Finance for International Development (FID): A New Measure to Compare Traditional and Emerging Provider Countries' Official Development Finance Efforts, and Some Provisional Results

Ian Mitchell, Euan Ritchie, and Andrew Rogerson

Abstract

It is increasingly recognised that countries outside the OECD are important players in development. However, there is no consistent measurement of development effort across all major economies. In this working paper we present a new indicator—Finance for International Development (FID)—that attempts to fill this gap by measuring in a comparable way the flows of official, cross-border concessional finance provided by 40 major economies. These countries collectively account for 88 percent of global GNI, and in 2017 provided $150 billion of development assistance by our measure, 18 percent of which was from countries outside the OECD. We present estimates of FID for each country, both in absolute terms and as a percentage of GNI, and outline differences between FID and existing indicators. Finally, we outline some limitations and how we would like to develop FID in the future.

Center for Global Development
www.cgdev.org

Working Paper 529
April 2020

Finance for International Development (FID): A New Measure to Compare Traditional and Emerging Provider Countries' Official Development Finance Efforts, and Some Provisional Results

Ian Mitchell
Center for Global Development

Euan Ritchie
Center for Global Development

Andrew Rogerson
Center for Global Development

The Center for Global Development is grateful for contributions from the Bill & Melinda Gates Foundation in support of this work.

Ian Mitchell, Euan Ritchie, and Andrew Rogerson 2020. "Finance for International Development" CGD Working Paper 529. Washington, DC: Center for Global Development. https://www.cgdev.org/publication/finance-international-development-fid

The data used in this paper is available here: https://www.cgdev.org/sites/default/files/mitchell-ritchie-FID-data-code.zip. More information on CGD's research data and code disclosure policy can be found here: www.cgdev.org/page/research-data-and-code-disclosure.

Center for Global Development
2055 L Street NW
Washington, DC 20036

202.416.4000
(f) 202.416.4050

www.cgdev.org

Contents

Figures

Tables

Boxes

Acronyms

CDI	Commitment to Development Index
CGD	Center for Global Development
CPA	Country Programmable Aid
CRS	Creditor Reporting System
DAC	Development Assistance Committee of the OECD
FFD	Financing for Development
FID	Financing for International Development
FSS	Forward Spending Survey by OECD DAC
GE	Grant Element (% of loan face value)
GEq	Grant Equivalent (absolute value corresponding to GE)
GPEDC	Global Partnership for Effective Development Cooperation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
MDB	Multilateral Development Bank
MDGs	Millennium Development Goals
PEFA	Public Expenditure and Financial Accountability (Assessments)
PFM	Public Financial Management
QuODA	Quality of Official Development Assistance
SDGs	Sustainable Development Goals
TOSSD	Total Official Support for Sustainable Development

Executive Summary

This paper sets out a new method of measuring and comparing the finance that governments provide for international development. It also includes the first estimates under that method.

Approach

The best-known existing measure of government finance for development is official development assistance (ODA), defined and collated by the OECD Development Assistance Committee (DAC). That measure provides important information on the DAC's 29 member countries and some non-member countries who choose to report on an ODA basis to the DAC (notably Israel, Russia, Saudi Arabia, Turkey and the UAE). But several large non-DAC countries - increasingly recognised as important development actors - do not report on ODA but nonetheless provide substantial volumes of development-relevant finance. We therefore measure the concessional development finance provided by 40 of the most important economic actors, with a particular focus on eight countries that do not use the DAC's measure.

In order to develop a measure consistent across countries, we have used a narrower definition focussed on government's international financial support. More specifically, our approach aims to measure the **grant-equivalent of officially provided, cross-border concessional finance for development**. In order to provide an intuitive shorthand, we have named this measure governments' **Finance for International Development (FID).** The measure consists of three main elements:

Finance for International Development (FID)		
Grants - bilateral cross-border grants (including "earmarked" funding through multilaterals)	**Loans** - bilateral concessional cross-border (grant equivalent) and equity[1]	**Multilaterals** - core contributions only

To enable comparability across providers, FID excludes a number of potentially valuable development activities included in the ODA definition. In particular, it focuses on international flows, which exclude ODA-eligible spending occurring within the provider's own territory, like refugee-hosting, some research and development, scholarships and administration.

The information for this measure is largely available from national publications; we explain our sources fully in Annex 1. For DAC-reporting countries, almost all the information is available through the Creditor Reporting System (the exception is loans which are concessional but do not reach the threshold for inclusion in ODA). In some cases, especially China, we used a range of sources to understand the bilateral finance portfolio, and the degree of its concessionality.

[1] See section 2 for treatment of bilateral development finance institutions (DFIs) including equity investments.

FID includes the grant-equivalent of all concessional loans. This differs from ODA practice, which only counts concessional loans when their grant element is sufficiently high: for lower income or least developed countries, this must be higher than 45 percent. It makes more sense to include the entire grant element (why should a 46 percent grant equivalent loan count, but a 44 percent one not?). DAC providers appear to make, and certainly report, few loans with a concessional element below the relevant threshold, likely because they would not receive credit for it as ODA (and highlighting the incentive effects of the measure). Non-DAC providers, particularly China, generally provide most of their loans on fully commercial terms. However, when they do offer concessional terms, these mostly exceed the ODA thresholds, so the removal of the threshold in FID does not fundamentally alter the picture.

For a country's contribution to multilateral institutions, we draw on information from the accounts of those agencies, and include agencies not previously considered, in particular the New Development Bank and the Asian Infrastructure Investment Bank, and make assumptions about their development focus. Note that we are including here only so-called core funding of these agencies in this category. Earmarked funding (also known as "trust funds") is captured under the bilateral grant rubric.

Findings

Our headline results focus on the latest comparable data available, mainly from 2017, for 40 countries, including 27 of the 29 DAC country members.[2] Taking the global figures (table 1A) on Finance for International Development (FID), we find that:

- Globally $149.9bn Finance for International Development was provided in 2017 by this group.
- This represented just 0.2 per cent of those countries combined national income; with less than half of that (0.07 per cent) provided for multilateral organisations (ie UN, WHO) core resources
- Of the total, 84 percent was from DAC providers
- Thirteen major international actors outside of the DAC are providing some $24.6bn, or 16 percent of total international finance for development within this 40-country total.
- Around 32 percent of FID was provided to multilaterals; 60 percent as grants; and 8 percent as the grant-equivalent of loans. These proportions were broadly similar across both groups (Table 1) but vary significantly by country.[3]

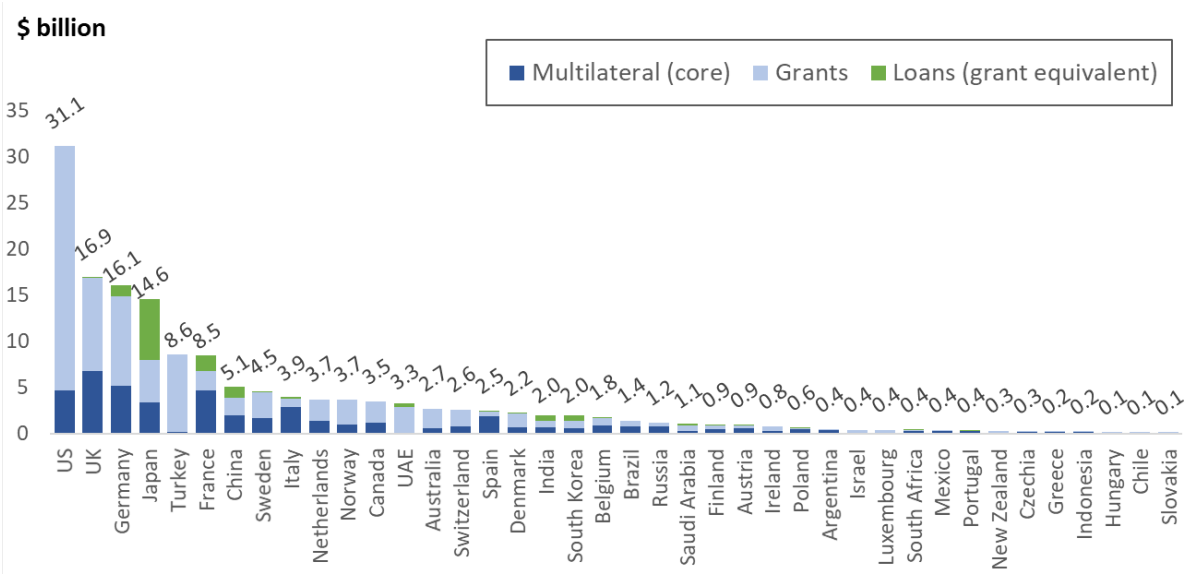
[2] We did not include Iceland and Slovenia in this iteration, see section 1 for explanation.
[3] Notably, Turkey's multilateral share is far lower than the non-DAC group average.

Table 1A. Finance for International Development - 2017 (Current $ million)

	Grants - bilateral & other non-reimbursable	**Loans** – bilateral grant element & equity	**Multilateral** - contributions to core		**Total FID**
Select DAC countries (27)	73,475	10,290	41,535		125,300 (84%)
Selected non-DAC countries (13)	15,783	2,405	6,363		**24,551** (16%)
TOTAL	**89,258**	12,695	**47,898**		149,851
% of total	60%	8%	32%		

Turning to individual country results (details in table 2 below):

Figure 1A. Total Finance for International Development, 2017



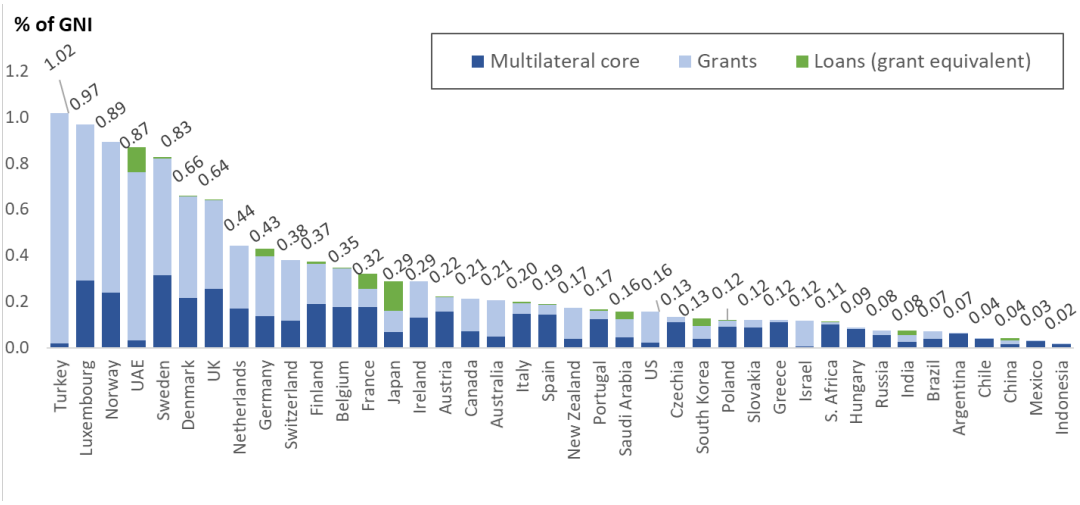
Note: Asterisk by country indicates that some information from a different year is used in calculation.

These initial FID estimates highlight (see section 8 for detailed country results):

- The US was by far the largest absolute provider of FID, providing over a fifth of the total
- The UK, Germany and Japan also provided over $10bn while France, Turkey and China each provided over $5bn
- China provided $5.1bn FID, making it the seventh largest donor in absolute terms. This grant-equivalent figure is much smaller than the face value of China's lending,[4] much of which is on market rates, and therefore non-concessional
- Turkey, UAE and India are the next largest non-DAC providers, with $8.6bn, $3.3bn and $2.0bn respectively[5]

We also look at FID as compared to GNI (figure 2A):

Figure 2A. FID as a share of gross national income 2017, (current $)



Note: Asterisk by country indicates that some information from a different year is used in calculation

[4] For our estimate of China's FID we rely on official sources, (cited in part by Kitano 2019), but we have undertaken a comparison with other sources (box 3), notably AidData (2017), who produce estimates to 2014. These suggest that our FID estimate for China could be up to 65 percent higher as a result of lending not included in official estimates. Still, AidData do not produce figures for 2017, and data on these additional loans are not published by China, so we have not included them. This higher figure would make China the sixth largest provider of FID (instead of the seventh largest according to our estimate), but it is still small (0.07%) as a share of GNI.

[5] For Saudi Arabia, we are aware that publicly available sources understate its international finance contributions and hope to update our estimates with new information as available.

Figure 2A provides FID as a share of gross national income. Note again that FID is different in coverage from, and generally lower than, ODA, with $25.9bn (table 9) under that measure excluded from the FID definition. ODA is the measure against the widely agreed UN target of developed countries providing 0.7 percent of national income in development assistance. In relation to FID, we find:

- Turkey was the only country to provide over 1 percent of its national income in 2017
- Luxembourg, Norway, UAE, Sweden, Denmark and the UK all provided over 0.5 percent
- China FID is just 0.04 percent of its national income, the lowest ratio among the BRICS countries
- The proportion of the economy provided as FID correlates strongly with income per head (figure 5, section 3) albeit with some notable outliers

Refining estimates and next steps

We have reached out to all countries covered by these estimates and would welcome feedback both on the method and on additional data sources. Overall, although there are some known gaps in the data, we think these estimates provide a good guide to the levels of Finance for International Development for almost all counties. We will be including FID as a share of GNI as our main measure of concessional development finance in our forthcoming Commitment to Development Index (CDI 2020), which will quantitatively assess leading economies' full policy efforts on development (including but not limited to development finance). We intend to pair FID with some measures of finance quality across both sets of providers.

We also hope to undertake further research to refine FID further, in particular by:

- Updating estimates based on more complete reports from provider countries, including forthcoming improved estimates of (annual) Chinese lending, and concessional lending from France, Germany, Italy and South Korea that does not qualify as ODA
- To better reflect the concessionally of loans by using more differentiated "discount rates" than those used in FID and ODA to better reflect recipients' market borrowing alternatives. These could be higher or lower than those now used in ODA calculations, depending on the market conditions in each country
- Adjusting estimates of technical cooperation for prices and wages – for example, $200k of technical cooperation would represent substantially more assistance if provided by India, where prices and wages are lower, than if provided by the US

FID measures only cross-border concessional finance. This funding is important and of particular policy interest, but there are also opportunities to measure a wider range of domestic funding activities that indirectly support international development, including those counted in ODA which we have excluded from FID. Similarly, the OECD's Total Official Support to Sustainable Development is a relevant and broader measure in development, albeit one not yet complete. There also remain open questions on the relevance to this discussion of fully commercial international official financial support, like export credits, especially in the context of debt sustainability concerns.

We welcome comments on our approach, and, of course, would be very keen to receive updated data and sources from provider countries.

Results Tables

Table 1. Finance for International Development, 2017 (current $ million)

	Grants (& other non-reimbursable)	**Loans** - grant element (& equity)	**Multilateral** - contributions to core	**Total FID**		**FID as % of total group GNI**
DAC countries (27)	73,475	10,290	41,535	125,300		0.26%
Non-DAC countries (13)	15,783	2,405	6,363	24,151		0.10%
TOTAL	**89,258**	**12,695**	**47,898**	**149,851**		**0.21%**
As a % of total group GNI	0.12%	0.02%	0.07%			
DAC %	82	81	87	**84**		
Non-DAC %	18	19	13	**16**		

Table 2. Finance for International Development, non-DAC members, 2017 (current $ million)

	Grants (& other non-reimbursable)	**Loans** & equity grant element	**Multilateral** - contributions to core	**Total FID**		**GNI (USD billion)**	**FID as % of GNI**
Argentina	26	0	390	**416**		626	0.07
Brazil*	606	0	821	**1,426**		2,016	0.07
Chile	6	0	108	**114**		266	0.04
China*	1,916	1,223	1,999	**5,138**		12,134	0.04
India	744	529	698	**1,971**		2,624	0.08
Indonesia*	15	0	166	**181**		982	0.02
Israel~	388	0	20	**408**		350	0.12
Mexico	26	0	344	**370**		1,129	0.03
Russia~	309	0	856	**1,165**		1,537	0.08
Saudi Arabia~	544	238	320	**1,103**		699	0.16
South Africa	24	13	348	**385**		339	0.11
Turkey~	8,400	0	170	**8,571**		842	1.02
UAE~	2,779	402	122	**3,303**		380	0.87
Non-DAC Total	**15,783**	**2,405**	**6,363**	**24,551**		23,923	0.10%
TOTAL (DAC and non-DAC)	**89,258**	**12,695**	**47,898**	**149,851**		71,416	**0.21%**

Notes: *indicates that some information from a different year is used in calculation. ~ indicates countries that report to the DAC but are not members. "ODA eligible but excluded" refers to development activities that we do not include in FID. For non-DAC providers, these figures are not comprehensive as ODA-eligible spend like refugee hosting/in-country research are not captured here.

