.62	22.38	8.42	192.88
2Y	18.7	99.94	49.52	30.32	371.16
3Y	32.97	154.95	75.91	59.69	504.25
5Y	64.49	267.86	122.67	126.28	651.9

"PD – Historical Time Series"

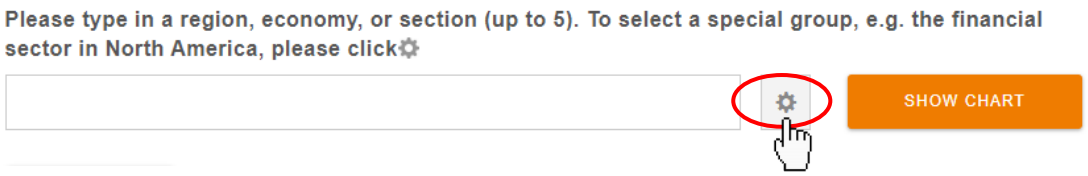


"AS – Term Structure"

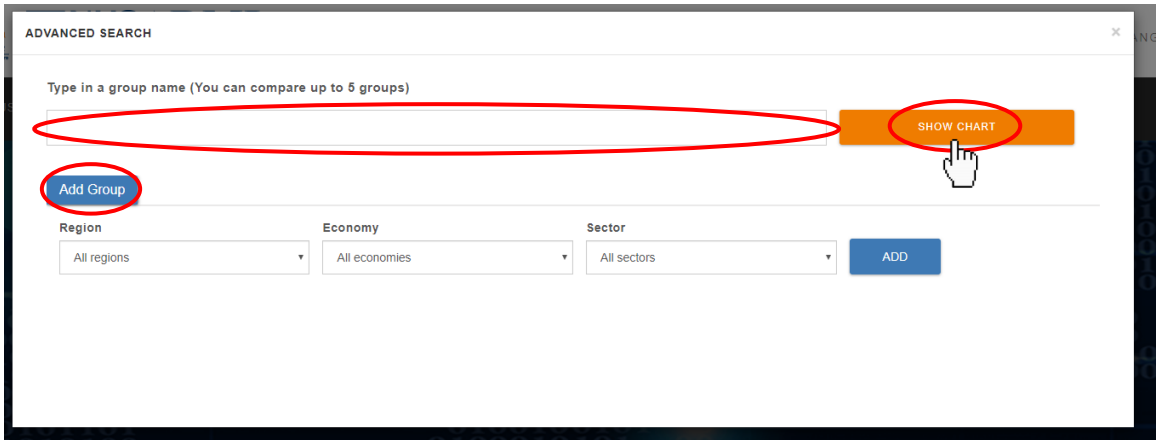


"AS – Historical Time Series"

Method 2. Add desired economies using the gear menu



Click on the gear menu, and then you will see a pop-up window for "**ADVANCED SEARCH**" (shown as below).

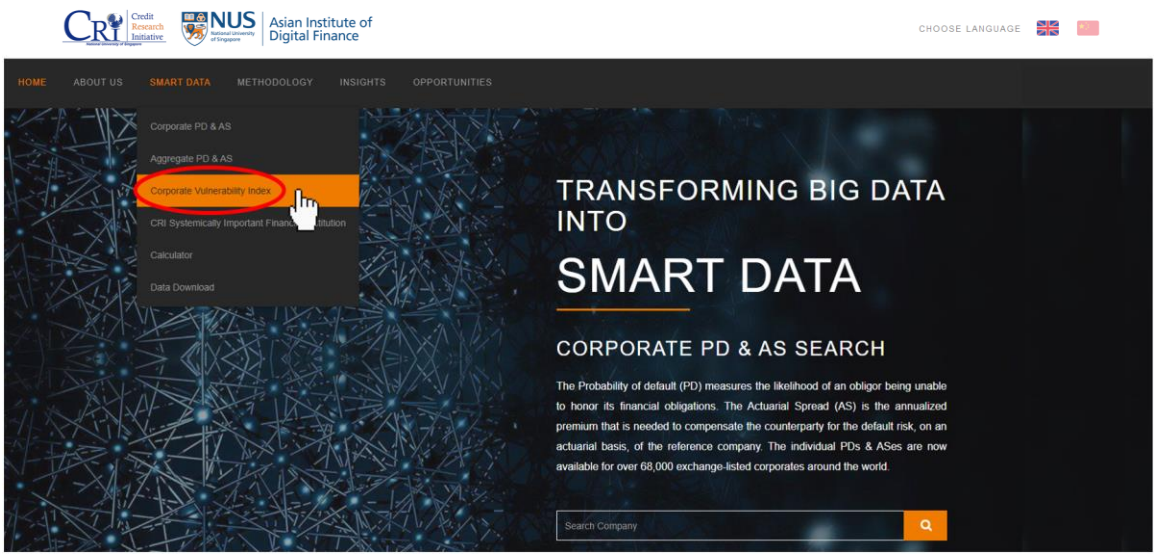


On this pop-up window, you can either keying in the name of group (or groups, **up to 5**), or using the encapsulated buttons "**Add Group**" to manually add groups for searching.

After selecting the company of your interest, click on "**SHOW CHART**" for the graph.

Query *Corporate Vulnerability Index (CVI)*

After login to your account on the CRI website, click on "**SMART DATA**" and choose "**Corporate Vulnerability Index**" (shown as below).



Then, you will be directed to our *Corporate Vulnerability Index* interactive interface.

