Statistical needs in Eastern Europe

As the historically planned economies of Eastern Europe undertake the transition to the free market, the statistical agencies of these nations face enormous challenges

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As free-market reforms are introduced into the formerly centrally planned economies of Eastern Europe,[1] the statistical agencies of these countries face enormous challenges. In the short term, policymakers will need reliable statistics on the pace and impact of the reforms, as each country embarks on the transition process. For the longer term, national statistical agencies must anticipate and prepare for the future statistical needs of the evolving market economies, a process including the establishment or revision of methodologies, concepts, and standards. Finally, restoring public confidence in official statistical series is an important priority.

The U.S. Bureau of Labor Statistics, in cooperation with Eurostat, the statistical office of the European Communities, sponsored a *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's.*[2] The conference, held February 14–16, 1991, in Washington, focused on the immediate and longer term challenges facing the Eastern European statistical agencies as they adapt to the increase in free-market activities in their countries' economies. This article discusses some of these challenges and insights gathered from the conference on the best ways to meet them.

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Conference overview

The *Economies in Transition* conference provided a forum for practical discussions of the effects on economic statistics of political and economic change in the Eastern European countries.[3] More than 200 representatives of statistical agencies, academia, and professional organizations from 22 countries, including 53 representatives from 7 Eastern European countries—Poland, Hungary, the Soviet Union, Czechoslovakia, Yugoslavia, Bulgaria, and Romania—participated in the conference.

Top experts and statisticians from the United States, Western Europe, Canada, Australia, and the Eastern European countries presented papers and participated in panel discussions. The discussions focused on the immediate difficulties in using available data and statistics during the transition period, and the emerging needs for new data and statistics as market reforms take hold. Proposals were examined for fundamental changes in national statistical systems to meet these needs.

At the conclusion of the conference, heads of statistical agencies from Poland, Hungary, and the U.S.S.R. participated in a panel discussion. The agency directors addressed various issues that had arisen during conference discussions, and provided insights into future statistical policies in their respective countries.[4] A followup panel of renowned Western economists and statisticians provided a commentary on the policy directions suggested by the Eastern European panelists.

Statistics and economic reform

The Eastern European countries are in varying stages of economic transition from central planning to a market orientation. In his discussion

paper on the changing statistical needs in Eastern Europe, Paul Marer of Indiana University introduced the phrase "historically planned economies" to capture the new economic diversity in these countries.[5] Historically planned economies include traditional and reformed centrally planned economies, as well as economies in transition.[6] This phrase emphasizes the lingering importance that central planning will have in these economies, and provides a useful characterization of those countries that have experienced central planning. Marer's paper suggests that the process of introducing market institutions and instruments may take a substantial amount of time, as Eastern European economies transform their institutions, the behavior of their economic agents, and their statistical practices. Characteristics of the centrally planned economy and the associated statistical system may persist to varying degrees during this transitional period.

Centrally planned economies tend to be composed of a relatively small number of very large state enterprises, whereas a market economy has a large number of smaller, private enterprises. Under the central planning system, decision-makers require a great deal of *detailed* information. The authority of state officials over enterprises allowed the state to place a heavy burden on enterprises to report this information. Data collection under central planning also emphasizes the need for universal coverage through censuses, to ensure greater reliability of the data. In turn, the statistical measures developed in the centrally planned economies often rely on the collection of *large amounts* of data.

As economic reforms are instituted, much of the data now collected may become unnecessary. At the same time, new data and statistical needs are being created as the market sector becomes increasingly important to the economy. For example, more accurate cost and profit information will be needed by private enterprises and by the government for assessing economic activity.

Conference participants generally agreed that increased reliance on sample surveys, rather than censuses, will be necessary. As the number of enterprises expands dramatically in the emerging market economies, the cost of collecting data using a census becomes prohibitive. In addition, use of sample surveys will reduce the burden on private entrepreneurs, whose responses will provide the data.

Because data reporting will no longer be compulsory and because the market economy is highly competitive, private entrepreneurs need to be assured that the data they provide to government statistical agencies will be confidential. Private organizations, on a voluntary or for-profit basis, might be encouraged to become involved in collecting and providing data, thus supplementing the efforts of government statistical agencies.

The definitions of basic statistical measures in centrally planned economies often are different from those appropriate for a market economy. For example, measures of output in centrally planned economies most often are based on a "net material product" concept, and are difficult to compare with output measures developed by market economy countries using the system of national accounts. Under central planning, price indexes often are based on list prices, rather than on actual selling prices, with the result that measures of economic growth and inflation are distorted. In addition, some statistical measures may have been constructed in such a fashion as to reflect favorably on the performance of the centrally planned economy.

