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For discussion

## **F.2 Asymmetric Treatment of Retained Earnings: Testing and Experimental Calculations**

Prepared by the Financial and Payments Systems Task Team (FITT)

INTERNATIONAL MONETARY FUND



## F.2 Asymmetric Treatment of Retained Earnings: Testing and Experimental Calculations<sup>1</sup>

*The overall results of the two-stage testing exercise among the balance of payments compilers support the feasibility of the recommendation of Option 2<sup>2</sup> to introduce supplementary tables for reinvested earnings (RIE) in portfolio investments (PI) assets and liabilities. A second phase of the testing among the national accountants is planned to be completed by the end of 2022.*

*In view of the overall supportive results of the testing on introducing supplementary information on PI RIE into the balance of payments, the GN F.2 (Option 2) is proposed to be considered by the IMF's Committee on Balance of Payments Statistics (the Committee) and the Advisory Expert Group on National Accounts (AEG) for final decision. The decision on the RIE for domestic equity and public corporations will be made once the results of testing by the national accounts community are available.*

1. **The Thirty-Sixth Meeting of the IMF Committee on Balance of Payments Statistics (the Committee) requested that the supplementary data collections proposed in Option 2 of the GN F.2 “Asymmetric Treatment of Retained Earnings” be tested with a sample of volunteer countries, covering at least portfolio investments (PI).** It was also recommended that, subject to the views of the Advisory Expert Group on National Accounts (AEG), the testing could be extended to domestic equity relationships.<sup>3</sup> In order to implement the testing requested by the Committee, FITT designed a two-stage exercise among balance of payments compilers, and the United Nations Statistics Department (UNSD) agreed to support the same testing exercise among national accounts compilers.

### BALANCE OF PAYMENT TESTING<sup>4</sup>

2. **In the first stage survey among balance of payments compilers, twenty-nine countries expressed interest in participating in the testing exercise for the reinvested earnings (RIE) of PI assets and 31 countries for the RIE of PI liabilities.**<sup>5</sup> During the first stage, a survey was launched to collect information on source data availability to compile RIE estimates for PI equity as a supplementary item in the balance of payments statistics, and to enquire about countries' interest to participate in a testing exercise. Eighty-one respondents from 75 countries completed the survey. Lack of relevant source data was the main reason preventing the participation of the other countries (77 percent of respondents had no source data to compile the RIE of PI assets and 63 percent of countries did not have it for RIE of PI liabilities).

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<sup>1</sup> Prepared by FITT Secretariat and Mher Barseghyan (IMF) and approved by co-chairs of FITT.

<sup>2</sup> Option 2: Leave the core balance of payments accounts and national accounts unchanged but add supplementary information on portfolio investment RIE to the balance of payments (and possibly memorandum items) and national accounts, and supplementary information on public corporations RIE and overall investment in resident enterprises RIE to the national account.

<sup>3</sup> See Summary of Discussions here: <https://www.imf.org/external/pubs/ft/bop/2021/pdf/VM2/21-12.pdf>.

<sup>4</sup> For more details see the Annex I.

<sup>5</sup> Around 40 percent of countries, combined, responded positively to participate in the testing exercise for the RIE of PI assets and liabilities.

3. **Only a small number of volunteer countries responded to the second stage survey, which entailed experimental calculations.** A questionnaire and a data template were developed for the second stage. However, out of 31 volunteer countries, six countries responded to the questionnaire, with only four providing data on RIE for PI.<sup>6</sup> Two approaches were used for compiling the reported data. Two countries with large holdings and liabilities used aggregate stock data from international investment position (IIP) and performance indices (price earnings ratios, dividends yield payout ratio, etc.) to compile the reported data. One country provided RIE data for PI liabilities only, compiled based on direct reports from the relevant corporations. Finally, one respondent used different methods to compile RIE for PI assets and liabilities: for assets, a method similar to that based on aggregated stocks and indices was used, built on more granular data; for liabilities, the RIE compiled for foreign direct investments (FDI) statistics are multiplied by shares owned by portfolio investors.

