

Chapter 1

The Demand for Economic Statistics

The media publish economic data on a daily basis. But who decides which statistics are useful and which are not? Why is housework not included in the national income, and why are financial data available in real time, while to know the number of people in employment analysts have to wait for weeks? Contrary to popular belief, both the availability and the nature of economic statistics are closely linked to developments in economic theory, the requirements of political decision-makers, and each country's way of looking at itself. In practice, statistics are based on theoretical and interpretative reference models, and if these change, so does the picture the statistics paint of the economic system. Thus, the data we have today represent the supply and demand sides of statistical information constantly attempting to catch up with each other, with both sides being strongly influenced by the changes taking place in society and political life. This chapter offers a descriptive summary of how the demand for economic statistics has evolved from the end of the Second World War to the present, characterised by the new challenges brought about by globalisation and the rise of the services sector.

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One of the major functions of economic statistics is to develop concepts, definitions, classifications and methods that can be used to produce statistical information that describes the state of and movements in economic phenomena, both in time and space. This information is then used to analyse the behaviour of economic operators, forecast likely movements of the economy as a whole, make economic policy and business decisions, weigh the pros and cons of alternative investments, etc.

Before embarking on an analysis of the economic statistics available for international comparisons, it is important to clarify some of the concepts that shape the type of information in existence, and hence the results it is possible to derive from these data. In the first place, it should be noted that the measures used to define any economic system depend on a particular conceptual framework. All types of measurement, in practice, require defined goals, and these goals, in turn, are derived from a particular “view” of reality, in other words a particular theory. In the case of economic statistics, there is no one single view of reality, but a number of theories, each of which tends to generate demand for specific instruments of measurement. Because of this, the development of economic statistics throughout the years can be closely linked to developments in economic theory. For example, the definition of the economic cycle (and the instruments for measuring its main features, such as amplitude and duration) can vary according to which theoretical framework is adopted (post-Keynesian, real business cycle, etc.), as can the definitions of well-being and employment/unemployment.

Despite the existence of a variety of theories about the way economic systems work, a substantial portion of the economic statistics produced today is based on concepts and definitions broadly shared at the international level. The conceptual framework most widely used is the one codified in the System of National Accounts (SNA), published in 1993 by the major international/supranational organisations (United Nations, UN; the Organisation for Economic Cooperation and Development, OECD; the International Monetary Fund, IMF; the World Bank, WB; and the Statistical Office of the European Communities, Eurostat). The SNA, like its European version, which is called the “European System of National and Regional Accounting” (ESA) and received official approval in 1996 in a European Council regulation, contains a huge body of mutually consistent concepts, definitions and classifications for measuring economic activity and several economic phenomena. In practice, it is also used as a base of reference for the production of sectoral and territorial economic statistics. The SNA could, therefore, be said to be the reference text for many recent developments in statistics aiming to measure the results of economic activity.

The conceptual framework used to develop the SNA is based on the neoclassical synthesis of the Keynesian economic theory. Thus, the focus of the SNA is on economic activities that translate into market transactions, rather than on all activities, or on social and environmental phenomena. It must be noted, however, that the SNA offers interesting ideas for extending the measurement of strictly economic facts to social and environmental phenomena. Lastly, it should also be noted that the SNA is subject to periodic reviews of its basic concepts, definitions of individual phenomena and classifications. A significant revision of the 1993 SNA has been agreed in 2008 by the

international statistical community, to address 44 measurement issues considered relevant to make the SNA able to deal with changes in the economic systems coming from globalisation, the development of the so-called “new economy”, etc. This evolutionary approach shows that the SNA itself, the instrument that for many represents the most complete collection of concepts used to produce economic statistics, is by its nature purely a matter of agreement.

