5. Aggregation and Consolidation of Data

Introduction

5.1 The analysis of FSI ratios is affected by the extent to which the data used for their calculation are consolidated. Thus, when constructing FSI ratios, attention needs to be paid to whether the data reported by entities are on a consolidated basis and the method by which the data for the whole of the reporting population[1] are aggregated. This chapter explains what is meant by consolidation and aggregation, and sets out the various approaches. It also sets out the adjustments required to produce sector-level data.

5.2 The FSI data compiled for domestically controlled deposit takers on a cross-border consolidated basis are best suited for financial soundness analysis when the deposit takers have international operations. Data on domestically located operations might be separately distinguished if the authorities believe it would contribute materially to their financial stability analysis (for example, to illustrate the linkage with other macroeconomic information). This chapter will also outline a preferred approach for the other sectors. The data implications of the *Guide*'s preferred approaches are explained in Chapter 11.

Defining Terms

What Is Meant by the Terms "Aggregation" and "Consolidation"?

5.3 *Aggregation* refers to the summation of data on gross positions or flows. Under an aggregation approach, the total positions and flows data for any group of reporting units are equal to the sum of the gross information for all individual units in the group.[2] Thus, the group and subgroup totals equal the sum of their component elements, and the data on claims and liabilities between the members of the group are preserved.

5.4 In contrast, *consolidation* refers to the elimination of positions and flows between units that are grouped together for statistical purposes. Consolidation can arise at various levels of grouping. For an individual institutional unit, all intraunit positions and flows are eliminated. If related institutional units are grouped together to form one individual reporting entity (for example, foreign branches of domestic banks are grouped with their parent bank), then all positions and flows within that reporting entity are eliminated from the reported information—that is, all flows and positions among the branches and with their parent are eliminated. If data for a group of reporting entities are consolidated, such as those in the same institutional sector (or subsector), then intrasector flows and positions are eliminated, leaving data on positions and flows with entities in other sectors (or subsectors).

5.5 Consolidation and aggregation can be combined for the purpose of compiling data series for use in calculating FSIs. For instance, reporting entities might provide consolidated data to the compiling agency, which then aggregates these data to create sector totals. On the other hand, the data provided might be consolidated rather than aggregated at the sector level. In this case, information on positions and flows among the entities covered in the reporting population need to be available to the compiling agency so that such positions and flows be eliminated. The approach

[1]The term "reporting population" refers to all entities included in the sector information. The population can vary depending on the institutional coverage of the sector.

[2]In some instances, data on an economic sector can be compiled using information reported by a sample of reporters, together with estimates for those units in the sector that do not report. Statistically, the more representative the sample is of the total population, the greater the likelihood of estimating reliable information for the nonreporters.

to consolidation and aggregation in compiling series for use in calculating FSIs is discussed below.

What Is Meant by the Terms "Subsidiaries" and "Associates"?

5.6 Before discussing consolidated data in more detail, definitions of subsidiaries and associates are required, as these terms are used throughout the rest of this chapter.

5.7 *Subsidiaries* are corporations over which a parent has established control. While recognizing that national practice on determining control can differ, control is defined in the *Guide* as the ability to determine general corporate policy by choosing (or removing) appropriate directors to obtain benefits from the activities of the corporation. Control is unambiguously established through ownership of more than half of the voting shares or otherwise controlling more than half of the shareholder voting power (including through ownership of a second corporation that in turn has a majority of the voting shares). Control could also be established with ownership of less than half the voting shares,[3] through, for example, special legislation, decree, or regulation.[4]

5.8 An *associate* is a corporation over which the investor has a significant degree of influence and which is not a subsidiary. Significant influence is usually assumed to arise when the investor owns from 10 to 20 percent (depending on national practice) and 50 percent of the equity/voting power of the entity. Typically, if the ownership stake reaches the threshold for classification as an associate but is expected to be of a temporary nature, the investment continues to be classified as a nonassociate equity investment. However, for FSI purposes, if the equity investment has reached the level to be classified as an associate for two successive reporting periods, the implication is that the investment is not temporary.

5.9 Joint ventures are separate entities owned and operated by two or more parties for their mutual benefit. In the *Guide,* such entities are classified either as subsidiaries, as associates, or neither, depending on the criteria set out in the previous two paragraphs. So if there are two or more investing parties, each of which has a significant degree of influence over the joint venture, they should each classify the entity as an associate, consistent with the definition in the previous paragraph.

What Is Meant by the Terms "Domestic Control" and "Foreign Control"?

5.10 When discussing reporting populations in more detail, definitions of domestic and foreign control are required.

5.11 Deposit-taking entities are defined in the *Guide* as *foreign controlled* if they are subsidiaries or branches of a foreign parent deposit taker. Foreign controlled deposit takers, in addition to supervision by the host supervisory authority, are typically subject to supervision by their parent supervisory authority, as recommended in the Basel Concordat of May 1983 (BCBS, 1983). This criterion should be taken into account if there is uncertainty as to the classification of a deposit taker as foreign controlled. All other deposit-taking entities should be classified as *domestically controlled.* If a domestic deposit taker is controlled by a bank holding company in a foreign country that is subject to banking supervision in that foreign economy, then it should be also classified as foreign controlled.[5]

5.12 For corporations in other sectors, they are foreign controlled if they are subsidiaries or branches of a foreign parent. All other resident corporations are to be classified as domestically controlled.

The Aggregate Resident-Based Approach

5.13 In the *Guide,* under an *aggregate resident-based* approach, data are reported at the level of institutional units resident in the economy and aggregated by the compiling agency to provide totals of the sectors. This is the approach adopted in the *1993 SNA,* the sectoral balance sheets in the *MFSM,* and related national accounts methodologies. The *Guide*

[3]There may be instances where a corporation controls another corporation without having any ownership stake, such as instances arising from a loan agreement.

[4]In some instances, governments sell corporate entities but make arrangements so that private investors cannot establish control with a majority stake (the so-called government "golden share").

[5]In some rare instances, the parent might be considered as being located in both the domestic and a foreign economy. In such instances, the compiler is encouraged to classify such entities as domestically controlled.

recommends this approach for the compilation of FSI data for the household sector.

5.14 For corporations in an aggregate resident-based system, the institutional unit within which all transactions and positions are consolidated consists of a headquarters office and any branch offices resident in the economy.[6]

The Consolidated-Based Approach

5.15 In the *Guide,* the consolidated-based approach refers to the consolidation of data at both the group and sector levels. It is the required approach for compiling data on deposit takers and other corporate sectors for use in the calculation of FSIs. The text below discusses both consolidated group reporting and compiling consolidated sector-level data. The deposit-taking sector is used as an illustration, but the principles espoused are also relevant and can be applied to other corporate sectors. Table 5.1 supports the text.

Consolidated Group Reporting

5.16 *Consolidated group reporting* by a resident deposit taker includes coverage not only of its own activities but also those of its branches and subsidiaries, with any transactions and positions among these entities eliminated on consolidation. In essence, consolidation is based on the concept of control by a parent of other operating units. Such an approach is an essential element of banking supervision (BCBS, 1997, No. 20) and is adopted to preserve the integrity of capital in deposit takers by eliminating double counting (gearing) of capital (BCBS, 2001b, para.1). It is for this reason, and also to avoid the double counting of income and assets arising from the intragroup activity of deposit takers—that is, activity that rests on the same pool of capital—that the *Guide* recommends that deposit takers' data be compiled on a consolidated group basis.

Cross-border consolidated data

5.17 *Cross-border consolidated data* are represented by Blocks 1a, 1b, 1c, 2a, 2b, and 2c in Table 5.1. This approach consolidates flows and positions of the domestically incorporated deposit taker with its branches (foreign and domestic) and deposit-taking subsidiaries (foreign and domestic); the approach is described as solo (bank-only) supervision by bank supervisors. The cross-border consolidated approach focuses on domestically incorporated deposit takers and provides an indication of their financial soundness regardless of where the deposit-taking business is undertaken.[7]

Domestically controlled, cross-border consolidated data

5.18 *Domestically controlled, cross-border consolidated data* are represented by Blocks 1a, 1b, and 1c in Table 5.1. This approach consolidates the data of domestically controlled and incorporated deposit takers with their branches (domestic and foreign) and all deposit-taking subsidiaries (domestic and foreign).

