

SERVICE INDUSTRIES: THE CHANGING
SHAPE OF THE AMERICAN ECONOMY

SUBCOMMITTEE ON
ECONOMIC STABILIZATION
OF THE
COMMITTEE ON
BANKING, FINANCE AND URBAN AFFAIRS
HOUSE OF REPRESENTATIVES
98th Congress, Second Session



NOVEMBER 1984

Printed for the use of the
Committee on Banking, Finance and Urban Affairs

This report has not been officially adopted by the Committee on Banking, Finance and Urban Affairs and may not therefore necessarily reflect the views of its members

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1984

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LETTERS OF TRANSMITTAL

NOVEMBER 5, 1984.

To all Members of the Committee on Banking, Finance and Urban Affairs:

I am transmitting a study prepared by the Subcommittee on Economic Stabilization entitled "Service Industries: The Changing Shape of the American Economy."

The Subcommittee on Economic Stabilization held a series of hearings this past June on the impact of the growing service sector of our economy and the competitive prospect of the U.S. service industries in international markets. This study explores some perspectives on the contribution of service industries to our national economy, and the impact of their rapid growth.

Sincerely,

FERNAND J. ST GERMAIN, *Chairman.*

(III)

HOUSE OF REPRESENTATIVES,
COMMITTEE ON BANKING, FINANCE AND URBAN AFFAIRS,
SUBCOMMITTEE ON ECONOMIC STABILIZATION
Washington, DC, October 26, 1984.

HON. FERNAND J. ST GERMAIN,
*Chairman, Committee on Banking, Finance and Urban Affairs,
Rayburn House Office Building, Washington, DC.*

DEAR MR. CHAIRMAN: I am pleased to transmit herewith a staff study entitled, "Service Industries: The Changing Shape of the American Economy." During the course of the last Congress, the Subcommittee on Economic Stabilization held an extensive series of hearings into the status and prospects of the American economy. We paid particular attention to those industries which are subject to international competition.

Much has been written over the past few years about the future of this nation's basic manufacturing industries, and the Subcommittee has issued reports on this subject. But not enough attention has been given to the importance and impact of service industries on the nation's economy. In June, the Subcommittee held a series of four hearings into this subject. This staff report is meant to organize and discuss the information received during the course of those hearings, and to outline issues of importance to policymakers.

I would like to particularly commend Ms. Jeanne Roslanowick, who is principally responsible for the Subcommittee's staff work on the impact and future direction of the American service economy.

Sincerely,

JOHN J. LAFALCE, *Chairman.*

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SERVICE INDUSTRIES: THE CHANGING SHAPE OF THE AMERICAN ECONOMY

INTRODUCTION

Over the past several decades, we have been witnessing a profound transformation of our economy which has fundamentally altered many of the key variables which determine our rate of economic growth, our standard of living, and our position in the world economy. Although our historic position of world economic leadership was based on goods production, we have been rapidly shifting our economic center of gravity toward services. The service sector already accounts for fully 67 percent of our total GNP and has exceeded the goods sector as a component of GNP since 1975. In contrast to the job displacement occurring in many of our manufacturing industries, service industries are generally experiencing significant job growth. Over 50 percent of all private sector jobs are generated by service industries, and projections indicate that the service sector will account for the vast majority of the job growth expected over the next decade and a half. International service transactions are a major source of strength for the U.S. balance of payments. In stark contrast to the merchandise trade deficit, statistics on international services transactions show a significant surplus, which until recently was able to offset the deficit on the U.S. merchandise trade account.

In every major economic area—growth rates, standard of living, employment, balance of trade—our service sector has overtaken the goods sector in significance. Yet in spite of this dramatic change in our economy, most of our businessmen, economists and policy-makers continue to think about our economy with models and images derived from the goods-producing sector. When we think about “structural unemployment,” the image is Youngstown and rusting steel mills, not filing clerks displaced by computers. When we discuss inflation, the debate revolves around oil and food, not medical care and communications services. When we ponder the negative effects of the trade deficit, it is Japanese autos which drive the debate, not Korean construction firms out-bidding American ones for foreign contracts. This implicit “goods bias” in our thinking makes it difficult both to perceive the real nature of our economy and to anticipate future changes in it which will affect the welfare of our citizens. Like generals who blindly prepare for the last war, our economic policy-makers spend too much of their time thinking about the last economy.

For France’s generals, faith in the Maginot Line precipitated defeat at the hands of a German army which better understood the changing dynamics of warfare. In the same way, our contemporary “goods bias” could easily lead our nation to economic decline at the

hands of countries which better understand the changing economic dynamics of the shift from goods to services.

SERVICES IN THE "INDUSTRIAL POLICY" DEBATE

Paradoxically, our implicit "goods bias" helped to turn last year's concern about structural problems with the U.S. economy from an academic discussion among technical experts into a national dialogue about the need for a national industrial strategy. The country was ready to participate in a debate about the future of our goods sectors, for most people readily understood rusting steel mills and Japanese automobile imports.

Yet the easy acceptance of these traditional symbols of a goods-based economy made it very difficult for many people to grasp the reality that such symbols no longer represented the center of economic gravity in our country. The service sector's problems and future potential received short shrift in much of the goods-biased industrial policy debate. This was not the intention of this Subcommittee, but it does attest to the persuasive power of old symbols and metaphors.

It is important to redress the intellectual imbalance which the country's implicit goods bias has introduced into the economic and industrial policy debate. In many respects, the problems of the goods-producing sectors and the service sectors are identical: both face increased foreign competition; both suffer from restricted access to foreign markets; both must contend with active sectoral promotion policies in other countries; both must overcome serious problems of productivity stagnation and insufficient innovation; both must grapple with new technologies which revolutionize old ways of doing things.

In other ways, the service sector exhibits a set of characteristics unique to it, characteristics which are not shared with the goods-producing sector. The service sector is far less capital-intensive and is far less subject to fluctuations in the business cycle. The service sector is far more entrepreneurial and has far more small establishments than the goods sector. Productivity in services is far more difficult to measure and to enhance. Services rely much more on labor and are therefore far more sensitive to labor force quality and availability. Service produce a dramatically different distribution of jobs and earnings opportunities.

Both the unique and the shared problems of the service sector deserve more thoughtful attention from public policy than has been provided to date. The mandate of the Subcommittee on Economic Stabilization is to monitor the overall performance of the economy, develop policies which help produce stable, rapid growth, and devise sectoral strategies to enhance the growth and competitiveness of key sectors. These are concerns which apply equally to the goods producing and the service producing sectors.

To help redress the imbalance in our policy thinking arising from our country's implicit goods bias, the Subcommittee undertook a preliminary set of hearings to explore the problems of the service sector and to discover whether service industries should be included as active participants in the industrial policy debate. This report, which is based largely on the four days of preliminary hear-

ings held in June of this year, confirms our initial view that there *are* problems in the service industries which warrant public policy attention.

But this report also reflects the reality that there is far less *consensus* on policy directions for the service sector than for the goods sector. From the hearings record and an analysis of current literature on the problems of the service industries, we find that much of the policy debate on services is dominated by one of two misleading perspectives. On the one hand, many argue that services are an inadequate substitute for goods; that a "nation of hamburger stands cannot grow," and that there is no future for an economy based on "taking in one another's laundry." Alternatively, others take the position that services are a panacea for all that ails the economy. They see an economy based on services as a clean, prosperous, steadily-growing economy with decent and remunerative work for all.

Both perspectives are seriously misleading. We can never hope to have an economy based entirely on services, for the production of goods and the production of services are intricately interconnected. The competitive economy of the future will inevitably be a mixed economy of goods and services. At the same time, service jobs are not necessarily inferior substitutes for jobs in the goods-producing sector. Services encompass many of the highest-profit, fastest-growing sectors of our economy. A "nation of computer terminals and information flows" is a more accurate image of the service sector than "a nation of hamburger stands."

The purpose of this report is to move the discussion of the service economy beyond simplistic dichotomies. Because there is as yet no consensus regarding what to do about services, we are not yet in a position to propose for public debate anything like a "national policy for the service sector." We are, however, convinced that such a policy response will inevitably be required if we are to strengthen and expand the service-based sector of our economy. To prepare for this future policy development, we have written this report primarily as a means of exploring problems and raising questions, rather than as a proposal for immediate action. The goal of the report is to move us "toward a services policy," not to recommend a specific blueprint for such a policy. Movement "toward" a services policy requires that we look closely at three basic problem areas: international competition in services, domestic policies and information for managing a services economy, and the labor market implications of a transition to services.

THE NEW INTERNATIONAL COMPETITION IN SERVICES

Since it was the trade deficit which fueled much of the "industrial policy" debate, the apparent strong performance of services in international transactions led many to conclude that our nation faced little competitive challenge in services. But the much-lauded surplus in services trade is largely illusory. Contrary to popular belief, the United States does not hold a predominant position in world trade in services. A variety of items fall within the category of "services" as measured in international transactions: income on foreign investment, royalties and fees, tourist expenses, and mili-

tary transfers, as well as transportation, construction, and financial services performed for or by foreigners. It is net investment income that clearly dominates the United States balance on international services. Movements in the overall service balance and in net investment income have always in fact been closely linked. After deducting investment income, several countries approach the United States in terms of gross receipts from international services transactions.

Investment income reflects the flow of earnings on assets accumulated abroad through international capital movements in the past. The services surplus results from the fact that the United States has been in a net creditor position on direct investments throughout the postwar period, reflecting the worldwide expansion of United States multinational firms. The U.S. surplus in services increased twelve-fold from \$3 billion in 1970 to \$36 billion in 1980, but much of that expansion is attributable to increases in investment income. In 1980, U.S. exports of services totaled \$120.7 billion (a little over half the value of merchandise exports), of which \$75.9 billion or 63 percent derived from investment income. However, recent large net capital inflows into the United States, which have helped to finance the record U.S. budget deficits, have already begun to reduce the net inflow of investment income. If current trends continue, the United States will become a net debtor country by 1986, and most or all of the surplus in investment income gradually will disappear.

The growth of our international trade in services has, in fact, been relatively modest when measured against our inflated perceptions and what might be expected given our comparative advantage in many service industries. Expansion of international trade and investment in services is important for service industry growth. Yet neither can be taken for granted. Our service sector is becoming an area of increasing vulnerability.

Foreign Sectoral Policies For Services

Our earlier hearings on the goods sector revealed that America lagged far behind other industrial countries in creating active sectoral policies to promote the competitiveness of its industries. The same holds true for services. Most of our competitors have seen the significance of the shift from manufacturing to services far earlier than we have, and a good number of them have developed quite explicit policies to strengthen and promote their service industries.

Most of our trading partners have either in law or in fact "nationalized" many of the most important services, and provided these public monopolies with protection, support and encouragement which goes far beyond anything which this country does for its own service industries. The presence of such active "national services policies" affects American service industries in two broad ways: first, the national monopolies receive priority access to their domestic markets, and often deliberately exclude American firms from competing in those markets; second, foreign governments actively promote and subsidize the international export sales of their domestic service industries. Korea, for example, provides a variety of financial and administrative support to its construction services

firms and offers both financial and technical assistance for export promotion.

But while it is clear that American service firms face increased competition in international markets, it is substantially less clear what our public policy response should be to these problems. Several key policy questions remain unresolved, including the following:

Can U.S. policy effectively influence national service monopolies abroad when our trading partners argue their right to such monopolies under international law?

How can we effectively promote service exports? Clearly goods-biased institutions such as the Export-Import Bank are inadequate to the task, but new institutions have yet to be proposed or developed.

Can we deal with international restraints on services trade through multilateral mechanisms such as the GATT when the principles which govern trade negotiations are not always readily applicable to services and "invisibles"?

MANAGING THE SERVICE ECONOMY

A second broad area of concern involves the ability of our conventional economic policy indicators and tools to cope with the changing reality of a services economy. Most of our statistics were designed to measure the performance of a goods-based economy, and most of our public economic stabilization tools are oriented toward business cycle stabilization for capital-intensive rather than labor-intensive industries.

A major policy problem with respect to the service economy is that, as a general rule, government literally does not know what it is talking about. The "service sector" is at best a nebulous concept. Statistics on service industries indiscriminately mix personal services, international banking and government, thus skewing our perceptions of the nature and extent of the growth that is occurring. The information and statistical systems used by the Federal Government to monitor the services economy are seriously flawed. Different statistical systems use different definitions and classifications and are often inconsistent with each other, further complicating analysis.

Furthermore, when we try at the national level to develop economic indicators which monitor the health of our economy, we often select those with a strong bias toward the older and less dynamic goods-producing sector. Several of our "leading economic indicators" are biased toward the goods-producing sector, and such numbers as "manufacturing capacity utilization" and "average factory wage" probably are growing steadily less useful as descriptive indicators of the status of our economy.

And if we do not even know how to *describe* our service-based sector, we have even less ability to manage that sector for optimal growth and prosperity. For example, many of our traditional economic development and economic stabilization tools are oriented largely towards the goods-producing sector. Tax policies to stimulate investment, such as the Investment Tax Credit and the Accelerated Cost Recovery System, have a far greater stimulative effect on capital-intensive manufacturing industries than on labor-inten-

sive services. Conversely, the recent increase in payroll taxes and decrease in corporate income taxes has the unintended effect of increasing the tax burden on the more dynamic and rapidly growing service sector while reducing the load on the goods sector. Such inter-sectoral discrimination may be neither good economics nor fair public policy.

