

DEVELOPMENT CO-OPERATION DIRECTORATE

Comparing multilateral and bilateral aid

A portfolio similarity analysis

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Comparing multilateral and bilateral aid: A portfolio similarity analysis

Complementarity between multilateral and bilateral aid is essential to ensuring Official Development Assistance (ODA) has impact and is effective. This paper examines whether multilateral outflows and the “multi-bi” (or earmarked) aid of Development Assistance Committee (DAC) members are complementary with their bilateral aid along three dimensions: by theme, by geography, and by financing instruments. It concludes positively, but also reveals contrasted visions of the role of multilateral aid across the DAC membership, and some risks stemming from recent shifts in the characteristics of multilateral outflows and multi-bi aid.

Key messages

- For the Development Assistance Committee (DAC) as a whole, the portfolio similarity analysis suggests that multilateral outflows and multi-bi (or earmarked) aid offer complementarity with bilateral aid:
 - Multilateral outflows complement DAC direct bilateral aid by providing different financing instruments and geographic focus;
 - By contrast, multi-bi aid targets different thematic sectors but presents very high similarity with DAC bilateral aid across the two other dimensions (geographic focus and financing instrument).
- Individual DAC members have contrasted visions of, and expectations from, the multilateral development system. This results in a variety of portfolio strategies depending on whether they resort to multilateral channels to (i) reinforce, (ii) complement or (iii) diversify their aid portfolios.
- The role of multilateral aid relative to the DAC bilateral aid portfolio evolves over time, which involves risks as well as opportunities. Particular caution is required to ensure that the multilateral development system continues to uphold the collective priorities of its members (such as the commitment to Leave No One Behind), and does not only mirror or amplify bilateral priorities.
- Looking forward, the portfolio similarity analysis could be extended to derive additional insights on the roles and value added of multilateral and bilateral aid.

The growth of multilateral development finance calls for fresh insights on its complementarity with bilateral aid

Multilateral development finance is growing in size and complexity

Multilateral aid plays an increasingly important role in the development co-operation landscape. Development partners channel an increasing volume and share of their Official Development Assistance (ODA) through multilateral channels. Between 2010 and 2019, total ODA channelled through the multilateral development system (including core and non-core contributions) rose by 35%, from USD 53 billion to USD 73 billion. Over the same period, multilateral aid also increased as a share of total ODA, from 36% to 40%. The COVID-19 pandemic could accelerate this trend, given the key role played by multilateral institutions in the immediate response to the crisis.

The continued expansion of the multilateral development system generates concerns over a lack of coherence and co-ordination with other channels of development co-operation. The *Multilateral Development Finance 2020* report (OECD, 2020^[1]) highlighted that the multilateral development system has evolved into a crowded and complex ecosystem since its inception in the aftermath of the Second World War. The proliferation of multilateral entities creates a sense of opacity and fragmentation, and makes co-ordination more difficult, both among the numerous entities conforming the multilateral system, as well as between multilateral organisations and bilateral development partners.

Ensuring complementarity between multilateral and bilateral aid is key to maximise their development impact

To be effective, multilateral aid needs to be clearly articulated with other forms of development co-operation. For development partners, a key rationale for investing in the multilateral development system

lies in its value added and complementarity relative to bilateral aid. Recent research shows that multilateral organisations have a set of comparative advantages that members can leverage in addition to their bilateral aid (OECD, 2020^[1]). This includes their global reach, specific sectoral expertise (e.g. humanitarian aid), convening power, and diversity of financing instruments. Yet, there is still limited understanding on the division of labour between multilateral and bilateral aid, and this represents a key obstacle to strengthening the impact of DAC members' ODA.

Lack of clarity on the division of labour between multilateral and bilateral aid is a key obstacle to strengthening the impact of DAC members' ODA.

A better understanding of the complementarity between multilateral and bilateral aid could help maximise the impact of multilateral development finance by:

1. Defining a division of labour between multilateral and bilateral aid that makes the most of the available resources, leaving no country or objective behind;
2. Taking advantage of possible synergies between multilateral and bilateral aid while avoiding overlaps or duplication; and
3. Clarifying the roles and value added of the different channels of development co-operation to increase accountability towards taxpayers.

The portfolio similarity analysis can provide initial insights on the complementarity between bilateral and multilateral aid (Box 1).

Box 1. Key features of the portfolio similarity analysis

The portfolio similarity analysis compares multilateral aid relative to the bilateral aid flows reported by OECD Development Assistance Committee (DAC) members. In line with the approach adopted in the *Multilateral Development Finance 2020* report (OECD, 2020^[1]), multilateral aid is defined as the sum of multilateral outflows (aid activities financed from multilateral development institutions' regular budgets) and multi-bi aid flows (bilateral aid earmarked through multilateral organisations)¹. For the purpose of this analysis, these two components of multilateral aid are compared to DAC members' direct bilateral aid (aid flows that DAC members channel directly to their partner countries).

