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Some Principles for Development of Statistics for a Gulf Cooperation Council Currency Union

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Gulf Cooperation Council Currency Union**

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Abstract

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> those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are
> published to elicit comments and to further debate.

Looking ahead to the creation of a Gulf Cooperation Council (GCC) Currency Union in
2010, the paper covers some implications for the statistical programs of the GCC countries.
Despite uncertainty over the structure of the proposed union, the paper envisions several
types of mutually reinforcing statistics—convergence criteria, statistics on the core policy
variables and instruments, additional macroeconomic data, specialized statistics related to the
economic and institutional conditions within the union, and public information. Major
changes to national statistical programs are needed that should begin soon.

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I. INTRODUCTION[1]

The creation of a currency union among member countries of the Gulf Cooperation Council[2] (GCC) is scheduled for 2010. Looking ahead, this paper discusses some of the implications for the statistical programs of the GCC countries. It provides an overview of the main statistical needs and some methodological issues that countries may face in implementing a new single currency area. While the primary focus of the paper is on the principles of monetary statistics development, the paper also discusses a broader set of general economic statistics needed to convey information for executing monetary policy.

Drawing from the experience of the European Economic and Monetary Union (EMU),[3] the paper stresses that the principles must be applied flexibly to reflect the unique conditions and still uncertain structure of the union intended for the Gulf region. Experience with the GCC Currency Union will differ from past experiences, but a clear knowledge of the past should provide an overview of what can be done and also pave the way for possible improvements, no matter how successful the past experience.

Generally, once the currency union is in place, a new entity will exist: **the union as a whole**. In statistical terms, this means that alongside reliable and comparable statistics of the individual countries, statistics for the union as a whole will be needed.[4] Compilers will produce the union data mostly via aggregation and, when needed, consolidation of the

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[1] Ettore Kovarich was Principal of the Monetary Statistics Compilation Section at the European Central Bank (ECB) from 1997 to 2000, in charge of the publication of EMU monetary aggregates. He was seconded to the EMI/ECB from Eurostat, where he had worked on monetary union convergence criteria for the fiscal sector. Russell Krueger is Senior Economist in the Financial Institutions II Division of the IMF Statistics Department. From 1996 to 2000, he liaised as an IMF staff with the EMI/ECB during the period of the development of the EMU statistical system. The authors would like to acknowledge the expert assistance of Colleen Cardillo, Claudia Dziobek, Rene Fievet, Joan Gibson, Cornelius Gorter, Rajan Govil, Artak Harutyunyan, Robert Heath, Patrick Njoroge, Cathy Pattillo, David Robinson, Armida San Jose, Michel Stubbe, and Bent Thage for reviewing this paper. This paper grew out of a presentation made in January 2005 by one of the authors to Qatar government officials about some of the implications of the creation of a currency union.

[2] The GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

[3] The authoritative study of the development of statistics for the EMU is *The Development of Statistics for Economic and Monetary Union*, 2004, by Peter Bull, former Director of the ECB Statistics Directorate. Our paper draws heavily from that source, but we attempt to selectively pull away from the European experience to highlight principles that may have more general applicability. We illustrate that future monetary unions could have very different structures and policy frameworks than were found in Europe.

[4] We emphasize the importance of parallel construction of good statistical systems for the union and in each of the union members. Good-quality statistical systems need to exist within each member country to meet a continuing demand for national statistics and to contribute to the union statistical program. Union-level oversight of national statistical systems might be called for to ensure that the overall quality is not imperiled by poor-quality data from some union members.

national data. This implies that the national data should be designed or fine-tuned to allow such operations. Statistics should also be available in a timely manner, implying a further effort at coordination between the national compilers. In addition, a need for longer historical series will emerge with respect to the union, back to periods when it did not yet exist. Consequently, the available national statistics will provide the only source for developing historical series for the union.

Importantly, the statistics for the union will comprise the public face of the union itself. The public face can directly affect the confidence that the international community will have in the prospects of the union and also affect innumerable on-the-ground economic decisions about whether to invest in the GCC countries and to use the GCC currency.

The following sections of the paper provide background on the GCC Currency Union, discuss experiences in preparatory statistical work of the EMU, list principles for developing statistics for a currency union, elaborate on what statistics to prepare, and draw conclusions.

II. BACKGROUND ON THE GULF COOPERATION COUNCIL CURRENCY UNION

The GCC, established in 1981, seeks to build economic and social ties among the six GCC member countries—Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. The countries share many cultural, political, and economic ties.

In December 2001, at a GCC summit in Muscat, the member countries signed an agreeent for an economic union, with the intent of establishing a common market and a monetary and economic union. The agreement also moved forward the date for a customs union for the GCC to January 2003, so that it would coincide with the start-up of the World Trade Agreement. The customs union would take the step of applying a common customs tariff of 5 percent on all goods from outside the GCC, with the exception of some goods previously exempted from tariffs. The customs union was intended to increase intra-GCC trade in goods and services, and attract foreign investors. Moreover, the application of a common visa program, permitting GCC citizens to readily travel between GCC countries, supported the impetus for an economic union.

