

2012; Drehmann and Juselius, 2013; and Alessi and Detken, 2014). Indeed, Haldane (2012), in a speech at the 2012 Jackson Hole conference, stressed that the more complex the system, the greater the need to keep it simple, echoing findings of the BIS, U.S. Federal Reserve, and others that sometimes “less is more.”

50. On the Fund’s part, some recent work on balance sheet analysis (BSA) provides a good example of how collaboration between Fund statisticians and economists can shed light on the way forward for more effectively identifying and using data to support the Fund’s strategic work (IMF, 2015b). Both the global financial and euro crises might have been better foreseen through rigorously applying BSA.⁴⁸ A full set of balance sheet matrices is also a primary starting point for understanding macrofinancial linkages, and complemented with a global flow of funds,⁴⁹ forms the basis for the analysis of interconnectedness and spillovers. The use of BSA to strengthen surveillance was a running theme throughout the 2014 TSR and IEO (2011a).

51. But the recent global crisis was not the first to shed light on the usefulness of this approach.⁵⁰ The Asian crisis was the catalyst for work on the BSA at the IMF (Allen and others, 2002), and the 2004 “Review of Data Provision for Fund Surveillance Purposes” (IMF, 2004a) was already pushing for its use in Article IV consultation staff reports. Yet BSA was used only sporadically pre-crisis and typically for emerging markets. It was rarely employed for low-income countries (largely due to lack of data) or for advanced economies (where at least partial, and in some cases, like the United States, fairly complete data were available).

52. Why was BSA used so sparingly pre-crisis? Lack of analytical tools (and staff training on those available) hindered its use in bilateral surveillance. But the primary reason was that very few countries, even today, provide the full set of sectoral balance sheets. The IMF, particularly in the context of the DGI, has become more

proactive in encouraging the compilation of balance sheet data by its member countries, and now there is reason to expect that data availability will not be as significant a hindrance as it had been in the past (Box 6).

53. Much more remains to be done, however, especially on data for the corporate, household, and shadow banking sectors.^{51,52} Against a background of fiscal austerity in many countries, the demand for more complete balance sheet data might run up against other, perhaps more urgent, needs. Nevertheless, a compelling case could now clearly be made that the benefits, not only to the IMF but to the member countries themselves, outweigh the costs.

C. Data Quality

The Fund is not just a passive recipient of data; it runs some validation checks and promotes data quality.

54. The Fund has a number of mechanisms to obtain some assurances about the quality of the data it uses. With STA playing the pivotal role, it has developed methodologies for the proper compilation of economic and financial statistics, and works to support high-quality data through capacity-building—technical assistance and training. The Fund also performs some validation checks in the course of its operational work and prior to dissemination, with these checks varying by department and purpose of the data.

55. STA relies mostly on official data reported directly by countries. It checks these data for their compliance with established formats, examines them for outliers, and performs some routine consistency checks to capture large discrepancies across data sets. STA

⁴⁸A study on the United States using balance sheet analysis concluded: “Detailed analysis of aggregate sectoral balance sheets could have been helpful in identifying pressure points for the U.S. economy pre-crisis . . . Balance sheet data for [households] and [other financial centers] were indicating a build-up of vulnerabilities, while standard vulnerability (financial soundness) indicators for the U.S. were not recording ‘red flags’ pre-crisis.” (IMF, 2015c).

⁴⁹In addition to its work on balance sheets, STA is also pushing forward with cutting edge work on a framework for the global flow of funds.

⁵⁰A key difficulty is that statistics are often produced with considerable delay. Ideally, forward-looking indicators would be the preferred means of detecting emerging risks, but these are difficult to come by. In their absence, macroeconomic stocks data (e.g., balance sheet data) could better indicate a buildup of pressures due to their “sticky” nature (the slow rate of change of stocks).

⁵¹In many countries, the shadow banking sector is the fastest growing segment of the financial sector, and in some cases, is larger than the banking sector.

⁵²Latin American Shadow Financial Regulatory Committee (2015) and Reinhart (2015) raise concerns, in the context of the expansion of shadow banking, about data on the extent of leverage in emerging markets and whether international reserve positions may overstate available resources. For example, reserve availability may be overstated when (i) central banks intervene by issuing dollar-linked debt, (ii) third parties (e.g., sovereign wealth funds, special status banks, state-owned enterprises) intervene in forex markets on behalf of the central bank, (iii) swap arrangements are not adequately captured in reserves data, and (iv) lines of credit extended by Chinese development banks to emerging markets are not included in external debt data. In general, recent Article IV reports for the affected emerging market economies have not covered these potential data shortcomings or have done so very tangentially. On occasion, issues such as the treatment of certain types of interventions have been raised, but have not been viewed as key areas for concern.