The comparative analysis focuses on three key dimensions of portfolio similarity:

- (i) **thematic dimension:** comparing the sectoral allocation of aid, based on the sector and purpose codes of the OECD DAC Creditor Reporting System (CRS).
- (ii) **geographic dimension:** examining how aid is allocated across different geographic areas, using the CRS region and recipient country codes.
- (iii) **instrument dimension:** comparing the use of various official development finance instruments, based on the CRS finance type code.

The methodology combines descriptive analyses with a measure of portfolio similarity. In addition to the descriptive analysis based on aid flows reported in the CRS, portfolio similarity scores

¹ By way of comparison, total multilateral outflows amounted to USD 189 billion in 2018, while direct bilateral aid represented USD 115.5 billion and multi-bi aid totalled USD 25.5 billion.

are computed to quantify the level of similarity between multilateral and bilateral portfolios across the three above-mentioned dimensions. Portfolio similarity scores are computed using the cosine similarity formula:

$$\text{similarity}(A,B) = \frac{A \cdot B}{\|A\| \times \|B\|} = \frac{\sum_{i=1}^n A_i \times B_i}{\sqrt{\sum_{i=1}^n A_i^2} \times \sqrt{\sum_{i=1}^n B_i^2}}$$

Cosine similarity is a metric commonly used for similarity analysis², which provides a value ranging between 0 (when two portfolios are completely dissimilar) and 1 (when they are completely similar)³. The value takes into consideration both (i) the number of attributes that two portfolios have in common (e.g. the number of purpose codes, in the case of the thematic dimension) and (ii) the weights attached to each attribute (e.g. the volume of aid flows targeting each purpose code).

Cosine similarity allows for a finer level of detail in the portfolio similarity analysis. While the descriptive analysis needs to be carried out at an aggregated level (e.g. using sector codes for the thematic dimension and region codes for the geographic dimension) to discern patterns within the large quantity of CRS data, cosine similarity allows to consider a large number of portfolio attributes (e.g. purpose codes or recipient codes). This helps translate the high level of detail into a single comparable value.

The analysis is conducted both at DAC level as well as for individual DAC providers. The DAC level analysis allows to study the value added of multilateral aid relative to DAC members' bilateral aid across the three above-mentioned dimensions. The analysis of individual DAC members, on the other hand, sheds light on the portfolio strategies used by the different DAC providers.

At Development Assistance Committee (DAC) level, the portfolio similarity analysis reveals unique roles for multilateral outflows and multi-bi (or earmarked) aid

Multilateral outflows and multi-bi aid offer complementarity across different dimensions

Multilateral outflows complement DAC direct bilateral aid in terms of financing instruments and geographic focus. Figure 1 shows that multilateral outflows differ significantly from DAC direct bilateral aid in terms of geographic focus and financing instrument used, as indicated by their relatively low portfolio similarity scores (respectively 0.49 and 0.4). On the other hand, with a score of 0.77, the thematic focus of multilateral outflows and DAC bilateral aid appears relatively similar.

Multi-bi aid provides thematic complementarity relative to DAC direct bilateral aid. The results of the portfolio similarity analysis are largely different for DAC members' multi-bi (or earmarked) aid, reflecting its singular role within the development co-operation landscape. Multi-bi aid appears to have relatively low similarity with direct bilateral aid in terms of thematic allocation (0.51). This suggests that multi-bi aid may add value in thematic areas where multilateral organisations may have greater know-how than bilateral development partners. Humanitarian aid is a case in point since bilateral development partners often leverage the expertise and operational capacity of multilateral organisations in this area: in fact, the