Although the degree of economic reform in each country varies, representatives from the Eastern European nations expressed similar concerns with regard to many of the statistical measurement issues raised during the conference. The following section focuses on some of the topics discussed, including measures of output and the national accounting system, price collection and measurement, labor force statistics, household income surveys, and private enterprise data.[7]

Selected issues

Output measures and national accounts. The Eastern European countries have in general relied on a material balances concept in constructing measures of output. In his paper on real national income measurement, conference participant Abram Bergson of Harvard University discusses the importance of the material balances system of national accounting for the economy in transition, from the perspective of the Soviet Union.

The concept of national income under the material balances system is net material product. Net material product is a measure of the production of final goods and "material" services. This concept of national income excludes depreciation of productive capital assets and "nonmaterial services." Nonmaterial services are viewed as a redistribution of material production, and so are excluded from the national income measure.[8] Some services, defined as "material services," which do contribute to the production of goods, are included in net material products. Among these are freight transport, business communication services, trade services, and restaurant services.[9]

The exclusion of much of the service sector results in net material product being significantly smaller than gross national product, the estimate developed by market economies, which use a system of national accounts. Bergson's paper reviews a variety of factors distorting the official Soviet national income measures, and compares these measures with U.S. Central Intelligence Agency calculations of Soviet national income.

Bergson points out that distortions in the national income measure arise at the basic data level when enterprise managers have an incentive to falsely report that production has met or exceeded established quotas. However, the impact of this false reporting on national income measures will be limited, in Bergson's view, because statistical personnel monitor enterprise reports.

Bergson suggests that the use of inappropriate base-year prices for newly introduced products may also result in an overstatement of growth in real national income. Newly introduced products require an appropriate base-year price. Goskomstat, the central statistical office of the former U.S.S.R., has apparently often determined this base-year price by referring to the prevailing prices of similar goods in production at the time the new good is introduced.[10] Bergson suggests that this procedure is not as problematic as it might seem, because official prices are revised infrequently. However, products that differ only in a minor way from existing products have frequently been assigned inordinately higher prices than existing, comparable products.[11] As a result, the use of prevailing prices to establish a base-year price for a newly introduced product results in an inflated value for the new product and an overstatement of real national income growth.[12]

Bergson notes in his paper that Goskomstat is now publishing real national income measures that reflect the application of the system of national accounts methodology, for comparison with the material balances system methodology. Steven Rosefielde, in his discussant comments on Bergson's paper, states that the primary deficiency of the Soviet statistical system is its reliance on state-established prices and production levels, rather than the choice of the material balances concept over the system of national accounts. Simply adopting the Western system of national accounts and correcting some data reporting errors will not eliminate basic distortions in the Soviet national income figures that result from the reliance on state-established prices and production quotas.[13]

Marer similarly cautions in his paper that the adoption of the system of national accounts-based classifications and definitions will not automatically improve the credibility of the resulting statistics. He points out that, if the same price indexes are applied using the system of national accounts data, the resulting statistical measures might be distorted just as the material balances system-based measures are.

Leszek Zienkowski of the Polish Central Statistical Office and the Polish Academy of Sciences presented a paper on statistics and the transition to the free market in Poland that summarizes the experience of the Polish statistical agency in using the material balances methodology. Because decisionmakers under central planning required data on real flows to make production decisions, the statistical system focused on the "material sphere." The "nonmaterial sphere," or service sector, which included redistributive activities such as financial services, received little attention.[14] Zienkowski notes that financial data will become increasingly important as market reforms take place.

According to Zienkowski, material balances system definitions were often imprecise. In addition, in Poland, the material balances system was isolated from "branch" or industry and sector level statistics. Data produced for industries and sectors were not coordinated in the material balances system definitions and classifications, and so were not compatible. Finally, the classification system used in the material balances system is different from that used for system of national accounts measures in Western European countries and recommended by the United Nations, making international comparisons difficult.

In his paper, Zienkowski concludes that Poland should create a completely new statistical system, based on the system of national accounts method of accounting. He suggests that such accounts be developed parallel to the material balances system accounts, and replace the latter accounts as soon as possible. The creation of a new statistical system would permit the development of a "fully consistent system of basic data" collected from households, establishments, banks, budgeting agencies, and other reporting units.[15] In addition, the Polish statistical office should exert its influence on the accounting rules followed by enterprises, the banking sector, and those responsible for the state budget.

Ed Hewett of The Brookings Institution, in his discussion of the paper by Marer, suggests that economies in transition might give less priority to preparing comparable estimates of national income, considering the limited resources available to the Eastern European statistical offices. Hewett cites the inadequacies of using existing exchange rates for the Eastern

European countries to construct dollar values of gross national product, and the large amount of resources needed to estimate quality-adjusted purchasing power parities for use in estimating national income.

In addition, Hewett suggests that macrovariables will inevitably give a distorted view of economic activity during the transition process, because of problems in measuring prices and in capturing changes in the quality and quantity of goods produced. As a result, less emphasis should be placed on the measurement and interpretation of macro variables during the transition period. More priority should be given to direct quality measurement for selected goods and services, the change in shortages of goods over time, and environmental quality variables.

