The statistical system and the national income accounts

Gerardo P. Sicat*

1. Introduction

My participation in this session is accidental. There was this seminar that Dr. Dante Canlas gave at the UP School of Economics on his plea for investing more resources on the national income estimates—an idea with which I agree wholeheartedly. Having voiced, then, a few comments on the topic, I have been asked to contribute my thoughts during this session on economic statistics.

The comments that I made in that small seminar were based on an address I made before an audience of professional statisticians in our country. It is opportune, perhaps, that I can address the same issues before the Philippine Economic Society, whose membership includes some of the most discriminating users of national income accounts.

Before doing so, it would be useful to relate a personal incident about economic statistics that is relevant to the topic at hand. This also sets the stage for discussing the efforts undertaken to improve the income accounts in another era. Perhaps posterity deserves some recounting.

2. Looking back

My first truly important brush with economic controversy was related to the national income estimation methodology. Looking back through these long years, I find that it almost coincides with my professional birth as an economist.

In 1963 when I rejoined the UP Economics faculty as a newly arrived Ph.D. from graduate studies abroad, I wrote a paper entitled "On the accuracy of national income accounts" in the maiden issue of a new journal, today one of the progenitors of the *Philippine Review of Economics*[1].

The article called attention to some serious concerns I had about some estimates of the income accounts, especially the estimates of private consumption. The procedure then was to estimate private consumption as a residual. After building up

---

[1]The current journal of the Philippine Economic Society is the result of the merger of the *Philippine Review of Business and Economics*, where my study appeared, and the *Philippine Economic Journal*.

estimates of GNP through the value-added method, the total final demand components were estimated. The income accountants calculated the values of government expenditure and of total investment expenditure as directly as possible. Then, as if by the wave of a magic wand, they derived total consumption expenditure (the component that was almost 80 percent of total GNP) as a residual by deducting from the GNP estimates their estimates of government and investment expenditure.

That article triggered a major temper explosion in the statistical offices where the income accounts were estimated. The director of the Office of Statistical Coordination and Statistics (OSCAS), which was then a major bureau of the National Economic Council, felt slighted by my commentary. He thought of me as a brash young economist who would demean the work of the national income accountants. Soon, I was made to confront the head and other senior statisticians of the National Income branch of that office on orders of the chief of OSCAS, who was breathing down my neck.[2]

In 1970, I became head of the National Economic Council or NEC (for those who were too young then or yet unborn, that was to become half of the future National Economic Development Authority or NEDA after the reorganization of the planning agencies in 1973). Under the old setup, the statistical estimation agencies came under my official supervision, although the NEC was an independent bureau with the special task of improving and managing the country's statistical system. All the statisticians became my colleagues and friends. In fact, I became their boss, their taskmaster. This gave me the great opportunity to put the improvement of national income methodology in my agenda.

My attitude towards the work of statisticians, then as now, is not to direct any criticism on the estimates that they put out. As always, my task was to ask methodological questions about the way those estimates are made. Experts like statisticians take pride in their technical work. Theirs is an independent professional activity of processing information and coming up with estimates. To get them to explain the methods of their estimation puts the discussion on solid professional ground. If there are better methods of arriving at the estimate, then they get the opportunity to explain them. These would surface after a thorough examination of the method of estimation.

This episode in my life taught me at least two important things about economic statistics. The first is never to impugn, or appear to impugn, the credibility of statistical estimates. The credibility of the official statistics provides the stamp of reliability on the information about the economy. If we do not have credible estimates, we would have to exert more effort just to explain how and why we got those estimates. I work on the assumption that government statisticians undertake assiduous efforts in giving us the best estimates that are possible at the moment. That may be a mistaken assumption, but it is nevertheless a good starting point

---

[2]Bernardino Bantegui became very unhappy with me and he sent Pablo Samson, Peregrino Reyes and Elpidio Makanas to the UP to engage me in debate.

for serious dialogue. The producer of the statistical estimate must account for his estimates.

The second important lesson is that one must pay full attention to the improvement of the estimation techniques—to keep on making the best estimates that could be had with the available statistical resources. The estimates that our agencies provide can only gain strong credibility if they are exposed to a system of critical commentary and feedback at the professional level. I think that this is the shadow activity that the statistical agencies should always have in their routines. They ought to be alert to the best possible methods of estimating the income accounts and to come prepared against a severe doubter of their product.