All these steps together were viewed as merging the GCC states into a more homogeneous entity that would have increased stature in dealing with other economic groupings. A broad program of economic integration is envisioned, in which a currency union is embedded as one of many important structural innovations. A reason for such a broad approach is to deal with several envisioned broad structural economic transformations and promotion of economic diversification, including deepening of the financial sector.[5]

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[5] For a good discussion of possible future structural transformations, see Sturm, M. and N. Siegfried (2005) which describes a fairly centralized supranational structure for the monetary union and other integration initiatives because "the economic viability of the GCC's project to introduce a single currency crucially hinges on the degree of economic integration among its members"...for which..."it is desirable to eliminate in the GCC, insofar as possible, non-monetary obstacles to integration" (p. 23).

The agreement called for establishment of a GCC Currency Union with a single currency. It instructed the Commission of Governors of Monetary Institutions and Central Banks to adopt the U.S. dollar as a common basis for GCC currencies by year-end 2002. It also directed the Financial and Economic Cooperation Committee to agree by year-end 2005 on the measures of economic performance needed for the monetary union. A single currency would be created on January 1, 2010.

In late 2004, the IMF Managing Director, Rodrigo de Rato, endorsed the GCC effort, citing the need for the GCC countries to use the creation of the union to cut dependence on volatile petroleum revenues and to address a growing challenge of unemployment. He said, "the road to monetary union will require intensified efforts to ensure political consensus on critical economic issues and development of relevant convergence criteria, common data standards, and development of relevant institutions." He said that "increased regional integration culminating in an efficient monetary union will also help the region's economic prospects."[6]

In January 2005, a committee of GCC central bank governors met in Kuwait to advance work on identifying convergence factors and other matters related to the currency union. Although the committee did not release an official statement, it reportedly made progress on selecting indicators to be used as convergence criteria—statistical tests that countries must meet to be eligible to join the union. It is believed that the major criteria cover inflation, debt, and reserves, and possibly the European Union standard stating that public debt must not exceed 60 percent of GDP. On the other hand, no public information is available on whether agreement has been reached on the structure of the currency union, including whether it will be partial or comprehensive.

The committee of central bank governors is making preparations for the currency union. Further, a high-level technical committee from central banks and finance ministries is handling specific aspects of preparation for the union, as well as the research on technical issues that arise. Formed in 2004, the technical committee is headed on a rotating basis by the governor of the state that holds the GCC presidency for that year. Subgroups dealing with specific aspects of the union, such as policy or clearing operations, have been established as well.

The structure and role of the union remain unsettled as of the date of this paper's preparation. For example, a study prepared for the Gulf Research Center in Dubai argued that the new GCC currency could take a prominent role. In addition to its role in enhancing the GCC economies, the currency could take an important international role—possibly undoing the linkages of the GCC currencies to the U.S. dollar, serving as the currency for invoicing of petroleum products, acting as an Islamic currency, and serving as a reserve currency capable of generating significant seigniorage income.

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[6] See IMF (2004).

III. PREPARATORY STATISTICAL WORK—EXPERIENCES OF THE EUROPEAN MONETARY UNION

This section briefly reviews some of the key elements of the statistical preparations for the European Monetary Union. This overview may help provide a sense of some complexities or challenges that countries may face, how they have overcome them, and how they organized the structure and distributed responsibilities in an ambitious currency union. Section IV attempts to draw some principles from this experience and describe how countries might apply them in the GCC context.

The Europeans had a comprehensive approach—described in Bull (2004)—going back to the early 1980s. It involved not only a range of committees and numerous consultations with statistics users and national statistical officials but also interaction between the future compilers at the European Monetary Institute (EMI—the predecessor to the ECB)[7] and at the Commission (Eurostat). The result of the early committee work was broad agreement on many—but not all—aspects of the union. During the early statistical work, many policy and institutional aspects of the shape of the union were unknown. However, a key aspect affecting the early work was an expectation that statistics needed for policy at the union level would parallel those already used by the national policy officials.

In 1992, the Committee of Governors of the Central Banks of the Member States of the European Economic Community established the Working Group on Statistics (WGS), composed of the heads of statistics functions of the central banks. This working group was supported by a small group of statisticians—mainly seconded from central banks and based at the Bank for International Settlements in Basel, Switzerland. The WGS began putting into effect the statistical programs, based on the options for the strategy of the future single monetary policy of the union. The strategy was defined by the policy arm of the EMI and would ultimately be decided by the ECB when it would take up its duties.

Key committees and groups, established to set up the union statistical operations, included the following:

- The Committee on Monetary, Financial, and Balance of Payments Statistics was created by the European Council in 1991 to help set the direction of statistical programs, especially regarding the allocation of responsibilities between national central banks and national statistical offices. Its oversight responsibilities continued throughout the period when statistics were under development.

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[7] The EMI/ECB itself was not permitted to compile statistics until just before the inauguration of the monetary union.