5.19 The focus on the health and soundness of domestically controlled deposit takers arises because domestic authorities might ultimately be required to provide financial support. If domestically controlled deposit takers have foreign branches and subsidiaries, they may well be among the larger deposit takers in the domestic economy, so the potential direct financial risk of the failure of these deposit takers could pose a systemic risk.

Domestically controlled, cross-sector consolidated data

5.20 Another option is to consolidate information from all branches and subsidiaries involved in financial intermediation—that is, beyond just deposit-taking business—with that of the domestically controlled and incorporated parent entity. In other words, consolidating information beyond that in 1a, 1b, and 1c. This approach is termed the *domestically controlled cross-sector consolidated* approach in the *Guide.* Most supervisory data rely on this form of consolidation, as it is the approach used in the Basel Capital Accord (although insurance activity is typically excluded).

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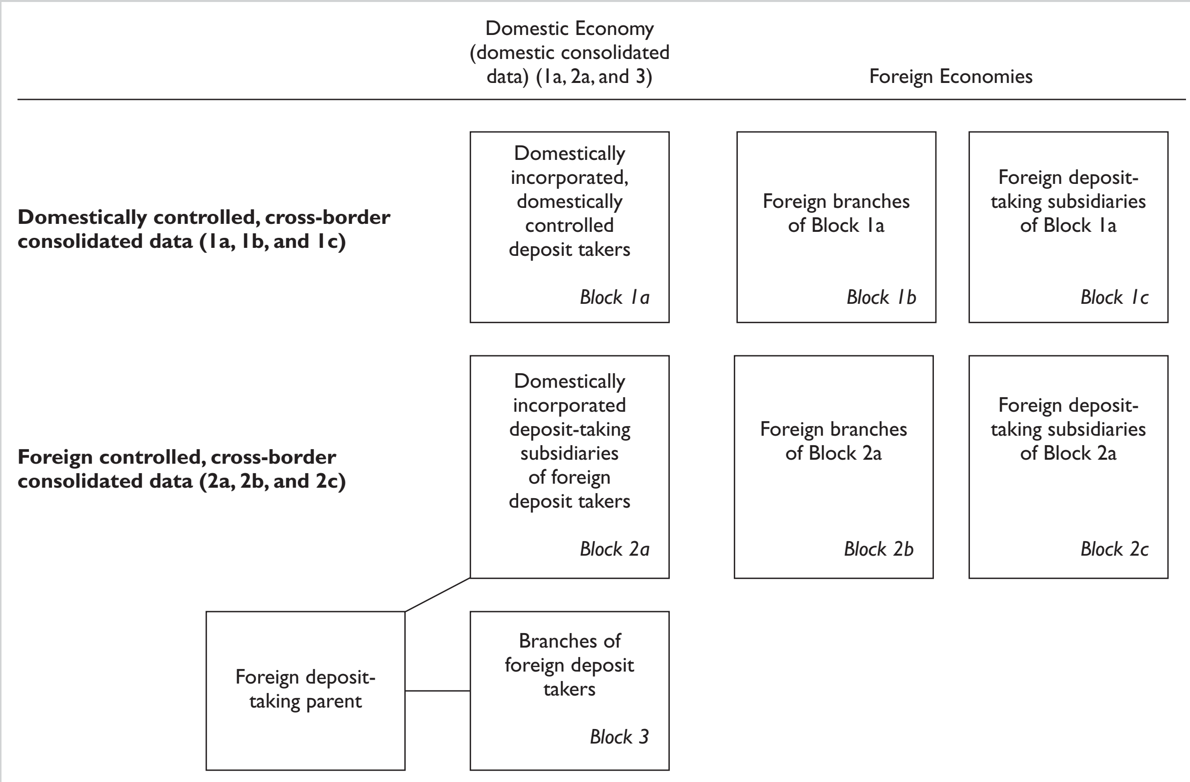
[6]A separate financial unit within a larger conglomerate might be regarded as an institutional unit if, in its own right, it can own assets, incur liabilities, and engage in economic activities and in transactions with other entities.

[7]A variant of this approach is to cover all domestically incorporated deposit takers and "only" their branches, a so-called legal control approach. This is represented by Blocks 1a, 1b, 2a, and 2b.

Table 5.1. Schematic Presentation of Levels of Consolidation



5.21 The cross-sector consolidated approach can highlight financial strengths and weaknesses of a group in the context of the full range of activities and thus can provide a broader view of soundness than the approach that focuses only on deposit takers. For instance, weak nonbank subsidiaries might trouble the deposit-taking sector. However, there are some drawbacks. At the sector level, the clarity of the institutional sector information is diminished because flows and positions of entities owned by the parent entity—but outside its institutional sector—are included. This could make difficult the early detection of emerging weaknesses in the performance of deposit takers. The coverage of activities is not clear-cut; for instance, should insurance companies in the group be included? Moreover, interpretation of these data might prove problematic, particularly in periods of merger and acquisition activity among units in different institutional sectors. In addition, relationships with other non-deposit-taking members of the group would not be detected, such as connected lending between the deposit takers and their non-deposit-taking affiliates.

Foreign-controlled, cross-border consolidated data

5.22 *Foreign-controlled cross-border consolidated data* are represented by Blocks 2a, 2b, and 2c in Table 5.1. This approach consolidates the data of branches (domestic and foreign) and all deposit-taking subsidiaries (domestic and foreign) with the data of their domestically incorporated foreign-controlled parent. Depending on country circumstances, authorities may consider it necessary to monitor (on a nationality basis) the performance of foreign-controlled deposit takers and their deposit-taking parents.

5.23 As foreign subsidiaries are part of a larger deposit-taking group, their activities in the economy are affected by the policy decisions of their parent, while ultimately foreign banking supervisors are most concerned about the health and soundness of these institutions. To this extent, from the viewpoint of the host authorities, there is a significant prudential difference between foreign-controlled and domestically controlled institutions. However, the host authorities should not be indifferent to the health and soundness of these institutions, as their activities do affect the domestic economy, and financial risks arising from their subsidiaries and branches abroad could ultimately have an impact on the domestic economy.

5.24 The relevance of data on foreign subsidiaries in the economy will vary depending on country circumstances, as will the interest in collecting information on the foreign branches and subsidiaries of such institutions.

Domestic consolidated data

5.25 The *Guide* defines *domestic consolidated* data as data that consolidate flows and positions of the resident deposit takers with those of their branches and deposit-taking subsidiaries (if any) resident in the domestic economy. Domestic consolidated data are represented by Blocks 1a, 2a, and 3 in Table 5.1. The reported data include flows and positions with all nonresidents and residents.

5.26 Data compiled using this approach are of analytical interest because deposit takers resident in a domestic economy provide payment services, offer savings opportunities to the public, and allocate funds for viable investment projects. These institutions are also the agents through which central banks undertake monetary policy actions. In turn, resident deposit takers are affected by domestic conditions.[8] Therefore, their actions both affect and are affected by the domestic economy, and if resident banks fail to undertake, or sharply curtail, their financial intermediation activity, there would be detrimental consequences for the domestic economy.

5.27 Moreover, domestic consolidated data provide a link to other macroeconomic data sets, such as the national accounts and monetary aggregates. Indeed, monitoring the interconnections between domestic consolidated data and macroeconomic data series, such as those on the real economy, credit growth, fiscal positions, and international capital flows, as well as asset price bubbles, could support macroprudential analysis (see, for example, Barton, Newell, and Wilson, 2002, Ch. 3; Crockett, 2000).

5.28 While the net income/loss arising from foreign operations is captured, this approach does not identify the risks to domestic deposit takers incurred through their foreign branches and subsidiaries.

