

## Miscellanea

Under the heading Miscellanea, essays will be published dealing with topics considered to be of general interest to the readers. All contributions will be refereed for their compatibility with this criterion.

# Information Needs for the Market and for Democracy

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### 1. Visible and Invisible Hand

This paper starts on a rather theoretical note, but will end on a more concrete one – establishing the statistical budget of a nation. Of the concepts in the title “market” and “democracy” are first briefly considered.

“The invisible hand” is a familiar expression to anyone who has studied economics or the history of ideas, and is perhaps even heard as early on as in grammar school classrooms. But to talk about the “visible” hand is what may be new and of interest in this context – although it denotes an old phenomenon.

Classical market theory assumes that if all consumers and producers act in their own interests, the invisible hand of market mechanisms will guide their activities toward the

greatest possible prosperity. Does this invisible hand really need any statistics? Or does the market provide sufficient information in itself?

Using the same metaphor for the theory of democracy, it is not an invisible but a *visible* hand that directs the development toward the greater good. According to the original theories, we are obliged as citizens to articulate our interests and our notions of the truth. Elected representatives are then to operate as the visible hand that meshes these divergent interests into a policy for the whole – the will of the people determining the course of society.

Political parties and parliamentarianism were late-comers to the original liberal theory of the visible hand. It was found that the people’s articulation of their interests and the subsequent balancing of them by elected officials was not enough. Long-term directives did not evolve from this simple process. More was needed. It was necessary for citizens to play an active role, such as participating in political discussions, pro-

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posing policies, and organizing into parties, if the democratic model of government was to achieve stability.

Governing is only possible with the help of information. How, then, can this flow of information serving the needs of the market and of democracy be described? In simple terms, the system of prices is the market's information system. Ideally, all the information needed by a consumer to choose between sacrifice and satisfaction should be encapsulated in the price and the product itself. The producer is then informed as to how many persons are willing to pay a certain amount to purchase a certain good. Price is the main information carrier and one of the decisive factors governing consumers' behaviour.

## **2. The Information System for the Polical Process**

There is also an information system serving policy decisions in a democracy, consisting of three basic elements. The goal here is partly to make the visible hand indeed visible to the general public – “this is how they govern!” – but partly also to help guide the visible hand in its motion. These two functions are integrated.

The first, and most fundamental, element in a democratic information system is the institutions based on freedom of opinion (press, modern media, organizations) to assure an open and unrestricted forming of public opinion. Democracy presupposes a free exchange of ideas, interests, and world views. No censorship can be allowed to inhibit the expression of the opinions or the interests of any individual or group.

The rationale for this free forming of opinion is that competition among ideas will result in the enhancement and refinement of the values and interests articulated. Also in

this competition, truth will survive the battle against dishonesty and self-seeking propaganda. If space allowed, we could elaborate further on this idea of the ennoblement or refinement of our values through public discussion, a reasoning developed by John Stuart Mill and many later commentators, including Gunnar Myrdal.

Public discussion puts a limit on individual egoism. Citizens as a group are urged upwards, to a higher, more universal level, where truth cannot be suppressed for long if ideas are exchanged openly. The truth will be recognized as such when it is freely articulated. As we can see, the classical theory was rather optimistic . . . .

But unrestricted opinion formation alone does not suffice. Even in completely open exchange, differences in power between groups, classes, organizations, and regions will determine which parts of reality and which values will be expounded and dominate the public sphere. Differences in power in the process of opinion formation are inevitable, since differences already exist on the individual level: in our ability to present our arguments, in whether we are timid or forceful, etc.

Additional institutions are needed if this open exchange in the public arena is to be provided with qualified and impartial material, which will help citizens better to understand the various views and values forwarded.

Independent science must be organized as the second element in the information system of democracy for this very reason. Science is organized in such a way that a limited number of persons are selected on the basis of their demonstrated skills at logical reasoning and exposition according to certain rules and procedures. They are allowed to spend their energies on formulating and testing their arguments and reason-

ings. Scientists are to have no decision-making powers outside their own sphere.

Freedom of science entails that scientists have the authority within science to develop methods and lines of thinking freely and to submit their results for public debate. Both the citizens and the guiding hand can then be provided with ideas and theories tested in a more thorough and unbiased manner than they would normally be able to achieve on their own.

