Statistical measurement, standards and definitional issues: towards data convergence?

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1. Introduction

The state of economic statistics in a specific country is informed by a complex mix of factors. Both the quality and scope, in particular, can vary considerably not only globally but also amongst countries within a specific region. Access to administrative data, overall skills and institutional capacity, financial resources, and level of economic development are some, amongst a host of other factors, that explain why we have statistical infrastructure and systems that may have evolved very differently from country to country. What this implies, in essence, is that our assessment of the economic performance of one country against another is complicated by very little knowledge of whether standards of measurement are comparable.

In view of a high variance in cross country measurement capability, this paper looks at how countries can improve their attempts to provide a basis for comparison of their economic data through a variety of initiatives. The note has in mind a region like the South African Development Community (SADC) and raises a number of statistical issues if countries within such a region were to integrate in whatever way this may be defined.

2. The challenge of within country inconsistencies

Government statistical offices face a variety of difficulties when it comes to assessing the consistency of data sets. Often, they find that one of their official numbers is contradicted by another. There are several areas where these contradictions are particularly visible. For example, in the area of employment statistics where one set is estimated from households while the other from businesses. Although they more or less measure the same thing, they often give out contradictory signals. This has been the case in South Africa recently with the introduction of a quarterly labour force survey and its comparison to the enterprise quarterly survey.

Other possible areas are typically within the domain of national accounts where GDP, estimated from the production side gives different signals to the expenditure side. Once again, these come about because surveys focusing on the supply side may vary in quality from surveys on the demand side.

These inconsistencies raise an important question. If one statistical agency faces these consistencies with its own data within its own national borders, what does this mean when comparing indicators across countries? This concern has particular relevance if we are to embark on any policy initiative such as trade or monetary integration.

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[1] DDG Economic Statistics; Statistics South Africa. This is by no means an exhuasitve piece of research. It is at best some notes for discussion purposes.

3. Cross country comparisons

Cross country comparisons of economic data play an important role in a variety of ways. In particular, they provide tools to help in development assistance, evaluation of policy and its impact on the economy and last but not least, the readiness of countries to integrate. Naturally, depending on the issues at hand, data needs vary. For economic integration, flows in goods, services would be of critical importance. This short note, however, looks at some basic macroeconomic data for the purpose of highlighting a few challenges relating to standards definition and transparency. The most central indicator is the measurement of national income or GDP.

What is an area that may be much harder to come to grips with is the extent to which the measure of GDP, for example, in both level and change is comparable in one country relative to another. An alternative way of asking the question is the following. If we were to put under the spotlight, the GDP of South Africa and Zambia, for example, what would say the latter's GDP look like to its current numbers if we transposed South Africa's resources, expertise, statistical infrastructure and collection methods? A very difficult question to answer, but several initiatives can be put in place to begin to appreciate the strengths and weaknesses of country specific data. More will be said about this later.

Similarly, inflation and the system of price statistics underlying its measurement is another important area of concern. Methods differ from country to country and despite the existence of international manuals and guidelines, the extent to which countries rely on these manuals is purely resource dependent. If one country re-weights its inflation basket every three years and introduces quality adjustments, while another has a ten year re-weighting frequency and no quality adjustment, how comparable would their inflation rates be? Once again, we will never know unless we embark on systematic inter-country experiments which maybe very costly and time consuming.

The important point to emphasize is that cross country comparisons are used everyday to make judgements about the behaviour of one economy relative to another. The extent to which these numbers are based on comparable methods and sources, for good reason, is rarely given thought by economists. Statisticians have an important role to play in devising ways of providing ground rules to compare one number against a similar one in another country or countries.

4. Peer review and transparency

The importance of international statistical methods, as developed by a variety of international agencies plays a critical role in providing some confidence in comparative numbers. But despite this there is a long way to go in putting our faith in cross country comparisons of economic and social data.

Any indicators that would be central to assessing the readiness of convergence ought to be subject to scrutiny through an important peer review process. Countries need to invest resources in ensuring that methods and sources are developed and potential differences can be factored in if these exist.

The value of peer review is best demonstrated in the current international prices comparison (ICP) project conducted by the World Bank and other regional institutions. The ICP is the international exercise that answers the question whether country A is more or less expensive than country B at the exchange rates that prevailed in the year of reference. It does so by comparing exchange rate converted prices to an arbitrarily chosen standard – traditionally the US dollar but not necessarily so – and determining whether these are higher

or lower than the prices that would have prevailed if the exchange rate left the consumer indifferent as to where he should make the purchase.