From the point of view of optimal economic management, we must confront a number of difficult questions with regard to the service sector:

Do we need new economic indicators to monitor the pulse of our service economy?

Do we need to develop different or better tools for economic stabilization to smooth business cycle variations in a services economy?

How can we strive to maximize productivity growth in a service economy where the final output is intangible and productivity itself very difficult to measure?

JOBS IN THE SERVICE SECTOR: QUANTITY AND QUALITY

Finally, public policy with respect to services needs to grapple with the labor force problems attendant to the switch from goods to services. Many observers hope that the services industries, with their strong projected occupational growth, will be able to provide answers to the structural unemployment problems created by the decline of basic manufacturing industries. But it is by no means clear that services offer an employment panacea: in fact, there is considerable evidence that service employment to date has not been very successful either in reabsorbing workers displaced from the manufacturing sector or in providing strong income-earning opportunities for the mass of available workers. The increasing contribution of service industries in generating employment is clear but the implications of that contribution are not.

Services will provide a great deal of projected future job growth, but the nature of that growth is mixed. Occupations with the largest projected job growth include building custodians, cashiers, sales-clerks, and waiters and waitresses as well as lawyers, physicians, accountants, and auditors. There is disturbing evidence that service industries in fact tend to create a disproportionate number of high-wage, high-skill white-collar jobs on the one hand, and low-wage, low-skill jobs on the other, with little in between. The sophisticated information technology characteristic of many service industries holds the potential for deskilling the nature of work for a large portion of our labor force. There is little overlap between the job requirements of many service industries, and the skill and wage levels of the large number of displaced workers in the manufacturing sector. Dramatic job increases in service industries have done little to alleviate the regional dislocation in our economy. Women, minorities, older workers, and part-time workers comprise a larger part of the work force in services than in manufacturing, and the very demographics of the service work force may well have an impact on the nature of the employment opportunities that develop. Unions play a far less significant role in the service sector, and

the question of unionization will loom large as service industry employment expands.

Even as job growth in the service sector is pointed to as the solution to some of our employment problems, job growth in some service sectors is beginning to abate. Job growth in many service industries, while still significant, is down from historical rates. Service industry growth patterns are beginning to stabilize somewhat and increasing application of technology in the service sector is beginning to have the effect already familiar in the manufacturing context. Even as we anguish over the job displacement in our smoke-stack industries, we have not begun to anticipate how international competition and technological change is likely to impact our booming service industries. According to some observers, between seven and fifteen million service jobs will be lost in the next fifteen years because of the new technologies.

In the face of such changes, public policy must deal with such questions as the following:

Do we need changes in our education, training and labor information systems to facilitate growth and labor market adjustment in a services economy?

Are policies needed to address the job quality and income distribution consequences of a service economy?

Will there be enough service jobs to absorb those who are displaced from the manufacturing sector?

Are public job-creation strategies required in the service sector?

GOVERNMENT POLICY AND THE SERVICE SECTOR

Through its range of economic policies, Government in many ways establishes the environment in which the service sector has to operate. We must have a fuller understanding of the service sector and its impact if we are to ensure that public policy operates so as to enhance our overall prospects for economic growth. This report is an attempt to explore in more detail some of the issues we must confront as the service economy increases in importance and impact. It is hoped that it will generate further discussion regarding the contribution service industries can make to continued economic growth and how that contribution can best be facilitated.

We have the opportunity in services to anticipate problems and formulate policies that will maintain the international competitiveness of our service industries and maximize their job creation potential. If we fail to meet this challenge, we may be forced to confront the truth of Santayana's dictum that "Those who forget history are doomed to repeat it." Today's struggle to "salvage" large portions of the goods sector could easily be reproduced a decade hence with services. If there is one lesson which we should draw from our recent discussion of "industrial policy" for the manufacturing sector, it is that anticipating problems and seeking solutions at an early stage is far more effective and positive than cleaning up a crisis once it has occurred.

ROLE OF SERVICES IN THE ECONOMY

OVERVIEW

The United States is now the most services-oriented economy in the world. Over the last twenty to thirty years, services have been providing the bulk of U.S. economic and employment growth. Today, services account for close to two-thirds of U.S. economic output and consumption. Roughly two out of every three Americans in the work force are employed in the services sector.

The major portion of future economic growth and job creation—not just in the United States, but in other industrialized countries as well—is expected to originate in the services sector. The implications for domestic and international patterns of economic growth, investment and capital formation, employment, productivity, inflation, and economic relations will be significant. Our economic assumptions about the manufacturing sector cannot readily be applied to services. Services are less cyclical than goods—growing less in booms, and falling less in recessions. Services, at least at this point, tend to be more labor intensive and to use less capital equipment than manufacturing. Productivity increases have been slower in services, and price increases generally have been more rapid. The average size of service establishments tends to be small, and there has been less concentration of production into large firms than is the case in many manufacturing industries. Some of these characteristics may change as technological advances affect the service sector, but it is clear that the service sector raises different issues than the manufacturing sector with which we are more familiar.

Yet, despite its increasing importance, the dominant role of services in the domestic economies of the industrial nations is not generally reflected in economic policy formation, which is still focused principally on the production and consumption of goods. Nor is the important impact of services on such macro-economic factors as inflation and productivity well understood by policy-makers.

Eliciting policy attention for services is difficult, as services lack the visibility and analytic base required to generate such attention. Services are difficult to classify and to quantify, and data development has lagged far behind that achieved in the area of goods. For these same reasons, international economic policy formation in the United States and other countries has focused even more predominantly on goods than has domestic economic policy. The extent and characteristics of international commerce in services have been virtually unknown to policy-makers, as international trade and investment data have been developed with an almost exclusive focus on goods.

DEFINITIONAL AND INFORMATIONAL PROBLEMS

Defining the Service Sector

While a number of observers speak readily of the growth and prospects of "services," the term connotes little in terms of the actual industries or sectors of the economy being discussed. In many ways, "services" constitutes a catch-all category. Generally, services are defined by subtraction—they are what is left over after goods production is deducted. The term encompasses a wide variety of economic activities: distributive services, such as wholesale and retail trade, communications, transportation and public utilities; producer services, such as accounting, data processing, legal counsel, marketing, banking, architecture, engineering, and other professional and technical services; consumer services such as restaurants, hotels, laundry and dry-cleaning; and even non-profit and government services such as education, health, the administration of justice and national defense.

This imprecision unfortunately carries over into policy realms, as no agreed-upon definition of the services sector is used in government classifications. The Standard Industrial Classification system of the United States defines services as: "hotels and other lodging places; establishments providing personal, business, repair and amusement services; health, legal, engineering, and other professional services; educational institutions; membership organizations; and other miscellaneous services." Sectors with widely varying growth rates and very different impacts on productivity and employment are lumped together; important growth sectors are subsumed within one or another category of "other."

Yet, despite its vagaries, this is considered a very limited definition. Most statistical classification systems that distinguish between "goods" and "services" (such as the U.S. national income accounts) define the "services sector" even more broadly, either as (1) the above service functions, plus finance, insurance and real estate (including rent and imputed rent for owner-occupied dwellings); wholesale and retail trade; and general government; or (2) all of the above, plus transportation, communications, and public utilities. The latter, most inclusive, of these definitions is the one frequently used by the Department of Commerce and the Department of Labor.

The service sector thus encompasses an extremely heterogeneous grouping of economic activities having little in common other than that their principal outputs are generally intangible—difficult to measure, and generally impossible to ship or store. Individual service industries vary widely with respect to characteristics such as labor intensity, capital requirements, technological sophistication and growth rates. These service industries do not share common production processes, customers, suppliers, market channels, or economic activities. Their one common feature—the intangible nature of their output—provides no real insight regarding the contribution of these industries to the growth of our economy.

Even were we clearer as to what is encompassed within the term "services," it remains difficult to discern clearly the shifts in our economy and the contribution service industries are making to our economic growth. When one speaks of services output, what is actu-

ally being referred to is only the output of those industries classified as being in the service sector—not the total production of all services *per se*. The two are not the same, for many services are produced in the goods sectors and are counted as part of the output of that sector. Distinctions can be quite arbitrary. The output of an accountant employed by an accounting firm, for example, is counted as part of the services sector. Were that same accountant performing the same functions, but employed in the accounting department of an automobile manufacturer, his output would be considered as part of the manufacturing sector.

The choice of any of the common definitions does not materially alter any conclusions about the growth, increasing importance, or general characteristics of the services sector. But the fact of service sector expansion does not really tell us enough, given the heterogeneous nature of service industries and differences in the nature of their economic activities.

DATA ON THE SERVICE SECTOR

Inadequacy of Existing Data

The information and statistical systems used by the Federal Government to monitor the services economy are notoriously inadequate. There are no precise classifications on service industries to provide accurate information about their contribution to our national economy. As a result, our ability to understand and monitor the economy as a whole is negatively affected. The rapid rate of technological change, with new businesses and even new industries emerging overnight, makes the task formidable enough. But the limitation inherent in the traditional indices we use to track our economy makes it impossible. Official data series were generally constructed to describe manufacturing activity and trade in goods. As a result, our aggregate statistics provide a very misleading picture of what is happening to service industries.

Industrial and wage data are hopelessly inadequate. The Standard Industrial Classification Code is the principal means by which the Federal Government collects information about industry sectors, and the central tracking mechanism is the Standard Industrial Classification Manual which divides all economic activities into twelve divisions and eighty-four "major industry groups." Older industries are clearly over classified and reported while emerging growth industries are under classified and reported.

Decisions as to what constitutes a major industry were made in the 1930's. As a result, the leather and tobacco industries, which between them account for only 4 percent of total output, are both classed as major groups. Yet digital computers, which did not exist when the classification system was established, are part of the non-electrical machinery group. Microprocessors do not have a code of their own but are lumped with semiconductors and related devices. Under our current industrial classification system, a \$300-million-dollar professional services firm—along with the entire \$35 billion professional services industry—is classified as "other."

These failings translate into other misleading data. For example, the Federal Reserve industrial production and capacity utilization findings are based on a composite index of the relative importance

to total production of 215 industries in 1967. The growth industries of the last 16 years, like electronics, are necessarily understated and the older industries, like steel, are overstated. Similarly, the Industrial Outlook of the Bureau of Industrial Economics did not include any information on services until 1983.

Wage data suffers from similar shortcomings. Labor Department data was developed to measure manufacturing wages and only tangentially touches on services, now our major employer. Only 30 percent of the industries published in the wage data series are service industries, although over 70 percent of the jobs in the U.S. are now in the services sector.

It is, therefore, little wonder that the widely followed indicators we look to as the bellwethers of our economy—the index of leading and lagging indicators—do not reflect reality. While indicators such as the average manufacturing workweek, new orders for plant and equipment, inventory levels, and commodity prices might have been sufficient for the old economy, it is questionable whether they accurately gauge a nation where the majority of production and employment comes from service industries.

Our ability to track international trade trends fares no better. While there are some 10,000 specific product categories for goods trade, there are fewer than a dozen aggregate categories for services trade. Likewise, the surveys used to gather information on U.S. international investment are skewed mainly toward manufacturing investments.

Traditionally, international services transactions have been measured as a component of the U.S. balance of international payments. The balance of payments (BOP) is aimed at measuring the transactions of a country, rather than those of an industry. For purposes of BOP calculations, services are defined as all invisible transactions of a country, arising from both services industries and goods-producing industries. Thus, "services" in the balance-of-payments sense include Government transactions, tourism, royalties and fees, private miscellaneous services, and all investment income. Because many service transactions involve the receipt of royalties and fees, private miscellaneous services, and investment income, BOP statistics provide very little industry-specific guidance. All such transactions, regardless of the industry involved, are grouped together in the BOP accounts.

It is clear that greater detail and precision on an industry-specific basis, and better coverage than is currently available through BOP statistics are needed. Although other publicly-available data sources exist for many services industries, there remain gaps within, and inconsistencies among, these data series. Nowhere is there a comprehensive and consistent source of data that would make possible an accurate and periodic calculation of the shares of international service transactions held by major producing countries.

The inadequacy of our present system of collecting statistical information on services makes it extremely difficult to assess current trends and project future developments internationally. A statistical system that permits the reasonably accurate measurement of a U.S. service industry's share of foreign markets is essential in order to assess our international competitive position. Such assess-

ments are at the heart of determining international negotiating strategies and priorities concerning the elimination of barriers to trade in services. Currently, we have no adequate mechanism for assessing the competitive prospects of, and setting policy toward, service industries. The discrepancy between statistics and reality makes it impossible for our trade negotiators to determine priorities and trade-offs in a negotiating arena.

In order to generate and maintain an improved information system, a high degree of cooperation between the domestic service industries and the U.S. government will be required. For an improved data base to be meaningful in measuring the U.S. market share, it will have to take into account the fact that, unlike the case of physical goods, many services must be produced where they are consumed. It follows that the revenues of foreign affiliates of domestic service companies need to be explicitly taken into account when measuring the U.S. competitive position in international services trade. This entails counting as part of U.S. market share the receipts earned in foreign markets by affiliates of U.S.-based service industries.