Table 3. Finance for International Development, selected DAC countries,* 2017 (current $ million)

	Grants (& other non-reimbursable)	**Loans** - grant element (& equity)	**Multilateral** - contributions to core	**Total FID**		**GNI (USD billion)**	**FID as % of GNI**
Australia	2,064	0	624	**2,687**		1,294	0.21
Austria	256	13	651	**920**		414	0.22
Belgium	850	16	901	**1,767**		508	0.35
Canada	2,284	0	1,178	**3,462**		1,630	0.21
Czechia	49	0	224	**273**		203	0.13
Denmark	1,485	11	727	**2,223**		337	0.66
Finland	441	20	486	**947**		254	0.37
France	2,078	1,740	4,682	**8,499**		2,648	0.32
Germany	9,680	1,209	5,187	**16,075**		3,750	0.43
Greece	14	0	229	**243**		203	0.12
Hungary	10	0	109	**119**		136	0.09
Ireland	412	0	345	**758**		264	0.29
Italy	950	119	2,881	**3,950**		1,968	0.20
Japan	4,640	6,531	3,382	**14,553**		5,038	0.29
Korea	853	531	586	**1,970**		1,531	0.13
Luxembourg	279	0	120	**400**		41	0.97
Netherlands	2,297	0	1,425	**3,722**		838	0.44
New Zealand	259	0	79	**338**		195	0.17
Norway	2,708	0	998	**3,706**		416	0.89
Poland	146	10	457	**613**		505	0.12
Portugal	83	13	266	**362**		216	0.17
Slovakia	29	0	84	**113**		94	0.12
Spain	571	18	1,877	**2,466**		1,309	0.19

Sweden	2,761	47	1,736	**4,543**		549	0.83
Switzerland	1,813	0	808	**2,621**		688	0.38
UK	10,081	14	6,768	**16,862**		2,634	0.64
US	26,382	0	4,726	**31,108**		19,830	0.16
Total	**73,475**	10,290	**41,535**	125,300		47,492	0.26%

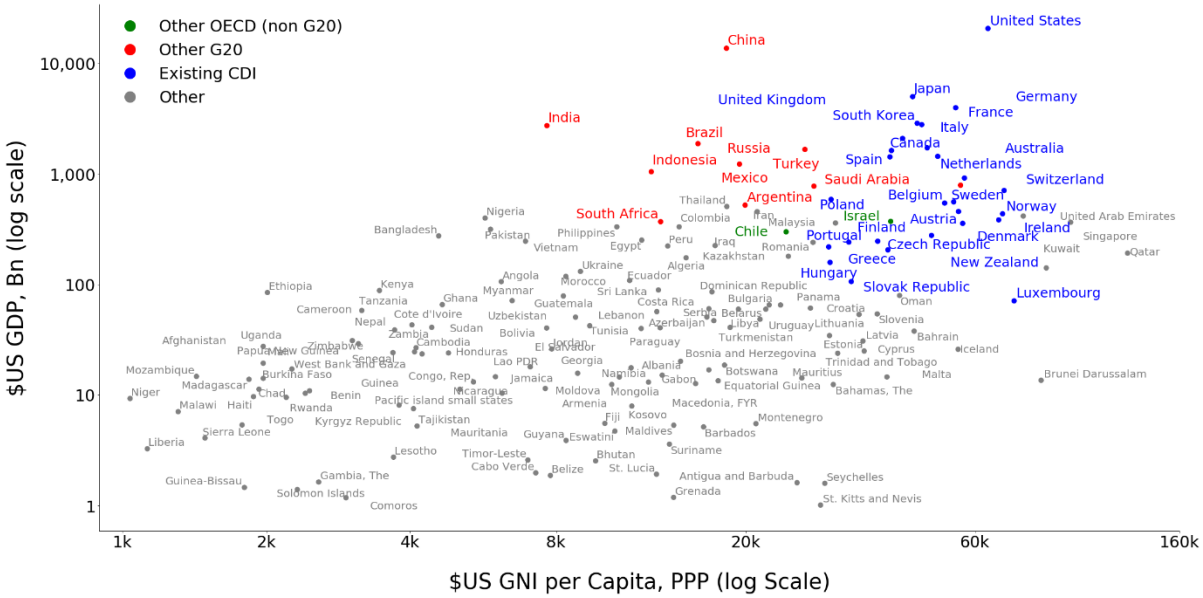
**Note:* This table includes DAC countries currently included in the Commitment to Development Index and so excludes Iceland and Slovenia

1. Introduction, Aims, and Structure

Scope. This paper suggests a revised framework to measure consistently the official international development finance provided by both advanced and emerging countries, including some that do not report to the OECD's Development Assistance Committee (DAC). We tentatively label this measure Finance for International Development (FID). We apply this framework to generate and review a provisional set of comparative results across this broader 40-country set. We draw on best-in-class available analyses by third-party researchers for non-reporting countries and contrast them with published estimates by both national official sources and the DAC.

We have focussed on 40 countries who are members of the G20 group or who are OECD members with GDP above $70bn.[6] These criteria arise from the planned coverage of the forthcoming Commitment to Development Index (CDI 2020) and correspond to economic importance and level of responsibility. G20 countries are the major economies and also have a role in global economic system which merits scrutiny of their development impact. We also include larger OECD members: all OECD countries have relatively high incomes (above $40k adjusting for prices) and responsibility for development rises with income and lower data collection costs enable us to cover most OECD countries. Still, we only include those with economies equal to or larger than the current CDI's smallest economy, Luxembourg (GDP of $70bn in 2018). In addition, we have included the United Arab Emirates (UAE) reflecting their economy size (bigger than some G20 countries), income levels (above most of the OECD) and their significant reported ODA (around £4bn in 2018).

Figure 1. Country economy size and income level (2018)



Note: G20 refers to those not within the existing CDI/ OECD. All current CDI countries are also OECD members.

Source: CGD analysis of World Bank World Development Indicators 2018.

[6] This definition excludes, by virtue of size, two countries which are members of the DAC, Iceland and Slovenia.

Background. International development finance definitions are in a state of flux, as actors, purposes and instruments continue to diversify. Terms like "aid," "donor" and "recipient" are rightly considered anachronisms, but alternatives often lack precision. The boundaries between private and public finance, as well as domestic versus cross-border funding and so-called concessional versus non-concessional terms, have become much more fluid, especially with the increased attention paid to global challenges like climate change, pandemic disease and forced migration. Considerable recent international effort has been spent probing "beyond-aid" concepts and definitions, with fresh technical proposals now before the UN Interagency Expert Group[7]. The Sustainable Development Goal (SDG) framework has likewise spurred the search for different terminology like "Global Public Investments"[8] to capture the essence of this broader spectrum of funding.

Our specific point of entry to this discussion was the need to update and expand the country coverage of the Commitment to Development Index (CDI, 2018) published regularly by the Center for Global Development including what we now term its Development Finance component. These assessments, which, paradoxically, mainly concern the *non*-financial policies of relatively advanced countries, had so far covered only "traditional provider" OECD Development Assessment Committee (DAC) members.[9]. Moreover, their main finance element hitherto related only to "aid" in the narrow sense of official development assistance (ODA), a constantly negotiated and amended construct shaped entirely by, and mainly intended for, DAC members. *We asked ourselves: how should we define a measure so as to allow a fair and balanced comparison with important national actors that are not members of, and/or choose not to report data to the DAC, such as Brazil, China and India?*

From this starting point a number of further challenges quickly emerged which we discuss below, the major ones being (a) the full inclusion of official concessional bilateral loans and (b) the case for excluding development-related public spending that occurs mostly or entirely within provider countries.

Aims. This search for a new or reconfigured measure therefore serves three interlinked aims:

1. To recognise different forms and sources of official development finance contributions in a reasonably comparable way, despite data limitations

2. To incentivise "non-traditional" providers of development finance to self-publish and have their distinctive contributions internationally recognised

3. To acknowledge and mitigate some major known limitations of established metrics like ODA

---

[7] Financing For Development: Progress And Prospects 2018
https://developmentfinance.un.org/sites/developmentfinance.un.org/files/Report_IATF_2018.pdf
[8] For example, see "Embracing global public investment can get financing for development back on track" by Jonathan Glennie, Harpinder Collacott
https://www.devex.com/news/opinion-embracing-global-public-investment-can-get-financing-for-development-back-on-track-95797
[9] The DAC Committee comprises 30 members and 7 participants http://www.oecd.org/dac/development-assistance-committee/

Structure. The *second* section of this paper sets out the proposed overall framework and introduces the three component parts of the new core measure, which we provisionally title Finance for International Development (FID). This is calculated on a grant-equivalent basis and consists only of cross-border flows. We explain how this counts the grant equivalent of official development loans, or their so-called concessional element. We also contrast this measure with the traditional ODA definition, as well as proposals submitted to the UN for an expanded aggregate measure, provisionally titled Total Official Support for sustainable Development (TOSSD).

The *third* section presents provisional summary results for FID across 40 provider countries, including 13 "new" actors, broken down into its 3 main elements, and discusses some preliminary emerging patterns. We relate FID to national income and identify major differences between these estimates and others in the public domain. We also show for all DAC members the total deductions from ODA made to reach FID. Country-by-country details are shown in Annex 1.

The *fourth* section identifies some 'known unknowns' for further research. First, there are *identified data gaps*, particularly for DAC loans which fall below the ODA threshold, and more granular information on non-DAC loans. The second area is to *re-value elements* of financial support to fully-account for the concessionality of loans, and the relative value of technical cooperation. The third area is to build up a better picture of *in-provider official spending* generating major development benefits. This goes far beyond those ODA elements we have excluded from FID. One could adopt broader definitions of, for example, R&D, security and refugee spending in advanced and emerging economies benefiting developing countries. Proposals in these "global challenges and development enablers" areas are already under consideration in the TOSSD project and could complement FID. The fourth major unresolved area concerns the treatment of (ostensibly) *"commercial" officially backed loans* - such as export credits - that generate no grant element using uniform discount rates, but might nonetheless be valuable for some countries without sufficient credit market access. Conversely, they could increase the risk of unsustainable debt burdens.

The *fifth* section concludes before further sections provide detail on the individual country estimates.

2. A New Core Development Finance Measure: "Finance for International Development" (FID)

Overall aim. This definition sets out to encapsulate, on a grant-equivalent basis, the core package of financial assistance which nations provide *officially and concessionally across borders* to support development. All three of these qualifiers need to be met: public-source financial support, consistently counted in grant or grant equivalent form, and reaching eligible partner countries.

This FID definition is therefore deliberately narrower than ODA in some key respects, notably in excluding all domestic spending in the provider country which currently scores as ODA, namely on: development-related R&D (when spent within the provider); in-country refugee spending; scholarships; aid administration; and promotion of development awareness. There are two complementary reasons for this "cross-border" restriction. First, one of principle, in that such expenditure (Action Aid, 2011, among other critiques) is sometimes of debatable benefit to developing countries directly, as distinct from supporting provider country institutions, and/or developing country individuals temporarily located in the provider. And second, one of practicality: with some exceptions (notably some scholarship and training programmes) such activities are not

delivered or funded by, nor even systematically reported to, the outward-facing development cooperation agencies in non-DAC countries, so the corresponding data is almost entirely lacking.

It also takes a slightly broader approach to calculating the grant element of bilateral loans, as discussed below. The main difference with ODA is that FID does not set any arbitrary minimum threshold for the percentage grant element, below which loans fail to qualify.

Main components. The core FID aggregate consists of the three main complementary tracks of official grant-like financial support between advanced and emerging country providers and developing country destinations. The first two are the main forms of direct cross-border bilateral flows and the third works through multilateral intermediaries.

1. **Bilateral grants to developing countries**

2. **The grant element of bilateral loans for development**

3. **Financial contributions (grants, equity) to multilateral development organisations**

We now review each one of these in more detail.

Track 1. Bilateral grants to developing countries. This track is similar to the Country Programmable Aid (CPA) measure developed a decade ago for analytical purposes by the DAC (Benn et al. 2010). Both exclude some development-related expenditures occurring within the provider's territory that by accounting convention are scored as ODA, but do not represent cross-border financial flows. The largest three such exclusions concern domestic public spending on: *refugees*; *scholarships* and professional training for developing country nationals; and *development-related R&D*. We discuss these further in Section 4.

For most provider countries which do not report to the DAC, national development assistance statistics, usually the responsibility of the outward-facing cooperation agency or department, do not typically identify such spends, which usually feature only under the parallel budgets of other government departments. A partial exception is "in-bound" scholarship and training costs, which are significant and transparent components of the foreign assistance programme for India, for example. Where we found such elements, we excluded them from the core bilateral grants measure.

Our bilateral grant measure does however include humanitarian aid, which is almost by definition non-programmable, so not included in CPA, but a valuable cross-border grant flow nonetheless. It also excludes the grant-equivalent of bilateral loans, as this is counted under Track 2 discussed below.

We also included in this track the capital, recorded by providers on a grant basis, provided to bilateral development finance institutions (DFI), like the UK's CDC or the French Proparco, enabling subsequent investments by the DFI in developing countries. This is one of the two ways official equity stakes in developing country private entities can be recorded as ODA, the alternative being to count directly the net

value (purchases minus sales) of equity investments by the DFI in each period.[10] We record this latter metric in track 2 as it has some similarities with loans, involving as it does a charge (i.e., dividend).

Track 2. The grant element of bilateral loans. Official loans for development present the opportunity of "leveraging" public subsidies to, and equity stakes in, lending institutions many times over. By the same token, the face value of a loan is not an accurate representation of its true cost to the provider, unlike the case of a pure grant. To estimate this value, one needs detailed information on loan maturities, interest rates, and country risk of non-repayment, or at least approximate risk category. The "concessional" element of the loan can then be determined by comparing the required stream of repayments with a notional one calculated at some "market reference" interest rate -the closer to market terms the required stream is, the lower the concessional element.

This difference can then be discounted back and expressed as an absolute net present value, or *grant equivalent (GEq),* and as a percentage of the original face value of the loan, termed a *grant element (GE)*. By definition, once a given portion is scored as a grant in this way, the rest represents a loan on fully commercial terms, which as such should not therefore count as FID at all. (We discuss later the special case of countries with virtually no financial market access, hence an exceptionally high implied discount rate, for whom official loans even on "fully commercial" terms may represent a valuable resource).

We broadly follow the recently revised DAC methodology for scoring loan grant elements , but without applying minimum thresholds (Box 1). The DAC uses three minimum grant element levels (10 percent for upper-middle-income countries, 15 percent for low-middle-income and 45 percent for low-income and least developed). Loans not meeting these tests will not count as ODA. Any threshold-based system tends to generate perverse cliff-edge effects. Grant equivalents of 46 percent for the poorest countries score in full, whereas those at 44 percent fail to score at all, thereby also providing incentives to game the system. We therefore decided to score the entire grant equivalent, at the same discount rates used by the DAC, whether above or below the relevant cut-off level. This presents a problem in that the terms are generally not available for loans recorded as Other Official Flows for DAC countries (those with a concessional element too small to be counted oas ODA. France provided us with the information we needed to calculate the grant equivalent for these loans, Germany provided partial data, but other countries were unable to do so. We explore the potential difference this could make to FID estimates in Box 4.

Finally, this component also includes relatively small amounts of bilateral equity investments, where these can be identified at the cross-border level, as discussed above.

[10] There are problems with the latter metric (not least the paradox that the more successful the investment, the larger the negative ODA upon its disposal), and it is not large for most providers, especially non-DAC.

Box 1. Measuring the concessionality of loans (DAC and "qualifying thresholds")

The treatment of official loans in measuring development finance is a complex and politically sensitive matter, not least given recent research findings (Horn, Reinhart, Trebesch 2019) that China is now as large an official creditor of developing countries as the rest of the world's governments combined, and that its lending is overwhelmingly on fully commercial and secured terms.

The second complication (*Scott, 2019*) is that the DAC has recently radically modified its own scoring approach to concessional lending. In essence, this has involved a change from counting, and netting out, the face value flows of loan disbursements and subsequent repayments as they occur, to counting only their discounted net present value (grant equivalent) on entry. This is done using discount rates that are intended to factor in the higher risk of non-repayment for some country groups[1].

Both the past and the current DAC method are also subject to *qualifying threshold* levels of the minimum grant element (GE) which makes a loan eligible for ODA. The DAC's new system has three different GE thresholds – 45 percent for least developed and low-income countries, 15 percent for low-middle income and 10 percent for upper-middle-income – and as well as different discount rates(9 percent, 7 percent and 6 percent) applied to the same three country income groups, in both cases higher for lower-income countries and vice versa. (Country income group is effectively used here as a proxy for the differential risk of non-repayment, above a universal market reference rate currently set at 5 percent.)[11]

This complex set of shifts does not allow, as Scott and others (op. cit.) have pointed out, a consistent time series of ODA provided in loan form. It will also mean that some large historical creditor countries like Japan, Germany and France will see their ODA numbers artificially boosted in the short and medium term as a result of loan repayments on earlier loans no longer being netted out. Finally, we do not know which, if any, loans DAC-reporting countries are making that fail to meet these qualifying thresholds, but nonetheless contain a significant grant element- as there is no strong incentive for these to be reported. The face value of such loans is ostensibly counted as OOF, but it is not clear that OOF reporting is comprehensive, and there is not sufficient information to calculate the grant element for these loans. (We have requested this information from key DAC donors, but many were unable to provide us with this information. We explore this issue in greater depth in Box 4).

