UNCTAD

Investment and Enterprise Division

Establishing the baseline: estimating the fiscal contribution of multinational enterprises

ANNEX I

Technical background paper accompanying the *World Investment Report 2015*, Chapter V "International Tax and Investment Policy Coherence"

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Section A. Establishing the baseline: estimating the fiscal contribution of multinational enterprises

1. Objective and scope of the analysis

The main goal of the contribution analysis is to arrive at a meaningful order of magnitude for the *fiscal contribution* of foreign affiliates (FAs) of multinational enterprises (MNEs) to developing economies. The definition *"fiscal contribution"* in this context encompasses all types of payments by FAs to host country governments, including taxes, social contributions and other revenues. Note that headquarters of MNEs based in developing countries are excluded from the analysis.

Ultimately, the goal of the analysis boils down to the estimation of three metrics: a. The share of government revenues paid by FAs over total government revenues; b. The share of government revenues paid by FAs over the government revenues paid by the corporate sector; c. The absolute amount of government revenues paid by FAs.

The analytical effort is relevant in a number of respects.

- In the broad discussion on the financing of the *Sustainable Development Goals (SDGs),* it helps to size the potential role of MNEs in mobilizing domestic resources for development.[1]

- In the current BEPS discussion, it helps to *draw a baseline* to assess the weight of the tax leakage *relative to the tax contribution*.[2]

- Operationally, in the BEPS measurement work (Action 11 of the OECD/G20 BEPS Action Plan) it is helpful to understand relative sizes of categories of MNE contributions when estimating the impact of different BEPS schemes.

Despite the relevance of the research question, to our knowledge there are no previous studies that arrive at a quantification of the fiscal contribution of foreign affiliates to developing economies in a systematic or comprehensive fashion. The main reason for this gap is arguably the substantial scarcity of data on taxes paid by foreign affiliates in general, and in developing economies in particular. Most MNEs do not report taxes and other financial information at the level of their FAs.[3] Increasing pressure for country-by-country reporting may significantly improve information availability in the near future, but at the current stage access to relevant data on FA operations and financials is still highly problematic.[4]

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[1] The *World Investment Report 2014* focuses on the role of FDI in mobilizing *external sources* of development financing in terms of private investments into SDGs; this study complements that perspective highlighting the role of FDI in mobilizing *domestic resources*.

[2] It is important to observe here that the goal is to compute the fiscal contribution "after profit shifting", i.e. it targets what FAs actually pay (based on what they report) *after BEPS* has taken place.

[3] MNEs in general do not have the obligation to report detailed business and financial information on their FA activities. Recently, due to mounting pressure for tax transparency, an increasing number of MNEs are voluntary opting to disclose tax information on their foreign operations. See for example detailed by-country tax contribution reports from Vodafone (http://www.vodafone.com/content/sustainability/operating_responsibly/tax/) or BBVA (http://press.bbva.com/latest-contents/press-releases/bbva-8217-s-total-tax-contribution-topped-9-8-billion-in-2013).

[4] Country-by-country reporting has been a long standing pillar of tax transparency advocacy (see for example the Tax Justice Network website http://www.taxjustice.net/topics/corporate-tax/country-by-country). It allows detecting distortions and misalignments in business and financial indicators of FAs, potentially signaling profit shifting practices. In the context of the BEPS-G20 process, countries agreed on a new standard for MNEs to report their economic activities (including profits and tax payments) to the tax authority on a country-by-country basis. However this measure *per se* would not increase access to FA information for the broad public as transparency remains

In practice, analysts can count on two main sources of information on taxes paid by foreign affiliates.

The ORBIS database by Bureau Van Dijk collects financial and business information from balance-sheet and P&L data for over 100 million companies worldwide. It is currently by far the largest recipient of firm-level data. More crucially, it is the only firm-level database providing comprehensive information on the ownership structure of companies; this makes it, *de facto*, the only option when the analytical focus is on multinational enterprises and the operations of their foreign affiliates. However for developing regions, in particular Africa and to some extent Latin America, ORBIS suffers from severe problems of coverage of the sample and availability of the financial information.[5] Additionally, there are some methodological issues related to the correct identification of foreign affiliates and the proper interpretation of their financials.[6] Examples of studies using ORBIS to analyze the tax dynamics of MNEs in developing countries include Markle and Shackelford (2012, 2013); Fuest *et al.* (2012);[7] Cobham and Loretz (2014).[8]

The second source of data on taxes paid by FAs are foreign affiliates statistics (FATS) collected through national surveys. These include: a. Statistics on the activity of affiliates operating in the reporting country

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confined to one-to-one communication with the tax authority. Aside from the BEPS project, other on-going transparency initiatives provide useful complementary information on the activity of MNEs in their countries of operations. A notable example is the Extractive Industry Transparency Initiative (EITI) supporting member countries (participation is on voluntary basis) in the full disclosure of company payments and related government revenues from oil, gas and mining. A review of corporate transparency initiatives currently in place can be found in PwC (2013).

[5] According to preliminary findings from UNCTAD on-going efforts, ORBIS reports some 2,600 foreign affiliates operating in Africa. For some smaller African countries, it records unreasonably low numbers of FAs (e.g. Burundi - 3 FAs, Benin - 8 FAs, Congo - 15 FAs). Additionally, out of the 2,600 identified foreign affiliates, more than 2.100 (more than 80%) either do not report tax data at all or report negative/null values of taxes. For other indicators, like turnover or employment, the coverage does not improve substantially (not available data at 65% for turnover and almost 80% for employment). As a further benchmark Zambian Central Bank surveyed 126 active foreign affiliates in 2013 while UNCTAD extraction from ORBIS returns 36 items.

[6] There are two main obstacles to consistent collection and elaboration of FAs information from ORBIS. a. Missing information on the location of the ultimate owner (this is often the case when the ultimate owner is physical person or a family) that does not allow to discriminate between domestic and foreign subsidiaries; b. Double-counting of financials in the aggregate figures due to consolidated accounting. UNCTAD is currently dealing with these issues in a (parallel) analytical effort aimed at building an ORBIS-based dataset of foreign affiliates to strengthen its statistics on international production.

[7] The studies of Markle and Shackelford and Fuest *et al.* apply econometric techniques on a sample of firms extracted from ORBIS to analyze taxation of MNEs, either by comparing MNEs with domestic firms or by comparing MNEs with different features between each other. More specifically, Markle and Shackelford (2012, 2013) use consolidated data from ORBIS to analyze factors influencing business groups' effective tax rates or ETRs (taxes paid over pre-tax profit reported by ORBIS) for a sample of both developed and developing countries. Interestingly they find no evidence of a substantial difference in the ETR between domestic companies and MNEs, while within the group of MNEs the locations of the subsidiaries (financial centers vs. other countries) matter. Also Fuest *et al.* (2012) explore the determinants of ETRs based on a sample of ORBIS data focusing specifically on developing economies. Results confirm that adherence to a multinational group does not play a significant role in determining the effective tax rate (unlike institutional factors like the level of corruption).

[8] Cobham and Loretz take a more policy-oriented perspective where the goal is to analyze the potential impact on individual countries of a change in the tax system, from the current system of separate accounting to unitary taxation. In particular, based on financial and operational data extracted from ORBIS on a sample of FAs worldwide, the paper simulates how the tax base and the tax revenues would re-partition across country if various apportionment formulas are applied. Although data coverage is problematic for developing countries, the paper finds that apportioning profits according to measures of actual economic activity would result in a major redistribution of the tax base at the expense of specific jurisdictions, and in most cases toward the lower income countries in the sample.