Price collection and measurement. As involvement in free-market activities increases, a major problem for most of the Eastern European statistical agencies centers on unreliable price indexes. As indicated earlier, statistics that make use of the official price lists—such as measures of the rate of growth of output or productivity—may be seriously distorted because of the difference between the official list price and the theoretical "market value" of a good or service.

Under central planning, prices were set, rather than determined by supply and demand. Official prices frequently remained unchanged for extended periods. The official list price of goods and services often differed greatly from the value to purchasers, as reflected by prices of similar items purchased in unofficial markets.

As the "unofficial" market becomes more important and the types and numbers of new enterprises increase, continued reliance on official prices will have a downward biasing effect on price indexes.[16] Goods sold at high market prices may be valued at lower official prices when included in the price index. As a result, true price increases may be understated (and output overstated) because of difficulties in measuring price increases and changes in quality of goods.

Alan Heston and Robert Summers, both of the University of Pennsylvania, suggest in their paper on price collection and measurement that the numbers of products and sales outlets in the price collection sample should be increased as the market economy expands, to minimize this downward bias in the price index during the transition. In their analysis, Heston and Summers compare price collection frameworks of Bulgaria, Romania, Poland, Czechoslovakia, Yugoslavia, the former German Democratic Republic, Hungary, and Austria.

Bulgaria and Romania had the smallest samples of items priced, in the smallest numbers of sales outlets, and used primarily official prices. Czechoslovakia and Poland collected price information for more than 1,000 items. Both countries have relied extensively on official price lists to collect price data in the past, but Poland is rapidly moving away from this reliance on official price lists.[17] Yugoslavia and the German Democratic Republic used a mixture of official and survey price information, with the German Democratic Republic collecting data for more than 1,000 items. Austria and Hungary primarily used survey data for price information on more than 1,000 items.

Stephen Gardner of Baylor University, in his paper on product quality and price inflation, discusses the importance of quality adjustments for price measurement in the Eastern European countries. Apart from existing problems of adjustment for changes in the quality of items purchased in the Eastern European countries, Gardner suggests that product quality will undergo further deterioration during the transition, followed by a marked increase in quality. "Hidden" inflation, reflected by a change in the quality of a good without a corresponding change in the price of the good, would increase. Economic indicators would not reflect this increase and would be misleading, perhaps making the transition period more difficult.

Gardner describes three types of quality-related hidden inflation. Constant-quality hidden inflation is a hidden price increase that occurs when producers evade price controls by introducing "new" products with insignificant quality improvements, at higher prices. Declining-quality hidden inflation results when there is a decline in the quality of a product, without a corresponding fall in the price. Rising-quality hidden inflation results when unavailable low-priced, low-quality goods are replaced by high-priced, high-quality goods.[18]

Some methods to correct for hidden inflation that are assessed by Gardner include the matched model method, direct quality adjustment, and hedonic analysis. Under the matched model method, products included in the price index must be unchanged between the base and reference years.[19] Gardner suggests that the matched model method would be difficult to use during the transition period because the assortment and quality of goods would be changing dramatically.

Direct quality adjustment also would be difficult during the transition period, when products are being completely replaced. Direct quality adjustment requires base-year prices for new products. Yet, market prices have not been

established for these products. In addition, those instances in which consumers are forced to substitute an available good for an unavailable, preferred good of lower quality and cost are not addressed by this method.

In hedonic analysis, a price series for a product is regressed on various quality characteristics and time. The coefficient on the time variable is then used in estimating prices adjusted for quality. Gardner advises caution in the use of this method and the interpretation of its results, particularly during the transition period. Until market economies are established, consumer prices may be related to the resource costs of producing a product, but will not reflect user valuations or product quality. The coefficient estimates from hedonic analysis, then, would reflect cost changes, rather than consumer value.

If lower priced, lower quality goods become more available as the transition progresses, hedonic analysis using pre- and post-transition data may imply a decline in quality when the consumer's valuation of quality has actually improved.[20] This wider availability would result in a decline in the forced substitution of higher priced, higher quality goods for the more desirable lower priced, lower quality goods.[21]

Labor force statistics. In his paper on unemployment and job search in the socialist economies in transition, Paul Gregory states that under central planning, unemployment simply ceased to exist—by definition. Workers were guaranteed employment, and the state was responsible for securing that employment. Entrance of individuals into the work force from middle and higher level educational institutions was guided by administrative authorities. Because the planned economy provided employment opportunities for all, a nonworking individual was either a "parasite" or in the process of changing jobs.[22] Frequent labor turnover was viewed as detrimental to economic efficiency.[23]

The planned administration of the economy resulted in inefficient sectors of the economy being preserved rather than restructured. Employment patterns in the historically planned economies thus are skewed toward heavy industry and agriculture, and away from services.[24] Employment under central planning was concentrated almost exclusively in state enterprises, with a very limited degree of private employment.[25]

Several labor experts participating in the conference believed that the inexperience of the historically planned economies with functional labor markets will make the difficulties of adjusting to a market economy more severe. Workers who are familiar with a job-rights environment may have trouble adapting to a competitive labor market. And because the worker was not previously responsible for searching out employment, job-search skills may be poor.