The IMF uses a somewhat different test for the minimum threshold level of concessionality of borrowings in the case of countries with active IMF programmes and significant debt sustainability risk. This threshold is a minimum GE of 35 percent after discounting using the IMF Standard Reference Rate, currently 5 percent. This is a harder bar to pass, even for low-income countries, than the DAC's (45 percent GE at 9 percent rate). The DAC's thresholds for low-middle-income countries (15 percent GE at 7 percent rate) and upper-middle-income (10 percent at 6 percent rate) are likewise easier. The IMF definition has also been taken up by the TOSSD Task Force, see Box 2 below.

For our purpose, which is not focussed on improving debt sustainability discipline, rather on comparing support levels across different lenders, any threshold-based system tends to generate perverse cliff-edge effects. Grant equivalents just above some arbitrary cut-off line score in full, whereas those just below fail to score at all, thereby

[11] In the CRS data we use there are small amount of loans to "MADCTs" (more advanced developing countries) and "Part I: unallocated by income". In the former case, these are countries about to graduate from ODA and so it makes sense to use the strictest discount rate (6%). In the latter, we choose to use the most conservative assumption (6%). Hence, these are both included as UMICs.

also providing incentives to game the system. We therefore decided to combine wherever possible the GEq of both "qualifying" and "non-qualifying" loans, i.e., not to apply any minimum GE threshold to non-DAC lenders. For DAC countries, the total GEq is split notionally into two lines, one for qualifying and one for non-qualifying loans (with a zero return, initially, for the latter, but scope for inclusion later).

For some non-DAC lenders, the specific country-income destination and loan terms breakdown is as yet unknown. However as Annex 1 shows, in the case of China, easily the largest lender in absolute terms, we have been able to model a reasonably narrow range of likely aggregate grant equivalents, based on repeated sampling of different lending terms and country income categories, within ranges for interest rates taken from Horn, Reinhart, Trebesch (2019) and others.

The inclusion of loans with grant elements under the threshold makes little difference to overall FID. For non-DAC countries there are three that report loans: China, India and South Africa. In the case of India, the terms are sufficiently generous that there are no loans that fall under the threshold (according to Lines of Credit Guidelines from the EXIM bank). For South Africa, none of the loans exceed the threshold, but the total value is small; the face value of developmental loans from South Africa we estimate as USD 191 million, but the grant equivalent as only USD 13 million. For China, the difference is larger, if still not large in the context of overall FID. Our central estimate for China's figure would decrease by USD 139 million if we didn't include loans that we estimate to be under the threshold. However, the sensitivity of China's estimate to our assumptions increases sharply (see Annex 1 for more detail). For DAC countries (and those reporting to the DAC), the incentives to provide these loans are limited, and we essentially assume that none are recorded (see section 4.1 on data gaps which illustrates for even the two largest providers this seems likely to be well under $1bn). Exceptions to this are France, who supplied enough information for us to calculate the grant element of their OOF loans, and Germany, who supplied information on a small quantity of public sector OOF loans.

Track 3. Contributions to multilateral organisations. Advanced and emerging countries' core contributions to (development-related) multilaterals are identified via information routinely published by the relevant multilateral agencies themselves. Note that this "core" definition excludes trust funds that bilateral providers earmark for specific countries and/or sectors, often referred to as "trust funds." These, following ODA convention, are scored as bilateral grants (our first component of FID) even if implemented by the relevant multilateral following an agreement with the funder.

To measure multilateral contributions for DAC providers we continue to use core multilateral tables (DAC table 1); we follow ODA in regarding funds channelled through a multilateral for a specific purpose ("multi-bi") as bilateral, and this is recorded under bilateral grants. For non-DAC providers, we analyse UN system financial data, and the annual reports of the 15 largest multilaterals in terms of ODA provided, following the methodology of McArthur and Rasmussen (2017).[12] We supplement this with additional multilaterals that we know are important for non-DAC providers. While this omits some multilateral contributions, they are not significant (see Annex 2 for full discussion). We investigated some apparent discrepancies across these sources, which mainly concern the newest multilateral banks, and report our findings in Section 3 below. As the information on capital contributions is usually reported in stock (cumulative) form, the annual flow values usually require calculating the difference between the two relevant reporting periods.

[12] However, multilaterals that have not received contributions during 2017 from non-DAC providers (such as EBRD) are not listed.

The standard multilateral ODA definition, which we retain for this Track 3, counts such grant or equity contributions as they leave the governments providing them, *not* as they eventually reach the destination country. Such outflows often occur after the multilateral organisation has blended the member/provider grant streams with other, often much larger sources, such as the proceeds of their own market borrowings and repayments of past loans, in the case of the multilateral banks (MDB).[13]

The "inflow" (core multilateral contributions by members/shareholders) view is simpler to obtain than any alternative methods based on reported multilateral disbursements and some national ownership key such as shareholdings. It also avoids some of the above-mentioned inherent distortions across types of agencies, whereby national contributions to leveraged institutions would otherwise count for much more than those to others. [14]

[13] Conversely, for many agencies of the UN system in particular, contributions received from members are partly used up in providing upstream in-kind services (such as supplying norms and standards) to the collective, so are not fully available for onward transfer to individual developing countries. In the specific case of some UN agencies and Latin American emerging providers, spending is identified by UN agencies for the earmarked purpose of funding programmes in the "provider" country itself, so we have netted these out from the provider's multilateral total.

[14] However, it has some disadvantages, for example in not recognising that equity stakes can have a much larger indirect mobilising effect than pure grants passed through as such. This is not a trivial difference, when considering, say, China's recent contributions to the new MDB of which they are one of the, if not the single largest equity contributor(s).

3. Country FID Results

This section presents provisional estimates for total FID, for 40 countries, including 27 that are part of the DAC, 5 which are not, but report their data to the DAC, and 8 which are in neither category. These results are based on the best available official data, but we hope to revise them in the light of further information following discussions with national development agencies. In particular, there are some gaps that we are already aware of, such the Argentine Fund for South-South Cooperation, that is developmental in purpose, but for which we have not found reported figures.

Box 2. FID compared to TOSSD

The proposals by the recent OECD and UN-supported International Task Force on *Total Official Support for Sustainable Development* (TOSSD) are much broader than either ODA or FID, but in some respects complementary to the latter.

TOSSD has two pillars, one on cross-border finance flows and another capturing official support to global and regional challenges. The former includes private sector flows directly mobilised by official support (such as guarantees), and measures loans at face value, with a binary concessional/non concessional classification based on the IMF test (of a minimum 35 percent grant element at a 5 percent reference interest rate, see Box 1). Flows are also measured at the point of delivery to countries, meaning that outflows from multilaterals, whether core or earmarked, are reported, rather than inflows from their members as in the case of FID and ODA (FID and ODA also view capital contributions to national DFIs as bilateral grants, but allow the alternative of scoring cross-border net equity purchases, as discussed above).

The second pillar includes "global challenges and development enablers" like R&D, peace and security, climate change and refugee support. It is therefore similar in intent to the in-provider spending we have stripped out of ODA to reach FID, but TOSSD includes them on a much broader basis than ODA allows. So, for example, as mentioned earlier, the scope of "development-relevant" R&D is potentially broader, the coverage of refugee costs longer and the share of peacekeeping costs larger than in the respective ODA definitions.

Our preliminary assessment is that Pillar 2 (Global and Regional Challenges and Development Enablers) of TOSSD could be a good complement, once approved, for FID, which does not cover these areas at all. However, we find some TOSSD Pillar 1 (cross-border finance) definitions more problematic, for example in deciding to count official loans, and even private finance "directly" mobilised by public support, at face value, regardless of their grant element. This means that different components of TOSSD are effectively being measured in different "currencies" and cannot be easily aggregated into a meaningful overall total.

More fundamentally, TOSSD is primarily focussed on sustainable development using a destination country lens, whereas both ODA and FID deliberately take a "provider view," the latter in the context of assessments of advanced and emerging country performance like the CDI. It is relatively difficult to imagine a single and straightforward set of metrics performing both tasks credibly and simultaneously.

Given the similarity to ODA, the ranking among DAC countries should not come as a great surprise, though there are differences for a handful of countries, led by Germany whose ODA is disproportionately directed towards in-provider costs (with ODA spend of USD 6 billion on in-donor refugee costs in 2017, a figure

likely to decline in subsequent years given that only one year of refugee costs can be counted). Moreover, in isolating the grant base of the loan component (Table 3) we also see that loans are a major FID factor for three large and one medium-size DAC countries: Japan, France, Germany and Korea, in declining order.

In absolute terms, (Figure 2) the US's FID is nearly twice the size of that of the next largest country. Germany - the second largest country in ODA terms - is also the country with the largest difference between FID and ODA, and as a result is overtaken by the UK in terms of FID.

The FID estimates for most DAC countries do not include any lending with a grant element falling below the DAC qualifying thresholds. As noted in the previous section, because such loans do not qualify as ODA, they may not be reported to the DAC, to the extent they exist at all. We have approached both the DAC and these providers to request any further information on non-qualifying loans. However, France has sent us enough information to calculate the grant element of their portfolio, and we therefore include this additional spend (this increases their FID by USD 126 million). Germany provided us with information on loans to the public sector, but this do not make a material difference to Germany's FID (around USD 3 million). Other countries were unable to provide us with any information.

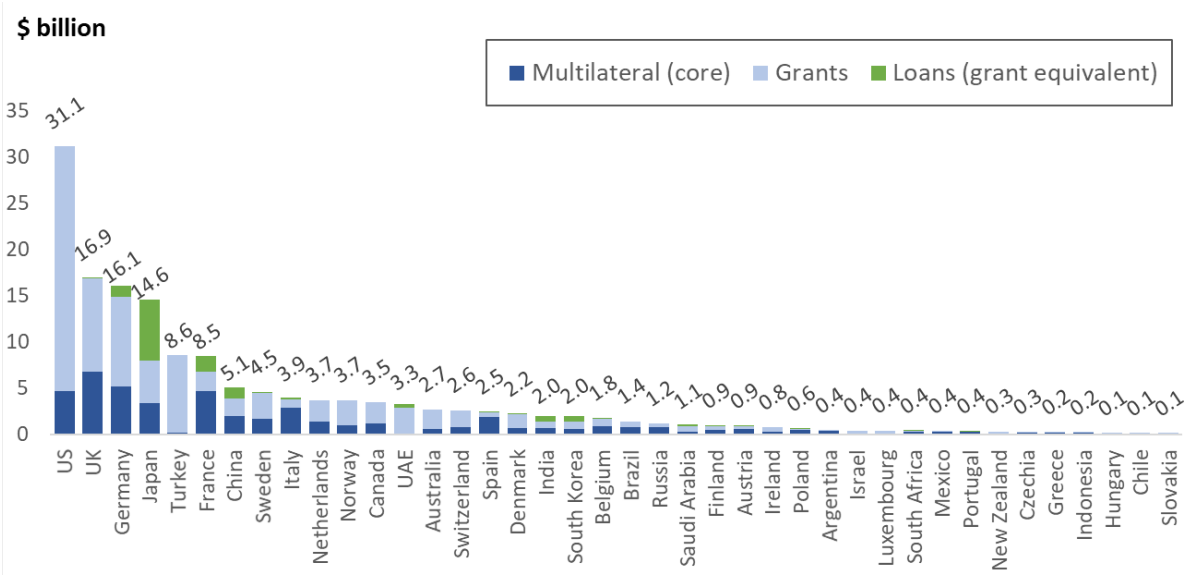
Three non-DAC countries stand out on this measure. Turkey, ranked 6th in absolute terms, is notable both for being the largest non-DAC contributor (USD 8.6 billion) and for channelling the smallest percentage through the international system (with only 2 percent of FID going to multilateral core funding). The vast majority of Turkey's FID is for relief projects in Syria, a particular concern for Turkey given their shared border. This also makes Turkey easily the world's largest humanitarian donor measured by share of GNI. (There is a potential concern that some of this spending might not actually be cross-border and so shouldn't be counted in FID; see Annex 1 for a discussion.)

China is the second largest non-DAC contributor in absolute terms. At USD 5.1 billion, this FID level may be smaller than expected given their enormous loan portfolio and the increasing media attention to China as a very important player in international finance and development. However, evidence from Horn et al (2019, see Box 3) and others suggests that the vast majority of this portfolio is on commercial terms, and therefore is not included in FID. (Even ostensibly non-concessional terms may still constitute a valuable contribution to national investments, especially for non-creditworthy countries, but also give rise to concerns over debt sustainability, a point which we explore in Section 4 below.) We compare our estimate to those from other sources in Annex 1 in the section on China.

The next largest non-DAC contributor is UAE (USD 3.3 billion). They are mainly involved in projects in the Middle-East (apart from a sizable portion spent in the Western Balkans, see e.g. Bartlett et al. 2017 for more information). After that, most non-DAC countries' contributions are relatively small in absolute terms, with only India, Russia, Saudi Arabia and Brazil passing the USD $1 billion mark.

India, China, Saudi Arabia and UAE , in declining order, also have a significant share of FID (between a quarter and an eighth) delivered in loan form, though their proportion of loan grant equivalents in FID is not nearly as high as Japan's (45 percent).

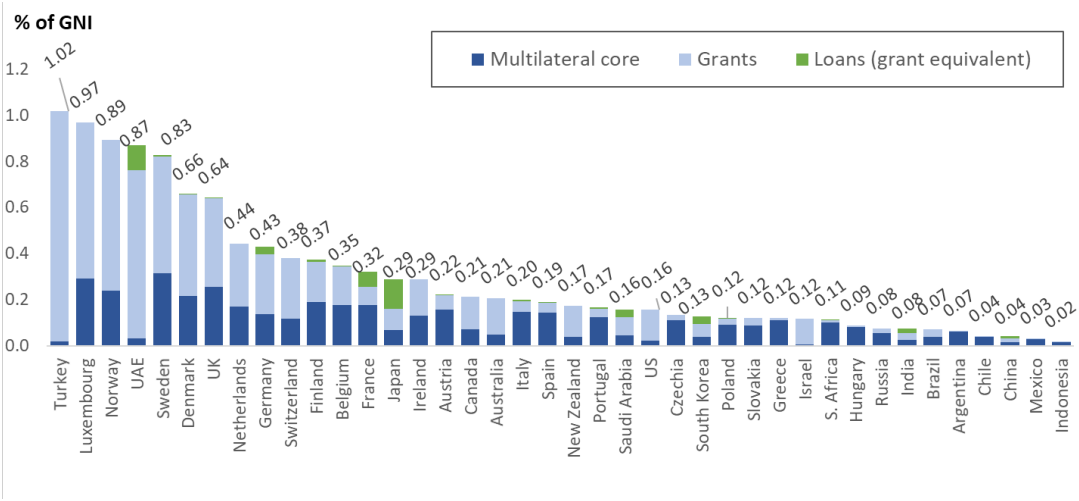
Figure 2. FID by country in 2017, absolute terms (current $)



Note: Asterisk by country indicates that some information from a different year is used in calculation.

FID as a share of national income (GNI). When FID is measured as a percentage of GNI, a different picture emerges. Turkey is the largest proportional contributor, and the only country to give FID worth more than 1 percent of their GNI. Norway and Luxembourg are the next largest, followed by the UAE, the only other non-DAC country to give a substantial proportion of GNI as FID. The other non-DAC countries all form the tail end of this distribution (unsurprising given their lower income-per-capita on average, as explored below).

Figure 3. FID as a share of current national income 2017, (%)



Note: Asterisk by country indicates that some information from a different year is used in calculation.

Box 3. Comparing different sources for China

Our estimate of FID for China is USD5.1bn, of which loans contributes just $1.2bn. This figure is the grant-equivalent of international concessional finance for development in 2017 - and is clearly a very different order of magnitude to its total lending, which has been estimated at over $400bn (Horn et al. 2019). We can roughly reconcile these two figures as follows. If the $400bn was lent evenly over twenty years, we might expect the annual flow to be $20bn. Only a fraction of that - around a sixth - is concessional, so, some $3bn. That figure is reduced again to about 30-40 percent to get the grant equivalent.

It is also worth comparing our estimates to that of AidData (AidData 2017), a research project at William and Mary university that has attempted to estimate China's official finance flows by triangulating among several sources (including official documents of recipients and news reports, following their "TUFF" methodology). Estimates from AidData are only available up to 2014, but to assess how their estimates for 2017 might differ we compare the 2014 data with the figures reported for the same year from (Kitano 2019).

