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Progress Through Crises: The Evolution of the IMF's Statistical Arsenal

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ABBREVIATIONS

BIS	Bank for International Settlements
DGI	Data Gaps Initiative
DQAF	Data Quality Assessment Framework
DSBB	Dissemination of Standards Bulletin Board
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FSI	Financial Soundness Indicator
FTC	Fiscal Transparency Code
FTE	Fiscal Transparency Evaluation
G-20	A grouping composed of major advanced economies and systemically important emerging market and developing countries
GDDS	General Data Dissemination System
IAG	Inter-Agency Group on Economic and Financial Statistics
<i>IFS</i>	<i>International Financial Statistics</i>
IIP	International Investment Position
OECD	Organization for Economic Co-operation and Development
ROSC	Report on the Observance of Standards and Codes
SDDS	Special Data Dissemination Standard
<i>WEO</i>	<i>World Economic Outlook</i>

EXECUTIVE SUMMARY

Deficiencies in the provision or interpretation of statistical information have been identified as contributing factors in several of the major economic crises of recent times. While not a main cause of any particular crisis, these deficiencies acquired enough prominence to trigger formal efforts to correct them, including at the IMF. This paper reviews four such incidents:

- The **Latin American debt crises** of the early 1980s prompted a sharp increase in the Fund's preoccupation with statistical issues, in particular with the coverage and timeliness of debt statistics and the need to keep the Executive Board apprised of the state of the provision of statistics to the Fund.
- The **Mexican crisis** in 1994 revealed the importance for crisis prevention of the timely provision of key information—international reserves and the central bank's balance sheet in this case—to both the IMF and financial markets. This led to the establishment of the Data Dissemination Initiatives by which countries voluntarily subscribe to disseminate an agreed set of data (and associated metadata): the Special Data Dissemination Standard (SDDS) for countries participating in international financial markets, and the less demanding General Data Dissemination System (GDDS) for countries in need of building up their statistical systems.
- Deficiencies in the quality and integrity of data—centered on reserves and external borrowing—were seen to be in part behind the **Asian crisis** of 1997 and led to the inclusion, as prescribed components of the SDDS, of a data template on reserves and a separate data category for external debt (a forerunner for reporting on the entire International Investment Position). The post-crisis discussions on statistics also led to the inclusion of a data module in the Report on the Observance of Standards and Codes process and the development of a Data Quality Assessment Framework, while the perceived urgency of strengthening the capability for early detection of crises led to the establishment of the very data-intensive Financial Sector Assessment Program and Vulnerability Exercise.
- Most recently, the **global financial crisis** gave renewed impetus to the efforts to strengthen the IMF's statistical arsenal, with the Fund participating actively in the G-20 Data Gaps Initiative and expanding anew the scope of the SDDS through the creation of the SDDS Plus, a higher tier of the standard aimed at systemically important countries. The crisis also led to the creation of the Fiscal Transparency Code in order to strengthen the monitoring of member countries' fiscal situation.

I. INTRODUCTION

1. The development of statistical activities at the IMF has naturally followed the changing needs and activities of the institution. The need to provide a solid quantitative base for Fund operations was identified by H.D. White already in 1946 (IMF, 1946), and considerable progress was made over the years both in what became the IMF Statistics Department (STA) and within the area departments' country desks. However, the process of change was not smooth or continuous: innovation came mostly in irregular spurts, often prompted by a crisis that laid bare some inadequacy in the existing toolkit or arrangements; indeed, data deficiencies were identified as among the causes of several of the major economic crises of recent times. As a result, problems with the provision or interpretation of statistical information, while not among the main causes of each particular crisis, acquired enough prominence to trigger formal efforts to correct them and prevent them from contributing to future problems.

2. This paper describes four instances where new data initiatives or concerted efforts to improve existing arrangements sprang out of crises that had global systemic relevance (Table 1). The Latin American debt crisis of the 1980s highlighted the need to collect data on member countries' external debt and debt service obligations and to assess the sustainability of their debt position; the Mexican crisis at end-1994 laid bare the consequences of inadequate provision of key information—on international reserves prominently in that case—to both the IMF and financial markets; non-transparent information on reserves, but more significantly the poor quality and integrity of data, were cited as among the deficiencies behind the Asian crisis of 1997; and, finally, the global financial crisis ten years later revealed inadequacies in the assessment of the fiscal situation in important countries and serious gaps in statistical information, particularly in the financial area, that are now being addressed by the G-20 Data Gaps Initiative (DGI).

II. 1982: THE DEBT CRISIS

3. The external debt situation of non-oil developing countries came under increasing pressure in the early part of the 1980s. The second oil shock in 1979–80 and a sharp rise in interest rates in industrial countries—with the ensuing global recession—caused a drop in commodity prices and a sharp deterioration in the terms of trade and external current account position of most non-oil developing countries. The resulting increase in financing needs came, moreover, at a time when the external debt position of these countries was already precarious and prompted many of them, particularly in Latin America, to seek a restructuring of their debt obligations.¹

¹ For a more extensive account of these developments, see Boughton (2001), Chapter 6.