A new type of direct survey of service-producing firms would appear to be required. Unlike imported and exported goods, which must pass through U.S. ports where they can be physically counted, internationally traded services cannot be measured in a physical sense, and do not pass through any centralized point analogous to a port. The only source for the type of detailed information needed is the corporate records of U.S. service producers and consumers. The foreign affiliates of domestic firms would also need to be surveyed, because domestic firms generally do not keep detailed records of their affiliates' transactions, particularly those involving third countries.

The time is long overdue to commit the resources necessary to bring our data collecting capability into the mid-1980's. Present plans call for an overhaul of the SIC Code by 1987. If it were adequately funded, this task could be completed by 1985. This effort should be joined by a determination to utilize this information to interpret international competitive trends and monitor economic change. Only by anticipating the future will it be possible to avoid economic policy decisions that will repeat the mistakes of the past.

CONTRIBUTION OF THE SERVICE SECTOR TO THE ECONOMY

While detailed data on the services sector is almost nonexistent, it is clear that the relative growth of services has been significant and continuing—providing the bulk of the U.S. economy's expansion. The output of services has eclipsed the output of goods in the U.S. Gross National Product for some time now, service employment has grown dramatically, and the U.S. services sector generally enjoys a substantial balance of payments (BOP) surplus which has helped to offset the large merchandise trade deficits incurred in recent years.

Contribution to Output and Employment

The gross product of U.S. service industries doubled between 1960 and 1970, and has almost tripled again since then to a level of

\$1.4 trillion. Service industries (excluding government) accounted for over 50 percent of the U.S. Gross National Product (GNP) in 1980. Communications, finance, insurance and real estate, wholesale and retail trade, transportation and miscellaneous business and professional services—as well as government—accounted for fully 69 percent of GNP in 1982, compared with only 21 percent in manufacturing. Even without the government share of 12 percent, services activities amounted to 57 percent of GNP. Such service industries as engineering and construction, accounting, financial, and management services, and transportation are important revenue sources, although food and entertainment dominate the domestic side of the service sector in terms of dollars, followed by health care. The relative importance of individual service industries is very difficult to identify, however. Even today, Federal agencies collect remarkably little disaggregated data on domestic output in services. Statistics are scarce, analytical work still rarer.

The employment figures are also striking. Seven out of ten Americans are service industry employees. From 1960 to 1980, over 23 million new jobs were created in service-producing industries compared with less than 4 million in manufacturing industries. The average annual growth rate in employment in services industries was 4.5 percent over the 1960-80 period, compared to only 1 percent in manufacturing. During the 1970's, the U.S. economy generated over 20 million new jobs of which 17 million were in services. By contrast, manufacturing employment grew by only 1 million. Service industries (excluding government) accounted for 54 percent of total U.S. non-agricultural employment in 1980. By 1980-81, 72 percent were employed in services. In 1982, service industry employment accounted for 66 million or 74 percent of all jobs, up from 62 percent in 1960. New jobs continue to emerge in industries such as professional and technical services, rather than in traditional manufacturing.

The service sector has so increased its impact that the growth of overall output and employment would be extremely difficult without a continuing contribution from it. Moreover, a number of services—especially such advanced business services as banking, insurance, telecommunications, data processing and information storage and retrieval—engender other growth in the economy. Such services directly stimulate demand for higher and higher technology products.

This growth in services, while impressive, does not mark a transition into an entirely new economy. The United States has been largely a service economy for many years. Since 1950, over 50 percent of our GNP has originated in the service sector. Non-governmental services have provided about 50 percent of U.S. GNP since 1960. That figure has not changed dramatically (57 percent in 1982), indicating that some of the dramatic growth of the service sector has been attributable to government. Services have actually accounted for a significant share of the GNP of all developed countries for quite some time. The contribution of non-governmental services to GNP in other major trading countries has also hovered in the 40-50 percent range during this same period.

The shift in employment has also been occurring for some time, although the change is significantly more dramatic. In 1920, the

service-producing share of non-agricultural employment was already 53 percent. In terms of jobs, the United States has been a service economy since about 1945, when over fifty percent of the American work force was employed in services, more than worked in manufacturing, agriculture, mining and construction combined. Since then, the proportion of service employment has grown dramatically. During the postwar years services have grown from 57 percent of employment (1947) to over 70 percent today, accounting for virtually all job increases since the beginning of the seventies. Since 1960, 86 percent of the job growth in this country has occurred in this sector. About 87 percent of all new jobs created in the 1970's were in service industries. What is striking is the shift in percentage terms in the past decade. In 1980, the Bureau of Labor Statistics predicted that in 10 more years, 71 percent of the work force would be in services. Yet we passed the 70 percent mark in less than three years.

This transformation of the economy has not involved all services equally. The expansion of service employment has been accounted for chiefly by the non-profit services (education and health), government, and, not widely appreciated, the producer services (finance, insurance, real estate and other business services such as law, accounting, advertising). Although the employment data does not directly reveal the fact, the growth in producer services is closely associated with the rapid growth of producer service-like activities performed within corporate organizations of goods-producing firms.

Services in International Markets

Services have also taken on growing importance in our international relations, although the nature of the impact of services in this context is more complex than at first appears. Although data on international service activities is also inadequate, IMF statistics show that services account for about one-fifth to one-quarter of international trade. Some services, such as architecture, construction and engineering, draw U.S.-produced goods abroad, as a result of their own foreign work. The U.S. International Trade Commission estimates that approximately 25 percent of U.S. merchandise exports was attributable to U.S. services trade.

Many observers have noted that services have contributed substantially to the U.S. balance of payments, providing a major source of surplus in recent years and offsetting our continuing merchandise trade deficits. In 1980, for instance, U.S. merchandise showed a \$27.4 billion deficit, while services showed a \$38.2 billion surplus, for a net surplus of \$10.8 billion. The U.S. surplus in services increased twelve-fold from \$3 billion in 1970 to \$36 billion in 1980.

Yet this alleged surplus in trade in services is largely illusory. Statistics on international service transactions include not only trade in services, which generally involves payments—e.g., for construction projects or licensed technologies—but also include income from foreign investments and even certain tangible goods, including computer software and military hardware. The apparent surplus in trade in services actually reflects repatriation of foreign investment income rather than rapidly expanding trade in services.

In 1980, U.S. exports of services totaled \$120.7 billion (a little over half the value of merchandise exports), of which \$75.9 billion or 63 percent derived from investment income.

The Relationship Between Goods and Services

Despite its increasing importance, service sector growth elicited little comment until relatively recently and might have continued to do so except for an equally dramatic but much more recent development: the deterioration of America's manufacturing industries. As a result, the interests of service and manufacturing industries are sometimes juxtaposed, as if they necessarily diverge. The relationship between the sectors is, in fact, complex and mutually-reinforcing. Services have enhanced the prospects and opportunities of our manufacturing sector and, in turn, the implementation of new technology by the manufacturing sector and the increasing dependence of goods-producing industries on services have been major factors in facilitating the growth of the service sector.

Services are closely linked to the goods-producing sector of the economy. Telecommunications, computer and data processing services, research and development, financial services, management consulting, and transportation and distribution systems are essential to sustain and energize other industries. These services provide the tools to revitalize and increase the productivity of traditional manufacturing sectors through the development and introduction of new technology and improved management practices. The use of appropriate professional, management and technical skills to apply new technologies to old industries is perhaps the most critical factor in determining whether the United States will continue to be a major producer of agricultural and industrial goods. New services are also creating the need for more hardware and thus are pulling the smokestack industries into greater activity.

By acting as a facilitating agent, the service sector is in fact strengthening both the agricultural and manufacturing sectors. More than 10 percent of the agricultural sector of the GNP already is generated by service activities such as soil preparation, and veterinary and forest services. Economists estimate that 20 percent or more of the minerals and mining revenues are in services such as drilling and exploration. Banking, construction, insurance, transportation, and other services enable our factories to operate. Service industries have also become increasingly important in international trade. As the goods being traded among nations become more sophisticated, so too must the services, such as training and maintenance, and telecommunications and data processing. Services are often, therefore, an intrinsic part of manufacturing and merchandise exports.

The increasing integration of services into the manufacturing sector is very important but very difficult to measure. Companies today rely on advanced communications systems to coordinate planning, production and distribution of products (goods or services); some engage in-house lawyers, accountants, and engineers; some have "captive" subsidiaries to handle their insurance needs. In 1950, production workers were 82 percent of the manufacturing work force; in 1980, the number had dropped to 70 percent. The nature of the jobs within the goods sector has itself been changing,

shifting toward white-collar and service-type functions and away from production-worker jobs as we increasingly devote attention to managing technology, machinery, and information, and as both the process of production and the process of economic interaction become more complex. All of these service functions are subsumed within the corporate structure of a manufacturer of goods, whose output is classified for statistical purposes as manufacturing. In fact, no one has a good idea of how deeply services have pervaded U.S. economic activity, except to estimate that the percentage of GNP is probably much higher than the figures indicate.

Distinguishing between a service firm and a goods-producing firm is becoming more difficult and less important. In developing its recent directory of top service firms, for example, *Fortune* defined a service company as one in which over 50 percent of sales are accounted for by services. A bank will have little trouble thinking of itself as a service organization under this definition. But a company that began as a manufacturer, gradually diversified into service lines, possibly associated with its product lines, and eventually slipped over the 50 percent border would be far less likely to identify itself as a service concern. The services sector is not made up only of "purely" service companies. Although the change is slow in coming, many companies that provide services do not view goods and services as mutually exclusive or separate their interests from those of the goods-producing sector.

In fact, the transformation of manufacturing, mining and agricultural firms into service firms or into firms dealing in both goods and services is increasingly apparent. There is a natural linkage between tangible production and intangible activities. The Honeywell Company provides an example. It is estimated that approximately 30 percent of the revenue of this company, perceived as a high-tech computer manufacturer, actually comes from services. Considering the hardware the company produces, the service component is not surprising. Similarly, General Telephone and Telegraph has earned more than half of its revenues from services since 1974. Agri-business giants, like Cargill, find the trading, marketing and distribution of grain a major part of their business. New trading companies like General Electric are off to a head start in this new service activity because they have a ready source of manufactured products to trade.

This trend led *Fortune* magazine to the creation of its much-vaunted Fortune 500 List of Service Companies. In 1982, ten companies previously included among the Fortune 500 Industrials were moved to the Service 500 list.

The changing nature of work in both manufacturing and service firms also illustrates the difficulty of neatly differentiating the goods and services sectors. Work on the plant floor has been undergoing substantial changes for some time. Eighty percent of the new jobs added in the manufacturing firms in the past twenty years were in service functions. The shift to services is not just a broad macro-economic trend—it is occurring within the manufacturing firm itself.

Work in the office has changed as well. New production techniques in service firms are strikingly similar to those long associated with the factory. Organization of the data processing function—

in banks, insurance companies, credit card firms and others—takes on many aspects of traditional industrial production. Word processors and computer-monitored supervision of activities like processing of insurance claims allow massive productivity increases. In essence, assembly line and mass production techniques have been transplanted to the office. They permit standardization of quality and measurable productivity, something previously viewed as impossible in service activities.

The consumption of goods and services is also complementary. This is particularly the case between consumer goods, especially durables, and many services. For example, the increased consumption of automobiles is associated with increased maintenance and routine fuel servicing. Increased travel involves consumption of motel and restaurant services and of transportation-oriented goods. The family home requires a combination of housing structure, household furnishings, and supplies along with a variety of services. The purchase of consumer goods requires a matching component of retail services. We remain very much a goods-oriented society, but one in which goods and services are very frequently used in tandem. Sharp distinctions between the sectors are therefore less important than understanding the needs and role of each sector in the economy.

The shifts in our economy make less and less meaningful the lines between old-line smokestack industries and newer high-tech and services industries. Our habit of segmenting discussion of the economy into services or manufacturing or high technology clouds our vision and diverts us from focusing on what is really happening. Manufacturing and services industries are inextricably linked. Problems and policies affecting one will inevitably have an impact on the other. At the domestic level, demand for goods and services interrelate, with the sectors fostering each other's growth. The changing nature of jobs in the service sector is spilling over into manufacturing as the integration of the sectors increases. At the international level, protectionism against services will inevitably mean higher costs and more limited choices for the consumers of those services, including the goods-producing sector. Restrictions on expansion of trade and investment in services will inhibit the expansion of goods trade.

EMPLOYMENT OPPORTUNITIES AND THE SERVICE SECTOR

The most dramatic impact of the growth in services has been felt in the employment context. Service industries have been responsible for most new job growth for some time, and projections indicate that the service sector will create the largest number of new jobs over the next decade and beyond. This job growth has helped to put some downward pressure on our spiraling unemployment rate, leading some observers to offer the burgeoning service sector as the answer to our structural unemployment problems and the source of needed new job opportunities.

The problem of worker displacement from manufacturing industries is not so easily remedied. The growth in service employment does not reflect an easy assimilation of displaced manufacturing workers. It reflects largely the movement of new entrants into the work force, primarily women and minorities, toward the service sector.

Moreover, the service sector is no more apt than manufacturing to provide an endless source of new job opportunities. Even as we anguish over the job displacement in our smokestack industries, we have not begun to anticipate how international competition and technological change is likely to impact upon our booming service industries.

