

# Quarterly International Investment Position Statistics

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DATA SOURCES AND COMPILATION TECHNIQUES



INTERNATIONAL MONETARY FUND



# **QUARTERLY INTERNATIONAL**

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## **INVESTMENT POSITION**

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### **STATISTICS**

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#### **Data Sources and Compilation Techniques**

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**March 2011**



## LIST OF ABBREVIATIONS

BIS	Bank for International Settlements
BOP	Balance of Payments
<i>BPM6</i>	<i>Balance of Payments and International Investment Position Manual</i> , sixth edition
CDIS	Coordinated Direct Investment Survey
CPIS	Coordinated Portfolio Investment Survey
CSDB	Centralized Securities Database
dc	domestic currency
EDS	External Debt Statistics
DIE	Direct Investment Enterprise
FAQs	Frequently Asked Questions
FDI	Foreign Direct Investment
GDDS	General Data Dissemination System
GFS	Government Finance Statistics
<i>GFSM 2001</i>	<i>Government Finance Statistics Manual, 2001</i>
IIP	International Investment Position
ISIN	International Securities Identification Number
ITRS	International Transactions Reporting System
JEDH	Joint External Debt Hub
MFS	Monetary and Financial Statistics
OCV	Other Changes in Volume
OECD	Organization for Economic Cooperation and Development
OFBV	Own Funds at Book Value
PI	Portfolio Investment
QEDS	Quarterly External Debt Statistics
QS	Quarterly Surveys
REL	Registers of External Loans
SBS	Security-by-security data collection system
SDDS	Special Data Dissemination Standard
SDR	Special Drawing Rights
SRF	Standardized Report Form

<b>Contents</b>	<b>Page</b>
List of Abbreviations .....	2
I. Background.....	4
II. Data Sources and Compilation Techniques .....	5
A. Summary Table of Data Sources and Reporting Requirements .....	5
B. When Quarterly Stock Data are Available.....	7
Other Macroeconomic Datasets.....	7
External Debt Statistics.....	10
Registers of External Loans.....	12
International Banking Statistics – Bank for International Settlements.....	12
Security-by-Security Data Collection System on Tradable Securities .....	13
C. When Quarterly Stock Data are Not Available.....	14
Developing Quarterly Surveys.....	14
Deriving Quarterly Stocks from Quarterly Transactions.....	16
Carry forward.....	24
III. Revision Policies and Practices .....	25
IV. Frequently Asked Questions (FAQs).....	27
Appendix I. Enhancements to the IIP .....	29
Appendix II. Experience of Selected Economies .....	30
A. China, P.R.: Hong Kong .....	30
B. Canada.....	31
C. Pakistan .....	33
D. European Central Bank.....	36

## I. BACKGROUND

Quarterly international investment position (IIP) statistics provide timely data for surveillance, and analysis of international liquidity and external exposures. In addition, quarterly IIP data are an essential component of national balance sheet data. Two important international initiatives—both arising from the need to fill information gaps identified after the onset of the recent financial crisis— have focused efforts on improving the availability and timeliness of compiling and disseminating IIP data.

The first initiative reflects efforts to implement Recommendation #12 of the report *The Financial Crisis and Information Gaps*,<sup>1</sup> provided to G-20 Finance Ministers and Central Bank Governors on October 29, 2009, which states:

*The IMF to continue to work with countries to increase the number of International Investment Position (IIP) reporting countries, as well as the quarterly reporting of IIP data. The Balance of Payments and International Investment Position Manual, sixth edition (BPM6) enhancements to the IIP should be adopted by G-20 economies as soon as feasible.*

The second initiative was the IMF Executive Board decision in March 2010 to enhance the Special Data Dissemination Standard (SDDS),<sup>2</sup> by prescribing the quarterly reporting of IIP data.<sup>3</sup> After a four-year transition period ending at end-September 2014, subscribers will be required to disseminate IIP data<sup>4</sup> with quarterly periodicity and quarterly timeliness (rather than the current prescription of annual periodicity and nine months timeliness).

The purpose of this pamphlet is to assist statistical agencies and central banks in compiling and disseminating (including re-dissemination through IMF publications) quarterly IIP data. In Part II, Section A sets out data sources and guidelines for reporting quarterly IIP data. Sections B and C present options for compiling quarterly IIP data given the detail, coverage, and frequency of source data available. This ranges from the ready availability of key quarterly stock data, to various estimation techniques that can be applied when some key data sources are unavailable. Part III discusses revision policies and practices for quarterly reporting when annual data become available. Part IV includes some Frequently Asked

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<sup>1</sup> <http://www.imf.org/external/np/g20/pdf/102909.pdf>.

<sup>2</sup> <http://dsbb.imf.org/Default.aspx>.

<sup>3</sup> <http://www.imf.org/external/np/sec/pn/2010/pn1041.htm> (PIN No. 10/41, March 23, 2010).

<sup>4</sup> On September 30, 2014, SDDS subscribers will be required to disseminate IIP data for the first and second quarters of 2014.

Questions (FAQs). Appendix I identifies enhancements to the IIP in *BPM6*, while Appendix II contains “case studies” of individual economies who have had experience in compiling quarterly IIP statistics.

## II. DATA SOURCES AND COMPILATION TECHNIQUES

### A. Summary Table of Data Sources and Reporting Requirements

1. In principle, quarterly IIP should be presented with the same level of detail as annual data.<sup>5</sup> However, quarterly data may not be available at the same level of detail, or for all of the same components, as annual stock data. If this is the case, data may be reported at more aggregated levels for quarterly IIP, while more detailed data are reported annually. Table 1 below illustrates the level of data that countries are encouraged to report if full detail for standard components is not available.
2. The shaded areas identify the *minimum* amount of detail requested for inclusion in IMF publications. This designation generally follows the requirements of the existing SDDS, where compilers classify assets and liabilities into direct investment, portfolio investment (broken down into equity and debt securities), other investment, and reserve assets. Reporting of financial derivatives is encouraged under SDDS; however, if countries report annual IIP data for financial derivatives, they are encouraged to estimate quarterly derivatives positions. Although the components for reserve assets are not currently required for SDDS, they should be available to compilers for quarterly IIP reporting. SDDS requirements may change occasionally through decisions of the IMF’s Executive Board.
3. However, the more detailed level of data is *strongly encouraged* to meet the needs for quarterly analysis and surveillance. Countries are also encouraged to compile bilateral quarterly IIP data for major partner countries to the extent possible. Countries are encouraged to provide detailed explanations of their data sources and the methodologies used for estimation techniques in their country notes.
4. Table 1 also presents the data sources for quarterly IIP by the main IIP components.

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<sup>5</sup> A substantial amount of detail – including IIP standard components, memorandum items, and many supplementary items – is available in Appendix 9 of *BPM6* at <http://www.imf.org/external/pubs/ft/BOP/2007/BOPman6.htm>. A summary of IIP enhancements is provided in Appendix I of this pamphlet.

