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Commerce Issues



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**Comptroller General
of the United States**

December 1992

The Speaker of the House of Representatives
The Majority Leader of the Senate

In response to your request, this transition series report discusses major policy, management, and program issues facing the Congress and the new administration in the area of commerce. The issues include (1) focusing the Department of Commerce's role on competitiveness issues, (2) investing in infrastructure to ensure mission effectiveness, (3) improving economic statistics to support efforts to revitalize the U.S. economy, and (4) planning a more accurate and less costly 2000 Census.

The GAO products upon which this report is based are listed at the end of this report.

We are also sending copies of this report to the President-elect, the Republican leadership of the Congress, the appropriate congressional committees, and the Secretary-designate of Commerce.



Charles A. Bowsher

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Commerce Issues

The Department of Commerce is a large, diverse agency responsible for numerous programs that cut across core national issues, including trade, technology, competitiveness, industry, environment, and economic activity. Commerce's missions include fostering technology, stimulating and regulating international trade, promoting commerce, analyzing social and economic activity, and studying the environment and natural resources.

Four years ago, we identified several important areas needing action at Commerce, including improving export promotion activities and controls, addressing problems associated with the decennial census, and monitoring progress on a new automated patent system. These are still relevant issues, though Commerce has made some improvements in export-related activities.

This report discusses the need for Commerce to (1) focus its missions on improving competitiveness and play a more significant role among the many federal agencies that share responsibility for that goal; (2) invest in infrastructure—which, according to Commerce's estimates, may require at least \$7.4 billion over 15 years,

including \$4.6 billion for modernizing the National Weather Service; (3) improve economic statistics to overcome concerns about their quality and coordination; and (4) change planning and decisionmaking for the 2000 Census to ensure that accuracy will not continue declining or costs will not continue rising. Census Bureau planning staff estimated that if the current approach to taking the census is retained for 2000, the costs could rise to about \$4.8 billion in current dollars, from \$2.6 billion in 1990.

Focusing Commerce's Role

Enhancing the federal government's ability to spur economic growth by increasing competitiveness is one key to economic security. Commerce, with its programs in technology, trade, statistics, telecommunications, and industrial development, has a role in this effort. Its programs are at the heart of federal efforts to foster both near-term and long-term improvements in the productivity of the U.S. economy.

The current organization of the federal government may not maximize the nation's capacity to improve productivity and competitiveness. A number of congressional bills and private sector reports have offered proposals aimed at improving the federal approach to this important issue. They propose restructuring programs and agencies that deal with the major elements of competitiveness, such as international trade and technology, and generally suggest significant changes to Commerce's present missions or organizational structure.

With the growing convergence of sentiment on this issue, both inside and outside the government, there will likely be attempts to reorder the federal approach to competitiveness. If it is determined that

Commerce should play a key role in enhancing and promoting competitiveness, the Secretary must be ready to address two issues that impair Commerce's ability to achieve that aim. First, Commerce will need to better focus its mission on improving and promoting competitiveness. Second, Commerce will need to play a more significant role among the various federal agencies that share responsibilities for improving competitiveness.

**Focus on
Promoting
Competitiveness**

Commerce is in a unique position to promote competitiveness because it combines many of the essential elements of government programs necessary to meet the goal—statistical analysis, international trade, technology promotion, telecommunications, and economic development. However, Commerce's Inspector General (IG) has described Commerce as a loose collection of more than 100 programs delivering services to about 1,000 customer bases. While many programs are directly related to the goal of supporting commerce and industry, many others are, at best, only distantly connected to this goal.

The majority of Commerce's limited resources are applied to tasks that do not

have a tangible impact on improving competitiveness. For example, in fiscal year 1993, an estimated 59 percent of Commerce's budget and 37 percent of its staff is to be allocated to the National Oceanic and Atmospheric Administration (NOAA) for weather, oceanic research, and other activities—which are only tangentially related to improving and promoting competitiveness. In this environment, it is difficult to apply sufficient resources and attention to all necessary activities and mission priorities.

If Commerce is to play a key role in enhancing and promoting competitiveness, the Secretary will need to formulate and set forth a strategy that taps into Commerce's inherent potential toward this end. At the outset of developing a strategy, the Secretary will need to carefully examine current components of Commerce and work with the Office of Management and Budget (OMB) and Congress to consider spinning off or eliminating those components that do not fit, while clarifying the roles and interconnections among those that do. Further, because the programs in Commerce do not encompass all the essential elements of improving competitiveness and productivity, the strategy should ensure that

Commerce's programs are consistent with other agencies' efforts.