#### NATIONAL ACCOUNTS TESTING<sup>7</sup>

4. **The first stage survey of national accounts compilers received positive response from around 15 countries.** The UNSD launched a survey (similar to the one targeting the balance of payments compilers) among national accountants during the first phase of testing to check the data availability for the compilation of the RIE in domestic relationships. Fourteen countries agreed to participate in the proposed practical compilation exercise for private domestic equity and 16 institutions for public corporations. The respondents mentioned that this topic is of high or medium relevance to most of their economies.

5. **As the next step, the UNSD intends to test the compilation challenges for domestic equity and public corporations with selected compilers that agreed to participate in the second phase of testing by the end of 2022.** Confirming the feasibility of the recommendation on the domestic relationships in this GN will be possible after the results of the UNSD testing become available.

#### OUTCOME OF THE PORTFOLIO INVESTMENT TESTING

6. **The testing among the balance of payments compilers, while confirming the significant importance of the RIE for countries, at the same time pointed to challenges in obtaining the necessary source data, as anticipated.** While the two-stage testing confirms the feasibility of the recommendation for external sector statistics (ESS) under Option 2 to introduce supplementary tables for RIE in PI, challenges in implementation need to be addressed. Further, it is considered that this supplementary approach may be revisited during the next round of the update of international statistical standards, taking into account the actual reporting by countries of the proposed supplementary tables on RIE in PI.

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<sup>6</sup> Two countries answered the questionnaire but did not provide any data. One country replied that due to other commitments, it was not possible to answer the questionnaire and compile the data.

<sup>7</sup> For more details see the Annex II.

## Annex I. Outcomes of the Testing and Experimental Compilation of the Recommended Option 2 for ESS.

### OUTCOME OF THE SURVEY ON DATA AVAILABILITY AND TESTING FOR ESS

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Eighty-one respondents from 75 countries completed the survey (Table 1). Twenty-nine countries (39 percent) were interested in participating in the testing exercise for the reinvested earnings (REI) of portfolio investment (PI) assets and 31 countries (41 percent) for the REI of PI liabilities (Table 1 provides the list of respondent countries). The lack of the relevant source data was the main reason preventing the participation of the other countries. However, countries considered the exercise as an important initiative for the updates of macroeconomic statistical manuals.

The results of the survey are discussed in more detail in the following section.

#### **Question 1. Does your institution have relevant source data to compile RIE for portfolio investment as supplementary items in the balance of payments?**

Seventy-seven percent of the respondent countries do not have the source data to compile the RIE of portfolio investment assets and 63 percent of countries do not have it for RIE of portfolio investment liabilities.

Many countries indicated not having source data or that the available data have limitations as main hurdles. Countries pointed to more difficulties to obtain data for the PI assets. Data on PI liabilities can be obtained from the annual foreign investment surveys or financial statements. However, countries with significant PI holdings indicated that it would not be feasible to ask corporations to report the data. Some countries responded that they would be able to compile the data for some institutional units only (e.g., financial corporations, government, banks). One European country highlighted its previous experience on the use of security-by-security database for PI statistics.<sup>8</sup>

#### **Question 2. Would your institution be interested in participating in an experimental exercise to prepare RIE data for portfolio investment for your country/economy?**

Thirty-nine percent of countries expressed interest to participate in the testing exercise for the REI of PI assets and 41 percent for the REI of PI liabilities. Countries that showed no intention to participate pointed to the lack of resources and the absence of source data as major issues.

#### **Question 3. Does your institution have plans to develop relevant source data to compile RIE for portfolio investment in the future?**

Around 20 percent of the respondent countries would develop the source data to compile the supplementary tables. Countries that would like to develop the new data sources plan to include additional tables in their enterprise surveys. However, countries with large PI holdings did not see a possibility to collect the data. Some countries indicated that they have other priorities, and the feasibility of introducing changes to their data collection systems needed to be evaluated.