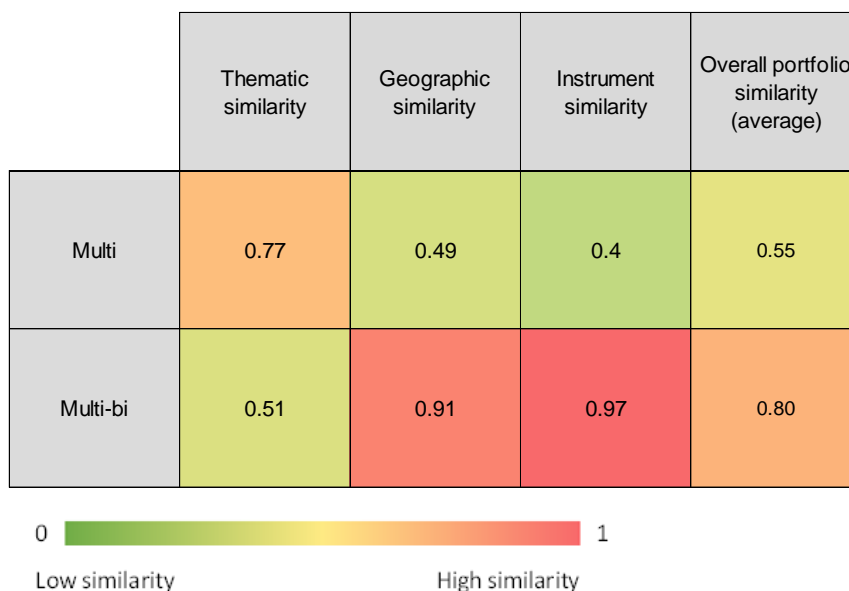
² Cosine similarity measures the cosine of the angle between two or more vectors (or aid portfolios, in this analysis). Although other measures of similarity exist, cosine similarity was selected for this particular analysis because it allows to measure the similarity between two vectors, irrespective of their size. Other use cases of cosine similarity include portfolio analysis in finance, recommendation engines, and document comparison.

³ In particular cases, cosine similarity scores could be negative although this is not the case in this analysis.

descriptive analysis shows that humanitarian aid is the largest component of multi-bi aid flows (39% on average between 2015 and 2019) but accounts for a relatively low share of bilateral aid (6%).

Figure 1. Multilateral outflows and multi-bi aid fulfil different roles compared to DAC direct bilateral aid

Portfolio similarity scores relative to DAC direct bilateral aid (based on USD commitments, 2015-19)



Note: The portfolio similarity scores for each dimension are computed based on the following CRS codes: purpose codes (thematic), recipient codes (geographic), and finance type (instrument).

Source: Authors' calculations using data from the OECD Creditor Reporting System (2021^[2]), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>.

Overall, multi-bi (or earmarked) aid bears a close resemblance to Development Assistance Committee (DAC) direct bilateral aid

Multi-bi aid presents very high similarity with the DAC bilateral aid portfolio across two out of three portfolio dimensions. This confirms the singular nature of multi-bi aid, which is officially considered part of DAC members' bilateral ODA. The results of the analysis suggest that DAC multi-bi aid has a similar geographic focus as the DAC direct bilateral portfolio (geographic similarity score of 0.91). The portfolio similarity scores are also very high in terms of financing instruments (0.97) – in the latter case, due to the prominence of ODA grants in both the DAC bilateral and multi-bi aid portfolios, where they accounted for respectively 68% and 97% of total flows in 2019.

The portfolio similarity scores of individual Development Assistance Committee (DAC) members reflect their contrasted visions for, and expectations from, the multilateral development system

At the level of individual DAC members, thematic and geographic similarity scores offer initial insights on the functions that multilateral aid fulfils in each member's aid portfolio. The scores reflect the variety of multilateral engagement strategies existing among DAC members⁴ and allow for an

⁴ To some extent, portfolio similarity scores also reflect the breadth (or narrowness) of DAC members' aid portfolios.

initial assessment of the role of multilateral aid relative to each member's bilateral aid portfolio. To account for the specificities and distinctive roles of multilateral outflows and multi-bi aid, these two components of multilateral aid are analysed separately.

The heterogeneity observed in Development Assistance Committee (DAC) members' scores shows that multi-bi (or earmarked) aid serves a variety of portfolio strategies

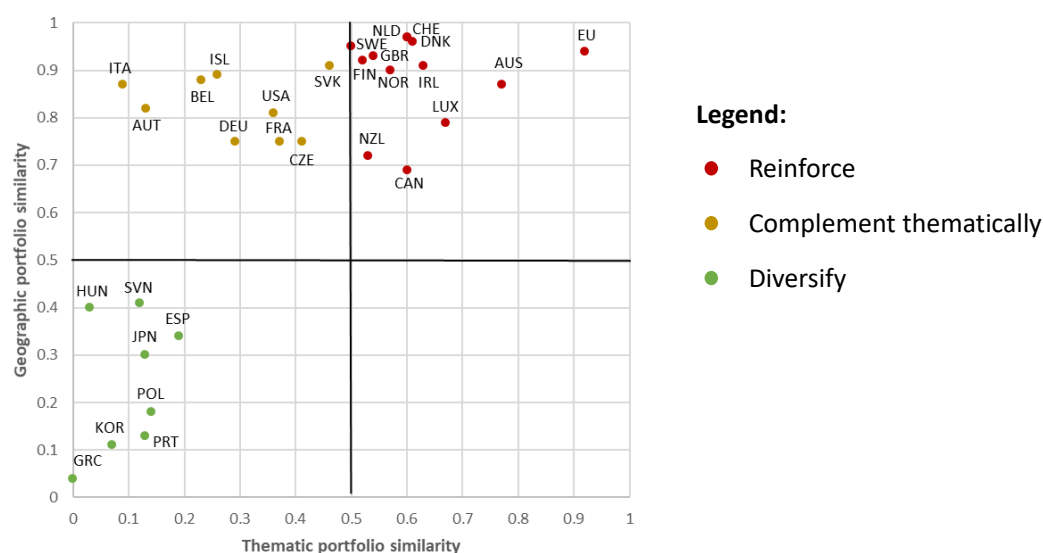
The portfolio similarity analysis reveals a variety of multi-bi aid portfolio strategies among DAC members. This is consistent with earlier analyses showing that DAC providers earmark their contributions through multilateral organisations to achieve a diverse set of objectives (OECD, 2020^[3]).