- Eurostat, the EU-wide official statistics office in Luxembourg, produces a wide range of statistics needed to support the currency union.[8] It operates under the umbrella of the European Commission. Prior to the WGS, Eurostat collected data from national authorities and produced monetary and interest rate statistics, balance of payments statistics, and financial account statistics. These tasks ultimately were transferred to the ECB, and discussions were held on the boundary of responsibilities between the agencies. The modalities for ongoing cooperation in producing statistics were also discussed.

- The Statistics Division at the EMI later became the Statistics Directorate of the ECB.

- The WGS later became the ECB Statistics Committee (STC). Senior statistical officials from each country were involved in overseeing the direction of overall statistical policy. The STC usually met once a quarter.

- For each topical area of statistics, the WGS/STC established a working group of technical officials—in monetary, balance of payments, general statistics, and information technology. They would develop statistical practices and rules that were subject to review and approval by the STC. Each working group had a secretary at the EMI, who maintained frequent communications with each country. Meeting as often as six to eight times a year, the working groups would also call ad hoc meetings when needed.

- In addition, the working groups would create ad hoc task forces as needed to address specific issues. Membership was voluntary and usually included about four to six people with key expertise from statistical departments in the member states. The task forces were asked to investigate issues and arrive at solutions quickly.

The EMI/ECB and national statistical authorities followed a decentralized approach, applying a doctrine called **"subsidiarity."** In this doctrine, activities are handled by independently operating national authorities to the extent possible. Reliance on national central banks to collect the basic information was believed to speed data collection, reduce reporting burdens, and make best use of existing infrastructures. A corollary in Europe was the fashioning of a **"layered approach"** to statistics. In this approach, the national central banks would collect a common set of statistics in their countries based on the statistical

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[8] Eurostat handled GDP, price indices, and fiscal statistics needed to compile the "convergence criteria" for each country. This compilation determined which EU countries were eligible to join the currency union. Eurostat also compiles a very broad range of macroeconomic statistics used in support of the EMU. It also has joint responsibility with the ECB for producing balance of payments statistics for the euro area.

practices appropriate for that economy. They would then transmit the data up a layer to the ECB for aggregation and consolidation into union-wide statistics.[9]

The layered approach to compilation of statistics obviously required convergence to common statistical standards, producing data that could be transmitted rapidly in a common format to the central statistical office. Much of the EMU statistical program was explicitly fashioned on the standards of the European System of Accounts, which is based on the statistical System of National Accounts. The linkage of the EMU standards to the national accounts allowed for construction of many currency union statistics from preexisting systems. It also facilitated the comparison of the union-related data with the set of macroeconomic statistics maintained by each country, which helps evaluate the performance of the monetary policies.[10]

IV. PRINCIPLES FOR STATISTICS FOR A CURRENCY UNION

This section presents an overview of key principles that authorities might consider in developing statistical programs for a GCC Currency Union. The principles are not intended to lay out a specific path for GCC statistical programs. The statistical paths that will be followed are affected by where each country starts and where the union wants to end up. Unknowns will be faced, and decisions will be made along the way that will affect the overall result.

In particular, there is the possibility that in the Gulf a relatively loose, more consensual approach to creating the union may be preferred, which would contrast sharply with the EMU model. In creating the union, the principles mentioned below can be considered, but they should be accepted or rejected as appropriate to each union's particular situation and goals. The EMU arrangements differ from those in the other currency unions in Africa and the Caribbean, and the GCC Currency Union will certainly have unique features that will affect its statistical requirements.

The key idea—the operation of a currency union requires that there exists single common monetary policy and that the policy officials have reliable, current information about the common policy and the policy instruments used to operate the union. Exactly what the policy will be is largely a political decision. But whatever the chosen policy, it cannot succeed without information about the condition of the union and the policy instruments available. The role of statistics is to provide the information needed to permit the successful operation

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[9] Centralizing statistics compilation applies both to monetary statistics, which are typically compiled by central banks, and to general macroeconomic statistics, which are used for analyzing general economic conditions of the union. The latter statistics may be collected by institutions outside the central bank, such as Eurostat.

[10] In contrast, the statistical foundations of the African and Caribbean currency unions are based on application of common financial accounting standards for banks operating throughout their unions, which permits easy aggregation of the data.

of the union.[11] Statistics are also the public face of the union, providing the information that the union members and the world at large need to judge the success of the union.

The statistics of the member countries must be added (aggregated) and consolidated to provide a unified picture of economic activity and the operations of the common monetary policy. Although a currency union is comprised of many countries, its policy is carried out union-wide. Thus, it is necessary that statisticians construct some statistics as if the union were a single country. This principle has many implications for the statistics programs of the union and its member countries. An important corollary is that it will be necessary to introduce a new statistical requirement to distinguish between positions with other member countries of the union and countries outside the union.[12]

A common set of statistical standards is needed to be able to aggregate and consolidate data, which must be applied by all member countries.