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<sup>8</sup> The database includes data on dividends, price/earnings ratios, which may assist in calculations of RIE estimates.

**Table 1. Responses to Relevant Survey Questions**

| Respondent Country    | Region | Portfolio Investment Asset |                                      | Portfolio Investment Liability |                                      |
|-----------------------|--------|----------------------------|--------------------------------------|--------------------------------|--------------------------------------|
|                       |        | Available Source Data      | Interest in Participation in Testing | Available Source Data          | Interest in Participation in Testing |
| Albania               | EUR    | No                         | Yes                                  | No                             | Yes                                  |
| Algeria               | AFR    | No                         | No                                   | No                             | No                                   |
| Armenia               | MCD    | No                         | No                                   | Yes                            | Yes                                  |
| Austria               | EUR    | No                         | No                                   | Yes                            | No                                   |
| Azerbaijan            | MCD    | No                         | No                                   | No                             | No                                   |
| Bahamas               | WHD    | No                         | No                                   | Yes                            | No                                   |
| Bahrain               | MCD    | No                         | Yes                                  | No                             | Yes                                  |
| Bangladesh            | APD    | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Belarus               | EUR    | No                         | No                                   | No                             | No                                   |
| Bermuda               | WHD    | No                         | No                                   | No                             | No                                   |
| Botswana              | AFR    | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Brazil                | WHD    | No                         | No                                   | No                             | No                                   |
| Bulgaria              | EUR    | No                         | No                                   | No                             | No                                   |
| Cameroon              | AFR    | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Chile                 | WHD    | No                         | No                                   | No                             | No                                   |
| Colombia              | WHD    | No                         | No                                   | No                             | No                                   |
| Costa Rica            | WHD    | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Croatia               | EUR    | Yes                        | No                                   | Yes                            | No                                   |
| Curaçao               | WHD    | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Cyprus                | EUR    | No                         | No                                   | No                             | No                                   |
| Denmark               | EUR    | No                         | No                                   | No                             | No                                   |
| Dominican Republic    | WHD    | No                         | No                                   | No                             | No                                   |
| Estonia               | EUR    | No                         | No                                   | Yes                            | No                                   |
| Ethiopia              | AFR    | No                         | Yes                                  | No                             | Yes                                  |
| Georgia               | MCD    | No                         | No                                   | Yes                            | Yes                                  |
| Germany               | EUR    | No                         | No                                   | No                             | No                                   |
| Guinea                | AFR    | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Hong Kong (SAR China) | APD    | No                         | No                                   | No                             | No                                   |
| Israel                | EUR    | No                         | No                                   | No                             | No                                   |
| Italy                 | EUR    | No                         | No                                   | No                             | No                                   |
| Japan                 | APD    | No                         | No                                   | No                             | No                                   |
| Jordan                | MCD    | No                         | Yes                                  | Yes                            | Yes                                  |
| Kosovo                | AFR    | No                         | No                                   | No                             | No                                   |
| Latvia                | EUR    | No                         | No                                   | Yes                            | No                                   |
| Lebanon               | MCD    | No                         | No                                   | No                             | No                                   |
| Lithuania             | EUR    | No                         | No                                   | No                             | No                                   |
| Macao (SAR China)     | APD    | No                         | No                                   | No                             | No                                   |
| Madagascar            | AFR    | No                         | No                                   | No                             | No                                   |
| Malawi                | AFR    | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Maldives              | APD    | No                         | No                                   | No                             | No                                   |