The consensus of the experts at the conference was that the transition would result in massive unemployment related to the restructuring of the economy. Because the planned economy resulted in the continued existence of inefficient sectors, the structure of the economy simply cannot be maintained in a competitive market environment.[26] Restructuring is expected to occur in terms of the relative importance of various sectors of the economy, the skills and occupations employed in the economy, and the types of firms operating in the economy.

Gur Ofer of Hebrew University, in presenting discussant comments on a paper by Saul Estrin and Christopher Pissarides, suggested that this structural unemployment will be aggravated by the lack of labor market institutions and market behaviors to move workers quickly from one employer to another.[27] The absence of a functioning housing market further limits labor mobility. This massive unemployment will be a primary issue during the transition, from a political as well as a statistical point of view. Ofer noted that unemployment policies considered adequate in the West may be received differently by workers who previously were guaranteed a job.

Citing the enormity of the problems anticipated in the labor markets and the pressing needs that policymakers will have for information on unemployment during the transition. several experts advised Eastern Europeans to adopt existing, internationally accepted labor statistics definitions and practices, in order to produce internationally comparable statistics.

Estrin and Pissarides, both of the Centre for Economic Performance, the London School of Economics, presented a paper on unemployment and wage statistics in Eastern Europe, and discussed the possible role of the Labor Force Survey.[28] The Labor Force Survey, in addition to administrative data sources, is used in the European Community to obtain information on labor market activities. The survey has the advantage of collecting information from all potential labor force members, including discouraged workers and those not receiving unemployment benefits but seeking a job. Administrative data, such as the number of unemployed receiving benefits, can be used to check the consistency of the unemployment statistics.

Ofer, in discussing the paper by Estrin and Pissarides, suggested that the existing household surveys of the Eastern European countries might be used until the more complicated and

expensive labor force surveys could be implemented. In his comments, he concluded that the extent and impact of unemployment resulting from restructuring during the transition will depend on the macroeconomic policies developed to ameliorate unemployment, including labor compensation, unemployment insurance, and retraining programs. He recommended that any subsidy policy should benefit new employers, rather than propping up inefficient old employers, to minimize unemployment.

Household income surveys. The social impact of the transition from a planned to a market-oriented economy can be analyzed using information from household budget surveys. Obtaining information on the effects of the transition on various social groups is clearly an important priority to the Eastern European countries. The existing household surveys in these countries were generally viewed by conference participants to be quite useful. However, in his presentation on the future of household income surveys in Hungary, Laszlo Vita of the Hungarian Central Statistical Office notes that the surveys should not be the only source of data on the social impact of the transition. Vita suggests that administrative data sources, including tax records, be used to supplement the survey data.[29]

Those administering the surveys face many challenges in providing the necessary information on the social impact of the transition. Barbara Torrey presented a paper evaluating household surveys of economic status in Eastern Europe, and discussed a number of these challenges.[30] As the private sector of an economy in transition grows, the household budget survey will need to increase the population representation of the private economy. Income definitions will have to be revised to include the income of the private entrepreneur. And because the survey is voluntary, attention toward encouraging participation in the survey and assuring respondents of the confidentiality of their data will be vital.

Institutional changes in the society as a result of transition, such as the introduction of a general personal tax, social security measures, pension plans, and unemployment benefits, will necessitate some changes in the household budget questionnaires. The surveys also will have to be modified to account for the fact that benefits previously provided to workers by employers, such as health care, subsidized housing, job training, higher education, and social services, may now be provided by the government or the private market.[31] In a paper on the use of household budget surveys in evaluating social consequences of transition, M. Lidia Barreiros of Eurostat reviews the household budget surveys of the European Communities and provides suggestions for the future development of such surveys in the Eastern European countries.[32]

During the transition, information on the rapidly changing economy's impact on households may be needed more quickly than the large household budget surveys are able to provide it. Torrey's presentation, as well as comments by several other experts participating in the conference, suggests the use of small, quick surveys to supplement the household budget survey and provide timely information for social policymaking during the transition.

Private enterprise data. Joseph Duncan of The Dun & Bradstreet Corporation presented a paper on improving information systems for private business in Eastern Europe.[33] In his presentation, Duncan notes that the role of government will shift during the transition process from one of *controlling* enterprises and economic activity to one of *supporting* the development of the market economy. Developed market economies rely on a framework of institutions providing necessary information and support to private enterprises. This framework includes legal institutions, business registers, and private organizations, such as chambers of commerce, that provide information on private enterprise activities. Duncan suggests that the development of the necessary legal institutions to support the market economy must be a priority. In addition, because of the importance of foreign trade to the developing market economies, the appropriate exchange rates need to be determined for their currencies.