Table 1. Main Initiatives in the Statistical Area Prompted by Crises

1982: Debt Crisis	<ul style="list-style-type: none"> • Periodic reports to Executive Board on timeliness and coverage of data reported by members. • Article IV consultation reports to include external debt developments, debt sustainability scenarios, and a reference to the quality of statistics. • Calls for integrated data management system in the IMF and for expanded technical assistance and methodological work on debt statistics.
1994–95: The Mexican Crisis	<ul style="list-style-type: none"> • Data dissemination initiatives: SDDS and GDDS including the establishment of the Dissemination Standards Bulletin Board (DSBB). • Staff to assess coverage, quality and timeliness of data in Article IV consultations.
1997: The Asian Crisis	<ul style="list-style-type: none"> • Data template on international reserves and foreign currency liquidity. • FSAP and Vulnerability Exercise for Emerging Markets. • ROSCs including the development of DQAF. • Increased scope and frequency of external debt reporting requirements, as a step towards reporting the entire International Investment Position. • IMF’s transparency policy.
2007: The Global Financial Crisis	<ul style="list-style-type: none"> • SDDS plus. • G-20 Data Gaps Initiative. • Enhancements to SDDS. • Fiscal Transparency Code.

4. The oil shocks in the preceding decade and the increasing involvement of commercial banks in recycling the surpluses accumulated by oil exporters had resulted in a sharp expansion of borrowing by net oil importers, mostly from commercial lenders. The accumulated weight of these borrowings markedly increased the debt-servicing burden, which was aggravated by the weakening of the maturity structure of the debt, product of the shorter maturities carried by commercial, as compared with official, loans. Furthermore, the move by industrial countries to a high interest rate policy, and its success in lowering inflation, abruptly shifted the real interest rate faced by borrowing countries, from negative in the 1970s to sharply positive by 1982.

5. The year 1982 saw a record number of debt reschedulings and a sharp rise in external payments arrears, giving rise to the perception of a generalized debt problem. Twenty countries undertook multilateral debt renegotiations that year, compared with an average of four countries per year in the second half of the 1970s. Moreover, whereas most of the reschedulings in the earlier period had involved relatively small debtors, seven of the countries rescheduling in 1982 were among the largest debtors. This situation heightened

concerns about the potential disruptive impact on the international banking system, in terms of both the concentration of sovereign risk as well as the adequacy of banks' capital.²

6. Before 1982, the IMF had already begun giving more attention to external debt issues, but neither official nor private lenders had fully recognized the fragility of the debt situation of developing countries. Country desks at the IMF had collected information on external debt, especially public sector debt, as part of their surveillance work on public finances and the balance of payments, but this information was in most cases partial and reflected more local reporting characteristics than common international standards. Around 1981, prompted by the growth of international bank activity, the Fund had embarked on a two-pronged effort to (i) develop jointly with the Bank for International Settlements (BIS) a reporting system on international bank lending, and (ii) integrate into Fund statistics the diverse and partial debt reporting systems developed by other international organizations, such as the World Bank, the BIS, and the Organization for Economic Co-operation and Development (OECD). However, by the time the crisis hit and the Fund was called to assist countries in debt difficulties, these efforts were still in their infancy.

7. A background paper for the January 1983 *World Economic Outlook (WEO)* indicated that "...available debt statistics remain insufficient and deficient for the purpose of monitoring debt developments for many countries..." and also reported that in preparing that paper "...a special effort was made, *for the first time*, to collect available statistics relating to short-term debt on a country-by-country basis" and that "comprehensive debt statistics and estimates were collected, *also for the first time*, for 39 individual countries..." (IMF, 1983, emphasis added). Similarly, the contemporaneous Review of Surveillance reported that "...in recent years the staff has sought to improve the coverage of external debt developments and policies in Article IV consultation reports. However, progress in this area has been hampered in several cases by lack of adequate data. In many cases, the importance of adequate data and of proper institutional machinery to monitor external borrowing has not been fully recognized by members until debt servicing difficulties emerged" (IMF, 1983b).

8. The year 1983 witnessed an explosion of Executive Board pre-occupation with statistical subjects, with Executive Directors discussing more than half a dozen papers dealing with external debt and the associated statistical issues. The main shortcomings that were identified related to the lack in many countries of data on medium-and long-term *private* external debt and the general unavailability of accurate data on *short-term* debt, whether private or official. At the same time, Directors perceived that the need for reliable and comprehensive data was heightened by the increased calls on the Fund to participate in the resolution of members' debt difficulties, where an operative IMF Stand-By Arrangement

² Commercial bank loans were overwhelmingly concentrated in a few large, mostly Latin American, debtors that were experiencing difficulties. The exposure of some major international banks to individual countries in that group exceeded 50 percent of the bank's capital. In a number of cases, the combined exposure of a bank to Argentina, Brazil, and Mexico was larger than the bank's capital (IMF, 1983c).

with upper tranche conditionality—and the associated need to calibrate eventual financing gaps—had become a prerequisite for the conclusion of official (and increasingly also private) multilateral debt renegotiations.

9. Concerns about the coverage and timeliness of debt statistics, as well as the mechanisms for controlling foreign borrowing by the public sector, were foremost among the Fund's preoccupations. Even though for many of the larger borrowers the situation was reasonably adequate, "...for some of the large borrowers and for many other countries there is room for much improvement" (IMF, 1983c). As a response, the IMF expanded its provision of technical assistance in the external debt field and took steps to strengthen its work on the measurement of debt—including on reporting methods, on achieving consistency between data from different sources, and on the coverage of short-term debt and international banking flows. To improve the general availability of debt information, it was proposed to begin publishing available external debt statistics on a continuous basis in the *International Financial Statistics (IFS)*. New tables on international banking activity started to be published beginning with the January 1984 *IFS* issue.