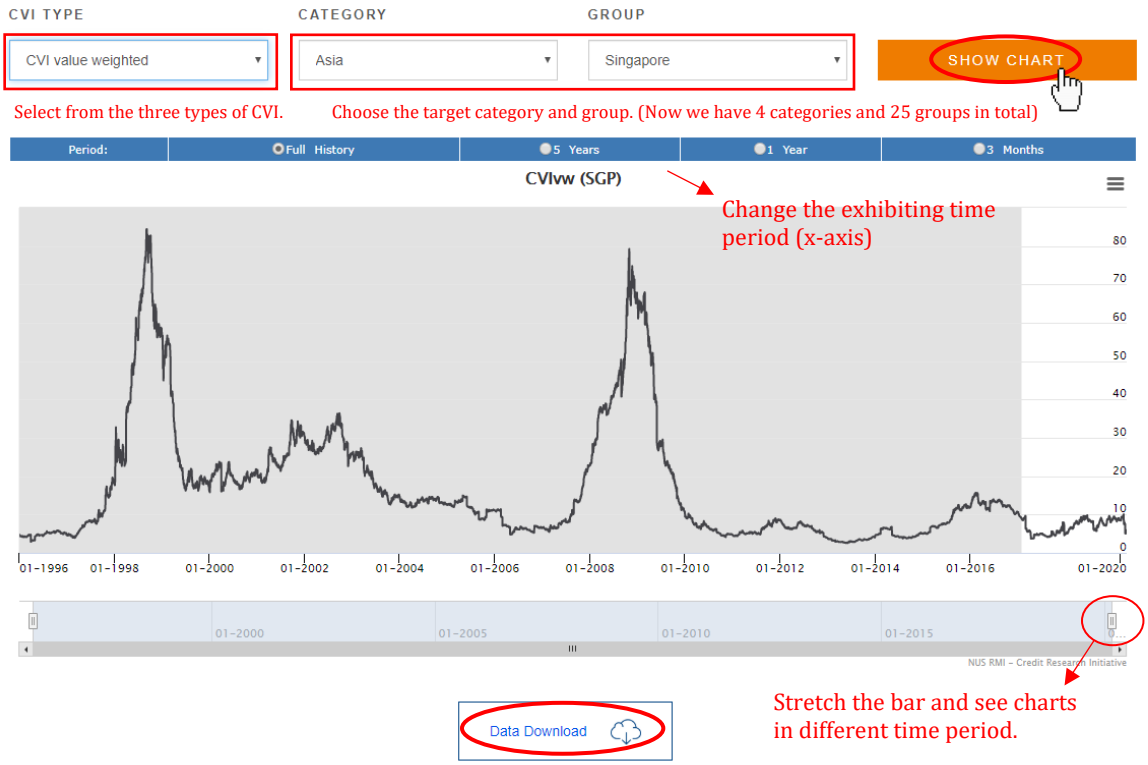
What is CVI?

The **CVI (Corporate Vulnerability Index)** measures the creditworthiness of a selected region, economy or portfolio of interest. It has three sets of indices to gauge the riskiness of a group from different perspectives: **equally-weighted CVI, value-weighted CVI,** and **tail CVI**.

The equally-weighted CVI is the average value of the individual PDs in a group. This aggregate measure focuses on the number of firms at risk in a group. The value-weighted CVI sums up the individual PDs with their market capitalizations as weights. This measure takes into account the size of each firm. The tail CVI is the top 5th percentile of the individual PDs in a group. It can also be interpreted as the conditional median of the 10th percentile tail. It focuses on the riskiness of the most vulnerable firms in a group.

(Please refer to technical report or white paper for in-depth explanation)

On this webpage, you can obtain historical CVI data and graphs of your interest (shown as below).

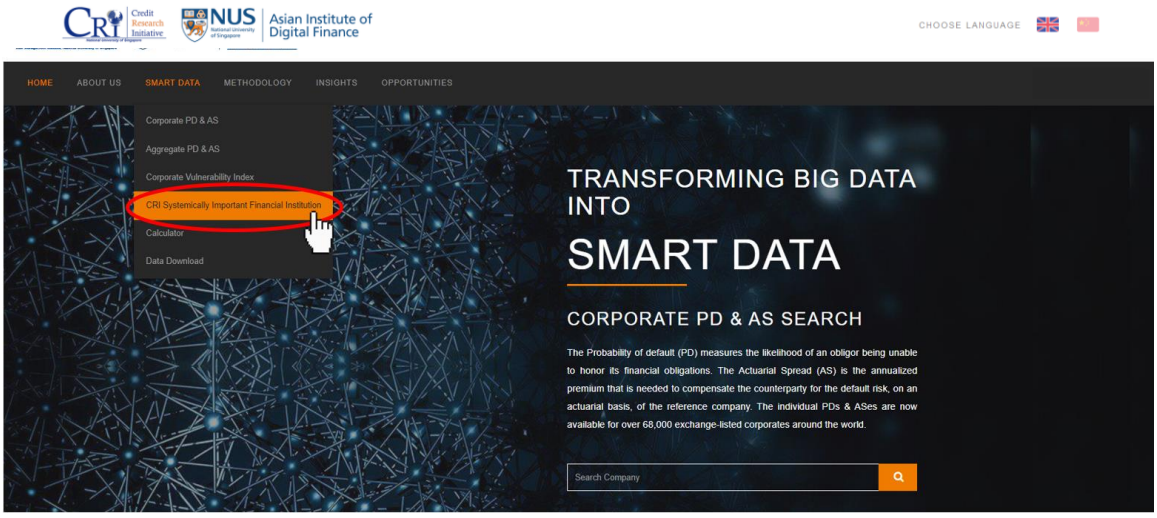


The grey area (before Feb 1, 2017) are back-calculated using the most recent calibration results to this month. All values after Feb 1, 2017 will be updated and supplemented to the series daily.

You can download the historical time series data of daily CVI by simply clicking on the buttons. (If you find problems in doing so, see “FAQs”)

Query *CRI Systemically Important Financial Institution (CriSIFI)*

After login to your account on the CRI website, click on "**SMART DATA**" and choose "**CRI Systemically Important Financial Institution**" (shown as below).



Then, you will be directed to our *CRI Systemically Important Financial Institution* page.