(inward FATS); b. Statistics on the activity of foreign affiliates of parents based in the reporting country (outward FATS). Since only developed countries produce these surveys, when the object of the analysis is the activity of foreign affiliates in developing economies the most relevant perspective is the outward one (e.g. activity of United States or German headquartered foreign affiliates in developing economies). The coverage of FATS in terms of reporting economies depends on the financial indicators of interest. For *"taxes paid"* by foreign affiliates essentially only U.S. Bureau of Economic Analysis (BEA) reports complete FATS information.[9] Existing studies on MNE taxation based on FATS data are almost exclusively limited to foreign affiliates of United States multinationals. For a useful overview of issues related to the collection and interpretation of BEA FATS data on taxation, see Yorgason (2009). For applications of BEA tax data, see for example Clausing (2009)[10] or IMF (2014).[11]

Unlike previous literature, the goal of the analysis in this study is to comprehensively "size a population", i.e. to measure the *total* amount of taxes paid by *all* foreign affiliates in developing economies, rather than exploring properties of a population (for example tax behaviors of MNEs) by generalizing from a reasonable but limited sample of firms. For this purpose, coverage issues of tax information in ORBIS and FATS statistics are even more challenging.[12] Additionally it is important to recall that both ORBIS and U.S. BEA FATS capture only a portion of the total FA fiscal contribution.[13] It is not surprising that in a context where availability of data on the P&L-transparent component, corporate income tax, is poor, data on other contribution items (*"above the line"*) are barely existent. The *"Doing Business"* total tax contribution approach developed by the World Bank jointly with PwC[14] circumvents the issue by computing by-country total tax corporate contributions on a pro-forma basis instead of using actual data.[15] This approach captures differences in the tax regimes of different countries and allows assessing the fiscal burden borne by the "average" firm across countries and regions but it provides limited insights on the

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[9] Bureau of Economic Analysis, International Economic Accounts (http://www.bea.gov/international/); see also Barefoot (2012). Also Japan reports some, albeit partial, data on taxation of FAs; source for Japan is Ministry of Economy, Trade and Industry (http://www.meti.go.jp/english/statistics/).

[10] Clausing (2009) leverages BEA data to analyse international profit shifting practices of U.S. multinationals. The paper investigates how profitability of U.S. headquartered FAs varies with tax rate differentials. Results confirm a responsiveness of MNEs to tax rate differentials, both in the form of financial profit shifting (stronger effect) and in the form of real profit shifting (more moderate effect).

[11] Similarly to Cobham and Loretz (2014), also IMF (2014) runs a simulation of the effect of a shift towards formula apportionment, but leveraging BEA outward statistics on U.S. headquartered multinational rather than ORBIS data. Empirical evidences suggest that advanced economies would systematically receive a larger portion of taxable base to the detriment of "conduit" countries (Bermuda, Ireland, Luxembourg, the Netherlands, Singapore and Switzerland). However for developing economies the picture is more nuanced: they would "gain" tax base only if the apportionment formula places heavy weight on employment.

[12] But see also discussion on limits of ORBIS in Cobham and Loretz (2014).

[13] In ORBIS this portion is limited to the corporate income tax, while BEA also reports an additional category *"taxes other than income and payroll taxes"*, however too aggregated to provide meaningful information on the contribution side. The category is also defined as "*indirect business taxes*" and includes a variety of taxes, such as sales taxes, value added taxes, excises; property taxes; international trade taxes; etc… For the purpose of establishing taxes borne by foreign affiliates it is too aggregated as it encompasses also some taxes collected but not paid (like Value Added Tax or VAT).

[14] See annual publication "Paying Taxes"; 2015 edition http://www.doingbusiness.org/reports/thematic-reports/paying-taxes

[15] The approach uses a case scenario to measure the taxes and contribution paid by a standardized business under each country tax regime.

size of the total contribution (function not only of the tax regime in place in a country, but also of the volume and distinctive features of the business activities performed).[16]

This study rather takes a stepwise approach that does not use directly information on taxes and other government revenues paid by foreign affiliates, subject to the major data constraints just discussed. Instead, the initial data inputs are government revenues data reported by countries; from these, the approach *"zooms in"* on overall corporate contributions (domestic and foreign), and finally on foreign affiliate contributions. Such an approach ensures that margins of error in estimations are confined at each step along the way. Nevertheless, as available data on foreign operations and tax payments of MNEs are limited and fragmented, the analytical approach has been heuristic, employing a variety of sources and methods to converge towards a meaningful order of magnitude of MNE contributions. Figure 1 summarizes the three main steps.

Figure 1. Overview of the methodology
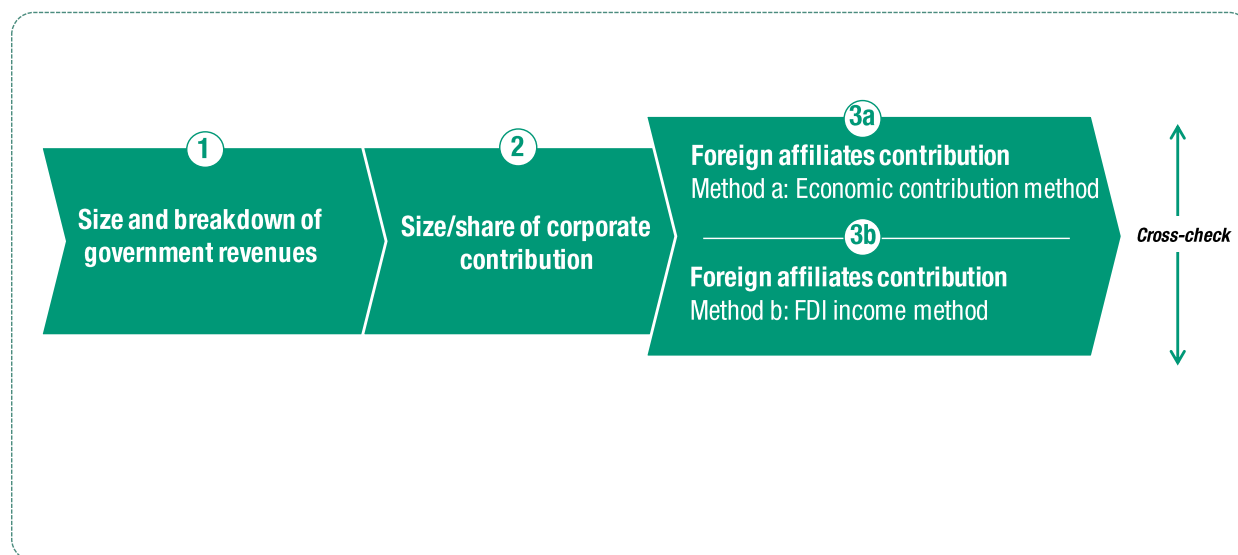
Source: UNCTAD.
Note: From step 2, *grants* are excluded from the analysis as they do not involve any corporate contribution.

- *Step 1* derives a convenient representation of the "average" government revenue collection (size and composition of government revenues as shares of GDP) in developing countries from available government finance data.

- *Step 2* allocates government revenues, according to the payer, either to business (*corporate contribution*) or to individuals/consumers.

- *Step 3* estimates the portion of the corporate contribution borne by foreign affiliates (*FA fiscal contribution*). The calculation in step 3 is performed employing two alternative methods, leading to consistent results: *3a. The economic contribution method* and *3b. The FDI-income method.*

The potential relevance of this study is not limited to estimation of the FA fiscal contribution. It is possible to envisage at least two other research areas that could benefit from this analysis.