10. The prominence acquired by debt-servicing problems also highlighted the need to enhance external debt surveillance within the Article IV consultation process. Thus, consultation reports were to include "as comprehensive coverage as possible of recent external debt developments ... [and] staff will pay particular attention to statistics concerning short-term debt and to the external debt monitoring and decision-making procedures of members" (IMF, 1983c). Moreover, coverage of external debt matters in Article IV reports was to be strengthened by including a forward-looking analysis assessing the sustainability of the external debt situation over the medium term. This proposal was picked up by the 1984 Review of Surveillance (March 1984) and, as a result, 75 percent of the 1984 staff reports for Article IV consultations already included medium-term external debt scenarios.

11. Out of the many discussions on debt and debt statistics that were held during 1983 and early 1984, a number of concerns emerged over more general aspects of data quality and data provision to the IMF. In February 1984, Executive Directors requested the staff to prepare an annual (changed to biannual after 1986) report on the timeliness and coverage of the data published in *IFS* and on developments in members' statistical reporting (IMF, 1984). Also, Directors proposed that a reference to the quality of a country's statistics should be included in staff reports on Article IV consultations. Directors emphasized the importance of technical assistance in statistics to countries and, finally, they expressed interest in the development of an integrated data management system within the Fund that would reconcile data in IMF statistical publications with those needed for the Fund's operational work. These topics would continue to be developed in subsequent years.

III. 1994–95: THE MEXICAN CRISIS

12. In December 1994, the Mexican peso was devalued and allowed to float. In the months that followed, the peso lost more than half of its pre-devaluation value. The collapse of the exchange rate arrangement and the ensuing upheaval in the Mexican economy were the consequence of several factors, including large portfolio capital inflows in the preceding years, the buildup of internal and external macroeconomic imbalances, a progressive shortening of the maturity of government debt—together with a shift of this debt from peso-denominated to dollar-linked debt—and a considerable deterioration in the quality of the domestic banks' assets. Resolution of the crisis was eventually achieved with a comprehensive program of adjustment and a large package of multilateral and bilateral assistance, but not before financial market pressures had spilled over into other emerging market economies, Argentina and Brazil prominently among them (Boughton, 2012: Chapter 10; IMF, 1995g: Section III).

13. The IMF's analysis of the crisis and examination of its own role in it highlighted the importance of timely key statistical information. Lack of such information had impeded an early warning of the mounting dangers in Mexico and preempted timely corrective action. International reserves data, together with central bank balance sheet data, had been made available to the Fund but with a two-to-three-month lag, while other monetary and public debt data could have been subject to even longer delays.

14. At an Executive Board meeting in early April 1995, Executive Directors "...noted that recent events underscored that shortcomings in surveillance due to information deficiencies could have very costly adverse effects" (IMF, 1995d). These concerns were echoed in the report that the Executive Board prepared for the Interim Committee later that month: "Information, including basic statistical data, has not always been provided to the Fund by member countries at the right time to permit appropriate monitoring of rapidly changing situations..." Directors emphasized that "strengthening the effectiveness of Fund surveillance is predicated on the regular and timely provision of data by all members" and that "...delays in provision of basic information to markets can detract from both efficiency and the associated discipline over policy and, in the end, may contribute to disorderly and disruptive market adjustments" (IMF, 1995e).

15. The fact that delays in obtaining crucial information had resulted in both Fund staff and financial market participants being caught unawares of a looming major crisis served as a wakeup call to the IMF to both intensify its efforts to ensure the timely availability of comprehensive data and to arrange for the wider dissemination of these data into the public domain. As described by the Fund's historian: "The Mexican peso crisis of 1994–95 highlighted a shortcoming in surveillance that had to be corrected. Almost from the moment the crisis erupted, Fund officials realized their ability to assess pre-crisis conditions in Mexico and to try to forestall the crisis had been hampered by the inadequacy of available data... [the priority to get timely and comprehensive data]... generated an intensive work

program over the next year that culminated in a commitment by the Fund to ensure and coordinate the dissemination of adequate data, not only to the Fund but to the public as well” (Boughton, 2012).

16. Throughout 1995, the Executive Board devoted a sizable number of its meetings to discussing the Fund’s policies and practices regarding member country statistics. As regards provision of data to the Fund, the staff called, in the context of the Biennial Review of Surveillance, for a list of eleven core categories of data to be provided by members on a high-frequency basis—monthly where feasible—with a minimum lag (IMF, 1995a, 1995b, and 1995c). The core categories comprised:

- Exchange rates
- International reserves
- The central bank balance sheet
- Reserve or base money
- Broad money
- Interest rates
- Consumer prices
- External trade
- The external current account balance
- The fiscal balance
- GDP/GNP

17. The staff also highlighted the importance for effective surveillance of the regular provision of detailed information on budgetary and balance of payments developments (including exchange market intervention and capital flows), emphasizing that information needs differ from country to country and that therefore data requirements needed to be handled flexibly. Executive Directors readily endorsed the list of eleven core categories and called also for staff reports “to address issues regarding the availability of timely and comprehensive data more directly, bringing issues of coverage, quality, and timeliness of data to the attention of Directors in staff appraisals” (IMF, 1995b). An operational guidance note to staff on the specific assessment of these three issues in Article IV consultations was issued shortly thereafter.