Economic statistics are produced to satisfy user demand, which is extremely varied and can be classified according to a number of different dimensions. The first and most fundamental distinction is based on whether the user is interested in analysing the *level* of economic variables or the way they *change* over time. In the first instance, the demand is normally for an absolute value of a certain variable (for example, the value of goods and services produced by an economic system); in the second, users are interested in how a particular variable changes over time (for example, the variation in production between the latest year and the one before). Despite the importance of the first type of question, in a variety of discussions of an analytical or political nature, a large part of the demand for statistical information is for temporal comparisons. This preference derives not only from user requirements, but also from the fact that statistical methods are more capable of assessing variations in economic magnitude over time, rather than their absolute value.

In this context, the question economic statistics are mainly required to answer pertains to the “health” of a particular economic system. The attention of the media, economic policy makers and economic operators is primarily focused on the level of, and movements in, the gross domestic product (GDP), which represents the flow of goods and services produced by the units of production residing in a given country (in other words by the national economy) over a certain period of time (a year or a quarter). While the level of GDP per head of population is the most commonly used shorthand measurement of the economic well-being of a given country (most of all in international comparisons), its variation over time in real terms (in other words at constant prices) measures economic growth, the maximisation of which is usually considered to be the main goal of economic policy.

Beyond comparing levels or variations in GDP, spatial and temporal analyses of economic data on specific sectors of activity, geographic areas, etc., as well as their structural features, are also extremely important. There is also strong growth in demand for information on the behaviour of individual economic operators, such as households and businesses. For instance, the study of the success factors for businesses, which is fundamental in defining industrial policy, requires the analysis of longitudinal data concerning individual businesses. Similar data of a longitudinal nature on the educational and employment history of individuals can allow the identification of groups “at risk” for poverty or unemployment, thus providing useful information for devising policies on employment or supporting income levels.

While measurement of GDP has for decades been the main pillar of economic information, since the end of the Second World War the demand for economic statistics has shown a constant tendency to increase and diversify. The reasons for this development are numerous, and closely related to developments in economic systems and policies. This is why, in order to better understand the current state

of economic statistics in OECD countries, it can be helpful to look briefly at the historical development of the demand for economic statistical information, in order to identify both ongoing trends and mid-term perspectives.

1.1. From the period after the Second World War to the first oil crisis

During the 1950s, development of economic theories based on the “neoclassical model”, establishment of the major international organisations, growth in international trade, changes in the economic structure due to new technologies, and the growing role of the State in economic and societal matters led to an extraordinary flowering of new concepts and statistical methods for measuring economic phenomena. In particular, studies by J. Meade (1907-1995), R. Stone (1913-1991) and S. Kuznets (1901-1985) laid the foundations for what was later to become the first *System of National Accounts* (published in 1952) and strongly influenced how statistical information was gathered, compiled and distributed. Of course, the work of the national statistical institutes depended not only on their own traditions, but also on the impact of war (in some European countries, for example, there was no population census in 1941). Nor should the role played by academic research centres and scholars in the development of economic statistics be forgotten, since they not only drew up the theoretical models but were unafraid to “get their hands dirty” gathering statistical data in the field and integrating them into the relatively scant information available from official statistics sources.

The 1960s saw a steep rise in demand for statistical information, mostly to guide and support economic policy development. The duty of the State expanded to include intervening in the economy to stabilise cyclical fluctuations, creating new infrastructures, maintaining the standard of living, as well as managing major enterprises considered of strategic interest. These new functions resulted in growing pressure on the statistical institutes to significantly broaden their fields of activity. In parallel, there was also a remarkable acceleration in demand for statistical information from both public and private research institutions. In this context, the development of econometric modelling played a significant role: large-scale models required data disaggregated by economic sector – production, consumption, employment, foreign trade, etc. – as well as monetary and financial variables. In addition, the growing role of the international currency markets greatly increased demand for internationally comparable statistical data. This resulted in a major commitment to develop internationally comparable statistics, not only by the Bretton Woods institutions themselves (the UN, IMF and WB), but also by relatively new organisations such as the European Economic Community and the OECD.