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[16] In particular the prototypical company driving the "Doing Business" calculation is defined as a domestic small-medium company, thus potentially very different from the average foreign affiliate of a multinational group.

a. The first step of the process includes an extensive and granular elaboration of government revenue data, generating a number of insightful government revenues statistics for developing economies. This value added largely owes to the recently released ICTD *"Government Revenue Dataset"* that, compared to other existing databases, achieves higher coverage and granularity of government revenue data for developing economies.

b. In step 3a, an analysis of the economic contribution of foreign affiliates to developing economies is carried out as part of the estimation of the FA fiscal contribution. The strand of research aimed at quantifying and monitoring the economic value generated by foreign affiliates in host economies clearly has a broader scope than the calculation of FA fiscal contributions. In recent years UNCTAD has made several analytical efforts in this area and developed its own methodology to assess FA economic contributions, including through systematic monitoring of global trends in international production.[17] The analysis in this study builds and improves on UNCTAD's experience in this area.

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The description of the estimation approach in this annex is meant to provide transparency and background to researchers who wish to pursue further improvement or refinement of the analysis of fiscal contributions of MNEs. Given the limitations of available data explained above, the estimates arrived at here should be interpreted as orders of magnitude.

2. Analytical approach

Step 1: Size and composition of government revenues

The first step of the process consists of deriving a meaningful representation of government revenue collection in developing economies. In this context *"government revenue collection"* refers to the average size (measured as a share of GDP) and composition (at a convenient level of granularity of the revenue components) of all revenues collected by governments. The average values for the various country groupings are computed from national government revenue data, after weighting each country according to its GDP.

For cross-regional analysis the most relevant global sources of government revenue data are the IMF/GFS database and World Bank and recently the ICTD "Government Revenue Dataset" (ICTD DB).[18] All these datasets face an obvious trade-off between granularity of the revenue structure and country coverage. Such a trade-off can be particularly penalizing for developing economies where available information from national governments is more limited.

The goal is to select a reference database that guarantees acceptable country coverage at a meaningful level of granularity (i.e. at a level of granularity relevant to the target research questions).

For the purpose of this study, the ICTD DB presents the most attractive balance between granularity and country coverage for developing economies. It captures around 120 developing countries, the largest available perimeter among government revenue databases. As explained in Prichard *et al.* (2014), the ICTD DB also has a number of other advantages related to consistent treatment of revenue information

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[17] Periodically the *World Investment Report* publishes a section reporting trends in international production estimated according to UNCTAD's contribution methodology (*World Investment Report 2014*, p. 29). For a more specific application of the methodology, see for example *World Investment Report 2012*, p. 29.

[18] The first version of ICTD DB was released in September 2014. For a detailed description of the ICTD DB, see Prichard *et al.* (2014).

across countries/regions and a dedicated focus on natural-resource revenues. Occasionally the methodology also appeals to the IMF-GFS dataset as a complementary source to extract relevant information that ICTD DB does not report (see note to figure 2). The main limit of the ICTD DB is timeliness: the most recent year for which ICTD DB presents a consistent and rich set of revenue data is 2009 (while, for example, most IMF GFS data are updated at 2012).[19] However validation procedures comparing ICTD DB 2009 with the IMF/GFS 2009 and 2012 shows significant alignment in the government revenue collection for various country groupings across time. Table 1 reports the results of the comparison for developing economies. The most visible difference in terms of the composition of government revenues is the higher weight assigned by the ICTD DB to *"Other revenues"* at the expense of *"Taxes"*. This is due to a systematic re-allocation of the natural-resource revenue items from *"Taxes"* to *"Other revenues"* performed by ICTD DB. See Prichard *et al.* (2014), pag. 26, for a more detailed discussion on the issue.

Table 1.High level comparison between ICTD DB and IMF/GFS, share of GDP

	ICTD DB 2009	IMF/GFS 2009	IMF/GFS 2012
Total taxes	16%	17%	18%
Income taxes	5%	6%	7%
Payroll	0%	0%	0%
Property	1%	1%	1%
G&S	8%	9%	9%
Int trade	1%	1%	1%
Other taxes	1%	0%	0%
Social contribution	3%	3%	3%
Other revenues	8%	5%	6%
Grants	0%	0%	0%
TOTAL REVENUES	27%	26%	27%

Source: UNCTAD elaboration on ICTD "Government Revenue Dataset" and IMF/GFS revenue data.

Step 2: Estimation of the corporate contribution

This step consists of the estimation of the share of government revenues paid by firms (as opposed to individuals/consumers). For each component of government revenues derived in step 1, the methodology arrives at an estimate for the corresponding share paid by firms (*"corporate share"*).

It is possible to identify three main cases (see also figure 2).

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[19] Notice that as the other steps of the estimation process are set at 2011 or 2012, the implicit assumption here is that on average the size and composition of the government revenue collection (as a share of GDP) for developing economies has not changed significantly between 2009 and 2012. This is in line with evidence from comparison with IMF/GFS 2012 data (see table 1).

- *Type 1: Fully allocable items*→ *corporate share at 100% or 0%*
  The estimation of the corporate share follows directly from the definition of the revenue category, so that the entire category is treated as either borne (corporate share at 100%) or not borne (corporate share at 0%) by business. The obvious examples are corporate income taxes (fully borne by companies) as opposed to personal income taxes (fully borne by individuals).[20]

- *Type 2: Non-allocable items*→ *corporate share set at 50% by convention*
  These items cannot be clearly allocated because they are too heterogeneous. They lay typically either at the lowest possible level in the government revenue classification (no further breakdown is available for their allocation) or at a level such that the more granular level exhibits too limited coverage to derive reliable statistics. Given uncertainty around the allocation, the corporate share for these categories is set at 50%. As these categories represent a residual portion of government revenues (see column 1, figure 2), this approximation, albeit rough, does not substantially affect the aggregate estimates.

- *Type 3: Indirectly allocable items*→ *corporate share following from allocation at lower levels*
  When the allocation has been done at lower levels, the allocation of the overarching category follows automatically from the corporate shares and the mix of the sub-categories.

For each relevant revenue item, figure 2 shows: a. The relative weight in the average government revenue collection of developing economies and b. The key elements of the estimation of the corporate contribution, i.e. the *item type*, the *corporate share* and the resulting *corporate contribution* (defined here as the share paid by corporation over total government revenues).

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[20] Although allocation in this category is relatively straightforward, two caveats should be kept in mind.
i. The allocation criteria are necessarily established "a priori" and apply equally to all jurisdictions. As such, they reflect the formal definition and the default application of the revenue category, but they do not accommodate for exceptions or nuances related to the actual implementation of the tax legislation. For example VAT is treated as a tax fully borne by consumers (corporate share at 0%). This approach is valid in general but it does not capture cases of irrecoverable VAT, effectively borne by companies. Similarly, considerations about whether a specific tax is actually "financed" by the same subject legally accountable for its payment or implicitly "passed on" to another economic actor are beyond the scope of this methodology. As an example, it can be argued that taxes on international trade are formally collected and paid by business but eventually passed on to the consumer. However, unlike value added taxes, they are not qualified as taxes on consumption and there is no formal mechanism to recover them (they are actually reflected as *costs* in the company income statement). Therefore, in this context, they are treated as "borne" by the business and thus fully allocated to the corporate income component (unlike value added taxes borne by consumers and fully allocated to the non-corporate component).

ii. The full (100%) allocation to the corporate component should not be interpreted too strictly; it reflects the fact that the *bulk* of the revenue item is paid by business. This is the case for example for the revenue item *"Property income"* within *"Other revenues"*. In this approach *"Property income"* is fully allocated to business. However it is a quite heterogeneous category, encompassing a number of sub-categories, the most relevant being *"Interest"*, *"Dividends"* and *"Rent"*. Although a part of this is paid by individuals (e.g. public residential housing), it is reasonable to expect that in developing economies the lion's share is financed by corporations, e.g. as natural resource-related fees or rents. This is particularly true for the ICTD DB where the corporate share of *"Other revenues"* is even larger due to the re-allocation of natural- resource revenues from the category *"Taxes"*. Similarly the assumption that taxes on *"International trade"* are largely paid by corporations follows from the prominent role that corporations and MNEs in particular play in international trade; UNCTAD estimates the share of trade involving MNEs at 80% of total trade (see *World Investment Report 2013*, p. 135).