The third element needed in the system is a counting authority. We might ask why there are statistical agencies in all organized societies. They are not the first institutions to come into being when a state machine evolves. First come warriors, tax collectors, judges, and priests, but eventually there is also the counting authority. Why?

Because it is not possible, for example, to calculate the number of unemployed persons in a society through the open exchange of ideas or by someone opining that there are so or so many thousands. Nor can scientists deduce it from some elegant theory or by experimentation in a laboratory. Statisticians actually have to get out and count.

And if statisticians do a proper job according to scientifically based standards, there is an objective reality to be found, given certain definitions. Statisticians can determine how much wheat is produced, how many people are unemployed, how many children are born, and so on. Those kinds of questions are best answered by simply counting or measuring.

If official statistics is indeed the third element in the democratic information system there must be some assurance that these statistics are available not only to the guiding hand, that is, to the ruling powers in the democracy. It is just as important that official statistics helps bring the actions of

the guiding hand into view. In other words, official statistics must serve the citizenry by revealing what paths society is taking, so that the guiding hand can be judged while at work.

In this sense, the statistical agency does not differ greatly in its function from the media. A newspaper may feel that it represents the interests of its readers, who are in turn average citizens and not those in authority. But the press is also read by persons in positions of authority, and may also influence their versions of reality and their official decisions. In this way, the press often functions as the 'secret service' or the 'central intelligence function' of the guiding hand. The statistical agency is often perceived as an instrument of government but can also work as the 'central intelligence' function of the citizenry.

### **3. The Information Needs of the Market**

There is also a need for statistics on the market. Statistics are usually associated with planning, but the actors in a market economy, primarily producers, need statistics as well. Decentralized decision making is in the nature of the market, as when a consumer visits a department store.

To grasp the end result of all the millions of decisions made within a market system, statistics are necessary to give a comprehensive picture. Information about prices, wages, and profits, for example, are fundamental. In order to reduce uncertainty at times of decision, actors in the market economy need statistics. Basic economic reasoning tells us that lack of adequate information at decision-time raises cost. Therefore uncertainty in market assessments and production decisions must be reduced. As soon as long-term undertakings are under consideration the contract must

include some estimate of prices of goods and wages that will apply throughout the life of the contract.

To understand why the U.S.A., considered the ideologically leading market economy, also is eminent in the field of economic statistics, it is necessary to understand that the information system of the market cannot be limited to prices alone, but must also include information that provides both overview and insights. Those who believed that economic statistics in planned economies were superior to those in the market economies of the West were, of course, wrong.

In the U.S. there has grown up a booming statistics industry to provide large corporations with customized data on the organizational environment in general and its markets in particular. The statistical services in demand are particularly those based on financial data and econometric forecasting and demographic data for various markets. User demand in the private sector is also strong enough to support lots of surveys on consumer taste, on audience size, and on public opinion on various issues.

In general, however, the market mechanism cannot on its own produce some optimum level of information. This is in general terms because information cannot be treated as a normal economic good since it has some special characteristics. Many can have the same piece of information at the same time without added cost. The marginal cost of distribution to the next person is often negligible. The producer of the information cannot control its further spread.

These and other factors have generated a widely held opinion among economic theorists that the market mechanism fails in the production of the general information contained in official statistics. Self-interested economic actors tend to underinvest in

information, particularly if its benefits will automatically be shared by many and not give a competitive edge. Nevertheless, to be the first to know is very often a great market advantage.

Actors in various markets often insist that there be no such advantages for "insiders". Official statistics, therefore, in some cases must be distributed at an exact time, in the same second to all actors. This is nowadays the rule for all information relevant to financial markets.

#### **4. The Public, Industry, and Authorities as Respondents**

We can refer to official statistics as civic information – statistics *for* and *by* the people. The quality of the information made universally available is determined by the quality of the individual's contribution as respondent. For example, the higher the non-response in our studies, the lower the quality of the information for the general public. When official statistics are scanty or unreliable more space opens up for deceit and propaganda in the public sphere.