Kitano's estimate of the face value of concessional loans was USD 2.6 billion for 2014. In this estimate, Kitano only considers loans from EXIM bank, and sources the data from the "Almanac of China's Finance and Banking 2011-2015". The reason for this specific focus on EXIM is that they are the "designated institution to implement the Chinese Government Concessional Loan" programme (p.49)[15]: the only institution with a formal mandate for soft lending. In practice there are other institutions that perform concessional lending and the grant equivalent of these loans should be included, but we don't have sufficient information. However, given that concessional lending is not part of their mandate the terms on these loans are likely to be harder Morris, Parks and Gardner (2020) estimate that the grant element was under 1 percent on loans from the China Development Bank for example, which is the other main lending institution)

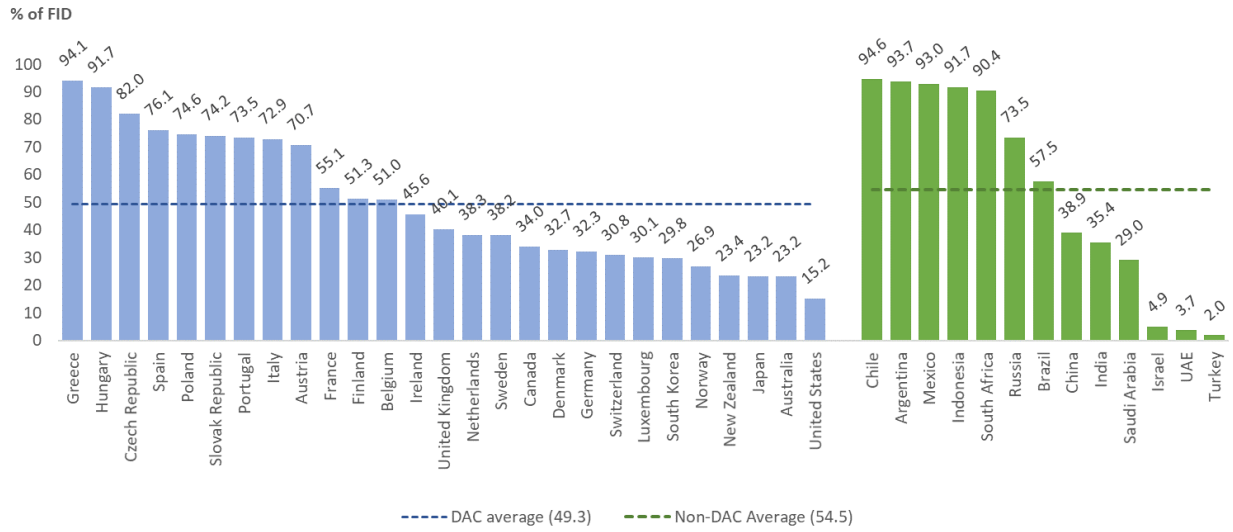
[15] The "concessional loan" programme is specific programme and therefore does not necessarily include all loans with a concessional element. But comparisons with the China 2014 Foreign Aid White Paper suggest that this is what China counts foreign aid, so combined with the fact that EXIM is the only bank with a formal concessional loan mandate we feel justified in narrowing our focus to this instrument.

and so even if the face value is high, the low grant equivalent is likely to mean we are not dramatically understating Chinese FID by omitting loans from other institutions[16]. Using the terms when available and this average when not, the grant equivalent of loans from other institutions in 2014 came to under USD 70 million, small in the context of China's total FID.

To compare with AidData we therefore focus on EXIM Bank loans in 2014 (excluding export credits, which are listed separately in both sources and not included in FID). We consider only those loans that are flagged in the dataset as "recommended for research". This gives an estimate of concessional loans from EXIM Bank in 2014 of USD 11.6 billion, considerably above the Kitano estimate of USD 2.6 billion. However, lots of these entries have no information on interest rates charged (or other loan terms) and therefore it is impossible to assess the degree of the concessionality, if any. These loans account for around USD 8.1 billion, so excluding them gives a figure of USD 3.4 billion, more in line with Kitano's estimate. Given that the latter aims to measure disbursements, whereas AidData measures commitments as measured by a range of sources, this difference is less troubling.

However, the presence of USD 8.1 billion of loans from EXIM bank with no interest rate information in 2014 highlights the uncertainty of our China estimate: if the figure in 2017 is similar and even a small proportion is concessional, this could significantly increase our estimate of China's FID. As an illustration, if in 2017 there is another USD 8.1 billion not included in our estimate, and the grant element is equal to that on the portfolio we are including, then China's FID would increase from USD 5.1 billion to USD 8.4 billion (65 percent higher).

Figure 4a. Core multilateral contributions as a share of FID, 2017, (%)

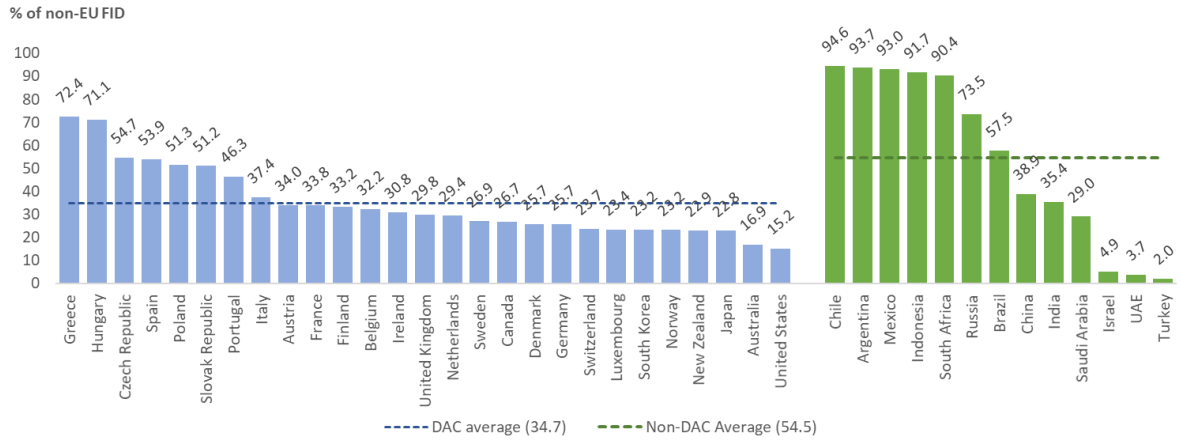


Note: Asterisk by country indicates that some information from a different year is used in calculation.

[16] There may also be some overlap between the loans recorded form other departments/institutions, and the figure for "Foreign Aid" we take (following Kitano 2019) from the Ministry of Finance Central Government Budget.

Multilateral shares. Figure 4a shows the multilateral shares of FID for both DAC members (blue) and non-members (green). Both groups have an average share of around 50 percent, but with very large variations. Much of the variation in the DAC multilateral share comes from the importance of (effectively non-discretionary) EU contributions. The share of FID accounted for by these contributions is as high as 79 percent for Greece, and 71 percent for Hungary, and in such cases the large multilateral share is more a reflection of small bilateral cooperation programmes. In total, for members of the EU (as of 2017 – UK still included) EU contributions accounted for 48 percent of multilateral FID, and 21 percent of total FID. Figure 4b shows the percent of FID accounted for by core multilateral contributions when EU contributions are excluded (i.e. removed from both numerator and denominator). The ranking of countries is similar, but the average for DAC countries falls to 34 percent. Several countries, in both groups, have extremely limited bilateral cooperation programmes, but two of the largest three non-DAC providers, along with the US, have the reverse-extremely limited multilateral shares. Conversely, Turkey and UAE have much lower multilateral shares of FID, and this asymmetry is sufficient to drag down the overall multilateral share for these non-DAC countries well below that of the DAC (Table 1).

Figure 4b. Core multilateral contributions as % of non-EU FID



Note: EU contributions are excluded from both numerator and denominator, i.e., for EU countries this is percentage of non-EU FID.

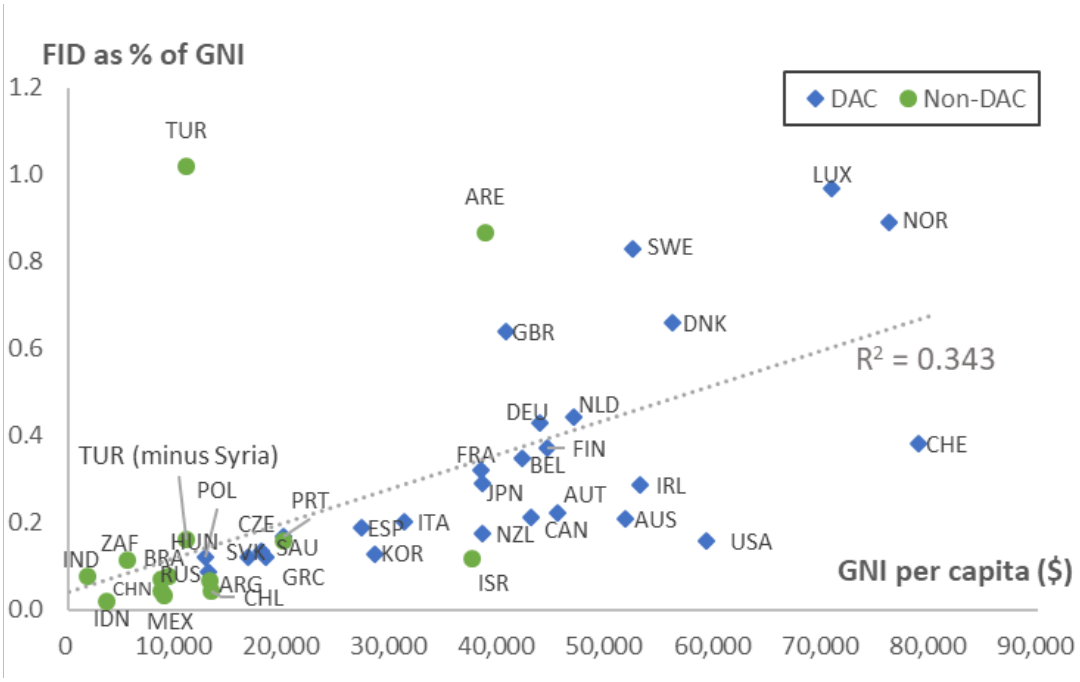
How FID varies with per capita income

Figure 5 plots the share of FID against per capita income for non-DAC (green) and DAC (blue) countries. This shows, as one might expect, that FID broadly tends to rise as a share of GNI for countries with higher per capita income terms.

Most "emerging" economies and recent DAC members cluster below a ratio of 0.2 percent and per capita incomes of $25k or less (not adjusted for PPP terms). The clear exception in this range is Turkey, at over 1.0 percent. Well below the trend line we see, again not unexpectedly, the US (with roughly the same FID "generosity" as Poland, but four times its per capita income), and Israel. Switzerland (the latter also

characterised by high refugee spending) sits barely above France in effort terms, despite having twice the latter's per capita income at market exchange rates. Far above the line, we find the elite "0.7 percent club," minus Germany and the Netherlands that on the FID measure score broadly in line with trend, of the UK, three Scandinavian countries and Luxembourg, but also UAE, well-above all other countries in its income class.

Figure 5a. FID as a share of GNI compared to income per head, 2017 (current $)



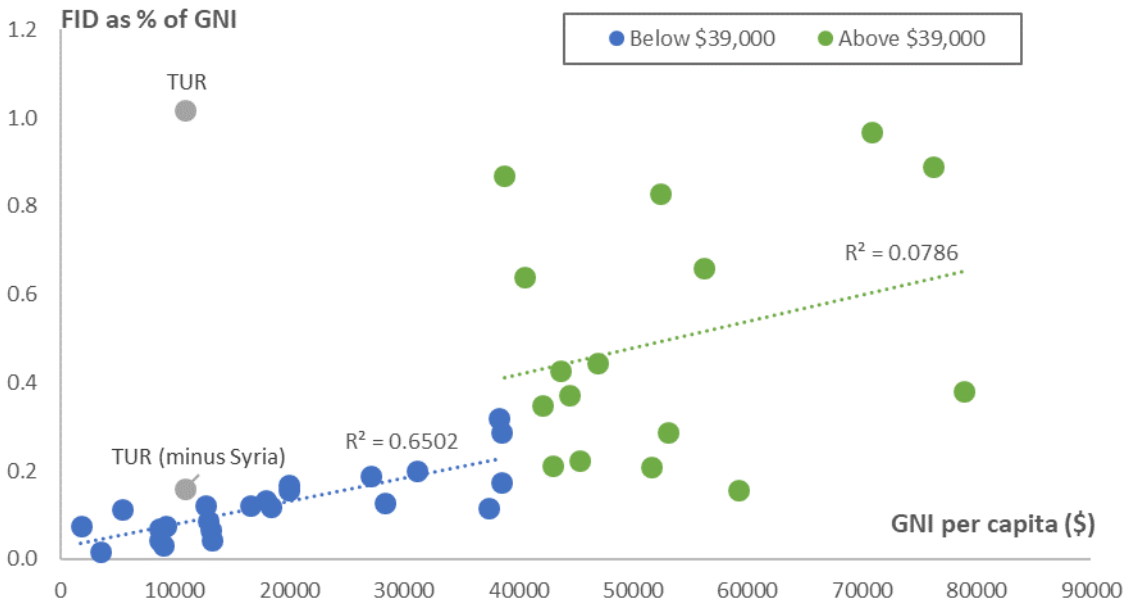
Notes: Data labels are ISO3 country codes.

Sources: World Bank Development Indicators, author's own calculations.

The strength and nature of this relationship varies according to income. Dividing the countries into a low- and high-income group and excluding Turkey, a clear outlier, reveals that there is a strong, linear relationship between income and FID as a proportion of GNI up until countries reach an income level of around USD 39,000, above which there is essentially no relationship between the two.[17] (Interestingly if Turkey is included but with its Syria spend subtracted, then it is very close to the line). Based on this purely statistical relationship (when Turkey is omitted) we might expect that as countries increase their income by USD 10,000, their FID would increase by 0.05 percentage points of GNI.

[17] Income level of USD 39,000 was found by the following test: a dummy variable was created equal to zero below the income threshold and 1 above, and interacted with the slope coefficient, and regressions of FID as % of GNI on income were ran for incremental increases in the threshold. USD 39,000 maximised the R^2.

Figure 5b. FID as a share of GNI compared to income per head, 2017 (current $)



Notes: Line for lower income group has been fitted without Turkey. R^2 including Turkey is 0.0310, i.e. there is essentially no relationship with Turkey included.

Source: World Bank Development Indicators, author's own calculations.

Finally, it is interesting to note that the relationship is slightly stronger when the EU contributions is subtracted from EU countries. The logic for this analysis is that these contributions are not entirely voluntary, and therefore not necessarily reflective of choices that countries would make if not members (although of course all countries have at least some say in EU allocations).

4. Unfinished Business: "Known Unknowns" and the Research Agenda Related to FID

We suggest that the agenda for further work on financial support for development falls into four broad categories:

1. Narrowing identified data gaps, principally related to greater transparency on official loan terms and destinations as well as technical cooperation

2. Re-valuing elements of finance for development to fully-account for the concessionality of loans, and the real value of technical cooperation

3. Defining the basket of in-provider grant spending that should legitimately count toward a broader, beyond-FID development cooperation aggregate

4. Deciding whether and how to recognise the development value of official loans made on fully "commercial" terms, such as export credits

1. Identified data gaps

Concerning concessional loans, there are two major known grey areas. First, for some non-DAC countries, there is the well-known lack of transparency on loan terms and country destinations, as reported extensively by Horn, Reinhart, Trebesch (2019) and others (mainly for China). Part of this lack of information is structural, as the main funding relationship can often be between banks and contractors based within the provider country, initially bypassing the ultimate sovereign borrower, and thus not reported systematically to international monitoring authorities (Horn et al, 2019, citing also Brautigam and Wang, 2016).

We have been able to work around this to some extent for China by considering estimates of the average loan terms over portfolios of different types of loan, and checking the robustness of these estimates using statistical sampling techniques (see Annex 1). However, we are aware that the large stock of outstanding loans described as "commercial", and excluded from our calculations, may in fact include some with a grant element. We also rely on Lauria and Fumagilli (2019) who report that most non-DAC countries do not use concessional loans as a development instrument (this is debatable for South Africa, who lend at terms not concessional enough to be counted as ODA, but nevertheless do have a Development bank that makes loans at interest rates below the DAC standard discount rates).

The second information gap concerns DAC concessional loans that do not meet the relevant concessionality threshold (10-15-45 percent GE). As such they do not count as ODA and instead are recorded as Other Official Flows (OOF). We have consulted DAC members regarding this lending and understand that France, Germany, Italy and South Korea have such loans in their portfolio and are liaising with the OECD on identifying the relevant amounts. We know that generally, these are relatively small amounts as even the entire OOF for these countries is small (although OOF reporting is not necessarily comprehensive).[18] However, Japan and South Korea are possibly exceptions. In 2017 they extended long-term loans counted under OOF worth USD 3.7 billion and USD 6.6 billion respectively. Even a small average grant element for these portfolios would make a material difference to their FID: for example, a 5 percent average grant element would increase Japan's FID by USD 185 million and South Korea's by USD 328 million (DAC table 2b). As noted above in Box 2, the difference that including loans under threshold makes to our central estimate for non-DAC countries is small.

A third data gap relates to multilaterals, where for expediency we did not incorporate contributions to some of the smaller multi-laterals (see Annex 2). Ideally, these would be incorporated.

[18] One caveat to this is that there are a number of loans reported to the CRS (and are included in ODA) that appear not to meet the thresholds, when one compares their face value disbursements and grant equivalents as reported in the same CRS file. It is not clear if these are simply reporting errors, or if there are additional terms relevant to the calculation that have not been included (such as charges forgiven).

Box 4. How much OOF are we missing?

One limitation of our estimates is that we do not include the full grant equivalent of loans currently counted under OOF, other than for France. This could be significant, especially for South Korea and Japan, who in 2017 reported to the DAC disbursing (gross) OOF loans to a cash value of USD 6.6 billion and USD 3.7 billion respectively. However, most countries do not publish sufficient information about these loans for us to calculate their grant equivalent.

In course of this research we contacted each country to try and obtain this information. France was able to provide this information, and Germany provided us with enough information to calculate the grant equivalent for public sector loans recorded under OOF, but not private sector loans. Although we cannot include the grant equivalent of loans with unknown lending terms (we don't even have average terms across portfolios as we do for China) this box explores the magnitude that this omission could make to our estimates.

