



## Regional: Exploring Risk-based Debt Sustainability Assessment Methods

Project Name	Exploring Risk-based Debt Sustainability Assessment Methods
Project Number	49099-001
Country	Regional
Project Status	Closed
Project Type / Modality of Assistance	Technical Assistance
Source of Funding / Amount	<b>TA 8893-REG: Exploring Risk-based Debt Sustainability Assessment Methods</b> Technical Assistance Special Fund US\$ 220,000.00
Strategic Agendas	Inclusive economic growth Regional integration
Drivers of Change	Governance and capacity development Knowledge solutions Private sector development
Sector / Subsector	<b>Public sector management</b> - Public expenditure and fiscal management
Gender Equity and Mainstreaming	No gender elements
Description	<p>This small-scale research and development technical assistance (S-RDTA) will explore the application of risk-based debt sustainability methods in the Asian context. This follows up on RDTA 7662, which in 2012 led to the publication of the book titled <i>Debt Sustainability in Developing Asia</i>. There, we compiled a public debt database for ADB Developing Member Countries (DMCs) and conducted IMF-type Debt Sustainability Analysis (DSA) for market-access countries, complemented by stochastic analysis in the form of fan charts. Premised on a favorable macroeconomic and fiscal outlook for most countries in the region, we concluded public debt to be generally sustainable.</p> <p>This S-RDTA will first update the public debt database for all DMCs to reflect the latest data available. For a few select DMCs, DSA projections will be updated to incorporate the risks from the macroeconomic stochastic environment. Analysis will then seek to move beyond the conventional approach based on scenario projections and debt ratio indicators, toward a better accounting for the risks faced by the public sector. Building on recent progress in the field of balance-sheet approaches to sovereign risk analysis, this project shall explore the feasibility of combining DSA with Value at Risk (VaR) or Contingent Credit Analysis (CCA) for a broader assessment of risk factors to public debt sustainability. These analytical frameworks for assessing sustainability under uncertainty will also account for important contingent liabilities, such as the public debt implications from a systemic banking crisis.</p> <p>Data constraints and resource limitations will likely limit the application of risk-based DSA to one or two select DMCs, to be chosen by the project team in consideration of data availability and country characteristics. The potential for possible future extensions of the analysis to as many DMCs as possible will be assessed. As concerns macroeconomic stochastic analysis as an extension of conventional DSA, the research team will select four DMCs deemed of particular interest and suitable for analysis. Again, country focus will be decided at project inception according to data availability, the presence of debt and risk profiles of particular analytical interest, and a country's inclusion or not in previous analyses.</p>

Project Rationale and Linkage to Country/Regional Strategy

Traditional DSA is predicated on identifying the primary balance that is compatible with a stable or declining debt ratio, against the backdrop of plausible medium term macroeconomic forecast assumptions. Debt ratios and various indicators are used to assess whether policies will lead to unsustainable debt dynamics. While appealingly simple and analytically useful, the standard framework's shortcomings are widely acknowledged. In particular, it does not incorporate the stochastic nature of the macroeconomic parameters determining debt sustainability; it fails to reflect the broader public sector balance sheet and asset values in particular; there is no assessment of systemic risks that run from private sector debt to the Sovereign, with the potential of jeopardizing an otherwise public debt profile.

To complement conventional DSA, this S-RDTA will first devise a method to better reflect the stochastic nature of the macroeconomic determinants of debt dynamics. It will then seek to extend the analysis to incorporate VaR, CCA or other systemic risk models, building on recent advances in the field. For example, the VaR methodology can be used to assess correlated solvency and liquidity risk for businesses, financial institutions and sovereigns, against the identification of correlated systematically important risk variables such as sector returns, country GDPs, interest rates, exchange rates, equity returns, and commodity prices. Risk assessments can then be undertaken on many entities simultaneously and preemptive measures to manage such risks can be identified.

However, VaR analysis is data intensive, limiting its applicability to a restrict number of DMCs. To circumvent data limitations, CCA applies option-pricing models to infer sovereign asset values and their volatility from the liabilities side of a consolidated government and central bank balance sheet. From these estimates CCA then derives useful indicators of sovereign risk, such as the distance to debt distress and the sovereign risk-neutral credit spread. By linking the credit risk premium to the balance sheet framework, CCA explains the underlying structural determinants of risks, which in turn relate to and help explain market based measures of credit risk, such as bond spreads or spreads on credit default swaps. By contrast, standard DSA tends to correlate very poorly with any of these market based measures of risk.

The findings of this S-RDTA will flow into three working papers. One technical paper will discuss conventional DSA and its expansion to better reflect macroeconomic stochastics, based on an update of the DMCs public debt database. Another technical paper will seek to devise a suitable VaR or CCA approach to sovereign risk and public debt analysis and assess its applicability against a DMC country case application. A third paper will summarize the key findings and discuss policy conclusions for a target audience of policy makers in the region, suitably drafted as a background paper to potentially serve as input for specific sections in a future ADB flagship report.

In sum, this S-RDTA will update the DMC public debt database and enhance the ERCD portfolio of debt sustainability and risk assessment tools available. The methods explored by this S-RDTA and its findings promise to be of relevance also to ADB operational departments, especially those dealing with public debt sustainability and risk analysis.

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Impact	Improved analytical capability in the field of risk analysis and DMC sovereign debt sustainability
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## Project Outcome

Description of Outcome	ADB stakeholders and DMC policy makers are aware of S-RDTA DSA methods
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Progress Toward Outcome

### Implementation Progress

Description of Project Outputs	ADB working papers and analytical inputs to reports are well received
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Status of Implementation Progress (Outputs, Activities, and Issues)

Geographical Location

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## Summary of Environmental and Social Aspects

Environmental Aspects

Involuntary Resettlement

Indigenous Peoples

### Stakeholder Communication, Participation, and Consultation

During Project Design

During Project Implementation

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## Business Opportunities

Consulting Services	The TA will engage 3 person-months of international consulting services, 4 person-months of national consulting services, and 1 resource person services who will contribute to the analytical and empirical work.
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Procurement To be determined

## Responsible Staff

Responsible ADB Officer	Ferrarini, Benno
Responsible ADB Department	Economic Research and Regional Cooperation Department
Responsible ADB Division	ERM
Executing Agencies	<i>Asian Development Bank 6 ADB Avenue, Mandaluyong City 1550, Philippines</i>

## Timetable

Concept Clearance	-
Fact Finding	-
MRM	-
Approval	27 Apr 2015
Last Review Mission	-
Last PDS Update	06 Mar 2015

## TA 8893-REG

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
27 Apr 2015	-	27 Apr 2015	31 Dec 2016	30 Apr 2017	-

Financing Plan/TA Utilization						Cumulative Disbursements		
ADB	Cofinancing	Counterpart				Total	Date	Amount
		Gov	Beneficiaries	Project Sponsor	Others			
220,000.00	0.00	0.00	0.00	0.00	0.00	220,000.00	27 Apr 2015	85,261.17

Project Page	<a href="https://www.adb.org/projects/49099-001/main">https://www.adb.org/projects/49099-001/main</a>
Request for Information	<a href="http://www.adb.org/forms/request-information-form?subject=49099-001">http://www.adb.org/forms/request-information-form?subject=49099-001</a>
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