**Table I**  
**Quarterly IIP – Possible Data Sources for Main Standard Components According to BPM6**

	Possible data sources	
	Assets	Liabilities
<b>Direct investment</b>		
<b>Equity and investment funds shares</b>		
Direct investor in direct investment enterprises (DIE) 1/	QS	QS
DIE in direct investor (reverse investment) 1/	QS	QS
Between fellow enterprises 1/	QS	QS
<b>Debt instruments</b>		
Direct investor claims on DIE 1/	QS/REL	QS/EDS/REL
DIE claims on direct investor (reverse investment) 1/	QS/REL	QS/EDS/REL
Between fellow enterprises 1/	QS/REL	QS/EDS/REL
<b>Portfolio investment</b>		
<b>Equity and investment fund shares</b>		
Central Bank	MFS	n.a.
Deposit-taking corporations, except the central bank	MFS/SBS	MFS/SBS
General government	GFS/SBS	n.a.
Other sectors		
Other financial corporations	SBS/QS	SBS/QS
Nonfinancial corporations, households, and NPISHs	SBS/QS	SBS/QS
<b>Debt securities</b>		
Central Bank	MFS	MFS/EDS
Deposit-taking corporations, except the central bank	MFS/SBS	MFS/SBS/EDS
General government	GFS/SBS	GFS/SBS/EDS
Other sectors		
Other financial corporations	SBS/QS/MFS	SBS/QS/EDS/MFS
Nonfinancial corporations, households, and NPISHs	SBS/QS	SBS/QS/EDS
<b>Financial derivatives (other than reserves) and employee stock options 1/</b>	QS/MFS	QS/MFS
<b>Other investment</b>		
<b>Other equity</b>	QS/MFS	QS/MFS
<b>Currency and deposits</b>		
Central Bank	MFS	MFS/EDS
Deposit-taking corporations, except the central bank	MFS	MFS/EDS
General government	GFS	GFS/EDS
Other sectors		
Other financial corporations	QS/BIS/MFS	QS/EDS/MFS
Nonfinancial corporations, households, and NPISHs	QS/BIS	n.a.
<b>Loans</b>		
Central Bank	MFS	MFS/EDS
Deposit-taking corporations, except the central bank	MFS	MFS/EDS
General government	GFS	GFS/EDS
Other sectors		
Other financial corporations	QS/REL/MFS	QS/EDS/REL/BIS/MFS
Nonfinancial corporations, households, and NPISHs	QS/REL	QS/EDS/REL/BIS
<b>Insurance, pension, and standardized guarantee schemes</b>		
Central Bank 1/	MFS	MFS/EDS
Deposit-taking corporations, except the central bank 1/	MFS	MFS/EDS
General government 1/	GFS	GFS/EDS
Other sectors 1/		
Other financial corporations 1/	QS/MFS	QS/EDS/MFS
Nonfinancial corporations, households, and NPISHs 1/	QS	QS/EDS
<b>Trade credit and advances</b>		
Central Bank	MFS	MFS/EDS
General government	GFS	GFS/EDS
Deposit-taking corporations, except the central bank	MFS	MFS/EDS
Other sectors		
Other financial corporations	QS/REL/MFS	QS/EDS/REL/MFS
Nonfinancial corporations, households, and NPISHs	QS/REL	QS/EDS/REL
<b>Other accounts receivable/payable-other</b>		
Central Bank	MFS	MFS/EDS
Deposit-taking corporations, except the central bank	MFS	MFS/EDS
General government	GFS	GFS/EDS
Other sectors		
Other financial corporations	QS/MFS	QS/EDS/MFS
Nonfinancial corporations, households, and NPISHs	QS	QS/EDS
<b>Special drawing rights (allocations)</b>	n.a.	MFS/EDS
<b>Reserve assets</b>		
Monetary Gold	MFS	n.a.
Special Drawing Rights (holdings)	MFS	n.a.
Reserve Position in the Fund	MFS	n.a.
Other Reserve Assets	MFS	n.a.
<b>Total assets/liabilities</b>		

n.a. = Not applicable.

NPISHs = Nonprofit institutions serving households

Source: *BPM6*, Appendix 9, IIP, pages 309-312

■ Minimum amount of detail requested

1/ This detail is strongly encouraged but may be reported only when material

MFS Monetary and Financial Statistics

GFS Government Finance Statistics

EDS External Debt Statistics

REL Register of External Loans

BIS Bank for International Settlements

SBS Security-by-security data collection system

QS Quarterly Surveys

rev. 06/2011



5. The next sections discuss two scenarios—(i) when the compiler has access to existing quarterly stock data that can be used to compile quarterly IIP, and (ii) when there are no existing stock data for quarterly IIP compilation.

### **B. When Quarterly Stock Data are Available**

6. In many cases, quarterly stock data are available to the compiler from balance sheets similar to annual IIP data. This section will examine the availability of quarterly stock data for the following data sources:

- Other macroeconomic datasets
  - Monetary and financial statistics (MFS)
  - Government finance statistics (GFS)
- External debt statistics (EDS)
- Registers of external loans (REL)
- International banking statistics – Bank for International Settlements (BIS)
- Security-by-security data collection system (SBS)

#### **Other Macroeconomic Datasets**

7. Macroeconomic stock data—used to compile monetary and financial statistics and liability data for general government from the government finance statistics of selected countries—are often available on a quarterly basis (monetary and financial statistics are often compiled on a monthly basis<sup>6</sup>). These datasets include data for the following sectors:

- *Central Bank*
- *Deposit-taking corporations except the central bank*
- *Other financial corporations*
- *General government*

8. A detailed explanation of how these data can be used for the IIP compilation is presented in the *International Investment Position: A Guide to Data Sources (IIP Guide)*.<sup>7</sup> For the central bank, the *IIP Guide* reconciles components of the IIP with information collected for monetary and financial statistics according to the *Monetary and Financial Statistics Manual, 2000* and the IMF Statistics Department's *Standardized Report Form (SRF)*

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<sup>6</sup> Monthly data are available for most countries in the IMF publication *International Financial Statistics (IFS)*.

<sup>7</sup> See <http://www.imf.org/external/np/sta/iip/guide/>. An updated version of this *IIP Guide* will be included in the forthcoming *BPM6 Compilation Guide* (see <http://www.imf.org/external/pubs/ft/BOP/2007/BOP6comp.htm>).

*ISR for Central Bank.*<sup>8</sup> The 1SR form includes selected components of official reserve assets, along with other cross-border assets and liabilities. Summary lines for external assets other than reserves and external liabilities from the *ISR* form are shown below.

### **Central Bank\***

(External assets other than Reserves)

<b>Financial Assets</b>	<b>Financial Liabilities</b>
<b>Nonresidents</b>	<b>Nonresidents</b>
<b>Foreign Currency**</b>	<b>Currency in circulation***</b>
<b>Deposits</b>	<b>Deposits</b>
<b>Securities other than shares</b>	<b>Securities other than shares</b>
<b>Loans</b>	<b>Loans</b>
<b>Shares and other equity</b>	<b>Financial derivatives</b>
<b>Insurance technical reserves</b>	<b>Other accounts payable</b>
<b>Financial derivatives</b>	
<b>Other accounts receivable</b>	

*\*Monetary and Financial Statistics Manual: Table 1 Sectoral Balance Sheet for Central Bank, page 130. In most economies this will cover the functional category “monetary authorities” – see paragraph 403, page 79 for exceptions.*

*\*\*This includes unconvertible foreign currency (convertible foreign currency - notes and coins held - are classified in Reserves).*

*\*\*\* For Liabilities (currency in circulation), usually nonresidents’ holdings are not separately identified in the central bank’s balance sheet.*

9. Similarly, IIP data can generally be reconciled with monetary and financial statistics data for deposit-taking corporations except the central bank presented in the *Standardized Report Form 2SR for Other Depository Corporations*.<sup>9</sup> Summary lines from the *2SR* form are presented below.

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<sup>8</sup> The SFRs do not include a breakdown by functional category, therefore shares and other equity (assets) need to be further broken down by direct or portfolio investment. The SRFs also do not identify shares and other equity liabilities in the standard components. These data are to be reported in memorandum items, but few countries report these items. In addition, the SRFs do not provide a maturity breakdown for loans.

<sup>9</sup>See footnote 8.

### Other Depository Corporations\*

Financial Assets	Financial Liabilities
Foreign Currency	Currency **
Nonresidents	Nonresidents
Deposits	Deposits
Securities other than shares	Securities other than shares
Loans	Loans
Shares and other equity***	Shares and other equity***
Insurance technical reserves	Insurance technical reserves
Financial derivatives	Financial derivatives
Other accounts receivable	Other accounts payable

\*Other Depository Corporations in *Monetary and Financial Statistics Manual*: Table 2 Sectoral Balance Sheet, page 136.

\*\*In general, commercial banks do not have currency liabilities – except in an economy where commercial banks issue bank notes

\*\*\*Direct investment or Portfolio investment (Memorandum Item for Liabilities)

10. Some countries may compile monetary and financial statistics using the *Standardized Report Form 4SR for Other Financial Corporations*. If this is the case, IIP compilers could use this data source.

11. Also, in some countries certain financial intermediaries, such as investment funds, insurance companies, and pension funds, report their balance sheets to supervisory authorities. If this is the case, those reports could be accessible to statistical authorities as a data source for compiling the quarterly IIP. In many countries the report forms can be adapted to fit both uses (supervision and macroeconomic statistics).