To give an illustration of the maximum potential level of missing OOF in our FID definition, we use the available CRS data to calculate a grant equivalent of the lending on the assumption that it falls just below the minimum grant thresholds for ODA eligibility (ie 45% for LDCs/LICs, 15% for LMICs and 10% for UMICs),

This estimate[19] is complicated slightly by the fact that the OOF reported to in the CRS dataset does not specify whether the loan is to the public or private sector. The method of judging whether it counts as OOF or ODA is different in each case: public sector loans count as ODA if they have grant elements above the new thresholds, as above, whereas private sector loans are recorded as per the old method (loans with a grant element above 25% at a fixed discount rate of 10% are counted as ODA at full face value). Whereas public sector loans use the same discount rates as we do for FID, private sector loans do not and so we cannot simply take 25% as the upper bound for their grant element.

We therefore "reverse engineer" what private loan terms are consistent with this (older) ODA 25% threshold. From these loan terms, we calculate what the grant element would be under the set of discount rates we use for all of FID (9%, 7% and 6% respectively for LDCs/LICs, LMICs and UMICs). To limit the number of parameters, we assume that each loan is repaid via an equal principal payments structure and that repayments are made semi-annually (this is by far the most common structure). We then apply the higher of the two grant equivalent threshold sets (public and private sector) to the aggregate OOF disbursement set, disaggregated by income group.

The results of this exercise are presented in the third column of table 4. The highest grant elements possible for private sector loans not already reported as ODA are 23% for LDCs/LICs, 18% for LMICs and 16% for UMICs under the new method.

We emphasise this is **not** an attempt to produce a realistic estimate of FID we may be missing, rather to illustrate an upper bound. Very few loans have a profile consistent with these grant elements, and it is very unlikely to be the case that all OOF loans are as generous as they could be, without quite counting as ODA.

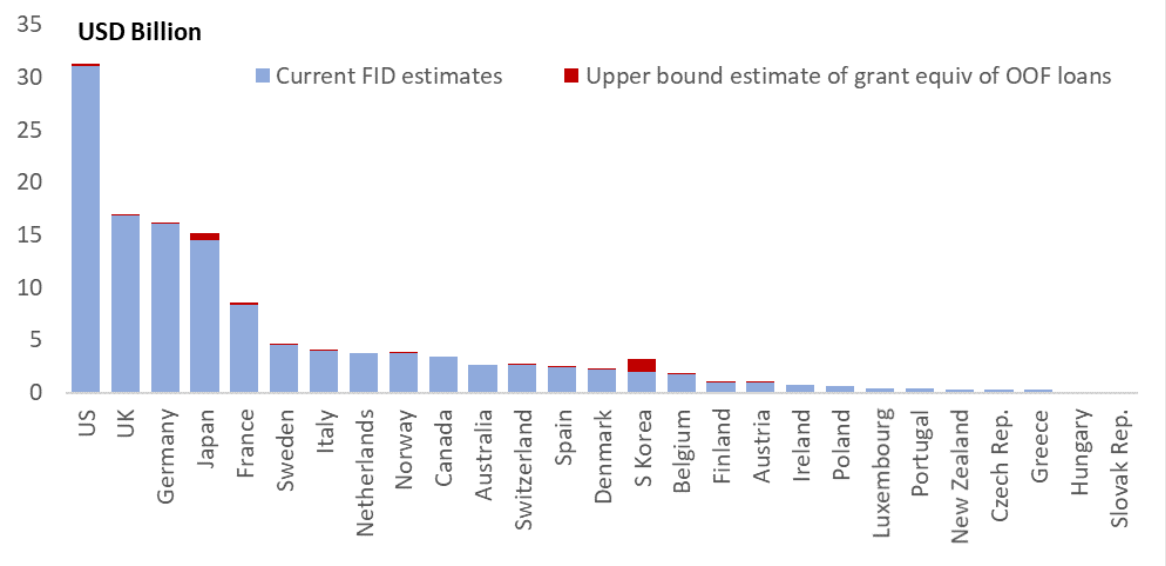
[19] There are other OOF transactions, such as equity, that we do not include. Their amount is insignificant, and the fact that they are not included as ODA presumably also means that they are not regarded as "developmental" for some other reason.

Table 4. Maximum grant element for OOF loans under differentiated discount rates (9%, 7% and 6% for LDCs/LICs, LMICs and UMICs)

	Public sector	Private sector	**Overall maximum**
LDC	0.45	0.23	**0.45**
LMIC	0.15	0.18	**0.18**
UMIC	0.10	0.16	**0.16**

Applying the higher of the two maximum grant elements to the face value of OOF loans, and adding the result to FID for DAC countries leads to the results in figure 6 below. This demonstrates that even under a highly unrealistic scenario designed to maximise the amount we add to FID as a result of OOF, the picture changes very little. In total, USD 2.6 billion would be added to FID, and South Korea would account for 46% of this increase. As such, South Korea would be the only country to change their position in the order of countries, either in terms of absolute FID or as a percent of GNI.

Figure 6. FID including grant equivalent of OOF loans: upper bound estimate



A more realistic assumption would be that the average grant element of loans is distributed evenly from 0 to the maximum possible grant elements (above which loans would be ODA). This would create an estimate half the size, of USD 1.3 billion.

2. Re-valuing elements of financial support

One significant data gap area is to try to get more systematic information on cross-border technical cooperation (TC), especially from non-DAC countries. This would allow a more appropriate comparison of the true value of this cooperation to the recipient: given typically much lower nominal salary levels in emerging as against DAC providers, the monetary value of TC in the former may significantly under-estimate its impact. This data would allow us to adjust for prices (using purchasing power parity) and therefore re-valuing this component. This data is readily available for countries reporting to the DAC, but patchy

otherwise. For non-DAC reporting countries that do list information, there may also be definitional inconsistencies.

The concessionality of loans, and their grant equivalent, relies on having reference market borrowing costs for the recipient country and comparing them to those of the loans in question. FID currently uses the same approach as ODA here, via stylized discount rates based on the income level of the country (Box 1). However, actual market rates vary quite significantly within as well as across these groups. A provider lending on the same terms to, say, South Sudan (with very high alternative borrowing costs), should in principle score a higher grant-equivalent reflecting the Sudan risk relative to say, Angola (with significantly lower borrowing costs), where the current ODA method rewards lending to each equally. One approach to this problem would be to estimate country-specific reference rates which would result in more appropriate risk premia and hence grant equivalents.

3. Counting in-provider spending with major international development spill-overs

The proposed exclusion from FID of ODA components relating entirely to within-provider spending opens up a whole chapter of how such items should be counted, perhaps as a companion metric to FID.

In fact, as mentioned in Box 2 on TOSSD, such items related to "global and regional challenges and development enablers" (the title of TOSSD's Pillar 2) are likely to go well beyond those allowable as ODA. So, for example, the definitions of allowable R&D expenditure are proposed to be wider (see TOSSD 2019 and Blampied and Rogerson, 2018), the coverage of peacekeeping costs larger, and of the hosting of refugees longer, than under corresponding ODA rules. But in principle, something very like TOSSD Pillar 2 could be a useful counterpoint to our FID metric, which is strictly about cross-border finance. Moreover, some of these types of spend (on technology, environment, and migration for instance) already feature indirectly as part of the assessment of the respective thematic areas of CDI policy, outside of development finance, now measured via FID, as such.

4. Whether and how to count (entirely) non-concessional official loans

At first glance, it may seem nonsensical to discuss fully "commercial" loan terms in the context of "concessional" or grant-like official finance, however that is measured in practice. But for many developing countries, international financial market access is heavily restricted, if not entirely precluded. Therefore, official loans which may not involve any explicit subsidies, such as export credits, yet benefit at least from the superior credit rating of the lender or guarantor, may be better for the borrower than the alternative of no funding at all. Should we recognise such "contributions" as a legitimate component of official finance, and if so, how?

Including at least the grant element calculated at country-specific, in some cases very high, discount rates remains an ambition of FID (see point 2 above) and would have the potential appeal of enabling better comparison between emerging and advanced sources of development finance.

There is a more contestable case for measuring all long-term officially backed non-concessional funding in some outer, beyond-FID official finance basket. Many non-DAC countries have substantial "commercial-

terms" loan programs which are routinely viewed as "assistance" by borrowing countries. However, the same instruments for OECD countries are typically excluded from consideration as development assistance (ODA or OOF), partly for the reason that export finance must not be priced uncompetitively under the relevant OECD state-aid discipline, so cannot be seen as offering a significant concessional element. The other formal objection by the DAC that export credits, regardless of concessionality, do not have the stated principal objective of destination-country development (as against promoting the exports and investments of the origin country) is at least debatable. A dam, say, financed through export credits ultimately delivers irrigation and/or power benefits, just like a similar one funded through bilateral or multilateral ODA.

Ultimately, however the case for more recognition of the value of fully commercial but officially backed loans to developing countries also has to factor in concerns of debt sustainability, which are beyond the scope of this paper. We suggest meanwhile that the face value of official finance at non-concessional terms be noted as a separate aggregate beyond FID. Such flows are very large in absolute terms (for China, a multiple of six or more times all its so-called concessional loans combined). A further complication is that we should not reward publicly owned commercial banks merely for being such, in situations where we would not count the same activity if delivered, presumably at a profit, by purely private actors.

5. Conclusions

This paper sets out a new method of measuring and comparing the finance that governments provide for international development. It also includes the first estimates under that method.

It has demonstrated that, even with likely incomplete coverage of the likely largest 8 providers, the finance for development provided by the 13 countries outside of the traditional DAC providers is at least $24bn, and around 16 percent of the total.

This work also demonstrates the differing mix of instruments used by providers, with the combination of grants, loans and funding for multilaterals varying significantly.

We have identified several areas for further research encompassing the refinement of FID, and of the development of related measures of development finance. We'd welcome comments on our approach, and of course would be very keen to receive updated data and sources to include.

Overall, it's clear that whilst the OECD DAC is a valuable forum, and ODA a very useful metric, there is value in a measure which is consistent between all providers. We hope that the thirteen countries who are not members of the DAC find FID a useful and intuitive framework and that this may provide a starting point for the regular reporting of finance for international development, perhaps with the support of the G20.

6. References

References for the individual country estimates are listed in the subsequent section. This section contains general references and those used in the sections above.

Action Aid (2011) Real Aid 3 Report,
https://actionaid.org/sites/default/files/real_aid_3.pdf

AidData (2017) Global Chinese Official Finance Dataset, Version 1.0. Retrieved from http://aiddata.org/data/chinese-global-official-finance-dataset

Benn, J. et al. (2010), "Getting Closer to the Core – Measuring Country Programmable Aid", Development Brief, Issue 1, OECD Publishing
https://www.oecd.org/dac/aid-architecture/45564447.pdf

Blampied, Rogerson (2018), working paper for TOSSD Task Force on Health Research and development, https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/Pillar-2-topics-Focus-on-research-WEB.pdf

Bräutigam, Deborah, and Jyhjong Wang, 2016. Eastern Promises: New Data on Chinese Loans in Africa, 2000 to 2014. John Hopkins China-Africa Research Initiative Working Paper 4, April 2016

CDI (2018i), Commitment to Development Index, Center for Global Development, London, Sept 2018
https://www.cgdev.org/commitment-development-index-2018
https://www.cgdev.org/sites/default/files/CDI-2018-methodology.pdf

CDI (2020), Commitment to Development Index, Center for Global Development, London, Forthcoming, Spring 2020

OECD (2018ii) "Development finance of countries beyond the DAC", OECD 2018,
https://www.oecd.org/dac/stats/non-dac-reporting.htm

OECD (2019) TOSSD Task Force, Draft Reporting Instructions, June 2019
https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/TOSSD-Reporting-Instructions.pdf

Sebastian Horn & Carmen M. Reinhart & Christoph Trebesch, 2019. "China's Overseas Lending," NBER Working Papers 26050, National Bureau of Economic Research, Inc.

Lauria and Fumagilli (2019) "BRICS, the southern model, and the evolving landscape of development assistance: Toward a new taxonomy", *Public Administration and Development* 39, 4-5, (167-173)
https://onlinelibrary.wiley.com/doi/full/10.1002/pad.1851#citedby-section

McArthur, Rasmussen (2017): "Who funds which multilateral organisations?", Brookings Institution
https://www.brookings.edu/research/who-funds-which-multilateral-organizations/

Morris, Parks and Gardner (2020): "Chinese and World Bank Lending Terms: A Systematic Comparison Across 157 Countries and 15 Years", Center for Global Development, Washington, DC. 2020
https://www.cgdev.org/publication/chinese-and-world-bank-lending-terms-systematic-comparison

Robinson, Ritchie and Kenny (2019): "UK Research aid: Tied, Opaque and Off-Topic?" Center for Global Development, London

Scott, Simon (2019) "A note on current problems with ODA as a statistical measure", Brookings Institution blog, Sept 26 2019, https://www.brookings.edu/blog/future-development/2019/09/26/a-note-on-current-problems-with-oda-as-a-statistical-measure/

Annex 1. Country Estimates

Countries reporting to the DAC (32)

This group of countries include DAC countries, but also Israel, Russia, Saudi Arabia, Turkey and UAE. As the latter report to the DAC, detailed data is available both from the DAC tables on the OECD statistics website, and from the Creditor Reporting System database. We use the latter for bilateral data as it has separate entries for grants, and grant elements of loans, but use DAC table 1 for contributions to multilaterals. Before splitting the ODA figures reported into grants and grant elements of loans, we subtract a number of items from the total. This is not because they are not important for development, or don't reflect provider effort, but because it is not clear that they are included in figures for non-DAC countries, and therefore would skew the comparison. The items removed are listed below, with the CRS "type of aid" code in brackets:

- Administration costs not elsewhere included (G01): These are costs not associated with any particular project, such as auditing activities and situation analyses. Given that they are not associated with programme delivery they are likely to be incurred within the provider country. An example would be the UK's Independent Commission for Aid Impact (ICAI).
- Promotion of Development Awareness (H01): Funding of activities designed to increase public support for development cooperation in the provider country.
- Refugees/asylum-seekers in-provider countries (H02 – H05): DAC countries are permitted to count first-year refugee costs towards ODA. These costs are unlikely to be included in non-DAC countries, and given that some of the new countries that we are measuring host significant numbers of refugees and asylum-seekers, it would be an unfair comparison to include these costs for DAC countries.
- Research conducted by in-country universities (omitted if both the channel code is between 11000 and 12000 denoting public sector institution in the provider country, and the purpose code = 43082, denoting research/scientific institution): these are not cross-border flows and therefore not under the scope of FID. We are confident that these costs are not included in our non-DAC estimates. In-provider research spend is not easy to identify in the CRS, and so the way we have measured this for DAC providers is very cautious; we want to be careful not to exclude funding for developing country universities, and research conducted overseas. As a consequence, we are confident that there is additional spending that we would remove if we could identify it systematically. The is likely to inflate the UK's FID in particular (see Robinson et al (2019)).
- Scholarships/imputed student costs (E01-E02): Amount spent on scholarships and training for students from developing countries. Although this is an important part of south-south cooperation, we omit it here as we are focusing on cross-border flows.
- Debt Relief (F01): This does not represent an actual cross-border flow, and is therefore not included.

In stripping out these items we aim to make FID as comparable as possible. However, we do acknowledge that this spending has the potential to have real development impact. Further research could attempt to produce comparable estimates of the amount spent on these categories by non-DAC countries. For the purposes of CDI, these are included in some form in other components, for example numbers of refugees hosted is included in the migration component. Therefore, stripping these from the aid component eliminates double counting.

Notes on CRS recording of private sector loans[20]

In addition to the above, we made a number of further adjustments to account for an odd feature of recording loans to the private sector as part of ODA. Although loans to public sector institutions (the vast majority) are recorded by their grant equivalent, private sector loans are still reported on a cash flow basis. This means that even within the category of loans, different concepts are being added together; i.e. apples are being compared with oranges. This arose from a disagreement[21] around the appropriate discount rates to be used for the private sector, which is deemed riskier than the public sector.

While it is true that the discount rates should reflect differing risk levels, this problem is not unique to the public-private distinction: lending risk also differs considerably among countries in the same income group. We therefore decided to calculate and include the grant equivalent of these loans regardless, using the same discount rates as for other loans, so that loans are being recorded on a consistent basis. This made a difference of only around $40m. Given that the private sector is regarded as riskier than the public we also performed the calculation with higher discount rates: adding one percentage point to the discount rates for each income group. The difference this made was insignificant, and therefore we opted for methodological simplicity, by using the public sector discount rates of 9%, 7% and 6% for LDCs/LICs, LMICs and UMICs. This decsion is also relevant to the calculation of the amount of OOF loans we may be omitting, see Box 4.

Note on Saudi Arabia

Data for 2017 is included in the DAC tables for Saudi Arabia, but correspondence with officials has confirmed the figures are incomplete. We are not aware of any other available data for 2017. In earlier years, Saudi Arabia recorded significantly higher contributions.

Note on Turkey

Turkey is a noticeable outlier; in that it gives far more FID than might be expected given its income level. Examining its country allocation reveals that the majority (85 percent) of its FID is humanitarian aid directed towards Syria. While Turkey's proximity to the conflict in Syria gives it a special interest, this result warrants a degree of caution. It is well known that Turkey spends a large amount hosting refugees within its borders, and this is by definition spending that is not included in FID. If the large figure for spending in Syria actually captures some of this then Turkey's FID is overstated relative to other countries.