Three main multi-bi portfolio strategies emerge among individual DAC members. Figure 2 provides an initial mapping of DAC members based on the role played by multi-bi aid in their respective aid portfolios. For the purpose of simplicity, the portfolio similarity analysis of individual DAC members focuses on the two dimensions that best reflect the specificities of their aid allocation, namely their thematic and geographic similarity. The results show that DAC members use multi-bi aid for three key objectives:

- To **reinforce** their bilateral portfolios by supporting multilateral action in the same thematic and geographic areas (high thematic and geographic similarity);
- To **complement** their bilateral portfolio by leveraging the thematic expertise of multilateral organisations (high geographic similarity and low thematic similarity); and
- To **diversify** their aid portfolios by leveraging the multilateral system in areas where they lack both expertise and in-country presence (low thematic and geographic similarity).

Figure 2. Three multi-bi portfolio strategies emerge among DAC members

Thematic and geographic similarity of DAC members' multi-bi and direct bilateral aid portfolios



Note: Portfolio similarity scores along the thematic and geographic dimensions of DAC members' multi-bi and direct bilateral aid. The scores are computed based on USD commitments (2015-19 average).

For example, a provider like Greece presents extremely low similarity scores between its multi-bi and direct bilateral aid portfolios due to their narrow and distinct focus (in recent years, the country's direct bilateral aid has been almost exclusively devoted to in-donor country refugee costs, while its multi-bi aid has been mainly focussed on the provision of humanitarian aid abroad). The European Union (EU), with its large and wide-ranging aid portfolios, presents the opposite situation (Figure 2).

Source: Authors' calculations using data from the OECD Creditor Reporting System (2021[2]) <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>.

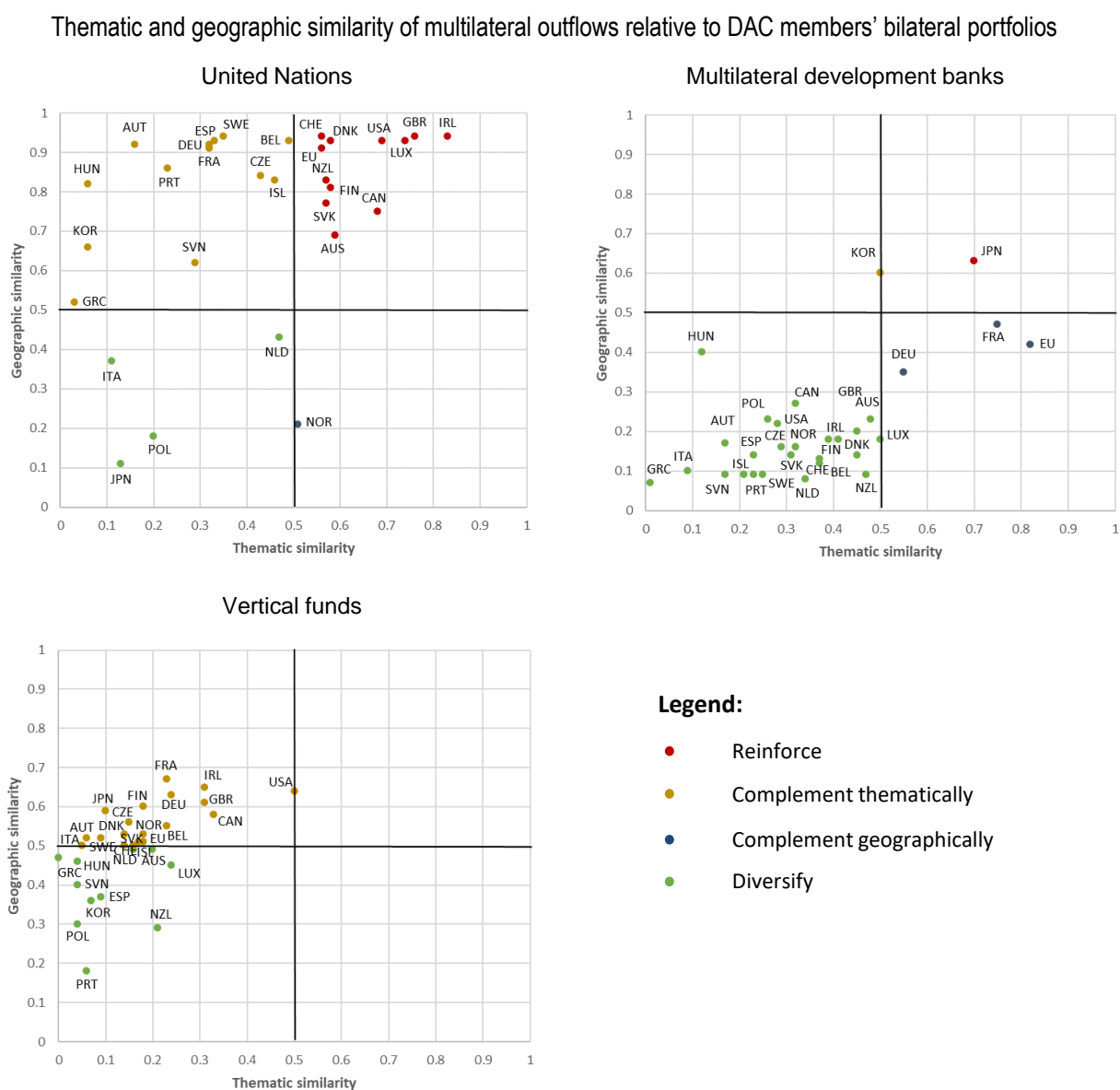
Despite the large diversity observed in DAC members' use of multi-bi aid, the portfolio similarity analysis corroborates a general pattern identified in previous studies (Eichenauer and Reinsberg, 2017^[4]), namely, the fact that a majority of DAC members use multi-bi aid to support partner countries or geographic areas relevant to their bilateral portfolio (OECD, 2020^[3]). In fact, multi-bi and direct bilateral aid present high geographic similarity (scores equal or superior to 0.7) for nearly three quarters of the DAC membership (22 out of 30 members).