Business registers provide basic data on the names and addresses of private enterprises, as well as more detailed data on size of the enterprise and its financial assets. This information assists private entrepreneurs in finding customers and suppliers, and in operating in the marketplace. In his presentation remarks, Duncan suggested that the central statistical office is the appropriate agency to maintain and distribute a business list of private enterprises. The business list should be confined to the limited basic data, including name, address, and type of enterprise, and would be available to all upon request.

More detailed data, such as financial data on individual enterprises, could be made available by private organizations such as industry trade groups, or marketed by private companies similar to Dun & Bradstreet, rather than being gathered by the statistical office. This would allow the government statistical agency to assure enterprises that the data it releases in an identifiable fashion would be limited to very basic information.

A number of conference speakers asserted that the statistical offices would benefit greatly by improving the technology available to perform the various tasks involved in producing statistical output. With regard to collecting and providing basic information on private enterprises, Duncan also suggested that moving quickly to update technology would be extremely valuable to private entrepreneurs.

Interpretation of statistics

Several experts noted that statistics for an economy newly introducing market activities will have very different interpretations than will those for an established market economy. Because prices in the historically planned economies prior to the transition were centrally determined, rather than determined by the market, pretransition statistics—such as the growth rate of output—based on these prices will be distorted. System-related economic problems, such as inflation and unemployment, cannot be measured using pretransition data because the forms such phenomena took in the centrally planned economies were quite different from those observed in market economies.

The measured rate of inflation may increase dramatically, simply because phenomena appearing as shortages and repressed inflation in a centrally planned economy would now be measured in the framework of a market economy. As enterprises become more efficient in the market economy, and as some inefficient enterprises cease to function, unemployment may increase. Output of some goods and services may fall, as market forces begin to determine production decisions. Statistical measures may reflect changes in these and other economic variables which would be interpreted as adverse news in a fully formed market economy, but which are consistent with a healthy transition process for the historically planned economies.

Because intertemporal comparisons of data produced under the old and new statistical systems will be difficult, assessing the performance of an economy in transition will require careful interpretation of economic indicators. Measures of output growth, inflation, and unemployment in the economy in transition may be biased if the statistical system fails to accurately capture developments in the rapidly growing private sector. Moreover, managers of surviving state enterprises may have an incentive to understate their performance in order to retain subsidies or justify price increases.

In his paper, Marer proposes supplementing traditional indicators of economic performance with nonconventional measures during the transition period. These supplemental measures include the extent of shortages of key goods and inputs; the degree of change in the legal framework, such as the legality of private ownership; the extent of the growth and importance of the private sector; the speed of deconcentration in various sectors of the economy; the extent of establishment and growth of market institutions; and the levels and shares of subsidies and taxes.[34]

Future statistical policies

During the final session, the heads of the central statistical offices in the seven Eastern European countries represented at the conference expressed their views on the issues raised and discussed future statistical policies in their own countries. Gyorgy Vukovich, head of the Central Statistical Office of Hungary, noted that the Eastern European countries have only 2 to 3 years to establish an operational statistical system corresponding to the requirement of a market economy. By comparison, the development of Western statistical systems for market economies took place over several decades. Vukovich also emphasized the following long-term priorities for central statistical offices: assess the needs of new groups of data users; build new relationships with data sources; obtain legislation defining the role of the statistical office and establishing the independence of that office from government authorities; and improve the credibility of the central statistical office.

Bohdan Wyznikiewicz, head of the Central Statistical Office of Poland, cited priorities as the implementation of the system of national accounts methodology; improvements in price statistics; and the introduction of unemployment and financial statistics. His recommended adjustments to statistical methodology included replacing censuses with sample surveys, reducing the extent of direct reporting by enterprises to the statistical agency, and ensuring the international comparability of data. The problems he anticipated in achieving these priorities included the lack of experienced staff and the need for modern technology.

Vadim Kirichenko, head of Goskomstat, emphasized the relationship between real changes in the economy and the development of a new statistical system supporting these changes. As real changes occur in the economy, changes in the statistical system become viable. Educating data users, respondents, policymakers, and statistical staff in new perspectives on statistics is a priority. These new perspectives include the need for independence of the statistical agency from government authorities; the policy of making statistics available to all groups of users

equally; and the pledge to protect the confidentiality of respondents.

Throughout the conference, the Eastern Europeans expressed eagerness to seize the opportunity to develop a new statistical system during the period of economic transition. Western participants cautioned against unnecessarily devoting resources to reinventing statistical definitions or methods. Some advocated taking over an existing statistical system "lock, stock, and barrel" from one of the European Community countries, to obtain an internationally compatible statistical system immediately and with minimal effort.