Our process for eliminating such spending from FID relies on the correct reporting of the "type of aid" variable in the CRS dataset, which has a marker for whether an expenditure item relates to "in-donor refugee spending." According to this marker, Turkey did not spend anything on in-donor refugees in 2017.[22] We know that Turkey does spend a considerable amount on refugees, this has may have been mis-reported as cross-border ODA (with implications for FID) or, domestic refugee spending is simply not reported in the CRS dataset.

[20] We are very grateful for valuable communication with the DAC on this issue.

[21] http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DCD/DAC(2018)47/FINAL&docLanguage=En

[22] There is a discrepancy between what the CRS reports, and what is reported in table DAC1, in which Turkey is reported to have spent USD 14.17 million on in-donor refugee costs. This difference is too small to have bearing on our results.

In 2017, Turkey received around USD 6.8 billion from the EU to assist with providing for refugees in-country, as part of the Facility for Refugees in Turkey. This transfer was all counted as ODA by EU countries, and therefore seems unlikely to have been counted again on behalf of Turkey when they (voluntarily) reported their spending to the DAC.

Therefore, we assume that additional domestic spending on refugees from the Turkish government is not included in Turkey's DAC reporting, and therefore that the humanitarian assistance provided to Syria is entirely cross-border. Turkey's FID is very sensitive to this assumption: there is only one entry for assistance from Turkey to Syria in the CRS which is equal to USD 7.2 billion. Removing this figure would result in FID worth USD 1.3 billion (0.16 percent of GNI) instead of USD 8.6 billion (1.02 percent of GNI). This would clearly understate Turkey's FID as some of this is certainly cross-border,[23] but illustrates the scale of difference that could be made if this figure has been mis-reported.

Countries not reporting to the DAC (8)

This section outlines how we arrived at estimates for counties not reporting to the DAC, including details of their multilateral contribution. At the end of each country entry we provide sources used. Unless otherwise stated, all were accessed between September and December 2019.

Each section also presents the breakdown of multilateral contributions from each country, and a discussion of how these differ from the OECD DCP estimates of multilateral contributions where available. We provide more comprehensive detail on how we arrived at our multilateral estimates in Annex 2.

Many of the sections make reference to the OECD's efforts to collate "Development finance of countries beyond the DAC" (see references).

[23] See description of Turkey's international development assistance here: https://www.tika.gov.tr/upload/2019/Turkish%20Development%20Assistance%20Report%202017/Kalkinma2017EngWeb.pdf

Table 5 . Finance for International Development – non-DAC, 2017 (current $ million)

	Grants (& other non-reimbursable)	**Loans** - grant element (& equity)	**Multilateral** - contributions to core	**Total FID**		ODA eligible spending found but excluded
Argentina	26	0	390	**416**		5
Brazil*	606	0	821	**1426**		7
Chile	6	0	108	**114**		4
China	1916	1223	1999	**5138**		261
India	744	529	698	**1971**		41
Indonesia	15	0	166	**181**		1
Israel~	388	0	20	**408**		0
Mexico	26	0	344	**370**		22
Russia~	309	0	856	**1,165**		425
Saudi Arabia~	544	238	320	**1103**		44
South Africa	24	13	348	**385**		0
Turkey~	8400	0	170	**8571**		0
UAE~	2779	402	122	**3303**		92
Non-DAC Total	**15,783**	**2,405**	**6,363**	**24,551**		902
TOTAL	**89,258**	**12,695**	**47,898**	**149,851**		**26,754**

Notes: * indicates that some information from a different year is used in calculation. "ODA eligible but excluded" refers to development activities that we do not include in FID. For non-DAC providers, these figures are not comprehensive as ODA-eligible spend like refugee hosting/in-country research are not captured here. ~ These countries report to the DAC, but are not DAC members.

Argentina

	Grants	Loans (grant equivalent)	Core Multilateral	Total
USD million	26.1	0.0	389.8	415.9
% of total	6	0	94	100

Grants

Argentina does not appear to provide public information on FID-eligible projects for 2017. From their website and official documents, it is clear that their primary vehicle for bilateral cooperation is "The Argentine Fund for South-South and Triangular Cooperation" (AFSSTC)[1]. This is reported to receive its funding – and is under the jurisdiction of – the Ministry of Foreign Affairs and Worship. However, in the budget for the ministry there does not seem to be any mention of the fund. The only entry that looks relevant for our purposes is expenditure on "promotion of international cooperation" of 84 million Argentine Pesos. This is not necessarily focused on developing countries, nor is it obviously eligible for FID. We did not find sufficient accompanying information about what this includes to warrant the inclusion of this figure.

Instead we form estimates by combining two sources. The first is the AFSSTC report. This contains figures for the number of projects undertaken by country[2], and the amount of expert-time provided, but does not provide any financial data (even aggregate expenditure).

The second source is "Report on South-South Cooperation in Ibero-America 2018," produced by the Secretaria General Ibero-Americana (SEGIB). This is a report that covers all the South-South/Triangulation projects undertaken by Latin American countries. It provides little in the way of financial data but does at least contain one summary chart of the total budgeted cost of projects. This indicates that the average cost of projects is around $82,000. We therefore multiply this by the number of projects listed in the AFSSTC report that are in ODA-eligible countries.

An obvious limitation with this estimate is that the average cost is calculated across all projects provided by Latin-American countries, not just Argentina. The distribution of recipients is also different which could imply different costs. A further limitation is that even this average cost is based on partial information. The report notes: "comparison requires certain economic data that even today, despite the best efforts made by the Ibero-American countries, are partial and incomplete." We hope to be able to fill this gap with further communication with officials in Argentina. Until then, this is the only information on project costs that we have been able to find.

The AFSSTC report states that there is a total of 210 projects, and based on those attributed to specific countries we estimate that 158 are ODA-eligible. All of the projects are some form of technical cooperation.

[1] As of the time of producing these estimates and writing the document, the AFSSCT had a website, but which was unavailable.
[2] Number of projects is presented per country and per continent. Unfortunately, the total number of projects obtained by summing country projects is not equal to that obtained summing by continents (the latter is higher). We assume that this is because there are projects that are continent specific but cannot be attributed solely to one country

The AFSSTC report describes three ways in which development cooperation is provided: sending Argentine experts abroad, organizing international seminars, and training foreign technicians in-country. The final way should not be included in our estimate. Given that there is no breakdown by types of provision, we assume an equal split and reduce the number of projects we include by one third. This results in 106 eligible projects, which at the average cost we have assumed results in bilateral aid of $11.0 million (and a further $5.5 million that would be counted under ODA).

Grants element of concessional loans

As noted, we have not found any bilateral data for Argentina. In addition, Lauria and Fumagalli (2019) report that Argentina do not use concessional loans. This column is therefore empty.

Multilateral

Argentina's contributions to and through multilaterals, 2017

Type	Agency	USD (millions)	% of total	% of FID
Core	CAF	29	7	6.9
	IBRD	30	8	7.1
	IDA	1	0	0.3
	IDB	303	78	72.9
	UN	27	7	6.4
	TOTAL	**390**	**100.0**	**93.7**
Multi – bi	UN	15	100.00	3.6

See Annex 2 for details on calculation and sources

Sources

Fondo Argentino de Cooperación Sur-Sur y Triangular:
https://www.cancilleria.gob.ar/userfiles/ut/publicacion-paba-eng.pdf

Secretaria General IberoAmerica: "Report on South South Cooperation in Ibero-America 2018",
https://www.informesursur.org/?page_id=4753&lang=en

We also consulted numerous documents from the Government of Argentina National Budget Office website: https://www.minhacienda.gob.ar/onp/presupuestos/2019 but did not use any data therein. Finally, Argentina Cooperacion appear to have a website, but this has not been working over the period in which this was written: http://www.foargentina.cancilleria.gov.ar/

Brazil

	Grants	Loans (grant equivalent)	Core Multilateral	Total
USD million	605.7	0.0	820.8	1426.4
% of total	42	0	58	100

Grant

Our source for bilateral development assistance from Brazil is the IPEA "Brazilian Cooperation for International Development" (COBRADI) report. The latest available report at the time of writing (Jan 2020) contained data up to 2016; we therefore use 2016 data as the latest available year. Table 3 on page 270 of this report details spending by laterality. As well as entries for bi- and multilateral aid, there are entries for "trilateral with international organisations" and "group of countries". It is not clear what these categories pertain to, and therefore we do not include these figures.

More detail is given on bilateral spending in Table 5 (p.273), which gives a breakdown of which countries received this expenditure. Although most are low- or middle-income countries, some are developed, such as the United States and Japan. The accompanying text makes it clear that the spending on projects with these developed countries is to build Brazil's own technological capability and knowledge, whereas spending on low- and middle-income countries is to share technical knowledge and provide educational opportunities. The purpose of this is clearly developmental (for example, one passage roughly translates as "the socioeconomic improvement of Mozambicans and their country"). Therefore, to estimate Brazil's bilateral spending, we sum the bilateral spending from Table 5 that goes to ODA-eligible countries. Roughly a quarter of this spending was on "other" countries. We assume that proportion of this spending that is ODA-eligible is the same.

Table 8 in the same document breaks down spending by "type of cooperation". One item in this table is "Scholarships/research". The text elaborates this as (roughly translated) "scholarships granted to foreigners in Brazil". We therefore subtract this from Brazil's total FID, as cooperation which is not cross-border.

Grant Element of Loans

There is no suggestion from the COBRADI that Brazil uses this instrument. A search in the document for "empréstimo" (the Portuguese word for loan) and similar only yielded results in the multilateral context. This accords with the findings of Lauria and Fumagalli (2019) , who report that Brazil do not use concessional loans in their development assistance (table 2).

Multilateral

Our estimate of Brazil's multilateral contributions differ from the OECD's in two important ways:

- We include a contribution of $325 million to the IDB. This contribution is described as "additional paid in capital" in the IDB Annual Report. It does not affect voting power, but as it is otherwise the same as other capital, we include it in our estimates. This is not included in the OECD estimates.

- We include Brazil's contribution to the NDB in 2017 of $300 million.

Brazil's contribution to and through multilaterals, 2017

Type	Agency	USD (millions)	% of total	% of FID
Core	ADF	0.03	0.0	0.0
	CAF	14	1.7	1.0
	GEF	3	0.4	0.2
	IBRD	42	5.1	2.9
	IBS TF	1	0.1	0.1
	IDA	17	2.0	1.2
	IDB	326	39.7	22.8
	NDB	300	36.6	21.0
	UNITAID	22	2.7	1.5
	UN	96	11.7	6.8
	TOTAL	**821**	**100.0**	**57.5**
Multi-bi	UN	590	100.0	41.4

See Annex 2 for details on calculation and sources

Source

Cobradi Cooperação Brasileira Para O Desenvolvimento Internacional 2014-2016: http://www.ipea.gov.br/portal/images/stories/PDFs/livros/livros/181219_cobradi_2014-2016.pdf

Chile

	Grants	Loans (grant equivalent)	Core Multilateral	Total
USD million	6.2	0.0	107.7	113.9
% of total	5	0	95	100

Grants

There are two primary sources that we use for Chile. The first is the "Balance de Gestion Integral Ano 2017," produced by the Chilean Agency for International Cooperation and Development. This document outlines two types of development assistance, "technical transfer" and "formation of human capital." The latter consists of various types of scholarship, and is therefore not eligible to be included in FID. The former consists of technical cooperation programmes, and includes contributions to two notable funds – the Chile-Mexico fund and the Chile-Spain fund (however it does not include the "Chile Fund against Poverty and Hunger," see below).

The second source is the website of the Chile Fund against Poverty and Hunger, that allows users to filter projects by delivery type ("Civil society," "Public Institutions of the state of Chile," and "humanitarian aid"). We only include the humanitarian aid projects for 2017. The reason is that this fund also receives contributions from other sources, and it isn't clear for other projects what Chile's contribution was. By contrast, the humanitarian aid projects all specify the amount that the Chilean government contributed, rather than the total budget for the project. In addition, the other types of projects seem to list commitments rather than disbursements, and it isn't clear what was spent in 2017.

Grant element of concessional loans

As noted, we assume that all bilateral aid from Chile is in grant form. No document that we have consulted suggests that they use concessional loans.

Multilateral

As with Brazil, the OECD have not included "additional paid in capital" to the IDB for Chile, equal to $94 million, and therefore has a considerably lower estimate.

Chile's contribution to and through multilaterals, 2017

Type	Agency	USD (millions)	% of total	% of FID
Core	IDB	94	87.2	78.3
	UNITAID	1.5	1.4	1.3
	UN	12	11.4	10.2
	TOTAL	**108**	**100.0**	**89.8**
Multi-bi	UN	2	100.0	1.5

See Annex 2 for details on calculation and sources

Source

Agencia De Cooperacion Internacional (2017): "Balance de Gestion Integral Ano 2017" https://www.agci.cl/images/centro_documentacion/AGCIBGI2017.pdf

Fondo Chile Contra el Hambre y la Probeza: https://www.fondochile.cl/area_tematica/ayuda-humanitaria/

China

	Grants	Loans (grant equivalent)	Core Multilateral	Total
USD million	1915.7	1222.9	1999.0	5137.6
% of total	37	24	39	100

The exact quantity of development assistance given by China has been subject to extensive research and debate. Many estimates have been produced, but all with slightly different purposes and none strictly comparable to ODA estimates from other providers.

The OECD estimate takes the figure for "Foreign aid" from the Ministry of Finance budget document. This is the smallest estimate as it is likely that it does not include concessional lending, which is increasingly recognised as an important part of China's international engagement. Kitano (2019) produces an estimate that includes concessional loans. However, these are estimated on flow basis (recording the face value of loans as ODA and netting off repayments) and the figure therefore does not reveal the grant equivalent of loans. Horn et al. (2019) present a database of Chinese lending, but their focus is not on concessional lending/development assistance specifically. They also include estimates of the average terms of Chinese lending, for interest-free, concessional and non-concessional lending. Our estimate of China's bilateral grant, and grant-equivalent development assistance combines these sources. The aggregate flows that we use pertain to 2017, but the background information that we use to calculate concessional terms from these flows comes from previous years.

Grant

Our starting point is the line for "Foreign Aid" from the MOF central budget, equal to $2,497 million. This figure contains grant assistance, and the face value of interest free loans. However, we do not know what proportion consists of grants. We estimate this using the breakdown of aid from the 2014 White Paper which reports that grants and interest-free loans were respectively 36.2% and 8.1% of the total (the rest being concessional loans) which equates to shares of 82% and 18%. Our bilateral grant figure is therefore $2,063 million. However, Kitano (2019) who has collated information from different ministries also reports spending on scholarships worth $261 million, which we subtract from the total.

Grant element of loan

This has two parts. The first is the grant element of *interest-free loans* counted under the MOF budget, the face value of which we assume is 18% of the total MOF figure. The 2011 White Paper reports that typical loan terms for interest-free loans are a maturity of twenty years and a grace period of five. We assume countries repay the loan in equal principal payments, and that all interest-free loans are to LDCs (Kitano 2019 makes the same assumption). This equates to an average grant element of 0.65, and therefore grant equivalent of $300 million.

The second part is loans with *interest rates at concessional levels*. This begins with Kitano's estimate of gross concessional lending. We again use the lending terms reported in the 2011 White Paper for concessional

loans: twenty-year maturity, a five-year grace period, and interest rates between two and three percent. We assume that the rates are uniformly distributed between these two values.

To establish the grant element it is also necessary to estimate the distribution of loans by country classifications, given that different discount rates are specified for each. For this we use the 2014 White Paper, one version of which contains a breakdown for aid by income status. This specifies that 61.1% of aid was to LDCs/LICs, 21.2% was to LMICs, and that 12.3% was to UMICs. A further 5.4% was to "others" which we interpret as not ODA-eligible, and so we do not include this proportion.

The assumption that the breakdown is equal to these proportions is imperfect. The figures pertain to the years 2010-2012 and so the allocation may have changed, and the distribution is for all foreign assistance, not just for concessional loans, which may differ. Nevertheless, this is the best available information. An alternative would be to use the breakdown of debt from the dataset recently produced by Horn, Reinhart and Trebesch. This is more recent, but is also far from perfect: the data pertains to the stock of debt rather than the flow, and includes all debt, not just concessional debt. The breakdown given is more skewed towards UMICs as a consequence, with proportions of 24.5%, 31.4% and 44.1% respectively for LDCs/LICS, LMICs and UMICs.

The assumption that for each group, the interest rate is uniformly distributed between the upper and lower bounds specified by Horn, Reinhart, Trebesch (2019) is questionable. It may be expected that lower income countries are likely to receive lower interest rates, and an alternative assumption could be that loans to LDCs are clustered around 2% and those to UMICs around 3%, with LMICs in between. However, we currently have no further information with which to refine the assumption. We explore what impact different assumptions have in Box 5. Notwithstanding that caveat, using our central assumptions, the average grant element of the loan portfolio is 42%, and the grant equivalent is equal to $923 million. Along with the interest-free loans reported in the MOF budget this equates to grant equivalent of bilateral loans equal to $1,223 million.