Figure 2. Overview of the estimation of the corporate contribution for developing economies

			Estimation of the corporate contribution	
Gov. revenue items	Weight (share of total gov. revenues)	Item type	Corporate share (share of the revenue item paid by business)	Corporate contribution (share of the gov. revenues paid by business)
Total taxes	61%	*type 3*	33%	20%
Income taxes	20%	*type 3*	65%	13%
Personal income	7%	*type 1*	0%	0%
Corporate income	13%	*type 1*	100%	13%
Payroll and workforce	0%	*type 2*	50%	0%
Property	3%	*type 2*	50%	1%
Goods and services	30%	*type 1*	0%	0%
International trade	4%	*type 1*	100%	4%
Other taxes	4%	*type 2*	50%	2%
Social contributions	10%	*type 3*	50%	5%
Employers	5%*	*type 1*	100%	5%
Employees	5%*	*type 1*	50%	0%
Other revenues	29%	*type 3*	75%	22%
Property income	15%*	*type 1*	100%	15%
Others	15%	*type 2*	50%	7%
TOTAL	100%			47%

Source: UNCTAD analysis, based on ICTD "Government Revenue Dataset" and IMF/GFS.

Note: "Others" within "Other revenues" include "Sales of Goods and Services", "Fines, Penalties and Forfaits", "Voluntary transfers other than grants", "Miscellaneous and unidentified revenues". Grants are excluded *a priori* from this scheme as they are irrelevant for corporate contributions.
*Split based on data from IMF/GFS dataset. Occasionally the ICTD DB does not provide the information at a level of granularity that allows a straightforward allocation while the IMF GFS dataset does (at a lower level of classification). This is the case for a. *"Social Contributions"* for which the ICTD DB does not provide the necessary split between employee component and employer component; b. *"Other revenues"* where no further sub-component is reported by ICTD DB. In these cases the methodology leverages IMF-GFS data to complement the ICTD DB and derive the required breakdown.

Step 3: Estimation of foreign affiliate fiscal contributions

The estimation of the FA fiscal contribution is carried out employing two alternative methods: a. The *economic contribution method* and b. The *FDI-income method.* Figure 3 summarizes the main features and the resulting estimates of the two methods.
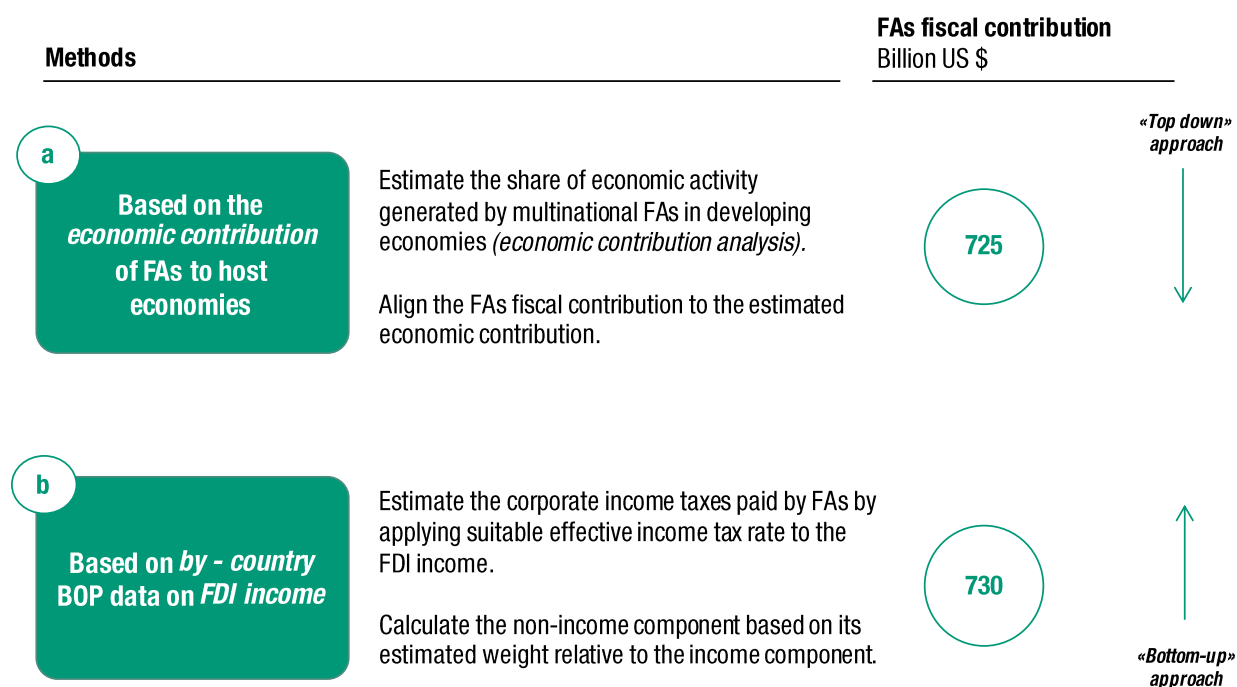
Step 3a: Economic contribution method

The main idea is that the portion of the corporate contribution attributable to foreign affiliates should reflect the economic value generated by foreign affiliates to the host economy *(economic contribution).*

"Economic value" in this context must refer to "reported economic value", i.e. economic value after profit shifting. A caveat should be made for those forms of profit shifting related to financial transactions: as national account statistics on value added report operating surplus (rather than profits) below-the-line profit shifting, primarily thin capitalization, is not fully captured by the contribution approach. This makes the contribution approach imperfect, and adds to the rationale for the complementary FDI-income approach, which fully captures it. The potential impact of the imperfection is captured by the estimation intervals (see the section below on limitations and areas for further research).

As the corporate fiscal contribution consists of different and heterogeneous components, it is not ideal to derive only one indicator of economic value (for example the value added); it is preferable to build the estimation on *multiple drivers*. Each driver will then apply to the most appropriate components of the corporate contribution in order to best approximate the corresponding share paid by FAs (*"FA share"*).

Figure 3. Overview of the estimation of the FA contributions for developing economies

Methods		**FAs fiscal contribution** Billion US $
a **Based on the** *economic contribution* **of FAs to host economies**	Estimate the share of economic activity generated by multinational FAs in developing economies *(economic contribution analysis).* Align the FAs fiscal contribution to the estimated economic contribution.	*«Top down» approach* 725
b **Based on** *by - country* **BOP data on** *FDI income*	Estimate the corporate income taxes paid by FAs by applying suitable effective income tax rate to the FDI income. Calculate the non-income component based on its estimated weight relative to the income component.	730 *«Bottom-up» approach*

Source: UNCTAD analysis, reference year 2012.

Figure 4 summarizes the selected drivers (*Profits*, *Employment*, *Exports*, *Value Added*); the components of the corporate contribution associated to each driver; [21] the estimated FA share. Notice that *Value Added* (fourth bucket) is used as "default" driver for the revenue categories that do not have a dedicated tailored driver. Section B at the end of this annex gives a comprehensive account of the empirical background behind the estimation of the FA shares.

Figure 5 builds on figure 2 (column 3) and on figure 4 (column 2) and shows the whole sequence of calculations leading from revenue collection statistics to the estimate of the FA fiscal contribution.

