



# Completion Report

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Project Number: 49099-001  
TA Number: 8893  
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## Exploring Risk-Based Debt Sustainability Assessment Methods

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TA Number, Country, and Name: TA 8893-REG: Exploring Risk-Based Debt Sustainability Assessment Methods		Amount Approved: US\$220,000	
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**Description.** Key aspects of fiscal risk facing the DMCs is left unaccounted by the conventional approaches to debt sustainability analysis (DSA), including the IMF's. For a fuller account of stochastic risk factors, this small-scale research and development technical assistance (S-RDTA) explored the application of more recent, risk-based debt sustainability methods in the Asian context.

This S-RDTA updated the public debt database and DSA for DMCs to reflect the latest historic data available (as of 2015) as well as baseline projections for 2016–2020 (the database had previously been prepared in the context of RDTA 7662 and the resulting ADB/Routledge book titled “Public Debt Sustainability in Developing Asia”).<sup>1</sup> It then explored new methods of debt assessment to complement the non-stochastic DSA framework. Focus was mostly on recent progress in the field of balance-sheet approaches to sovereign risk analysis, which combines DSA with Value at Risk (VaR) or Contingent Claims Analysis (CCA) for a comprehensive assessment of the risk factors affecting public debt sustainability. In doing so, this S-RDTA aimed to enrich the portfolio of debt sustainability and risk assessment tools available to ERCD, with shared benefits for ADB and external stakeholders.

**Expected Impact, Outcome, and Outputs.** The expected impact of the S-RDTA was improved analytical capability in the field of DMC sovereign debt sustainability and risk analysis, using as performance target the broad use of the TA's findings as inputs to ADB and DMC reports. The expected outcome was better awareness and understanding of relevant DSA methods and actionable tools that can be used by ADB staff and policy makers in the region. The expected target outputs were the submission of ERCD working papers and background contributions suitable for ADB flagship reports, as well as the dissemination of core findings through presentations and seminars to internal and external stakeholders.

**Delivery of Inputs and Conduct of Activities.** The TA was implemented following the TA Design and Monitoring Framework (DMF) and the TA Terms of Reference (TOR). The TA inputs were delivered by a team of consultants supervised by the ADB team working on the project (two senior economists and one economics officer). Four international consultants were engaged for a total of 4.5 person-months and one resource person was engaged for 0.5 person-month, without additional TA funding. The project did not hire any national consultants. All the consultants were engaged as individual consultants in accordance with ADB's Guidelines on the Use of Consultants. The consultancy periods were fully utilized. Individual consultants' performances were satisfactory, with agreed timelines and TORs being met in full.

The ADB team leaders in collaboration with a national officer administered the project, supervised consultants' research inputs, and co-authored four papers published in the ADB Economics Working Paper series and one article published in the Journal of Asian Finance, Economics, and Business. The research activities were completed on time.

Studies conducted under this TA reviewed these analytical frameworks and applied CCA to a number of DMCs, including Indonesia, Malaysia, the Philippines, the People's Republic of China (PRC), the Republic of Korea, and Thailand. In separate lines of inquiry, further papers assessed DSA for oil exporting countries, such as Azerbaijan, and the bearing of corporate debt on PRC's public debt sustainability. Findings were published in the form of working papers, journal articles, blogs, as well as within ADO flagship publications and loan documents. Dissemination through a number of internal and external seminars involved audiences of policy makers, fiscal regulators and scholars.

Funds for the project were used efficiently and prudently. The TA utilized approximately 39% of the total TA budget to pursue the planned activities, results, and outputs. The consultants' budget was utilized to 70%, because plans for a VaR case study had to be dropped, due to the excessively high costs it would have entailed. The training and seminars budget—mostly covering travel costs of ADB staff—exhausted only 23% of the allotment, because most events were held in HQ at low cost. The use of teleconferencing and video communication in lieu of face-to-face meetings further

<sup>1</sup> ADB. 2010. *Sovereign Debt Sustainability in Asia and the Pacific*. Manila.

lowered implementation costs. Publishing the TA findings through the ADB Economics Working Paper Series also saved funds intended for miscellaneous costs. The TA completion date was extended once for 4 months to allow for more time for some final publication and dissemination activities.