Many people do not see the link here. That participation in the making of statistics is an act of civic duty and that it is necessary if the democracy's information system is to function. The irate person who called Statistics Sweden complaining about the "unnecessary" telephone survey on unemployment is almost a typical case. "Unemployment! You don't need to ask about that, statistics on unemployment are in the newspapers every day!"

Analogically, we also have statistics *for* and *by* the business sector in our market economy. *For* the business sector, because effective business demands an overview of the millions of decentralised decisions made in the market, above all concerning

prices and wages, as well as of market conditions in general. Here too, the quality of the information on the economy of the nation found in the National Accounts is wholly dependent on the quality of the information received from individual firms as respondents.

This aspect is seldom mentioned in the public debate, where loud complaint is not seldom made about the burden of being a respondent, but little is said about losses when economic policies go astray because of lack of statistics or errors in statistics because of non-response or careless response.

Some time ago, a survey of businessmen's attitudes towards various public authorities was reported in the Swedish press. According to the newspapers, 19 of 20 businessmen were extremely critical to Statistics Sweden and the need to fill in statistical questionnaires. One editorial even expressed surprise at the extreme minority of businessmen – 1 in 20 – who were at all positive!

The actual figures were in fact the following. Of 100 businessmen, only 20 held any views at all about Statistics Sweden and related activities. Of these 20, 19 voiced criticism, which amounts to 19% and not 95, as one was led to believe.

About the remaining 80%, it can only be said that no one felt strongly enough in either a negative or a positive direction to find reason to at all mention the Bureau of Statistics in their responses.

The problem is understandable. Few businessmen in any country have cause in their daily work to study National or Financial Accounts tables, and to see the connection between these figures and the irritating statistics questionnaires concerning stock levels or working hours or wage costs that they are required to fill out. Yet it should really not be difficult for these persons

to understand the undeniable need for economic statistics, both in the interests of the overall guidance of the economy via state policy, and in their own interests as actors in the market.

Also not so long ago, a report that the GNP increase in the U.S. economy during a certain quarter was only 0.5% triggered a heavy fall of the dollar and a decision to lower interest rates. I need hardly further stress the importance of economic statistics, as a source of information for actors in the market and as a trigger for economic policy measures, and the importance, therefore, for the whole business sector that we are able to compile correct statistics.

Finally, there are statistics *for* and *by* the public sector. Such statistics concern the information necessary both for the authorities, if they are to act rationally and according to democratically reached decisions, and for the citizens and their elected representatives, if they are to scrutinize and evaluate the operations, planning, and demand in the public sector.

Understanding the social welfare programs and how they work is not possible by discussing individual cases and asking, was it correct to remove this child from its home, was it appropriate to award public assistance in that case, and so on. This cannot be done because this would be incompatible with protecting the privacy of underprivileged individuals who are seeking assistance. But we can and must make statistics to be able to judge whether the social programs are functioning in accordance with legislative intentions, whether the municipal social welfare boards are making oppressive or arbitrary decisions, whether people are being treated equally, whether individual privacy is being protected, and so on.

The same applies to the health sector.

Here it is also argued that compiling statistics on in-patient treatment is inconsistent with patients' integrity. It is especially problematic when doctors make this claim. Part of the reason for keeping statistics and case records is to hold physicians accountable. There are no other means for doing so. Physicians who claim to be protecting their patients when they refuse to submit information about them for statistical purposes are not in fact protecting their patients' interests.

Official statistics on the way different authorities discharge their duties is a minimum requirement for the accountability of authorities in a democracy.

## 5. Epistemological Classifications

Usually when the needs for information for decision-making are discussed, it is done according to subject matter. In other words, decision-makers need to know more about the unemployed, the elderly, or about the world of finance.

But there is another way of classifying those needs. It can be done on epistemological grounds, using the theory of knowledge as a starting point. In the following discussion of the four basic needs for information, terminology will be used that is generally found in Scandinavian welfare research.

The first question to be asked is whether something is developing for the better or for the worse, that is, *welfare assessments* must be made. What is the current situation in this area? The question is a constant in policy making. It must be addressed in every instance of planning.

And how should the current situation be evaluated? A description of the situation in itself will not suffice as an answer. Comparisons must also be made, that is, comparisons with the situation yesterday or

several years ago, or with other countries. To make assessments it must be possible to make comparisons over time or space.