In the case of multilateral outflows, the results suggest relative consensus on the value added of Multilateral Development Banks (MDBs) and vertical funds, but greater diversity of views on the role of the United Nations (UN)

The similarity between multilateral outflows and DAC members' direct bilateral aid varies across different types of multilateral organisations. In order to take account their specificities in terms of mandate, governance and business model, multilateral institutions are grouped into three broad categories: MDBs, UN agencies, funds and programs, and vertical funds⁵.

⁵ The vertical funds included in this analysis are the Global Fund, the Vaccine Alliance (Gavi), the Global Partnership for Education (GPE), the Global Environmental Facility (GEF), the Climate Investment Funds (CIF), the Adaptation Fund (AF), and the Green Climate Fund (GCF).

Figure 3. The role of the UN varies significantly across Development Assistance Committee (DAC) members' portfolios while Multilateral Development Banks (MDBs) and vertical funds fulfil clear-cut roles



Note: Portfolio similarity scores along the thematic and geographic dimensions of multilateral outflows and DAC members' direct bilateral aid. The scores are computed based on USD commitments (2015-19 average).

Source: Authors' calculations using data from the OECD Creditor Reporting System (2021_[2]), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>.

The level of concentration of portfolio similarity scores provides an indication on the role and value added of each multilateral grouping with regard to DAC members' direct bilateral aid. High score concentration, such as observed for MDBs and vertical funds, suggests that a group of organisations plays a similar role across DAC members' aid portfolios. On the other hand, high score dispersion, as in the case of the UN, indicates that the type of complementarity it provides relative to bilateral aid varies significantly from one member to another.

Multilateral Development Bank (MDB) outflows offer clear distinctive value relative to DAC members' bilateral aid. The aid flows from the main MDBs exhibit low thematic and geographic similarity with the bilateral aid of most DAC providers. More than 80% of DAC providers fall into the lower left-hand side quadrant, signalling that MDB outflows target different sectors and geographies compared to DAC members' direct bilateral aid. The low thematic similarity is in large part explained by MDBs' typical focus on economic infrastructure sectors, while social infrastructure and services remain a high collective priority of DAC bilateral aid (OECD, 2021^[5]). The low geographic similarity scores reflect, among other things, the fact that MDBs' country allocations are mainly determined by performance-based allocation formulas (PBA), while bilateral development partners have greater discretion to decide on their aid allocation. A few outliers emerge from the analysis, such as Japan or France, which exhibit relatively high thematic similarity relative to MDB outflows due to their strong bilateral focus on infrastructure project lending.