Playing a More Significant Role in Improving Competitiveness

The Secretary will also need to address the fundamental problem that Commerce lacks the prominence and resources to play a significant role in improving competitiveness. While many federal departments share mission-related functions and programs with other departments and agencies, Commerce likely faces the most complex web of divided authorities. For example, Commerce shares its missions with at least 71 federal departments, agencies, and offices. Further, Commerce has traditionally taken a back seat to departments that had more prominent status, greater resources, and higher national priority in the Cold War world.

Now, in the post-Cold War era, the issues traditionally administered by Commerce have gained new priority and could push Commerce to a potential leadership position. Yet Commerce does not control a majority of the resources devoted to missions it shares with other agencies. For example, export promotion programs are distributed among 10 agencies. The U.S. Department of Agriculture, not Commerce, receives about

74 percent of total funding for these programs, although it accounts for only about 10 percent of U.S. exports.

If the incoming administration and the Congress determine that Commerce is to play a central role in improving competitiveness, then Commerce should occupy a more central position in the system of federal programs meant to achieve this end. To do so, the Secretary needs to work with the President, other Secretaries, and the Congress either to (1) secure clearer lines of coordinating authority over related programs in other agencies or (2) relocate those related programs into Commerce.

Investing in Infrastructure to Ensure Mission Effectiveness

The ability of Commerce to effectively achieve its missions—especially those related to enhancing national competitiveness and measuring and analyzing the environment—are largely dependent on the state of Commerce’s technical and research facilities. However, in the past, inadequate attention to strategic issues and long-term responsibilities have left Commerce with some critical infrastructure needs requiring immediate attention, including long overdue capital investments and a lack of needed technology.

Significant Investments Needed

Past funding problems, shortcomings in departmental oversight, and planning inconsistencies have left Commerce in a position of needing to invest heavily in its infrastructure. Commerce estimates that infrastructure currently in disrepair—including federal laboratories, a fleet of ships, weather satellites and radars, information systems, and other facilities and equipment—will require investments of at least \$7.4 billion over a 15-year period. Regardless of whether they remain in Commerce or become candidates for relocation elsewhere, these infrastructure needs merit prompt attention. For example,

- The National Institute of Standards and Technology (NIST) has requested \$607 million over 10 years to begin overdue renovation and replacement of laboratories and other research facilities that are between 25 and 40 years old. NIST's mission to advance scientific and technological progress is already hampered by obsolete technical and environmental systems, unreliable power supplies at research buildings, and major safety and systems capacity problems.
- NOAA is at risk of not being able to effectively carry out current and future ocean research activities. Several of NOAA's vessels are currently inactive, and the remainder of the fleet is obsolete or deteriorating rapidly. However, NOAA's ability to successfully fulfill its mission depends on its having fully operational vessels or access to available charter vessels. NOAA estimates it will require about \$1.5 billion over 15 years to modernize its fleet.
- The National Weather Service (NWS) is to provide weather forecasting and warning services for the protection of life and property. However, much of its current equipment is outdated, expensive to maintain, and difficult to repair. For these reasons, NWS has embarked upon a

comprehensive \$4.6 billion modernization of equipment, facilities, and related information systems. This modernization will help to ensure NWS' ability to monitor critical weather data, forecast potential weather disasters, and assess environmental conditions.

- The Patent and Trademark Office (PTO) is in the midst of a 14-year, \$700 million effort to automate its patent system. Patent information is essential because it is the largest single source of information on emerging technologies.

**Better
Departmental
Oversight Is
Necessary**

Although the funding for some of the needed enhancement of infrastructure is now programmed, Commerce will need to pay particular attention to how these improvements are managed. Past oversight problems of procurement and system development have left Commerce vulnerable to overruns, inefficiencies, and suboptimal achievement of its goals. For example,

- Commerce's accounting and financial management systems are incapable of providing managers with reliable information necessary for long-term planning. Commerce has characterized the

systems as archaic, unable to produce reliable information, inadequately controlled, and often not used by managers. Both Commerce and OMB have identified these as high-risk areas, meaning that they are particularly vulnerable to fraud, waste, or mismanagement.