Applying Consolidated Group Reporting to the Needs of FSI Data

5.29 As noted above, for compiling data for use in the calculation of FSIs, consolidated group reporting is preferred for deposit takers and other corporate sectors. However, as already discussed, there are several possibilities for the scope of the reporting population. Should only units located in the domestic economy be covered, or also their foreign offices? Should coverage be distinguished by domestic and foreign control? For deposit takers, should coverage encompass institutional units that do not meet the definition of deposit taker but are subsidiaries of deposit takers?

5.30 On these questions the *Guide* provides the following advice.

Deposit Takers

5.31 First, the *Guide* requires the compilation of data covering *domestically controlled deposit takers* on a cross-border consolidated basis for soundness analysis (see paragraphs 5.18 and 5.19). The data should cover domestically controlled deposit takers with international operations (foreign deposit-taking subsidiaries and branches). For economies that compile BIS consolidated banking data, the *Guide* supports identification of an FSI data set as consistent as possible in coverage with that of the BIS data, as analytical benefits could accrue from comparing the data sets. When foreign deposit takers play a significant role in a financial system, the authorities could compile FSIs on a cross-border consolidated basis for all domestically incorporated deposit takers—that is, domestically controlled deposit takers and the

[8] For instance, the BCBS (1996, p. 3) noted the possibility of legal and procedural difficulties in carrying out the timely management of risks on a consolidated basis. Therefore, while capital requirements for market risk apply on a worldwide-consolidated basis, national authorities retain the right to monitor market risks of individual entities on a non-worldwide-consolidated basis to ensure that significant imbalances within a group do not escape supervision.

local subsidiaries of foreign deposit takers, consolidated with their own branches and deposit-taking subsidiaries (if any).[9] Such data could then be disaggregated into separate FSIs for domestically controlled deposit takers and for the local subsidiaries of foreign deposit takers.[10]

5.32 In some instances, supervisory data on a deposit-takers-only basis may not be available because of the structural features of the banking system. In such circumstances, the inclusion of subsidiaries whose activities are closely related to deposit takers[11] could be justified on soundness grounds.[12]

5.33 The compilation of data covering all *deposit takers resident in the economy* (domestically controlled and foreign controlled) on a domestic consolidated basis might be separately considered if the authorities believe it would contribute materially to their financial stability analysis by promoting understanding of the relationship with the macroeconomy (see paragraphs 5.25 to 5.28).[13,14] Domestic consolidated data (1) can facilitate comparability with other macroeconomic data, (2) can promote cross-country data comparability, and (3) are consistent with the BIS's locational international banking statistics. Providing these data series through the development of sectoral accounts based on national accounts concepts would be an attractive approach, and the *Guide* provides guidance on how this can be achieved. Such an approach might be a medium-term objective in those economies where sectoral accounts are still relatively underdeveloped.[15]

5.34 The purpose of compiling cross-border consolidated data is financial soundness analysis, while that of compiling domestic consolidated data is to illustrate links to the macroeconomy. It is clear from discussions during the preparation of the *Guide* that neither consolidation approach will always satisfy both purposes.

5.35 To undertake meaningful analysis, it is important that the accounting rules and concepts be applied as consistently as possible across all data sets, regardless of the approach to consolidation. When disseminating any data, the institutional coverage and basis of consolidation should be made explicit.

Other Corporate Sectors

5.36 For FSIs covering the other financial and nonfinancial sectors, a consolidated approach is preferred to avoid double counting of assets and capital and, in the case of nonfinancial corporations, to avoid double counting of earnings.

5.37 For *other financial corporations,* the two FSIs currently listed—assets to total financial sector assets and assets to GDP—are intended to provide an indication of the importance of these institutions in the domestic financial system. The first of these two indicators could be compiled on either a cross-border consolidated basis or a domestic consolidated basis, while the second should be compiled on a domestic consolidated basis (for better consistency with GDP). It is important to note that the two currently listed FSIs above could be supplemented by additional FSIs for the sector. Specific proposals for FSIs

[9]Foreign branches may also play a significant role in the domestic economy and compiling separate data on this group might be considered. However, the relevance of some of the FSIs, such as the capital adequacy indicators, would depend on the nature of the funding of the branch—whether it has stand-alone capital or is simply funded from the head office through interbank deposits (see the memorandum item to Table 4.1, "net liabilities of branches of foreign deposit takers to their parents," line 61, Table A3.2, in Appendix III).

[10]On a nationality basis, the authorities could use the FSIs compiled by the countries of the parent deposit takers to further assess the soundness of foreign banks.

[11]Subsidiaries might include financial intermediaries such as, but not limited to, securities dealers. While national practices may differ, the inclusion of any non-deposit-taking subsidiaries should be noted in the metadata disseminated.

[12]If the non-deposit-taking subsidiaries are close to 100 percent owned, the net (but not gross) income and capital positions, if compiled consistently with the *Guide*'s concepts and definitions, will be similar to those of data without such non-deposit-taking subsidiaries. But gross exposure data could differ significantly, because cross-sector group claims are included in the deposit-takers-only data, and the other gross exposures of non-deposit-taking subsidiaries are excluded.

[13]The main difference between this concept and the preceding one is that it excludes foreign branches and subsidiaries of domestic banks, but includes foreign controlled branches and subsidiaries. If the domestic financial system contains only domestically controlled deposit takers with no international operations and no foreign bank operations in the local financial system, the two concepts are the same.

[14]If the domestic financial system contains only subsidiaries of foreign controlled deposit takers that have no foreign deposit-taking subsidiaries or branches, then the foreign-subsidiaries data set is the same as the domestic consolidated deposit takers data set.

[15]Moreover, if the foreign operations of resident deposit takers contribute a relatively small proportion of their total activity, from a practical point of view cross-border consolidated data covering both resident domestically controlled and foreign-controlled deposit takers could be used.

for the insurance sector, in particular, are likely to be forthcoming in the near future to be compiled on a cross-border consolidated basis.

5.38 For *nonfinancial corporations,* as with deposit takers, data might be compiled on both a domestically controlled cross-border consolidated basis and on a domestic consolidated basis. Data on the former basis would capture corporate financial strength and might, for example, be drawn from published corporate financial statements for the larger firms. Where such data are available and cover a substantial part of the sector, their reporting is encouraged. As with any partial coverage of the sector, the potential "survivor bias" should be kept in mind.[16]

5.39 However, the *Guide* acknowledges that in many countries, there is a relative lack of official, sector-level cross-border data and thus accepts, in the first instance, the compilation of domestic consolidated data based on national accounts methodology. Such an approach, through the link to other macroeconomic data sets, would also support the analysis of sectoral behavior in the context of macroeconomic developments, complementing macroprudential analysis. Providing these data series through the development of sectoral accounts would be an attractive approach. In disseminating any data, the institutional coverage and basis of consolidation should be made explicit, along with information on the accounting rules and concepts employed.

Specific Issues Arising from the Consolidated Approach

5.40 While aggregation of data is a simple concept, consolidation is more complex, particularly when deciding when and how to consolidate the activities of a subsidiary with the parent and other affiliated entities when the subsidiary is less than 100 percent owned.

5.41 The reason for consolidating activities of a subsidiary with a parent entity and other subsidiaries is that the parent entity has control over its activities and, therefore, directly affects and is affected by the activities of that subsidiary. However, consolidating the activities of minority-owned subsidiaries with a parent entity could potentially result in double counting among reporting entities, and compilers should remain alert to this possibility.

5.42 Furthermore, when consolidating the activities of less than 100 percent owned subsidiaries, the issue arises as to how to account for the minority interest—the other owners. The approach taken in the *Guide* is that full consolidation should be undertaken. Minority interests should not be separately identified in earnings or in the balance sheet as a liability item; they should be included as part of the capital and reserves of the consolidated entity. For deposit takers, such full consolidation is consistent with that of the Basel Capital Accord for the measurement of Tier 1 capital and reflects the focus on the total capital and reserves of the deposit taker in the consolidated group.

5.43 For any unconsolidated subsidiaries[17] and associates, earnings and the value of the equity investment are to be recorded on a proportionate basis in the income statement and in the capital and reserves, respectively, of the owner of the stake. That is, if the owner of the investment has a 50 percent stake in an entity, half of the net earnings after tax should appear as income from the equity investment, and half of the value of the capital and reserves of the entity should be recorded as the value of the equity investment in the balance sheet of the owner. There should be similar treatment for any equity investment by an associate and unconsolidated subsidiary in a parent (reverse equity investment).