The need for facts in numeric form based on counts or measurements as grounds for such assessments is, of course, why there is always business for statistics bureaus in all countries.

Secondly, there is a need for documentation for making *welfare appraisals*. The discussion often involves the question, should we view something as positive or negative, for example, whether child care or women's liberation or migration from one region to another are in themselves good or bad. These are considerations of a fundamentally different kind from the question of whether something is getting better or worse. Here the matter is whether the phenomenon is good or bad.

The arguments in such a discussion consist of theories or hypotheses on the causes and effects of the phenomenon. For example, child care is good because it is good for children, because it promotes the emancipation of women, etc. These are empirical assertions that can be tested, in many cases rigorously. However rigorously done, the results of such testing is not official statistics but belongs to the domain of science.

The testing of such causal assertions needed for making welfare appraisals, is a rather different type of activity from compiling the information needed for making welfare assessments, where developments only need to be measured in terms of quantities and illustrated as trends.

The third type of support documentation, constantly demanded in the political process, is that which is necessary for the selection of measures to be implemented, in other words for *planning*.

A prognosis is the fundamental component of all types of planning. What hap-

**Schema 1. Types of Knowledge for the Political Process**

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| <p>1. <i>Material for Welfare Assessments</i><br/>When assessing whether the living conditions of a population are getting worse/better or whether the conditions of one group is better or worse than those of another.</p> <p>2. <i>Material for Welfare Appraisals</i><br/>When considering whether a specific phenomenon, such as day-care centers, divorces, shared custody, should be regarded as welfare or illfare, as good or bad, positive or negative.</p> | <p>3. <i>Material for Planning New Measures</i><br/>Ideally, prognoses on the outcome of various action alternatives with pertinent cost estimates.</p> <p>4. <i>Material for Evaluating Measures</i><br/>Ideally, accounts of actual outcomes of implemented measure(s), so that the outcome of the measure(s) can be distinguished from the effects of other factors.</p> |
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pens if nothing is done? This first question is answered with a forecast or a prognosis. If the current trends (carefully selected) are prolonged, then what happens if nothing is done?

In order for a plan to evolve from a prognosis, interventive measures must be detailed to ensure that the prognosis does not come true, but that developments take place in the manner desired. The ideal setting for making decisions is to have prognoses of the outcomes of various alternative plans of action along with cost estimates. The measures chosen should ideally be based on this type of information.

Statistics Bureaus are often called upon to provide statistics for such calculations and also to provide the calculations now that computer models are available.

Finally, the grounds for evaluating the on-going programs is the fourth type of information needed in the political process. What is needed in *program evaluation* is an account of actual outcomes so that a particular outcome can be distinguished from the effects of other factors. Thus, it is not a

prognosis we need here, but rather a history that is to be verified. Theoretically and in practical terms, this is why there is such a big difference between what is needed for choosing measures and what is needed for evaluating such measures.

According to elementary scientific theory, only the experiment, the controlled experiment, can serve as the grounds for evaluating a measure. But we can almost never make use of this method within the social and economic sciences. In practice, however, we can achieve quite a bit with statistics gathered within designs less perfect than the controlled experiment.

## 6. Statistics Supply Programs

In theory, each policy area has the same information needs according to this classification. Both citizens and their elected representatives need to be able to assess the situation and the trends regardless of whether the area is education, taxation, working conditions, unemployment, or what not. They may want to be enlightened as to how certain new or old phenomena should

be appraised. They need evaluations of on-going programs in the area and also best estimates of what would happen if they changed a program in this or that way or added a program.

To infuse the policy-making process with adequate information, an exhaustive discussion on the information needs in each policy area is a meaningful activity for users and producers of official statistics. For such discussions *statistics supply programs* have been introduced by Statistics Sweden as an instrument to design a statistics policy for each substantive policy area.

These were all given the same simple structure, based on the discussion presented earlier. For each policy area, a statistics program was drawn up specifying the objectives.