One factor that could significantly change this estimate is the large volume of commercial lending performed by China's EXIM bank. Although this is commercial in nature (and therefore wouldn't be classed as FID or ODA) there may be some proportion of these loans that have a grant element, as a result of the generous discount rates stipulated by the DAC. However, we don't have information on these loans and so for now assume that they are not relevant to our measure. As discussed in box 3, AidData estimates suggest that inclusion of such loans could increase our estimate of FID for China by 65%.

Box 5. How sensitive is China's estimate to assumptions?

We have made assumptions about 1) the breakdown of loans between LDCs/LICs and middle-income countries, and 2) the interest rates charged to each group. Using the estimate from Kitano for concessional loans (so, ignoring the interest-free loans from the MOF) and terms from 2011 White Paper, the maximum possible grant-equivalent of loans estimate is USD 1,164 million: with all loans going to LDCs and charging 2%. The minimum possible figure is USD 594 million: with all loans going to UMICs and charging 3%. Assuming the lending terms have not changed, we can therefore be confident that the actual figure is within this range. In the context of China's total FID, the largest estimate of concessional lending would mean an overall FID value of 12% higher than the smallest value, and 2% higher than our central estimate. While sizable therefore, where the estimate falls within this range does not dramatically alter the picture, and does not change China's rank against other countries. We can be reasonably confident that China' FID estimate lies between $5.2 billion and $4.7 billion.

To check robustness, we generate random interest rates between 2 and 3%, and random splits between LDC, LMIC and UMIC countries, to see how the total figure for the grant element of China's concessional lending changes. In one million draws, the distribution of the grant equivalent is clustered around $870 million, only slightly less than our estimate of $923 million, and roughly 80% of values are between $800 million and $1,000 million. Therefore, if we had no other information on the split between country classifications, our estimate would be reasonable.

An alternative assumption to uniformly distributed interest rates for all country groups is that LDCs are more likely to be charged low, and UMICs more likely to be charged high interest rates. Running the exercise again but with the assumption LDCs/LICs are more likely to be charged interest rates at the lower end of the distribution (and with the converse assumption for UMICs, with the distribution for LMICs still flat) does not change the shape of the distribution.

This exercise demonstrates that conditional on the accuracy of estimates from Kitano on gross loan disbursements, and loan terms reported by Horn, Reinhart, Trebesch (2019), our estimate of $923 million is cautious but reasonable.

Multilateral

Our estimate of China's multilateral contribution differs considerably from the OECD's estimate. The primary reasons for this are:

- We include contributions to the New Development Bank, to which China contributed $300 million in paid-in capital in 2017.
- There is a difference in the amount contributed to the World Bank Group. The OECD total is $649 million, whereas ours is $149 million. There is possibly a difference in methodology for measuring IDA contributions. For IDA replenishments, we have divided the amounts pledged by the number of years that the replenishment covers, given that we do not have data on cash contributions when given. In addition, we average the annualised rate for the replenishment rounds IDA17 and IDA18,

as the calendar year 2017 spans the two (IDA17 ends June 2017, when IDA18 begins). It is possible that OECD have included the entire IDA18 pledge in the year it was made.

- OECD seem to include contributions "through" and "to" (i.e. multi-bi and core multilateral) together, whereas we include multi-bi as bilateral. This has led to a larger UN contribution in the OECD estimate.

China's contribution to and through multilaterals, 2017

Type	Agency	USD (millions)	% of total	% of FID
Core	ADF	46	2.3	0.9
	AIIB	1013	50.7	19.7
	ASDF	25	1.3	0.5
	CGIAR	5	0.3	0.1
	Gavi	1	0.1	0.0
	GEF	9	0.5	0.2
	GF	6	0.3	0.1
	IDA	149	7.5	2.9
	IDB	124	6.2	2.4
	NDB	300	15.0	5.8
	UN	321	16.1	6.2
	TOTAL	**1999**	**100**	**38.9**
Multi-bi	WB_TF	40	28.6	0.8
	UN	100	71.4	1.9
	TOTAL	**140**	**100**	**2.7**

See Annex 2 for details on calculation and sources

Sources

AidData. 2017. Global Chinese Official Finance Dataset, Version 1.0. Retrieved from http://aiddata.org/data/chinese-global-official-finance-dataset

EXIM Bank Annaul Report 2017
http://english.eximbank.gov.cn/News/AnnualR/2017/201812/P020181205388465253449.pdf

Kitano (2019), " Estimating China's Foreign Aid: 2017-2018 Preliminary Figures", JICA Research Institute
https://www.jica.go.jp/jica-ri/publication/other/20190926_01.html

Horn, Reinhart, Trebesch (2019), "China's Overseas Lending", Kiel Working Paper https://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/Christoph_Trebesch/KWP_2132.pdf

Information Office of the State Council, China, 2011, "China's Foreign Aid" http://english.www.gov.cn/archive/white_paper/2014/09/09/content_281474986284620.htm

Information Office of the State Council, China, 2014, "China's Foreign Aid 2014" http://en.people.cn/n/2014/0710/c90883-8753777.html

Ministry of Finance, China, 2017 Central Government Expenditure Budget http://yss.mof.gov.cn/2017zyys/201703/t20170324_2565759.html

Strange, Austin, Mengfan Cheng, Brooke Russell, Siddhartha Ghose, and Bradley Parks. 2017. AidData's Tracking Underreported Financial Flows (TUFF) Methodology, Version 1.3. Williamsburg, VA: AidData at William & Mary.

India

	Grants	Loans (grant equivalent)	Core Multilateral	Total
USD million	743.9	529.1	698.4	1971.5
% of total	38	27	35	100

Grants

The figure for grants from India is taken from the Ministry of External Affairs (MEA) Annual Report, which provides a breakdown of the annual MEA budget in appendix XIII. We take the allocation to "Technical and Economic Cooperation" (TEC) as the value of India's (pure) bilateral grant aid. In the MEA for 2018/2019, it is clear that TEC is the development assistance program. The introduction reads: "The largest allocation in the Ministry's budget was for Technical and Economic Cooperation with foreign countries through assistance as grants and loans" (p.30-31). In the 2017/18 report from which our estimates draw, allocations for "loans and advances to foreign governments" are listed separately, and therefore we assume that the TEC entry only includes grants. This assumption is supported by the next appendix which provides a country breakdown of "Technical Cooperation Programmes", the total of which is equal to the sum of loans and advances to foreign governments, and TEC. However, we also subtract the (similarly named) entry for the ITEC programme, which is a technical cooperation programme that appears to be largely in country. This entry wasn't listed separately in the 2017/18 report and so we assume the value is the same as in the 2018/19 report for want of better information.

Grant element of concessional loans

There are two sources for this estimate: the MEA annual report and EXIM bank Line of Credit (LOC) data. The lending terms are taken from the 2015 Guidelines issued by India's EXIM bank for lending to different countries. This document contains two lists of countries, with associated lending terms. Although the document calculates the grant equivalent for the different loan terms, the discount rate is different to that used for DAC countries, and we therefore do not use them for our calculation. It is worth noting that the DAC estimate is more generous: the discount rate that India uses is lower.

- The first source is the allocation to "Loans and Advances to Foreign Governments," reported in the MEA annual report, appendix XIII. To estimate the grant-element it is necessary to know the country to receive these loans. According to the 2018/19 report, all loans listed under technical cooperation are to Bhutan. We therefore assume that the same is true for 2017/18.
- The second source is data on Lines of Credit extended by EXIM bank. This dataset lists LOC agreements by country since 2005, and the value of loan disbursements since the agreement was signed. However, we are interested in the amount disbursed per year which is not listed. Instead, for each loan we average the amount disbursed across the years since the agreement was signed. This will obviously not be accurate if loan disbursements are clustered around the beginning or end and there has been a recent change in agreements signed, but it should be a good approximation otherwise. This gives an estimate of the face value of disbursements per year. We then use the terms listed in the EXIM guidelines in order to calculate the grant element of these disbursements. Some countries that

have signed LOC agreements are not included in the guidelines. It is assumed that the terms of these loans are not concessional, and therefore not relevant to this component. At the terms given in the guidelines, all of the EXIM loans are concessional, and therefore all are included.

Multilateral

India's contribution to and through multilaterals, 2017

Type	Agency	USD (millions)	% of total	% of FID
Core	ADF	11	1.6	0.6
	AIIB	285	40.8	14.5
	ASDF	10	1.4	0.5
	CGIAR	8	1.1	0.4
	GEF	3	0.4	0.2
	GF	6	0.9	0.3
	IDA	30	4.3	1.5
	IBS TF	1	0.1	0.1
	NDB	300	43.0	15.2
	UN	44	6.3	2.2
	TOTAL	**698**	**100.0**	**35.4**
Multi-Bi	UN	3	100	0.2

See Annex 2 for details on calculation and sources

Sources

EXIM Bank India, 2015, "Lines of Credit Guidelines"
https://www.eximbankindia.in/assets/pdf/loc/GOI-Guidelines-on-LOC.pdf

EXIM Bank India, "EXIM Bank of India Operative Lines of Credit" accessed August 2019, **but data format has since changed**.
https://www.eximbankindia.in/lines-of-credit

Ministry of External Affairs, 2017-2018 Annual Report
https://www.mea.gov.in/annual-reports.htm?57/Annual_Reports

Ministry of External Affairs, 2018-2019 Annual Report
https://www.mea.gov.in/annual-reports.htm?57/Annual_Reports

Indonesia

	Grants	Loans (grant equivalent)	Core Multilateral	Total
USD million	15.0	0.0	165.7	180.7
% of total	8	0	92	100

Grants

We have only managed to find one source on bilateral assistance provided by Indonesia. This comes from the Annual Report of "Indonesia's South South and Triangular Cooperation (SSTC)". The most recent version available is 2016; we assume no change between 2016 and 2017. We hope that communication with Indonesia will confirm that this is the extent of their bilateral assistance, or highlight other things to include. According to the SSTC report, Indonesia spent $15 million on development cooperation activities. Of these, 4% are described as "internships". It is not clear what this pertains to, but we assume that this is similar to scholarship and therefore we exclude this from our estimate.

Grant element of concessional loans

There is no mention of lending in the SSTC report, and we have not found any other data to suggest that they use this instrument. In addition, Lauria and Fumagilli (2019) report that Indonesia do not use concessional loans (table 2).

Multilateral

There are two large differences between our estimate, and that of the OECD. The first is that our figure for the AIIB is significantly lower: $114 million as opposed to $343 million. In calculating Indonesia's contribution, we take the difference in paid-in capital between the 2017 and 2016 annual reports, as we understand this to be stock figure. By contrast, the OECD has taken the value from the 2017 annual report. This differs from how they have calculated China's contribution.

The second difference is for the World Bank contribution: our estimate is $17 million, the OECD estimate is $80 million. Our method in calculating IDA contributions was to divide the amount pledged in each IDA round by the number of years the pledge covered. The calendar year 2017 spanned two successive rounds (IDA17 and IDA18), and so the annualised figures for each are averaged. The OECD has possibly included the total amount in the year it was pledged, which was around $83 million for IDA18 (covering the period June 2017 - June 2020).

Indonesia's contribution to and through multilaterals, 2017

Type	Agency	USD (millions)	% of total	% of FID
Core	AIIB	114	68.9	63.2
	ASDF	4	2.1	1.9
	IDA	17	10.0	9.2
	Islam DB	11	6.7	6.1
	OFID	1	0.3	0.3
	UN	20	11.9	10.9
	TOTAL	**166**	**100**	**91.7**
Multi-bi	UN	0.5	100.0	0.3

See Annex 2 for details on calculation and sources

Sources

National Coordination Team of South-South Cooperation, 2016, "Annual Report of Indonesia's South-South and Triangular Cooperation (SSTC) 2016" http://open_jicareport.jica.go.jp/pdf/12315719.pdf

Mexico

	Grants	Loans (grant equivalent)	Core Multilateral	Total
USD million	26.1	0.0	344.4	370.5
% of total	7	0	93	100

Grants

Our estimates of grants come from Mexico's "Cuantificación de la Cooperación Mexicana" produced by AMEXCID, the organisation that has responsibility for producing statistics on Mexico's international development cooperation. This breaks down Mexico's development assistance into five categories: contributions to international organisations, scholarships to students from developing countries, "financial cooperation", technical cooperation, and humanitarian aid.

- In principle, financial cooperation could include concessional loans. However, in 2017 the total amount of spending in this category is all accounted for by one project in Haiti, in the form of "non-reimbursable financial cooperation". We assume that means it is in grant form.
- Several humanitarian aid projects are listed in countries that are not ODA-eligible, such as Puerto Rico, but it appears that these are not included in the total reported by Mexico. However, the category also includes a payment to UNICEF, which is captured in a data from the UN CEB. To avoid double counting this is subtracted from the total.
- We also subtract Scholarships from the total, in line with the FID definition, equal to $22 million.

Grant element of loans

Mexico has used concessional loans in the past (in 2014 they disbursed roughly $10 million dollar loan to Nicaragua with a 40% grant equivalent) and as noted, the AMEXCID (2011-2012) document annexes the grant element calculation previously used by DAC countries. However, they do not appear to have disbursed any concessional loans in 2017.

Multilateral

There are two primary differences between our estimates and that of the OECD. The first is the difference in our estimates for IDB: our figure for Mexico's contribution is $197 million, which is the difference in paid in and "additional" paid in capital between the 2017 and 2016 annual reports. The OECD estimate is $96 million. We are aware that the OECD has not included additional paid in capital, but this does not completely explain the difference (the IDB reports do not show any change in normal paid in capital). The OECD received their estimates direct from Mexico and so there is possibly a reporting difference (such as financial/calendar year reporting). We hope to resolve this following communication with Mexico.

The second difference is in the contribution to CAF. As described below, our estimate is taken from the CAF annual financial statement which contains the difference in paid in capital between Dec 2016 and Dec 2017. The OECD have communicated to us that they received their estimate from Mexico directly. This is a discrepancy that we hope to resolve in the future, but until then we keep our estimate to ensure consistency with other contributors. In addition, our estimate is already slightly higher than Mexico's reported "Contributions to Multilateral Organisations" reported in their "Quantification of Mexican Cooperation" (AMEXCID 2017) (their figure is $280 million, whereas ours is $284 million). Changing to the OECD figure would increase this divergence.

Mexico's contribution to and through multilaterals, 2017

Type	Agency	USD (millions)	% of total	% of FID
Core	CAF	18	5.2	4.9
	IBRD	65	18.8	17.5
	IDA	16	4.8	4.5
	IDB	197	57.3	53.3
	UN	48	13.8	12.8
	TOTAL	**344**	**100**	**93.0**
Multi-Bi	UN	11	100.0	2.9

See Annex 2 for details on calculation and sources

Source

Mexican Agency for Development Cooperation (AMEXCID)
-2011-2012, "Cuantificación De La Cooperación Internacional Para El Desarrollo"
https://transparencia.sre.gob.mx/amexcid/images/stories/transparencia/Informe-cuantifica-CID-AMEXCID-2011-2012.pdf
- 2017, "Quantification of Mexican Cooperation"
https://infoamexcid.sre.gob.mx/amexcid/ccid2017/index.html

South Africa

	Grants	Loans (grant equivalent)	Core Multilateral	Total
USD million	23.6	13.3	348.4	385.2
% of total	6	3	90	100

Grants

We consider three different sources for South Africa. The first is the budget produced by the National Treasury, the second is the African Renaissance Fund Annual Report produced by DIRCO.

Grant element of concessional loans

Laurie and Fumagilli (2019) report that South Africa do not use concessional loans. This may be true at ODA thresholds for concessionality, but it appears that the Development Bank of South Africa do engage in development lending to other countries, and they are clear (p.32 here) that they do not aim to achieve a market rate of return. We therefore consider their lending.

- According to the financial statement, they lent a total of ZAR 11.2 billion in "development loans". However, many of these were lent within South Africa. We assume that the disbursement was in the same proportion to the stock of loans given on p.53 of the report. The total stock of development loans was ZAR 79.9 billion, and the stock to the "rest of Africa" was ZAR 17.0 billion, with a country breakdown of the latte figure provided. We therefore assume that for each country, the disbursement was the ratio of the stock of loans to that country, to the total stock of ZAR 79.9 billion.
- They do not provide the interest rate charged on the loans. However, they do report that for net interest income on "international financing" was 6.6%. We therefore take this as the estimate of the interest rate charged.
- There is a breakdown of the duration of loans on p.52. Time intervals are given in which loans are able to be repaid. We take the maximum of each category, as borrowers have the option of repaying at this time. For the last category (duration >14 years) we arbitrarily assume a maximum duration of 20 years. Average across categories gives an average duration of 8.8 years.
- We assume that there is no grace period, and that the number of repayments per year is one, and that the loan is repaid by way of equal principal payments.

The above assumptions yield an estimate of concessional lending outside South Africa of USD 13.3 million.

Multilateral

The key difference between multilateral estimates for South Africa between FID and the OECD is our inclusion of contributions to the NDB.

It should also be noted that for South Africa, several agencies are included that make a material difference to their FID results, but for which contributions from other donors are unlikely. These are the Southern African

Development Community, and the African Union (along with programmes New Partnership for African Development (NEPAD) and African Peer Review Mechanism (APRM)). We looked for reports of contributions from other donors on their websites but could not find breakdowns of contributions from other countries included. Given that South Africa reported these contributions, and that they are likely to only be significant for South Africa given its membership in these organisations, we nevertheless include these figures. For the reasons above, we do not believe this will unfairly advantage South Africa.