5.44 For commercial accounting and bank supervisory data, the full consolidation approach for subsidiaries tends to be preferred, with a prorated approach for profits and capital of associates. A version of the proportionate approach is that adopted in the *1993 SNA* for both foreign subsidiaries and asso-

[16]Compilers using sampling techniques based on financial statements need to be aware of the potential "survivor bias." For instance, a sample of large listed nonfinancial corporations might include those with high debt-to-equity ratios, particularly in a period of significant merger and acquisition activity. However, if some of these companies subsequently fail (perhaps due partly to the high gearing), fall out of the sample, and are replaced by other companies, the time series of debt-to-equity data could be noticeably affected. Thus, it is important both to provide information on how the data are constructed and to have as comprehensive a coverage of entities as possible.

[17]For data on a domestic consolidated basis, such unconsolidated subsidiaries are those in other non-deposit-taking domestic sectors and all foreign subsidiaries. On a cross-border consolidated basis, such subsidiaries are those in other non-deposit-taking sectors (domestic and foreign).

ciates, whereby proportionate shares of their earnings and capital are attributed to the parent; however, this is not the treatment adopted in the *1993 SNA* for domestic subsidiaries or associates.

Compiling Consolidated Sector-Level Data

5.45 The compilation of consolidated sector-level data for use in FSIs is a two-step process. Given consolidated group reporting for each sector, (1) data reported by the corporations in the reporting population are aggregated, and (2) further sector-level adjustments (consolidations) are made to produce sector-level data.[18] If data are not reported on a consolidated group basis, additional adjustments are required to eliminate intragroup positions and transactions.[19]

5.46 In compiling sector-level data it is important to appreciate that the range of deposit takers whose activities are to be captured in the sector-level data (known in the *Guide* as the reporting population) will vary depending on the consolidated group reporting approach adopted. In other words, each consolidated group reporting approach has its own sector-level reporting population, which will differ from that for other consolidated group reporting approaches. For instance, if foreign branches and deposit-taking subsidiaries are included in the consolidated group data, then the reporting population at the sector level under this approach will be larger than if they were not. The idea that for FSI purposes more than one reporting population can be defined contrasts with other macroeconomic data sets, such as the monetary and financial statistics data sets, for which the reporting population is singly defined based on residence and the nature of the activity undertaken.

5.47 Furthermore, for FSI purposes (and, again, different in approach from other macroeconomic statistics), sector-level adjustments are needed to eliminate double counting of capital and income within the reporting population. These adjustments can be summarized as follows:

- Intrasector equity investments are deducted from the overall capital in the sector, so that capital and reserves held within the sector are not double counted.
- Neither gains and losses from the intrasector claims nor intrasector transactions should affect the sector's net income, or capital and reserves. That is, for deposit takers, value is added or lost through their transactions with and claims on entities that are outside the deposit-taking sector.

5.48 A more detailed specification of the sector-level adjustments required is provided in the text annex below. To aid in carrying out these adjustments, Box 5.1 highlights various recommendations on classification and treatment of interbank flows and positions. Box 5.2 provides similar recommendations for the other (non-deposit-taking) financial corporations sector and the nonfinancial corporations sector. Box 5.3 discusses how consolidated data differ depending on whether the consolidation is on a cross-border or domestic basis.

5.49 It is important to note that sector-level data compiled for FSI purposes should include any intrasector positions in debt and financial derivatives on a gross basis; that is, such positions among groups should not be eliminated. This approach allows the interrelationships among groups in the sector, and hence potential contagion risks, to be identified. This is viewed as particularly relevant for the deposit-taking sector. This is because asset-based FSIs are intended primarily to identify the gross risks faced by the deposit-taking sector, and these risks encompass claims on each other.[20] For instance, to discover whether certain types of deposit takers concentrate on lending in, say, foreign currency, potentially excluding a portion of such lending could be misleading. The same reasoning applies to the other asset-based FSIs. In contrast, in the *MFSM*'s Other Depository Corporations Survey, flows and positions among the reporting population are eliminated.[21]

5.50 More generally, the *Guide* encourages separate identification and monitoring of gross information on interbank positions.

[18]By making adjustments, the sector-level data are not the sum of individual deposit takers' reports. Thus, data on FSIs disseminated by individual deposit takers and those for a sector as a whole will likely differ.

[19]Chapter 11 provides more details on the adjustments required.

[20]In Chapter 13, monitoring interbank exposures on a deposit taker–by–deposit taker basis is discussed.

[21]Box 11.1 sets out how monetary and financial statistics data can be used in the calculation of the agreed indicators.

Box 5.1. Interbank Flows and Positions

Within any financial system, there are likely to be financial relationships among deposit takers. These can be significant and take the form of interbank borrowing and lending, and ownership of equity and other traded instruments issued by deposit takers. How these various interrelationships are captured in the data used for calculating FSIs is important to understanding the data. This box aims to explain how the *Guide*'s various recommendations regarding the classification of interbank flows and positions in the financial statement at the sector level fit together. Chapter 11 sets out the information required to meet these recommendations.

Flows and positions between deposit takers in the same group[1]

In the consolidated approach, all intragroup flows and positions—including capital and reserves—among deposit takers in the reporting population are eliminated from the sector information.

Flows and positions with other deposit takers

For income and expense, and capital and reserves, the approach taken is essentially to exclude from sector data interbank flows and positions with other deposit takers in the reporting population.[2] The objective is to avoid using a gross estimate of the flow of income into, and the measure of total capital in, the sector, which would lead to an overstatement of its financial health and capital strength. In the income and expense statement, intrasector noninterest income and expenses are eliminated; moreover, intrasector dividends are eliminated both in the noninterest income and dividend payable lines. Interbank interest income and expense are presented in gross terms and, in principle, will add up to zero in the net interest income line. Adjustments are made for any provisions on nonperforming claims on other deposit takers in the reporting population. (The text annex to this chapter provides a numerical example of the sector-level adjustments required.)

Following the same approach, liquid assets exclude nontraded interbank claims, thus avoiding the overstatement of the measure of liquidity at the sector level. Such interbank claims are neither "external" sources of liquidity for the sector nor realizable for cash in the market (unlike tradable claims on other banks). Similarly, short-term liabilities used in calculating the FSI *liquid assets to short-term liabilities* should exclude intrasector short-term liabilities.

To monitor risk exposures and the potential for contagion, in the case of gross assets (and liabilities), the *Guide* recommends as a general principle including in the sector data gross interbank claims and liabilities (as with interest flows). This is because asset-based FSIs are intended primarily to identify the gross risks faced by the deposit-taking sector, and these risks encompass claims on each other.

More generally, the *Guide* encourages separate identification and monitoring of the gross amounts of interbank positions.

To avoid asymmetric recording by debtor and creditor deposit takers, adjustments are made to the data for specific provisions on loans (or other assets) on other deposit takers in the reporting population.

[1]A group in this context is a parent deposit taker, its deposit-taking branches, and deposit-taking subsidiaries.

[2]The term "reporting population" includes all deposit takers included in the sector information. It varies depending on the institutional coverage of the sector.

Equity investments

The treatment of equity investments requires special mention.

In all measurement systems, a distinction is made when an equity investment reaches a certain level at which the investor achieves significant influence over management decisions, and hence over the use of the capital resources of the entity. As noted elsewhere in this chapter (paragraph 5.8), depending on national practice, this level may be 10 percent or 20 percent. Consistent with such a distinction, in the *Guide* the value of the investor's equity investment in associates and unconsolidated subsidiaries is to be recorded in the investor's balance sheet, and earnings are to be attributed to the investor's income statement (noninterest income) on the basis of the investor's proportionate share in the capital and reserves of the associate and unconsolidated subsidiary. Any reverse equity investment in a parent by an associate or unconsolidated subsidiary should be similarly recorded in the associate/subsidiary's balance sheet and income statement.