12. The *IIP Guide* also presents the components for general government balance sheet data for external assets and liabilities based on the *Government Finance Statistics Manual, 2001 (GFSM 2001)*.<sup>10</sup> Although many countries have started to report selected financial assets and liabilities for government finance statistics, few countries have full balance sheets. In most cases, countries should reference the original data source to fulfill IIP reporting requirements including quarterly timeliness. Summary lines for government external assets and liabilities from the *GFSM 2001* are shown below.

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<sup>10</sup> See page 180, *foreign assets and liabilities* at <http://www.imf.org/external/pubs/ft/gfs/manual/>.

## Government External Assets and Liabilities

*Government Finance Statistics Manual 2001 (p. 180)*

<b>Financial assets</b>	<b>Financial liabilities</b>
<i>Foreign</i>	<i>Foreign</i>
<b>Currency and deposits</b>	<b>Currency and deposits</b>
<b>Securities other than shares</b>	<b>Securities other than shares</b>
<b>Loans</b>	<b>Loans</b>
<b>Shares and other equity</b>	<b>Insurance technical reserves</b>
<b>Insurance technical reserves</b>	<b>Financial derivatives</b>
<b>Financial derivatives</b>	<b>Other accounts payable</b>
<b>Other accounts receivable</b>	

13. IIP components that could use monetary and financial statistics and government finance statistics as a data source are identified in Table 1 with the acronyms MFS and GFS respectively.

### External Debt Statistics

14. In most countries, estimates of the stock of external debt are compiled on a quarterly basis. These data could also be used as a source for compilation of quarterly IIP liabilities, including for *Other sectors*.

15. The definitions and criteria used regarding time of recording, concept of residence, and exchange rate conversion, along with classification by institutional sectors and financial instruments conform to the principles set out in the *BPM6*. Accordingly, external debt statistics should be consistent with IIP *Liabilities*, except that equity and investment fund shares, and financial derivatives and employee stock options are excluded from external debt.<sup>11</sup>

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<sup>11</sup> Although external debt statistics should be compiled on both a nominal and market value basis, some countries may only compile these data on a single basis. When this is done, estimates of the value of debt securities sometimes are recorded in external debt statistics at nominal values, whereas these instruments should be recorded in the IIP at market values.

16. The IIP components that could use external debt statistics as a data source are identified in Table 1 by the acronym EDS.

### ***Quarterly External Debt Statistics (QEDS)***

17. The QEDS database provides detailed external debt data published by countries that subscribe to the IMF's SDDS, and similar data for General Data Dissemination System (GDDS) countries that are in a position to produce the external debt data prescribed by the SDDS.<sup>12</sup> This database is updated in the middle and end of the *fourth* month after the end of the reference quarter, and so countries should reference the original data source to fulfill quarterly IIP timeliness requirements.

### ***External Public Sector Debt***

18. In December 2010, the World Bank and the IMF launched the online Quarterly Public Sector Debt Database,<sup>13</sup> which presently offers access to quarterly public sector debt statistics for 30 countries and is updated every three months.<sup>14</sup> Once again, in order to meet the timeliness of quarterly IIP reporting, compilers should reference the original source data.

19. Nonetheless, the data published in this database could be used for cross checking IIP data for earlier quarters. For example, countries participating in the Public Sector Debt Database could compare data reported on the line *External creditors* in Table 1: *Gross General Government Debt Position at Nominal Value* to data for General Government in the IIP.<sup>15</sup> This data source may be particularly useful to those countries that do not participate in the QEDS.

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<sup>12</sup><http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/EXTDECQEDS/0,,menuPK:1805431~pagePK:64168427~piPK:64168435~theSitePK:1805415,00.html>.

<sup>13</sup><http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22782893~pagePK:64257043~piPK:437376~theSitePK:4607,00.html>.

<sup>14</sup> Public sector debt includes all liabilities of public sector units, as defined in the *2008 SNA*, excluding equity and investment fund shares and financial derivatives and employee stock options. The total amount of these debt liabilities is presented as the gross debt position of the public sector. The release of the pre-publication draft of the *Public Sector Debt Statistics: Guide for Compilers and Users* is planned for early 2011. It is available at <http://www.tffs.org/psdstoc.htm>.

<sup>15</sup> Seventeen of the thirty reporting countries at launch included data in the line for **External Creditors** in Table 1. Countries should note that debt securities in the IIP should be reported at *market* value while data in this table are at *nominal* value.

### ***Joint External Debt Hub (JEDH)***

20. The JEDH, which was jointly developed by the Bank for International Settlements (BIS), the IMF, the Organization for Economic Cooperation and Development (OECD), and the World Bank, brings together data for selected debt assets from international creditor/market sources and external debt statistics from national sources.<sup>16</sup> Some of the quarterly data series may be available with sufficient timeliness to compile quarterly IIP data—for example, *Multilateral loans*, or *International debt securities*, *Brady bonds*—however, it is important not to double count if data from the JEDH and national sources are both being used.

### **Registers of External Loans**

21. Some compilers use registers of external loans to obtain data on loans received or extended by the nonbank sector. These data, often collected for exchange control purposes, allow monitoring of both loans to/from nonresidents and, in some cases, nonmarketable securities issued to nonresidents. If the exchange controls are abolished, the administrative documents and arrangements created for that purpose might be adaptable for statistical purposes. The figures obtained from this source usually cover both loans between related companies (parent companies and affiliates) and between unrelated companies.

22. The IIP components that could use registers of external loans as a data source are identified in Table 1 by the acronym REL.

### **International Banking Statistics – Bank for International Settlements**

23. The international banking statistics collected and disseminated by the BIS provide information on the international banking business conducted in selected major international banking centers that provide data to the BIS. The locational banking statistics provide quarterly debtor/creditor bank information on loans and deposits of resident banks with nonresident banks and nonbanks by country. Many compilers use the data from nonresident banks on loans and deposits in relation to resident nonbanks<sup>17</sup> to supplement other balance of payments and IIP data sources.<sup>18</sup>

24. The statistical release of the provisional quarterly BIS data would not provide quarterly IIP compilers with the data in time to meet the new timeliness requirements. For

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<sup>16</sup> [http://www.jedh.org/jedh\\_home.html](http://www.jedh.org/jedh_home.html).

<sup>17</sup> BIS Quarterly Review, International Banking Statistics, Table 7B at <http://www.bis.org/statistics/bankstats.htm>.

<sup>18</sup> Nonbanks include *Other sectors*—Other financial corporations, nonfinancial corporations, households, and NPISHs—as well as the *General Government sector*.

example, provisional Q2 data for 2010 were released by the BIS on October 27, 2010—Q2 data would need to be released by quarterly IIP compilers on September 30. However, the BIS data could be used to revise estimated IIP data for the previous quarter.

25. The IIP components that could use international banking statistics as a data source are identified in Table 1 by the acronym BIS.

### **Security-by-Security Data Collection System on Tradable Securities**

26. For countries that use a security-by-security data collection system to compile portfolio investment in the IIP, these data should be available with a high frequency and could be used for quarterly IIP compilation. Typically, the information is obtained from resident custodians and from resident end-investors whenever they deposit their securities with nonresident custodians. The resident custodians report positions in securities with nonresidents for their own account and on behalf of other residents.

27. This information needs to be supplemented with data on securities issued abroad by residents and held by nonresidents, which could be obtained from data sources such as mercantile registers (i.e., public registers of companies), the Treasury, and financial statements of monetary and financial institutions. The outstanding amount of resident holdings of securities issued abroad needs to be deducted from the total outstanding amount issued abroad in order to identify the nonresident holdings.

28. As cross-border securities trading and settlement often uses the International Securities Identification Number (ISIN code) to identify securities, if the ISIN code is also used in a securities database to identify securities, then security-by-security reporting by respondents can be supported by information from the securities database. In Europe a securities database (CSDB) developed at the European Central Bank is used for this purpose.<sup>19</sup> The CSDB is a security-by-security database that maintains information on the attributes of each security and uses the ISIN code to identify each security. This database allows the compiler to classify the securities reported on an individual basis with the ISIN code by residency of the issuer, institutional sector of the issuer, instrument, and other attributes.