- NOAA's Next Generation Geostationary Operational Environmental Satellite system has encountered problems that have resulted in substantial cost growth, schedule slippage, and potentially reduced satellite capability. This put Commerce in the position of having to borrow a satellite from the European satellite consortium to ensure that NWS will be able to meet minimum mission requirements of protecting public safety through the forecasting of severe storms and issuance of warnings. Commerce reported to OMB that this is currently a high-risk problem.
- The NWS modernization program has exceeded its expected cost and is far behind schedule. The initial cost estimate of nearly \$2 billion has risen to \$4.6 billion, and the projected date for completing the planned upgrades has slipped from 1994 to 1998. Contract-related deficiencies have been identified by us, OMB, and Commerce's IG as

one of the major contributors to the delay and cost overrun. Satellite and radar systems have been especially problematic in the past, and close contractor oversight of information system development is vital to preventing similar problems in that phase of the project. The NWS modernization effort has been reported as a high-risk area several times and is still on the high-risk list.

- After investing nearly 10 years and \$417 million, PTO is unable to ensure that efforts to automate its patent system will meet expected benefits and fulfill users' needs. Some progress has been made in automating paper files and manual processes, but PTO's estimated completion dates and development costs continue to change.

Commerce's scientific and technical facilities are vital to improving national competitiveness or to protecting human life and property in the event of severe weather conditions. The incoming Secretary will need to pay close attention to Commerce's infrastructure to ensure that critical facilities, scientific equipment, and information systems are upgraded as efficiently and as timely as possible. This will require the Secretary to work with the

Congress and OMB to identify and build resources for those high-priority areas demanding greater funding and staffing requirements. To prevent future problems and ensure continued attention to infrastructure and other organizational capacity needs, the Secretary will also need to (1) ensure adequate departmental oversight and accountability for procurement and systems development projects, (2) place a high priority on improving financial management systems, and (3) provide continuing leadership in developing more effective strategic analysis and planning systems for all Commerce units.

Improving Economic Statistics to Support Efforts to Revitalize the U.S. Economy

Many economists and policymakers have voiced concerns about the quality of the nation's economic statistics and their failure to keep pace with the changing U.S. and world economy. Without early attention to this problem, the new administration may find itself hampered by a lack of reliable and timely economic data as it attempts to revitalize the U.S. economy.

Wide Agreement That Economic Statistics Need Improvement

Concerns about the quality of economic statistics have been long-standing and bipartisan. The Carter administration complained that the economic information base appeared "to provide inadequate support for policy decisions." The Council of Economic Advisers noted in 1990 that structural changes were "making it increasingly difficult to track the course of the economy accurately" to the point where "many analysts question the accuracy of measurement of even the most basic variables, such as output and inflation." For example, we noted in a 1989 report that there is a strong possibility that exports are underreported in merchandise trade statistics. As a result, the U.S. trade deficit may have been smaller than reported.

The National Academy of Sciences concluded in a recent book that the existing economic statistics system does not provide a comprehensive picture of U.S. involvement in the global economy and that the government needs to devote more attention and resources to increasing the coverage and quality of international economic statistics.

**Decentralized
Statistical System
and Lack of
Leadership Create
Special Demands**

While responsibility for supervising the organization and coordination of the federal statistical system lies with OMB, resources devoted to carrying out these responsibilities have been greatly reduced. The lack of OMB coordination of the statistical system puts added demands on Commerce and its two statistical agencies, the Census Bureau and the Bureau of Economic Analysis (BEA), which calculates the gross domestic product (GDP) and other economic indicators. BEA, in particular, relies extensively on source data provided by other government agencies in producing its statistical reports on the nation's economy.

A November 1992 Congressional Research Service report on the coordination of federal economic statistics characterizes the current situation as being like "an opera without a conductor." Without a strong OMB role in

coordination, Commerce must play an active part not only in coordinating the activities of the Census Bureau with BEA but also in negotiating governmentwide solutions to governmentwide problems with economic statistics.