Figure 4. Estimation of FA economic contribution in developing economies

Drivers	Associated components of corporate contribution	Share generated by FAs
1 **Profits**	**Corporate income taxes**	**25%**
2 **Employment**	**Taxes on payroll and workforce** **Social contributions**	**10%**
3 **Exports**	**Taxes on international trade**	**50%**
4 **Value Added**	**All other relevant gov. revenue items:** • **Other taxes (including property taxes)** • **Other revenues**	**20%**

Source: UNCTAD elaboration on multiple sources. See also Section B of this annex.
Note: Other revenues include (non tax) revenues from property income (mostly royalties) and the other items classified as "Other revenue" in the IMF GFS classification, namely "Sales of Goods and Services", "Fines, Penalties and Forfaits", "Voluntary transfers other than grants", "Miscellaneous and unidentified revenues". Grants are excluded *a priori* from this scheme as they do not involve any corporate contribution.

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[21] For taxes related to labour and social contributions (second bucket) the ideal driver would be "*remuneration of employees*" for which, however, data availability is very limited; thus *"employment"* was selected as second-best option. It is plausible that MNEs pay on average higher salaries than domestic companies and therefore using "Employment" as driver would understate the FA fiscal contribution. This bias is addressed by "rounding up" the estimated FA share of employment (at 6% - 9%) to 10%. See exact figures in Section B of the annex. As *international trade taxation* (third bucket) includes both taxes on import (import duties) and taxes on exports, and the two components cannot be easily separated, the driver *"Exports"* is used here as a generic indicator of FAs penetration in trade.

Figure 5. Estimation of FA fiscal contributions according to the economic contribution method

| Taxes on income, profits and capital gains	Gov. revenues as: Share of GDP%	x	Corporate contribution as: Share of gov. revenues	=	Share of GDP %	x	FAs contribution as: Share of corp. contribution	=	Share of GDP %	x 25.4 TN US$ [GDP 2012]	= Absolute value Billion US$
Individuals	1.9		0%		0				0		0
Corporations	3.5		100%		3.5		25%		0.9		220
Taxes on payroll and workforce	0.2		50%		0.1		10%		0.01		5
Taxes on goods and services	8.0		0%		0				0		0
Taxes on international trade and transactions	1.0		100%		1.0		50%		0.5		124
Other taxes (including property taxes)	1.6		50%		0.8		20%		0.2		42
Social contributions	2.8		50%		1.4		10%		0.1		35
Other revenues	7.8		75%		5.9		20%		1.2		297
TOTAL	27.0				12.8				2.8		723

Source: UNCTAD elaboration on multiple sources, reference year 2012. See also Section B of this annex.
Note: Differences in totals due to rounding. Grants are excluded *a priori* from this scheme as they do not involve any corporate contribution.

Although the method is not designed to distinguish between the fiscal treatment of FAs and domestic companies, it returns a differentiated contribution mix. This effect is due to the fact that the methodology applies different contribution shares to different components of economic value added. The differences in the relative size of the contribution shares and consequently in the contribution mix between foreign affiliates and the "average firm" reflect differences in their typical business profile. Figure 6 compares the contribution mix of foreign affiliates and the average firm (for taxes and social contributions only, excluding other revenues). As expected, the FA contribution is relatively higher in international trade taxation, while the weight of corporate income taxation is the same, at 50% of the total amount of taxes and social contributions.

The estimated values presented here should be interpreted as orders of magnitude. They represent central values in range estimate intervals, due to approximations and limitations of the methodology (further explained below in the section on limitations and areas for further research). The overall estimate of $725 billion is the mid-point of a range with a lower-bound of around $650 billion and an upper-bound of around $800 billion. Note that this level of approximation does not have a substantial impact on the relevance of the FA fiscal contribution i. as a share of total government revenues, it falls in a range between 9% and 12%; ii. as a share of total corporate contribution, in a range of 20% - 25%.

Figure 6. Contribution mix for foreign affiliates and the average firm *(total includes only taxes and social contributions, no other revenues)*
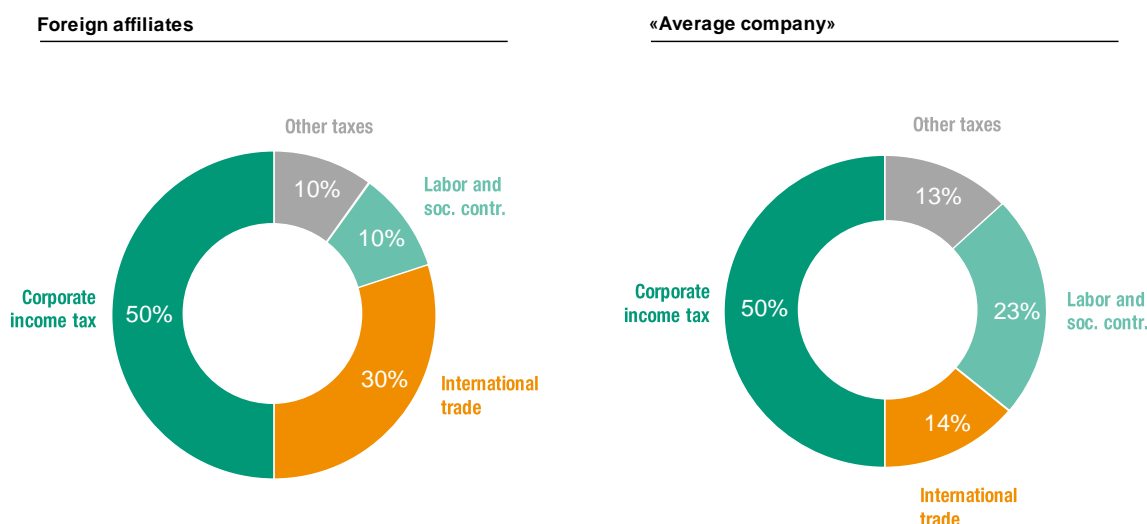
Source: UNCTAD.

Step 3b: FDI-income method

The FDI-income method is to some extent "external" to the main estimation process: it is driven by balance of payments (BoP) data on FDI income[22] rather than government revenue data and it just borrows from step 2 of the process the estimation of the average mix of the corporate contribution.

Figure 7 summarizes the key elements of the approach. The FDI-income method is characterized by two building blocks:

1. It leverages BoP data on FDI-income (equity component)[23] to estimate the corporate income taxes paid by foreign affiliates, after applying a suitable effective income tax rate.
2. It exploits the estimation of the corporate contribution performed in step 2 to estimate the size of the non-income component relative to the income component.[24]

The two building blocks are independent until the last step of the calculation where the weights of the different components from (2) are applied to the corporate income taxation paid by FAs from (1) in order to estimate the total FA fiscal contribution.

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[22] Country data available from IMF, Balance of Payments statistics.

[23] The values of pre-tax FDI income are not directly retrievable from by-country BoP data. Instead, they are estimates obtained by applying to the total FDI stock of the region the average rate of return of the equity income for the reporting countries. Furthermore, as BoP-reported FDI income is by definition "after-tax" the determination of the pre-tax FDI income requires adding a (corporate income) tax component calculated using the average effective tax rates reported in column 2.

[24] The distribution of the corporate contribution by region is estimated following the same logic applied in figure 2 to developing economies. The only difference is that the average government revenue collection, i.e. the "starting point" (column 1 in figure 2), is calculated by region rather than for developing economies as a group.