It must be decided whether statistical programs will be centralized or decentralized. The centralized approach is followed by the currency unions in Africa and the Caribbean—the union central banks operate throughout the region, and the national agencies are branch offices of the central bank. In this situation, effectively one organization performs the official compilation of statistics. In contrast, Europe, as mentioned above, followed a decentralized approach, under the **subsidiarity** doctrine.

Laws or other regulations may need to specify key matters central to the production of the core statistics of the union. Laws may also need to specify those matters in which it is important that application be fully consistent across the union to achieve acceptable results. Further, it is possible that regulatory activities might be directly tied to statistics, which means that statistical standards begin to carry the force of law.[13] Linked to that, an effective system of sanctions (fines) can help dissuade reporting agents from not complying with the reporting requirements. The GCC may decide to implement compulsory reserve requirements as part of the monetary policy instruments and procedure of the GCC Currency Union. In this event, synergies would result between the reporting requirements for minimum reserve purposes and statistical purposes. The result could imply significant savings of reporting burden and gains in data quality.

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[11] In this respect, it would be useful that the monetary policy decision makers have power to define and implement statistical requirements independently. This does not rule out the need for good cooperation with other authorities involved in statistical work.

[12] In Europe, this meant that banks needed to compile separate data on their asset and liability positions vis-à-vis residents of other monetary union member states (MUMS) and all other nonresidents (non-MUMS). This was a challenging task.

[13] In the EMU, this situation occurred because of a decision to (1) base the application of required reserves on the same group of institutions that comprise the statistical money-creating sector, and (2) base actual required reserves of individual institutions on their statistical information on deposits from residents of the union.

National statistical activities are likely to be constrained by the application of the common methodology, institutional structures of the union, or legal requirements. A need will continue for good-quality national level statistics, but the nature of the statistics might change because of the membership of the country in the union. For example, the meaning of monetary aggregates or reserve assets at the country level will change. In addition, many methodological changes will be introduced to monetary, balance of payments, and other statistics, to be able to produce harmonized union-level statistics.

A structure and procedures must be set up to establish rules and coordinate the actions of the union and national statistical compilers. Regardless of the specific form the arrangements take, it is important that the rights and obligations of each party involved be clearly specified and that the components function smoothly as individual entities and as part of the larger framework.

The use of "convergence criteria" for membership requires early comparisons of GDP, fiscal, inflation, and interest rate data. Convergence criteria are general indicators of overall economic performance used to establish whether a country can enter the union. Convergence criteria require that high quality nonfinancial and financial statistics that apply a well-defined common methodology be available prior to the start-up of the union. In this way, countries can make valid comparisons that do not prejudice the entry prospects of any country. However, it is also possible to apply these indicators not has hurdles for entry, but as "convergence benchmarks" that are general guidelines for countries to achieve prior to membership or for monitoring countries' performance once in the union.

The needs of users should be surveyed and the feasibility of meeting those needs must be conveyed back to users. This is necessary to efficiently develop the needed statistics within the given resource constraints and to help users understand the prioritization that must be undertaken. This was an important part of the process in Europe, and provided some specific guidance to the statisticians as early as 1992 on the directions for the development of statistical programs.

Review of the existing situations and practical implementation experiences is needed to ensure the consistency of the results. The EMI sent many surveys to the member countries to ask about the existing conditions, feasibility of proposals, and experiences in applying statistical standards. Working groups reviewed the surveys and discussed the results. Based on this process, the authorities made many ad hoc decisions on how to proceed. Monitoring of implementation became a continuous activity, and several formal implementation reports were prepared that set out the status of work and the gaps that needed priority attention.

Flexibility and a focus on the essentials are needed because some key decisions will not be made until late in the process. Statistical programs may need to be developed before the final shape of the union is known. For example, in Europe, at the time the statistical work began, the eventual membership of the EMU and the policy instruments were unknown. Flexibility was important, and statistical options were prepared that might not be used. Also, some

political decisions may come quite late in the process, requiring very quick statistical adjustments.[14]

Flexibility will also be needed to deal with statistical practicality. Some information might not be available on a timely basis or be available at all due to resource constraints. In Europe, one technique to deal with this was to distinguish between statistics compiled under a "short-term approach" versus "steady-state statistics." The short-term approach used largely existing unharmonized data across countries to give a rough idea of conditions needed to carry out policy. Over time, a steady-state approach was introduced to produce harmonized statistics based on careful research on what should be done. Under the steady-state approach, countries are required to introduce changes to their statistical systems, if needed.[15] Another aspect regarding flexibility is that as the work proceeds statistical issues or problems will be uncovered that will need to be addressed.

Statistics will require more resources and should have a high priority. There is a clear danger that the resources allocated to union statistics will not be sufficient to address the demands for more output and better quality and more timely statistics. Although some reprioritization may take place between the production of statistics for the home economy and for union purposes, authorities cannot assume that the resources needed for national statistics will diminish and become available for production of union statistics. [16]

Data must be collected and transmitted to a central statistical operation and statistics prepared quickly in order to be useful for policy. That is, data providers must collect the information quickly and accurately, and statistical compilers must complete their work in a timely fashion. Data timeliness plays an important role because a statistical picture of the union is not available until the last reporting agent has fulfilled its requirements. This fact will put pressure on data providers and statistical offices, who must operate on fixed schedules.