For sector-level data, when both the associate and parent are in the reporting population:

- The value of the earnings attributable to the investing deposit taker should be deducted from noninterest (other) income, so the same net income is not double counted. Moreover, to ensure that dividends payable and retained earnings for the sector are not overstated, the investing deposit taker's share of the dividends payable and of retained earnings (which together should equal the entry in noninterest income) is to be deducted from these items.
- The proportionate share of the investing deposit taker in the capital and reserves of the associate (or parent, in the instance of reverse investment) should be excluded from gross assets and from capital and reserves in the balance sheet for the sector.

Furthermore, if one deposit taker buys an associate or subsidiary stake (or adds to it) in another entity (or there is a reverse investment) and pays above the proportionate value of the capital and reserves of the entity—that is, assets provided are greater in value than those received—the difference is regarded as purchased goodwill.[3] The reporter should deduct the value of goodwill from retained earnings within capital and reserves. Similarly, if a deposit taker sells a stake in an associate or subsidiary (or there is a disinvestment of a reverse investment) at a value greater than the proportionate value of the capital and reserves—that is, assets received are greater in value than those provided—the difference should be added to retained earnings. If own equity is used to purchase a stake in an associate or subsidiary, then the value of assets, as well as capital and reserves of the purchaser, increases by the value of the proportionate share of the capital and reserves of the associate or subsidiary. Appendix V provides two numerical examples of the treatment of goodwill.

For sector-level data, the market value of other equity investments of deposit takers in deposit takers in the reporting population should be excluded from gross assets and from capital and reserves (narrow measure). Moreover, gains and losses realized or unrealized on investments in equity in other deposit takers in the reporting population should be excluded from the income and expense statement.

[3]This will mean that cash will be reduced by more than the value of the equity stake, thus reducing capital and reserves.

Box 5.2. Flows and Positions in the Non-Deposit-Taking Sectors

Within any financial system there are likely to be financial relationships among institutions in the same sector. This box explains how the *Guide*'s various recommendations regarding the classification of intrasectoral flows and positions in the financial statements of the other (non-deposit-taking) financial sector and the nonfinancial sector fit together. Chapter 11 sets out the information required to meet these recommendations.

Other financial corporations

Compared with the deposit-taking and nonfinancial sectors, there is only a short list of FSIs for the other financial corporations. Thus, the sectoral information set out in Chapter 4 is more limited, and hence so are the sector-level adjustments.

In the domestic consolidated approach, all intragroup flows and positions[1]—including capital and reserves—among resident other financial corporations in the reporting population[2] are eliminated from the sector information. This involves excluding any equity holdings from assets and capital and reserves, as well as excluding all intragroup claims and liabilities.

Moreover, at the sector level all equity holdings in other other financial corporations in the reporting population are eliminated from assets and capital and reserves to avoid double leveraging of capital at the sector level.

Nonfinancial corporation

In the domestic consolidated approach, as with deposit takers and other financial corporations, all intragroup flows and positions[3]—including capital and reserves—among nonfinancial corporations in the reporting population are eliminated from the sector information. This involves excluding any equity holdings from assets and capital and reserves, all intragroup claims and liabilities, and all intragroup income and expense items.

Moreover, at the sector level the balance sheet value of all equity holdings in other nonfinancial corporations in the reporting population is eliminated for assets and for (the narrow measure of) capital and reserves, to avoid double leveraging of capital at the sector level. As with the deposit-taking sector, associate investments (and reverse equity investments) by nonfinancial corporations in other nonfinancial corporations are valued on the basis of the investor's proportionate share of the associate's capital and reserves. In principle, if any increase or decrease in the value of equities held in other nonfinancial corporations is recorded by the investing nonfinancial corporation as a valuation adjustment, and not as a gain or loss in income, such valuation changes should be deducted only from total capital and not from the narrow measure of capital and reserves. All these adjustments to data should be made at the sector level.

Intrasector income and expense items should not affect net income. Thus, intrasectoral dividends payable and the parent's share of an associate's retained earnings (and, similarly, in the case of a reverse equity investment, an associate's share of a parent's retained earnings) should be deducted from other (net) income, with counter-entries in dividends payable and retained earnings. Such adjustments ensure that net income, dividends payable, and retained earnings for the entire sector are not overstated. Moreover, any gains and losses on equity holdings in other nonfinancial corporations and on sales of fixed assets to other nonfinancial corporations included in other (net) income should be excluded. All these adjustments to data should be made at the sector level.

Interest income and expenses are presented in gross terms and, in principle, will add up to zero in net income, and thus no adjustment is required. However, to compile the memorandum series of earnings before interest and tax, data are required on interest receivable from other nonfinancial corporations.

[1]A group in this context is a parent other financial corporation, its other financial corporation branches, and other financial corporation subsidiaries.
[2]The term "reporting population" includes all other resident financial corporations (or resident nonfinancial corporations, depending on the sectoral data being compiled).
[3]A group in this context is a parent nonfinancial corporation, its nonfinancial corporation branches, and nonfinancial corporation subsidiaries.

Annex. Detailed Specification of the Sector-Level Adjustments Required

Deposit Takers

5.51 Table 5.2 illustrates the sector-level adjustments required[22] to aggregate individual deposit-taker data to avoid double counting of capital and income. They are explained in the rest of this annex. The table presents data for three deposit takers (1, 2, and 3) resident in the domestic economy. The income and expense and balance sheet statement data of each deposit taker are presented in the first three columns, and the sector-level data are presented in column 4. Deposit taker 3 is an associate of deposit taker 2. Because of the focus on adjustments, not all lines in the full statement of accounts (as set out in Table 4.1) are separately identified. The text notes

[22]It is likely that the authorities will need to collect additional data series beyond their existing basic data sources to make the sector-level adjustments, and this might involve resource costs. Chapter 11 provides some indication of the series required.

Box 5.3. What Is the Difference Between Data on a Cross-Border and a Domestic Basis?

The *Guide* sets out two broad approaches to consolidation: cross-border consolidation and domestic consolidation. In discussions on the draft *Guide,* the question was raised of how the data produced under these approaches differ, not least in the context of helping compilers to comprehend the principles and implications of these consolidation approaches.

This box outlines a set of cases, starting with the most straightforward and continuing through increasing degrees of complexity, to (1) explain how the data produced by these two consolidation approaches differ in principle, if at all, and (2) indicate the potential net effect on the sector-level data series used to compile FSIs. To illustrate the principles involved, the box focuses only on the differences arising from the consolidation approaches and not on the scope of institutional coverage. Clearly, if the scope of institutional coverage differs—such as domestic-controlled-only as opposed to domestic and foreign controlled together—the data sets will differ. While the box focuses on deposit takers, the principles set out are equally applicable to other corporate sectors.

In broad summary, while cross-border consolidated data do not distinguish among banking activities conducted in the domestic and foreign economies, data for the domestic-consolidated banking sector do not capture risks incurred through foreign branches and subsidiaries, and therefore could give a misleading assessment of the soundness of the sector.

1. Domestic deposit takers do not have foreign branches or deposit-taking subsidiaries or associates[1]

In these circumstances the cross-border consolidated and domestic consolidated data are the same.

2. Domestic deposit takers do not have foreign branches, or deposit-taking subsidiaries, but do have foreign deposit-taking associates

In these circumstances, the cross-border consolidated and domestic consolidated data are the same. For both sets of data, the proportionate value of the foreign associates' capital and profits are included in the sectoral income and balance sheet information. In neither instance are these foreign associates included in the reporting population.

3. Domestic deposit takers have foreign branches

In these circumstances, the cross-border consolidated and domestic consolidated data will differ. On a cross-border consolidated basis—but not on a domestic consolidated basis—foreign branches are included in the reporting population.

On a cross-border consolidated basis, unlike a domestic consolidated basis, with some exceptions, gross income and expense flow data and gross balance sheet and off-balance-sheet exposures of the foreign branches will be included in the sector data. The exceptions are that intrasector flows and positions, other than debt positions and associated interest income flows among unrelated deposit takers, are eliminated during consolidation. Therefore, loans extended by a foreign branch to residents of that foreign country and/or to residents in the economy of the parent will be included on a gross basis in the sector balance sheet, unless the borrower is another deposit taker in the same group.