The 1970s, characterised by the end to the post-war system of international payments, major instability in the international financial system and economic upheavals following the 1973 oil crisis, represented a period of growth in the demand for economic statistics. International financial instability and conversion to a regime of freely floating currencies stimulated demand for monetary and financial statistics, both at the national and international levels. Strong and persistent increases in the general level of prices (inflation and hyperinflation), coupled with marked fluctuations

in economic activity and levels of employment in many countries, industrialised or not, placed exceptional pressures on national statistical systems, central banks and international institutions, which were required either to produce new statistical information, or to publish their data more frequently.

Consistent with an “interventionist” view of economic policy, governments and central banks were expected to make frequent decisions on the level of interest rates, the management of public spending, the control of capital movements, etc., in response to movements in the main economic variables, and the timing of decisions came to be viewed as critical in determining whether a policy would be effective. At the same time, businesses had to reformulate their mid-term production strategies in line with the dramatic changes in the relative prices of oil and other products, which led in turn to corporate restructurings and related movements in the flow of labour. Lastly, the problem of economic and social growth in the poorer countries acquired a prominent place on the international political agenda, in the strategies of the national banking systems and also in public opinion.

At the European level, given the development of Community institutions, the demand for internationally comparable statistical information grew significantly. In the past, it was mainly the fields of agriculture and foreign trade that were affected by this process, since these were the areas in which most European policy was concentrated. But by the 1970s, the definition of standards for the production of European statistics extended to national economic accounting, statistics concerning trends in various economic sectors, as well as to the classification of economic activity and products.

During this period, there was a marked increase in interest shown by the media and the economic operators themselves in economic statistical information. Coupled with this, the growing role played by trade unions and business organisations in economic policy discussions in many western countries resulted in broadening the user base for economic statistics. The difficulty of predicting future movements in critical variables, such as international exchange rates, income, inflation (hence wages), and interest rates led to a greater emphasis on economic statistics. Research centres were asked to provide ever-more-frequent economic policy forecasts or advice came up with new models, either for analysing the economic cycle or for evaluating future changes in the structures of various economies. As a result, demand for international statistics grew further still, whether to assess the economic and financial position of countries (especially developing countries) in the throes of financial and monetary crises, compare the relative performance of various economic policy measures, or even to formulate production and marketing strategies of multinational corporations.

1.2. From the early 1980s to globalisation

Throughout the 1980s, both economic theory and the direction of economic policy underwent important changes, given a second oil crisis, an increase in the trend towards the internationalisation of systems of production, and the expansion of the international financial system. With acceptance of the new classical macroeconomics,

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based on the real business cycle and supply side economics, demand for economic statistics focused mainly on the behaviour of companies and markets (including the job market). There was also demand for in-depth exploration of the interaction among businesses of different sizes and ownership structures (such as the issue of vertical integration and the development of corporate groups) and between sectors of production (outsourcing of services functions, the growth in sub-contracting, etc.). In addition, the development of modern time-series analysis increased demand for sub-annual (typically monthly and quarterly) economic indicators on real, as well as financial, phenomena. Increasing numbers of research centres were basing their econometric models on data observed quarterly, prompting the statistical institutes either to produce sub-annual and ever-more-frequent assessments of the main products or activity sectors statistics within the scope of the national accounting systems, or to develop new indicators.

The 1980s also saw a boom in monetary and financial transactions, as well as in the stock and bond markets, in which households were showing ever greater interest. In addition to the attention devoted to the measurement of income and overall demand (consumption, investment, etc.) there was also a greater amount of data being produced on the dynamics of supply and on productivity, with particular emphasis on measuring the so-called “non-observed economy” (or “underground economy”).

Changes in economic systems and in industrial relations, as well as the greater degree of interest shown by households in the financial markets, meant that the demand for economic information spread throughout the different parts of the society. Mass media devoted more attention to economic information, which became part of the daily flow of information to economic agents, households included. Economic terms once considered useful only to “those in the know” became part of everyday language. Finally, new techniques of time-series analysis were developed and applied to the study of economic phenomena, significantly altering approaches to forecasting economic aggregates and increasing the numbers of research centres and individual scholars capable of carrying out quantitative analysis and forecasting, and therefore needing detailed and timely statistics.