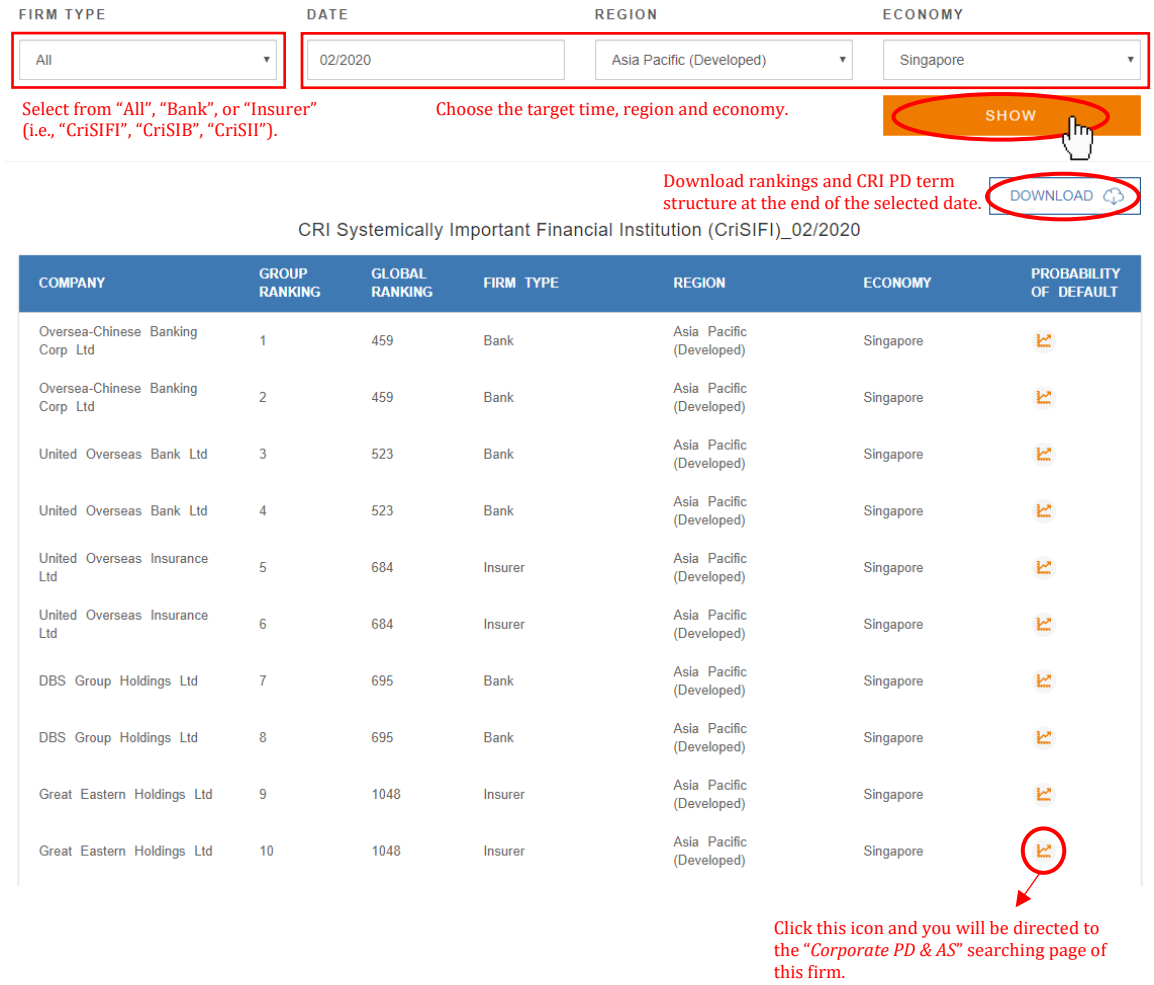
What is CriSIFI?

CriSIFI (CRI Systemically Important Financial Institution) is the ranking of systemic importance for the exchange-listed banks and insurers around the world. It is dynamic by nature, and it determines a firm's systemic risk by its size and interconnectedness with others.

A higher ranking of a firm means it is likely to pose larger threat to the global financial system. CriSIFI is available every month from January 2000 onward and covers 2,142 banks and insurance companies in January 2020.

(Please see Chan-Lau, Duan, Chuang, and Sun (2018) and the white paper for an in-depth explanation.)

On this webpage, you can query ranking of systemic importance for the listed banks and insurers of your interest (shown as below).



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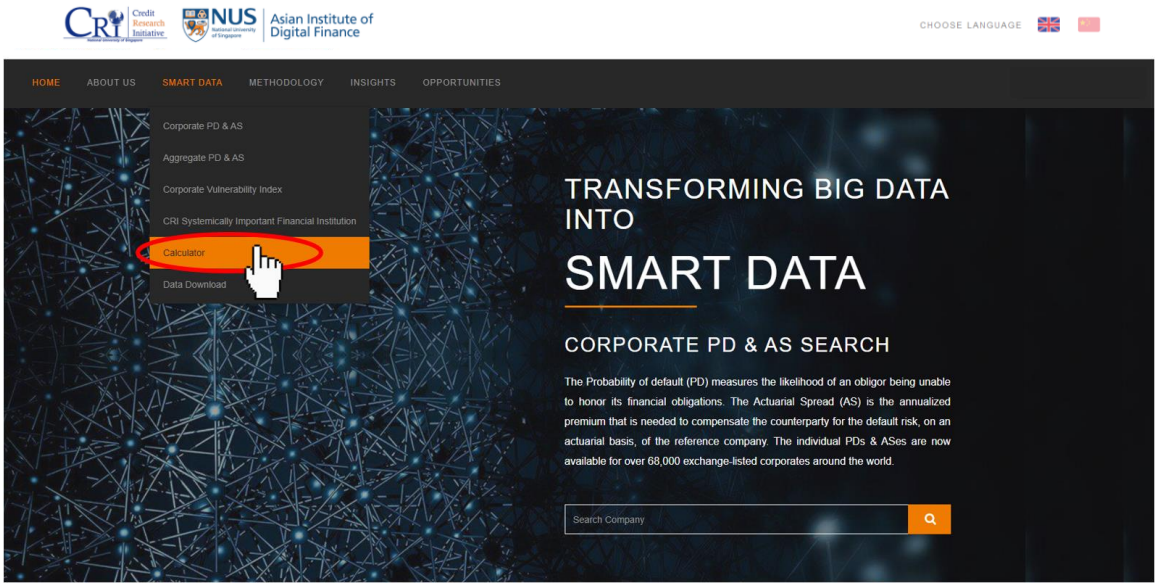
PD & AS Calculator