29. The security-by-security data collection system can also be a data source for the IMF's Coordinated Portfolio Investment Survey (CPIS). The CPIS collects information on the stock of cross-border holdings of securities—separately for equity securities and long-

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<sup>19</sup> [www.ecb.int/pub/pdf/other/centralisedsecuritiesdatabase201002en.pdf](http://www.ecb.int/pub/pdf/other/centralisedsecuritiesdatabase201002en.pdf).

term and short-term debt securities, valued at market prices. Data are presented by residence of the issuer of the securities.<sup>20</sup>

30. Currently, the CPIS is conducted annually (since 2001). However, in consultation with the IMF's Committee on Balance of Payments Statistics and CPIS participating countries, the IMF is to increase the frequency of the survey from annual to semi-annual and to accelerate by three months the timeliness of reported data. More frequent and timely reporting of CPIS data could provide improved benchmarks for estimating quarterly portfolio stock data.

31. The IIP components that could use a security-by-security data collection system as a data source are identified in Table 1 by the acronym SBS.

### C. When Quarterly Stock Data are Not Available

32. In many cases, particularly for data for *Other sectors*, quarterly IIP data sources may not be available. This section identifies three approaches that may be used to produce quarterly IIP data in these cases:

- Developing quarterly surveys
- Deriving quarterly stocks from the last available position and subsequent quarterly transactions
- Carry forward

33. For most countries a combination of these approaches may be the most feasible way forward.

#### Developing Quarterly Surveys

34. Enterprise surveys and surveys of custodians and financial intermediaries may be a key data source for compiling data for *Other sectors*, which includes nonfinancial corporations, other financial corporations (such as pension funds, insurance corporations, and investment funds), households, and nonprofit institutions serving households.<sup>21</sup> Countries in the early stages of compiling an IIP may wish to implement surveys with quarterly periodicity from the start. Examples of survey forms, including the "Collection Form for International Investment Positions for Direct Investment and Other Cross Border Positions"

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<sup>20</sup> Methodology, data sources, and results from the survey are available at <http://www.imf.org/external/np/sta/pi/datarsl.htm>.

<sup>21</sup> For the household sector, household surveys are more likely to be conducted on a less frequent basis (annually or in some cases every five years). These surveys could collect information such as holdings by residents of bank deposits and real estate (direct investment equity) abroad, and of foreign securities.



can be found in the *Coordinated Direct Investment Survey Guide, March 2010 (CDIS Guide)*.<sup>22</sup> The *CDIS Guide* also provides guidance on how to conduct surveys. It is useful to include a question on currency composition in the survey form because this information can be used to improve the calculation of stocks from flows, which is discussed in depth in the next section.

35. For countries with established annual survey operations, the introduction of quarterly surveys may be phased in over time. For example, quarterly foreign direct investment (FDI) surveys could target the largest companies that cover approximately 90 percent of the value of FDI. A country could then use grossing-up techniques to estimate the remaining 10 percent.<sup>23</sup> For example, for smaller companies in the population to be estimated, FDI positions could be carried forward or a growth rate applied.<sup>24</sup> Such an approach should be used as a temporary measure until more robust details are available from a benchmark survey.

36. Ratios can be used to produce quarterly estimates from annual data. More specifically, quarterly estimates for enterprises that are able to report only annual data can be developed with reference to the quarterly pattern reflected in the data of those enterprises that do report quarterly information. Different ratios can be constructed for different geographical regions or industrial sectors, so that the ratios applied fit the population that is being estimated.

37. The annual surveys could continue to provide more robust coverage. They could include all cross-border positions for nonfinancial corporations and financial corporations including FDI (equity and debt), portfolio investment, financial derivatives and employee stock options, and other investment.

38. The IIP components that could use quarterly surveys as a data source are identified in Table 1 by the acronym QS.

39. The experience of China, P.R.: Hong Kong in compiling quarterly IIP from quarterly surveys can be found in Appendix II (A).

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<sup>22</sup> <http://www.imf.org/external/np/sta/cdis/index.htm>.

<sup>23</sup> More information on sample surveys will be included in the forthcoming *BPM6 Compilation Guide*. In addition, detailed information on sample design is available in the [Export and Import Price Index Manual Theory and Practice: December 2009](#), page 134. Although this latter reference discusses sampling techniques for price statistics, it covers basic sampling theory that is applicable to sample surveys generally.

<sup>24</sup> It may be useful to develop sample surveys that permit the separate estimation of data for small- and medium-sized enterprises from all other enterprises, to support analysis, especially at the industry level.

## Deriving Quarterly Stocks from Quarterly Transactions<sup>25</sup>

40. For those cases where there are no quarterly stock data sources and where quarterly stock surveys are not feasible, the compiler may consider deriving quarterly IIP stock data from transactions data in the financial account of the balance of payments (BOP), assuming quarterly BOP transactions are available in appropriate detail.<sup>26</sup>

41. A detailed discussion can be found in the *External Debt Statistics: Guide for Compilers and Users*, Chapter 12, Appendix: *Estimating Data with Transactions Information*.<sup>27</sup>

42. However, the use of accumulated transactions to estimate stocks is a weak basis for estimating IIP, because errors can be easily introduced and, consequently, they tend to be retained in the estimates until a survey of stocks can be undertaken.

43. In principle, the value of a stock at the end of a period is equal to the value of the stock at the beginning of the period plus:

- Transactions
- Other changes in volume
- Exchange rate changes, and
- Other price changes

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<sup>25</sup> For specific items, like financial derivatives, quarterly stocks should not be derived from quarterly BOP transactions because changes in position due to price or exchange rate changes can be substantial. See FAQ #5 on page 29 for further discussion.

<sup>26</sup> SDDS subscribers are required to disseminate quarterly BOP data. For some components, BOP transactions may not be available on a quarterly basis or there may be a lag that does not meet the timeliness needs of quarterly IIP compilation. If this is the case, the guidance provided in the section on *Carry Forward* would apply.

<sup>27</sup> <http://www.imf.org/external/np/sta/ed/guide.htm>.

*The following examples illustrate how transactions data can be used to derive quarterly stock data based on different scenarios. These examples assume that stock data are available on an annual basis; therefore stock data for the beginning of the period would be available. If information on currency composition is available, other assumptions become easier to make—for example, if information on the currency composition is known, the impact of changes in exchange rates can be calculated and other price changes can also be calculated. Changes in stock or bond price indexes (which will include the impact of changes in economic outlook and market interest rates) can be used to calculate other price changes. In these examples, amounts in **bold** reflect source data available to the IIP compiler.*

### *Example One*

Estimation of quarterly stock data using quarterly **transactions**:

Direct investment liability – equity

Denominated in domestic currency (dc) and reported in domestic currency.

No changes in price or other changes in volume (OCV).

Position at December 31, 2008: 1,000

Transactions during 2009: Q1 = 150, Q2 = 50, Q3 = -100, and Q4 = 200.

Example One	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4
Yearend position in dc	<b>1,000</b>				
Transactions in dc		<b>150</b>	<b>50</b>	<b>-100</b>	<b>200</b>
Quarterly estimated positions in dc		1,150	1,200	1,100	1,300

### *Example Two*

Estimation of quarterly stock data using quarterly **transactions** and **exchange rate changes**:

Direct investment asset – equity

Assume the currency composition of position and transaction data is available.

Denominated in foreign currency (US\$) and reported in domestic currency (dc).

No changes in price or OCV.

Position at December 31, 2008 in dc: 1,000

Transactions during 2009 in dc: Q1 = 150, Q2 = 50, Q3 = -100, and Q4 = 200.

