

# STATISTICS AND ECONOMIC DEVELOPMENT

*By*

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Needless to say, I regard it as a distinct privilege to have this opportunity to meet with fellow statisticians in Manila. I quite agree with what Dr. Givens had to say about the importance of cementing firmer and more intimate relationships among statisticians throughout the world and particularly, it would seem to me, between those in the Philippines and in the United States. The very brief exposure I have had over the past two days makes it clear to me that, certainly in respect to the problems of Southeastern Asia and in less developed areas of the world in general, the Philippines may well turn out to be the most important prototype from the standpoint of demonstrating the potentialities of statistics in relation to economic development. In the course of my brief observations here this noon, I think I can document that to some extent.

I don't think it is necessary to make any elaborate observations to this audience about the basic importance of economic development and the planning and implementation of economic development. I referred on another occasion on which it is my privilege to speak in Manila, to the observation that the historian Toynbee made when asked what he thought would go down as the most distinguishing characteristic of our generation. His reply to that question was not the invention of the atomic bomb or the control of nuclear energy. It was the realization for the first time in the history of man that every man on the face of this earth from whatever culture and whatever race and whatever stage of economic development at the moment, could look forward in the future to a level of life to freedom and to human dignity the equal of that of any other man on the face of the earth. To Toynbee that represented the contribution of our generation that would overshadow anything

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we had ever done even with the control of nuclear energy. I say this by way of very quick preface to the fact that what we have come to know as economic development has really become an instrumentality responsible for making possible this particular new hope which appears in our civilization.

Moreover, as another preliminary observation I should like to state that economic development in the less developed parts of the world, and more specifically in Southeastern Asia is necessarily going to involve a considerable participation from governments, that is, central planning and central implementation of economic development programs. This is much more apt to be the case than in the case of economic development in the more developed areas of the world today. The more developed areas had the opportunity historically, to develop gradually, to develop largely on a free enterprise, free market mechanism basis.

This is not the place to elaborate the whys of this difference perhaps other than to point out that there is quite a difference in historical context and quite a difference in the kind of problems which confront the less developed countries today, compared with the situation of the more advanced countries in their initial stages of development. For example, only a central government can begin to cope with the problems of the rehabilitation of war-devastated economies. This cannot be left to the market mechanism, free enterprise alone. Only a central government, particularly in countries suddenly free from control and administration from outside sources, can begin to utilize on an optimal basis the relatively limited resources, material and all too often human, to meet the challenges with which countries throughout Southeastern Asia are confronted. Only a central government can begin to raise the tremendous outlays needed for capital expansion for some aspects of development programs.

All this is by way of saying that as long as you have the necessity for much more central planning and much more central direction of economic development, you have necessarily a situation in which there is a much greater need for statistics as a basis for achieving successful economic development.

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Or to put it this way, to achieve economic development from any central source, it is necessary to plan, it is necessary to administer, it is necessary to evaluate the results of what you have done on specific development projects. To do these things, one needs sound facts. It happens that our profession has provided, at least up to this point in human history, the most effective way of getting such sound facts and in the most useful form. That is essentially what statistics are. We need statistics for economic development because they provide a sound factual basis for planning. They provide signposts, guideposts and quantifications of targets and goals in the administration of specific economic projects. We need statistics, also, for purposes of evaluating the results of our programs, in essaying whether or not what we have actually done has come anywhere near to meeting our targets, and our objectives; and to point out the deficiencies, the gaps in our work, so that planning can be adapted, modified, and successful programs achieved.

I think any statistician who has on occasion some nostalgia and a feeling of inferiority because he did not study the law or some other profession might with these kinds of perspectives arrive at the very sobering conclusion that the statistician occupies a peculiarly strategic point in programs of economic development and therefore a strategic place in the national and international scene. This kind of perspective, incidentally, gives me a certain amount of pride in being a statistician, because it helps to explain to myself as I hope it will to you, that we do have indeed a noble profession and a useful one.

The stress that I have placed on the planning and implementation of economic development from a central source is by no means to be interpreted to mean that the day of the free enterprise and the free market is now gone. These things are not "dead ducks" to use some good American colloquialism. On the contrary, I feel that I should perhaps point out that, in my judgment, the most successful economic development programs are going to be those which achieve a relatively rich mixture of free enterprise and free market activity, along with the necessary central planning and implementation. Certainly,

so far in the history of man, it is only in free enterprise societies where all freedoms are highly stressed and valued that we have had successful economic development manifest in high mass level of living. I mention this, in passing, for this purpose. Free enterprise, like the government, to be most efficient in playing its role in economic development must also have a sound factual basis, for its own decision-making. And in consequence we wind up with this realization: that sound statistics are needed both by government and by private enterprise so that economic development and the desired goals of raised levels of living can be achieved most efficiently, and in the shortest period of time. I think we, in the statistical fraternity, can take considerable pride in the role we play in setting a firm foundation for economic development whether it is to proceed from a governmental or a private sector in the economy.