| Respondent Country                                 | Region    | Portfolio Investment Asset |                                      | Portfolio Investment Liability |                                      |
|--|-----------|----------------------------|--------------------------------------|--------------------------------|--------------------------------------|
|  |           | Available Source Data      | Interest in Participation in Testing | Available Source Data          | Interest in Participation in Testing |
| Marshall Islands                                   | APD       | Yes                        | Yes                                  | No Response                    | No Response                          |
| Mauritania   | MCD       | No                         | Yes                                  | No                             | Yes                                  |
| Mauritius  | AFR       | No                         | No Response                          | No                             | No Response                          |
| Mexico   | WHD       | No                         | No                                   | No                             | No                                   |
| Moldova  | EUR       | No                         | No                                   | Yes                            | Yes                                  |
| Morocco  | MCD       | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Myanmar  | APD       | No                         | No                                   | No                             | No                                   |
| Nepal  | APD       | No                         | Yes                                  | No                             | Yes                                  |
| Netherlands  | EUR       | Yes                        | No                                   | Yes                            | No                                   |
| Nicaragua  | WHD       | No                         | Yes                                  | No                             | Yes                                  |
| North Macedonia                                    | EUR       | No                         | No                                   | No                             | No                                   |
| Norway   | EUR       | No                         | No                                   | Yes                            | No                                   |
| Oman   | MCD       | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Palestine, State of                                | MCD       | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Papua New Guinea                                   | APD       | No                         | Yes                                  | No                             | Yes                                  |
| Paraguay   | WHD       | No                         | Yes                                  | Yes                            | Yes                                  |
| Philippines  | APD       | No                         | No                                   | No                             | No                                   |
| Poland   | EUR       | No                         | No                                   | No                             | No                                   |
| Portugal   | EUR       | No                         | Yes                                  | No                             | Yes                                  |
| Romania  | EUR       | No                         | No                                   | Yes                            | No                                   |
| Rwanda   | AFR       | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Samoa  | APD       | No                         | No                                   | No                             | No                                   |
| Saudi Arabia                                       | MCD       | No                         | Yes                                  | No                             | Yes                                  |
| Singapore  | APD       | No                         | No                                   | No                             | No                                   |
| Solomon Islands                                    | APD       | No                         | Yes                                  | No                             | Yes                                  |
| South Africa                                       | AFR       | No                         | No                                   | No                             | No                                   |
| Sweden   | EUR       | No                         | No                                   | No                             | No                                   |
| Switzerland  | EUR       | Yes                        | Yes                                  | Yes                            | Yes                                  |
| Thailand   | APD       | No                         | No                                   | No                             | No                                   |
| Turkey   | EUR       | No                         | No                                   | No                             | No                                   |
| Tuvalu   | APD       | Yes                        | Yes                                  | Yes                            | Yes                                  |
| United Kingdom                                     | EUR       | No                         | No                                   | No                             | No                                   |
| USA  | WHD       | No                         | Yes                                  | No                             | Yes                                  |
| Vietnam  | APD       | No                         | No                                   | No                             | No                                   |
| Zimbabwe   | AFR       | No                         | Yes                                  | No                             | Yes                                  |
| <b>Total Respondents (positive answers)</b>        | <b>75</b> | <b>16</b>                  | <b>28</b>                            | <b>26</b>                      | <b>30</b>                            |
| <b>Total EBA-ESR Respondent (positive answers)</b> | <b>27</b> | <b>4</b>                   | <b>6</b>                             | <b>6</b>                       | <b>6</b>                             |