In contrast, on a domestic consolidated basis, all gross income and expense flows and gross claims and liabilities between foreign branches and domestic deposit takers are included in the sector data. Therefore, lending by a domestic parent to its foreign branch will be included in loans to nonresidents in the sector balance sheet.

How do these differences affect the sector-level data series used to compile FSIs? The effect will differ depending on the nature of activity undertaken by foreign branches, but three indications can be provided:

(i) Unless foreign branches are primarily transacting with their parent, data on gross assets and liabilities will be larger in the cross-border consolidated data than in the domestic consolidated data.

(ii) Unless foreign branches are primarily transacting with other deposit takers in the reporting population, gross income and expenses data will also be larger on a cross-border consolidated basis.

(iii) Profits and capital should be more or less the same in both approaches, as all the profits and any capital of the foreign branches are attributable to the parent.

However, some differences might arise because the sector-level adjustments explained in the text annex to this chapter (see paragraphs 5.53 and 5.79) might vary because of differences in the reporting populations—some adjustments might be needed on a cross-border consolidated basis that are not needed on a domestic consolidated basis.

4. Domestic deposit takers have foreign deposit-taking subsidiaries

In these circumstances, the cross-border consolidated and domestic consolidated data will differ. On the cross-border consolidated basis, but not the domestic consolidated basis, foreign subsidiaries are included in the reporting population.

As with foreign branches, on a cross-border consolidated basis, unlike on a domestic consolidated basis, with some exceptions, gross income and expense flow data and gross on-balance-sheet (and off-balance-sheet) exposures of the foreign subsidiaries will be included within the sector data. The exceptions are that intrasector flows and positions, other than debt positions and associated interest income flows among unrelated deposit takers, are eliminated during consolidation.

In contrast, on a domestic consolidated basis, gross income and expense flows and gross claims and liabilities between the foreign subsidiaries and domestic deposit takers are shown in the sector data.

[1]Subsidiaries and associates are defined in paragraphs 5.7 and 5.8.

Box 5.3 ***(concluded)***

The impact of the differences on the sector-level data for foreign deposit-taking subsidiaries is the same as for foreign branches as described in items (i) and (ii) in case 3 above, as well as in (iii) above if the foreign subsidiary is 100 percent owned by the domestic parent. However, if the foreign subsidiary is less than 100 percent owned, the impact is not the same as described for foreign branches in (iii) above.

Where foreign subsidiaries are less than 100 percent owned by the parent, profits (or losses) and capital sector-level data on a cross-border consolidated basis are likely to be higher than on a domestic consolidated basis. This is because on the cross-border consolidated basis the full profits (or losses) and capital of foreign subsidiaries are included in the data, but on a domestic consolidated basis the profits and capital of foreign subsidiaries are to be included on a proportionate ownership basis. Therefore, if the subsidiary is 50 percent owned, "only" 50 percent of profits and capital will be included in the domestic consolidated data. In other words, on a cross-border consolidated basis, the minority investors' proportionate ownership of capital and share of the profits is included in the data, which is not the case on a domestic consolidated basis. There is one exception—if the minority investors are other deposit takers in the domestic consolidated reporting population, then the value of their investment and earnings from it are included in the sector data.[2] As described for foreign branches in (iii) above, some other differences might arise at the sector level because of varying sector-level adjustments caused by the difference in reporting populations.

5. Domestic deposit takers have subsidiaries and associates in other sectors[3]

In these circumstances, the cross-border consolidated and domestic consolidated data are the same, with one exception: if the parent's investment in the subsidiary or associate is held through a foreign deposit-taking subsidiary in which there are minority investors (see below).

As subsidiaries in other sectors are not consolidated with the deposit-taking parent, gross income and expense flows and gross claims and liabilities between the subsidiaries and the deposit-taking sector are included in both sets of data, as are the parent's proportionate share of the profits and capital and reserves of the subsidiary. The same principles apply for associates in other sectors. If the subsidiary or associate in the other sector is controlled by a foreign deposit-taking subsidiary of the parent that has minority investors, then the proportionate share of profits and capital recorded in the domestic consolidated data is less than in the cross-border consolidated data to the extent of the minority investors' proportionate share of the profits and capital of the subsidiary or associate in the other sector.[4] The reason for this difference is the same as that described in the last paragraph of case 4 above.

[2]When domestic deposit takers have foreign deposit-taking subsidiaries, if a minority investor in such a subsidiary is in the reporting population, to avoid double counting of income and capital at the sector level on a cross-border consolidated basis, the value of any investment and any earnings on this investment reported by the minority investor should be excluded from the sector data.

[3]These subsidiaries or associates are not included in the reporting population.

[4]The same difference between cross-border consolidated and domestic consolidated data arises when investments in foreign deposit-taking associates are owned by foreign deposit-taking subsidiaries of the domestic parent that has minority investors.

the adjustments that are also required for the other corporate sectors.

5.52 The relevance of each adjustment will depend on national circumstances. Some adjustments, such as for fees and commissions, might be generally applicable, whereas others, such as for provisions on loans to other deposit takers, may not. Compilers should make a judgment on the costs and benefits of the collection of new data. If available evidence suggests that an adjustment is not relevant or would be insignificant, the benefits of collecting such information may not outweigh the potential costs to reporters and the compiling agency.

Adjustments in the income statement

5.53 For the purposes of compiling data for use in calculating FSIs, up to seven adjustments are required to the income statement to eliminate intrasector transactions and gains and losses from the intrasector claims. These adjustments are described below:

- Provisions for accrued interest on nonperforming loans (and other claims) to other deposit takers;
- Fees and commissions receivable and payable from other deposit takers in the reporting population;
- Dividends receivable and payable from other deposit takers in the reporting population;

Table 5.2. Sector-Wide Data: Consolidating Income and Expense as Well as Balance Sheet Items

	Deposit Taker 1	Deposit Taker 2	Deposit Taker 3	**Sector-Wide Data**
Income and expense				
Gross interest income	600	1,300	400	**2,300**
Less provisions for accrued interest on nonperforming assets	0	150	0	**130**
Of which: On loans to other deposit takers[1]	0	20	0	***Eliminated***
Interest income	600	1,150	400	**2,170**
Interest expense	300	500	200	**1,000**
Net interest income	300	650	200	**1,170**
Noninterest income	250	700	400	**1,213.8**
Fees and commissions receivables	110	300	200	**580**
Of which: From other deposit takers	0	30	0	***Eliminated***
Gains/losses on financial instruments	50	100	100	**245**
Of which: On deposit takers' equities	5	0	0	***Eliminated***
Prorated earnings	0	100	0	**20.8**
Of which: From other deposit takers	0	79.2	0	***Eliminated***
Other income	90	200	100	**368**
Of which: Dividends from deposit takers	7	0	0	***Eliminated***
Other income receivable from other deposit takers	0	0	15	***Eliminated***
Gross income	550	1,350	600	**2,383.8**
Operating expenses	500	600	150	**1,215**
Of which: Fees and commissions payable to other deposit takers	15	0	15	***Eliminated***
Other expenses payable to other deposit takers	0	5	0	***Eliminated***
Provisions (net)	50	80	10	**132**
Of which: Provisions on loans to deposit takers	0	8	0	***Eliminated***
Net income (before extraordinary items and taxes)	0	670	440	**1,036.8**
Income tax	0	272	176	**448**
Net income after tax	0	398	264	**588.8**
Dividends payable	0	300	140	**391**
Of which: To other deposit takers	0	0	49	***Eliminated***
Retained earnings	0	98	124	**197.8**
Balance sheet				
Nonfinancial assets	500	500	300	**1,300**
Financial assets	11,250	17,800	7,300	**36,158**
Loans (excluding specific provisions)	8,850	14,100	5,500	**28,458**
Gross loans	9,250	14,400	5,600	**29,250**
Specific provisions	400	300	100	**792**
Of which: Provisions on loans to deposit takers	0	8	0	***Eliminated***
Shares and other equity	100	300	200	**400**
Of which: Investment in deposit-taking associates	0	180	0	***Eliminated***
Investment in other deposit takers	20	0	0	***Eliminated***
Other financial assets	2,300	3,400	1,600	**7,300**
Total assets	11,750	18,300	7,600	**37,458**
Liabilities	11,000	16,700	7,000	**34,700**
Capital and reserves	750	1,600	600	**2,758**
Total liabilities and capital	11,750	18,300	7,600	**37,458**

[1]Deposit takers covered in this and the other "of which" lines are those only in the reporting population.