The comparisons are made for about a thousand carefully defined goods and services and in order to preserve sense in the comparisons countries are first compared to their neighbours; sub regions are compared to neighbouring sub regions and in the last instance world regions are compared to each other using a carefully developed set of methods. From this, important indicators such as GDP and GDP per capita, expenditure and other variables provide the basis for cross country comparisons.

In order to provide good estimates of real consumption in the economy, ICPs are constructed on the basis of two important data sets – prices statistics and national accounts which in turn rely on a variety of data sets. The problem is that price statistics are not always collected monthly in all countries, while expenditure weights are not always available. Weighting frequency of expenditure weights differs from country to country. But frequency of data is only one side of the problem. As mentioned, countries are differently endowed with resources and priorities which mean that an investment made in indicator in one country will be different to that of another.

While the ICP project is should not be our main concern, it provides an interesting example of how countries in one region can begin to benefit from working collectively on a common framework. While the preliminary results of the ICP are out showing for example, how per capita income of South Africa differs from that of Egypt in official exchange rate terms compared to purchasing power parity terms, there is more scope to interrogate country specific estimates.

What this implies is that we need more transparency in how countries collect prices, what assumptions are made and so on to get a real sense of the cost of living in these countries. Moreover, we need a sense of how reliable expenditure weights are in different countries to get a real sense of whether price and weights truly reflect conditions in the respective countries concerned. In general, more transparency in methodology is a sine qua non for the success of ICPs, coupled with strong leadership by regional bodies. Without this it may be difficult to have faith in this kind of initiative.

For it to work we need critical reflection amongst countries and to find a way of forcing people to show what they have done. Hence an important ingredient of success is a culture of peer review, promoting transparency in methods and mutual trusts so that countries are confident of each others results.

A culture of contestation and peer review of detailed practices go to the heart of the basis of comparability. This is no substitute for a framework for common definitions. However, definitional considerations and dissemination are central to this process.

An all encompassing indicator like the GDP provides another interesting example of the problems of comparison. It is well know that the framework that informs the GDP is the system of national accounts. The most updated version is the 2008 revision, which is very recent and is just beginning to be rolled out by many developing countries.

In the SADC region, not all countries compile GDP on the basis of System of National Accounts (SNA) 93. In addition not all countries have a quarterly GDP. It may well be that, depending on the extent of implementation of whether it is SNA 68 or a partial SNA 93, the level or size of the economy could differ considerably. But it may be that this is less of problem as rates of change may matter more than levels.

Naturally levels or size of the GDP will become more contested if it is associated with an allocation fund. The level is not only sensitive to which national accounts framework is used but also what assumptions are made about informal sector activity. The extent to which countries invest resources into estimating the true level of GDP by developing detailed estimates of informal sector activity is another area that, at the best of times is riddled with problems.

If levels matter and the stakes are high, one way in which this can be resolved is to introduce common methods and ground rules that would be flexible enough to work around significant country differences but at the same time will allow some comfort to peers that some framework has been adhered to in measuring the informal sector.

5.   Standards and dissemination

While it is generally easy to access country data either through websites, or international and regional organisations, it is generally difficult to access meta data allowing peer review of inter-country methods. The importance of peer review of meta data depends on how important economic indicators are to any policy initiatives. It may also be that tolerance for systematic measurement differences in GDP and inflation may be much lower than for other indicators. But the extent to which efforts need to be put in reviewing each others data will driven by the policy agenda at hand.

The Special Data Dissemination Standard (SDDS) under the auspices of the IMF is an interesting example how mechanisms can be put in place for peer review processes. The SDDS was established in 1996 to provide guidance on disseminating data to the public for countries that have or might seek access to international capital markets.

At this stage South Africa is the only country in sub-Saharan Africa that is SDDS compliant. What is important about this initiative is that subscribers must disseminate advance release calendars, giving the public prior notice when these data will be disseminated. In addition, sub-scribers must update and certify their approaches and metadata. This includes coverage, periodicity, and timeliness of the data, as well as on integrity, access by the public, and other aspects of data quality.

While the need to subscribe to SDDS may not be urgent for countries in the SADC region, the systems and principles may provide an important basis for protocol on data standards that may be an important pre-requisite for any policy initiative on convergence. Even a watered down version of these could serve as an important guideline for the SADC region if were wanted to develop standards for measuring each others economic behaviour.

6.   Conclusion

All that has been said is meaningless unless policy demand is strong and clearly articulated. While statisticians, in general, need to work consistently at improving the integrity of economic data and work closely with international and regional initiatives on the adoption of common definitions, practices and methods, more effort should be put in opportunistically mobilizing around policy initiatives at the regional level. This will not only signal to policy makers the importance of allocating resources to measurement and statistics but it will also build capacity amongst countries by learning from each other and in the process build confidence in producing good comparable data.