After login to your account on the CRI website, click on "**SMART DATA**" and choose "**Calculator**" (shown as below).

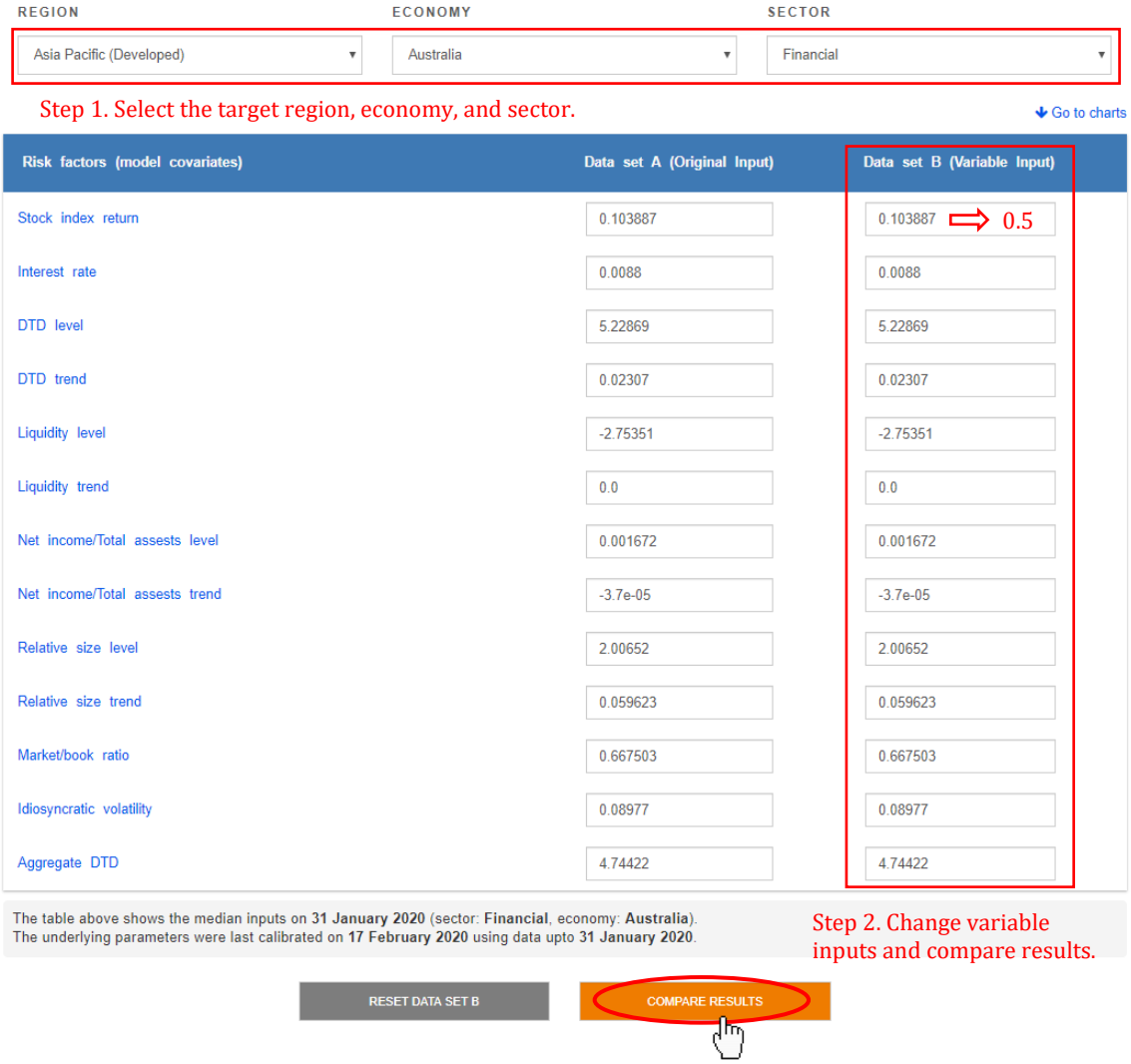


PS & AS calculator helps you compute your own PD and AS, and provides you with a convenient tool for **sensitivity analyses**.

How to use this calculator? There are two steps for you to follow:

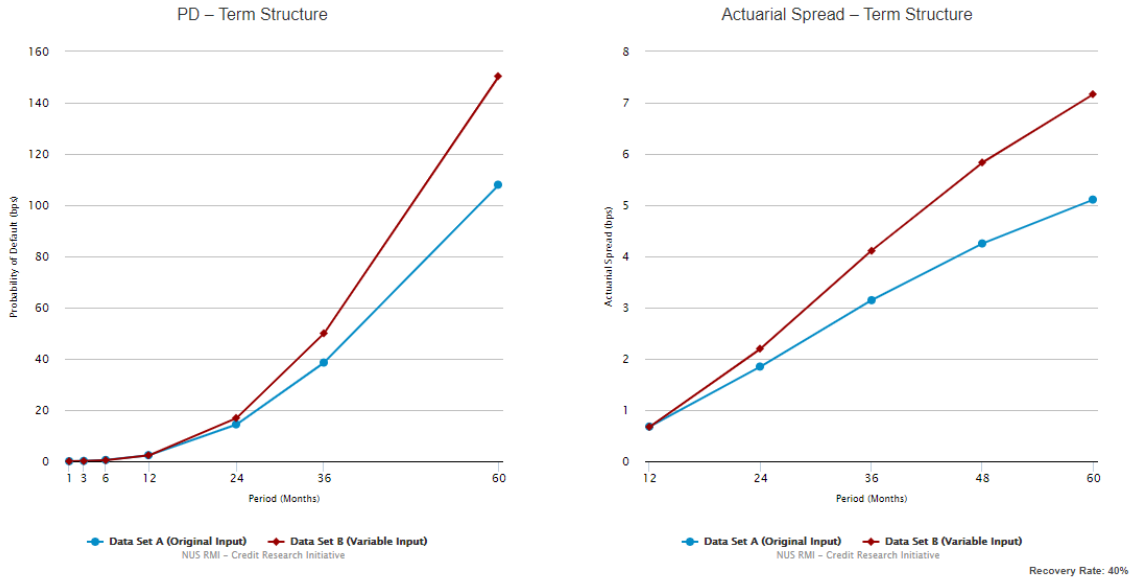
Step 1. Select the target region, economy, and sector (shown as below). The default values, which are the **median values** of the risk factors in this particular group, have been given in both dataset A and B.

Step 2. Keep the dataset A (original input) unchanged and adjust values in dataset B (variable input). Click on the "**COMPARE RESULTS**" button to compare PD and AS figures after risk factor adjustment.

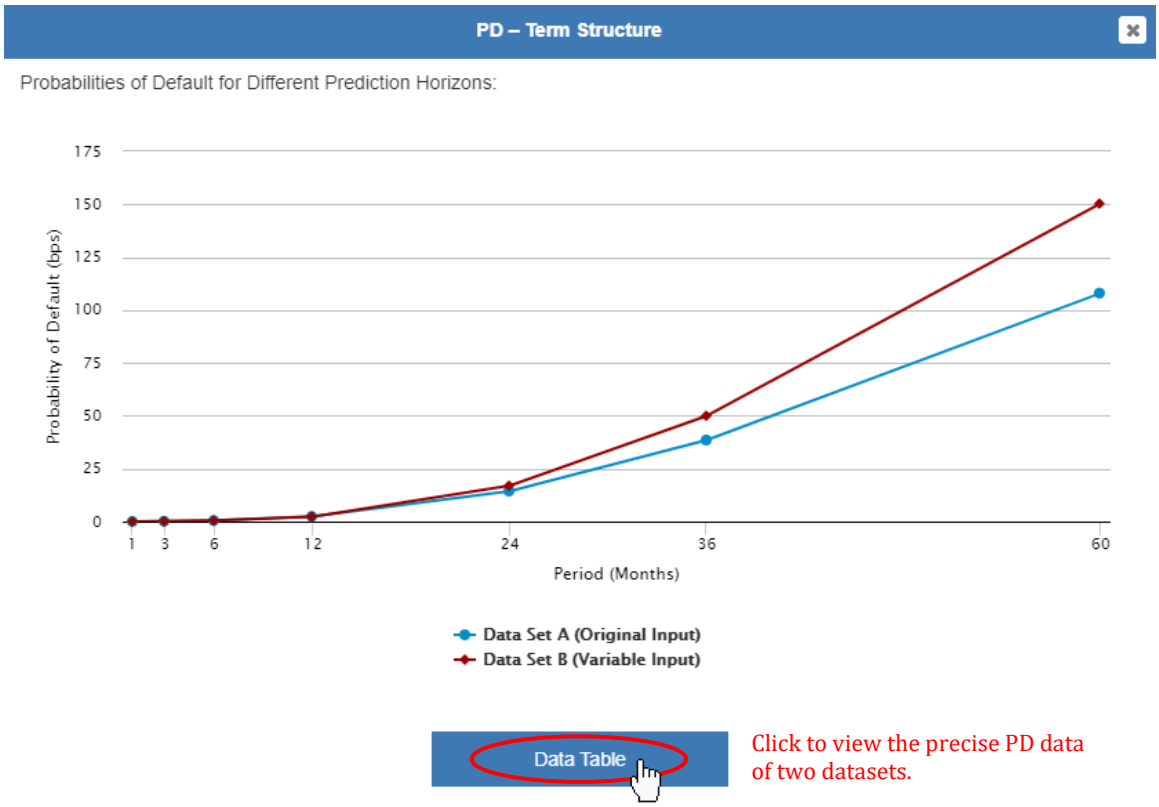


You can click on the "**RESET DATA SET B**" button to clear all the adjustments you make to dataset B.

For example, we select "Asia Pacific (Developed)", "Australia", and "Financial" in the upper drop-down boxes, then we modify the "Stock index return" of dataset B to 0.5 (shown as above) and click on "COMPARE RESULTS" button. The comparing graphs of PD and AS are thus exhibited:



You can click on each graph to view more details.