Others advised that differences in institutional structures between the Eastern European and Western countries be carefully considered when implementing a new statistical system. Statistical definitions and concepts accepted by Western statisticians might be readily imported, but the statistical methodology used to develop appropriate measures might need to be adapted. Questionnaires, sampling frames, methods of recruiting and training interviewers, field techniques, and methods of analysis might not be readily transferrable, but instead might require modification to account for institutional differences.[35]

During a followup panel discussion of the stated policy directions of the Eastern European statistical agencies, Edmond Malinvaud, a former director of INSEE, the national statistical institute of France, described three tasks facing the statistical office.[36] The first is the building of a new statistical system suited to the market economies that are developing. Second, the transition process itself must be observed. And finally, data describing the past may need to be revised. He proposed that the main priority should be to build the new statistical system, and elaborated on the institutional prerequisites for a strong statistical system.

In his panel remarks, Malinvaud asserted that it is essential to obtain a clear, commonly applied set of laws providing a legal basis for the statistical system. A second institutional issue involves balancing the coordination of statistical concepts and data with the need for decentralization of statistical agencies working with various users in different fields. Finally, Malinvaud emphasized the need to achieve a wide dissemination of data, and to develop public recognition of a strong ethic in the production of statistics. This ethic should embrace objectivity in the production of statistics, provide confidentiality to respondents, be open to questions about the validity of published statistics, and promote an awareness of the relevant issues that statistics must address.

THE STATISTICAL ISSUES facing the Eastern European statistical agencies have both unique and universal qualities. The economic, political, and social price of the transition from a centrally planned to a market-oriented economic system is high, and there is a pressing need to resolve these issues quickly. Yet, as the Eastern European economies adopt a market orientation, the requirements of the statistical systems become increasingly clear. The *Conference on Economic Statistics for Economies in Transition* provided a rich basis for mutual cooperation and further understanding of the difficulties ahead. Short-term solutions were suggested for transition-period statistical needs, and guidance was offered in the development of future statistical systems.

The U.S. Bureau of Labor Statistics continues to cooperate with the central statistical offices of Poland, Hungary, Czechoslovakia, and the former U.S.S.R. (now the Commonwealth of Independent States) in rebuilding their statistical systems. Bureau staff recently traveled to Poland, Hungary, and Czechoslovakia to further develop our assistance programs, and the Bureau's Division of International Technical Cooperation continues to work with Eastern European statistical agency staff in devising and conducting training seminars and other programs. □

Footnotes

[1] For ease of exposition, the term "Eastern Europe" is used in this article to refer to Poland, Hungary, Czechoslovakia, Yugoslavia, Bulgaria, Romania, and the former German Democratic Republic (East Germany), as well as the Union of Soviet Socialist Republics (U.S.S.R.). The article's reference to the U.S.S.R., rather than the Commonwealth of Independent States, reflects that nation's political status when the conference was held.

[2] A volume on the conference proceedings, including commissioned papers, panel discussion remarks, and discussant and audience comments, is forthcoming.

[3] In addition to the recent conference, the U.S. Bureau of Labor Statistics is providing guidance and support to statistical agencies in Poland, Hungary, Czechoslovakia, and the former U.S.S.R. (now Commonwealth of Independent States) as they work to meet these challenges. The

Bureau's Eastern European assistance program, funded by the Support for Eastern European Democracies (SEED) Act, was initiated in November 1989. Bureau staff traveled to Warsaw and Budapest to meet with staff from the respective central statistical offices, discuss the type of assistance needed, and provide guidance on various statistical issues. Top officials of the Central Statistical Office of Poland, in turn, visited the Bureau in September 1990 to participate in further discussions. Also staff from the central statistical offices of Poland, Hungary, Czechoslovakia, and the former U.S.S.R. are participating in various seminars and workshops conducted by the Bureau's Division of International Training and Cooperation.

[4] Statistical agency heads from Czechoslovakia, Yugoslavia, Bulgaria, and Romania presented somewhat briefer comments on the conference discussions and future policy directions from the floor of the conference.

[5] Paul Marer, "Conceptual and Statistical Problems of Comparative Measurement of the Economic Performance of Eastern European Countries in Transition," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*, pp. 1–2.

[6] *Ibid.*, p. 1.

[7] The conference proceedings volume provides a broader discussion of these and other measurement concerns.

[8] Abram Bergson, "Real National Income Measurement: In Soviet Perspective," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*, pp. 4–5.

[9] *Ibid.*, pp. 3–4.

[10] *Ibid.*, pp. 9–10.

[11] *Ibid.*

[12] *Ibid.*

[13] Steven Rosefielde, "Comments on 'Real National Income Measurement: In Soviet Perspective'," discussant remarks, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*, p. 12.

[14] Leszek Zienkowski, "Statistics in Transition in the Economy in Transition (the Polish Case)," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*, p. 2.

[15] *Ibid.*, p. 11.

[16] Alan Heston and Robert Summers, "Consequences of Expanded Availability of Goods and Services for Price Collection and Measurement of Trends in Output and Inflation," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition, Eastern Europe in the 1990's*, p. 3.

[17] Paul Armknecht, unpublished memorandum (U.S. Bureau of Labor Statistics, June 1990).

[18] The reader is referred to the conference proceedings for a discussion of whether this phenomenon is a form of hidden inflation.