An early view on the money issuing sector is needed by defining the universe of monetary institutions early in the process so that statisticians may begin work with them. Statisticians should work early with banks and other money issuers to make them aware of statistical

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[14] For example, authorities decided on allocation of seigniorage in the EMU after the inauguration of the union, which required changes in the accounting for issuance of currency by the national central banks.

[15] Some observers feel that a general shortage of resources in the national statistical offices led to a higher priority placed on the initial work of monetary statistics, while much work that was needed to improve other statistics was left aside. Observers feel these statistics continue to lag the monetary statistics and are not what they should be.

[16] Sturm and Siegfried (2005) suggest that significant staffing will be needed at the supranational level to move the process forward and that "simply entrusting staff working for national authorities with these tasks and trying to foster cooperation in committees and working groups may not be sufficient to ensure that the necessary supranational perspective is given due consideration" (p. 55).

needs when they are adopting accounting systems or creating databases. This undertaking can greatly facilitate the ultimate process of collecting data needed for compiling statistics.

Statistics must be communicated between central banks, national statistics offices, and the central statistical operation based on a common messaging format or data exchange protocol. The EMU addressed this need by creating a new, highly flexible electronic data exchange system, known as GESMES/CB, which national central banks were required to use to communicate with the ECB. For this purpose, technicians also developed a standard data-coding system, being used throughout Europe.

Expect analysts and the public to request historical time series for newly developed series. This enhances the usefulness of newly developed data. However, the historical time series can be quite difficult to compile, and innovative methods will often be required.

Dry runs should be undertaken prior to the start of the union in which all relevant data should be supplied and attempts made to compile the consolidated union statistics. These dry runs will test procedures and provide policy officials with a first look at the uuion-wide data.

The messages coming from the union and national sources must be coordinated. They will need to develop procedures to determine who can release information and when. The statistics coming from national authorities may need to be compiled in special ways to ensure consistency with the information from the union.

It is likely that the provision of data to the IMF for surveillance, publication, and other purposes will change. A "gateway" approach might be used such as developed for the EMU data, under which in a voluntary arrangement the ECB sends the IMF monetary data for all the EMU countries. This procedure guarantees that the data are timely and that the data used at the IMF are fully consistent with the data used for policy in the EMU. It also reduces reporting burdens for national authorities. Following the creation of the union, an euro area page was introduced in the IMF's *International Financial Statistics* covering monetary, reserves, and other statistics for the union as a whole. It was subsequently followed by pages for the Central African Economic and Monetary Union, West African Economic Monetary Union, and Eastern Caribbean Currency Union.

Expansion of the union is a possibility. Whatever holds the countries together hopefully is a glue that can be used flexibly in the future if other countries seek to join, and not a shell that excludes others. Each expansion of the union creates new challenges for statisticians who must help new members' statistical programs catch up with existing members. The statisticians should also be able to construct historical time series based on the expanded union membership. In Europe, this was the case of Greece, which joined the EMU two years after the start of the union.

Many of the above points about the role of statistics in the GCC Currency Union have been summarized in the study by Sturm and Siegfried (2005):

An absolutely crucial issue for GCC convergence criteria is the quality of the statistical data on which the monitoring and assessment of the criteria are based. First, data for all indicators used must be available in a timely manner. Second, the data need to be sufficiently reliable...Third, data must be comparable between member states, as otherwise no meaningful conclusions can be drawn...and comparisons may even be misleading. The European experience shows that even in countries with a generally sound data basis, a major effort is needed to meet the statistical requirements for monetary union, in particular regarding data comparability" (p. 53).[17]

*The crucial message of the principles above is that **statistical preparations for a currency union must start early.*** Statistical preparations for the EMU at Eurostat and the EMI began six to seven years before the start of the union. It took that long to establish standards, set up the central operations, and introduce new standards and program changes at the national level. Even so, just prior to the launch of the EMU, statistical operations were very hectic, and some things could not get done. The unambiguous message is that the statistics work must start early, long before the public notices and long before some key decisions are made that will affect the ultimate shape of the union. And as reinforced by Sturm and Siegfried (2005), "steps toward the harmonization of concepts and the preparation of appropriate aggregation and consolidation methods have to be taken in good time prior to the start of Monetary Union. Their implementation in all prospective participating countries has to start sufficiently far in advance, as it generally involves a significant lead time" (p. 68).

V.   WHAT STATISTICS MUST BE PREPARED?

Statisticians may distinguish among several types of statistics relevant for unions: convergence criteria that serve as tests before countries can join or to monitor countries' continuing macroeconomic performance; the core set of statistics to operate the union; statistics on external aspects of a currency union; a broad set of macroeconomic and market statistics to evaluate general conditions and monetary policy and assess its effectiveness; statistics disseminated to inform the public and serve as the public face of the union; and specialized statistics related to the economic and institutional conditions within the union.