Figure 7. Estimation of the FA contribution according to the FDI-income method
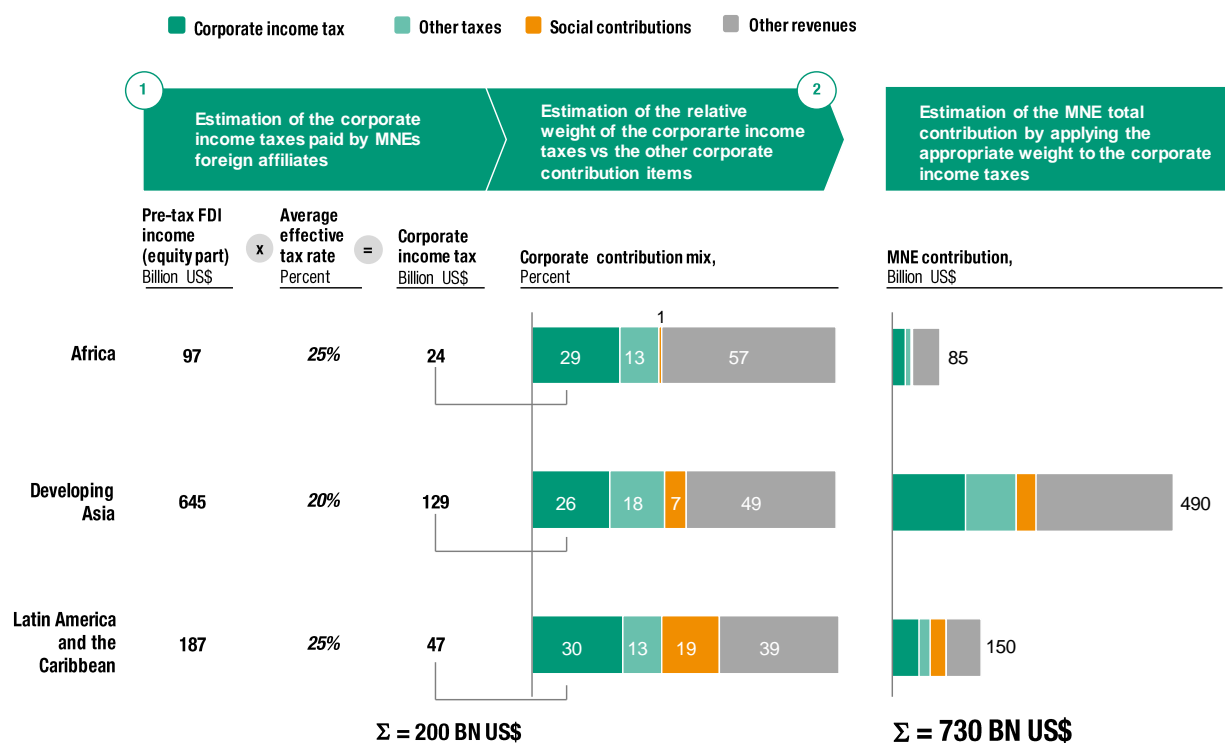
Source: UNCTAD

Note: Minor inconsistencies due to rounding.

Unlike the economic contribution method, the FDI-income method proceeds from the bottom to the top: it first estimates the FA fiscal contribution for each developing region and then sums the results to obtain the aggregate estimate for developing economies. The total FA fiscal contribution at $730 billion comes out as broadly consistent with the results of the economic contribution approach (at $723 billion, last row in figure 5), and also the estimate of the corporate income component of the fiscal contribution at $200 billion (figure 7, third column) against $220 billion estimated by the contribution approach (figure 5, second row, last column) is aligned.[25] From a methodological perspective, the consistency of the two estimates of the corporate income component is particularly helpful because at this stage of the procedure the two calculations are independent, i.e. there is no overlapping of the two methodologies that may "induce" convergence in the results.

The two approaches should not necessarily lead to the same result. In fact, the FDI income method should in theory yield a lower estimate, given that it can only take into account the income on the foreign-owned

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[25] For the non-income component there are some moderate differences between the estimates. This is due to the fact that while the contribution mix resulting from the economic contribution method is specifically tailored to FAs, by construction, the contribution mix from the FDI-income method inherits (from step 2) the contribution mix of the "average firm". The differences in the estimates of the non-income components reflect the differences in the contribution mix of foreign affiliates and the "average firm", as shown in figure 6.

part of direct invested enterprises, rather than the full income of foreign affiliates (although the difference should not be large, especially in developing countries).[26]

The value added of the FDI-income method to the overall estimation process is twofold:

- Due to data constraints, the economic contribution method becomes less reliable when the perimeter of the estimation is restricted from "developing economies" to individual developing regions (Africa, Asia, Latin America). In these cases, the FDI-income method can provide more reliable regional estimates of the FA fiscal contribution as it builds on data with better regional coverage.

- Given the fact that it is largely "exogenous", the FDI-income method represents a valuable validity check to test the estimation performed by the economic contribution method, which, as explained above, is imperfect.

The most challenging step of the FDI-income method is to "center" correctly the effective tax rates (ETRs) by region (column 2). The literature review for this study has not identified any prior studies that specifically target effective tax rates for foreign affiliates and only few that address developing economies. Critically, even for the same region, the literature proposes different ETRs, sometimes covering a range as large as 15% - 30%, depending on the data source, the sample of firms/countries and, above all, the methodology used for the calculation.[27] Clearly such a large variability may have non-negligible repercussions on the final estimate. Examples of papers addressing effective tax rates for developing countries include Ali Abbas *et al.* (2012), Markle and Shackelford (2012, 2013) and Fuest *et al.* (2012).[28] Ali Abbas *et al.* (2012) employs a forward-looking measure of the effective tax rate[29] while Markle and Shackelford (2012, 2013) and Fuest *et al.* (2012) resort to backward-looking approaches. The two studies of Markle and Shackelford are based on the notion of *average effective tax rate* (AETR) while Fuest *et al.* on the *marginal effective tax rate* (METR).[30] As the purpose of this study is intrinsically "descriptive", i.e.

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[26] Interestingly, the estimation of the corporate income component from the FDI-income method at $200 billion against $220 billion from the contribution method is consistent with the interpretation of the FDI income method as a lower bound. However, when calculating the non-income contribution items, the FDI income method applies the weights of the corporate contribution derived in step 2 rather than the weights of MNE contribution from the contribution method in Step 3.a. (this serves the methodological purpose to keep the FDI-income and the contribution approaches separate). The use of different weights is responsible for the convergence of the final estimates; given corporate income taxation at $200 billion, if MNE contribution weights were applied to the FDI income method, the final estimate for MNE total contribution would be at $660 billion, a proper lower bound to the $725 billion derived with the contribution method.

[27] There are two main approaches to the calculation of the ETRs: forward-looking and backward-looking. Forward-looking metrics measure the tax burden on a pre-defined investment project. More specifically they measure how taxes affect the cost of capital (i.e. the minimum required rate of return on an investment project). They are calculated on a stylized hypothetical investment and incorporate all the tax payments due over the lifetime of an investment, along with all the other cash-flows of the investment projects. Backward looking metrics are calculated as the plain ratio between corporate income tax payments and pre-tax income from reported accounting data. The two measures can lead to substantially different results and this partially explains the variability observed in the literature between estimates of the effective tax rates.

[28] Also Chen and Mintz (2013) and World Bank and PwC (2015), although they do not focus specifically on developing economies, provide effective tax rates for a number of developing countries as part of their annual ranking of countries' effective tax rates.

[29] Other examples of forward-looking approaches include Chen and Mintz (2013) and, to some extent, World Bank and PwC (2015).

[30] Although both Markle and Shackelford (2012, 2013) and Fuest *et al.* (2012) use a backward-looking formula, the approaches are different. In Markle and Shackelford effective tax rates are calculated as the average effective tax rate (AETR) within the sample of companies, i.e. the plain ratio between the sum of corporate income taxes paid and

to derive a measure of corporate income taxation as close as possible to historical data, the backward-looking AETR approach of Markle and Shackelford, based on actual accounting data, seems the most appropriate. Thus the effective tax rates employed in the estimation (figure 7, column 2) are substantially aligned with Markle and Shackelford (2012, 2013). Additional validation checks performed by UNCTAD on a sample of foreign affiliates from ORBIS also confirm these levels. The rounding of the ETRs at the 5 pp reflects the level of variability observed between the papers of Markle and Shackelford and the UNCTAD benchmark.