18. The other salient feature regarding data inadequacy in the Mexican crisis—the insufficient information provided to international financial markets—raised concerns about the potential vulnerability it implied for some systemically important financial institutions. Thus, together with improving the flow of information to the Fund in the context of surveillance, provision of data to the public became a main strand of the Executive Board’s

debate. Lack of timely information to financial markets was seen as a factor in triggering the crisis in 1994 and in its subsequent spread to other emerging market economies. The provision of key information in a regular and timely manner was considered to be important for the efficient functioning of markets. Moreover, well-informed markets would enhance policy discipline as they would react swiftly to adverse developments, prompting governments to take corrective action before tensions reached a level that might result in an abrupt loss of market confidence. However, as desirable as increasing the flow of publicly available information would be for market efficiency and discipline, the Articles of Agreement gave the Fund no authority to require members to publish data, and could rely only on their willingness to do so. Thus, the IMF undertook to design standards for publication—as a service to its members—and to invite members voluntarily to subscribe to them.

19. The April 1995 Communiqué of the Interim Committee asked the Executive Board “to work toward the establishment of standards to guide member countries in the provision of data to the public” (IMF, 1995f). During the ensuing Board discussion, Directors agreed that the scope of the standards to be established should extend over four dimensions:

- Coverage and periodicity: publication of an agreed set of statistics—those most useful for analysis and policy purposes—with a specified frequency.
- Access: ensuring the unimpeded access by the public to the official statistics.
- Integrity: establishing confidence in the objectivity and professionalism of the compilers of statistics.
- Quality: including in the standards some monitorable features that could allow some general assessment of the quality of statistics.³

20. Data provision to the public was especially important for emerging market countries that sought capital from international financial markets. These countries could benefit from some kind of certification that they were observing international standards of data provision. Thus, while work continued on developing a set of guidelines applicable to all member countries—which were to become the **General Data Dissemination System (GDSS)**—a more demanding standard, the **Special Data Dissemination Standard (SDDS)**, was defined for countries that already had, or were seeking, access to international capital markets.

³ Given the difficulty of defining and judging quality, emphasis was placed on the ability to monitor. The initial proposal in this regard included two proxies for quality: (i) publication of documentation of the methodology and sources used in preparing the statistics (the metadata), and (ii) publication of the breakdown of series that are aggregates. See IMF (1995h).

21. Formulation of the SDDS involved a lengthy and extensive debate about the exact definition of the four dimensions of the proposed standard and the degree of flexibility that could be provided in each of them. In particular, in regard to coverage, it was agreed that the standards would comprise two broad classes of data: (i) a prescribed set that would include the core categories required for surveillance augmented by some additional important categories,⁴ and (ii) an encouraged set of desirable but not always available types of data. Flexibility to adapt to particular country circumstances was provided by allowing some selectivity in regard to the components of the prescribed categories, with some components allowed to be reported on an “as relevant” basis. Countries that subscribe to the SDDS undertake to disseminate the basic set of data covered by the standard within an established periodicity and on a timely basis, i.e., as close as possible to the end of the reference period.

22. To give operational significance to the standard, the Fund set up an electronic bulletin board—the Dissemination of Standards Bulletin Board (DSBB). This displays information about the availability of the data provided by each subscriber, the calendar for their release, and explanations as to how the statistics are produced in each country (the “metadata”). It was expected that countries subscribing to the SDDS would establish hyperlinks from the DSBB to their own national data pages. The responsibility for the accuracy of the metadata and of the statistics themselves rested with the member countries.

23. The DSBB was intended to play a central role in monitoring the subscribing countries’ observance of the standard. Observance of the SDDS relied essentially on the documentation provided by each subscriber and on the monitoring by the public that used these data, allowing the Fund to maintain an arm’s length stance in this regard: “Directors emphasized that the Fund should avoid making direct public assessments of data quality. This caution was raised to avoid the implication that, by establishing the standard and its infrastructure and by maintaining the DSBB, the Fund was certifying good practice with respect to quality and other characteristics of the data” (IMF, 1996). The quality of the data provided to the Fund was to be monitored in the course of Article IV consultations. If it were found that a country was no longer observing the standard, the Fund would signal this fact by removing the country’s metadata from the DSBB.

24. The Executive Board approved the establishment of the SDDS in April 1996. Meanwhile, consultations with member countries on the less demanding GDDS continued, and this initiative was eventually approved in December 1997. The general system represented a goal toward which the Fund was to work with all its members, through technical assistance, training and regular staff work. Its objective was to help developing and emerging market countries first to improve data quality, and then proceed to strengthen their dissemination of macroeconomic and demographic data. Joining the system did not require a country to meet specified standards but committed it to cooperating with the Fund to improve

⁴ The resulting coverage structure encompassed 17 prescribed categories grouped around the four traditional sectors (real, fiscal, financial, and external) of Fund surveillance.

the production and dissemination of statistical data. In subsequent practice, the GDDS met with varying success: most of the targeted member countries adopted GDDS—with some of them even being able to progress to the SDDS—and there were some significant improvements in the comprehensiveness and quality of their statistical systems, but quality problems by and large continued while data dissemination remained weak (Alexander and others, 2008).