[19] H. Stephen Gardner, "Product Quality and Price Inflation in Transitional Economies," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition, Eastern Europe in the 1990's*, p. 7.

[20] *Ibid.*, pp. 10–11.

[21] Paul Armknecht of the U.S. Bureau of Labor Statistics suggested that cross-sectional hedonic analysis, rather than time series, might be useful in making direct quality adjustments during the transition period.

[22] Paul R. Gregory, "Unemployment and Wage Statistics in Eastern Europe and the Role of the Labor Force Survey," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*, p. 2.

[23] *Ibid.*, p. 4.

[24] *Ibid.*, p. 3.

[25] *Ibid.*, p. 4.

[26] *Ibid.*, p. 3.

[27] See Gur Ofer's discussant comments on Saul Estrin and Christopher Pissarides, "Unemployment and Wage Statistics in Eastern Europe and the Role of the Labor Force Survey," in the forthcoming conference proceedings volume.

[28] Saul Estrin and Christopher Pissarides, "Unemployment and Wage Statistics in Eastern Europe and the Role of the Labor Force Survey," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*.

[29] Laszlo Vita, "On the Future of Household Income Surveys in Hungary," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*.

[30] B. Torrey, T. Smeeding, W. Okrasa, and T. Garner, "Household Surveys of Economic Status in Eastern Europe: An Evaluation," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*.

[31] See Jacques van der Gaag's discussant comments on B. Torrey and others, "Household Surveys," in the forthcoming conference proceedings volume.

[32] M. Lidia Barreiros, "The Use of Household Budget Surveys in Evaluating Social Consequences of Transition," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*.

[33] Joseph W. Duncan, "Improved Information Systems for Private Business in Eastern Europe," Discussion Paper, February 1991, in *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*.

[34] Marer, pp. 28–29.

[35] See Stephen E. Fienberg's remarks during the panel discussion "Statistical Foundations and the Market Economy," forthcoming in the conference proceedings volume.

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APPENDIX: An overview in brief of additional issues

This appendix contains abstracts of four conference papers. Three of the papers address some topics not discussed in the above report: the impact of the underground economy on the transition, agriculture's role during the transition, and statistics and the German unification process. The fourth paper provides a practical view of the statistical issues confronting the Eastern European statistical offices during the pro-

cess of economic transition, based on the experiences of the Polish Central Statistical Office.

These papers, in conjunction with those referenced in the above report, complete the complement of papers presented at the *Conference on Economic Statistics for Economies in Transition: Eastern Europe in the 1990's*. Copies of all papers presented at the conference are available on request from the U.S. Bureau of Labor Statistics. In addition, a volume containing the conference proceedings is being prepared by the Bureau, and will be available in early 1992.[1]

Abstracts

Bruno Dallago,[2] "Second and Irregular Economy in Eastern Europe: Its Consequences for Economic Transition."

This paper suggests that national statistics may be underestimated during transition from central planning to a market system because of unregistered activities in the "second economy." In addition, changes in the second economy may result in a structural distortion of statistical aggregates during the transition. Estimates of costs, incomes, and employment may change due to the second economy's inner movement and transformation, rather than to changes in economic performance. The paper concludes that careful analysis of the second economy's structure and dynamics is essential to the correct assessment of developments during transition.

The second economy in centrally planned economies is defined as consisting of all activities that escape the direct control of the state. The second economy includes the regular private sector and the irregular economy; the irregular economy includes only those economic activities that evade or avoid the society's laws governing those activities. As economies move from central planning to market activities, the regular private sector becomes part of the official economy, and only irregular economic activities remain in the second economy.

The paper describes the second economy in centrally planned systems prior to transition; reviews measurement methods and estimates of the irregular economy in Soviet-type economies prior to transition; discusses the causes, role, and consequences of the second economy in centrally planned economies; describes the process of privatization and structural transformation of the economy during the transition to a market system; and assesses the consequences of the second economy for the transition.

Robert B. Koopman,[3] "Agriculture's Role During the Transition from Plan to Market: Real Prices, Real Incentives, and Potential Equilibrium."

The agricultural sectors in centrally planned economies have played a large role in lackluster economic performance, and chronic food shortages have contributed to discontent with the system. Koopman suggests that the agricultural sector provides an interesting case study of the effective price policy of centrally planned economies, the interaction of this price policy with the planned economic system, and the future agricultural potential of historically planned economies under market reform.

Previous research analyzing the causes of food shortages had generally been limited to studying production shortfalls. Koopman suggests that production problems may not be the largest contributor to food shortages. Instead, producers' supply responses appear to be consistent with the effective "incentive price policy" environment they face.

Koopman constructs and estimates a simulation model of the world's agricultural economy to analyze the potential impact of market-style reform in the centrally planned economies. The simulation model is based on estimates of support to producers and consumers and assumptions about the slope, shape, and location of supply and demand curves. The model is a static, partial equilibrium net-trade model, consisting of constant-elasticity supply and demand curves for each of 22 commodities in 36 separate countries or regions.