A quick review of the specific problems identified during the formulation of the economic statistics initiatives is a good place for the new Secretary of Commerce to become familiar with the issues facing federal economic statistics programs. These budget initiatives called for real increases in the budgets of BEA, the Census Bureau, and other economic statistical agencies. Although the near-term solutions emphasized the need for additional resources, the long-term plans were to examine organizational, methodological, and other overall improvements. A search for systemic solutions seems appropriate given the systemic problems, such as the lack of overall coordination, facing federal economic statistical agencies.

**Commerce Must
Ensure Integrity and
Credibility of
Economic Data**

Press reports in 1991 and 1992 have called into question the integrity and credibility of economic statistics. We examined several allegations of manipulation of GDP and

personal income estimates for the first quarter of fiscal year 1991 and found no evidence of the alleged manipulation. However, the very existence of these allegations poses a credibility threat to the federal statistical system. An October National Academy of Sciences' report said, "It is essential that an agency maintain credibility for itself and for its data and information. In particular, an agency must be perceived to be free of political interference and policy advocacy."

Planning a More Accurate and Less Costly 2000 Census

Reforming the decennial census will be a very important task for the new Secretary of Commerce. The results of the 1990 decennial census indicated that the current approach appears to have exhausted its potential for counting the population at an acceptable level of accuracy at reasonable cost.

Innovative approaches to the census are possible, but their adoption requires prompt policy guidance and leadership from senior Commerce and Census Bureau officials early in 1993. Without decisive leadership at the start of the new administration, sufficient time will not be available to build the political consensus and public support necessary for major census reforms and to test and integrate the many interwoven procedures and technologies that constitute an undertaking as big and complex as the decennial census.

Decline in Census Accuracy Despite Increased Costs

In 1990, accuracy fell below that of the 1980 Census even as census costs escalated significantly. A broad, overall measure of census accuracy—the net undercount (the percentage of the population not counted)—had declined each census since it was first measured in 1940. However, the official estimate of the net undercount rose

to 1.8 percent in 1990, from 1.2 percent in 1980. A particularly disturbing component of this result was that the difference in the net undercount between blacks and non-blacks increased in 1990 to its highest level since 1940. Furthermore, the 1990 Census appears to have missed substantially more persons than suggested by the official net undercount estimate. Overall, we estimated that it missed a minimum of 9.7 million persons—about 3.9 percent of the count—and contained a minimum of 14.1 million gross errors, including double counts and fictitious enumerations.

The decline in the accuracy of the census cannot be attributed to spending less than was spent in 1980. The 1980 Census cost \$1.1 billion over 10 years, while the 1990 Census is estimated to have cost \$2.6 billion. Even adjusting for inflation and workload growth, the cost of the 1990 Census was still 25 percent higher than the 1980 Census. Census Bureau planning staff estimated that if the current approach to taking the census is retained for 2000, the costs could rise to about \$4.8 billion in current dollars.

Census Reform
Leadership
Needed Now

Important decisions based on wide
consultation and staff analysis are needed by
the fall of 1993 to guide planning for field

tests of census methods and procedures scheduled for 1995, to shape budget and operational planning for the rest of the census cycle, and to guide discussions with state and local governments and other interested groups. The administration must also seek early and active consultation and cooperation with the Congress.

Early Decisions
Needed on Content
of Census
Questionnaire

Public cooperation is essential to obtaining accurate census data at a reasonable cost. For reasons not entirely under the Census Bureau's control, the mail response rate has been declining. In the future, this trend may continue because the environment for census-taking by the traditional mail-out and mail-back method may worsen. Although the Census Bureau cannot expect to solve the problems created by societal changes, it can reduce the effects of these problems by streamlining the questionnaire, thus making it easier for the public to cooperate with the census.

In 1992, the Census Bureau tested a simplified, more user-friendly short form—sent to about five of six households—and found that changes in the short form also can increase the level of cooperation with the census. For example,

the test results indicated that generally asking fewer questions can improve the mail response rates. As an indication of the magnitude of potential savings, the Census Bureau has estimated that a streamlined questionnaire in 1990 asking only five questions could have saved as much as half a billion dollars. The Census Bureau also should examine the need for the census long form, which had 59 questions, and the size of the sample to which it was sent—about 1 in 6 households. Not unexpectedly, the response rate in 1990 for the census long form was lower (60 percent) than that of the short form (66 percent).