Box 6. Does Lack of Data Still Prevent the Use of Balance Sheet Analysis?

In October 2015, to encourage Fund economists to utilize balance sheet analysis (BSA) more frequently, the IMF posted an Intranet article entitled, “Five Things You Need to Know About Balance Sheet Analysis.” The following excerpts from three of those “five things to know” indicate that the authors of the article believe that lack of data is no longer the inhibiting factor that it once was:¹

“1. Balance sheets matter a lot. Balance sheet analysis captures the role played by financial frictions and mismatches in creating fragility, amplifying shocks, and generating spillovers. The boom, bust, and recovery associated with the global financial crisis can all be viewed through the prism of balance sheets. The boom was associated with increased private sector debt, and the bust created a decline in wealth that was propagated across the world through balance sheet linkages, even as debt remained elevated. Recovery has featured deleveraging, as the private sector restructures its balance sheets by increasing savings, cutting spending, and repaying debt. In turn, governments have responded by expanding the fiscal or central bank balance sheets to buttress demand.

2. Data no longer pose major constraints to analyzing balance sheets. While balance sheet data were hard to

¹This conclusion may be too sanguine, in light of the fact that fewer than two dozen Fund members were able to provide complete annual and quarterly sectoral balance sheets as of mid-2015.

come by in the past, country coverage and granularity of data have improved. This is in part due to Fund-supported initiatives such as the collection of data on financial sector balance sheets through standardized report forms (SRFs), and information on cross-border financial interlinkages through international investment positions (IIP) and coordinated surveys on direct and portfolio investments (CDIS and CPIS). Such initiatives have helped to better capture the state of the balance sheets of key sectors of the economy and how they are linked to each other as well as to the rest of the world. Even where balance sheet data are not fully available for some sectors, it is possible to make pragmatic assumptions or use supplementary information—including national sources, micro data, and surveys—as a workaround.

3. A lot of the data can be exploited using off-the-shelf techniques. Successive waves of crises have driven innovation in the Fund’s analytical toolkit, including macro models, techniques for macrofinancial stress testing, the balance sheet approach (BSA), and debt sustainability analyses. The new Board paper and note also develop some new empirical tools, including: illustrations of how to construct balance sheet matrices using Fund-collected data, and analyze them to get an aggregate sense of the key vulnerabilities in the economy; tools to dig deeper into these identified vulnerabilities using micro data; and general equilibrium and reduced form approaches to improve macro forecasting by incorporating balance sheet variables.”

is also working on implementing some intersectoral consistency checks,⁵³ which could prove an important additional tool for quality control.

56. Though many of the Fund’s area department country teams obtain much of their data directly online from national sources or from commercial databases (such as Haver Analytics), many staff missions, particularly in low-income countries, still spend considerable time collecting data in the field, with Fund staff often “getting their hands dirty” working on data with their counterparts during missions.⁵⁴ The policy discussions between mission teams and country authorities often reveal data inadequacies, potentially prompting

⁵³Official data are typically sourced from several agencies within the same country (e.g., national statistics office, central bank, ministry of finance) and are thus often inconsistent on an intersectoral basis, as these agencies often do not cross-check their respective data.

⁵⁴While this is often among the most appreciated contributions of IMF staff during missions, staff often consider it among the least rewarding parts of mission work.

corrective action and improvements in data quality. Staff estimates, which are often discussed first with country authorities, are frequently used to fill in the blanks from missing or problematic data.⁵⁵

57. Implicit in IMF country teams’ collection of data are validation activities that involve some verification of data at the primary source, checking the accuracy of basic calculations, and assessing overall consistency within a macroeconomic framework. According to staff interviews, country teams have traditionally been more active in checking and validating data in emerging markets and low-income countries, while tending to accept without question the data from advanced economies. The IMF’s flagship publications use a combination of the data collected by area departments and those from commercial databases as inputs. At this stage,

⁵⁵Jerven (2016) uses the example of Ethiopia to illustrate the lack of clear procedures as to the use of staff estimates in place of official data that are questioned by staff.

additional validation checks are performed, attending, to some degree, to issues of global cross-country consistency.