3. Limitations and areas for further research

This study is designed to provide an *order of magnitude* for FA fiscal contributions and to stimulate further efforts aimed at consolidating and refining the estimate. It is possible to envisage a number of analytical areas of improvement and related avenues for future investigation.

First, the most critical issue concerns the collection and exploration of firm-level statistics on the activity of FAs. Currently the economic contribution method relies primarily on FATS statistics supported by a collection of heuristic and empirical evidence from a variety of other sources. Although the only consistent source of FAs data so far, FATS statistics suffer from being driven exclusively by developed economies, either as investors (outward FATS) or as recipients (inward FATS). A more objective picture of the activity of FAs in developing economies requires complementing FATS with additional data. *ORBIS* is the natural and, in the short term, most feasible complement to FATS. However analytical work needs to be done to define a methodology to select and clean ORBIS data in order to have a consistent set of foreign affiliates (ideally consistent with FATS data). Additionally, robust imputation procedures are needed to complete the significant amount of missing data in developing economies (see also note 5 and note 6). Collection of FATS data by developing countries central banks, following some scattered examples like Zambia (Bank of Zambia, 2014) or Thailand (Tattawasart, 2011), would considerably improve the information available, providing an inward FATS perspective on developing economies. Finally public country-by-country reporting would mark a real discontinuity in the possibility to measure and monitor the activity of FAs in developing economies.

Second, another key issue relates to the identification of the effective income tax rate of foreign affiliates in developing economies. As explained above, the literature supports a range of options, leading to quite different results. In addition, a difficult question is whether a differentiated rate should be used for foreign affiliates and domestic companies. As mentioned above (see note 7), other studies have failed to find a significant difference in rates between domestic and foreign firms. An UNCTAD preliminary analysis through ORBIS, comparing average effective tax rates of large samples of domestic companies and foreign affiliates from different developing regions, also does not reveal any systematic gap between the two groups. Moreover, ORBIS firm-level evidence suggests ETRs for developing regions aligned with (or slightly above) those found in similar studies (Markle and Shackelford, 2012, 2013).

As uniform ETRs for foreign affiliates and domestic firms may appear counterintuitive, two important points should be made:

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the sum of all the pre-tax reported profits. In Fuest *et al*, they are estimated through a regression model and they are consequently interpreted as marginal effective tax rates (METRs), i.e. they represent the corporate income tax that would be paid (by the average company) on the marginal unit of profit. Resulting estimates may differ significantly as the first measure incorporates all the heterogeneity of the sample and the effect of the starting conditions, while the second is designed to net them off and capture the "pure" relationship between taxes and profits. Indeed, the values of the effective tax rate estimated by Markle and Shackelford (roughly at 20-25%) turn out to be higher than the values estimated by Fuest *et al*. (at 10-15%).

1. The fact that domestic firms and foreign affiliates are found to have similar ETRs does not preclude that MNEs, at the consolidated level, may have significantly lower ETRs due to base erosion and profit shifting. (ETRs are applied to the tax *base* that remains in foreign affiliates after profit shifting.)

2. Many developing countries provide fiscal incentives to MNEs, which (insofar as they lower the tax *rate* rather than the base) would normally imply lower ETRs for foreign affiliates compared to domestic firms. While incentives may have a significant impact at the individual country level, at the aggregate level the empirical evidence does not show any effect. Better and more disaggregated data and further research will be needed to quantify the effect of fiscal incentives.

The economic contribution method does not directly use ETRs but assumes effective tax rates of domestic companies and foreign affiliates are aligned. Consistently, in the FDI-income method, the effective tax rates used are not "tailored" to foreign affiliates but they reflect the average effective tax rates applied to firms in the regions. The issue is sensitive and open to debate and would deserve renewed empirical effort;[31] its implications, beyond this study, would be relevant for the on-going policy discussion on tax incentives and development.

Third, there are a number of factors that may lead to potential over/under-estimation of foreign affiliate contributions. A factor leading to potential over-estimation of the foreign affiliate contribution lies in the derivation of profits via operating surplus (see explanation in the concluding section on the Contribution Index). Although operating surplus ratios constitute a generally accepted proxy for profit ratios in national account statistics, it cannot entirely eliminate some forms of below-the-line profit shifting, primarily thin capitalization. (Above-the-line forms of profit shifting, such as transfer mis-pricing on operating transactions, should be excluded.) A number of factors qualify this limitation:

*   While the contribution method as presented here does not allow full exclusion of below-the-line forms of profit shifting, they are fully captured in the estimation methodology presented in annex II. The two have been kept separate here to avoid mixing independent approaches, but they could be considered complementary. Under extreme assumptions where the full extent of profit shifting as estimated in annex II would be due to thin capitalization (note that (a) there is no obvious solution to assess this and (b) the scenario is unlikely) the impact on corporate income tax contributions of foreign affiliates would imply a fall in the overall contribution estimate to the lower-bound estimate of $650 billion.

*   The FDI income method, which does not present this problem (it is based on reported profits of foreign affiliates), is consistent with the 25% share of FAs in total corporate profits applied in the contribution method.

*   UNCTAD's preliminary firm-level analysis based on ORBIS does not reveal a systematically higher foreign affiliate share in operating surplus than in profits.

Conversely, a factor leading to potential under-estimation of the contribution, again related to the contribution method, is the treatment of "mixed income" in the calculation of the profit share from national account statistics. In particular, the contribution method presently does not strip out the non-corporate business income component from the baseline for the calculation of the FA contribution. Removing non-corporate business income, which would be unlikely to contain any foreign affiliate contribution, would have the effect of increasing the foreign affiliate share in the remaining corporate income part, thereby increasing the foreign affiliate contribution rate. Simulation of this effect under a reasonable (conservative) hypothesis of mixed income at 20% of total value added in developing

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[31] For example, it would be interesting to investigate whether ORBIS may suffer from a selection bias on companies reporting tax information (excluding from its monitor exactly those companies that pay low or no taxes).

economies[32] would yield the upper-bound estimate for the total foreign affiliate contribution of around $800 billion.

Other factors leading to potential over- or underestimation cannot be excluded a priori.

Fourth, as government revenue data are the very first data input to the analysis, any improvement in the ICTD Government Revenue Dataset will have a positive impact on the resulting estimate. Desirable improvements include:

- More updated revenue information to track recent trends in revenue collection. Alignment with IMF data (currently updated at 2012) would be desirable.

- Higher granularity in the government revenue structure would allow extracting more punctual information to distinguish between individual and corporate contribution. In particular as "other revenues" is a relevant component of revenue collection in developing economies it should be further broken down to minimize arbitrary allocation.

- Improvement of country coverage would strengthen the empirical basis of developing countries and enable more representative statistics.

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[32] Country data on mixed income for developing countries are scarce. However, based on available data and evidence from other studies (Guerriero 2012, Trapp 2015), mixed income at 20% of value added is a conservative assumption.

Section B. Cross-fertilization between the MNE Fiscal Contribution Analysis and UNCTAD's Contribution Index

The calculation of the economic contribution is one of the steps of the methodology described above (and illustrated in figure 4) to estimate the fiscal contribution of MNEs. The methodology developed here builds on, and improves on, UNCTAD's Contribution Index, which attempts to measure the overall economic contribution of foreign affiliates to host economies. The Contribution Index is described in detail in the *World Investment Report 2012* (p.32).

There is no unique source that can provide a comprehensive picture (across the different drivers) of the economic contribution of FAs in developing economies; instead the estimation is the result of the enquiry of multiple sources that jointly form the "contribution profile" of FAs in developing economies (figure 4, column 3). The methodological choice to round the contribution shares at the 5 pp level reflects the expected degree of approximation of the estimate, as well as the ultimate objective of the analysis to arrive at an order of magnitude estimation.[33] For each driver the following paragraphs review the background behind the estimated FA share. For ease of exposition the drivers are not listed in the same order as in figure 4.