An early decision on census content is required for political and operational reasons. A political consensus must be built to support a simplified census questionnaire or to ensure continuing support from the Congress and the public for a census with the traditional scope and content. An early decision also will provide time to find necessary substitutes for any data lost by streamlining the census questionnaire. A late decision either to add or eliminate a large block of questions poses significant operational risks to the census.

**Early Decision
Needed on Whether
to Use Sampling**

Even with a simplified questionnaire, the Census Bureau's test showed that it can expect a large number of Americans will still not return their form by mail. Statistical sampling of these nonrespondents would reduce the time and labor-intensive fieldwork required to follow up missing questionnaires. We, the National Academy of Sciences, and the Commerce IG have recommended that the Census Bureau explore if and how sampling can be used to improve the census. Census Bureau staff estimated that the cost of the 1990 census would have been reduced by \$460 million if the Census Bureau had sampled 10 percent of the nonrespondents rather than collecting data on all of them. In addition to these cost savings, sampling will reduce the total respondent burden and even potentially increase the data quality.

Sampling for nonrespondents will require early consideration by the Census Bureau and other key policymakers inside and outside Commerce. Legislation may be needed to allow the Census Bureau to sample those housing units not returning a form by mail. Because of its critical nature to census planning and the need for operational testing, legislation to permit sampling, if necessary, should be proposed to and

considered by the Congress as expeditiously as possible.

Early Decisions
Needed to Improve
Address List and
Geographic
Information

An accurate and complete address list and associated geographic information is a cornerstone of a successful mail-out census. For the 1990 Census, the Census Bureau spent over a half a billion dollars to develop the means to identify the mailing address and physical location of about 100 million housing units. But even such an enormous expenditure of resources did not guarantee an accurate and complete address list. The Census Bureau estimated that it missed about 3.5 million housing units in 1990 and that about 2 million were erroneously counted. Furthermore, we estimated that the Census Bureau spent over \$300 million visiting or searching for vacant or nonexistent housing units.

The Census Bureau has major opportunities to improve its address list for the 2000 Census, but it must begin soon the process of updating, upgrading, and integrating its 1990 automated address control file and the associated automated geographic systems. In particular, an early decision is needed on the important role the U.S. Postal Service (USPS) might play in these activities. We

believe that letter carriers are in a much better position than temporary, inexperienced census workers to identify housing units and determine whether they are occupied. Moreover, recent USPS technological advances in building an automated national address list reinforce the practicality of USPS' increased involvement in updating the Census Bureau's address list and geographic information systems. Early decisions are necessary because cooperative arrangements between the Census Bureau and USPS will require extensive lead times to negotiate, plan, test, and prepare.

Related GAO Products

Decennial Census: 1990 Results Show Need for Fundamental Reform (GAO/GGD-92-94, June 9, 1992).

Automated Patent System: Information on PTO's Program to Automate Patent Information and Processes (GAO/T-IMTEC-92-20, May 28, 1992).

1990 Census: Limitations in Methods and Procedures to Include the Homeless (GAO/GGD-92-1, Dec. 30, 1991).

Weather Forecasting: Cost Growth and Delays in Billion-Dollar Weather Service Modernization (GAO/IMTEC-92-12FS, Dec. 17, 1991).

1990 Census: Reported Net Undercount Obscured Magnitude of Error (GAO/GGD-91-113, Aug. 22, 1991).

Weather Satellites: Action Needed to Resolve Status of the U.S. Geostationary Satellite Program (GAO/NSIAD-91-252, July 24, 1991).

Trade and Economic Data: Many Federal Agencies Collect and Disseminate Information (GAO/NSIAD-91-173, May 1, 1991).

Census Reform Needs Attention Now
(GAO/T-GGD-91-13, Mar. 12, 1991).

1990 Census Adjustment: Estimating Census Accuracy—A Complex Task (GAO/GGD-91-42, Mar. 11, 1991).

Decennial Census: Preliminary 1990 Lessons Learned Indicate Need to Rethink Census Approach (GAO/T-GGD-90-18, Aug. 8, 1990).

Ocean Research Fleet: NOAA Needs to Plan for Long-Term Fleet Requirements
(GAO/RCED-90-42, Nov. 13, 1989).

Weather Satellites: Cost Growth and Development Delays Jeopardize U.S. Forecasting Ability (GAO/NSIAD-89-169, June 30, 1989).

Commerce Issues (GAO/OCG-89-11TR, Nov. 1988).

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