While employment growth in the service sector will expand the number of job opportunities, it provides no easy solution for our unemployment and underemployment problems. Serious concerns have been voiced regarding the effect of service sector jobs on upward mobility. Some observers question the ability of the service sector to provide a sufficient number of mid-level, relatively well-paying jobs to sustain our current standard of living. While many service sector jobs serve the immediate needs of new entrants into the work force, the range of these jobs does not create an effective career ladder for these workers to follow. The service sector does create a significant number of high-wage, high-skill white-collar jobs. But these positions are far out of reach of entry level service sector workers, as well as most of those displaced from the manufacturing sector.

None of these issues has been adequately explored. Our ability to assess future employment prospects depends on obtaining a better understanding of current employment trends in the service area and their implications.

FUTURE JOB GROWTH

The labor force is projected to grow at a much slower rate during 1982-95 than it did during the past ten to fifteen years. In the late 1970's, nearly 3 million people a year were entering the labor force; by the early 1990's, the number of labor force entrants is projected

to drop to about 1.3 million annually. Nearly two-thirds of the growth will be among women, an increase from the share they represented of labor force growth in the 1970-1982 period. Blacks and other minorities are projected to account for about one in four new entrants into the labor force, an increase from their 17 percent share during the same period.

Total employment is projected to rise from an annual average of 102.6 million in 1983 to 125.3-130.3 million by 1995, a gain of 23-28 million new jobs. Despite some projected gains in certain manufacturing industries, the source of the vast majority of new job growth in the period to 1995 will clearly continue to be the service sector. The increasing importance of services in generating employment will have significant implications for our occupational structure.

Manufacturing

The employment contribution of the manufacturing sector will continue to decline in importance. The number of manufacturing jobs rose by more than 4.4 million over the 20 years from 1959-79, but the share of total jobs accounted for by manufacturing declined by 4 percentage points. By 1982, severe reductions in manufacturing employment caused manufacturing's share of all jobs to drop even further. While manufacturing represented 25 percent of all jobs in 1959, it represented less than 19 percent in 1982. It is projected that it will merely maintain this severely reduced share throughout the 1982-95 period.

Job gains in manufacturing are expected to account for less than 1 of 6 new jobs between 1982 and 1995. (Table 1). Those job gains that will occur often reflect only some rebound from low recession levels, not new job growth in the manufacturing sector. As a result, much of the job growth projected in manufacturing occurs in the early part of the 1982-95 period. While about 3 million jobs are projected to be added to factory employment by 1990, only about 1.3 million will be added between 1990 and 1995. The decline in manufacturing employment is not simply a cyclical phenomenon, however. Only some of manufacturing's traditional share will be recouped. After that, the longer term decline in manufacturing's share of total employment is expected to resume. The net result is that in 1982 and in 1995 the share of total employment which manufacturing represents will be about the same. Furthermore, employment in several key manufacturing industries (e.g., autos and steel), will never reach previous peaks. While some turnaround in demand is projected to boost production in these sectors, productivity improvements and technological change will limit the extent of job expansion.

TABLE 1.—ACTUAL AND PROJECTED EMPLOYMENT BY MAJOR SECTORS, 1959-95

Sector	1959	1969	1979	1982	1995		
					Low	Moderate	High
Employment (in thousands)							
Total.....	67,705	82,401	102,211	102,315	125,251	127,563	130,299
Farm.....	5,491	3,495	2,861	2,815	2,500	2,550	2,595
Nonfarm.....	62,214	78,906	99,350	99,500	122,751	125,013	127,704
Government.....	8,083	12,195	15,947	15,803	17,180	17,230	17,760

TABLE 1.—ACTUAL AND PROJECTED EMPLOYMENT BY MAJOR SECTORS, 1959–95—Continued

Sector	1959	1969	1979	1982	1995		
					Low	Moderate	High
Federal.....	2,233	2,758	2,773	2,739	3,163	2,960	3,139
State and local.....	5,850	9,437	13,174	13,064	14,017	14,270	14,621
Private.....	54,131	66,711	83,403	83,697	105,571	107,783	109,944
Mining.....	612	501	704	742	842	864	844
Construction.....	3,825	4,386	5,903	5,491	7,798	7,925	8,004
Manufacturing.....	16,985	20,469	21,406	19,234	22,963	23,491	24,132
Durable.....	9,560	12,081	12,989	11,326	14,266	14,496	14,965
Nondurable.....	7,425	8,388	8,417	7,908	8,696	8,995	9,167
Transportation and public utilities...	4,304	4,718	5,534	5,543	6,488	6,637	6,746
Trade.....	13,245	16,704	22,352	22,536	27,764	28,545	28,859
Finance, insurance, and real estate.....	2,923	3,864	5,523	5,899	7,607	7,685	7,788
Services.....	9,663	13,747	20,258	22,617	30,814	31,290	32,203
Private households.....	2,574	2,322	1,723	1,635	1,295	1,346	1,368
Percent Distribution							
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Farm.....	8.1	4.2	2.8	2.8	2.0	2.0	2.0
Nonfarm.....	91.9	95.8	97.2	97.2	98.0	98.0	98.0
Government.....	11.9	14.8	15.6	15.4	13.7	13.5	13.6
Federal.....	3.3	3.3	2.7	2.7	2.5	2.3	2.4
State and local.....	8.6	11.5	12.9	12.8	11.2	11.2	11.2
Private.....	80.0	81.0	81.6	81.8	84.3	84.5	84.4
Mining.....	.9	.6	.7	.7	.7	.7	.6
Construction.....	5.6	5.3	5.8	5.4	6.2	6.2	6.1
Manufacturing.....	25.1	24.8	20.9	18.8	18.3	18.4	18.5
Durable.....	14.1	14.7	12.7	11.1	11.4	11.4	11.5
Nondurable.....	11.0	10.2	8.2	7.7	6.9	7.1	7.0
Transportation and public utilities...	6.4	5.7	5.4	5.4	5.2	5.2	5.2
Trade.....	19.6	20.3	21.9	22.0	22.2	22.4	22.1
Finance, insurance, and real estate.....	4.3	4.7	5.4	5.8	6.1	6.0	6.0
Services.....	14.3	16.7	19.8	22.1	24.6	24.5	24.7
Private households.....	3.8	2.8	1.7	1.6	1.0	1.1	1.0

Source: Employment Projections for 1995, BLS Bulletin 2197, March 1984, Table 2, page 24.

The nature of the work force within manufacturing is also changing and white-collar workers are significantly increasing in importance. Virtually all of the recent job cutbacks in manufacturing occurred among production workers. Between 1979 and 1982, average annual employment in manufacturing fell by 2.2 million; production worker jobs were down 2.3 million while nonproduction jobs were up slightly.

Services

The vast majority of new job growth is projected to take place in the service-producing sector. This sector—broadly defined as transportation, communications, public utilities, trade, finance, insurance, real estate, services, and government—is projected to account for almost 75 percent of all new jobs between 1982 and 1995.

Within the service-producing sector, the services industries are projected to continue to grow the fastest. Industries such as medical care, business services, professional services, hotels, personal services, and nonprofit organizations will provide the most new job opportunities over the next decade and a half, accounting for more than 1 of 3 new jobs from 1982 to 1995, compared with 1 of 6 for all

manufacturing industries. In sum, they will account for more than 31 million jobs in 1995, almost one-fourth of total employment.

Service industries are less affected by cyclical movements than many of the goods-producing industries, and the recent recession was no exception. While declines in employment were reported for most industries, jobs in the services industry of the service-producing sector expanded 3.7 percent a year throughout the 1979-82 recessionary period. While job growth might arguably have been stronger without the economic downturn, almost 2.4 million jobs were added in these service industries during the period in which other sectors experienced layoffs.

The largest industry in the services industry category, miscellaneous business services, will generate the most new jobs between 1982 and 1995. Employment is projected to grow from 3.7 million in 1982 to a little over 6 million in 1995. A wide variety of services are included in this sector, such as personnel supply, business consultants (providing management services or public relations advice), janitorial and protective services, and computer and data processing services. All are expected to show rapid growth. Total output for the industry is projected to grow 5.3 percent a year and employment, 3.9 percent.

GENERAL IMPLICATIONS OF EMPLOYMENT SHIFTS

Job Creation

Rising employment in the service sector has had a positive impact on overall job growth. The U.S. has been able to create jobs at a rate of five million a year at a time when unemployment is still rising in Europe. In the last decade, while Western Europe lost approximately 2 million jobs, the United States created about 20 million. This impressive job growth is largely attributable to the rapid expansion of our service sector. As a result, our economy has proved very successful in its ability to absorb new workers.

However, the rather extraordinary job growth in the service sector provides no long-term solution to the problem of providing sufficient job opportunities for our citizens and no ready panacea for the serious structural unemployment problems our economy has experienced over the last several years. Employment in the service sector is unlikely to continue growing at its current rapid rate. Moreover, job growth in the service sector reflects demographic shifts in the labor force rather than the provision of new job opportunities for those displaced from declining manufacturing sectors.

Prospects for Continued Job Growth

According to a number of observers, between seven and fifteen million service jobs will be lost in the next fifteen years as the result of technological change alone. There is already evidence that the rapid growth in employment in the service sector will not continue unabated, as the application of new technology and other factors are increasingly felt in that sector of our economy. Several service sectors are already experiencing slowdowns in their historical growth rates.

Projected growth rates in business services, for example, although among the highest projected for all industries, are still lower than the historical growth rates for the industry. Since 1958, growth in business services output has averaged 9.4 percent a year and employment, 7.0 percent. Total output for the industry is now projected to grow 5.3 percent a year and employment, 3.9 percent. This slowdown is projected to continue as the industry matures and the shift from in-house services to contracting-out businesses slows. Miscellaneous professional services—encompassing legal, engineering, architectural, accounting, and other professional services—are projected to follow the same pattern as business services.

The health field has been a very significant force in accounting for both the number of jobs and rate of expansion in the service sector. That dramatic growth, at least at past levels, is also not expected to continue. Because of higher costs and the assumption of no new government programs, on which past growth was largely built, it is expected that output and employment in medical care services will slow from historical rates.

A similar pattern emerges in government, another important source of past employment growth in the service sector.

Employment is projected to grow more slowly than in the private sector. This has been true since 1975, but is the opposite of what occurred during the expansionary 1950's and 1960's. The state and local sector represents most of the projected increase as 1.2 million new jobs will be added over the next 13 years. Although this represents a reversal from the actual declines of the late 1970's, it is a significantly lower level of job growth than occurred in the 1960's and contrasts dramatically with the 3.6 million jobs generated during the preceding 13-year period.

Financial and banking services provide a good example of the impact of technology in the service sector. Employment in banking grew 4.4 percent through the 1960's and 1970's, as the expanding use of checking accounts created the need for a large number of new hirings for check processing. That impetus will no longer be as strong a factor, however, as automatic transfers continue to replace manual check processing. While the output of financial and banking services is projected to grow by 4.1 percent a year, showing very large gains over the next decade and a half, employment growth is projected to be very modest, with jobs gains limited to 1.9 percent a year.

Increased output in other service sectors will also be accompanied by very limited job growth. The output of the transportation, communications, and public utilities sector is projected to lead all others in growth, reflecting the strong demand for new telecommunications services. However, this sector is projected to contribute only modestly to overall job growth, adding slightly more than one million extra workers.

Impact on Structural Unemployment

An increasing portion of our unemployment is accounted for by workers displaced from manufacturing industries because of the changes occurring in the overall structure of our economy. Those job gains which are evident in the service sector are of relatively

little use in solving this serious "structural" unemployment problem.

The growth in service sector employment does not reflect an easy assimilation of displaced manufacturing workers. Relatively little of the shift to services came from manufacturing or agriculture. This shift is not evidence of an actual migration of workers from one sector to another, but reflects relative or proportional changes in employment distributions, and is the result of the relative rather than absolute decline of employment in the goods sectors. It results from the expansion of the labor force and especially the increasing participation of women. Since 1967, women have accounted for about 60 percent of the total growth in the labor force and a large segment of these women have moved into jobs in the service sector.

The contrast in the source of new employees for the goods and services sectors reflects this fact. In the goods sector, new employees were three times as likely to have worked in the services sector in the previous year than to have not been working. Just the opposite relationship holds for the services sector, where new employees were twice as likely to not have worked at all in the previous year than to have worked in goods-producing. The contrast between the two sectors is even greater when data for men and women are examined. Both men and women in the goods sector were more likely to have been employed the previous year in services than to have not been employed, although this tendency was stronger for men than for women. In the services sector, on the other hand, there was a clear difference between men and women, with men more likely to have been employed the previous year in the goods sector. This is a sharp contrast to the situation among women where, by a 6 to 1 ratio, they were more likely to have not worked at all the year before.

The Changing Nature of Occupations

The effect of job growth in the service sector on the nature and distribution of jobs becoming available also raises serious concerns regarding the impact of this shift in our employment structure.

The growth of services and the increasing importance of service (i.e., non-production) activities within goods-producing firms has changed the occupational composition of the workforce. Not only has there been a sharp rise in the share of white-collar employment (from 44 to 53 percent during the period 1961 to 1981) but there have been significant shifts in the importance of specific occupations. Major increases have occurred in the employment of managers, professionals, technicians, and clerical workers and service workers (for example, cooks, cleaning workers, food service workers and health service workers) largely because of the rapid growth of services.