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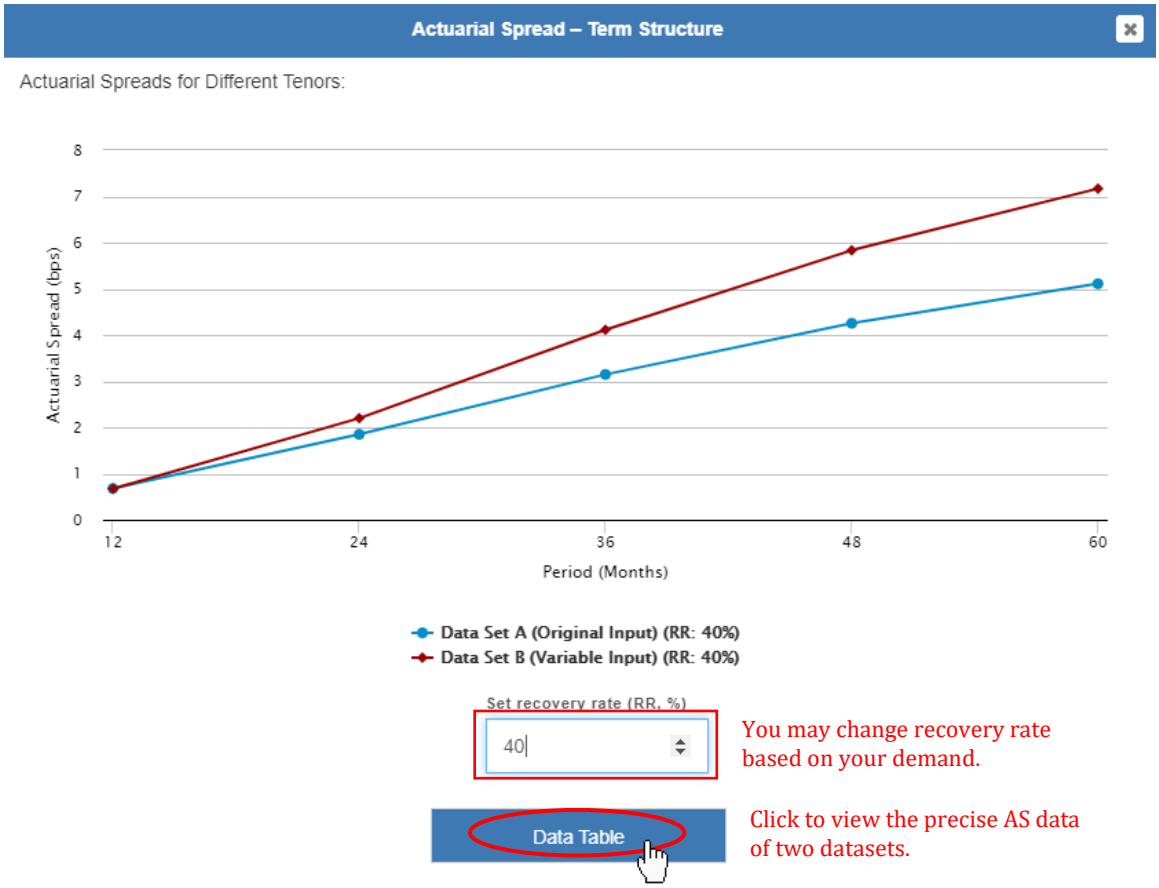

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Global Access

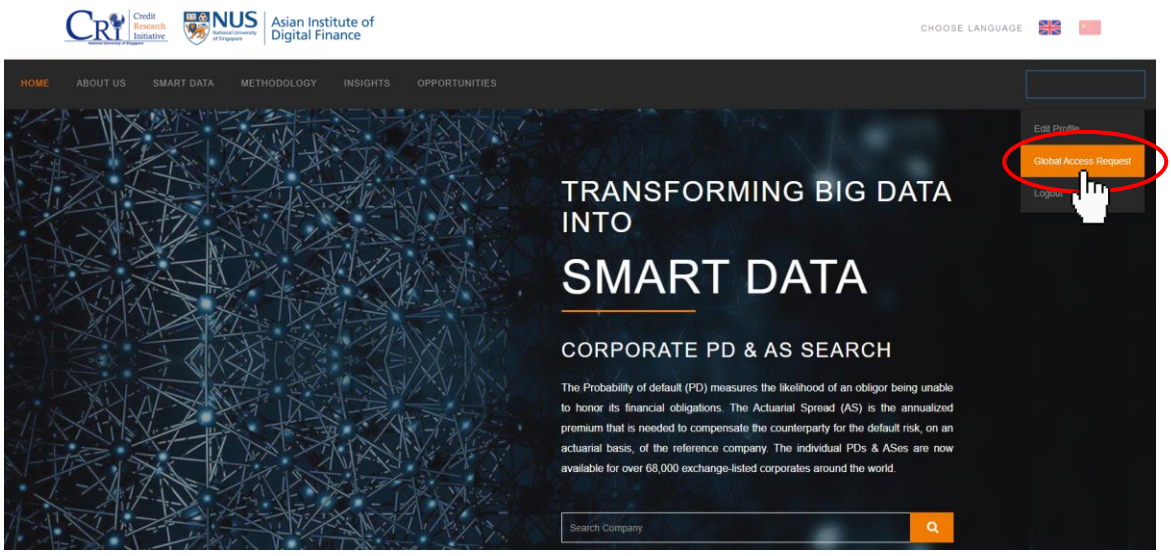
Since the General Access covers only a limited number of 5,000 selected listed firms data, the "**Global Access**" will allow you to have the full access to the CRI database comprises of all 70,000+ listed firms across the globe.

In this section, we provide more details on how to apply for the "Global Access", and we will introduce the "**Data Download**" function with "Global Access".