South Africa's contribution to and through multilaterals, 2017

Type	Agency	USD (millions)	% of total	% of FID
	ADF	1	0.4	0.3
	AU	16	4.5	4.1
	GEF	1	0.3	0.3
	GF	2	0.6	0.5
	IBRD	2	0.5	0.4
	IDA	6	1.8	1.6
	IBS TF	1	0.3	0.3
	NDB	300	86.1	77.9
	SADC	8	2.3	2.1
	UN	11	3.2	2.9
	TOTAL	**348**	**100**	**90.4**
Multi-bi	UN	13	100.0	3.4

See Annex 2 for details on calculation

Source

OECD Development Cooperation Profile:
https://www.oecd-ilibrary.org/sites/18b00a44-en/index.html?itemId=/content/component/5e331623-en&_csp_=b14d4f60505d057b456dd1730d8fcea3&itemIGO=oecd&itemContentType=chapter#section-d1e20940

Estimates of National Expenditure, National Treasury 2018 (includes 2017 actual expenditure)
http://www.treasury.gov.za/documents/national%20budget/2018/ene/FullENE.pdf

African Renaissance and International Cooperation Fund Annual Report 2017/2018, DIRCO,
http://www.dirco.gov.za/department/african_renaissance_2017_2018/african_renaissance_fund2017_18.pdf

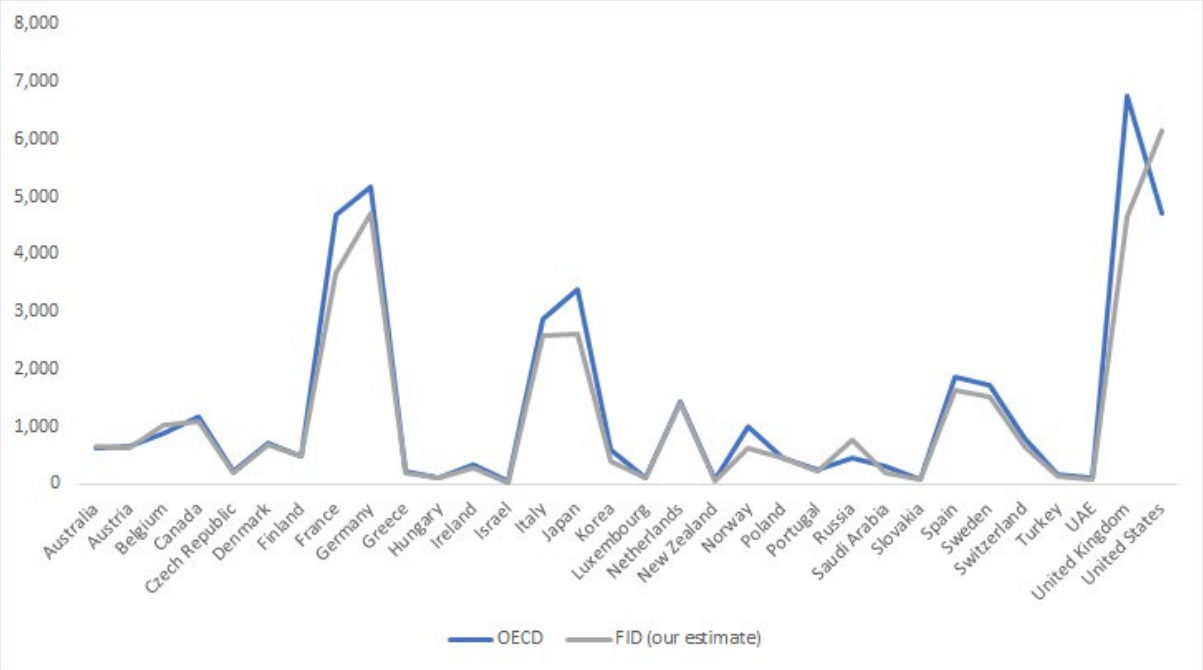
DBSA Annual Financial Statements, 2017-18, https://www.dbsa.org/EN/About-Us/Publications/Annual%20Reports/DBSA%20Annual%20Financial%20Statements%202017-18.pdf

Annex 2. Multilateral Estimates

To ascertain the multilateral estimates for non-DAC reporting countries, we visited the annual reports and financial statements of the major multilateral organisations, and used information on contributions, pledges, and paid in capital to estimate an annual figure for 2017. This follows the methodology originally used by MacArthur, Rasmussen (2017) for the period 2014-2016. Given that our list of multilaterals is not comprehensive, our estimates are incomplete: we know that there is a long tail of smaller international organisations with a development purpose, who inevitably receive funding from some of the countries included. Nevertheless, even the sum of contributions to these organisations is unlikely to be significant.

For DAC (or DAC reporting) countries, we use the estimates from the DAC tables, although in the case of Russia we add in the contribution to the NDB, which is not included in the ODA currently (with a coefficient on contributions of 100%, although this is subject to review). To check that this is reasonably consistent, the chart below compares the estimates that our methodology produces for multilateral contributions of DAC reporting countries, with the estimates reported by the DAC.

Figure 7. Comparison of OECD and FID multilateral estimates ($ million)



As might be expected, there are some countries for which the OECD has slightly higher estimates. Exploring the reasons behind these differences, we are confident that we are not creating significant against non-DAC reporting countries by including a smaller set of Multilaterals. The multilaterals that are causing most of the difference between the estimates are the Adaptation Fund, EU Institutions, IFFIm and the Drug Purchase Facility. Checking participants in these multilateral programmes suggests that all report to the DAC, and therefore for each, we are using DAC estimates which already include these contributions. We are therefore only creating bias against non-DAC countries if there are significant multilaterals that are systematically ignored by DAC countries, such as the NDB. We do not anticipate there being many large enough to affect our estimates, but would welcome suggestions on further funds to include, beyond those listed below.

There are a few countries - Belgium, Russia and the US - for which our estimate is larger. In the case of Russia, this is obviously because of the NDB contribution; Russia is the only BRICS country to report to the DAC. In the case of Belgium, the difference is small, and possibly explained by the rough estimation of pledges that are made over multi-year periods (we have averaged pledges across the periods, but this may not correspond to actual payment schedules). In the case of the US, there are significant differences in our figures for contributions to various UN agencies. We hope to investigate this apparent inconsistency. Our method for calculating UN contributions is below. In addition, our estimate of the US contribution to IDB is much higher: possibly as a result of difference OECD not counting "additional paid in capital", (see below).

Overall, we are confident that our method of calculating multilateral contributions of non-DAC providers is comprehensive and comparable. The full list of multilateral organisations we include is given in Table 6:

Table 6. Multilateral organisations and calculation method

Acron.	Name	Notes on data collection/links
ADF	African Development Fund	The amount pledged during replenishment rounds is divided across the years to which they pertain. If on the basis of financial year (July-June) then the crossover year is the average of the annual amount for each replenishment round. Data from ADF-14 report (table on page 87), found here.
AU	African Union	This multilateral is only included for South Africa, for which it is important multilateral, and data was taken from the South African treasury document (available here and linked in the South Africa section). We checked AU documents to try to find a country breakdown of contributions to include other countries if possible, but were unsuccessful. However, given that South Africa reported their contribution transparently (and it wasn't obvious for other countries) we thought it better to include the contribution.
AIIB	Asian Infrastructure Investment Bank	The difference between the stock of "paid in capital" between the 2017 and 2016 Financial Statements (table under C10). Coefficient of 0.85 applied to total to reflect proportion of development activities. Statements can be found here.
ASDF	Asian Development Fund	The amount pledged during replenishment rounds is divided across the years to which they pertain. If on the basis of financial year (July-June) then the crossover year is the average of the annual amount for each

		replenishment round. Data is from the "ADF 12 Donor's Report" (table 5) found here.
CAF	Latin American Dev. Bank	The difference between the stock of "paid in capital" between Dec 2017 and Dec 2016. Data is from the 2017 Audited Financial statement, found here (first table on p.38 for 2017, and first table on p.39 for 2016).
CFF	Concessional Finance Facility	Amount taken from World Bank Financial Intermediary Fund website.
CGIAR	Consultative Group for Int. Agricultural Research	Amount taken from World Bank Financial Intermediary Fund website.
Gavi	Global Alliance for Vaccines and Immunizations	Amount taken from spreadsheet containing value of cash receipts for 2017, found here.]
GEF	Global Environment Facility	Amount taken from World Bank Financial Intermediary Fund website.
GF	Global Fund	Figure is taken from Annual Financial Report (table A.1 on p.20, column "Contributions received in 2017"), and converted to dollar value using exchange rates in table "Key Foreign Currencies" on p.56. Report can be found here.
IBRD	International Bank for Reconstruction and Development	Figures are taken from June financial statements for consecutive years (end of year statements did not have country breakdowns), available here. Difference is taken in the stock of paid-in capital between years (table beginning p.80 in 2016, table beginning p.86 in 2017, and p.90 in the 2018 statement).
IBS TF	India-Brazil-South Africa Trust Fund	This organization was listed in South Africa's treasury document, but other sources suggest that equal contributions of $1 million per year are made by all of South Africa (confirmed by treasury document) Brazil and India (see here for example).

IDA	International Development Association	The amount pledged during replenishment rounds is divided across the years to which they pertain. Given that the rounds are on the basis of financial years (July-June), 2017 falls across rounds 17 and 18. We average the annual amount for each replenishment round. Figures taken from the IDA18 report (table 1a, column (2)) found here, and the IDA17 report (table 1a, column (18)) found here. Figures converted to dollar values using the USD/SDR exchange rate in the table.
IDB	Inter-American Dev. Bank	The difference between the stock of "paid in capital" between the 2017 and 2016 report (table IV in each case). This includes "additional paid in capital" in the 2017 report which has no corresponding entry for 2016 (and so is assumed zero i n 2016). Reports can be found here.
IsDB	Islamic Development Bank	The difference between the stock of "paid in capital" between the 2017 (IsDB Annual Report 1438H) and 2016 (IsDB Annual Report 1437H) reports (annex 5A in each case). Currency is Islamic Dinar which is equivalent to SDR, so converted using 2017 SDR/USD exchange rate, taken from fxtop.com historical rates. Reports can be found here.
NDB	New Development Bank	The difference between the stock of "paid in capital received" between Dec 2017 and Dec 2016, both taken from tables on p.92 of the 2017 Annual report, found here.
OFID	Opec Fund for International Development	The difference between 2017 and 2016 in the stock of "total paid in contributions" taken from the final column of the second table in Annex 2 (p.69 in the 2017 report and p.68 in the 2016 report). Reports can be found here.
SADC	Southern African Development Community	This multilateral is only included for South Africa, for which it is important multilateral, and data was taken from the South African treasury document (available here and linked in the South Africa section). We checked SADC documents to try to find a country breakdown of contributions to include other countries if possible, but were unsuccessful. However, given that South Africa reported their contribution transparently (and it wasn't obvious for other countries) we thought it better to include the contribution.
UNITAID	UNITAID	Figure taken from the "Audited Financial Statement" for year 2017, available here (page 31).

WBTF	World bank Trust Funds	Amount taken from Annex to 2017 annual report which gives yearly contributions. This is included in the grants pillar, not the multilateral. This is because this is more accurately described as multi-bi aid. Report can be found here.
UN	UN system	UN data is taken from the UN System Financial Statistics,hosted by the UN Chief Executives Board for Coordination (UN CEB). We split the data into Assessed and Voluntary Non-specified (core, included in multilateral pillar) and Voluntary Specified (multi-bi, included in grant pillar). We also exclude voluntary specified contributions that are spent in the provider country. This is a particular issue for some Latin American countries that perform several budget functions through the UN for accounting reasons. Data can be found here.

Excluding "within-provider" specified UN contributions

The inclusion of data from the UN is complicated by the fact that the UN has projects in nearly all countries. While we do not aim to calculate "net" financial assistance by subtracting financial assistance received from that given (which would lead to large negative values for countries such as India), we do not want to include finance which has been specified to be spent in the country providing assistance, as we do not regard this to be a cross-border flow. Rather, this is tantamount to using the UN as an implementing partner to deliver on domestic priorities. Therefore, while we do not alter core UN funding (which involves relinquishing control and therefore could be spent anywhere) we should subtract funding specified funding that is spent in the giving country.

Unfortunately, the UN CEB dataset does not provide granular detail on which countries specify finance for which projects. We only have data on the total amount that UN organisations spend in each country, and the total that they receive from each country (broken down by whether or not it is specified). We therefore assume the following:

1. If expenditure in a country is greater than the specified contribution from that country, their non-core contribution to that UN organisation is zero, as it is all spent in the same country. The difference between the values is spend from core funding, and specified funding from other countries.

2. If expenditure in a country is lower than the specified contribution, it is subtracted from the country's non-core funding to that UN organisation.

This estimate is crude, and is will likely understate the amount of finance to the UN which is cross-border, as in the first case, we class all specified funding as being spent in the giving country. Nevertheless, without more detailed information this is a reasonable approximation.

Key differences with OECD multilateral estimates

As outlined in the notes for each country, there are differences between our estimates, and the OECD's, that apply to a number of countries:

- **IDB:** The table detailing the capital contributions of each member in the 2017 annual report contained a column not present in previous years, listing the "additional paid in capital" contributions. A footnote explains that this additional capital does not affect voting rights, but is otherwise the same as ordinary capital. The OECD estimates do not include this figure. Our view is that regardless of voting power, this represents a real transfer between the country and the IDB.
- **World Bank Group:** The OECD estimates for contributions to the World Bank Group are consistently higher than ours. There are some obvious potential differences: we include contributions through Trust Funds in the bilateral grant component of FID, given that this is multi-bi finance. In addition, we haven't yet included IBRD contributions. However, the size of differences is still not explained by these factors. It is possible that the OECD used a different method to report the pledges in IDA rounds. Ours is explained in table 6.
- **NDB:** The OECD do not include estimates for the NDB, which has made a significant difference to estimates of member countries (Brazil, Russia, India, China, South Africa).

Table 7. Summary of FID, pillars as % of total FID, DAC

	Grants (& other non-reimbursable)	Loans - Grant element (& equity)	Multilateral - contributions to core	Total FID		% of ODA excluded
Australia	77	0	23	2687		11.4
Austria	28	1	71	920		26.7
Belgium	48	1	51	1767		20.8
Canada	66	0	34	3462		18.3
Czechia	18	0	82	273		10.3
Denmark	67	0	33	2223		10.9
Finland	47	2	51	947		12.0
France	24	20	55	8499		21.3
Germany	60	8	32	16075		34.1
Greece	6	0	94	243		22.4
Hungary	8	0	92	119		19.8
Ireland	54	0	46	758		9.6
Italy	24	3	73	3950		32.3
Japan	32	45	23	14553		5.6
Korea	43	27	30	1970		8.4
Luxembourg	70	0	30	400		5.8
Netherlands	62	0	38	3722		26.5
New Zealand	77	0	23	338		25.2
Norway	73	0	27	3706		10.7
Poland	24	2	75	613		12.7
Portugal	23	4	74	362		13.5
Slovakia	26	0	74	113		5.3
Spain	23	1	76	2466		15.1

Sweden	61	1	38	4543		19.4
Switzerland	69	0	31	2621		17.6
UK	60	0	40	16862		7.3
US	85	0	15	31108		12.2
Total	**59**	**8**	**33**	**125,300**		**17.1**

Table 8. Summary of FID, pillars as % of total FID, non- DAC

	Grants (& other non-reimbursable)	Loans - Grant element (& equity)	Multilateral - contributions to core
Argentina	6	0	94
Brazil*	42	0	58
Chile	5	0	95
China	37	24	39
India	38	27	35
Indonesia	8	0	92
Israel	95	0	5
Mexico	7	0	93
Russia	26.5	0	73.5
Saudi Arabia	49	22	29
South Africa	6	3	90
Turkey	98	0	2
UAE	84	12	4
Non-DAC Total	**64**	**10**	**26**
TOTAL	**60**	**8**	**32**

Table 9. Comparison between FID and ODA for DAC countries ($ million)

	FID	ODA	ODA excluded*	ODA excl. as % of total ODA
Australia	2,687	3,036	346	11.4
Austria	920	1,254	335	26.7
Belgium	1,767	2,218	463	20.9
Canada	3,462	4,346	775	17.8
Czech Republic	273	304	31	10.3
Denmark	2,223	2,461	271	11.0
Finland	947	1,084	129	11.9
France	8,499	10,699	2,264	21.2
Germany	16,075	24,406	8,317	34.1
Greece	243	314	70	22.4
Hungary	119	149	29	19.8
Ireland	758	838	80	9.6
Italy	3,950	5,865	1,884	32.1
Japan	14,553	15,230	860	5.6
South Korea	1,970	2,152	181	8.4
Luxembourg	400	424	25	5.8
Netherlands	3,722	5,001	1,341	26.8
New Zealand	338	450	114	25.3
Norway	3,706	4,125	442	10.7
Poland	613	702	89	12.7
Portugal	362	398	57	14.2
Slovak Republic	113	119	6	5.3
Spain	2,466	2,559	438	17.1
Sweden	4,543	5,564	1,091	19.6
Switzerland	2,621	3,142	560	17.8
United Kingdom	16,862	17,133	1,335	7.8

United States	31,108	35,250	4,317	12.2

*ODA excluded will not necessarily equal difference between FID and ODA as a result of other minor changes (such as different recording of private sector loans).