Example Two	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4
Data source: Denominated in foreign currency (US\$) and reported in domestic currency (dc)					
(A) Yearend position in dc	<b>1,000.0</b>				
(a) Transactions in dc		<b>150.0</b>	<b>50.0</b>	<b>-100.0</b>	<b>200.0</b>
Step 1: Revaluation of transactions for effect of changes in exchange rates					
(b) Average exchange rate (units of dc to US\$)		<b>12.0</b>	<b>12.5</b>	<b>14.5</b>	<b>15.5</b>
(c) Transactions in \$ = (a) / (b)		12.5	4.0	-6.9	12.9
(d) Exchange rate at end of quarter	<b>10.0</b>	<b>14.0</b>	<b>11.5</b>	<b>11.0</b>	<b>14.0</b>
(e) Estimated value of transactions (that occurred during the quarter) in terms of their end of quarter position = (c) * (d)		175.0	46.0	-75.9	180.6
(f) Exchange rate gains/losses due to revaluation of transactions = (e) – (a)		25.0	-4.0	24.1	-19.4
Step 2: Revaluation of opening positions for effect of changes in exchange rates					
(g) Opening positions in dc = Q1 = (A) for t-1 Q2 thru Q4 = line (l) for t-1		<b>1,000.0</b>	1,575.0	1,339.8	1,205.6
(h) Opening positions in \$ = (g) / (d for t-1)		100.0	112.5	116.5	109.6
(i) Opening positions revalued using end of quarter exchange rate = (h) * (d)		1,400.0	1,293.8	1,281.5	1,534.4
(j) Exchange rate gains/losses due to revaluation of opening positions = (i) – (g)		400.0	-281.3	-58.3	328.8
(k) Exchange rate gains or losses, total = (f) + (j)		425.0	-285.3	-34.1	309.5
(l) Quarterly estimated positions in dc = (e) + (i) or (a) + (g) + (k)		1,575.0	1,339.8	1,205.6	1,715.1

*Totals may not equal sum of components due to rounding.*

44. The results are an approximation of the actual stock position partly because the calculations for converting transactions into end positions use the *average* exchange rate during the period instead of the actual exchange rate in effect at the time of each transaction. When using average rates, the shorter the reference period the better.

45. In the absence of data on the currency composition, the compiler could:

- Match the *trade-weighted exchange rate* to a *financial instrument-weighted exchange rate* by conducting a simple enquiry with some of the more important economic agents, in order to calculate a correlation between the two exchange rates. The *calibrated* trade-weighted exchange rate would then be applied to the respective financial instrument. This enquiry could be reviewed every year or so, if no currency composition is available to the compiler. If it is not possible to calculate a calibrated trade-weighted exchange rate, the compiler could assume that all instruments denominated in foreign currency are in the same currency. This “currency” could be the known dominant currency in the country’s financial transactions, such as the U.S. dollar, the euro, the Japanese yen, or the pound sterling. However, this could lead to a biased estimate of exchange-rate effects and consequently of stocks.
- In the absence of data on the currency composition for every domestic sector or functional category, the compiler might be able to use the currency composition of one sector, such as banks, as a proxy for other sectors. This could only be done if there is evidence that there is some similarity between the currency composition of banks and the other sectors. In order to determine this, a comparison could be made for a period when the currency composition for all sectors is available. This methodology should be used only until new information is available as it could introduce errors.

### *Example Three*

Estimation of quarterly stock data using **transactions, exchange rate changes, and price changes**:

Direct investment asset – equity (traded)

Assume the currency composition of position and transaction data is available.

Denominated in foreign currency (US\$) and reported in domestic currency (dc).

Assume the stock market price at end of period and average stock market price are available.

No OCV.

Position at December 31, 2008 in dc: 1,000

Transactions during 2009 in dc: Q1 = 150, Q2 = 50, Q3 = -100, and Q4 = 200.

Example Three	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4
Data source: Denominated in foreign currency (US\$) and reported in domestic currency (dc)					
(A) Yearend position in dc	<b>1,000.0</b>				
(a) Transactions in dc		<b>150.0</b>	<b>50.0</b>	<b>-100.0</b>	<b>200.0</b>
Step 1: Revaluation of transactions for effect of changes in prices					
(b) Average stock market prices during the quarter		<b>1.066</b>	<b>1.070</b>	<b>1.055</b>	<b>1.040</b>
(c) Stock market price at end of quarter	<b>1.100</b>	<b>1.045</b>	<b>1.068</b>	<b>1.025</b>	<b>1.033</b>
(d) Estimated value of transactions (that occurred during the quarter) in terms of their prices at end of quarter position = (a)*[(c)/(b)]		147.0	49.9	-97.2	198.7
(e) Price changes reflecting revaluation of transactions = (d) – (a)		-3.0	-0.1	2.8	-1.3
Step 2: Revaluation of transactions for effect of changes in exchange rates					
(f) Average exchange rate (units of dc to US\$)		<b>12.0</b>	<b>12.5</b>	<b>14.5</b>	<b>15.5</b>
(g) Exchange rate at end of quarter	<b>10.0</b>	<b>14.0</b>	<b>11.5</b>	<b>11.0</b>	<b>14.0</b>
(h) Estimated value of transactions (that occurred during the quarter) in terms of their exchange rates at end of quarter position = (d) * [(g)/(f)]		171.6	45.9	-73.7	179.4
(i) Exchange rate gains or losses due to revaluation of transactions = (h) – (d)		24.5	-4.0	23.5	-19.2

Step 3: Revaluation of opening positions for effect of changes in prices				
(j) Opening positions in dc = Q1 = (A) for t-1 Q2 thru Q4 = line (q) for t-1	<b>1,000.0</b>	1,501.6	1,306.5	1,125.7
(k) Opening positions revalued using stock market price at end of quarter = (j)*[(c) / (c for t-1)]	950.0	1,534.6	1,253.9	1,134.4
(l) Price changes reflecting revaluation of opening positions (k) – (j)	-50.0	33.0	-52.6	8.8
Step 4: Revaluation of opening positions for effect of changes in exchange rates				
(m) Opening positions revalued using end of quarter exchange rate = (k) * [(g)/ (g for t-1)]	1,330.0	1,260.6	1,199.4	1,443.8
(n) Exchange rate gains or losses due to revaluation of opening positions= (m) – (k)	380.0	-274.0	-54.5	309.4
(o) Other price changes, total = (e) + (l)	-53.0	33.0	-49.8	7.4
(p) Exchange rate gains or losses, total = (i) + (n)	404.5	-278.0	-31.1	290.2
(q) Quarterly estimated positions in dc = (h) + (m) or (a) + (j) + (o) + (p)	1,501.6	1,306.5	1,125.7	1,623.3

*Totals may not equal sum of components due to rounding.*

46. When actual market values are not available, for example for untraded equity, information on book value can be collected from enterprises, and then adjusted as necessary. “Own funds at book value” (OFBV) is an accepted proxy for market value. OFBV values unlisted equity using financial accounting rules in which an enterprise’s cumulative reinvested earnings are included; accumulated depreciation on plant and equipment are included; and most financial instruments held by the enterprise are valued at market or fair values. If information on OFBV is not available to the compiler, then ratios based on suitable price indicators, such as the ratio of market capitalization<sup>28</sup> to book value for listed companies in the

<sup>28</sup> See *BPM6* paragraph 7.16 (d).

same economy with similar industrial activity could be used as a proxy until other source data are available.

47. The experience of Canada in the development of market value estimates can be found in Appendix II (B).

48. In terms of data quality, these equations can serve to cross-check or verify transactions data or positions data. For example, if the beginning and end position data are available as well as the currency composition and the relevant price index, then the transactions data reported in the balance of payments can be cross-checked. Potential errors and omissions in the balance of payments may be identified through this exercise.

*Example Four*

Estimation of quarterly stock data for bonds using **transactions** and **price changes**:

Portfolio investment liabilities – bonds

Position at December 31, 2008: 4,000 denominated in domestic currency.

Transactions during 2009: Q1 = 235, Q2 = -1,200, Q3 = 718, Q4 = 327.