In Europe, demand for comparable economic data was strong, above all on the part of policy makers. The gradual transfer of competence to the Community institutions begun in the late the 1950s and the use of statistical indicators to calculate either the amount of national contributions to the budget of the Community institutions, or the flows of “structural funds” directed at economically disadvantaged areas, made it indispensable to have an assessment of the relative position of each country/region, requiring more timely and detailed data by sector and territory. Towards the end of the 1980s, because of the process of setting up the European Union (EU), the demand of the Community institutions for statistics was becoming broader still. Regulations were approved by the European Council to encourage member States to produce economic statistics more compliant with international standards. In many countries, those demands came on top of the existing requirements of national users, greatly increasing the operating costs of the national statistical institutes. At the international level, work towards the development and updating of methodological standards intensified to keep pace with new economic realities.

The 1990s saw the birth of the “information society”, on the wave of change brought about in economic and social systems by the “technological revolution” and globalisation.

“The concept of the “Information Age” suggests a number of propositions. It implies that there is more information now than ever before, which is indisputable. The concept also implies that more people spend more time producing and using more information than ever before, which is also indisputable. Beyond that, the concept of a new “Information Age” also suggests that the role of information is more important in the economy than ever before, and that information is replacing some earlier “fuel” of the American economy. These two propositions are forcefully debated and disputed”.

The above was written in 1993 by J.W. Duncan and A.C. Gross in their book *Statistics for the 21st Century*. However, as the last decade of the 20th century progressed, the concept of the “information society” gradually came to be accepted, not only by academics but by political decision-makers and society as a whole, so that significant research programmes and political action were directed towards it. The following factors have wrought a profound transformation in society and economic systems, and as a result have influenced the development of economic statistics: the concepts of the knowledge economy and the digital economy; the extraordinary transformation in many production processes thanks to new information and communication technologies (ICT); the globalisation of economic and social systems; the creation of the Internet giving millions of users access to enormous amounts of information; the fall of many barriers to the free circulation of goods, people and production factors.

These phenomena, together with the growing role of service businesses and other forms of intangible activity (research and development, electronic commerce, new financial services, etc.), the expanding operations of multinational corporations, and the rethinking of the role of the State in the regulation of economic systems, have severely affected the national statistical apparatus. They have produced radical changes (which are still ongoing) in the techniques used for gathering and disseminating information (for example, increased use of administrative data, or relying on the Internet for collecting and disseminating data). Even the “strategic positioning” of the national statistical institutes has been questioned. Thanks to the availability of new information technology, new producers of statistical information have gradually appeared on the market, while corporations begun using data produced in real time by their own information systems instead of (or in addition to) “official” statistical data. Policy makers required ever more detailed and timely economic statistics, not only on short-term trends, but also on the characteristics of, and changes in, the production structures within their own countries or abroad.

The media and the financial market operators begun turning their attention to each new piece of information supplied not only by official sources, but also by every single business or association in the field. The growing awareness of the interaction between economic development and social and environmental balance has required the development of more integrated statistical frameworks to provide comprehensive

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evaluations of the state of a given country. Lastly, the intensifying international mobility of goods, units of production and persons has forced a rethinking of the concepts, definitions and classifications of economic statistics, which have been reinforced but are still demonstrably ill-adapted to the task of accurately reflecting some economic realities (for example, the activity of multinationals).

In Europe, the processes of preparing, introducing and managing the European Monetary Union resulted in an unprecedented increase in the demand for economic statistics. Both the European Commission (through the Statistical Office of the European Communities - Eurostat), and the European Central Bank (ECB) have added to the pressure on national statistical systems to produce economic data that are extremely timely and detailed. On the other hand, also because of the role played by the EU in the maintenance of regional policies, an equally strong demand for information has emerged at the sub-national level (regional, provincial and local), sustained by the trend towards federalism in a number of European countries.