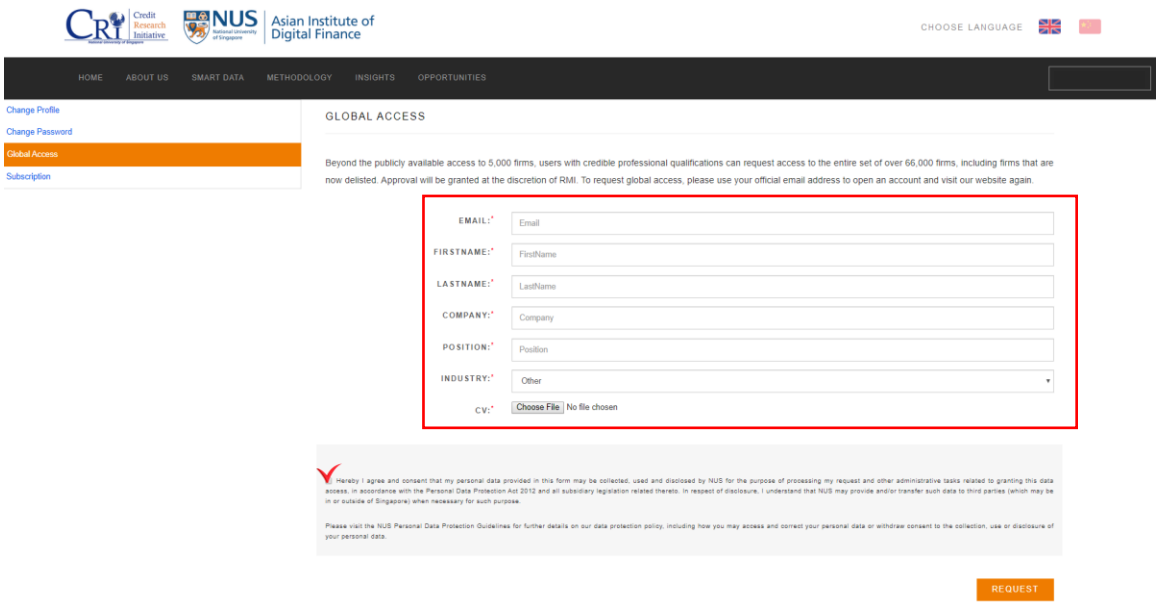
Applying for the Global Access Database

Please visit our website: http://nuscri.org/ and sign in with your account credentials.

After signing in, bring your mouse over to your username on the upper right corner of the website and select "**Global Access Request**" shown as below.



Then, you will be directed to the Global Access application page:



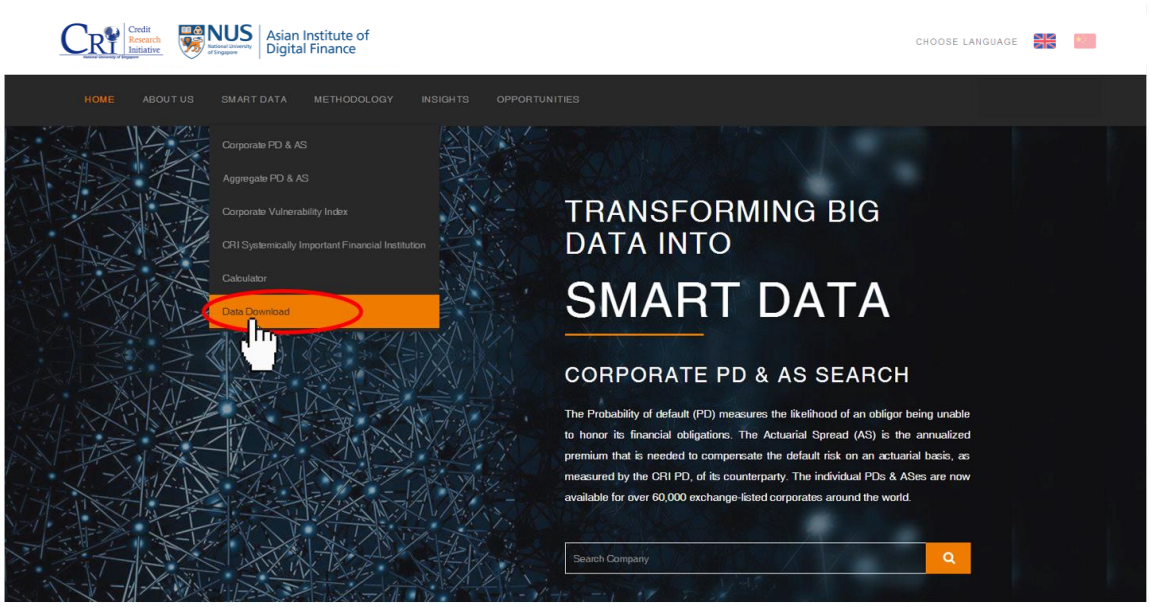
Fill in your personal information and attach your real CV to proceed. Otherwise, your application will be rejected.

(Note: It may take some time for us to process with your request, and the request can only be examined on work days. You will be able to have an access to our data once we have proceeded with our acceptance to your details. If you have any problems with it, please email us at: nuscri@nus.edu.sg)

Data Download

With your "Global Access" entitlement granted, you will be able to conveniently download full historical data in bulk.

On the homepage of the CRI website, click on "**SMART DATA**" and select "**Data Download**" (shown as below).



The Historical PD Data presents the entire history of PD data with term structure ranging from 1 month to 5 years for the corresponding companies.

There are several files available for downloading. You can filter and download files based on your interest.

*See what you can get from "**Data Download**":*

PD Data

- Aggregate PD Data (update semi-annually with 1-year to 1 year and half lag in data. Please *see historical files under "Archive"*)
  - explanatory note (*click on the hyperlink*)
  - by Economy (mean value or median value)
  - by Economy/Sector (mean value or median value)

- Individual PD data (update semi-annually with 1-year to 1 year and half lag in data. Please *see historical files under "Archive"*)
- Company Mapping List ("Company Information_20XXXXXX.csv" contains information of all the companies which have ever been added to our system; "bics_mapping.csv" and "gics_mapping.csv" provides mapping for "BICS_Sector" and "GICS_Sector" in "Company Information_20XXXXXX.csv")
  - PD Data for All Economies (combination of all the .csv files in "PD Data for Individual Economies")
  - PD Data for Individual Economies (separate .csv files for each economy)