Example Four	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4
(A) Yearend position	<b>4,000.0</b>				
(a) Transactions		<b>235.0</b>	<b>-1,200.0</b>	<b>718.0</b>	<b>327.0</b>
Step 1: Revaluation of transactions for effect of changes in prices					
(b) Bond price index end of period	<b>110.0</b>	<b>108.0</b>	<b>120.0</b>	<b>125.0</b>	<b>105.0</b>
(c) Average bond price index during the quarter = [(b for t-1) + (b)]/2		109.0	114.0	122.5	115.0
(d) Estimated value of transactions (that occurred during the quarter) valued at end of period = (a)*[(b)/(c)]		232.8	-1,263.2	732.7	298.6
(e) Price changes reflecting revaluation of transactions = (d) – (a)		-2.2	-63.2	14.7	-28.4
Step 2: Revaluation of opening positions for effect of changes in prices					
(f) Opening positions = Q1 = (A) for t-1 Q2 thru Q4 = line (j) for t-1		<b>4,000.0</b>	4,160.1	3,359.2	4,231.8
(g) Opening positions revalued using bond price index = (f)*[(b) / (b for t-1)]		3,927.3	4,622.4	3,499.2	3,554.7
(h) Price changes reflecting revaluation of opening positions. (g) – (f)		-72.7	462.2	140.0	-677.1
(i) Price changes, total = (e) + (h)		-74.9	399.1	154.6	-705.5
(j) Quarterly estimated positions = (d) + (g) or (a) + (f) + (i)		4,160.1	3,359.2	4,231.8	3,853.3

*Totals may not equal sum of components due to rounding.*

#### *Example Five*

Estimation of quarterly stock data using **transactions** and **other changes in volume**:

On March 31, 2009, an investor purchases, for \$600, 6 percent of the shares of a nonresident enterprise that entitles it to 6 percent of the voting power. On August 31, 2009, the investor purchases, for \$500, another 5 percent of the shares of the same enterprise that entitles it to an additional 5 percent of the voting power.

The first transaction is classified as portfolio investment. The second transaction, which raised the investor's voting power above the 10 percent threshold, is classified as direct investment. The 6 percent of shares purchased in the first transaction is then reclassified from portfolio investment to direct investment as these shares now constitute part of direct investment. The reclassification is recorded in other changes in volume.

Position at December 31, 2008 from annual survey:

Foreign Direct Investment (FDI). Equity and investment fund shares: \$3,000

Portfolio Investment (PI). Equity and investment fund shares: \$4,000

Example Five	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4
FDI Equity and invest. fund shares at the beginning of the period in US\$	<b>3,000</b>				
FDI equity transactions in US\$				<b>500</b>	
Other changes in volume in US\$ Reclassifications, FDI				+ 600	
Direct Investment. Equity and investment fund shares estimated		3,000	3,000	4,100	4,100
PI Equity and invest. fund shares at the beginning of the period in US\$	<b>4,000</b>				
PI equity transactions in US\$		<b>600</b>			
Other changes in volume in US\$ Reclassifications, PI				-600	
Portfolio Investment. Equity and investment fund shares estimated		4,600	4,600	4,000	4,000

### Carry forward

49. In the absence of quarterly transactions data or any reliable quarterly stock estimate for any individual item, the most recent stock figure could be carried forward (i.e., use the same stock figure) until other source data are available. For example, for trade credit liabilities denominated in domestic currency, if transaction data are only available on an annual basis, the stock data at the beginning of the period could be carried forward each quarter until the annual transactions data are available. The following section will explain how to distribute revised data.

50. *Carry forward should be used only when all other avenues for obtaining quarterly stock data have been exhausted.*

### III. REVISION POLICIES AND PRACTICES

51. A clear revision policy is needed for dissemination of high frequency data that rely to a large extent on estimates. This includes quarterly IIP statistics. Revisions should follow a regular and transparent schedule and users should be informed of this practice. The revision cycle should be predetermined and reasonably stable from year to year. The reasons underlying the revision cycle (e.g., the availability of source data, the timing of revisions with related datasets) should be explained and compilers need to inform the public when the revisions are outside the regular cycle (e.g., by the availability of new source data or errors).

52. The revisions should be measured, assessed, and explained in the IIP publication and in the database accessible by users. The analysis of differences between the revised and preliminary data should be published for major aggregates to allow an assessment of the reliability of the preliminary data.

53. Data revision is a continuous process. For most quarterly statistics, preliminary data need to be released one quarter after the end of the reference quarter. Although practices may differ across countries, in many cases these data are revised when data for the following quarter become available—for example Q1 data are revised when Q2 data are released. When annual results are available, data for all quarters in the year (and perhaps for one or more earlier years) are subsequently revised. Historical revisions to prior years are encouraged when substantial revisions to coverage and/or methodology take place.

54. When data from annual surveys become available, the quarterly IIP should be revised accordingly:

*Example Six*

Position at December 31, 2009 derived from quarterly estimates: **3,250**

Position at December 31, 2009 from the annual survey: **3,550**

The difference between December 31, 2009 stock reported on the annual survey and the year-end stock derived from quarterly estimates is:  $3,550 - 3,250 = 300$ .

Unless other information suggests a different pattern, this difference may be distributed equally (and cumulated) over the three quarters:  $300/3 = 100$ . If information is available that suggests that the adjustments to the three quarters should not be equal (for example, if exchange rate movements or transactions were particularly significant in a single quarter), then a different pattern of adjustment should be considered.

If the annual difference was distributed equally to all three quarters, the quarterly revised stocks would be:

Example Six (1)	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4
(A) Yearend position	<b>3,000</b>				
(a) Quarterly BOP transactions		<b>100</b>	<b>50</b>	<b>-100</b>	<b>200</b>
(b) Quarterly estimated stocks: Q1 = (A) for t-1 + (a) Q2 thru Q4 = (b for t-1) + (a)		3,100	3,150	3,050	3,250
(c) Difference to be distributed: (3,550-3,250)/3 = 100		+100	+200	+300	
(d) Quarterly revised stocks: Q1 thru Q3= (b) + (c)	<b>3,000</b>	3,200	3,350	3,350	<b>3,550</b>

If the new submission also contains revisions for 2008 the process would be as follows:

Position at December 31, 2008 from the annual survey: **3,150**

Position at December 31, 2009 from the annual survey: **3,550**

The difference between December 31, 2009 stock reported on the annual survey and the year-end stock derived from quarterly estimates is:  $3,550 - 3,400 = 150$ .

As noted above, unless other information suggests a different pattern, this difference may be distributed equally (and cumulated) over the three quarters,:  $150/3 = 50$ .

Example Six (2)	2008Q4	2009Q1	2009Q2	2009Q3	2009Q4
(A) Yearend position	<b>3,150</b>				
(a) Quarterly BOP transactions		<b>100</b>	<b>50</b>	<b>-100</b>	<b>200</b>
(b) Quarterly estimated stocks: Q1 = (A) for t-1 + (a) Q2 thru Q4 = (b for t-1) + (a)		3,250	3,300	3,200	3,400
(c) Difference to be distributed: (3,550-3,400)/3 = 50		+50	+100	+150	
(d) Quarterly revised stocks: Q1 thru Q3= (b) + (c)	<b>3,150</b>	3,300	3,400	3,350	<b>3,550</b>

#### IV. FREQUENTLY ASKED QUESTIONS (FAQS)

##### **1. What is the main benefit of compiling quarterly IIP statistics?**

The main benefit of compiling quarterly IIP statistics is to provide more timely data for surveillance, and analysis of international liquidity and external exposures. In addition, quarterly IIP data are an essential component of national balance sheet data. The lack of timely information hinders the ability of policy makers and market participants to develop effective responses. After the onset of the recent financial crisis it became clear that a major data gap was the availability and timeliness of quarterly stock data on cross border exposures. Compilation of quarterly IIP statistics also allows for a better understanding of cross-border linkages.

##### **2. We are going to launch an annual survey to collect IIP data. Could we also ask for quarterly data in our annual survey to be used for the compilation of the quarterly IIP statement?**

We encourage the implementation of quarterly surveys (rather than the collection of data for all quarters on an annual survey), to ensure the availability of data for a quarterly IIP statement in terms of timeliness and frequency. To minimize reporting burden and overall cost, a quarterly survey could be directed to a smaller number of enterprises and could use a questionnaire with less detail than an annual survey. Grossing up techniques or models based on the available reported data could be used to estimate data for the enterprises not reporting in a quarterly (or annual) survey.

##### **3. We have quarterly IIP data but with less detail than the minimum amount of requested information. Should we start reporting partial quarterly IIP or should we wait until we achieve the minimum amount of requested detail?**

We encourage estimating the missing components so as to obtain the minimum amount of detail requested for the IMF publications. To achieve this, various approaches could be considered, such as developing quarterly surveys, or deriving quarterly stocks from the last available position and subsequent quarterly transactions.