58. Nonetheless, all these validation activities still fall short of fully addressing deficiencies in source data and disparities in definitions and coverage. Errors can be, and have been, missed by the standard validation checks. This can have real consequences for member countries, as exemplified by an incident with the April 2009 *GFSR*. The IMF presented the external debt refinancing needs, as a ratio to foreign exchange reserves, of the central and eastern European countries, but the figures presented were, in some cases, more than twice the real ratios. The IMF corrected the errors, but not before they had (according to authorities) adversely affected market confidence. This incident prompted MCM to tighten its validation procedures, including by assigning a dedicated “fact checker,” sending the data to area departments for review,⁵⁶ and improving country desk inputs to the *WEO* database.

Ultimately, though, the quality of data depends on the member country . . .

59. Inevitably, there are limits to what the IMF can do to correct the shortcomings of data provided by member countries. Member countries show a wide disparity in the degree of development and independence of their national statistical compiling agencies, in their institutional structure, and in the resources allocated to statistical activities. While there is still room for the IMF to strengthen its work on quality assurances, ultimately, the quality of data depends on the attention and resources that member countries devote to it. Indeed, the accuracy of the information disseminated by the Fund is the sole responsibility of countries.⁵⁷

60. Concerns about quality are particularly relevant for the more resource-constrained statistical compiling agencies in low-income countries, which face greater difficulties in collecting primary source data, tend to employ outdated methods, and struggle to retain qualified personnel.⁵⁸ In response to a survey question, IMF

⁵⁶According to some interviewees, this step is very time-consuming (and at times, impossible) for area department country desks, as the *GFSR* heavily uses data from commercial sources (including for some macroeconomic data) which might diverge from those used by the country desks.

⁵⁷Article VII, Section 5 notes that it is the member’s obligation to provide accurate data to the Fund, to the extent of its ability.

⁵⁸The binding nature of resource constraints was clearly evident in recent years when, in many low-income countries, the emphasis on the Millennium Development Goals forced authorities to give

staff, particularly those working on emerging market and low-income economies, overwhelmingly pointed at the limited capacity of countries as a main reason for data deficiencies that hamper surveillance.⁵⁹ But limited capacity was also mentioned for almost a quarter of advanced countries with data deficiencies.

. . . but STA has played a major—and much appreciated—role in supporting high-quality data from the membership.

61. Although the assurances of quality that the IMF can provide in the short run are limited, STA’s initiatives to strengthen data quality over the medium and longer term are significant. The methodological manuals developed by STA have become the world standard that countries seek to adopt and implement,⁶⁰ while the technical assistance (TA) and training provided by STA are effective forces for the improvement of data.⁶¹

62. Training in statistics is highly appreciated by recipients, with 90 percent or more of survey respondents agreeing that the training is of high quality, aligned with the recipients’ priorities, feasible to implement, and has helped improve the quality of data. Appreciation for TA is even stronger than that for training (Figure 4), with views on its quality, relevance and feasibility almost unanimously positive. Some reservations were expressed, though, on follow-up and support subsequent to TA—partly in response to STA’s revised approach to committing follow-up assistance, which involves setting specific benchmark actions for implementation, together with evidence of compliance.⁶²

precedence to social indicators to the detriment of data on economic growth or employment (Jerven, 2013).

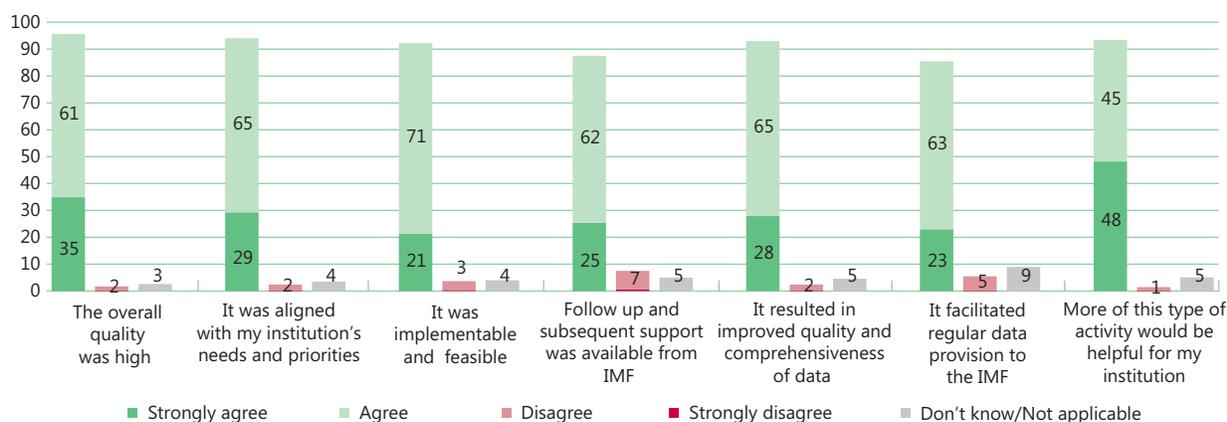
⁵⁹Jerven (2016) notes, as examples, huge changes in some low-income countries’ GDP statistics due to rebasing after years of using out-of-date baselines, calling into question the validity of surveillance based on numbers that could change so markedly. Nigeria’s GDP, for example, increased by 89 percent in 2014 after the base year was changed from 1990 to 2010, instantly vaulting Nigeria to the top of the GDP chart in Africa.