IV. 1997: THE ASIAN CRISIS

25. The initiatives to strengthen data provision and dissemination that were launched in the wake of the Mexican crisis were still in their early stages of implementation when a new crisis exposed fresh spots of weakness on the data front and forced the Fund to re-examine the adequacy of its statistical apparatus. This time the crisis affected primarily Southeast Asia.

26. The financial crisis that embroiled the economies of Southeast Asia in the second half of 1997 came as a surprise to many. These economies had been among the most successful emerging market economies and had hitherto been held up as a model to others given their generally prudent fiscal policies and high saving rates. Nevertheless, a sudden deterioration in sentiment by foreign and domestic investors triggered a crisis that rapidly engulfed several of them. The March 1998 *WEO* attributed their sudden collapse in part to some external factors—principally among them the underestimation of risks by international investors—but mainly to domestic factors. The latter included overheating pressures, pegged exchange rate regimes (which offered an implicit guarantee of exchange value, encouraged external borrowing, and created a one-way bet for speculative inflows), lax supervision and enforcement of prudential rules in the financial system, relationship and government-directed lending practices that had weakened the banks' lending portfolios, and "...problems of data availability and lack of transparency, which hindered market participants from maintaining a realistic view of economic fundamentals, and at the same time added to uncertainty..." (IMF, 1998a).

27. In a meeting of the Executive Board to examine IMF surveillance in the run-up to the Asian crisis, Directors indicated that in some cases "...the Fund had been taken by surprise, owing in part to the lack of access to requisite information" (IMF, 1998b). Moreover, "...the Asian crisis revealed the critical importance of certain data that had not been available, either because the authorities had been reluctant to provide them—such as reserve-related liabilities of the central bank—or because systems did not exist to produce the data in a timely manner—such as private short-term debt. The crisis had also demonstrated that adequate provision of data to the public is important in the promotion of transparency and strengthening market confidence. Directors emphasized that further efforts are needed to strengthen members' data provision to the IMF and the public, including through the Special Data Dissemination Standard." As this quote shows, the data inadequacies behind the Asian

crisis that lay at the core of the Directors' concerns pertained again to two familiar areas: international reserves and external debt.

28. The issue in Thailand—the country where the crisis first appeared—was that the IMF and the international financial markets had not been able to obtain a clear picture of the true situation regarding international reserves. The onset of the crisis showed that they had been relying on misleading information. The exchange rate had been under pressure for quite some time before the crisis, but the authorities had refused to heed the Fund's advice to modify the exchange rate band and had hoped to ride out the speculative attacks by depleting their foreign exchange reserves. This they increasingly did "...by engaging in forward swaps of foreign currencies for baht rather than through outright purchases of baht, which left the reported stock of reserves intact. Because the Bank of Thailand (like many other central banks) did not publish those forward transactions—or even divulge them to the IMF—this practice effectively disguised the extent of the real loss...Without knowledge of the sharp and ongoing drop in net reserves, Fund officials...[had]... concluded that the crisis had passed" (Boughton, 2012).

29. As regards external debt, the problem was centered largely on short-term foreign currency borrowing. The borrowers varied from country to country—corporations in Korea, real estate finance companies in Thailand, banks in Indonesia—but in all cases these were private sector entities that, relying on an implicit (or assumed) guarantee from the government, had borrowed short term in foreign currency and invested long term in the domestic market. This made large segments of the economy extremely vulnerable to adverse shifts in market sentiment or a sizable depreciation of the home currency.

30. The suddenness and virulence of the crisis provoked a wide ranging debate at the Fund and in the international community that, beyond the failings of information, extended to broad topics such as the effectiveness of Fund surveillance, the need to strengthen the analysis of developments in the financial sector, and the relative merits of capital account liberalization versus selective capital controls. On the specific subject of statistical information, the debate focused on three interrelated areas: data availability in general, data provision to the Fund, and strengthening the SDDS.

31. The main deficiencies in regard to overall data availability were, naturally under the circumstances, identified as affecting international reserves and external debt. There was clearly a need to clarify the concepts of reserve assets, reserve-related liabilities, and the treatment of financial derivative activities in the context of international reserves. This led to an effort to develop guidelines that would facilitate the compilation of standardized reserve-related data. This effort, however, met with understandable reluctance from country authorities to disclose information that they regarded as sensitive. In particular, authorities sought to preserve the confidentiality of their foreign exchange market intervention, were concerned that publication of weekly—and thus more volatile—reserves data would

destabilize exchange markets, and opposed the dissemination of detailed data on the currency composition of their holdings.

32. In the end, agreement was reached in March 1999 on a **data template on international reserves and foreign currency liquidity** that was incorporated as a prescribed component into the SDDS. The foreign currency liquidity position is a wider concept than just international reserves in that it covers also the central government and refers to readily usable foreign exchange resources, including actual and potential short-term drains. Thus, the template covers official reserve assets, other foreign currency assets held by the monetary authorities and the central government, short-term foreign currency obligations, and potential drains on reserves (such as derivative positions or external debt guarantees extended by the government). Dissemination of the template's data was to be on a monthly basis, with a lag of no more than one month (the lag on reserve assets was still prescribed to be just one week, while dissemination of the full template on a weekly basis was encouraged). Reporting along the lines of the SDDS reserves template, with its monthly periodicity and timeliness, was established as a benchmark for the entire IMF membership.⁵

33. The reserves template made an important contribution to increased transparency in reserve management and to more prudent reserve management practices. This said, problems remained, nonetheless, that detracted from its general usefulness. Principal among them were insufficient coverage of the largest reserves holders, the treatment of special (sovereign wealth) funds, and the need for more detailed and more frequent reporting on the currency composition of reserves.