- The investing deposit taker's prorated share of the earnings of associate deposit takers also in the reporting population;
- Other income receivable and payable from other deposit takers in the reporting population;
- Gains and losses on deposit takers' ownership of equities of other deposit takers in the reporting population; and
- Provisions on loans to other deposit takers in the reporting population.

5.54 A notable exclusion from the list above is data on intra-deposit-takers' interest income and expense. These data are presented gross because they sum to zero in the net interest income line.

Eliminating provisions for accrued interest on intrasector loans[23]

5.55 The *Guide* recommends that, once a loan is classified as nonperforming, interest cease to accrue. If such a loan is to another deposit taker in the reporting population, an asymmetry of approach will arise in that the debtor deposit taker continues to accrue interest, but the creditor deposit taker is not supposed to do so. Therefore, an adjustment is required to eliminate this asymmetry.

5.56 In Table 5.2, of the 1,300 of gross interest income of deposit taker 2, there are provisions of 150 for accrued interest on nonperforming loans, of which 20 relates to an intrasectoral loan. In calculating the sector-wide total (column 4), 20 of the provision is eliminated so that the sector-wide net interest income is greater than the aggregated amount for deposit takers 1, 2, and 3.

5.57 A similar adjustment is required even if interest income is reported as a single figure excluding accrued interest on nonperforming loans. Moreover, if the debtor deposit taker subsequently paid interest, which the *Guide* recommends be recorded in the provisions line, this payment would need to be eliminated in calculating sector-wide data.

Eliminating intra-deposit-takers' fees and commissions

5.58 While intrasector fees and commissions receivable and payable do not affect sector-level net income—since they net out to zero—four FSIs use either the data series "gross income" or "noninterest expense." Therefore, for these gross data series, the *Guide* recommends the exclusion of intrasector fees and commissions.[24]

5.59 In Table 5.2, of the 300 of fees and commissions receivable by deposit taker 2, 30 is receivable from (payable by) the other two deposit takers in the reporting population. These amounts are intrasector transactions, representing neither income from nor payments to other sectors. Therefore, in calculating the sector-wide total (column 4), 30 is eliminated from fees and commissions receivable and payable.

Eliminating intra-deposit-takers' dividends receivable and payable

5.60 For dividends receivable and payable, these amounts net out to zero in the sector-wide retained earnings. However, as with the adjustments required for fees and commissions, including these amounts on a gross basis affects specific series that are used to calculate FSIs. Most notably, the inclusion of dividends receivable from other deposit takers in the reporting population in other income would double count sector-level gross and net income, because the income is already reflected as part of gross and net income of the deposit taker paying the dividend. Therefore, the *Guide* recommends that intrasector dividends receivable and payable be excluded from the gross amounts in which they are included, that is, from other income (dividends receivable) and from dividends payable.

5.61 In Table 5.2, of the 90 of other income of deposit taker 1, 7 corresponds to dividends receivable from deposit taker 3. This intrasector transaction is eliminated by subtracting 7 from sector-level noninterest income and dividends payable.

5.62 The same sector-level adjustments are required for intrasector dividends payable and receivable in the nonfinancial corporations sector.

Eliminating an investing deposit taker's prorated share of an associate's earnings

5.63 For associate (and reverse) investments, the investor recognizes as revenue (expense) each period its proportionate share of the net income (loss) of the associate. For the same reason as given for dividends

[23]The same approach is adopted for provisions for accrued interest on other intrasector claims.

[24]See also paragraph 4.21.

payable and receivable—to eliminate double counting of income—the value of the earnings of a deposit taker that are attributable to an investing deposit taker also in the reporting population is eliminated.

5.64 In Table 5.2, of the 100 of prorated earnings of deposit taker 2, 79.2 corresponds to the proportionate share of the net income of deposit taker 3 (the associate). Of this amount, 42 corresponds to the proportionate share of dividends payable and 37.2 to the proportionate share of retained earnings. These intrasector transactions are eliminated by subtracting 79.2 from sector-level noninterest income (deposit taker 2's proportionate share) and 42 for dividends payable (deposit taker 3's amount payable), thus reducing retained earnings by 37.2.

5.65 The same sector-level adjustments are required for intrasector associate (and reverse investment) earnings in the nonfinancial corporations sector.

Eliminating deposit takers' intrasector other income

5.66 Other income includes all noninterest income other than trading gains and losses, less those items otherwise identified and for which separate adjustments are made—fees and commissions, dividends receivable, and the prorated share of retained earnings. As four FSIs use either the data series "gross income" or "noninterest expense," for these gross data series the *Guide* recommends the exclusion of intrasector other income.

5.67 As other income receivable and payable among deposit takers does not affect sector-level net income (since these amounts net out to zero), in excluding intrasector other income flows two adjustments are made, one in income and the other in expenses. An exception to this symmetric treatment occurs if the income received is a gain or loss on the sale of a fixed asset. In such instances, the gain or loss is deducted from "other income," but there is no adjustment in expenses because such income does not represent an expense of the purchaser. The same sector-level adjustments are required for the nonfinancial corporations sector.

5.68 In Table 5.2, of the 100 of other income receivable by deposit taker 3, 15 is receivable from (payable by) deposit taker 2. This amount is an intrasector transaction, representing neither income from nor expenses paid to other sectors. Of this amount, 10 is a gain on the sale of a fixed asset to another deposit taker. Therefore, in calculating the sector-wide total (column 4), 15 is eliminated from other income receivable and 5 is deducted from operating expenses payable, thus reducing sector-wide retained earnings by 10.

Eliminating gains and losses on ownership of other deposit takers' shares and other equity

5.69 Gains and losses on deposit takers' ownership of other deposit takers' shares and other equity (other than equity investments related to associates and subsidiaries, and reverse investments) should be eliminated from the sector-level gains and losses on financial instruments data, so that gains and losses from the intrasector claims do not affect sector-level income. Unlike debt securities, in the *Guide* equity assets and liabilities of deposit takers are measured differently on the two sides of the balance sheet. While the deposit-taking owner records gains and losses on the shares and other equity assets based on market prices, there is no corresponding change in the issuer's books. Thus, without the exclusion of gains and losses on holdings of the shares and other equity of other deposit takers in the reporting population, sector-level income would be affected.

5.70 Further, at the sector level, the *Guide* considers that transactions in deposit takers' shares and other equity (both intrasector and intersector) are equity financing transactions—that is, transactions that can increase or decrease capital without having to go through the income account. Therefore, at the sector level it is immaterial which deposit taker sells or purchases shares and other equity vis-à-vis an outside sector; all sales and purchases reflect exchanges of equity for capital resources regardless of whether the transactions involve issuance of own equity or secondary purchases in securities markets. The adjustments required at the sector level are further developed below in the discussion on the balance sheet adjustment for intrasector holdings of shares and other equity.

5.71 In Table 5.2, of the 50 of gains on financial instruments of deposit taker 1, 5 corresponds to a gain arising from the ownership of shares and other equity of deposit taker 3. At the sector level, this gain of 5 is eliminated from noninterest income, thus reducing retained earnings by 5.

5.72 When recorded in other income at the entity level, the same sector-level adjustments are required for the gains and losses on intrasector shares and other equity holdings in the nonfinancial corporations sector.