AS Data

- Aggregate AS Data (update semi-annually with 1-year to 1 year and half lag in data. Please *see historical files under "Archive"*)
  - explanatory note (*click on the hyperlink*)
  - by Economy (mean value or median value)
  - by Economy/Sector (mean value or median value)
- Individual AS data (update semi-annually with 1-year to 1 year and half lag in data. Please *see historical files under "Archive"*)
  - Company Mapping List (it contains information of all the companies which have ever been added to our system)
  - AS Data for All Economies (combination of all the .csv files in "AS Data for Individual Economies")
  - AS Data for Individual Economies (separate .csv files for each economy)

DTD Data

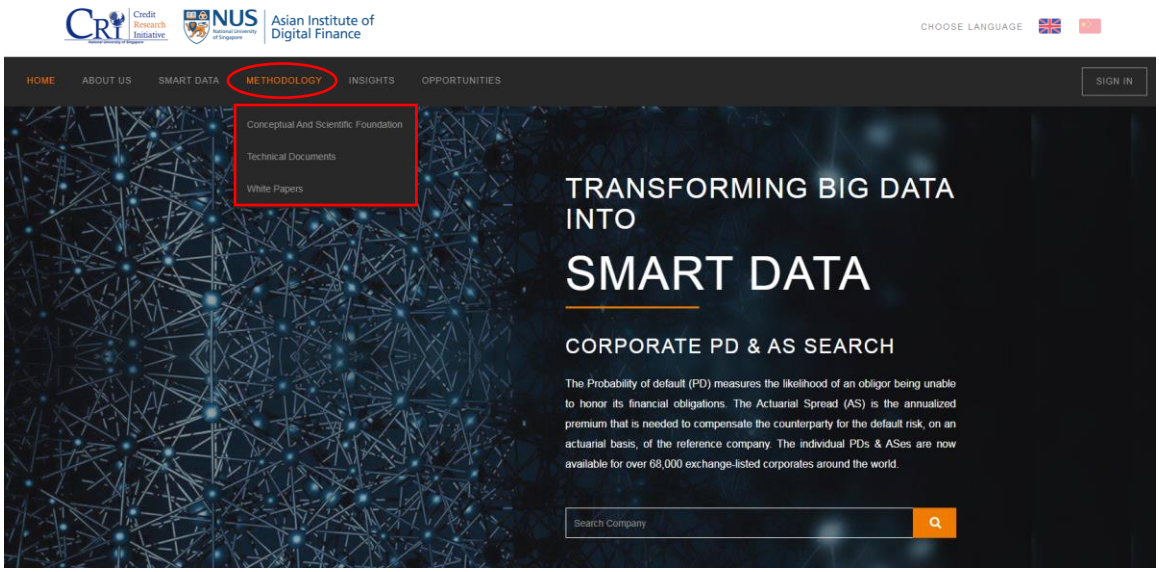
- Company Mapping List (it contains information of all the companies which have ever been added to our system)
- DTD Data for All Economies (combination of all the .csv files in "DTD Data for Individual Economies")
- DTD Data for Individual Economies (separate .csv files for each economy)

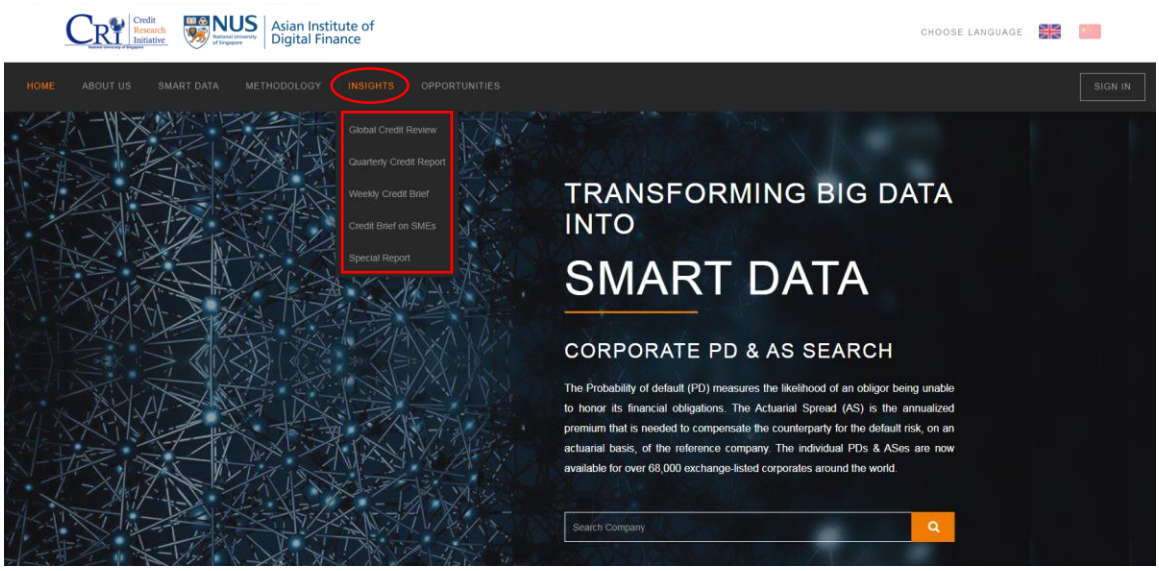
Parameter Data

- (update monthly. Please *see historical files under "Archive"*)
  - explanatory note (*click on the hyperlink*)
  - Parameter Estimates (includes all files of individual economies' parameter estimates)
  - NS Parameter Estimates (includes all files of individual economies' four parameter estimates for the Nelson-Siegel function of each covariate)

Methodology & Insights

To learn more technical details about CRI methodology and insights, you can click on "**METHODOLOGY**" and "**INSIGHTS**" buttons respectively for the drop down menus (shown as below).





All the methodology papers and insight reports are available even without an account.

Credit Research Initiative
National University of Singapore

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NUS Asian Institute of Digital Finance – Credit Research Initiative
Address: 21 Heng Mui Keng Terrace, I^3 Building, Level 4, Singapore 119613
Website: http://nuscri.org/

Credit Research Initiative
National University of Singapore