**Table 2. Responses Summary to the Survey Questionnaire**

| Questions  | Number of Responses | %    |
|--|---------------------|------|
| <b>1. Does your institution have relevant source data to compile RIE for portfolio investment as supplementary items in the balance of payments? For portfolio investment assets</b>                     |                     |      |
| Yes  | 16                  | 21%  |
| No   | 59                  | 79%  |
| Total  | 75                  | 100% |
| <b>1. Does your institution have relevant source data to compile RIE for portfolio investment as supplementary items in the balance of payments? For portfolio investment liabilities</b>                |                     |      |
| Yes  | 26                  | 35%  |
| No   | 47                  | 64%  |
| No response  | 1                   | 1%   |
| Total  | 75                  | 100% |
| <b>1.1 Provide more information (if any) on the source data availability.</b>  |                     |      |
| <b>2.1 Would your institution be interested in participating in an experimental exercise to prepare RIE data for portfolio investment for your country/economy? For portfolio investment assets</b>      |                     |      |
| Yes  | 28                  | 37%  |
| No   | 46                  | 61%  |
| No response  | 1                   | 1%   |
| Total  | 75                  | 100% |
| <b>2.1 Would your institution be interested in participating in an experimental exercise to prepare RIE data for portfolio investment for your country/economy? For portfolio investment liabilities</b> |                     |      |
| Yes  | 30                  | 40%  |
| No   | 43                  | 57%  |
| No response  | 2                   | 3%   |
| Total  | 75                  | 100% |
| <b>2.1. Provide brief reasons (if any) in support of your response.</b>  |                     |      |
| <b>3. Does your institution have plans to develop relevant source data to compile RIE for portfolio investment assets in the future?</b>   |                     |      |
| Yes  | 16                  | 21%  |
| No   | 40                  | 53%  |
| No response  | 19                  | 25%  |
| Total  | 75                  | 100% |
| <b>3.1. Provide more information (if any) on your plans or main challenges.</b>  |                     |      |
| <b>4. Does your institution have plans to develop relevant source data to compile RIE for portfolio investment liabilities in the future?</b>  |                     |      |
| Yes  | 13                  | 17%  |
| No   | 32                  | 43%  |
| No response  | 30                  | 40%  |
| Total  | 75                  | 100% |
| <b>4.1. Provide more information (if any) on your plans or main challenges.</b>  |                     |      |



## SUMMARY OF THE EXPERIMENTAL CALCULATION EXERCISE

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*Six respondents out of 31 volunteer countries responded to the second phase questionnaire. Only four of them provided data, and one compiler responded that due to other commitments it was not possible to undertake the compilation.*

**Two countries (US and Switzerland) used aggregated stocks and aggregated performance indicators to compile the data.** Compilers used indirect indicators to calculate the total earnings and dividends (or ratios) and then to calculate the difference at the final stage.

**The US used price earnings ratios (PER) (MSCI excluding US index for PI assets, and S&P 500 for PI liabilities) as a performance indicator.** The difference between earning per price (the opposite of the price to earnings ratio) and dividend yield (DY) represents the reinvested earnings ratio expressed in percent. Average aggregated positions (S) from the IIP are used to calculate the REI in terms of USD.

$$(1) \text{ RIE} \% = (1 \div \text{PER}) - \text{DY}$$

$$(2) \text{ RE} = (\text{RIE} \% \div 4) \times ((S^{t0} + S^{t1}) \div 2)$$

**Switzerland used a similar calculation method.** The average payout ratio from Bloomberg is applied to IIP stocks, and the difference between the payout and dividend payout represents the REI in PI.

**Both methods use aggregated performance indices that contain some “noise” (performance aggregates may be based on non-negative ratios, the PIs composition may differ from MSCI compositions, etc.),** which is typical when using any aggregated indicators/volumes. Both countries realize the limitation of the aggregated ratios/stocks and indicated that for accurate calculations more granular data are needed to link the performance indicator to a specific stock.

**The other two countries (Armenia and Portugal) used more granular data to make estimates.**

**Armenia compiled data only for liabilities (the country indicated in the first phase that it may perform calculations only for liabilities).** Data from balance sheets and income statements of individual enterprises were used, containing information on net profit and dividends. The country indicated that nonfinancial corporations do not report any data for PI.

**Portugal used different methods to calculate RIE for PI assets and liabilities.** For PI assets, data from the Centralized Securities Database (CSDB) were used (accrued income factor), and the outstanding (equity) amounts by country and issuance sector breakdown were used to obtain the total income. In addition, the distribution of earnings (dividends) was obtained from a direct monthly report by companies. The reinvested earnings correspond to the difference between the estimated total income and the distributed earnings. For liabilities, direct investment reinvested earnings are weighted by the percentage owned by the non-resident portfolio investors weight.