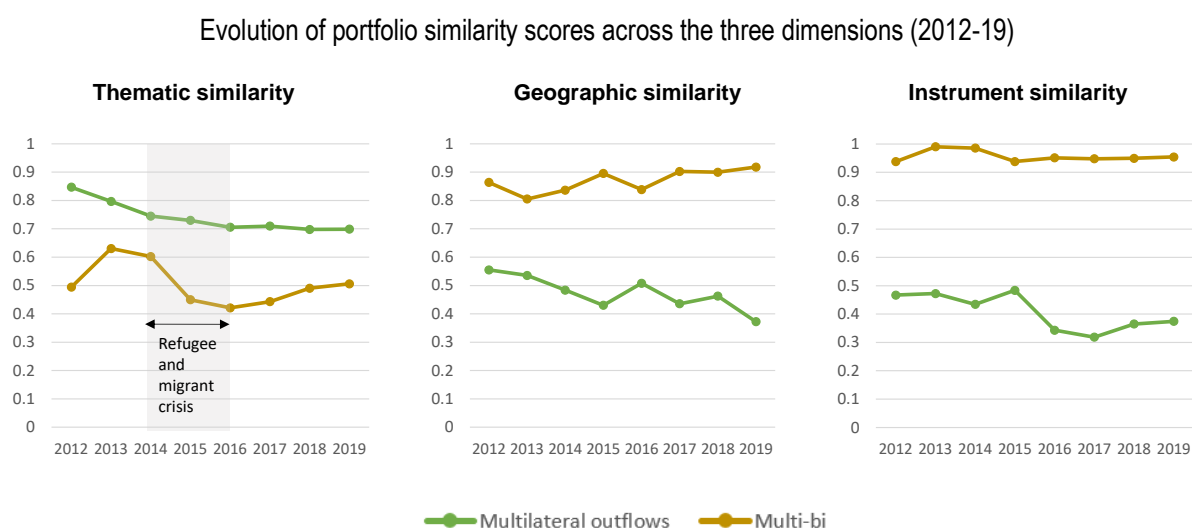
The role of UN agencies, funds and programmes varies considerably across DAC members' aid portfolios. Overall, UN entities present relatively high geographic similarity with most DAC members' bilateral portfolios: 78% of DAC members present a geographic similarity score above 0.5. On the other hand, varying levels of thematic similarity with UN outflows can be observed across the DAC membership, reflecting the variety of roles that the UN development system plays across members' portfolios, as well as its wide mandate.

Vertical funds provide specialised and differentiated expertise in particular thematic areas. The similarity scores of vertical funds' and DAC members' direct bilateral aid flows are highly concentrated and reveal low thematic similarity and moderate geographic similarity. These results confirm the unique role played by vertical funds within the broader development co-operation landscape. This by supporting partner countries across a small number of specific thematic areas, such as the immunisation against prevalent childhood diseases (Gavi, the Vaccine Alliance), the control of infectious disease, especially malaria, tuberculosis and HIV/AIDS (Global Fund), the strengthening of education systems (GPE), and environmental protection (GEF, CIF, AF and GCF).

Recent trends in the evolution of multilateral and multi-bi (or earmarked) aid portfolios present both risks and opportunities

The evolution of multilateral and bilateral portfolios offers interesting insights on the shifts affecting the multilateral development system. The analysis reveals contrasted trends for multilateral outflows and multi-bi aid flows. Between 2012 and 2019, similarity between multilateral outflows and DAC direct bilateral aid has decreased across all portfolio dimensions. In the case of multi-bi aid, by contrast, similarity with DAC direct bilateral aid has been increasing steadily over the last two decades, with the exception of a brief reversal of the trend between 2014 and 2016 due to a spike in humanitarian aid earmarked through multilateral organisations (multi-bi aid).

Figure 4. Multilateral outflows and multi-bi (or earmarked) aid present contrasted trends



Note: Portfolio similarity scores across the three dimensions are computed based on USD commitments.

Source: Authors' calculations using data from the OECD Creditor Reporting System (2021^[2]), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>.

Similarity between multilateral outflows and Development Assistance Committee (DAC) direct bilateral aid is decreasing across all portfolio dimensions

This diverging trend is driven by recent growth in Multilateral Development Banks (MDB) lending. Recent years have seen a rise in the volume of multilateral outflows from the main MDBs, such as the World Bank, African Development Bank, Asian Development Bank, Inter-American Development Bank, the Asian Infrastructure Investment Bank and the New Development Bank (OECD, 2020^[1]). This growth in MDB lending has had a visible impact on multilateral development finance: for example, the share of non-concessional finance in total multilateral outflows has increased from 43% to 52% between 2012 and 2018. It has also contributed to a gradual shift in the sectoral allocation of multilateral outflows, which have seen soaring investments in productive sectors, while infrastructure investments still account for the largest share of multilateral outflows.