34. With regard to external debt, the efforts were directed towards obtaining more comprehensive and timely data, particularly from the private sector and at the shorter end of the maturity spectrum. A separate data category for external debt was established in the SDDS, prescribing the dissemination of quarterly external debt statistics within one quarter of the reference period. This category was to cover the stock of debt of the general government, the monetary authorities, the banking system, and other sectors. Dissemination of data on debt service obligations and the domestic/foreign currency breakdown of the debt was encouraged. Compilation and dissemination of debt data was seen as a first step towards developing data on the entire International Investment Position (IIP)—an aim of the SDDS from the outset, but one that involved many complexities and imposed heavy resource demands on national statistical authorities.

35. It was recognized that to compile data on short-term debt, let alone the other components of the IIP, would require substantial efforts by member countries. Thus, the Fund increased its emphasis on technical assistance to strengthen countries' ability to provide such data. The effort to improve external debt statistics also buttressed the need for

⁵ "In view of the diversity of circumstances facing individual members, the benchmarks would serve as points of reference rather than absolute standards" (IMF, 2000).

collaboration with other international agencies that maintained partial databases in this area, such as the World Bank and the BIS. Aiming to strike a balance between the benefits of better and timelier data and the additional resource costs to the public, national authorities, and the Fund, a transition period was provided to allow subscribers time to build up their capacity to meet the data coverage, periodicity, and timeliness requirements of the new or expanded data categories.

36. Together with spawning initiatives to strengthen data provision and dissemination, the Asian crisis gave renewed impetus to a wider discussion on the reform of the international financial architecture. A principal element of this new financial architecture was the establishment of the **Financial Sector Assessment Program (FSAP)** in 1999, a joint effort of the World Bank and the IMF aimed at identifying development needs of the financial systems of member countries and facilitating early detection of financial sector vulnerabilities, with the latter a very data-intensive exercise.

37. In this general context, it became increasingly clear during discussions in 1998–99 that promulgating internationally valid standards was not enough: efforts were also needed to make sure the standards were observed. The IMF was, therefore, asked to assess countries' observance of international standards in its areas of competence, including in economic and financial statistics. These assessments gave rise to the **Reports on the Observance of Standards and Codes (ROSCs)**, whose publication was intended to increase transparency and expose countries to the exercise of market discipline. The ROSCs included a description of country practice and a commentary by Fund staff on the extent to which these practices conformed to the relevant standards.

38. Always present in the discussions on data provision and dissemination was a concern with safeguarding the quality and integrity of these data. The SDDS gave guidance and a common format for the dissemination of data, including the metadata on compilation methodologies and sources, but the standard relied exclusively on self-declaration by subscribers and feedback from the eventual users of the data. In this regard, “a set of standards that does not deal with the quality of statistics is empty, and it may even be harmful because it may encourage the publication of questionable data for the sake of getting recognition for observance of the standards” (IMF, 1995g). At the same time, the Fund's efforts to strengthen quality assurances were tempered by the desire to keep the responsibility for the compilation of statistics at the national authorities' doorstep and also not to be put in the position of providing a certificate of quality for the data. Executive Directors took the view that “...self-assessments...have a useful role to play, as these would promote ownership of the assessments. In general, Directors thought self-assessments should be followed by external evaluations to bring the perspective of independent assessors to the process” (IMF, 2001).

39. Out of these concerns, in 2001 came the development of the Data Quality Assessment Framework (DQAF), which provides a structure for assessing the extent to which countries

meet the prerequisites of data quality—such as the independence of, and adequacy of financing for, the compiling agency—and follow international best practices in regard to the standards espoused by the SDDS, i.e., integrity, methodological soundness, accuracy and reliability, serviceability, and accessibility. For each of these standards the DQAF would indicate whether the standard is observed, largely observed or not observed, with an appropriate comment.

40. All along, doubts continued to be expressed about the adequacy of the data included in staff reports and about the coverage of the information that countries were required to provide to the IMF (see, for example, IMF, 2002, 2004, 2005). The doubts led to frequent requests during 2000–08 to add to the assessments of data adequacy for surveillance (required since 1995) an assessment that was based on the DQAF (whenever a data ROSC had been made available) and to strengthen the staff’s use of the Balance Sheet Approach, reserves adequacy indicators, debt sustainability analyses, and financial soundness indicators.

41. Finally, public pressure during and after the Asian crisis helped to revolutionize the Fund’s approach to disclosure of country information. The Fund introduced its **transparency policy** in the late 1990s. This eventually evolved into the publication of most country reports, opening up a major avenue of additional dissemination of data, in particular, the Fund’s “operational” data (i.e., the data upon which the Board bases its decisions).

