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Estimating U.S. Economic Contributions to the Indo-Pacific, Version 1.0—Technical Documentation

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Introduction

To estimate the total annual value and range of U.S. economic partnership with the Indo-Pacific, AidData used a unique variety of publicly available databases that capture monetary flows from U.S.-based actors to Indo-Pacific economies.

This technical annex aims to provide further information on the methodology for this study. The first section provides an overview of the taxonomy of distinct U.S. engagement channels we found to be most relevant and measurable. We also share details on the data sources we used for each channel as well as the time period for the data.

In the second section, we discuss the methodological aspects of our study. This includes the detailed mapping of the U.S. government's programmatic sectors to the four key sectors we identified from our evaluation of Indo-Pacific's priority areas. This section also includes details of any statistical techniques that we used to estimate the volume of U.S. contributions through various channels, as well as details on any assumptions we made in transforming readily available data into information that was more fit for purpose.

Section 1: Taxonomy of U.S. Contributions to the Indo-Pacific

To capture the universe of direct and indirect contributions that the U.S. makes to the Indo-Pacific's economy and prosperity is inherently difficult. We identified eight distinct channels of contributions that were reliably quantifiable. We classified these channels into two broad categories: U.S. Government-driven and U.S. Private Sector-driven. Table I provides a list of these channels, the associated source of data that we used to quantify the volume of contributions for that channel, and the time period for which the data source provided coverage.

Table I: Taxonomy of U.S. Contributions to Indo-Pacific

Category	Data Source	Time Coverage
U.S. Government-driven		
Bilateral Assistance	USAID Foreign Aid Explorer[1]	2012-2022
Multilateral Assistance	OECD Creditor Reporting System (CRS)	2012-2022

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[1] Although the USAID Foreign Aid Explorer has data for 2023, the data for this period is incomplete. Therefore, we only evaluate data that has been reported up to 2022.

Investment Guarantees	• U.S. International Development Finance Corporation • Multilateral Investment Guarantee Agency (MIGA), the World Bank	2012-2022
Private Sector-driven		
Trade	U.S. Trade in Goods by Country, United States Census Bureau	2012-2022
Remittances	The World Bank, AidData Estimates	2012-2022
Foreign Direct Investments	Bureau of Economic Analysis, U.S. Direct Investment Abroad: Balance of Payments and Direct Investment Position Data	2012-2022
Philanthropic Contributions	OECD Creditor Reporting System (CRS)	2012-2022[2]

Section 2: Methodology for Counting U.S. Contributions

Table II: List of Economies and ISO Alpha-3 Codes

Indo-Pacific Economy	ISO Alpha-3 Code	Indo-Pacific Economy	ISO Alpha-3 Code
Australia	AUS	Northern Mariana Islands	MNP
Bangladesh	BGD	Malaysia	MYS
Brunei	BRN	New Caledonia	NCL
Bhutan	BTN	Niue	NIU
Cocos (Keeling) Islands	CCK	Nepal	NPL
China (P.R.C.)	CHN	Nauru	NRU
Cook Islands	COK	New Zealand	NZL
Fiji	FJI	Philippines	PHL
Micronesia, Federated States of	FSM	Palau	PLW

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[2] The OECD CRS' Private Philanthropy for Development (PPFD) data goes back to 2009. However, several philanthropies did not begin reporting to the CRS until 2017, so figures for this flow represent a conservative estimate.

Hong Kong SAR	HKG	Papua New Guinea	PNG
Indonesia	IDN	Korea, Democratic Republic of	PRK
India	IND	French Polynesia	PYF
Japan	JPN	Singapore	SGP
Cambodia	KHM	Solomon Islands	SLB
Kiribati, Republic of	KIR	Thailand	THA
Korea, Republic of	KOR	Tokelau	TKL
Laos	LAO	Timor-Leste	TLS
Sri Lanka	LKA	Tonga	TON
Macau SAR	MAC	Tuvalu	TUV
Maldives	MDV	Taiwan	TWN
Marshall Islands	MHL	Vietnam	VNM
Burma (Myanmar)	MMR	Vanuatu	VUT
Mongolia	MNG	Samoa	WSM

Note: Several data sources reported semi-aggregated regional funding (e.g. Oceania, regional) for projects that were cross-country in nature or earmarked for regional fora such as ASEAN. To ensure that the data reflects the full value of flows to the region, these annual totals are recorded with "Regional, unspecified" in the "Alpha3" column. Researchers interested only in bilateral engagements may wish to filter these rows out of aggregate calculations.