Now let's get down to more specific cases. To get adequate statistics for these all important purposes, a certain number of essential ingredients are necessarily involved. It is at this stage that I should like to point to a least one way of classifying some of these ingredients, and to discuss them with you, in so far as the very limited time permits.

First of all, there must be provision for some kind of adequate administration of statistical programs. This means that in any country and particularly in those that are attempting economic development, there must be provision for a coordinated, unified statistical system. I find it increasingly difficult to understand why, in some of the countries in which I have visited, different statistical agencies sometimes acts as if they were not members of the same government, or sometimes even act as if they were actually members of warring quite different governments. The essential thing for statisticians who are going to make a contribution that is to be worthwhile is to realize, above all, that no matter where they are, are working for the same country and the same government. Their job is not to obtain a little principality or domain of their own which they are to expand and to preserve from all possible invaders but, rather, to find out how to de-

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velop a statistical program that will do the country the most good.

Based on my own observation in working in my own government service in the United States, I sometimes feel that the last vestige of Adam Smith's "economic man" is to be found in the bureaucrat in government. He, I think, is the free enterpriser *par excellence* in terms of really building his own empire. Consequently, explicit provision is needed for the development and coordination of statistics. In general, the provision can take either one of two forms. First, provision for what is becoming increasingly known as an "integrated statistical system" which means the creation of one tremendous major statistical organization in which practically all statistical functions are not only coordinated but performed and conducted. The other, getting to be known as a "coordinated statistical system" is where you have considerable de-centralization of statistics but with provision in terms of leadership and in terms of activity, and I mean adequate provision for coordination of statistics no matter where they may originate within a government so that they are additive and so that they become an effective instrumentality for the all-important nation-building purposes.

As I understand your own reorganization plans, there is some likelihood that this second type of decentralized statistical system with provision for coordination will emerge. (This is incidentally, essentially what I have recommended for Burma and which Burma herself is putting into effect, although she will have one rather large statistical organization achieved through a consolidation of the Census Office and the Central Statistical and Economics Department.)

If you obtain provision for a coordinated system then there are a number of things that might well be discussed, but I am afraid time does not permit any particular thorough exploration. For example, if you have authority really to coordinate statistics in government such authority can be a menace rather than a help unless it is exercised with some sense of responsibility. I refer to responsibility that entails competent evaluation of the needs of government, that basic needs

for planning and economic development purposes, and that effects coordination in a useful way. Moreover, the coordination function may also involve the assumption of leadership by the central agency. To my mind based on what I have observed in various parts of this world a central statistical authority ought to be abolished if it is not competent to take real initiative and exert real leadership in helping develop a statistical system consistent and consonant with the needs of the government for policy and administrative purposes. Statistics should play a vital role as a basis for policy formation in government. The statistical system should provide economic and social intelligence to government. If the statistical system does not tie into policy formation in government then something is wrong. The government is not utilizing its opportunity for getting a sound factual basis for planning.

The first point, then, is that provision, and adequate provision, must be made for the administration of an adequate statistics program. Without a proper administrative framework statistical agencies are a drag and an obstruction to development activity rather than a major contributor to planning and administration of the kind which they should be. A second point to be made is that organization of a statistical system that can be useful for economic development will depend to a considerable extent on obtaining adequate personnel. Statistics has become a profession. It is as absurd to expect an untrained person to do a decent, effective, and an adequate statistical job as it is to expect a cook to perform an appendectomy. Now maybe some of you would feel that since the surgeon and the cook both wield a knife, it shouldn't really matter. But I think the day is here, and we may as well face it frankly, when the study of law for example, is not the best preparation for doing statistical work. If you want to be a statistician, it is necessary to learn and study statistics. The unavailability of trained personnel is without question not only an obstacle to statistical development but, as I have observed throughout this part of the world, a major bottleneck in economic development. Here again I can not take the time to elaborate. Suffice it to say, that the nations in this part of the world have only recently as an aftermath of the war ac-

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quired independence and that they are faced with the task of carving out their own destiny, deprived of their previous leadership provided by colonialism. It is not surprising that these nations simply do not have enough people with enough technical training and enough experience to do the jobs that are required to be done. This is true for statistics as well as for many other types of functions. This poses a difficult problem requiring re-education and the re-orientation of attitudes. I suspect that in the Philippines, as well as in other parts of Southeast Asia, you still have thousands of students studying the arts, literature, history, and law, instead of engineering, medicine, statistics, and economics, and other subjects that might make them more useful contributors to a nation-building program instead of ornamental devices with considerable culture and the knowledge of how to behave at lots of meetings.

One other observation about personnel: you cannot get competent statistical personnel and the conception of statistics as a profession, unless a number of specific things are done. Some of these things are being done in Burma. I can not take the time to detail them. But, it is necessary if you are going to make statistics a profession, which it is in the more developed parts of the world, to provide for the statistician professional opportunity and a career line that he can follow. In Burma a statistical and economic service was created in the government for the person with a degree that qualifies him to be regarded as a statistician. Such a person can enter at a junior professional grade and look forward with confidence to working his way up to the highest possible grade in the government service, with tenure and with recognition and salary commensurate with his experience and his ability to produce.