##### **4. Regarding the examples on deriving stocks from quarterly transactions, could we use “derived liabilities” data from the IMF’s Coordinated Portfolio Investment Survey (CPIS) as the initial stock position?**

CPIS data can be useful as a data source for cross checking annual (or semiannual) portfolio investment data. Other data sources, such as mercantile registers, the Treasury, and financial statements of monetary and financial institutions could also be useful in this regard. It may be important to recognize that currently about 75 economies participate in the CPIS (including nearly all large securities holders), and therefore the derived liabilities data from the CPIS are

a useful source of information but do not cover global holdings by nonresidents of your economy's securities.

**5. We collect financial derivatives with annual frequency. Could we use the same stock amount for the quarterly IIP estimates?**

If the position in financial derivatives is substantial, quarterly stock data should not be derived by summing quarterly BOP transactions in financial derivatives because changes in position due to price or exchange rate changes can be substantial. A reliable data source for measuring quarterly stocks is needed. If information on quarterly positions in financial derivatives is available for depository corporations, for example in the 2SR form, it may be possible to use this data source as a proxy for other sectors. If however financial derivatives are a very small component of the total IIP assets or liabilities, as it is for many economies, there may not be substantial misstatement if the most recent annual stock position for financial derivatives were carried forward until the next annual or semiannual figure became available. The carry forward estimation technique should be used *only* when positions are relatively small and other methods for estimating quarterly positions are not available or reliable.

**6. If stock data are available only on a semiannual basis, how should an estimate be derived for the quarter for which the stock data are not available?**

The stock data at the end of the quarter for which data are not available can be derived based on the most recent stock estimate and flow or transactions data, as described in examples in Part II of this pamphlet. Ideally, derived estimates will be revised when new semiannual stock data are available.

**7. Could the revision cycle for BOP and IIP have different periodicity?**

To achieve consistency between two data sets, ideally the revision periodicity for the BOP and IIP accounts should be the same.

## APPENDIX I. ENHANCEMENTS TO THE IIP

There is an increasing amount of interest in detailed IIP data. In particular, recommendation #12 in the report *The Financial Crisis and Information Gaps* stated in part that the enhancements to the IIP contained in *BPM6* should be adopted by G-20 economies as soon as feasible. To the extent possible, all countries are encouraged to compile quarterly and annual IIP data that are consistent with *BPM6* recommendations. The *BPM6* IIP enhancements include the following:

### General

- Increased emphasis and guidance on use of market valuation for direct investment positions (paragraphs 7.16—7.18)
- SDR allocations (standard component of the IIP)

### Memorandum items

*Memorandum items are part of the standard presentation, but are not used in deriving totals and balancing items.*

- A more detailed sectoral breakdown, including identification of the nonbank financial institutions (Table A9-1, memorandum table)
- Standardized reporting for the currency composition of international assets and liabilities, including financial derivatives (Table A9-1-1b and Table A9-1-2b, memorandum tables, derivatives reported at notional value)
- Information on the impairment of cross-border loans (for creditors only)
  - at fair values (memorandum item, if feasible; paragraph 7.46)
  - nonperforming loans at nominal value (supplementary item, or memorandum item if fair value of impaired loans is unavailable; paragraph 7.46)
- Reserve-related liabilities (short-term reserve-related liabilities on a remaining maturity basis are a memorandum item; memorandum items in Table A9-V)

### Supplementary items

*Supplementary items are outside the standard presentation, but are compiled depending on circumstances in the particular economy, taking into account the interests of policymakers and analysts as well as resource costs.*

- Loan loss provisions (supplementary item; paragraph 7.46)
- Supplementary detail on the remaining maturity of international assets and debt liabilities (Table A9-III-1a and Table A9-IV, supplementary tables)
- Significant off-balance sheet commitments (where these may be significant, compilers should provide supplementary information on their maximum exposure loss, paragraph 7.74)
- Financial derivative positions with non residents at notional value, if feasible by market risk categories (e.g., foreign exchange, single currency interest rate, equity, commodity, credit, and other; supplementary items, paragraph 5.95)
- Holdings of sovereign wealth funds not included in reserve assets functional category (supplementary IIP items, paragraph 7.73).

## **APPENDIX II. EXPERIENCE OF SELECTED ECONOMIES**

### **A. China, P.R.: Hong Kong**

The financial crisis in 2008/09 revealed the need to fill important data gaps that hindered the proper and timely identification of financial vulnerabilities of economies. Enhancement of IIP statistics from annual to quarterly frequency was one of the recommendations that emerged from a series of discussions and consultations in the international community.

The Census and Statistics Department (C&SD) of China, P.R.: Hong Kong, believed that the development of quarterly IIP statistics, complemented by existing quarterly BOP statistics, would strengthen the usefulness of the statistics for financial surveillance. In May 2009, the C&SD decided to enhance the frequency of IIP statistics from annual to quarterly compilation, with a plan to disseminate the first set of quarterly IIP statistics of China, P.R.: Hong Kong for the reference period of Q1 2010 in June 2010.

Preparatory work was started immediately in order to ensure smooth implementation of the enhancement in a timeframe of around one year. Some important tasks conducive to the success of this project are highlighted below.

#### **Collection of Quarterly Position Data**

China, P.R.: Hong Kong adopts an integrated survey approach to collect quarterly data on external transactions, positions and income at one time from resident companies for compiling BOP, IIP, and related statistics. An internal study found that the quarterly position data collected are of good quality for compiling reliable quarterly IIP statistics. Thus no major change in data collection work was needed and the respondent burden could be constrained to the existing level.

#### **Streamlining of Work Processes**

The new quarterly compilation of IIP statistics is fully integrated with the existing computer system for BOP compilation to ensure consistency between position and transaction data as well as to reduce any extra efforts required. The effort to compile quarterly IIP statistics provided an opportunity to streamline the work processes for BOP and IIP compilation, so as to achieve savings of resources in certain areas for deployment to some new activities. As a result, no extra staff resources were needed for compiling quarterly IIP statistics.



## **Staff Engagement and Training**

All key working staff were engaged at an early stage of the project, which was very effective in raising staff's commitment and contribution to the work. Furthermore, suitable training to all staff involved in the compilation and dissemination processes was provided in order to equip them with all the necessary knowledge and skills.

## **Trial Run**

Several trial runs were conducted to test different aspects of data compilation and dissemination. The trial runs were very useful because they not only identified certain areas for fine-tuning, but also provided some opportunity for the staff to become familiar with the new work processes.

With the concerted effort of all parties involved, the C&SD disseminated the first set of quarterly IIP statistics of China, P.R.: Hong Kong with a quarterly time lag in June 2010. China, P.R.: Hong Kong's experience indicates that early planning and staff engagement were crucial factors leading to the successful implementation of the project.

## **B. Canada**

Canada's IIP is produced on a quarterly basis and typically released within 75 days after the end of the reference period. This reflects the availability of timely and high frequency IIP sub-components, or related detail used to estimate these sub-components. The current time series for the quarterly IIP runs from 1990 onward. Both a book value and a market value IIP, with tradable securities valued at current prices, are available simultaneously. This note covers further developments towards a full market value IIP planned for 2012.

Aggregate IIP data are coordinated and confronted with related/counterpart estimates from the quarterly sectoral balance sheet accounts—*National Balance Sheet Accounts*—which is typically released one day after the IIP.

## **Direct Investment**

Annual surveys of the book value of inward-outward foreign direct investment form the basis of the benchmark estimates for the year-end positions. Quarterly positions between these benchmarks and for periods subsequent to the latest benchmark data (noted as preliminary) are estimated using quarterly investment flows plus re-invested earnings derived from the quarterly FDI sample survey, supporting data from the Statistics Canada's quarterly enterprise survey, as well as detailed information on mergers and acquisitions (M&A). For current M&A transactions, efforts are made at adjusting current values back to underlying book values for direct investment enterprises.