A.   Convergence Criteria

"Convergence criteria" are general indicators of overall economic performance based on GDP, fiscal, inflation, exchange rate, interest rate, or similar macroeconomic data that are used to establish whether a country can enter a union. Alternatively, the indicators can be used not has hurdles for entry, but as "convergence benchmarks" that are general guidelines for monitoring countries' performance either prior to membership or while they are in the union. In either case, the indicators will require prior to the start-up of the union high-quality nonfinancial and financial statistics constructed according to a well-defined common

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[17] They add, "The current state of data availability, reliability, and comparability in the GCC suggest that further effort is needed in GCC countries to meet the statistical requirements for a meaningful assessment of convergence criteria—in particular in the fiscal area—and the operation of a monetary union" (p. 53).

methodology. In this way, countries can make valid comparisons that do not prejudice the entry prospects of any country, or which can be used for regular monitoring of whether a country is converging with the common economic targets.

Convergence criteria are used to ensure that the macroeconomic performance of each member is reasonably close to the performance of other countries so that major imbalances are not introduced into the union to the detriment of overall monetary policy, or to prevent asymmetries between countries in reactions to economic shocks or to application of the common monetary policies. Ideally, indicators should be available on a quarterly basis with good timeliness so that authorities can obtain current feedback on how effectively their policies are bringing the economy in line with the convergence criteria.

Where the criteria will be decisive in granting approval to join an union, the criteria should have legal status and an independent authority recognized by all candidate countries (typically the union statistical office or the union central bank) should be charged with the task of assessing the consistency of the methodology used and the resulting figures.[18] Even if a prior assessment is not called for, the countries will need a set of main macroeconomic indicators to monitor the evolution of the union as a whole and provide an effective communication tool. Because the convergence criteria chosen will continue to provide the main macroeconomic statistics for the new union, the criteria should therefore monitor the individual economies as well as the union as a whole. They should at the same time satisfy the statistical reporting requirements subscribed within existing agreements with international bodies like the IMF, in terms of methodology adopted, coverage, and timeliness.

As noted above, convergence criteria for the GCC Currency Union are under development, which from some reports roughtly appear to correspond to the EMU criteria.[19] However, there has been some thought in the region that an inflation criterion may not be needed

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[18] In the process leading to the EMU, this role was given to Eurostat.

[19] The criteria that were used in the EMU were as follows:

The level of inflation: measured via the consumer price index. Within the GCC, a common index should be developed to accurately represent inflation in all candidate countries and in the entire Union.

The level of interest rates: short- and long-term rates on government securities or other sets of securities chosen to be comparable and descriptive of the interest rates prevailing in all countries. The methodology developed should consider from the start the subsequent need to monitor single-currency-area interest rates.

The stock of government debt: in absolute value and as a percentage of GDP, which should be also calculated in a comparable way by all countries.

The evolution of public spending: in this case, one should be able to distinguish real transactions from simple changes in value, an issue that proved particularly tricky in the European case and led to long technical discussion and even political quarrels.

because the driving forces for inflation are likely to be very similar throughout the GCC.[20] Also, the absence of long-term borrowing by GCC governments may make that measure unnecessary.

Sturm and Siegfried (2005) suggest that the convergence criteria for the GCC will have a different role than in Europe. That is, the criteria will not be used for acceptance into the union but will help ensure the already high level of convergence in the monetary field while inducing greater convergence in fiscal situations. They state that "for a meaningful monitoring and assessment of convergence criteria, and later on for the conduct of an area-wide monetary and exchange rate policy, the quality, availability, and comparability of statistical data for the GCC member states needs to be ensured" (p. 6). The quality and comparability of the statistics of the member states will be significantly strengthened if the underlying financial accounting standards for banks and the nonfinancial sectors are improved, made more detailed, and made more transparent. This will become more important with the growth and maturing of the GCC financial markets.

B. The Core Currency Union Statistics

The core set could vary depending on the specific policy framework that will be adopted in the GCC Currency Union. For example, if the preservation of domestic price stability is selected as a prime goal of the union, as in the EMU, then price indices are required. In other unions, this indicator might only be useful information, not a key element of policy.[21] And the possibility exists that the GCC union will take a comprehensive, full information view of its policy role that will create specific mandates for collecting a broad range of data to inform the policy discussion in numerous individual areas.[22]

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[20] However, some observers have concluded that inflation has varied across the GCC countries significantly in recent years.

[21] Other information that might be required to operate a union could be fiscal statistics or information on capital adequacy of banks.