You are never going to have statisticians, you are never going to have top people attracted into statistics as a profession, or if you attract them you will never retain them as statisticians, if you do not provide a career line for them.

So much for personnel. A third point, which I think it is necessary to make is in regard to substantive program. This consideration could take a series of lectures rather than two

or three minutes of observations. Suffice it to say, that we must regard the business of programming statistics as having other objectives than the glorification or the edification of statisticians. He who is not able to assume the role of a humble servant to serve somebody else, his own government, for example, on economic development matters, has no business being in statistics. You never produce statistics for your own glorification, edification, and monopolistic control. This should be a self-evident statement, but it is amazing how often it is not understood by statistical personnel. A statistical program should be planned from the standpoint of who are the major consumers and what are the major uses of the data. These are the basic questions, the answers to which provide a statistical program for a government. Very briefly, a statistical program, in general, can be divided into two kinds of statistics: benchmark statistics, on the one hand, and current statistics on the other. The benchmark statistics involve the kinds of statistics obtained through censuses, where you take complete counts or comparable comprehensive activities. With the development of modern statistical practices, however, even a census provides most of its information through a sample taken in conjunction with it rather than through the complete count. As soon as you begin saying "sampling" you are at the heart of much statistical technique which calls for professional knowledge. You can not use the word sampling without having a lot of things in mind that the layman does not know.

Current statistics are a continuous flow of data such as foreign trade and vital statistics, and periodic data such as monthly statistics on production, employment, unemployment, prices and the like. There are, of course, many other current statistics such as current industrial indicators, current indicators of sales and inventories. Such indicators are of particular importance where a possible inflationary or deflationary change may be involved. In Southeastern Asia where emphasis is increasingly on new construction, current construction statistics and housing statistics are very important.

Although I can not take the time to discuss the many aspects of current statistical programs I would like to mention one specific type of operation of special importance. I refer



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to a type of enterprise relatively new to the world — we have had it for only fifteen years in the United States and it has even more recently spread to a number of countries including Canada, Japan, and the United Kingdom. I think Burma is going to have such an operation within a year. This operation is one of the most useful single ways of obtaining current statistics on a wide variety of matters that has yet been invented, and it has been made possible only by the new techniques in the sampling of human populations. I refer to what is known in the United States as the "Current Population Survey." In the United States, we have such a survey once a month. In some other countries, Canada, for example, it is done once a quarter. Thru such a current population survey, a small sample of about 25,000 households, representing an entire nation can provide statistics on employment, unemployment, population and other matters on a continuous basis. It is possible to include a series of rotating questions so that once a year you can obtain data on, say, family income, education of the population, internal migration, housing facilities, health programs, or any of the specific targets which may be in the economic development program. A relatively small sample operation which it will take a competent statistician to set up and conduct, can provide statistics on a continuing basis to your government at extraordinarily low cost.

Another point that I regard as of great importance, in this statistical potpourri, is the maintenance of high statistical standards. It is at this point that the contribution of statisticians is especially important. This involves many considerations. It involves first the question of quality of data which means that the statistician must provide measurements of validity and of reliability, and he must also control the precision of data — three essential ingredients of quality.

Maintaining high standards also means that you must maintain standards of timeliness. Current statistics are not worth anything if you get them a year after your decision was taken. You are just kidding yourself and wasting your time and your government's money if you are not providing statistics in time for current use. If you are providing data only

for the historical record and there is no hurry, then you probably ought to have your appropriations decreased considerably.

A third standard is that relating to meeting the needs of the consumer. The statistician must remember not only that he is a servant, but that in his servant capacity, he also has an obligation to get his product where it will do the most good. This means that there must be special attention paid to how these statistics are distributed, to who gets them, and to the form in which they get them. This means that one must consider such questions as: Is it desirable to have certain statistical series sent out every week to key officials and key policy makers, other kinds of data, perhaps monthly, and still other kind of statistics, perhaps quarterly? Do you have adequate indexes to the data? Do you have adequate bibliographies? Statistics do not do anybody any good if they are buried in a 2,000 page report that nobody knows exists or that cannot find. And not even the vice-president of a university, no matter how bright he might be, can use such statistics if he does not know where they are.

Let me close with this final consideration. The gathering of statistics, the job of being a statistician is essentially a grubby job in many ways. The statistician must be motivated by the kinds of perspectives, to which I referred earlier, of service and the feeling of really contributing to something important. We statisticians have the opportunity in our own nations to help in the very important tasks of economic development and other nation-building programs. But the work we do as statisticians, among other things, means getting out into the field. A statistician that can wear out a pair of spurs on a desk in Manila or Washington is another person who ought to be on somebody's "list." Where you get statistics is in the field. I want to close with this admonition to all of you my fellow statisticians — the admonition of the manager of an insurance company who was at one time addressing his salesmen. He was trying to stir them up to produce increased activity and increased sales. His admonition was essentially this: "If you find," he said to his salesmen, "that you are wearing out pants' seat at a greater rate than shoeleather, it is a pretty good indication that you are making contact at the wrong end."