V. 2007: THE GLOBAL FINANCIAL CRISIS

42. The global financial crisis can be traced to 2007 when a downturn in the U.S. housing market spread to affect major banks and financial institutions of industrial countries. By 2008, the global financial system was in imminent danger of collapse and economic activity was declining sharply across most of the advanced economies. The crisis stemmed mainly from the accumulation of macroeconomic and financial imbalances among and inside the major economies, accompanied by dangerous increases in financial leverage and risks aided and abetted by financial innovations that escaped the eye of the regulator (IEO, 2011).

43. In contrast to earlier crises, inadequacies of statistical information were not among the causes for failing to detect the impending crisis. Indeed, with hindsight it became clear that a substantial amount of data existed that pointed to increasing overheating and growing vulnerabilities in several key areas. The crisis occurred more from ignoring these warning signals than from the absence of them. As indicated in the subsequent evaluation by the Independent Evaluation Office of the IMF: “Lack of data and information, while a problem, was not a core reason behind the IMF’s performance. First, much available data were ignored or misinterpreted (e.g., credit growth, leverage, the growth of high-risk instruments, and household balance sheets)... Second, the lack of data did not prevent the IMF from praising the state of some financial systems nor the risk-diversification features of securitization. Moreover, the relative paucity of data in some emerging markets did not prevent the IMF from raising the alarm in these countries. Finally, advanced country surveillance teams

typically received the information that they requested, and in any case it is unclear how they would have used additional data on individual financial institutions given their prevailing conceptual framework on macro-financial linkages” (IEO, 2011).

44. The above notwithstanding, the crisis revealed a number of areas where statistical information was either insufficient or lacking. According to a report prepared for the G-20 Finance Ministers and Central Bank Governors: “While the financial crisis was not the result of a lack of proper economic and financial statistics, it exposed a significant lack of information as well as data gaps on key financial sector vulnerabilities relevant for financial stability analysis” (IMF Staff and Financial Stability Board Secretariat, 2009). Better information would have strengthened the existing warning signals and, at the very least, would have facilitated the design and implementation of the policy and regulatory measures put in place in the aftermath of the crisis.

45. The G-20 thus asked the IMF and the Financial Stability Board (FSB) “to explore gaps and provide appropriate proposals for strengthening data collection....” This request gave rise to the **G-20 Data Gaps Initiative (DGI)**. In general terms, the gaps that were detected in the available statistical information fell into three main interrelated areas:

- *The buildup of risk in the financial sector.* Despite the increased use of a growing number of Financial Soundness Indicators (FSIs), these failed to give a proper sense of the degree and location of leverage and risk taking (liquidity, credit and tail risks) within the system, particularly in the lightly regulated or unregulated areas that constitute the “shadow banking system.”
- *Cross-border financial linkages.* The rapid growth of large financial institutions with a global reach had given rise to a network of financial links and exposures that was not captured by the information available to domestic regulators or policymakers.
- *Vulnerabilities to shocks arising from the domestic economies.* In particular, there were weaknesses in regard to monitoring the behavior and exposures of domestic economic agents vis-à-vis vulnerabilities embedded in the stock or flow positions of the government, financial, corporate and household sectors; their exposure to developments in particular sectors, such as the real estate market; and the linkages between the financial and real sectors within an economy.

46. The DGI aimed at filling gaps in the existing store of statistics and at improving the timely provision of statistics that are internally consistent and comparable across countries. This was to help identify risks and support evidence-based policy decisions at the national and international levels. To this end, 20 recommendations were formulated, which were endorsed by the International Monetary and Financial Committee as well as the Finance Ministers and Central Bank Governors of the G-20.

47. Work on the DGI was underpinned by consultation with national authorities and, crucially, was undertaken in a concerted way by the main international agencies with responsibilities in the area of statistics. The strong collaboration and coordination among these agencies gave rise to the formation of the Inter-Agency Group on Economic and Financial Statistics (IAG),⁶ which has evolved into a permanent and valuable forum in which statistical issues can be addressed.

48. The IMF, together with the FSB, took a leading role in the work of the DGI and assumed responsibility for addressing several of the DGI recommendations. The recommendations under the Fund's direct responsibility were directed to fill gaps in the three core areas of weakness brought to light by the crisis—i.e., financial sector soundness, cross-border financial linkages, and vulnerabilities to domestic shocks—and also those aimed to improve the timeliness of the dissemination of official statistics.

49. The Fund assumed specific responsibility for promoting the dissemination of FSIs by all G-20 countries and for developing and encouraging the implementation of standard measures in areas such as tail risks, variations in distribution of—and concentration in—economic activity, and leverage or maturity mismatches in the financial system. In addition, the IMF sought the participation of the G-20 countries in the portfolio investment survey and reporting of their IIP, and promoted the dissemination of timely and comparable government finance data.

50. Through their participation in the IAG, Fund staff was heavily involved in promoting the compilation and dissemination of sectoral balance sheets and real estate price indices, and in establishing a centralized system of global and timely data provision, the Principal Global Indicators, which brings together the IAG's data for the G-20 economies (plus five other economies).

51. Beyond these core areas in need of improvement, the crisis also exposed fundamental weaknesses in integrating financial sector linkages into the macroeconomic models used for policy making, and highlighted the need for timely compilation, and especially dissemination, of statistics that, crucially during the crisis, had shown to become available with a time lag that negated their usefulness.