Caution is required to ensure the multilateral development system remains in line with the collective priorities of its members. On one hand, the decreasing similarity between multilateral outflows and DAC bilateral aid constitutes a positive signal in terms of complementarity since it suggests increased specialisation of multilateral aid as well as greater use of the comparative advantages of the multilateral development system. For instance, the rise in non-concessional flows observed in multilateral outflows responds in part to the call made in the Addis Ababa Action Agenda (AAAA) to use MDBs' financial leverage in order to increase the volume of financing for sustainable development. On the other hand, the diverging trend also calls for increased attention from the DAC to ensure that the multilateral system continues to uphold the collective priorities of its members, for example their commitment to leave no one behind (LNOB).

Development Assistance Committee (DAC) bilateral and multi-bi portfolios, on the other hand, have started converging again in recent years

The convergence between the two portfolios is driven by variations in the levels of aid devoted to humanitarian assistance, and social infrastructure and services. The results reveal a long-term trend of thematic convergence between the DAC bilateral and multi-bi portfolios, only temporarily reversed

during the refugee and migrant crisis of 2014-16, which led to a spike in humanitarian aid earmarked through multilateral organisations (multi-bi aid). Since the end of the crisis, the converging trend has resumed, in part due to an increased focus of DAC members' multi-bi aid on social infrastructure and services. In the case of the other two dimensions (geographic focus and financing instruments), the similarity was already extremely high (portfolio similarity score superior to 0.9) and has remained relatively stable over time.

The rise of multi-bi aid and its resumed convergence with the DAC bilateral portfolio raise concerns over a progressive “bilateralisation” of multilateral aid. Given the significant increase of multi-bi aid since the early 2000s (both in terms of volume and as a share of total ODA), the way DAC members earmark their contributions through multilateral organisations increasingly shapes multilateral development finance. Multi-bi aid has typically been used by DAC members to support countries relevant to their bilateral portfolio in thematic areas where they lack expertise or operational capacity (e.g. humanitarian assistance). (OECD, 2020^[3]) However, the convergence observed through the portfolio similarity analysis suggests that members increasingly earmark funds through multilateral channels to advance their bilateral priorities. Although earmarking is often a rational choice and can respond to valid motives, the increase of such funding and the convergence with bilateral ODA could lead to a situation in which multilateral aid increasingly mirrors and amplifies bilateral priorities.

Main conclusions

The portfolio similarity analysis provides initial insights on the complementarity between multilateral and bilateral aid. The findings show that multilateral outflows and multi-bi (or earmarked) aid fulfil different functions relative to DAC direct bilateral aid, as well as across DAC members' portfolios. Moreover, the roles and complementarity of multilateral and bilateral aid evolve over time, as members adapt their support in reaction to specific crises (e.g. the refugee and migrant crisis) or needs from partner countries.

The results underscore the multi-faceted and adaptive nature of multilateral development finance. The flexibility offered by multilateral development finance is an asset for development partners in an era of global development challenges, characterised by increased uncertainty. However, the analysis finds that the evolution of multilateral outflows and multi-bi aid presents both risks and opportunities.

Developing a shared understanding of the role of multilateral outflows and multi-bi aid among DAC members is necessary to ensure they add value to their bilateral aid portfolio. The results of this analysis could inform a discussion on how to reconcile the multiple visions of, and expectations from, the multilateral development system observed across the DAC membership.

Looking forward, the portfolio similarity analysis could be extended to derive additional insights on the roles and value added of multilateral and bilateral aid:

- This analysis could be updated following the release of the 2020 ODA figures to examine how the role of multilateral development finance has evolved during the first year of the pandemic, and to explore how the multilateral development system can best add value to the post-COVID recovery effort.
- Building on the four new categories of multi-bi (or earmarked) aid proposed in a recent [policy note](#) (OECD, 2020^[3]), the portfolio similarity analysis could be replicated at more granular level to examine the specific role played by each earmarking modality in DAC members' portfolio. This would contribute to a nuanced approach to DAC members' multi-bi aid, recognising their diverse uses, qualities and characteristics.
- Clustering methods could also be used in addition to the portfolio similarity analysis to identify complementarity between multilateral organisations operating in specific development areas, such

as climate, health, or education. This would also enable an initial mapping of multilateral organisations based on their thematic focus, geographic focus, or the financing instruments they employ.