The first goal is to be able to respond to certain crucial questions about the current situation and development in the form of official statistics on an on-going basis. These key questions should be given in concrete terms so that they can be used for making welfare and development assessments. We can take the example of the health sector. The central questions were found to be:

1. the health conditions of various population groups and how this has changed;
2. the health risks for various population groups, whether they have increased or decreased;
3. the resources and costs for the various branches of the health and medical services and how these costs have changed;
4. the accessibility of treatment for the ill in various population groups and how this accessibility has changed.

It turned out that these central questions

were relatively easy to select and formulate for the various policy areas. Anyone in the political process would indeed like to have good answers to those questions available on an ongoing basis for monitoring purposes.

Official statisticians had to admit rather humbly that there were not very many of these areas for which good answers were available on the basis of official statistics. In many cases, available official statistics only covered questions of the third type (on resource input) really well, the labour market with its monthly labour force survey being an outstanding exception. However, the fact that exhaustive answers cannot always be achieved with the use of statistics should not inhibit the search for telling indicators.

Secondly, the program should provide useful information for evaluating current measures and operations. Here the measures to be evaluated should be listed, not that these evaluations as a rule were to be made by the statistics bureau. Its concern would mainly be to be able to provide data for such evaluations. Again using the health sector as an example, concerns center on evaluating the various schemes in terms of gains in health as related to costs. For such descriptions, very little exists in the way of ready-made programs or models. This is on the whole true for all sectors in the social field.

Thirdly, the program should provide a basis for decision-making and planning in the form of prognoses supplemented by specifications of the costs and utilities of alternative measures. In the field of economics, well-developed models exist for this type of calculation and these serve as a base for economic policy. Such models are also used in the formation of energy policy and in income statistics where computer simulations are used to describe the effects of



### **Schema 2. The Outline of a Statistics Supply Program**

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. <i>Program goals</i> <ol style="list-style-type: none"> <li>a. to illuminate the following main questions with official statistics</li> <li>b. to provide statistical data for evaluating the following programs</li> <li>c. to provide documentation for planning in the form of prognoses</li> <li>d. to compile statistics of the right quality, at the right point in time, at the lowest possible cost</li> </ol> </li> </ol> | <ol style="list-style-type: none"> <li>2. <i>Detailing the information needs</i> <ol style="list-style-type: none"> <li>a. specifications of the main questions</li> <li>b. specifications for evaluation</li> <li>c. specifications for planning</li> <li>d. specifications of demands for quality</li> </ol> </li> <li>3. <i>Current statistics supply</i></li> <li>4. <i>Needs for change of statistics supply</i></li> <li>5. <i>Priorities between statistical needs</i></li> </ol> |
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changes in the rules governing taxation and welfare benefits.

The fourth goal to be discussed in the program is the required precision of statistics and at the lowest possible cost. This is the common criterion of efficiency used in statistics production. The quality requirements and information needs for each area are to be defined in detail. User performance in the program discussions were least productive in this section of the program. Sometimes, users were capable of setting timetables, when statistics were needed to fit the decision process in the policy area. Users in few areas were willing to discuss such questions as sample size and precision needed, the need for estimates of total error, level of non-response tolerated, etc.

Describing the present system for supplying statistics and diagnosing problems is the next section of the programs. These sections are very useful as an overview. The needs for modifications are then described. Finally, priorities for the next program period of three years are to be discussed.

Scheme 3 on the following page contains the statistics programs for the various policy areas in Sweden. To gain access to, obtain an overview of, or grasp the statistical production at Statistics Sweden and its design in order to discuss and criticize it, the appro-

priate point of entry is the program for each policy area.

The break-down into programs is based on government ministries. Within the ministries, there are subject area units, and these form the basis of the sub-classification scheme below. Altogether, there are 42 programs counting also the general programs on common matters like statistical methodology.

More could be said about these divisions. The program on economic policy, for example, is an integrated, comprehensive program. We have developed a sub-program on financial markets, but none for foreign trade or price policy, for example. These areas are instead part of the larger program.

Each of these programs can be discussed in more detail although this is not the place for such a discussion.

### **7. Establishing the Statistical Budget**

A crude way of describing the official statistics of Sweden is to examine how much money is granted to the various statistics programs. The priorities as translated into budget terms are as follows in millions SEK: labour market 45, education 22, housing 15, income and wealth 12, social services 7, and health services 6.