**Evaluation of Outputs and Achievement of Outcome.** The TA delivered its planned output target of ADB working papers and background materials for reports being submitted, published, and disseminated extensively. While only three analytical papers have been initially planned, four technical papers were published as ADB economics working papers: (i) Public Debt Sustainability in Developing Asia: An Update (December 2015); (ii) Exploring Risk-Adjusted Fiscal Sustainability Analysis for Asian Economies (May 2016); (iii) Contingent Claims Analysis of Sovereign Debt Sustainability in Asian Emerging Markets (June 2016); and iv) Leverage and Capital Structure Determinants of Chinese Listed Companies (January 2017). A revised version of the latter appeared also in the Journal of Asian Finance, Economics, and Business (February 2017, Vol.4, No.1). A fifth ADB working paper, titled “Debt Sustainability Analysis for Oil Exporters with Sovereign Wealth Funds” has been ready for publication since October 2016 but has yet to receive CWRD’s clearance, pending Azerbaijan government’s no-objection to publication.

The TA also achieved its planned outcome, holding various dissemination activities attended by bank staff and DMC stakeholders. The TA held (i) a lecture course on contingent claims analysis, macrofinancial risk analysis, and risk-based debt sustainability framework on 19–20 October 2015 at ADB HQ; (ii) a presentation of the paper “Public Debt Sustainability in Developing Asia: An Update” on 03 December 2015 at ADB HQ; (iii) a seminar on exploring risk-adjusted fiscal sustainability analysis on 15 December 2015 at ADB HQ; (iv) a presentation of a paper on contingent claims analysis of sovereign debt in Asia on 27 April 2016 at ADB HQ; (v) a presentation of a paper on debt sustainability analysis for oil exporters with sovereign wealth funds (using Azerbaijan as a case study) on 4 August 2016 at ADB HQ; (vi) a presentation of papers on debt sustainability analysis for Asian economies at the XI International Conference on Public Policy and Management at the Indian Institute of Management of Bangalore (IIMB) on 8 August 2016 in Bangalore, India; (vii) a presentation of a paper on leverage and capital structure determinants of Chinese listed companies on 21 November 2016 at ADB HQ; and (viii) an overview presentation of the TA papers on debt sustainability analysis in developing Asia to the ASEAN+3 Macroeconomic Research Office (AMRO) on 13–14 December 2016 in Singapore.

In terms of impact, the TA also reached its target of having DSA methods cited in ADB reports by 2017: thus far, findings of the study titled “Debt Sustainability Analysis for Oil Exporters with Sovereign Wealth Funds” was used as background material for the section on debt sustainability in Part 1 of the Asian Development Outlook 2016 Update, a flagship publication of ADB, as well as for an appendix assessing the DSA impacts of the Azerbaijan CSF Loan No. 3486 (December 2016). The ADO 2016 Update was launched in Hong Kong, China on 27 September 2016. Dissemination activities were also held in conjunction with ADO 2016 Update with outreach activity in Malaysia. There have been 41,581 page views and 10,819 downloads of the ADO 2016 Update as of 17 April 2017, indicating a sufficiently vast dissemination. Furthermore, TA datasets and analyses have been shared broadly with ADB internal (e.g. ORM, PRCM) and external (e.g. JBIC) clients.

**Overall Assessment and Rating.** The TA’s overall assessment rating is “successful”. The TA achieved its outcome of enhancing analytical capability in the field of sovereign debt sustainability and risk analysis, through several studies that explore risk-based assessment tools and their applicability in the context of ADB DMCs. The studies were conducted well within the intended costs and gathered positive feedback from stakeholders in and outside ADB. Overall, ADB’s performance, as the executing agency, is rated as satisfactory.

**Major Lessons.** 1. Data constraints limit the application of risk-based DSA to a few DMCs only. 2. Value at risk analysis is most promising an analytical tool, but its costs and data requirements are daunting and cannot be handled within a small-scale TA. 3. Contingent claims analysis, though useful, entails resource costs that trade off heavily against the use of readily available indicators, such as credit default swap and bond spreads.

**Recommendations and Follow-Up Actions.** Given ADB’s limited access to fiscal data and resources in this field, DSA country analyses would have to rely on IMF data and findings, such as incorporated in IMF’s Article IV country documents. However, IMF publications usually omit information about some of the key drivers and assumptions underlying debt ratio projections, which precludes us from assessing their plausibility and updating per ADB’s own assumptions. ADB should leverage the established channels of institutional collaboration to explore ways for IMF to grant privileged access to all its latest DSA templates, data and projections for all the DMCs.

TA = technical assistance; CSF = countercyclical support facility; CWRD = Central and West Asia Department; DMC = developing member country; ERCD = Economic Research and Regional Cooperation Department; IMF = International Monetary Fund.

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