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Annex A. Portfolio similarity scores of individual DAC members

Table A.1. Thematic and geographic similarity between DAC members' multi-bi and direct bilateral aid

	Thematic similarity	Geographic similarity
Australia	0.77	0.87
Austria	0.13	0.82
Belgium	0.23	0.88
Canada	0.6	0.69
Czech Republic	0.41	0.75
Denmark	0.61	0.96
EU Institutions	0.92	0.94
Finland	0.52	0.92
France	0.37	0.75
Germany	0.29	0.75
Greece	0	0.04
Hungary	0.03	0.4
Iceland	0.26	0.89
Ireland	0.63	0.91
Italy	0.09	0.87
Japan	0.13	0.3
Korea	0.07	0.11
Luxembourg	0.67	0.79
Netherlands	0.6	0.97
New Zealand	0.53	0.72
Norway	0.57	0.9
Poland	0.14	0.18
Portugal	0.13	0.13
Slovak Republic	0.46	0.91
Slovenia	0.12	0.41
Spain	0.19	0.34
Sweden	0.5	0.95
Switzerland	0.6	0.97
United Kingdom	0.54	0.93
United States	0.36	0.81

Note: The scores are computed based on USD commitments (2015-19 average).

Source: Authors' calculations using data from the OECD Creditor Reporting System (2021_[2]), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>.

Table A.2. Thematic and geographic similarity between UN outflows and DAC members' direct bilateral aid

	Thematic similarity	Geographic similarity
Australia	0.59	0.69
Austria	0.16	0.92
Belgium	0.49	0.93
Canada	0.68	0.75
Czech Republic	0.43	0.84
Denmark	0.58	0.93
EU Institutions	0.56	0.91
Finland	0.58	0.81
France	0.32	0.91
Germany	0.32	0.92
Greece	0.03	0.52
Hungary	0.06	0.82
Iceland	0.46	0.83
Ireland	0.83	0.94
Italy	0.11	0.37
Japan	0.13	0.11
Korea	0.06	0.66
Luxembourg	0.74	0.93
Netherlands	0.47	0.43
New Zealand	0.57	0.83
Norway	0.51	0.21
Poland	0.2	0.18
Portugal	0.23	0.86
Slovak Republic	0.57	0.77
Slovenia	0.29	0.62
Spain	0.33	0.93
Sweden	0.35	0.94
Switzerland	0.56	0.94
United Kingdom	0.76	0.94
United States	0.69	0.93

Note: The scores are computed based on USD commitments (2015-19 average).

Source: Authors' calculations using data from the OECD Creditor Reporting System (2021^[2]), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>.

Table A.3. Thematic and geographic similarity between Multilateral Development Banks' outflows and Development Assistance Committee members' direct bilateral aid

	Thematic similarity	Geographic similarity
Australia	0.48	0.23
Austria	0.17	0.17
Belgium	0.37	0.12
Canada	0.32	0.27
Czech _Republic	0.29	0.16
Denmark	0.45	0.14
EU Institutions	0.82	0.42
Finland	0.39	0.18
France	0.75	0.47
Germany	0.55	0.35
Greece	0.01	0.07
Hungary	0.12	0.4
Iceland	0.21	0.09
Ireland	0.41	0.18
Italy	0.09	0.1
Japan	0.7	0.63
Korea	0.5	0.6
Luxembourg	0.5	0.18
Netherlands	0.34	0.08
New Zealand	0.47	0.09
Norway	0.32	0.16
Poland	0.26	0.23
Portugal	0.23	0.09
Slovak _Republic	0.31	0.14
Slovenia	0.17	0.09
Spain	0.23	0.14
Sweden	0.25	0.09
Switzerland	0.37	0.13
United Kingdom	0.45	0.2
United States	0.28	0.22

Note: The scores are computed based on USD commitments (2015-19 average).

Source: Authors' calculations using data from the OECD Creditor Reporting System (2021^[2]), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>.

Table A.4. Thematic and geographic similarity between vertical funds' outflows and Development Assistance Committee members' direct bilateral aid

	Thematic similarity	Geographic similarity
Australia	0.2	0.49
Austria	0.06	0.52
Belgium	0.23	0.55
Canada	0.33	0.58
Czech Republic	0.14	0.5
Denmark	0.15	0.56
EU Institutions	0.17	0.51
Finland	0.18	0.6
France	0.23	0.67
Germany	0.24	0.63
Greece	0	0.47
Hungary	0.04	0.46
Iceland	0.18	0.51
Ireland	0.31	0.65
Italy	0.05	0.5
Japan	0.1	0.59
Korea	0.07	0.36
Luxembourg	0.24	0.45
Netherlands	0.16	0.49
New Zealand	0.21	0.29
Norway	0.18	0.53
Poland	0.04	0.3
Portugal	0.06	0.18
Slovak Republic	0.16	0.5
Slovenia	0.04	0.4
Spain	0.09	0.37
Sweden	0.09	0.52
Switzerland	0.14	0.53
United Kingdom	0.31	0.61
United States	0.5	0.64

Note: The scores are computed based on USD commitments (2015-19 average).

Source: Authors' calculations using data from the OECD Creditor Reporting System (2021^[2]), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>.