The simulation model is solved under three different scenarios—the first reflects rapid productivity gains in agriculture and soft consumer demand, the second reflects no productivity gains, and the third reflects falling incomes combined with no productivity gains. Each of the scenarios rebuilds a previously planned economy into a reasonable approximation of a market economy. Supply and demand elasticities are assumed to move from being relatively inelastic under planning-based economies to being relatively elastic under market-based systems. Supply and demand curves are shifted to account for expected productivity gains and excess demand. After removing policy price wedges, the model solves for a new equilibrium, with a solution horizon of 5 years.

Results of this study suggest that agricultural production in the centrally planned economies was not simply deficient, but a rational producer response to a relatively unfavorable price policy environment. In addition, Koopman finds that overstimulated consumer demand contributed more to food shortages under central planning than did shortfalls in supply.

Manfred Melzer and Reiner Staeglin,[4] "The Role of Economic Statistics in the German Unification Process."

The former German Democratic Republic was united with the Federal Republic of Germany on October 3, 1990. Melzer and Staeglin provide a remarkable overview of the unification process from the standpoint of the statistical system. The authors critically review the statistical system of the former East Germany, to illustrate the statistical issues accompanying the unification process. They conclude that the rapid pace of the unification as well as the economic difficulties of the former East Germany result in enormous statistical problems. In the authors' view, the need to implement the West German statistical system as quickly as possible in the former East Germany becomes even more urgent when longstanding deficiencies in the latter's statistical system are considered.

While acknowledging that the necessary information systems and economic statistics cannot be developed in a short time, Melzer and Staeglin point out that some compromise solutions can be developed to provide data for policymaking during the

transition period. The authors elaborate on the data needs of the unified Germany during the transition period; the efforts under way at the Federal Statistical Office, the Deutsches Institut für Wirtschaftsforschung, and other organizations to bridge the information gap during the transition period; and the anticipated timetable for establishing a new statistical information system in East Germany that is in accordance with that of West Germany.

Ongoing efforts to provide data needed in the transition period, as described by Melzer and Staeglin, include the preparation of unofficial national accounts estimates for East Germany, West Germany, and the united Federal Republic of Germany by the Deutsches Institut. A Socio-Economic Panel study, conducted for West Germany since 1984, was extended by the Institut in June 1990 to include East Germany. This panel will provide (unofficial) representative and longitudinal data on income, transfer payments, labor market experience, changing family composition, and housing.

Unofficial estimates of purchasing power parities between the East German Mark and the West German Deutschemark have also been prepared by the Deutsches Institut to supplement the extremely weak price statistics of the former East Germany. Finally, the authors describe the need for consistent input-output tables for East and West Germany, as well as for the united Germany; the difficulties in developing these tables; and the inability of the Federal Statistical Office to undertake such work at this time. Preliminary work to recalculate the existing input-output table for East Germany for 1987 according to Western standards is being undertaken by the Deutsches Institut in cooperation with the Institute for Economic Sciences in the former East Berlin.

Jozef Olenski.[5] "Statistical Production Processes in Transition."

Based on the experiences of the Polish Central Statistical Office, this paper discusses the impact of the transition to a market-based economy on official statistics. In particular, the author focuses on the statistical production process and specific changes needed in this process as the transition to a market economy progresses. The effects of the transition on the legal status and organization of official statistical agencies also are discussed.

Olenski describes the statistical system in Poland up until 1988 as a "reporting" system, with all state-owned and cooperative enterprises required to report data to a central administrative body. In general, private enterprises were not covered by this reporting system. The basic form of data collection was the full survey, or census. Sample surveys were not considered an acceptable means of data collection. Information collected for statistical purposes was widely available, even in disaggregated forms, and used for nonstatistical purposes.

After 1988, as a result of dramatic political and economic changes, the private sector began to develop rapidly. The number of private businesses increased markedly. State-owned businesses began to be privatized and the need to update and maintain a business register became clear. The importance of ensuring the confidentiality of data collected from private businesses was established. The existing statistical system, characterized by Olenski as a "reporting" system, clearly was unable to provide the information needed by an emerging market economy. The system needed to be adapted to account properly for the development of the private sector and the movement toward a market-based economy.

Olenski provides a very practical description of the components of the statistical production process and the changes required in each statistical component as a result of the movement toward increased market activities. Data sources; data editing and validation; data storage and retrieval; data processing; publication and dissemination of official statistics; and statistical tools such as business registers, classification systems, nomenclatures, and glossaries are included in his careful discussion of the impact of transition on the production of official statistics.

Footnotes to the appendix

[1] To receive a copy of a conference paper, or further information on obtaining the conference proceedings volume, contact Susan Powers, Office of Productivity and Technology, Bureau of Labor Statistics, Room S–4325, Frances Perkins Building, 200 Constitution Ave., N.W., Washington, DC 20210.

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