Harmonizing Sector Codes

To better understand how U.S. economic engagements support Indo-Pacific economies in four key sectors, we first decided to harmonize the sector classifications used by U.S. government agencies and multilateral agencies for their disbursements and budgeting to the thematic priority areas of health, infrastructure, education, and the environment and climate change. Table III below provides the crosswalk we developed for this purpose.

Table III: Crosswalk of Sector Codes to Indo-Pacific Focus Areas

Sector Classification	U.S. Government Sector Name	OECD CRS Sectors
Health	Family Planning and Reproductive Health; Health - General; Health Care and Social Assistance; HIV/AIDS; Malaria; Maternal and Child Health; Other Public Health Threats; Pandemic Influenza and Other Emerging Threats (PIOET); Tuberculosis.	Basic health care; Basic health infrastructure; COVID-19 control; Health education; Health personnel development; Health policy and administrative management; Infectious disease control; Family planning; Malaria control; Medical education/training; Medical research; Medical services; NCDs control, general; Other prevention and treatment of NCDs; Personnel development for population and reproductive health; Pharmaceutical production; Population policy and administrative management; Promotion of mental health and well-being; Reproductive health care; STD control including HIV/AIDS; Tuberculosis control.
Infrastructure	Infrastructure; Communications policy and administrative management; Construction; Information and communication technology (ICT); Oil and Gas; Power; Telecommunications; Transportation; Transportation and Warehousing; Utilities.	Infrastructure; Communications policy and administrative management; Electric mobility infrastructures; Electric power transmission and distribution (centralised grids); Fertilizer plants; Hydro-electric power plants; Information and communication technology (ICT); Rail transport; Road transport; Solar energy for centralised grids; Telecommunications; Transport equipment industry; Water supply - large systems; Water supply and sanitation - large systems; Wind energy.
Education	Basic Education; Education and Social Services - General; Higher Education; Early childhood education; Education facilities and training; Education policy and administrative management; Educational research; Educational Services; Upper Secondary education; Primary education.	Basic life skills for youth; Early childhood education; Education facilities and training; Education policy and administrative management; Educational research; Higher education; Lower secondary education; Multisector education/training; Primary education; Research/scientific institutions.
Environment & Climate	Clean Productive Environment; Environment; Environment - General; Natural Resources and Biodiversity.	Biodiversity; Biosphere protection; Environmental policy and administrative management; Environmental research.
Other	All other sectors for the bilateral, multilateral, and philanthropic sources that report data using the above comparable sector classifications.*	

Note: This crosswalk only applies to data from sources that utilize a comparable sector reporting schema: Bilateral Assistance, Multilateral Assistance, Investment Guarantees, and Philanthropic Contributions.

It was not possible to map every type of flow in this study to these sectoral focus areas. These include remittances and foreign direct investment, which are only available at a nationally-aggregated level. We further elected to not attribute trade to these focus areas, as different reporting standards mean that the trade in goods can not be as reliably aligned with thematic focus areas in a conservative manner.

Therefore, we have assigned these three flows the "Not Attributable" value in the "Sector" classification variable.

Categorizing Technology Imports

To identify the proportion of all U.S. economic engagement that corresponds to technology-related trade, we created a simplified variable that indicates whether import-related data classifications are connected to the technology sector or other sectors. This variable was calculated based on data categorizations under the Harmonized Tariff Schedule of the United States (HTS), which is in turn based on the international Harmonized System for classification of trade in goods. Technology-related trade was defined as the value of goods imported under Chapter 85 of the HTS, defined as "Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles."