### ***Market value estimates of direct investment***

Estimates of the market value of FDI equity are under development and will be available at the time of the release of the 2012 historical revisions to the *Canadian System of National Accounts*. A version of the market capitalization approach is primarily being used to develop these new estimates. With this improvement to FDI added to existing estimates of securities at market values, Canada will publish two official estimates of IIP by mid-2012—the traditional book value estimate, which will link to the annual geographical FDI estimates, and an aggregate market value estimate, which will become the focus at the time of the quarterly IIP releases.

### **Portfolio Investment – Assets**

The Canadian Portfolio Investment Survey (which is security-by-security based) provides a benchmark for annual asset positions of debt and equity at market value for foreign equities and bonds. Market value benchmarks are converted to book values using capitalization ratios to derive the book value estimates. Quarterly positions between these benchmarks and for periods subsequent to the latest benchmark data (noted as preliminary) are estimated using quarterly flows at market value (derived from a monthly survey of security-by-security cross-border transactions<sup>29</sup>) summed and adjusted to book value. These calculations are supplemented by reference to Statistics Canada's quarterly survey data for large institutional investors.

### ***Market value estimates of portfolio investment assets***

Supplementary estimates of portfolio investments in bonds and equities at market value are available from 1990 onward. Quarterly positions between these benchmarks and for periods subsequent to the latest benchmark data (noted as preliminary) are estimated using quarterly flows at market value, adjusted to take into account fluctuations in the prices of the assets. These price adjustments are derived from the use of selected stock market indices and market yields covering the most important countries of investment by Canadians.

### **Portfolio Investment – Liabilities**

An inventory of outstanding Canadian instruments and equity issues is also combined with monthly cross-border transactions in securities to derive quarterly liability positions. A detailed system is used to process data on Canadian bonds and both Canadian and foreign

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<sup>29</sup> These data constitute the monthly release of *Canada's International Transactions in Securities*, which provide an essential part of the quarterly release of *Canada's Balance of International Payments*.

money market instruments. Positions are derived on an issue-by-issue basis and can be automatically produced on a quarterly basis. The system generates positions at both, market and book values.

### ***Market value estimates of portfolio investment liabilities***

As noted directly above, the system for Canadian debt securities calculates a market value position on an issue by issue basis based on prices observed from the monthly cross-border transactions survey. When cross-border trading activity is not observed on an instrument, the market value is derived from market yields matching the characteristics of the instrument. For Canadian equities, the book value benchmark estimates are converted to market value using capitalization ratios on an issue by issue basis. Subsequently, quarterly positions are generated using flows at market value and price changes from the Canadian stock market.

### **Other Investment and Reserve Assets**

Outstanding loans issued by banks and governments are available on a quarterly basis. Loans from other corporations are derived from annual surveys and quarterly flows. Deposits are also available from the banks on a quarterly basis. Official international reserve assets are available on a monthly basis. The other miscellaneous accounts are based on annual surveys adjusted to quarterly positions using quarterly flows.

### **Currency Fluctuations**

Outstanding positions for all IIP sub-components denominated in foreign currency are revalued each quarter to reflect fluctuations in exchange rates on both book and market value bases.

## **C. Pakistan**

Following the recommendation made by the 2009 IMF multisector statistics mission that Pakistan develop and compile quarterly IIP statistics, the State Bank of Pakistan Statistics and Data Warehouse Department initiated for the first time the compilation of such statistics for Pakistan.

## Identification of Data Sources and Timeliness

In the first stage, all possible data sources for the compilation of quarterly IIP statistics were identified. The major data sources identified and used for the IIP compilation are as follows:

- International Transactions Reporting System (ITRS): available on a monthly basis;
- Quarterly External Debt Statistics: data on transactions in debt claims are available on a quarterly basis with a time lag of one quarter whereas data on transactions in debt liabilities are available on a monthly basis;
- Balance of payment flows: available on a monthly basis;
- Monetary and financial statistics: available on a monthly basis;
- Other data sources such as the State Bank of Pakistan accounts: also available on a monthly basis;
- Quarterly Survey of Foreign Direct Investment (FDI) in Pakistani banks branches abroad;
- Quarterly Survey of Enterprises having deposits abroad: new data source that has been initiated for the compilation of BOP and IIP statistics.

## Compilation of Assets

- **Direct Investment Abroad**

Quarterly surveys from deposit money institutions have been initiated to record the stock and flow data of FDI in foreign branches of Pakistani banks whereas the ITRS flows data have been used to estimate the closing balances of FDI of enterprises other than banks. Limitation of using ITRS data is that it does not provide any information on price changes and exchange rate changes. Therefore, an estimation procedure needs to be established for calculations of price changes and exchange rate changes.

- **Portfolio Investment Assets**

ITRS flow data have been used to estimate the closing balance of portfolio investment (PI) abroad. Since the CPIS is conducted on an annual basis, the CPIS data cannot be used for estimating the closing balance of PI abroad.

- **Financial Derivatives**

Financial derivatives data have been incorporated for the first time in the IIP compilation for the deposit money institutions. Efforts are underway to record the financial derivatives data of the State Bank of Pakistan as well.

- **Other Investment – Trade Credit**

BOP flows data have been used to estimate the closing balances of trade credits.

- **Other Investment – Currency & Deposits**

Information drawn from the FE-25 statement compiled by the BOP division, as well as the ITRS data have been used to compile the stock and flow data.

- **Other Assets - Banks**

Data on Foreign (Export) Bills Purchased & Discounted reported through Sectoral Balance sheet have been used to compile the stock and flow position.

- **Reserve Assets**

State Bank of Pakistan accounting records have been used to compile reserve assets.

### **Compilation of Liabilities**

- **Direct Investment in Pakistan**

ITRS flow data have been used to estimate the closing balances of FDI in Pakistan. The limitation of using ITRS data is that it does not provide any information on price changes and exchange rate changes. Initially efforts were made to estimate the price changes using the data of the stock market index, which was subsequently compared with the original price changes recorded through the survey. The two sets of data revealed huge differences and hence the idea of using the stock market index data seemed unsuitable for such estimations. There is an ongoing effort to identify an estimation procedure for calculating price changes in this scenario.

- **Portfolio Investment – Equity Securities**

ITRS flow data have been used to estimate the closing balances of PI – equity. The problem of estimating price changes is the same as described above.

- **Portfolio Investment – Debt Securities**

Data from external debt statistics and special convertible rupee accounts statement has been used to estimate the flows and stocks.

- **Financial Derivatives**

Financial derivatives data have been incorporated for the first time in IIP compilation for the deposit money institutions. Efforts are underway to record the financial derivatives data of the State Bank of Pakistan as well.

- **Other Investment – Trade Credits**

The source of this data has always been the annual foreign investment survey. No other data source is available for estimating the flow and stock data related to trade credits. Therefore, the same value was carried forward during quarterly IIP compilation.

- **Other Investment – Loans – Monetary Authorities**

The data available on IMF website related to Use of Fund Credit and Loans from the IMF have been used to calculate the stock and flow data. Data are also reconciled with those from the external debt statistics and BOP statistics.

- **Other Investment – Loan – including General Government**

External debt statistics have been used to compile the stock and flow data. While compiling the quarterly IIP, it has been strongly felt that timely reconciliation of flows data reported through external debt statistics and BOP is very important since IIP is based on stock and flows which needs to be reconciled with both. In the absence of proper reconciliation procedure, the IIP data on stock and flows will not be reconciled with any of the above data sets.

- **Currency & Deposits – Monetary Authorities**

State Bank of Pakistan accounting records have been used to calculate the stock and flow data.

- **Currency & Deposits – General Government**

External debt statistics have been used to calculate the stocks and flows data.

- **Currency & Deposits – Banks**

ITRS and information drawn from the FE-25 statement have been used to calculate the stock and flow data.

- **Other Liabilities – Monetary Authorities**

As recommended by the IMF, the SDR allocations have been classified as monetary authorities' long-term liabilities. The data have been obtained from the IMF website.

- **Other Liabilities – General Government**

External debt statistics have been used to calculate the stock and flows data.

- **Other Liabilities – Other Sectors**

BOP data on foreign air and shipping companies have been used to calculate the stock and flow data.

#### **D. European Central Bank**

This paper contains the experience of European countries in compiling BOP and IIP statistics <http://www.ecb.int/pub/pdf/scpops/ecbocp67.pdf>.