Recent occupational projections suggest that wide-ranging but fairly divergent jobs skill be needed over the the next decade-and-a-half. Employment in jobs requiring a college education or specialized post-secondary technical training are expected to increase significantly. However, many jobs that do not require post-secondary training are also expected to expand significantly. For example, the projected rapid increase in demand for medical services will re-

quire large numbers of nursing aides and orderlies, in addition to highly trained medical practitioners.

The new technology is increasingly affecting occupational structures, with shifts away from clerical work in some industries and increased emphasis being given to employing technically-trained personnel. Technological change will continue to affect employment growth in many occupations. For example, word processing equipment will slow the employment growth of typists, and industrial robots are expected to reduce the growth in employment of welders, production painters, and material-moving occupations. Despite widespread technological advances, employment will increase in many traditional fields, although the areas of job expansion in many cases hold out limited hope of any real expansion of opportunity. More workers will be needed to drive trucks, to deliver goods, to clean a growing number of buildings, to perform health and personal services, and provide police and fire protection for our increasing population, and to maintain and repair a larger stock of automobiles, appliances, and factory equipment.

Rapid expansion of high technology will also spur the growth of scientists, engineers, technicians, and computer specialists. Employment in these occupations has generally grown faster than the economy as a whole and is expected to continue to do so. However, even in some of these fields, technological advances will have an impact on reducing employment needs. For example, advances in computer-aided design technology are expected to limit severely the employment growth of drafters.

Projected changes in the occupational structure are indicated in Tables 2 and 3. Those occupations with the largest job growth, expected to account for about one half of total employment change over the next decade-and-a-half, are shown in Table 2. The array is a mixed one. Computer systems analysts, electrical engineers, computer programmers, and lawyers are among the occupations listed, but many others cited are at the low-skill, low-wage end of the job scale. Included are custodians, cashiers, office clerks, salesclerks, nursing aides and orderlies, kitchen helpers, guards and doorkeepers, food preparation and service workers in fast food restaurants, receptionists, typists, and waiters and waitresses. Occupations with rapid rates of growth are shown in Table 3. Many of these are linked to the advances in and the increasing application of high technology—for example, computer service technicians, computer operators, office machine repairers, and electronic data-processing equipment operators. Although expectations for these occupations include rapid expansion, it can also be seen that they do not constitute a significant portion of total growth in the economy.

TABLE 2.—FORTY OCCUPATIONS WITH LARGEST JOB GROWTH, 1982-95

Occupation	Change in total employment (in thousands)	Percent of total job growth	Percent change
Building custodians	779	3.0	27.5
Cashiers	744	2.9	47.4
Secretaries	719	2.8	29.5
General clerks, office	696	2.7	29.6
Salesclerks	685	2.7	23.5

TABLE 2.—FORTY OCCUPATIONS WITH LARGEST JOB GROWTH, 1982–95—Continued

Occupation	Change in total employment (in thousands)	Percent of total job growth	Percent change
Nurses, registered.....	642	2.5	48.9
Waiters and waitresses.....	562	2.2	33.8
Teachers, kindergarten and elementary.....	511	2.0	37.4
Truckdrivers.....	425	1.7	26.5
Nursing aide and orderlies.....	423	1.7	34.8
Sales representatives, technical.....	386	1.5	29.3
Accountants and auditors.....	344	1.3	40.2
Automotive mechanics.....	324	1.3	38.3
Supervisors of blue-collar workers.....	319	1.2	26.6
Kitchen helpers.....	305	1.2	35.9
Guards and doorkeepers.....	300	1.2	47.3
Food preparation and service workers, fast food restaurants.....	297	1.2	36.7
Managers, store.....	292	1.1	30.1
Carpenters.....	247	1.0	28.6
Electrical and electronic technicians.....	222	.9	60.7
Licensed practical nurses.....	220	.9	37.1
Computer system analysts.....	217	.8	85.3
Electrical engineers.....	209	.8	65.3
Computer programmers.....	205	.8	76.9
Maintenance repairers, general utility.....	193	.8	27.8
Helpers, trades.....	190	.7	31.2
Receptionists.....	189	.7	48.8
Electricians.....	173	.7	31.8
Physicians.....	163	.7	34.0
Clerical supervisors.....	162	.6	34.6
Computer operators.....	160	.6	75.8
Sales representatives, nontechnical.....	160	.6	27.4
Lawyers.....	159	.6	34.3
Stock clerks, stockroom and warehouse.....	156	.6	18.8
Typists.....	155	.6	15.7
Delivery and route workers.....	153	.6	19.2
Bookkeepers, hand.....	152	.6	15.9
Cooks, restaurants.....	149	.6	42.3
Bank tellers.....	142	.6	30.0
Cooks, short order, speciality and fast food.....	141	.6	32.2

Note: Includes only detailed occupations with 1982 employment of 25,000 or more. Data for 1995 are based on moderate-trend projections.

Source: Employment Projections for 1995, BLS Bulletin 2197, March 1984, Table 2, page 43.

TABLE 3.—TWENTY FASTEST GROWING OCCUPATIONS, 1982–95

Occupation	Percent change	Employment change (thousands)	Percent of total job growth
Computer service technicians.....	97	53	0.21
Legal assistants.....	94	43	.17
Computer systems analysts.....	85	217	.85
Computer programmers.....	77	205	.80
Computer operators.....	76	160	.62
Office machine repairers.....	72	40	.16
Physical therapy assistants.....	68	26	.09
Electrical engineers.....	65	209	.82
Civil engineering technicians.....	64	23	.09
Peripheral electronic data-processing equipment operators.....	64	31	.12
Insurance clerks, medical.....	62	53	.21
Electrical and electronics technicians.....	61	222	.87
Occupational therapists.....	60	15	.06
Surveyor helpers.....	59	23	.09
Credit clerks, banking and insurance.....	54	27	.11
Physical therapists.....	54	25	.10

TABLE 3.—TWENTY FASTEST GROWING OCCUPATIONS, 1982-95—Continued

Occupation	Percent change	Employment change (thousands)	Percent of total job growth
Employment interviewers.....	53	30	.12
Mechanical engineers.....	52	109	.43
Mechanical engineering technicians.....	52	25	.10
Compression and injection mold machine operators, plastics.....	50	47	.19

Note: Includes only detailed occupations with 1982 employment of 25,000 or more. Data for 1995 are based on moderate-trend projections.

Source: Employment Projections for 1995, BLS Bulletin 2197, March 1984, Table 3, page 44.

ADEQUACY OF AVAILABLE EMPLOYMENT OPPORTUNITIES

Jobs in the service sector cut across the economic spectrum. There are, without question, many low-wage, low-skill jobs in a service economy, just as there are many such jobs in an industrial economy. This low-skill end of the spectrum often provides needed jobs for new entrants into the job market and part-time workers. But, the service sector is also creating a number of high-wage, high-skill jobs as well as the low-level jobs for which it receives greater notoriety. A significant number of service jobs are white-collar, highly-skilled, well-paid and involve knowledge-intensive work. Many of these are found in upper-level white-collar occupations such as professional, technical, administrative and sales functions.

The nature of the jobs the growing service sector is creating does not dispel a major concern about its impact on employment opportunities. The potential disparity in the kinds of jobs becoming available is itself an issue. Many observers believe that sectors of our economy in which employment is expanding provide two distinct types of jobs: high-paying slots for professionals and managers and low-paying jobs, with little prospect for advancement, for most other workers. In contrast, the sectors whose importance is declining are characterized by a different job structure, one marked by a much thicker middle range of jobs in which workers can progress to higher level pay scales. If the bulk of future job growth will be either at the low or high ends of the income and skills scales, there is a real danger of a declining standard of living for many of our citizens.

While aggregate trends suggest no dramatic shifts in the job structure, an examination of specific trends reveals legitimate cause for concern. The jobs the service sector creates tend to cluster at the low and high ends of the skills and income scales with little in the way of a career ladder in between. While significant job creation in the service sector has met the immediate needs of new entrants into the work force, the nature of the job structure puts them at risk of being locked into low-wage, low-skill employment over the long term. The large number of new jobs in services has made only a small dent in what remains an unacceptable level of unemployment, with eight to nine million of our citizens still unable to find work. Moreover, it has done nothing to alleviate the plight of displaced manufacturing workers whose skills make them unlikely candidates for service sector employment. Trends far more

apparent in services than in manufacturing—the changing demographics of the work force, the greater importance of part-time work and the increased mobility of work sites, a far less significant degree of unionization, a larger number of small work establishments—will have a dramatic effect on the evolution of the job structure in the service sector. Yet the potential impact of these trends is only vaguely understood. All of these issues raise serious concerns and require greater attention from policymakers.

Aggregate Trends

1983 Evidence

Aggregate statistics show that the proportion of full-time workers earning middle class incomes in the production of goods is exactly the same as in the rest of the economy. (See Table 4). As is widely believed, durable goods manufacturing is one of the three sectors with the highest proportion of middle class earnings (50 percent). But the other two are in the services sector: transportation and communications and the public sector. There is no difference between the proportions of middle class earners in non-durable manufacturing (44 percent) and those in services such as finance, insurance and real estate (43 percent) and miscellaneous services (43 percent).

TABLE 4.—EARNINGS DISTRIBUTION ACROSS SECTORS, CATEGORIZED BY HIGH, MIDDLE AND LOW EARNINGS, 1969, 1983 ¹

Sector	[In percent]								
	Total			Males			Females		
	High	Mid	Low	High	Mid	Low	High	Mid	Low
Distribution in 1983									
Total.....	21	46	33	30	47	23	8	44	49
Goods producing.....	24	46	30	30	48	22	6	42	52
Agriculture.....	3	27	69	4	28	68	1	21	78
Mining.....	48	42	9	53	40	8	28	55	16
Construction.....	28	45	27	30	45	25	6	51	42
Manufacturing.....	23	48	29	31	51	18	6	41	53
Durables.....	26	50	24	32	51	17	7	49	44
Nondurables.....	19	44	37	28	51	21	5	34	61
Services.....	19	42	40	30	43	27	6	40	54
Transportation, communication, and public utilities.....	36	49	15	43	45	12	14	58	27
Trade.....	14	38	48	21	44	35	3	28	69
Finance, insurance, and real estate.....	22	43	35	44	39	18	7	46	46
Private households.....	2	8	90	2	18	80	1	7	92
Miscellaneous services.....	16	43	41	28	41	31	7	44	49
Public sector.....	23	55	23	32	53	15	12	56	32
Distribution in 1969									
Total.....	20	50	30	28	56	16	5	39	56
Goods producing.....	21	53	26	26	58	16	2	38	60
Agriculture.....	5	25	70	6	26	68	0	16	84
Mining.....	32	52	15	35	52	13	1	56	44
Construction.....	32	50	18	33	49	17	5	57	38
Manufacturing.....	20	55	25	26	62	13	2	38	60
Durables.....	22	60	18	27	62	11	3	49	48
Nondurables.....	15	49	36	23	60	17	2	28	71
Services.....	17	45	38	27	54	19	3	33	64

TABLE 4.—EARNINGS DISTRIBUTION ACROSS SECTORS, CATEGORIZED BY HIGH, MIDDLE AND LOW EARNINGS, 1969, 1983¹—Continued

[In percent]

Sector	Total			Males			Females		
	High	Mid	Low	High	Mid	Low	High	Mid	Low
Transportation, communication, and public utilities.....	23	61	16	28	62	10	4	55	41
Trade.....	15	43	41	23	54	23	2	25	74
Finance, insurance, and real estate.....	22	45	33	40	48	12	4	42	54
Private households.....	2	9	89	5	26	70	2	7	92
Miscellaneous services.....	15	42	43	28	49	23	4	37	59
Public sector.....	24	56	20	34	56	10	12	56	32
Differences in distributions, 1983-1969									
Total.....	+1	-4	+3	+2	-9	+7	+3	+5	-7
Goods producing.....	+3	-7	+4	+4	-10	+6	+4	+4	-8
Agriculture.....	-2	+2	-1	-2	+2	0	+1	+5	-6
Mining.....	+16	-10	-6	+18	-12	-5	+27	-1	-28
Construction.....	-4	-5	+9	-3	-4	+8	+1	-6	+4
Manufacturing.....	+3	-7	+4	+5	-11	+5	+4	+3	-7
Durables.....	+4	-10	+6	+5	-11	+6	+4	0	-4
Nondurables.....	+4	-5	+1	+5	-9	+4	+3	+6	-10
Services.....	+2	-3	+2	+3	-11	+8	+3	+7	-10
Transportation, communication, and public utilities.....	+13	-12	-1	+15	-17	+2	+10	+3	-14
Trade.....	-1	-5	+7	-2	-10	+12	+1	+3	-5
Finance, insurance, and real estate.....	0	-2	+2	+4	-9	+6	+3	+4	-8
Private households.....	0	-1	+1	-3	-8	+10	-1	0	0
Miscellaneous services.....	+1	+1	-2	0	-8	+8	+3	+7	-10
Public sector.....	-1	-1	+3	-2	-3	+5	0	0	0

¹ Income categories established using median male weekly earnings of \$142 in 1969 and \$379 in 1983 as a middle benchmark. The categories are defined as follows: high (1983) = \$500+; mid (1983) = \$250-499; low (1983) = \$0-249; high (1969) = \$187+; mid (1969) = \$94-187; low (1969) = \$0-93.

(See testimony of Robert Lawrence, The Brookings Institution, before the Subcommittee on Economic Stabilization).