Given this incident, it was not therefore an accident that the work of the national income branch of the OSCAS at NEC was very demanding during the period of my supervision there. On my direct prodding, a conference of the country's national income statisticians brought together many specialists, including economists. We spent two days in Los Baños examining various aspects of the national income estimates, focusing mainly on how the income accountants prepared their estimates. We reviewed suggestions of how these could be improved upon.

At the end of the conference, I asked the national income branch to produce a manual of estimation of the accounts, in which they documented all the methods that they used. The manual was designed as a methodological aid to their annual exercise of estimating the accounts. It was also their training manual for new recruits to their office. It was, above all, intended to make the process of estimating the components of the account transparent to both the estimators as well as the users. Moreover, the manual was also an aid for the statistical workers in their effort to improve on their own methodology and to codify it further when they had occasion to change the method.[3] (I still recall the occasion when Dr. Tito A. Mijares, then the country's chief statistician, and Director Pablo Samson of the National Income unit, presented me with a finished manual of operations sometime in 1972. It was their handiwork, done with pride and with professionalism.)

Today, I do not know if the manual of estimates is still in use. If it is, it must have changed in some aspects, as I expect it would, if only to indicate progress. The last time I asked whether we still have such a manual for current estimators of the income accounts, I did not get a clear answer. I have not gotten a clear answer either as to whether some of the methods have changed drastically or only minimally, if at all. But surely, users can learn much from studying the basis of the estimation procedures for all the items of the income accounts, so they might be able to offer suggestions for improvements if they have any.

By the time I left the government in 1981, some improvements in the estimates had been undertaken. A major effort was the re-basing of all the income accounts to the year 1972. The accounts from the year 1946 to the current period of the mid-

---

[3]It was providential that as I was preparing for this talk, and during a research on some other issues about the 1970s, I came upon this news item published in the *Business Day*, the former name of *BusinessWorld*, the business newspaper. The item was precisely on the efforts of the national

1960s were linked to the later series, thus providing a better framework for looking at the long-term estimates of GDP.

In addition, the semestral income accounts were put out, with the quarterly income accounts becoming simply an exercise in adding two more periods in the periodicity of the estimates. The regional gross product accounts were also estimated. The increase in the range of periodic and regional accounts of the GDP is quite an accomplishment. Many countries do not undertake such detailed accounting of the national economy.

Even as the product range of output of income accounts has enlarged, there is need to pay attention to the internal methodologies of some basic income estimates. More is not necessarily better. A major review is needed. I will come back to this point when I tackle in specific terms some of my observations about the present income accounts and how they might be improved.

3. Current state of the statistical system

I now go to some of the points I presented before the 9th National Convention of Statistics in October last year which are relevant in the present context. I commented then on a World Bank paper on the challenges imposed by globalization on national statistical systems.[4]

My comments led me to a description of the extensive base of the primary data sources and the increased number of surveys and special studies on statistics and on statistical resources. In particular, the focus was a commentary on the quality and quantity of our statistical outputs.

---

income statisticians during this period to improve the national income accounts, and they were the result of the introspections of the statisticians on the methodologies of their estimates. It depicted their efforts to reconcile long periods of time in which income estimates had been made. Up to that time, the effort to deal with inter-temporal improvements of the income accounts had not been addressed directly. I summarize this news report below:

Major revisions of the national income data from 1946 to 1972 were undertaken in three stages covering all sectoral and sub-sectoral components of the income accounts. Stage 1 covered the estimates during calendar years 1967-1972 which had already been released then. By reconciling sources and various methodologies that competed with their approach, they arrived at a full set of time series that were therefore comparable in methodology. Stage 2 covered the period 1960-1966. The results were intended first for their internal use (at that time) prior to final release. Again, these revisions were based on the new methodological improvements that they undertook for the 1967-72 series. According to the report, these were still being used mainly for internal use of the staff and were still incomplete, but they were based on the sources of data and methodology that were consistent with the new series. The re-basing of the income accounts was attuned to the year 1967. Stage 3 of the report was to link the long-term data from 1946 to 1959 with the 1960-1972 data. The news report also made an announcement that quarterly regional accounts and reports on regional domestic product accounts were being prepared as standard offerings in the future. ("National income: NEDA revises data," *Business Day*, November 23, 1973.)

4Shaida Badie, Misha Belkindas, O. Dupriez, N. Fantom, H. Lee, "Developing Countries' Statistical Challenges in the Global Economy," 9th National Convention on Statistics (NCS), EDSA Shangri-La Hotel, October 4, 2004.