This high-level category (i.e. two-digit category) best aligns with a conservative estimate of technology imports. Chapter 85 goods range from basic materials such as wires and electronic integrated circuits, to component goods such as semiconductors, up to assembled consumer electronics such as smartphones and LAN equipment. Chapter 85 items do not include some items such as specialized medical or manufacturing equipment. However, given the breadth of materials under those sector categorizations, we determined that this set of goods aligns best with the conventional understanding of technology-related trade.

To calculate the "Other" category, these values were subtracted from the total value of U.S. imports for each year and origin country.

Import Category	Trade Data Classifications
Trade	Customs value of imported goods classified under Chapter 85 of the Harmonized Tariff Schedule of the United States.
Other	Total customs value of all other imported goods.

Data Collection and Analysis

Using the crosswalk, all downloaded databases from publicly available sources (see Table I above) were amended to harmonize the sectors for all observations of contribution by channel and year. However, not all our identified engagement channels contained readily available sectoral data. These include the majority of private sector flows (FDI stock and remittance estimates), and while technology trade can be identified in the U.S. trade data, it is not possible to attribute all trade flows to education or health sectors. Additionally, our researchers had to perform additional analysis to estimate the value of U.S. financial engagement with Indo-Pacific economies. These reflect U.S. contributions via multilateral agencies, investment

guarantees provided by the U.S. via MIGA, and contributions via remittances. We provide the details of these analyses below.

U.S. Engagements via Multilateral Agencies

We evaluated the public records of all multilateral organizations active in the Indo-Pacific to find the share of U.S. contribution in their overall operations. We used equity held by the U.S. government to determine how much of grants disbursed by development banks and investment funds could be attributed to the United States. When U.S. shareholding changed between 2012-2022, we chose the lowest value to ensure estimates were conservative. When shareholding values were not available, we calculated averages based on the portion of annual core funding attributable to the U.S. in available reporting. Table IV provides our estimated U.S. share for each multilateral organization active in Indo-Pacific and the information source used. These percentages were used to estimate the U.S. contribution to Indo-Pacific's development via multilateral organizations.[3]

Table IV: Estimated U.S. Share of Contributions made by Multilateral Organizations in the Indo-Pacific

Organization	Share	Notes
Central Emergency Response Fund	0.88%	Based on 2015-2017 average of USG core contributions divided by total core contributions. U.S. contributions drop to 0 after 2017.
Climate Investment Funds	24.6%	Climate Funds, percent from totals since 2008.
FAO	11%	Calculated based on U.S. assessed and voluntary contributions divided by total contributions to FAO.
GAVI	11.83%	While the U.S. contributed/pledged 13.0% of GAVI funding 2016-2020, for the total 2000-2020 period the U.S. contributed 11.83% (2.46B/20.9B).
Global Environment Facility	14.75%	The U.S. held 14.75% actual shares for the 6th GEF Replenishment in 2014. The 7th replenishment occurred in 2018 and increased that value to 15%.
Global Fund	31.76%	Mean of the annual portion of USG contributions within total Global Fund pledges and contributions, 2001-2019.
IAEA	29.11%	Based on U.S. contributions to IAEA funding in 2017.
IDA, World Bank	11.9%	Mean of U.S. contribution shares over FY 10-FY 18 replenishments.
IFAD	9.36%	Mean of U.S. contributions to past three IFAD replenishments (IFAD 9-11).

[3] We were only able to capture multilateral contributions for those organizations that reported their funding of activities in the Indo-Pacific to the OECD CRS database.