**Other countries that initially indicated their participation in the experimental compilation (Nicaragua, Botswana and Curacao) responded that they could not compile the data.**

**Overall, countries indicated that the current data collection systems are not designed to collect RIE data for portfolio investments.** They noted that additional data sources are needed to compile more precise data, in form of databases containing information on (i) foreign companies, (ii) domestic companies with PI (similar to those that are used to compile direct investments), and (iii) security by security databases.

**Table 3. Responses to Relevant Survey Questions**

| Countries           | Provided Data | Answered to Questionnaire |
|---------------------|---------------|---------------------------|
| Albania             | No            | No                        |
| Armenia             | <b>Yes</b>    | <b>Yes</b>                |
| Bahrain             | No            | No                        |
| Bangladesh          | No            | No                        |
| Botswana            | No            | <b>Yes</b>                |
| Cameroon            | No            | No                        |
| Costa Rica          | No            | No                        |
| Curaçao             | No            | No                        |
| Ethiopia            | No            | No                        |
| Georgia             | No            | No                        |
| Guinea              | No            | No                        |
| Jordan              | No            | No                        |
| Malawi              | No            | No                        |
| Marshall Islands    | No            | No                        |
| Mauritania          | No            | No                        |
| Moldova             | No            | No                        |
| Morocco             | No            | No                        |
| Nepal               | No            | No                        |
| Nicaragua           | No            | <b>Yes</b>                |
| Oman                | No            | No                        |
| Palestine, State of | No            | No                        |
| Papua New Guinea    | No            | No                        |
| Paraguay            | No            | No                        |
| Portugal            | <b>Yes</b>    | <b>Yes</b>                |
| Rwanda              | No            | No                        |
| Saudi Arabia        | No            | No                        |
| Solomon Islands     | No            | No                        |
| Switzerland         | <b>Yes</b>    | <b>Yes</b>                |
| Tuvalu              | No            | No                        |
| USA                 | <b>Yes</b>    | <b>Yes</b>                |
| Zimbabwe            | No            | No                        |

## Annex II. Summary of Survey on Data Availability for National Accounts<sup>9</sup>

A total of 44 respondents contributed to this consultation.

The topic is of high or medium relevance to most respondents of the National Accounts global consultation on this issue.

### RIE FOR PUBLIC CORPORATIONS

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For 56 percent of respondents, institutions have source data available to compile RIE for public corporations as supplementary items in the national accounts for domestically controlled public corporations. Of them, 80 percent have Government Finance Statistics (GFS) assets and liabilities (stock) data, 72 percent have GFS financial transaction data, and 24 percent have other source data (e.g., enterprise databases, financial statements, and Balance of Payments data).

Of the respondents whose institutions have these source data available, most (83 percent) institutions have access to detailed (audited) financial statement information, including notes for public corporations. In half of respondents' countries, equity of public institutions can be available for sale to private investors.

Three respondents' institutions have plans to develop relevant source data to compile RIE for public corporations' assets and/or liabilities in the future.

Sixteen institutions are interested in participating in an experimental estimation exercise to prepare RIE data for public corporations.

### RIE FOR PRIVATE DOMESTIC EQUITY STAKES

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Approximately 50 percent of all respondents' institutions have relevant source data available to compile RIE for private domestic equity stakes as supplementary items in the national accounts for domestically-controlled private corporations. In those institutions the dominant types of source data available are financial statements, administrative tax data (mostly individual taxable receipts and withholding tax data), and surveys for enterprise income statements.

Two respondents' institutions have plans to develop relevant source data.

Fourteen institutions are interested in participating in an experimental estimation exercise to prepare RIE data for private domestic equity stakes.

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<sup>9</sup> Prepared by the UNSD.