[22] Examples of demands for comprehensive data collection and analysis for policy purposes can be found in numerous articles in the *ECB Monthly Bulletin* during the first few years of the euro area. For example, "The Two Pillars of the ECB's Monetary Policy Strategy" (November 2000) describes the second pillar as analysis of a wide range of economic and financial indicators to broadly assess risks to price stability and to help provide a medium-term forward-looking perspective to deal with the time-lags in transmission of monetary policy. Other studies described the ECB policy perspectives—monetary aggregates and price stability, short-term economic indicators for assessment of price developments, the institutional framework of the European System of Central Banks, external accounts of the euro area, euro area international reserves, monetary presentation of the euro area balance of payments, international use of the euro, GDP growth and output gap, monetary policy under uncertainty about the state of the economy and structural changes due to creation of the union, and the information content of interest rates for monetary policy, among others. These analyses employed extensive information to bolster the quality of the research and policy discussion. Also, the collection and dissemination of a range of data used for policy analysis helped to ensure transparency over policy decisions and build public confidence in the soundness of the policy process.

Monetary statistics are one of the "core" statistical datasets needed to run a currency union. Monetary statistics are derived from the banking systems, which offer timely and accurate data. Challenging tasks may be to harmonize the data collected by the national banking systems, define the coverage of financial institutions, collect the level of detailed information needed, and implement a uniform timeliness for all reporting agents.

Banks' balance sheets include most of the information needed to assess the evolution of liquid, and less liquid, assets within the union. If national data are comparable and provide the needed breakdowns in terms of instruments and counterparts, data compilers can aggregate and consolidate them at the union level to provide a reliable measure of money.

Once established with a homogeneous reporting population, a common methodological framework, harmonized reporting requirements, and agreed reporting timeliness, the union will have a sound base of monetary statistics, allowing economic and monetary analysis for the purposes of the single monetary policy. The final step would be to introduce the consolidation procedures to allow the production of union statistics and the calculation of union monetary aggregates.

In this respect, another challenging methodological aspect is to derive flows from changes in the reported stocks. Reported balance sheet data are end-period stocks. For the purposes of economic analysis, statisticians need to derive flow data, netting out all changes in volume from the effects of nontransactions, such as revaluations, devaluations, or loan write-offs.

The most relevant outputs of the monetary statistics datasets will be as follows:

- *Consolidated balance sheet for the central bank and commercial banks*. The balance sheet can be used to calculate the monetary aggregates of the union.

- *Clearing system statistics.* A currency union will have a unified method to clear interbank transactions and cross-border transactions in policy securities. The ECB, for example, collects statistics on the TARGET clearing system.[23]

- *Policy interest rates and transactions in securities and deposits used for policy.*

- *Required bank reserves.*

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[23] TARGET stands for **T**rans-European **A**utomated **R**eal-time **G**ross Settlement **E**xpress **T**ransfer system, which is a real-time gross settlement (RTGS) system for the euro, operated by the Eurosystem. It is used for the settlement of central bank operations, large-value euro interbank transfers, and other euro payments. Within the statistical balance sheets of union central banks or other clearing organizations, it will matter considerably whether clearing positions are presented on a gross bilateral basis between the member countries, or on a net multilateral basis: a specific decision will be needed on whether to use gross or net treatment of clearing balances in the GCC Currency Union statistics. Special operations were needed to prevent the grossing up of intra-EU central bank positions as a result of TARGET clearing operations.

- *Currency issuance and retirement and movements of currency and negotiable instruments included in the money stock between union members*. Currency issuance and retirement statistics might be used for the important purpose of allocating seigniorage income and allocating the expenses of retiring used currency.

C. Statistics on the External Aspects of a Currency Union

A currency union necessarily involves creation of a single currency, for which international reserves and exchange rate policies must be developed. Thus, the union will need statistics on the following:

- *The exchange rate* (market, nominal, and effective).

- *The international reserves of the union.* The IMF's *Data Template on International Reserves and Foreign Currency Liquidity* (Kester, 2001) is an internationally accepted framework that probably should be adopted. The nature of international reserves for members of a currency union changes, because claims formerly in currencies of other union members will no longer be part of reserve assets and because the union might exercise some control over the assets held in individual countries.

- *Balance of payments and international investment position.* The transactions and positions between union members must be netted out in the consolidation process, which requires that statisticians apply a common classification system to the external statistics of each country and reconcile bilateral discrepancies in the external accounts.[24]

D. Statistics on the Macroeconomy and the Effectiveness of Policy

Analysts need a wide range of macroeconomic and financial market statistics to carry out policy analysis or to evaluate the effectiveness of monetary policy. In Europe, interest has steadily increased in a very wide range of macroeconomic statistics to support the ECB's policy analysis, resulting in many new demands on member country authorities for statistics. These have included the following:

- *Financial accounts*—In Europe, a major program was established to compile the Monetary Union Financial Accounts.

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[24] A significant issue in the compilation of the international investment position will be the different nature of the international reserves funds of the GCC members. Dealing with those differences and with the interrelations with the fiscal accounts may provide difficult statistical challenges.

- *Asset prices*—Real estate[25], equities, and debt securities.

- *Financial market statistics*—The ECB has a comprehensive database of securities markets and interest rates.

- *GDP and its components*.