3.1 Primary data production and collection

The Philippine statistical system produces an extensive set of primary data. The main producers of data are the operational agencies of the government. This is a consequence of the reporting and regulatory functions that they exercise over economic enterprises and citizens in the country. The extensiveness of data generated derives from the strength of our decentralized system of data collection. It also speaks of the relative level of development of the statistical gathering in many of these offices.

But the system is far from perfect. Incremental improvements are happening but most of us know where the central weaknesses of the system are located. The production sectors, especially in agriculture and in the services, are probably the weakest link in the data system. But industrial data are not too far off from the fragile nature of primary numbers because they are subject to the fluctuations of the market.

Foreign trade statistics have a greater level of accuracy than these other sectors even with the existence of smuggling. The computerization of data entry has helped speed up data processing. Monitoring domestic trade and production data occurs under less auspicious circumstances, in part because these are as difficult to track as agricultural data.

The efficiency of data-gathering activities critically depends on the skills of grassroots data collectors and evaluators. That activity, however, is influenced by major administrative policy changes that affect these individuals. For instance, I understand that agricultural production data and other social statistics were affected seriously during the immediate period when the Local Autonomy Act of 1991 required the devolution of many functions from the national departments to local and provincial offices.

Data from the corporate sector of the economy should be easier to track down, but the computerization process of some major data producers has not moved fast enough. For instance, we have yet to fully maximize the benefits of computerizing company information from the Securities and Exchange Commission (SEC). Indeed, this is in spite of the fact that it has been some three decades now since a private publication started tracking the largest corporations of the country, apparently by arrangement with the SEC.

Price data are well-tracked and up-to-date. Data on government expenditure, taxation, financial transactions, banking and payments are generally accurate and relatively easily produced. With improving computerization, the speed with which these data are produced is an indication of the strength of the statistical system.

A consequence of this easier access to numerous data is the quickness with which the government is now able to provide information on the state of the financial system, the debt level, debt service issues, and on the quality of the assets of the

banking system. The quality of the data on regulated industries depends on the competence and integrity of the regulators. In short, to obtain estimates that reflect the true state of affairs of regulated companies, these companies have to account for the data that they prepare and submit for review to the regulators.

Incidentally, these are very important elements in providing the key statistics that are needed by open economies. These are the foundations of the early warning systems that economic experts seek in the evaluation of economic performance and future prospects.

For example, the current debate on the state of fiscal deficit and the state of the Philippine economy is the result of the availability of more information about various aspects of debt, taxes, and public expenditure. Because of the data that could be accessed by analysts, it is possible to bring the debate to a level of clarity that will generate fruitful discussions.

3.2 Censuses and surveys

The statistical system is able to produce censuses and surveys with regularity and relative timeliness. These activities represent the structural foundation of a statistical information system. As it were, the primary data that the statistical system collects provide the muscle mass on this structural foundation. We will continue to do more of the same in the future.

The number of surveys periodically undertaken reflects the long experience that the system has had in this field. Surveys of household income and expenditure, and surveys of manufacturing establishments have been carried out since the 1950s. During these times, surveys of construction activities were also carried out.

The big leap in effort was undertaken during the mid-1950s when the statistical system was reorganized and strengthened. The spate of technical assistance resources was a boon to the system. Periodic reorganizations have also led to survey and censuses being undertaken more fully.

Population censuses are undertaken with sufficient frequency. This was part of the regular functions of the census bureau even before the country's independence. In those days, comprehensive population censuses had intricate economic censuses integrated with them, which are less common nowadays. Instead, economic censuses are now sectoral in nature such as the Census of Philippine Business and Industry and, as a result, tend to be confined to sector issues. Annual surveys of business are built around the censuses.

The censuses and surveys are very important in the production of benchmarks and sector blow-up ratios that are common in the estimates of national income aggregates. The timeliness of these censuses and surveys is geared to our need to generate data for required statistical series. But these are also significant in producing byproducts useful for generating parameters on other aspects of the economy.

This brings me to certain questions, for which I cannot yet provide answers owing to the lack of current knowledge and familiarity with what has been happening in the statistical system. Have we used the surveys and censuses to the fullest extent to improve a number of important statistical accounts? The big question is: Do we need all the surveys that come with regularity? Are there critical surveys that need to be done but are not being done? In short, are we putting our scarce resources to their best use by producing the right surveys? Should there be more critical studies and surveys in areas where we need further information?