Source: Bureau of Labor Statistics; unpublished data, Usual Weekly Earnings of Employed Full-Time Wage and Salary Workers, 1969, 1983.

There are important differences in the patterns of earnings by sex. For females, goods production in general and manufacturing in particular actually provide lower proportions of middle-class earnings than the rest of the economy. The distribution of female earnings across the large "miscellaneous services" sector is identical to the distribution in the economy overall.

Everything else being equal, it appears that a declining share of manufacturing in total employment would result in a relatively small decline in the aggregate in the proportion of middle-class earnings—primarily for males.

Changes between 1969 and 1983

Data regarding the distribution of earnings over time does indicate that, in the aggregate, the proportion of middle-class earnings has declined over the past 14 years. Of the 4.0 percentage-point decline from 50 in 1969 to 46 in 1983, one point shows up in upper-class earnings and three points in lower-class earnings. The declines in the middle were widely diffused: some decline occurred in every sector besides agriculture and miscellaneous services. However, the proportion of earnings in the middle declined relatively more in goods production, and the drop was particularly large in

high-wage sectors such as mining, durables manufacturing and transportation.

The detailed data by sex and industry tell a more complex story. The declining middle is confined to males. In virtually every major sector of the economy, for females it is a story of the shrinking lower class. The proportions of middle and upper class earnings of females have both increased.

The reasons behind this declining middle are more difficult to pinpoint. The most common explanation—that sectors with relatively small shares of middle-class jobs have been expanding the most rapidly—is not very powerful, according to some observers.

A more important explanation for the declining middle, according to these same observers, is the changing age distribution of the labor force. The impact of the entrance of the baby boom generation into the labor force has been significant. The earnings of these workers, especially of younger men, have experienced a relative decline. Between 1969 and 1983, the ratio of median earnings of males under age 25 to those of males above age 25 declined from 74 percent to 55 percent. As Table 5 demonstrates, the declining middle is closely associated with age. For younger workers, the declining middle is associated with a rise in the lower-class earnings; for those above 35, it is associated with a rise in the upper-class earnings. Only among the youngest females has the middle declined and the lower-class earnings expanded. In short, this evidence suggests that shifts in the labor force distribution across age groups rather than sectors may be a more important reason for the declining middle. Increasing competition from both male and female entrants into the work force has depressed the earnings of young males.

TABLE 5.—DISTRIBUTION OF EARNINGS BY AGE CATEGORIES, 1969, 1983

Age group	Distribution 1983			Distribution 1969			Distribution 1983-1969		
	High	Mid	Low	High	Mid	Low	High	Mid	Low
Males and Females									
Years:									
Under 25	4	32	64	5	46	49	-1	-14	+15
25 to 29	15	52	33	18	59	23	-3	-7	+10
30 to 34	23	52	25	25	53	22	-2	-1	+3
35 to 39	29	48	23	27	50	23	+2	-2	0
40 to 44	29	46	25	27	48	25	+2	-2	0
45 to 49	29	45	26	25	50	25	+4	-5	+1
50 to 54	29	46	26	22	50	28	+7	-4	-2
55 to 59	27	47	27	19	50	31	+8	-3	-4
60 to 64	24	47	29	19	49	32	+5	-2	-3
65 to 69	19	39	42	15	38	47	+4	+1	-5
70 and over	14	29	57	10	24	66	+4	+5	-9
Males									
Years:									
Under 25	5	37	58	8	56	36	-3	-19	+22
25 to 29	21	54	25	23	64	13	-2	-10	+12
30 to 34	31	52	16	32	57	11	-1	-5	+5
35 to 39	40	47	13	36	54	10	+4	-7	+3
40 to 44	43	45	12	37	53	10	+6	-8	+2
45 to 49	42	45	13	35	54	11	+7	-9	+2
50 to 54	42	45	14	31	56	13	+11	-11	+1

TABLE 5.—DISTRIBUTION OF EARNINGS BY AGE CATEGORIES, 1969, 1983—Continued

Age group	Distribution 1983			Distribution 1969			Distribution 1983-1969		
	High	Mid	Low	High	Mid	Low	High	Mid	Low
55 to 59.....	38	47	14	26	57	16	+12	-10	-2
60 to 64.....	34	49	17	24	54	21	+10	-5	-4
65 to 69.....	28	41	32	19	43	38	+9	-2	-6
70 and over.....	18	32	49	13	30	58	+5	+2	-9
Females									
Years:									
Under 25.....	2	26	72	1	35	63	+1	-9	+9
25 to 29.....	7	49	44	5	47	48	+2	+2	-4
30 to 34.....	10	52	38	4	42	53	+6	+10	-15
35 to 39.....	11	49	40	5	41	54	+6	+8	-14
40 to 44.....	10	46	44	6	39	56	+4	+7	-12
45 to 49.....	10	45	45	5	41	54	+5	+4	-9
50 to 54.....	8	47	45	6	39	55	+2	+8	-10
55 to 59.....	8	45	47	7	37	56	+1	+8	-9
60 to 64.....	7	46	47	8	37	55	-1	+9	-8
65 to 69.....	7	36	56	6	27	67	+1	+9	-11
70 and over.....	7	24	69	5	14	81	+2	+10	-12

(See testimony of Robert Lawrence, The Brookings Institution, before the Subcommittee on Economic Stabilization).

Source: Bureau of Labor Statistics, unpublished data; Usual Weekly Earnings of Employed Full-Time Wage and Salary Workers by Age, Sex, and Race, 1969-1983.

According to some studies, the reductions in earnings due to the effect of a large influx into the work force appears to be greatest at the beginning of a career and to diminish thereafter. This suggests that, with time, the middle could thicken once again, as the large number of baby-boom men mature.

In the aggregate, it can thus appear that sector shifts are likely to have a relatively small impact. Aggregate statistics indicate that the differences in sector shifts that are expected over the next decade are sufficiently small and unbiased with respect to earnings distribution that the outlook indicates an American economy in 1995 with an earnings distribution very similar to what it is today. (See Table 6). Other factors, such as the changing age distribution of the labor force, may have more important effects. The middle of the earnings distribution could well thicken considerably as the baby boom matures, a relatively smaller influx of younger workers enters the labor force and the participation rates of women stabilize.

TABLE 6.—ACTUAL AND PROJECTED EARNINGS DISTRIBUTIONS, 1983, 1995

[In percent]

	1983 distribution			1995 projected distribution		
	High	Mid	Low	High	Mid	Low
Total.....	21.0	45.6	33.4	20.8	45.4	33.8
Males.....	30.1	46.7	23.1	30.2	46.6	23.2
Females.....	7.6	43.9	48.5	7.5	43.7	48.9

(See testimony of Robert Lawrence, The Brookings Institution, before the Subcommittee on Economic Stabilization).

Source: The 1995 projected distribution is calculated using 1983 sector proportion (elsewhere described) and the corresponding 1995 sector growth rate (U.S. Department of Labor, Bureau of Labor Statistics, "Employment Projections for 1995," March 1984, p. 24).

Specific Problems Related to Service Sector Employment

The distribution of earnings in the economy is in fact determined by a vast array of factors. One of these is industry characteristics, but many others such as shifts in technology, unionization, age, sex, and international competition may play even more substantial roles. These factors are playing a role in the service sector, as they have in manufacturing, but their impact appears more problematical than positive or benign.

While aggregate trends may not reveal serious problems, they reveal nothing about the experiences of individuals and households as shifts in the economy occur. With respect to human welfare, the basic issue in any economy is not only the level of employment or unemployment or the number of jobs *per se*, but the quality of the jobs that exist, the living standards that those jobs offer, and the distribution of income that the economy generates. The positive implications drawn from some of the aggregate data ignore significant issues that will, in fact, have an important impact on employment prospects. Specific trends in the American labor market have the potential to lead to increasing instability and inequity throughout our economy.

The growth of the service sector has been welcomed by those who believe that an increase in white collar occupations, which have traditionally carried with them higher status and better pay, means an increase in wages and an improvement in the quality of work life for U.S. workers. This argument presumes that the qualities of white-collar work do not change over time, and that the executive secretary or the middle manager is the prototypical service employee. It also rests on an assumption that white-collar work is more rewarding and better paid than blue-collar work. For many workers, and particularly for women, this is not the case. Service jobs are not all alike or even similar. They range from those that are highly autonomous and carry with them substantial authority to those that are the most marginal and low paying, with a monotony that rivals that of the assembly line, but a wage level that often does not.

The mill-based and smokestack industries have been characterized by a labor market structure containing a relatively small high-wage segment at one end of the job spectrum, a small low-wage set of jobs at the other, and a large semi-skilled and skilled blue-collar and white-collar "middle." The industries where employment is expanding today may have a very different employment distribution. Preliminary evidence suggests that within the new high technology manufacturing sector, the business services sector, and in personal services and retail trade, the distribution of jobs may be "bimodal," or at least comparatively unequal.

Impact of Changing Occupational Structure on Income

There appear to be some basic differences in the occupational characteristics of service and non-service industries. Services have traditionally been much more heavily weighted with relatively low paying clerical and service worker jobs than have nonservices. (See Table 7). The difference is also apparent when examining occupational employment and earnings for major industry groups. (See

Table 8). Retail trade, and producer, consumer and non-profit services contained disproportionately large shares of workers earning 80 percent or less of the national average in 1975. Only distributive and public administration among the services had a predominance of jobs that paid at an average or above-average level. Among the remaining service sector groups, poorly-paid work made up a very large share (46 percent or more of all employment).

TABLE 7.—1975 OCCUPATIONAL DISTRIBUTIONS

	Services	Nonservices
Professional.....	13.2	4.4
Technicians.....	8.2	4.1
Managers.....	12.7	15.6
Clerical workers.....	20.6	9.1
Sales workers.....	8.0	2.0
Craftsmen.....	7.2	20.7
Operatives.....	6.9	31.3
Services workers.....	19.2	1.4
Laborers.....	4.0	11.3

(See testimony of Thomas Stanback, Columbia University, before the Subcommittee on Economic Stabilization).

TABLE 8.—Shares (percentages) of employment earning 80 percent or less of the national average in 1975

Construction.....	19.1
Manufacturing.....	17.2
Distributive services.....	9.7
Retail.....	60.0
Producer services.....	45.7
Consumer services.....	82.2
Nonprofit services.....	48.4
Public administration (excludes health and education).....	6.4

(See testimony of Thomas Stanback, Columbia University, before the Subcommittee on Economic Stabilization).

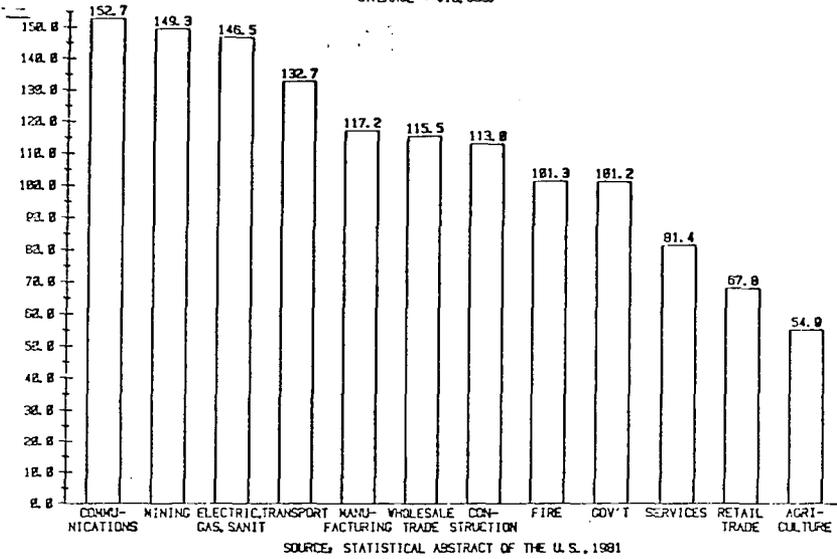
Low-wage employment has grown rapidly. Examining the differences in earnings across industries, it is evident that the services sector pays only 81 percent of the average and retail trade only 68 percent (See Table 9). These expanding employment sectors are well below average. Focusing only on the hourly wage incomes of production and non-supervisory workers in non-agricultural businesses, the data indicate that the services and related sectors (trade, services, finance, insurance and real estate) pay their hourly employees well below the average for all industries. Moreover, the expansion of low-wage employment has coincided with a decline in the fraction of families in the middle-class income range.

Table 10 indicates the absolute net change in employment in each sector between 1969 and 1982. The sectors experiencing the greatest net growth were clearly those which, at least in 1980, paid the lowest average wages. Specifically, 63 percent of the net new jobs were in industries whose 1980 average annual wage was less than \$12,500. And for the set of industries paying an average wage of \$22,000 or more, there was virtually no net growth at all during the period.