52. Close to home, the IMF launched new initiatives over 2010–12 to strengthen data provision for surveillance and further to enhance the SDDS (IMF, 2010). The **provision of data for surveillance** was strengthened through:

⁶ Members of the IAG are the Bank for International Settlements, the European Central Bank, Eurostat, the IMF (chair), the Organization for Economic Co-operation and Development, the United Nations, and the World Bank.

- Intensified efforts to increase the number of reporting countries in each of the required categories of statistics, particularly in regard to the IIP, foreign exchange reserves, and FSIs.
- Improved guidance on measuring and reporting statistics through technical assistance and the publication of new or updated manuals on balance of payments, monetary/financial and government statistics.
- The IIP was made part of the standard tables of economic indicators in Article IV consultation reports and the relevance of IIP data was enhanced through two coordinated surveys, on Direct Investment and Portfolio Investment, respectively.
- A drive to get more countries to report the currency composition of their foreign exchange reserves.
- Paying increased attention to labor market indicators in the context of surveillance.

53. Also in 2010, the Executive Board approved **enhancements to the SDDS**. These included among others the requirement that SDDS metadata comply with internationally accepted statistical methodologies (and describe deviations from them); the incorporation of several new data categories into the SDDS, viz., the quarterly IIP on a prescribed basis and FSIs, sectoral balance sheets, general government gross debt, and data on external debt by remaining maturity on an encouraged basis. In addition, the metadata and reporting formats under the GDDS were more closely aligned with those of the SDDS, with an increased emphasis on the dissemination of actual data in addition to just the metadata. An effort was also made to have the National Summary Data Pages, both in GDDS and SDDS, provide hyperlinks to longer and more detailed time series.

54. The principal modification in the SDDS area was the establishment of the **SDDS Plus**, a special, more rigorous, data category aimed at the Global Systemically Important Financial Institutions (IMF, 2012a). The establishment of the SDDS Plus was closely linked to and benefited from the IMF's participation in the G-20 DGI. The SDDS Plus received final approval in 2012 as a higher tier of the data standards framework. More than focusing on access to capital markets as is the case in the SDDS, the SDDS Plus is geared toward countries that already have systemically important financial sectors, i.e., countries that play a leading role in international capital markets and have institutions that are interconnected across borders. Thus, the SDDS Plus focuses on stronger data dissemination by a narrower

but systemically important group of countries.⁷ The SDDS Plus includes all SDDS prescribed data categories and nine additional categories that also are prescribed, these are:⁸

- Sectoral balance sheets, i.e., financial assets and liabilities of the main sectors in the economy.
- General government operations.
- General government gross debt, classified by debt instrument, currency denomination, and residence of the creditor.
- Other financial corporations survey.
- FSIs, a cluster of six indicators on the financial sector plus one related to real estate.
- Debt securities, data on the stock of securities by issuer and by holder.
- Coordinated Portfolio Investment survey, a semiannual survey of the stock of cross-border holdings of securities, classified by residence of the issuer.
- Coordinated Direct Investment survey, an annual survey of inward direct investment.
- Currency composition of foreign exchange reserves.

55. The global financial crisis had also uncovered fiscal fragilities in a number of advanced countries that came as a surprise to most observers. This drew attention to the importance of improving the quality and amount of the information on the fiscal situation across the international community. At the IMF, this prompted a reassessment of the Fiscal Transparency ROSC.

56. In particular, incomplete or inaccurate information about the government's underlying fiscal position played a prominent role in first triggering and then magnifying the crisis in the euro area, "...the crisis revealed that, even among advanced economies, governments' understanding of their current fiscal position was inadequate, as shown by the emergence of previously unrecorded deficits and debts" (IMF, 2012b). The lack of timely and reliable data on government deficits and debt and on the hidden or implicit obligations to public entities (not part of the general government) eroded market confidence in several of the affected countries.

⁷ All SDDS subscribers can adhere to the SDDS Plus and will be encouraged to do so (IMF, 2012a, p. 25).

⁸ These new categories were established after extensive consultation with stakeholders and transition plans for up to four of them through end-2017 were allowed.

57. Most of these weaknesses had been neither detected nor properly assessed either by IMF surveillance or by fiscal ROSCs in the countries where the latter had been conducted. In any case, by the time the crisis broke out, the annual number of fiscal ROSCs had already dropped significantly—as was also the case of data ROSCs—while the experience with these fiscal ROSCs had revealed a number of shortcomings, in particular, their focus on the process of assembling the fiscal data rather than on the quality of these data, their inability to convey a sense of the relative seriousness of the deficiencies they identified or to propose a clear and prioritized path of reform from current to best practices.

58. The revamped Fiscal Transparency Code (FTC) focuses on output rather than process, prioritizes goals, seeks to establish a clear path towards these goals by identifying intermediate steps and their sequencing, and stresses the analysis and management of fiscal risks (IMF, 2014). The FTC is organized around four pillars, the first of which is on **fiscal reporting**, replacing and improving upon what the data ROSC had been doing in the fiscal area.

59. The fiscal reporting pillar is the one bringing improvements to statistics. In this regard, the Fiscal Transparency Evaluations (FTEs), based on the new code, provide a quantified analysis of the comprehensiveness and quality of fiscal data. This may include measures of the coverage of fiscal reports, the frequency and timeliness of the reported statistics, their quality, and their integrity. The FTEs seek to differentiate the relative macro-critical importance of different fiscal transparency practices, moving away from the fiscal ROSCs, which assigned equal weight to all elements of the code.

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