Finally, the availability of large databases relating to single economic agents (businesses, persons, households, etc.) has spurred the development of new statistical and econometric techniques of analysis designed to summarise and comprehend the behaviour of individuals (or particular subject typologies), used in applied research, or for deciding on economic or social policy interventions. At the same time, the abundance of data coming from various sources has forced the statistical authorities, as well as end users, to devise statistical methods for integrating this data, and also for “selecting” which information is relevant for different needs and uses. This is a significant reversal in the trend seen for decades, when statistics were mainly supposed to “extract” the greatest possible amount of information from the collection of limited and partial data.

1.3. A look to the future

The previous brief account of demand trends for economic statistical information in the last 50 years should help the reader realize that producers of statistics have a significant and growing demand to satisfy. It should also show how wide is the range of users who needs economic statistics and why a full-fledged taxonomy of users is very difficult. For example, within the category of policy makers, it is possible to distinguish between those who are mostly interested in the supranational dimension from those whose main aim is to ascertain the position at national or subnational level. As a result, the former are very interested in the comparability of macroeconomic statistics, while the latter are mainly focused on sectoral or territorial detailed data, as well as the data's ability to depict the behaviour of particular groups of operators (successful businesses, individuals at risk of poverty, etc.). Within the media, it is possible to distinguish the press agencies, radio and television (especially interested in the speed at which data can be acquired, but much less so in thematic or sectoral detail), from the daily newspapers and the more in-depth periodicals, whose main concern is to tell a “story” based on the statistics.

In the world of business, medium-to-large companies are interested in receiving timely information not only about national and international macroeconomic

developments, but also on various aspects concerning the sectors in which they operate, at a meaningful level of territorial detail. By contrast, small businesses want information more limited in scope, possibly relating to the local market in which they work, or to their own sector of economic activity. Then there are research centres, either public or private, whose needs for information go in all directions, depending on the subject matter. Lastly, households mainly want information that is quite general (or “curious”), expressed in a form they can understand, almost exclusively “consumed” via the different media (television, the press, Internet, etc.).

Looking to the future, it is possible to identify certain trends in the demand for economic statistics that will presumably strengthen in the years to come. In the first place, demand will focus more and more on the services sector (which already accounts for over 70% of GDP in many developed countries), with new forms of production playing a more important part. The measurement of “intangible” activities will take on increased importance and this should bring about greater integration of economic statistics with social statistics: concepts such as those of human and social capital are already generating interest and becoming the subject of quantification, albeit still in embryonic form.

While the international dimension of various phenomena is set to increase with the integration of production activities dispersed over several countries, this will make it more and more difficult to measure the results of individual national economies. This will require a rethinking of the way in which economic statistics are currently compiled, especially with regard to the exchange of data between national statistical institutes in order to make national statistics more representative and consistent.

Thanks to the development of microeconomic models for the design and evaluation of public policy, there will presumably also be an increase in the demand for access to databases containing statistical information on single units (microdata). Such a trend, which is already apparent at the national and international levels, will inevitably present national statistical institutes as well as international organisations with new regulatory and organisational challenges (especially in terms of the protection of privacy). Finally, it is to be assumed that demand for greater integration of economic, social and environmental statistics will lead to new integrated accounting frameworks capable of bringing together these three main themes, mainly to enable policies that make economic growth socially and environmentally sustainable.

Demand for better integration of economic, social and environmental dimensions is also fostering the development of composite indicators, *i.e.* indicators that aggregate data covering specific phenomena into a single aggregated index, to be used to rank countries (regions, cities, etc.). These indices, very much appreciated by the media, are often used to advocate particular policies or to call public attention to issues not well covered by official statistics (corruption, human rights, etc.). Although the development of composite indicators is criticised by some statisticians and should require the use of an extensive set of statistical methodologies, it is putting pressure on the more traditional statistical sources to move towards new areas of work, including subjective well-being and happiness (or life satisfaction).

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Additionally, the increasing role of large emerging countries, such as China, Russia, Brazil, is putting pressure on international organisations to produce more comparable statistics. The limited availability of national statistics adhering to international standards, as well as the high speed with which these countries' economies and societies evolve, make the measurement of key statistics – including population, GDP, employment and international trade – difficult. Therefore, uncertainties still exist on the dimensions of some global phenomena, such as unbalances in the international financial system or migration flows.