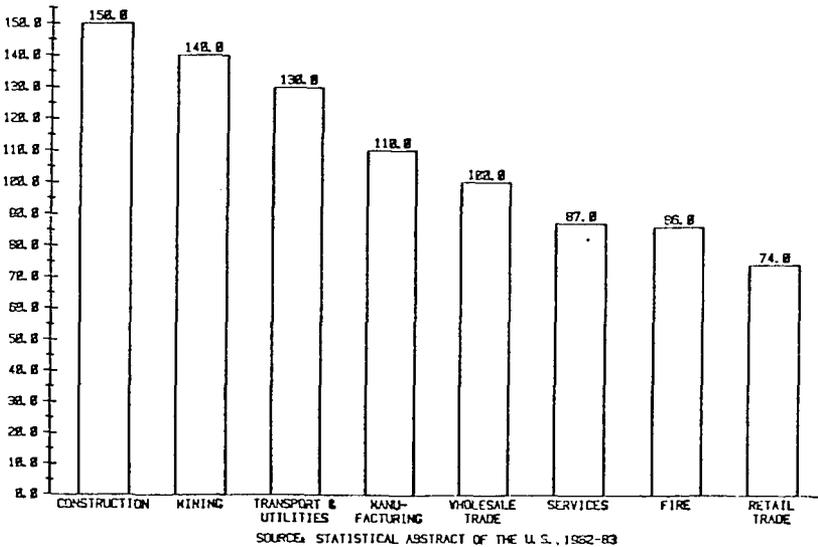
The forecasts of the Bureau of Labor Statistics to 1995, shown in Table 11, predict a continuation of this trend until the end of the century. Between now and the end of the century, the bulk of the

new jobs are expected to be created in sectors which, in 1980, paid an average annual wage of less than \$12,500. And, if anything, the decline in the industries paying more than \$22,000 is projected to be even greater. The evidence indicates a relative concentration of new employment in industries paying low average wages, together with a sharp decline of employment in the industries that, back in 1980, paid high average wages.

Table 9
ANNUAL TOTAL COMPENSATION BY INDUSTRY IN 1979
AS PERCENT OF AVERAGE
AVERAGE = \$16,993

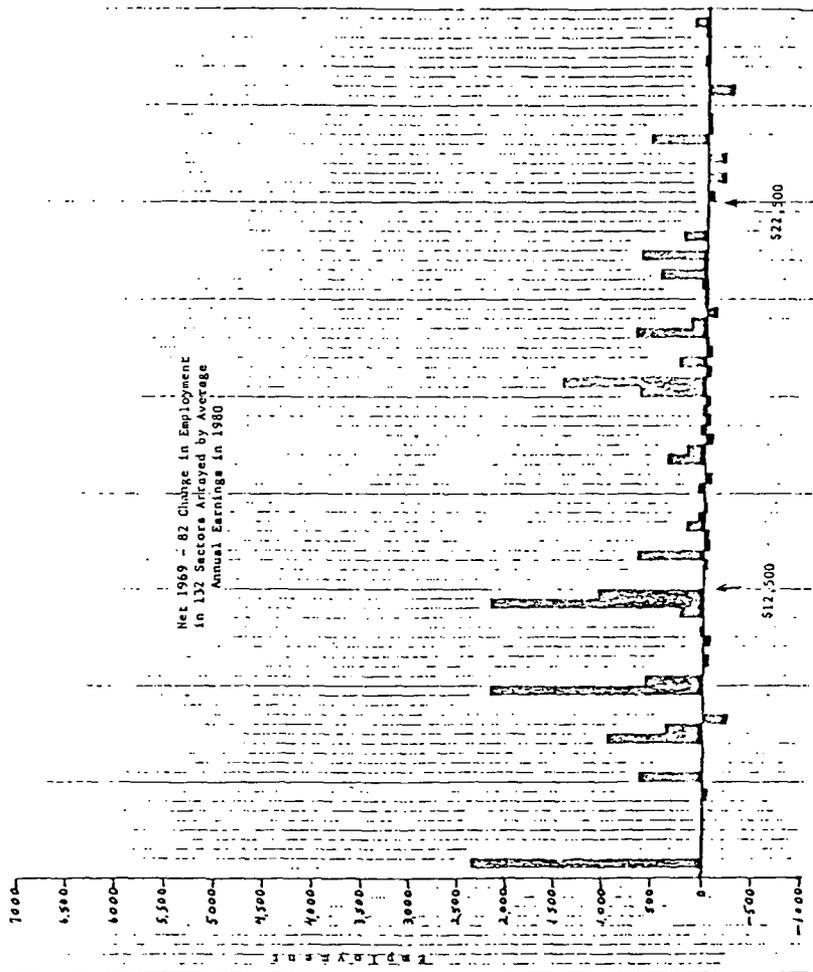


HOURLY EARNINGS BY INDUSTRY IN 1979
AS PERCENT OF AVERAGE
AVERAGE = \$6.16



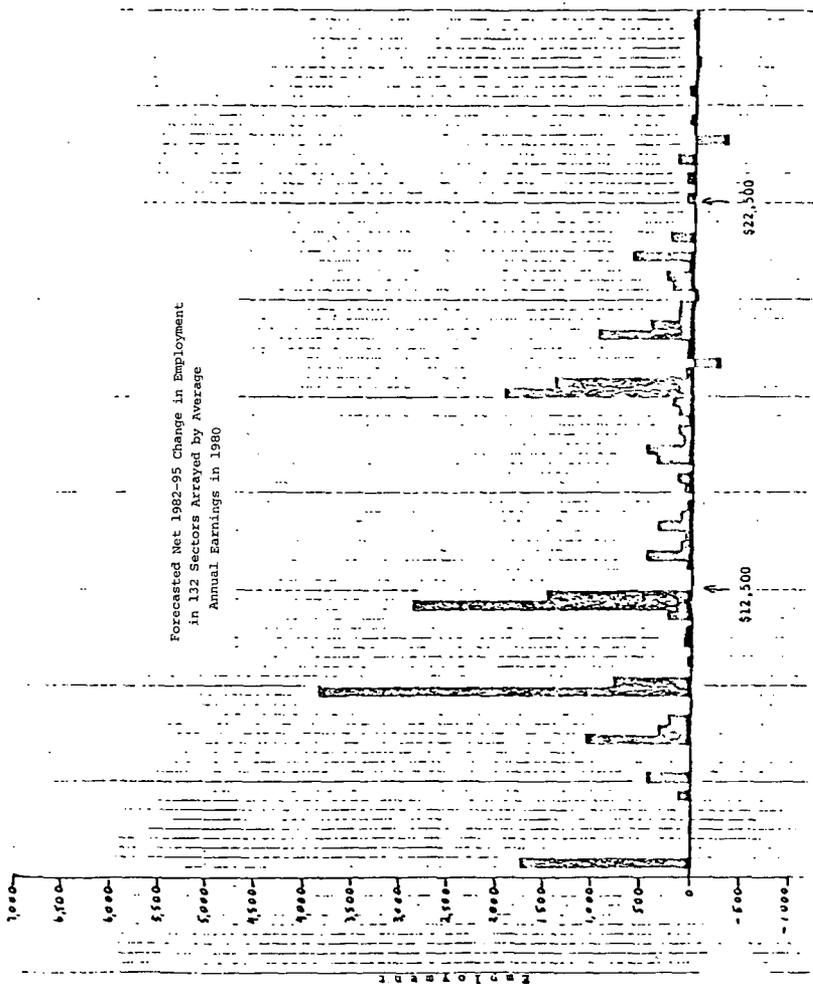
(See testimony submitted by Martin Bailey, The Brookings Institution).

Table 10



(See testimony of Barry Bluestone, Boston College, before the Subcommittee on Economic Stabilization.)

Table 11



(See testimony of Barry Bluestone, Boston College, before the Subcommittee on Economic Stabilization).

The Labor Mobility Problem

Not only do many of the jobs generated in expanding industries not pay comparable wages to those in declining industries, but displaced workers cannot readily find job opportunities in these expanding sectors. It is unreasonable to assume that workers move freely between occupations, industries, and regions, and in doing so, maintain their incomes and standards of living. For those who were employed in the older industrial sectors and regions of the country, downward skidding rather than traditional upward mobility may become the norm. And for new entrants into the labor force, those who do not have advanced skills may be relegated permanently to the lower rungs of the employment distribution ladder.

Data on how workers fare after displacement from basic manufacturing industries confirm the fact that many face permanent earnings losses. One study has calculated the earnings losses of permanently-displaced, prime-age male workers in a number of industries. In most cases, there is an immediate drop in income subsequent to termination, followed by a rise in earnings as those displaced find new employment in other firms. Some job losers are affected quite adversely, with their earnings falling to zero, while others find comparable work almost immediately.

Even after six years, workers in some industries continue to experience as much as an 18 percent shortfall. Those displaced from the better-paying, unionized industries like meat-packing, flat glass, automobile, aerospace, steel, and petroleum-refining suffered the greatest reduction in income. But even in the lower-wage sectors including women's apparel, shoes, toys, and rubber footwear, six or more years elapsed before displaced workers caught up with those who had the good fortune to hold on to their jobs. Downward mobility or skidding into low-wage jobs is not at all uncommon.

This phenomenon of downward mobility is very difficult to measure. For example, a steel worker who loses a high-wage job, but tries to maintain his family's standard of living by taking two low-wage jobs, may show up with the same wages and salaries one year as the next, but obviously the job distribution has changed. Preliminary analyses indicate there are a significant number of workers who are being forced to package income in new ways as the result of the significant skidding that occurs as individuals transfer out of the manufacturing sector, especially a relatively high-wage sector, into other sectors of the economy.

The typical blue-collar family of one earner supporting a family of four or more may in the future be a family which has two or three earners working for significantly lower wages in service jobs and packaging an income which is similar or not much less than the income that they had previously. It is certainly questionable whether this constitutes an improvement in social welfare. Such an effort to maintain their standard of living may create enormous strains and stresses within the family. And, if we examine such a shift in terms of a per capita or per hourly capita standard of living, that standard of living has clearly declined.

The national unemployment rate may fall as more jobs in the service and trade sectors are created. But the decline in unemploy-

ment may not do very much for standards of living if a large proportion of the new jobs pay significantly less than those that are disappearing.

The Impact of Demographic Shifts

Changes in the distribution of employment by industry have coincided with major changes in the demographic structure of our society and its work force. Major changes in the composition of the labor force and in the nature of work arrangements have occurred principally in the service sector and raise additional concerns about its growth. The cause and effect relationship between growing service sector employment and demographic changes in the labor force is difficult to decipher. The employment shift to services may not be the actual cause of some of the problems which have more visibility in services. Yet, expanding service sector employment may exacerbate rather than ameliorate the problems identified.

Major changes have occurred in the composition of the labor force. Women have come to play an increasingly important role in the labor force (their share of jobs rising from 29.6 percent in 1950 to 43 percent in 1980), and women labor force participants are much more likely to be married (59.3 percent in 1980, compared to 52.1 percent in 1950) and to have children (62.5 percent of labor force participants in 1980, up from 28.3 percent in 1950). There has also been a significant rise in the educational level of the labor force. In 1950, 34 percent of all persons 25 years of age or older had completed four years of high school or more (6 percent had completed college), but by 1980 the share of high school graduates had risen to 69 percent (college graduates to 17 percent). In considerable measure these changes in the nature of the work force have focussed on service activities.

From a positive standpoint, the employment needs of new entrants into the work force and of the growing service sector have conveniently meshed. Unlike several European economies, the U.S. economy had displayed remarkable flexibility in providing employment for the massive numbers of young people and women who sought work in the 1970s. In addition, it has made some progress in improving the access of women to employment affording higher earnings.

On the other hand, the identification of these new trends in the labor force with the growth of service industries raises legitimate questions as to whether or not the rise of services will give promise of better opportunities in the workplace in years to come.

The greater role of women in the service sector may have important implications. The sharp increase in female employment has been largely associated with the growth of services. By the mid-seventies roughly half of the jobs in service industries were held by women but only about a fourth of the jobs in the nonservice categories. A large share of the rapidly increasing service sector employment has involved work traditionally done by women at low pay. There has been a marked tendency for much of the new white collar work to be defined as women's work, paid for at relatively low rates and performed by women, and until recently by young workers from the baby-boom generation.

The effect of the demographic changes on income distribution is related to the effect of the changing employment structure. There are dramatic differences in earnings among demographic groups. Mature women working full time earn only 61 percent of the amount full-time mature men earn. Young men earn about the same fraction as mature women, while young women earn less than half the mature male amount. These figures understate the actual earnings differences, because women and young people work fewer hours per week than mature men. When hours differences are included, mature men earn two to three times what the other groups earn. These differences in earnings are not new, they have existed at least since World War II, and they are larger than the earnings differences among industries.

Most of the large number of women and young people who have come into the labor force in the past 15 to 20 years have in fact moved into low-wage jobs. Because the great majority of people still live in married-person families, this has meant an increase in family income that has in many cases sustained the middle-class through the ravages of severe economic dislocation. However, there has been a decrease in family stability which has had an offsetting effect, by both diminishing the fraction of middle-class families and raising the number of poor families.

While the expansion of the service sector has increased the number of jobs, it is important to remember that job choices can be involuntary. The teenage unemployment rate is very high, so that young people may well take any jobs they can find even though they might prefer to become full-time skilled workers. Women often face job discrimination and find job choices are limited, especially for those newly entering the labor force. While women have traditionally earned less than men, growing female employment in the service sector may help to perpetuate this pattern.

The only certain way to upgrade the positions of these new entrants into the work force would be for them to move into the types of jobs that men have held almost exclusively in the past. Certainly high-paying industrial jobs, often in unionized industries, are very over-subscribed and there are large numbers of women, young people and displaced workers who would choose to have such jobs if they could. But the destruction of industrial sector employment has made this impossible. The shift of employment from industry to services has reduced the number of such jobs available. Mature men are themselves often taking service sector jobs or early retirement because they have been displaced by plant closings or layoffs.