⁶⁰Data providers in member countries, both in interviews and surveys, expressed highly favorable views on the associated manuals and guides, with respondents agreeing that they are both practical and helpful (almost unanimous), as well as easy to understand and feasible to implement (85 percent).

⁶¹IMF staff, nonetheless, noted that the effectiveness of TA is sometimes undermined by the fundamental tension between weak governance and transparency, as opacity and lack of data preclude accountability.

⁶²This change in approach includes a move to a Results-Based Monitoring Framework and is due, in part, to the demand from the donor community to ensure effective allocation of resources. See also IEO (2014c).

Figure 4. Perception of Statistics Technical Assistance
(In percent)



Source: IEO Survey of Country Authorities and Data Providers.

63. A significant development in recent years has been an increase in the share of TA financed by donors. This doubled between FY2011 and FY2015 to 60 percent (35 percent excluding Regional Technical Assistance Centers). The increasing reliance on donor financing has led, at times, to a less than optimal allocation of resources, when donors' priorities have not been fully aligned with those of the Fund.⁶³

64. In general, the IMF explicitly avoids providing assessments of the quality of member countries' statistics.⁶⁴ However, the data modules of ROSCs come closest to a comprehensive assessment of data quality. The Data Quality Assessment Framework (DQAF), which lies at the core of the data ROSC, provides a structure for assessing the extent to which countries meet the prerequisites of data quality—such as independence of, and adequacy of financing for, the compiling agency—or follow international best practices in regard to established standards.⁶⁵ However, the DQAF is more focused

⁶³In this regard, STA has recently developed statistical scorecards for a large share of the Fund's membership. The scorecards provide country-specific snapshots of data methodology and provision in a heat map format, so as to provide country teams and reviewers a quick reference tool to help determine capacity development needs and underpin surveillance dialogue on data issues. These scorecards seem a promising approach to better prioritization of TA needs and could also promote more candid assessments of data adequacy for surveillance.

⁶⁴When the dissemination initiatives were first discussed at the Executive Board, "... Directors emphasized that the Fund should avoid making direct public assessments of data quality ... to avoid the implication that ... the Fund was certifying good practice with respect to quality and other characteristics of the data." (IMF, 1996b).

⁶⁵That is, integrity, methodological soundness, accuracy and reliability, serviceability, and accessibility.

on statistical processes than on passing judgment on the quality of the statistical output itself.⁶⁶