A large degree of uncertainty also exists about the condition of several developing countries, especially the poorest, where the availability and quality of key statistics is low. Notwithstanding the efforts made by the international community to support statistical capacity in these countries, several of them do not have basic figures, or they are produced under the control of political authorities, and thus considered unreliable.

Of course, even if statistical data and metadata are available, the capacity to transform this statistical *information* into *knowledge* to be used in decision-making by individuals, households, businesses and political institutions largely depends on the users' degree of statistical education, and this in turn depends on the country's level of economic development and also on purely cultural factors. Taking as an example the countries in the OECD, major differences can be observed: in the countries with an English-speaking culture (the United States, Canada, the United Kingdom, Australia, etc.) and in the countries of Northern Europe (Sweden, Finland, Norway, etc.) statistics play a fundamental role in political and cultural life, while in other countries the situation is much more nuanced. In the former, the greater degree of commitment to a culture of statistics is reflected not only in the greater levels of public funds devoted to the production of "official statistics", but also in greater levels of investment in applied economic research by academic institutions, foundations and major private sector companies, as well as training that is more geared to scientific disciplines and to quantitative aspects (including statistics) right down to the primary school level. By contrast, in some other countries there is less public investment in official statistics, a lower level of ability to distinguish between reliable statistical information and opinion polls, and political debate is mostly abstract and less likely to be based on statistically measured "facts".

A greater investment in statistical culture not only tends to improve the capacity to benefit from statistical data, but also creates the means by which information is communicated more accurately, a factor that is all the more important in an era of information oversupply. Naturally, this does not altogether prevent statistics being used for partisan purposes, or errors being made in interpretation. However, in countries with higher levels of statistical culture, there is a clear perception of official statistical information as a "public good", the production of which must be freed from any political influences. This consideration has led some countries to recognise the public function of statistics either in their constitutions or in laws that protect the independence of institutions producing official statistics. The inevitable effect of such recognition is to enhance the credibility of official statistics, and thus increase the demand for them.

That said, field studies have shown that even in the more statistically advanced countries, the proportion of people who know little or nothing about the country in which they are living and working is still high. As an example, a survey carried out in 2003 on a sample of citizens in the United States showed that the ability to correctly indicate the dimensions of key variables such as the public deficit or the tax burden, the level of the minimum wage or benefits under the social welfare system is quite limited, especially among people with the lowest levels of income or education, whose main source of information is television (or speeches by political and religious leaders), and who have no particular political leanings and no wish to be better informed about what is happening in their country.

The main conclusions of the authors are threefold: 1) in forming opinion about the direction of economic policy, ideology seems to play a greater role than accurate information; 2) the key hypothesis underlying economic models (*i.e.* that economic operators are fully informed, rational and basically selfish) seems to be a long way from reality, because it appears instead that individuals' actions are confused and basically generous; 3) there is still room for hope that increased knowledge might result in a better approach to decision-making, even though results obtained to date from the information society would seem somewhat limited.

In conclusion, the role played by statistics in orientating public policies and private decisions seems destined to grow in the near future, as will the difficulty users have in distinguishing reliable statistics from those of a lesser quality. Thus, the main challenge in the years to come for the producers of economic statistics will be based not on their capacity to provide quality statistics, but to offer a product whose quality will be clearly evident to the user. Fundamental to this challenge will be the growth in the statistical culture at every user level, with special attention to the world of the media. Following the principles of national accounting, the value of a service should be measured in terms of the change in the status of the consumer. In the case of statistics (a non-market service), we expect the consumer to experience an increase in his/her knowledge of the real world, enabling better choices for the individual and collective well-being. Until now, little attention has been paid to measuring the actual impact of official statistics. Instead, the focus has been limited to measuring the quantity of data published or the annual gathering of data, in other words the processes of production and not the outcome of the statistical function. One of the future challenges will be how to measure the impact of official statistics on the decision-making processes, both of individuals and of those responsible for political decisions.