**Schema 3. The Statistics Supply Programs by Ministry**

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|-------------------------------------------------|------------------------------------------------|
| 1. Ministry of Justice                          | 9. Ministry of Labour                          |
| 1.1. Criminal policy and the judicial system    | 9.1. Employment                                |
|                                                 | 9.2. Working hours                             |
| 2. Ministry of Foreign Affairs                  | 9.3. Working environment                       |
| 2.1. EFTA/EC-cooperation                        | 9.4. Regional policy                           |
| 2.2. Foreign aid policy                         | 9.5. Immigration and immigrants                |
| 3. Ministry of Defence                          | 10. Ministry of Housing                        |
| 3.1. Civil emergency preparedness               | 10.1. Housing, construction, buildings         |
| 4. Ministry of Health and Welfare               | 10.2. Physical planning, natural resources     |
| 4.1. Social trends                              | 10.3. Sports and exercises                     |
| 4.2. Family policy                              | 11. Ministry of Environment and Energy         |
| 4.3. Social services                            | 11.1. Environmental policy                     |
| 4.4. Health services                            | 11.2. Energy policy                            |
| 5. Ministry of Finance                          | 12. Ministry of Industry                       |
| 5.1. Economic policy                            | 12.1. Industrial policy                        |
| 5.2. Financial markets                          | 12.2. Information technology                   |
| 5.3. Income distribution                        | 12.3. Tourism                                  |
| 6. Ministry of Educational and Cultural Affairs | 13. Ministry of Public Administration          |
| 6.1. Education                                  | 13.1. Population                               |
| 6.2. Research                                   | 13.2. Citizens' political participation        |
| 6.3. Culture and the media                      | 13.3. The public sector                        |
| 7. Ministry of Transport and Communications     | 13.4. State personnel policy                   |
| 7.1. Transportation                             | 13.5. Consumer policy                          |
| 7.2. Traffic safety                             | 13.6. Wages and salaries                       |
| 8. Ministry of Agriculture                      | 13.7. Equality between the sexes               |
| 8.1. Agriculture and forestry                   | 14. General Programs                           |
| 8.2. Hunting, fishing, aquaculture              | 14.1. Statistical service                      |
| 8.3. Food and nutrition                         | 14.2. Research and development                 |
|                                                 | 14.3. Respondent burden and privacy protection |

This allocation, of course, does not correspond to the relative information needs of the different policy areas but is the result of historical developments. Can it really be

that the health sector, which consumes almost 10% of Sweden's GNP can manage its information needs on a statistics budget of a mere 6 million? Remedies to this situ-

ation have proved very difficult. Statistics in these neglected areas are not only limited by low resources, but also by other factors mentioned above.

A recent Commission on Statistics has arrived at several proposals for improving Swedish statistics. The statistical budget should no longer be drawn up in the same way as in the past where health statistics were weighed against labour statistics or statistics on culture or sports. No longer should statistics on a subject compete with those on another subject. Instead, the statistical budget should be considered in sectorized form.

In each policy area, the need for information (research and production of statistics) must be balanced against other activities within the area, and not against statistics or research in other areas. To accomplish this, a new decision procedure has been introduced where the budget for Statistics Sweden is broken down by ministry. Thereafter, each ministry would determine the level of statistics needed to be able to analyze, evaluate, and if need be, change the policies in the area.

## **8. Conclusion**

Having started out in a theoretical vein, I have ended here with rather concrete ques-

tions for official statistics policy. A counting authority, an Official Statistics Function, is a necessary and important element in the information system of democracy both for guiding the elected representatives – the visible hand – and for making the visible hand and its actions readily visible to the public.

But it is important to maintain a systems approach to satisfying the information needs of the democratic process. A very competent statistics bureau is not very valuable unless there are competent analysts in the different policy areas who can use the statistics to their full potential.

Statistics bureaus very easily become mere instruments of government, not of the citizenry. This is true of statistics bureaus in most dictatorships but it is also true of many democracies. In reality, statistics bureaus can function as part of a democratic information system only in cooperation with the press and the modern media, presenting statistics as news and as a basis for serious commentary.

Statistics bureaus also need an intimate relationship with science both for improvement of statistical methods in various policy areas and to provide official statistics as an infrastructure for social and related sciences.

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