ILO	22%	U.S. contributes [22% of ILO's regular budget](#) each biennium.
IMF	17.45%	Based on SDRs/[Percent of Quota](#)
UNAIDS	28.25%	Mean of U.S. share of [annual contributions to UNAIDS](#), 2017-2018.
UNDP	6.53%	Mean of U.S. share of [annual contributions to UNDP](#), 2017-2018.
UNFPA	6.75%	Mean of U.S. share of [annual contributions to UNFPA](#), 2014-2016. Note: Core contributions were halted in 2017.
UNHCR	33.41%	Mean of U.S. share of total [contributions to UNHCR](#) 16-18.
UNICEF	11%	UNICEF [reported figures](#).
UNPBF	0.06%	Per the 2018 Consolidated Annual Financial Report of the Administrative Agent for the Peacebuilding Fund
WFP	38%	Average of [U.S. contributions divided by total contributions 2014-2018](#).
WHO	16.4%	WHO U.S. average of total (assessed and voluntary) [contribution percentages 2014-2019](#).

Estimating Bill & Melinda Gates Foundation Contributions Via Multilaterals

In addition to the portion of multilateral organizations' disbursements to the Indo-Pacific that can be attributed to the U.S. government, a portion can be attributed to the Bill & Melinda Gates Foundation thanks to their substantial funding to health-focused organizations. Below is a table of estimated shares of disbursements attributable to the Gates Foundation.

Table V: Estimated BMGF Funding to Multilateral Organizations

Organization	Share	Notes
GAVI	19.66%	Based on the share [of total contributions 2000-2020.](#)
Global Fund	4%	Mean of the annual portion of BMGF contributions within total Global Fund [pledges and contributions, 2001-2019.](#)
WHO	10%	Average of total (assessed + voluntary) [contribution share for 2014-2019.](#)

Estimating Contributions of U.S. Philanthropies

To estimate trends and geographies of U.S.-based philanthropic contributions to the Indo-Pacific, we used data on funding from 23 large foundations that report their donations to the OECD's Creditor Reporting System. Globally, these organizations have shared data on nearly $60 billion worth of development and humanitarian spending since 2010. U.S. charitable giving encompasses many more organizations than just these listed. However, these 23 organizations have a significant scale of operations and transparency in reporting methods. This allows for us to calculate a conservative baseline estimate that is comparable to other

large-volume flows from the United States to Indo-Pacific economies. Organizations include Bill & Melinda Gates Foundation, Mastercard Foundation, Michael & Susan Dell Foundation, Bloomberg Family Foundation, Open Society Foundations, Susan T. Buffett Foundation, Ford Foundation, David & Lucile Packard Foundation, William & Flora Hewlett Foundation, Bezos Earth Fund, Rockefeller Foundation, Conrad N. Hilton Foundation, John D. & Catherine T. MacArthur Foundation, Howard G. Buffett Foundation, Gordon and Betty Moore Foundation, Margaret A. Cargill Foundation, Omidyar Network Fund, Inc., Citi Foundation, Arcus Foundation, MetLife Foundation, Carnegie Corporation of New York, and McKnight Foundation.

Estimating Bilateral Remittances

The estimate of bilateral remittances was calculated via [Ratha and Shaw (2007)](#)'s methodology. Specifically, this study used the approach detailed in the section "Using the Share of Migrants in Different Destination Countries as Weights." This is the most conservative approach to estimate remittances, as it does not adjust for the high average income in the United States compared to other countries. Data on total remittances received by country is derived from [the World Bank's Personal remittances, received dataset](#). Data on bilateral migrant populations is based on [the United Nations Department of Economic and Social Affairs International Migrant Stock 2020 dataset](#), which includes population estimates for bilateral migrant stock every five years from 1990-2020.

Deflators

All values are deflated to 2022 constant USD using the [Implicit Price Deflator from Federal Reserve Economic Data](#) that is hosted at the Federal Reserve Bank of St. Louis. Values are calculated at an annual level, with an index of 2022-01-01 equal to 100.

Population Figures

Population figures in the sheet 'geo_lookup' represent the total 2022 population for each economy, so that researchers can estimate per capita economy totals. Researchers interested in changes over time in per capita finance may wish to read in the full time series data and calculate annualized rates. Population data source: [World Bank Group World Development Indicators](#).