- *Fiscal accounts*—Government debt and deficit are monitored annually as a condition for membership in the euro area.

- *Holdings of euro instruments outside the euro area*.

E. Statistics for Dissemination to the Public

The public and financial market participants will demand a wide range of statistics on the union and its member countries. Rapid and reliable data dissemination via the Internet will be expected by market participants and by analysts to study the operation of the union. Statisticians will need to make special efforts to ensure that statistics released by the union and by its members are conveying the same message and that the sequencing of release times for statistics does not confuse or mislead statistics users or provide unfair advantages to certain segments of the market. Statisticians can expect strong pressure to produce historical time series.

F. Specialized Statistics

Specialized statistics could support the operations of the union and the analysis of its performance. Some of these would take GCC statisticians into areas of statistics where little previous work has been done:

- *Petroleum and energy statistics*—Statistical work in this area is under way in the context of the IMF's data dissemination initiatives. The work encourages additional metadata (information about statistics sources and methodologies) to promote knowledge of practices in oil and gas statistics. The work also encourages transparency initiatives, such as the Joint Oil Data Initiative and the Extractive Industries Transparency Initiative. There may also be demands for preparation of separate GDP estimates for the petroleum/gas sector and for all other sectors.

- *Workers' transfers and Hawala transfers*—Information on these flows can be important for understanding capital flows as well as domestic investment. The

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[25] Information on real estate prices and the exposures of the financial system to real estate is critically important in understanding trends in the cost of living, asset price movements, and financial system exposures. In some GCC countries, volatile real-estate-related capital flows could become concerns.

channeling of these flows outside standard banking channels creates major statistical problems.

- *Electronic money and transfers*—Innovations in the nature of money could result in important changes in the structure of GCC financial markets. Electronic money could be a major issue affecting monetary control and policy, given the specific timeline for the creation of the GCC Currency Union.

- *Islamic Financial Institutions*—As they grow in importance, their role in the GCC financial system will need to be followed. Significant methodological issues will be involved in attempting to incorporate information on Islamic financial institutions into a standard statistical framework.

- *Financial Soundness Indicators* (FSIs)—Information is needed on the strengths and exposures of the financial systems of GCC members, given the rapid structural changes that are occurring. With the expected high degree of integration within the GCC union, the compilation of regional FSIs might be advantageous. The IMF has an active program in FSIs that can provide guidance to the GCC countries. *The Compilation Guide for Financial Soundness Indicators* (IMF, 2006) provides guidance on the compilation of FSIs and on the analysis of FSIs.

VI. CONCLUSIONS

To conclude, each currency union has a unique structure, reflecting different histories, philosophies, and policies. Possibly, the GCC Currency Union might develop a loose arrangement very different from any other union. But whatever the ultimate specific structure of the union, it will be important for the GCC as a regional organization and for its member countries to put into place reliable and sound statistical programs that can flexibly address the requirements of currency union when they are agreed.[26]

The process will require professionalism and institution-building at the national and union levels. As described by IMF Managing Director Rodrigo de Rato, thought might be given to "creating an institution perhaps along the lines of Eurostat in the European Union [to] provide the GCC countries with high quality statistical information."[27] This will involve initiatives to create a statistical infrastructure specifically suited for compilation of monetary,

[26] As Jean-Claude Trichet, President of the European Central Bank, has recently stated, "Statistics are like the glasses through which policy-makers and all other economic agents view macroeconomic reality. If the glasses are totally reliable, well polished, and easy to handle, we may hardly notice that we are wearing them and we do not realise how vital they are for our clear view of reality. Surely, we only start to complain when the glasses are out of focus and we want to have a new pair when glass-making technology proceeds." "Euro Area statistics and their use for ECB policy-making," Speech by Jean-Claude Trichet delivered at the Second ECB Conference on Statistics, Frankfurt am Main, April 22-23, 2004.

[27] De Rato (2005). See also Dziobek and Al-Mansouri (2006).

reserves, and other statistics needed for a currency union. Initially, such work on the financial statistics needed for creating the union might be done in a separate institution or as part of the Eurostat-like structure. However, ultimately the authority and responsibility for collecting monetary and financial sector statistics for the union will probably need to reside within whatever GCC central banking institution is set up.[28]

The ultimate statistical demands of the union will be large, and substantial lead time will be needed to build the needed institutional and legal infrastructures for statistics and to begin the methodical collection of information and compilation of statistics. This work should begin very soon to support the successful launch of the GCC Currency Union.

An important final note is that the challenging road ahead has been traveled before, and advice and assistance will be available. We have described some of the statistical dimensions, based on our experiences. In describing the tasks ahead, IMF Managing Director de Rato said, "the Fund stands ready to assist by providing policy advice and technical assistance in our areas of competence and expertise, and by sharing with you the experience of other regions." [29]

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[28] The establishment of a GCC statistical institution(s) early in the planning process could make an important contribution to the success of the union by presenting an institutional face for the union as an operating organization.

[29] De Rato (2005).

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