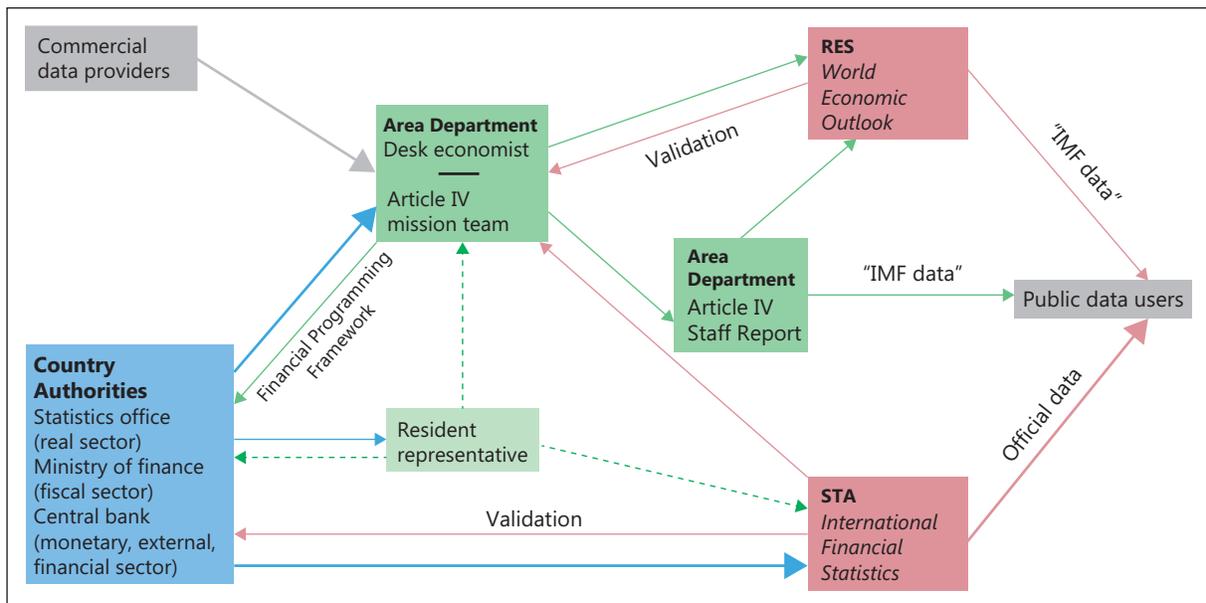
65. This evaluation's interviews and survey of data producers suggested that almost all of those who had been involved in their countries' data ROSCs considered them very useful for improving data quality and implementing best practices. Some authorities indicated in interviews that data ROSCs had the additional effect of strengthening the hand of national statistical offices in their quest for more resources. More than three-quarters of respondents believe that conducting these exercises on a periodic basis would be helpful. However, in recent years, due to their high cost, data ROSCs have become ever fewer and far apart and have now been (at least temporarily) suspended.

66. Recent problems with the reporting of fiscal and debt statistics in some countries, together with the phasing out of data ROSCs, have led the Fund to revamp its Fiscal Transparency Evaluation (FTE), including the addition of an important data pillar. This pillar replicates for the fiscal realm the categories of the data ROSC, including those of data quality and integrity. In contrast to the data ROSCs, the revamp of the FTE focuses on outputs rather than processes, thereby placing greater emphasis on the quality of published information.⁶⁷ It clearly presents strengths, weaknesses, and reform priorities through summary heat maps, making the FTE more accessible to policymakers, civil society,

⁶⁶Of course, it might be expected that a well-functioning statistical system is more likely to produce quality data.

⁶⁷STA has noted that it plans to revise the data ROSC to increase its efficiency and effectiveness, including by covering statistical outputs.

Figure 5. Data Flows at the IMF



Source: IEO.

and other stakeholders (in contrast to the relatively impenetrable data ROSCs, largely accessible only to statisticians).

67. The IMF is also cautious about explicitly assessing the prerequisites of quality, perhaps most importantly, that of a well-funded and autonomous national statistical office. That is, the IMF does not typically emphasize the need for member countries to better equip their national statistical offices, notwithstanding the evident benefits this would bring to the countries' own policymaking. In particular, weak statistical offices can fall prey to political pressures and inadequate funding, undermining the reliability, accuracy, and unbiasedness of their output. The Fund seldom places a priority on establishing an active dialogue on data issues with country authorities at the policymaking level, such as their needs for capacity-building or, when relevant, on including such issues in Fund conditionality.

D. Internal Data Management

Data management problems are deep-rooted . . .

68. The usefulness of data for IMF operational purposes also depends on the Fund's internal data management practices and, in particular, on the staff's ability to access a wide range of good quality, consistent data

on a timely basis. The evolution of the Fund's data requirements and activities has led to a highly decentralized approach to data collection, management, and dissemination (Figure 5 is a stylized representation of data flows to, within, and from the IMF). As a result, there are now about 180 *cross-country* databases in the IMF, of which about half are internally produced and the remainder externally provided, and more than 180 country-specific area department databases. At the same time, databases have become commensurately larger and more complex, implying a greater premium on efficient management and documentation. Departments have long been expected to adopt guidelines for data management.⁶⁸

69. Decentralization and the associated proliferation of databases have created a number of deep-rooted problems, all of them closely intertwined.⁶⁹ First, the Fund's fragmented and uncoordinated approaches to

⁶⁸For example, a November 1995 memo from the then-First Deputy Managing Director stated, "All departments that maintain economic databases will be expected to establish and implement data management guidelines in accord with the Fund-wide guidelines."

⁶⁹In addition to the proliferation of databases, there has also been a proliferation of interfaces for accessing data—Economic Data Sharing System (EDSS), Economic Data Warehouse, Joint Library (which manages commercial databases), Data Management for Excel (DMX) Data Navigator, Economic Outlook Suite (EcOS), etc., adding to the complexity and confusion for the user in finding data.