Employment (item 2, figure 4) and Value added (item 4):

- For employment and (gross) value added generated by foreign affiliates, outward FATS from United States (BEA) and Europe (Eurostat) represent the primary sources of data. As existing outward statistics capture the activity of foreign affiliates only from a sample of investor countries (the United States and EU countries), an up-scaling step is needed to extrapolate the worldwide data. Up-scaling is based on the shares of reporting (investor) countries in the FDI stock of developing economies.

  In order to calculate the contribution share, the indicator used as baseline for employment is the *total number of employees* from ILO statistics, targeting paid employees; for the value added is the *gross value added* retrievable from UN National Accounts data. Reference year is 2011, the most recent year for which Eurostat outward data were available at the time of the analysis (BEA reported also preliminary 2012 statistics).

- The resulting estimates are the following.

  - *(2) Employment.* Estimated share of employment generated by FAs in developing economies: a. Simple average: 9% (of which Africa, 10%; Asia, 12%; Latin America, 6%); b. Weighted average: 6% (of which Africa, 6%; Asia, 6%; Latin America, 5%).

  - *(4) Value added.* Estimated share of value added generated by FAs in developing economies: a. Simple average: 21% (of which Africa, 21%; Asia, 23%; Latin America, 20%); b. Weighted average: 19% (of which Africa, 22%; Asia, 20%; Latin America, 16%).

- As a benchmark, it is also useful to consider the FA share for developed economies, which can be retrieved using inward FATS from BEA and Eurostat. Compared to outward statistics, these data have the advantage of providing an exhaustive picture of all FAs operating in each reporting country and, as such, they do not need up-scaling. On average the estimated FA shares for both employment and value

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[33] Approximation on the contribution shares clearly affects the final estimation. The impact of approximations remains within the overall estimation interval from 650 US$ billion to 800 US$ billion.

added do not differ significantly from figures for developing economies (however significant differences emerge between the EU and the United States).

- *(2b) Employment - developed economies.* Weighted average: 9% (of which EU, 15%; United States, 5%);

- *(4b) Value added - developed economies.* Weighted average: 13% (of which EU, 22%; United States, 9%).

Profits (item 1):

- As outward FATS on profits are extremely scarce (virtually limited to the United States), an alternative argument is used, combining the above estimates of the FA share for employment and value added with information retrievable from National Accounts statistics on the partition of the value added in developing economies. On average, the labour share of the value added generated in developing economies is around 1/3. [34] Notice that in developed economies the picture is approximately inverted with the *capital income component* roughly at 1/3 of the value added.[35] In this context, given a FA share of the labour component of the value added at 10%, the FA share of the capital income component must be at 25% to align the FA share of the value added to the estimated 20%. The FA share in the capital income component of the value added at 25% is then taken as a proxy for the FA share in total profits.[36]

- Notice that with these shares of labour and capital income, the split of value added for FAs is even more skewed toward the capital income component than for domestic companies, exceeding 80% of the value added. This is arguably due to FA higher productivity of labour,[37] as well as higher FA penetration in capital-intensive sectors.

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[34] Guerriero (2012) finds a slightly higher share, at some 40% of the value added; such a difference does not substantially affect the final estimate.

[35] The split between the labour and capital components of the value added proposed by national accounts statistics for developing economies should be interpreted with caution. The capital component includes the *mixed income* generated by self-employment; this is a hybrid item allocated from an accounting perspective to the capital component but that economically pertains partially also to the labour component (as remuneration of labour). As this item is particularly relevant for developing economies, this effect tends to penalize the labour share in developing economies compared to developed ones. Guerriero (2012) recalculated the labour share using more sophisticated indicators that account for the mixed-income effect and found that the labour share for developing economies would increase significantly, reaching a level almost comparable to that of developed economies (at around 60-70% of value added).

[36] This step entails some assumptions. In national accounts statistics, a generally accepted proxy of (pre-tax) profits is the *net operating surplus*. Although the *net operating surplus* is the largest constituent of the capital income component of the value added, it is not the only one; also *depreciation* and *taxes and other subsidies* enter into the computation. The implicit assumptions here are that the share of foreign affiliates (at 25%) is the same for all the elements of the capital income component of the value added and that the share of foreign affiliates in profits is the same as in operating surplus. This caveat has been discussed in the earlier section on limitations and areas for further research.

[37] Using firm-level data from a sample of European countries, Altomonte *et al.* (2013) show that productivity of labour is higher for more internationalised firms. In developing economies this effect is expected to be even more pronounced.

- As for employment and value added, FA shares for developed economies based on inward FATS present values close to estimated shares for developing economies. In particular estimation from Eurostat inward FATS on gross operating surplus for a number of European countries gives a weighted FA share of 25% (30% as simple average).

Exports (item 3):

- Exports are also not systematically reported by FATS statistics. In addition, as exports are not a standard item of the balance sheet, coverage is also very limited in firm-level databases like ORBIS. Nevertheless, leveraging insights from UNCTAD's previous analyses, especially on *Global Value Chains* (see *WIR13*), integrating them with available scattered evidence from individual countries, a conservative estimate of the FA share is proposed, at around 50% of total exports from developing economies.

- The *World Investment Report 2013* (figure IV.8. pag. 150) estimates that on average foreign affiliates generate some 35-45% of the (domestic) value added incorporated in developing countries' exports. The bulk of this value added is arguably part of foreign affiliates' exports, so that the range represents a *lower bound* for the share of exports generated by foreign affiliates.[38]

- The same *World Investment Report 2013* (figure IV.14, pag. 135) states that around 80% of global trade involves TNCs, of which 1/3 is intra-firm trade, 1/3 arm's length trade and the remaining NEM-generated trade. It is reasonable to assume that the MNE share in trade in developing economies would be at least equally high and that the contribution of FA exports to intra-firm trade and arm's length trade would represent a major component of that share.

- A number of studies at the level of individual countries also confirm the prominent role of FAs in trade.

  - *Developing economies.* Fragmented available information at country level suggests a share of exports generated by FAs in developing economies equal to or higher than 50% of total exports.

    - In China in 2012 foreign affiliates accounted for 50% of exports and 48% of imports (see *World Investment Report 2013*, Box IV.3).

    - In smaller countries the share may be significantly higher. From inward FATS data collected by the national bank, in 2007 in Thailand the share of exports generated by foreign affiliates is 75%, and 72% for imports (see Tattawasart, 2011).

    - Similarly, Bank of Zambia estimates the share of exports generated by foreign affiliates at 81.6% of total export in 2013 (55.1% for imports). See Bank of Zambia (2014).

  - *Developed economies.* For benchmark purposes it is useful to recall also available data on the FA share of export for developed economies (expected to be substantially lower than developing economies).

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[38] The component to add on top of the 35-45% share to obtain the FA share in exports is the part of the domestic value added incorporated into foreign affiliate exports that is generated by domestic companies.

- ▪ From *World Investment Report 2013*, box IV.3, the foreign affiliates in the United States account in 2010 for 20 per cent of exports; in France they account in the same year for 34% of the export.

- ▪ The OECD also reports some scattered statistics on FA exports. In 2007 FA shares in exports for European countries varied considerably: from 22% of Italy to over 50% for Poland and Estonia.

- *Historical perspective.* On a more historical, but still meaningful, perspective, the *World Investment Report 1992* provides estimates of FA shares in exports for a number of developing economies, documenting that, already in the late '80s, FA export shares for many Asian and Latin American countries were over 25%-30%, with some peaks of 40%-50%.

The findings of the analysis of the Fiscal Contribution of MNEs, and the methodology developed for the analysis, represent a refinement compared with the Contribution Index published in *WIR12*. UNCTAD will aim to further build on this and remains open to suggestions for further improvements.

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