Eliminating specific provisions on loans to other deposit takers

5.73 Specific provisions on loans to other deposit takers in the reporting population need to be eliminated to avoid double recording of losses. A deposit taker will likely make a provision on its loans to another deposit taker if the net income and capital of the borrower deteriorate sharply. The provision decreases the lending deposit taker's net income as the borrower deposit taker's net income and capital resources decrease on account of the same adverse event. At the sector level, the impact of the adverse event would be counted twice unless the specific provisions on intra-deposit-takers' loans were eliminated.

5.74 Moreover, an asymmetry arises if specific provisions reduce the net amount of loans on the lender's books but a similar reduction in the amount of loan liabilities is not made in the borrower's books.

5.75 In Table 5.2, out of 80 in provisions recorded by deposit taker 2, 8 corresponds to provisions on loans to deposit taker 1. At the sector level, the provision of 8 is eliminated from provisions, thus increasing retained earnings by 8.

Calculating sector-wide retained earnings

5.76 In Table 5.2, sector-wide retained earnings (197.8) are not equal to the sum of the retained earnings data of deposit takers 1, 2, and 3 (222). How is the difference reconciled?

5.77 One difference is the prorated share of deposit taker 2 of the retained earnings of deposit taker 3 (37.2), which is eliminated to avoid double counting of retained earnings at the sector level. A second difference arises from adjustments made to gross income data, which are not mirrored elsewhere in the accounts. These adjustments are on account of the provisions for accrued interest on loans to other deposit takers in the reporting population, the gains and losses on other deposit takers' equity, the gains and losses on the sale of fixed assets to other deposit takers, and the provisions on loans to other deposit takers.

5.78 Therefore, sector-wide retained earnings (197.8) are equal to the aggregate retained earnings of deposit takers 1, 2, and 3 (222), less the prorated share of deposit taker 2 of the retained earnings of deposit taker 3 (37.2), less the gain on equity of deposit taker 1 (5), less the gain of deposit taker 3 on the sale of fixed assets (10), plus the provision of deposit taker 2 for accrued interest (20) and for loan losses (8).

Adjustments in the balance sheet

5.79 For the purposes of compiling data for use in calculating FSIs, three adjustments are required to the sector-level balance sheet data, primarily to avoid the double counting (double leveraging) of capital at the sector level. The adjustments concern

- Investments in associates resident in the economy,
- The market value of shares and other equity investments in other deposit takers in the reporting population, and
- Specific provisions on loans to (and other claims on) other deposit takers.

Eliminating the investor's prorated share of an associate's capital and reserves

5.80 In all measurement systems, a distinction is made when an equity investment reaches a level at which the investor achieves significant influence over management decisions and hence over the use of the capital resources of the entity. As noted earlier (paragraph 5.8), depending on national practice, this level may be 10 percent or 20 percent. Consistent with such a distinction, associate investments (and reverse equity investments) by deposit takers in other deposit takers in the reporting population are valued on the basis of the investor's proportionate share of the associate's capital and reserves (for participation in equity below that level, the investment is recorded at market value). If the associate's capital and reserves and the investor's proportionate share of that capital are both included in sector-wide capital and reserves, there will be double counting of capital at the sector level. To avoid this double counting, the value of the intrasector associate (and reverse) investment is eliminated from assets and capital and reserves.

5.81 In Table 5.2, out of 300 of shares and other equity assets of deposit taker 2, 180 corresponds to an investment in deposit taker 3, which is its associate. This investment is valued according to its prorated share in the capital and reserves of the associate.[25] At the sector level, 180 is eliminated from assets and from capital and reserves.

5.82 The same sector-level adjustments are required for intrasector associate (and reverse) investments in the sector-level consolidation for other financial corporations and nonfinancial corporations sectors, respectively.

Eliminating the market value of the shares and other equity investments in other deposit takers in the reporting population

5.83 The market value of the shares and other equity investments of one deposit taker in another deposit taker in the reporting population (except for investments in associates and subsidiaries) should be eliminated from the sector-level data to avoid double counting (double leveraging) of capital; the counter-adjustment is a reduction in sector-level assets.

5.84 If a deposit taker holds the shares and other equity throughout the period and their value increases (decreases) during the period, this increase (decrease) should be deducted from sector-level earnings (as described in paragraphs 5.69 to 5.72). The end-period market value of the shares and other equity should be deducted from sector-level assets and capital and reserves. The reason is that the increase in value does not represent additional capital resources from outside the sector. If a deposit taker sells to a second deposit taker the shares and other equity of a third deposit taker in the reporting population, any gains and losses made by the first deposit taker since the end of the previous period should be deducted from sector-wide income. Such a sale has no impact on capital and reserves, as the equity "merely" switches ownership within the sector, with any subsequent gains and losses deducted from sector-wide income and the market value of the equity deducted from sector-level assets and capital and reserves. Appendix V provides numerical examples of how to record these transactions and positions.

5.85 In Table 5.2, deposit taker 1 has shares and other equity investments in deposit taker 3 with a market value of 20. This amount is eliminated from sector-level data by deducting it from assets and from capital and reserves.

5.86 The same sector-level adjustments are required for intrasector shares and other equity investments in the sector-level consolidation for other financial corporations and nonfinancial corporations, respectively.

Specific provisions on loans to other deposit takers[26]

5.87 Just as in the adjustments to income, adjustments to the balance sheet are required for specific provisions on loans to other deposit takers to avoid asymmetric recording of losses, which arises if the debtor deposit taker records the full value of the loan outstanding while the creditor deposit taker reduces the value of the loan by the amount of the provision.[27] In Table 5.2, at the sector level, the provision of 8 recorded under loan assets of deposit taker 2 is eliminated, thus decreasing specific provisions and increasing capital and reserves.

5.88 Moreover, while not shown in the table, the outstanding amount of any provisions for accrued interest on nonperforming loans (or other assets) to other deposit takers in the reporting population needs to be added to the value of loans outstanding to avoid asymmetric recording, as the debtor deposit taker is accruing interest but the creditor is not.

Calculating sector-wide capital and reserves

5.89 In Table 5.2, sector-wide capital and reserves (2,758) are not equal to the sum of the capital and reserves data of deposit takers 1, 2, and 3 (2,950). How is the difference reconciled?

5.90 The difference is explained by the three adjustments noted above, each of which affects sector-wide capital and reserves. Therefore, sector-wide capital and reserves (2,758) are equal to the aggregate capital and reserves of deposit takers 1, 2, and 3 (2,950) less the equity investments in associates (180) and in other deposit takers in the reporting population (20) plus the specific provisions (8). While not shown in the table, the adjustment to the value of loans for provisions on accrued interest on

[25]This procedure also applies to the valuation of equity investment in unconsolidated subsidiaries. Any reverse equity investment in a parent by an associate or unconsolidated subsidiary should be similarly recorded in the associate's or subsidiary's balance sheet.

[26]The same approach is adopted for specific provisions on other intrasector claims.

[27]For the same reason, a similar adjustment needs to be made if the creditor deposit taker has written off some of the value of the loan, rather than making a specific provision.

nonperforming loans (or other assets) to other deposit takers in the reporting population, discussed in paragraph 5.88, needs to be made to sector-wide capital and reserves (narrow capital and reserves).

Other

Goodwill

5.91 While adjustments for goodwill should be undertaken at the level of the individual entity rather than at the sector level, the treatment of goodwill when a deposit taker buys an associate or subsidiary stake (or adds to it, or there is a reverse investment) in another deposit taker in the reporting population deserves mention. If the investor pays above the value of the capital and reserves of the associate or subsidiary, then the difference is regarded as purchased goodwill. The value of this goodwill should be eliminated from the investor's capital and reserves (and nonfinancial assets), as it reduces capital available to absorb losses, that is, cash is reduced by more than the value of the equity investment acquired. Similarly, if a deposit taker sells a stake in a deposit-taking associate or subsidiary (or there is a disinvestment of a reverse investment) at a price greater than the proportionate value of the capital and reserves, the difference should be added to the selling deposit taker's capital and reserves, thus ensuring symmetrical treatment to that for goodwill. Income is unaffected by such transactions. The same principles apply for the purchase and sale of other entities by deposit takers, and for the sale and purchase of subsidiaries and associates by other corporate sectors.