3.3 Estimation of the economic and income accounts

One part of the statistical system is dedicated to the production of aggregative accounts that are critical to the understanding of the functioning of the economy. Before these accounts can be estimated, other important indexes need to be available. These are, among others, consumer and wholesale price indexes, physical volume of production indexes, and trade quantum and price indexes.

Some of these indexes are very sensitive in terms of composition. The reason is that major shocks, both internal and external, affect the items in the index.

Take the case of the industrial index. Because of economic liberalization, the outputs of many highly protected industries have been seriously affected as they faced competition from new suppliers and even other enterprises. The indexes may fail to catch up with these new enterprises. In recent years, many new productive enterprises have located in special economic zones where export is a major activity. In addition, many enterprises have undergone internal restructuring, and surviving enterprises need to be tracked down so that the indexes can be purged of the firms that have gone down the drain.

When was the last time that these indexes were re-based? The base year of these indexes is 1985, which is one generation ago. Twenty years is a long time to let pass before changing the base year of critical indexes in an economy.

Most analysts would feel uncomfortable about using indexes that are keyed to a distant past. It is no easy task for any analyst to undertake one's own re-basing of existing series just to update data. But one would be tempted to do this, as I have done on numerous occasions recently.

This is not right. There is no substitute to having the statisticians of the statistical system undertake the re-basing of these indexes. To do this right, the data generated from censuses, surveys and primary data collected by the system become extremely helpful. One of the functions of the statistical system is to use the appropriate methodology to improve the statistical series.

After getting the price and quantum indexes re-based, the next issue is the matter of the estimation of the major income and output accounts. Of course, there are other important accounts that are valued for their importance in particular types

of economic studies, such as input-output accounts, flow of funds accounts, food balance sheets, and other types of accounts.

We are ahead of many countries in the region in the production of income and product accounts and in the range of statistical products. Not only do we have the extensive yearly accounts, we also have estimates of the quarterly income accounts. The regional product accounts are also undertaken. The quarterly accounts that are geared to the yearly estimates, and the variations in output, are mainly linked to the production indexes and to the price indexes. The regional accounts are also like the quarterly accounts. The estimates reconcile with the level of the yearly estimates on a national scale.

The most important of these series is the yearly accounts. They are the mother of all estimates. Generally, the subsidiary accounts are only an elaboration of the short-run data. In fact, the quarterly and the regional income accounts are mainly exercises in the movements of principal economic indexes over quarters and at regional levels of aggregation. We need to invest greater attention on the methodology of estimating the components of the income and product accounts.

4. Concluding remarks

We are unique in the ASEAN region for having estimates of varied sets of income and product accounts that have a quarterly cut as well as a geographic component. Although these varied offerings of estimates pose interesting challenges to the estimation of the income accounts, the greater challenge today rests in the improvement of the yearly measures of national income estimates.

I am sure that the national income experts have a better idea of where improvements need to be undertaken. I have a few suggestions.

The estimation of income, needs to be broken down into its different components. For many years, wage, interest, and other property incomes have been lumped together. We never get to distinguish for instance the personal incomes from the other property incomes. Providing estimates of these components would substantially improve the analysis of income distribution.

Another candidate for elucidation is the corporate income accounts. Our economy has been moving towards greater complexity and certainly, the corporate sector of the economy has grown. It would be useful to get more disaggregated estimates on these data.

But the most important estimates that require attention are those on the components of investment in the economy. This has a lot of interesting elements, among them investments in machinery and equipment, estimation of housing and construction, and investments in agriculture. Along with this is the estimate of changes in stocks, or inventory change.

An effort directed at these components of income and product accounts is not a trivial technical undertaking. It requires the investment of scarce technical expertise on issues that are directly aimed at improving major components of the accounts.

Improving the estimates of these components would be a major task for the technical resources of the system. As it is, our statisticians have their hands full in dealing with the expanding menu of data offerings. There are just too many demands to work on other statistical series. If we were to examine how their time is used, we would find that they are occupied with other statistical work.

There are other demands on the statistical system by various parties and project donors that compete for the precious time of statisticians. For instance, there is the thrust to further refine poverty indexes and quality of life indexes. Also, the demand for undertaking studies of environmental accounts has opened up. Although these are important, they represent a major trade-off from doing the job that represents the mandate of the statistical system. The infusion of new resources to finance these types of demands and other types of problems has crowded out the mainline quality-improving efforts that help to raise the quality of the income and product estimates.