Technology and Employment

Other trends are merging with the growth in service employment to contribute to the decline in middle-income jobs and potentially reduce the level of job skills in a number of occupations. Application of new technology is increasing in the service sector, as in manufacturing. The gap between clerical occupations on the one hand and professional, technical and managerial on the other is widening as a result of job design strategies adopted by firms that are implementing the new technologies.

Job redesign since 1979 has been dramatic and has in many cases eliminated the lowest level clerical and less skilled professional

jobs. Job categories have become more abruptly segmented while the avenues of mobility between them have been sharply reduced. Many of the newly-created jobs grant few opportunities for the exercise of judgment and reflect increased managerial control over the pace and content of work. Yet, these very jobs are less fragmented, less centralized, involve considerable training and often require a greater knowledge of the product than the jobs that have been replaced.

The insurance industry provides a good example of what is happening in the service sector. It appears that the new techniques do not eliminate skilled workers nor do they reduce required skills to the barest minimum. Instead, the most unskilled jobs are being eliminated, as are more routine professional jobs. The clerical jobs that remain fall into two categories—routine keyboarding and skilled, multiactivity work. Skilled clerical work continues to increase, however, as the more routine aspects of professional work are automated and folded into the clerical function. The remaining professional jobs require years of formal training in insurance or other disciplines.

Career ladders from skilled clerical to insurance professional positions have thus been effectively eliminated. The gap between the skills of clerical workers and those of professionals have widened despite the elimination of unskilled clerical work. Skill requirements for clerical workers have increased at the same time that the jobs have become overwhelmingly dead-end. The effect has been to eliminate a range of middle-level jobs within this industry and to close off avenues of upward mobility for those in clerical occupations.

In the last few years, partly as the result of successful affirmative action suits, sex discrimination has been a much less effective barrier to mobility. Now it appears that newly-opened avenues of mobility from clerical work to professional jobs are being blocked by new structural barriers—the elimination of less skilled professional positions. The decline in the lower-skilled clerical jobs has also limited the entry-level job opportunities for minority and working class women.

Computerization has in the past been most successful in eliminating repetitious low productivity work, but it has also acted to simplify work of all sorts. In a rapidly changing environment where even the lower levels of work often involve the use of expensive equipment and the higher levels involve coping with a much wider range of problems and procedures than formerly (albeit with the powerful assistance of technology), employers are placing a greater emphasis on literacy and ability to learn new ways of work. For higher level work there is also a new emphasis on credentialing through advanced business or technical training. At the same time, the new world of work places greater penalties on those with poor educational backgrounds and levels of competence than has previously been the case. Those low-level jobs which are open to these workers tend to be scheduled on a part-time basis, to pay poorly, and to offer few fringe benefits or opportunities for advancement.

Related Trends

Major changes in work arrangements have in fact accompanied the changes in occupational and labor force composition. There has been a continuous rise in part-time work (the seventies saw an increase from 33 to 37 percent of total employment) and an increasing tendency toward experimentation with flexible time scheduling. Whereas blue-collar work has been disciplined by the machine and typically carried out in full-time shifts, white-collar work can often be efficiently organized on a part-time basis. As a result, the increasing importance of the part-time worker has been largely concomitant with the rise of the service sector.

Workers in the service sector have typically found less security of the sort provided by unions, licensing, or even the work rules and fringe benefits of large organizations than have workers in the goods-producing sector. This is partly because of the increased incidence of part-time work and the ability to widely disperse work sites bestowed by the new technology. It is true that many professionals and technicians find protection in credentialing, and some service-producing organizations, particularly public utilities and government, are quite large and have well-established arrangements for seniority and fringe benefits. Nevertheless, for the service sector as a whole, the lack of unionization and the prevalence of small firms, coupled with the greater importance of part-time work, have clearly made for less sheltering.

These related trends are apt to have an independent impact on the nature of the job and income structure that will evolve in the service sector. The ability to readily organize significant numbers of workers conveniently grouped in large workplaces has been an important factor in the production of a job structure in manufacturing characterized by large numbers of mid-level, relatively well-paying jobs.

Unemployment

There is little evidence that employment growth in the service sector is doing much to alleviate continuing unemployment and regional dislocation problems. Our economy is continuing to experience difficulty providing full employment to all who want to work, despite employment growth in the service sector. Since the early 1970's, the unemployment rate at the peak of each new recovery following a recession has been higher than the one before (Table 12). The upward spiraling of the unemployment rate has in fact continued since 1946. (See Table 13). Some observers dismiss this secular upward shift in the rate of unemployment as caused by the changing composition of the labor force, or by increasingly voluntary "search unemployment" subsidized by readily available social insurance. A number of facts bring this position into question. Labor force participation rates have actually declined among minorities, especially black men, since the early 1970's. The female unemployment rate is now *less* than the male rate. And for each of the last four periods shown in Table 13, the average unemployment rates for white male adults were 3.2, 3.9, 4.3, and 7.1 percent respectively, indicating growing joblessness for this dominant group as well as for the other segments of the labor force.

Table 12



Source: Council of Economic Advisers, Economic Report of the President, 1983 (Washington, D.C.: Government Printing Office, February 1983), TABLE B-31, p. 199.

(See testimony of Barry Bluestone, Boston College, before the Subcommittee on Economic Stabilization).

Table 13

Average Unemployment Rates During the
Tenures of All American Presidents Since World War II

Truman (1946-52)	4.2%
Eisenhower (1953-60)	4.9
Kennedy/Johnson (1961-68)	4.9
Nixon/Ford (1969-76)	5.8
Carter (1977-80)	6.5
Reagan (1981-83)	8.9

(See testimony of Barry Bluestone, Boston College, before the Subcommittee on Economic Stabilization).

Changes in the nature of the work force within manufacturing industries exacerbates the unemployment problem. The rise in the proportion of managers, professionals, and supervisors appears to be happening across the board in American industry, in service as well as in manufacturing firms. It constitutes a structural problem for production and non-supervisory workers precisely because typists and machinists, food service workers and plumbers cannot easily move into jobs as managers, accountants, lawyers, and advertising editors in the "front offices" of American companies.

Other indicators demonstrate the presence of a continuing problem. The average duration of joblessness, measured as the mean number of weeks of unemployment experienced by all people out of work, is rising over time. Moreover, the ratio of unemployed job seekers to job vacancies indicates increasing structural problems: there were roughly 2.5 unemployed persons for every vacant job during the middle 1960's, an average of close to 4.0 unemployed persons per vacant job during the early 1970's, and an average of 5.0 or more unemployed persons for every vacant job during the latter part of the 1970's [even *before* the 1980 and 1981-82 recessions].

Numerous plant closings have exacerbated the problem. Over 22 million jobs disappeared between 1969 and 1976 as a consequence of establishment closings and long-distance relocations. The same corporations that closed facilities also opened over 1,600 new (generally much smaller) plants and acquired nearly 3,400 subsidiaries, but many of these were in new industries or different regions, providing little employment opportunity for those immediately affected by the closings.

Regional Dislocation

The shifts in our economy are creating a process of unequal and uneven development. Our economy does not seem to be producing a set of jobs that pay middle-class incomes for people of modest skill. That classification accounts for a very large proportion of the total working population. The result is the very substantial regional and industrial dislocation being experienced in many areas of the country. Particular sectors, regions, and groups of citizens are bearing a disproportionate share of the adjustment.

In such growth industries as non-electrical machinery (including computers), national employment over the period 1973-80 grew by 20 percent. But the variation around this national average was enormous, ranging from -7.3 percent in Michigan to +77.2 percent in Texas. Even in industries where the pattern was uniformly one of decline, as in textiles, the severity of that job loss varied among regions, from a high of "only" -8 percent in Georgia to a low of -34 percent in New York State. Unless workers are perfectly mobile between regions—which, of course, they are not—the growth of certain manufacturing sectors in Houston does not begin to fully compensate for the decline of others in Detroit.

The impact of the shifts in our economy on some of our cities has been dramatic, and the idea that manufacturing centers can readily convert to service centers is somewhat naive. As a result of the declining importance of manufacturing and the growth of the service sector, many cities heavily specialized in goods production have

faced major problems of adjustment, experiencing net losses in jobs and population and continued high levels of unemployment.

Many observers have suggested that encouraging the growth of new service industries is a solution to the problems of declining metropolitan areas. However, in the competition among metropolitan economies for such service industries, some have clearly been favored over others. In a recent study, the 140 largest Standard Metropolitan Service Areas were classified according to the industrial composition of employment and key characteristics of specialization in terms of business services, corporate headquarters, distribution, communications, and transportation. Comparison of growth rates among these groups of metropolitan areas shows clearly that the most rapid growth has been experienced by places that have been favored by the new post-war patterns of economic activity: people-centered activities (e.g., resorts), military build-up, activities related to corporate offices and to business, financial or distributive services (the regional service centers), or activities strongly influenced by the presence of higher levels of government or of major educational institutions. The slowest growing places are those which are still most clearly identified with the earlier industrial era, principally manufacturing areas.

Many of the major centers of the Northeast and Middle West (including New York, Boston, Philadelphia and Chicago) have experienced substantial losses in manufacturing employment, and posted aggregate gains only as a result of very substantial increases in services. Their modest net growth rates represent a considerable measure of success in transforming their economic structures. On the other hand, the manufacturing centers have not only shown little growth, but have, for the most part, been unsuccessful in bringing about a transformation toward a service-based economy.

The argument sometimes put forward that slow growth areas, and particularly old industrial centers under stress, can be rescued by bringing in new service activities by means of the computer and telecommunications technology must be carefully reevaluated. Analysis of their labor forces and institutional infrastructure strongly suggests that the preconditions for establishing service activities are often in large measure lacking. It may well be possible to revitalize these areas, but radical therapy will probably be called for. Their comparative advantages lie for the most part in the area of production. One possibility would be large infusions of capital to bring in new manufacturing technology, which, at least in some locations, could re-establish a viable export base around which supporting service activities could flourish.

Summary

All of the above trends suggest that the service sector is no panacea for our structural unemployment problems and cannot be relied upon as the sole source of future job growth. Some of the same problems we are confronting in manufacturing—a leveling off of job growth, the employment impact of the application of the new technologies—will be facing us in the service sector as well. In addition, service industries will be presenting unique problems with which we are less familiar.

Clearly, however, the service sector will continue to account for a larger share of employment. The transition required will involve a substantial degree of economic dislocation for particular segments of the work force. Highly-skilled workers or workers who have been able to invest in their own human capital—education, training and on-the-job experience—will benefit most because they have greater opportunities to move to expanding higher-paying jobs or to make the transition more rapidly if their firm or industry is adversely affected by structural change. Those who have relied on firm-specific skills and made low investment in education and training could face permanent displacement from their former jobs. If our economy is to benefit from the change that is occurring, it is imperative that we reduce the hardship of those workers adversely affected and assist them as they make the transition to occupations, industries and regions with expanding job opportunities. It is also critical that the transformation of our economy be closely monitored to ensure that public policy facilitates an overall improvement in the nature and distribution of employment opportunities.

SERVICES IN THE INTERNATIONAL ECONOMY

OVERVIEW

In the international context, our purportedly strong surplus in trade in services has been highlighted by many observers as providing a stark contrast to the declining competitiveness of our manufacturing industries in international markets. The comfortable assumption that we are rapidly expanding our trade in services and that that expansion can be expected to continue unabated is unfortunately belied by the facts.

Contrary to popular belief, the United States does not hold a predominant position in trade in services. Much of our large (although declining) surplus in international service transactions is attributable to investment income. A 1976 Commerce Department study pointed out that about 86 percent of estimated U.S. service sector sales overseas resulted from investment in foreign affiliates, while exports accounted for only 14 percent. According to international transactions statistics, services accounted for 33 percent of U.S. export earnings in 1973, unchanged from a decade earlier. By 1983, they stood at 36 percent but most of this growth was caused by increases in earnings from foreign investment (in particular, interest earned by U.S.-based banks). There is concern that the growth of service exports has in fact been slower than would be anticipated given competitive and structural factors that would be expected to favor rapid expansion of U.S. sales abroad. After deducting investment income, several countries approach the U.S. in terms of gross receipts from international services transactions. (This income is generated from foreign direct and portfolio investment. While some receipts derive from fees and commissions—i.e., traded financial services—the bulk of the total is composed of interest and dividends earned from foreign assets.) As a percentage of GDP, trade of non-factor services is more important to our trading partners than it is to the United States.

This distinction between trade and investment is important for a number of reasons. Most importantly, the assumption that we are rapidly expanding trade in services and that that expansion will somehow compensate for losses in merchandise trade is dangerous reliance on a phantom solution. Beyond that, trade and investment issues are not identical. Governments have traditionally separated trade from investment issues and developed separate disciplines for each. The issue of investment is generally considered far more sensitive, raising even more complex questions of sovereignty and control over domestic development. Consensus on the principles that should govern international investment of any kind is non-existent and there is no authoritative existing framework governing international investment activities, similar to the General Agreement on Tariffs and Trade (GATT), to rely upon. Only traded services

would be the clear subject of a potential new trade negotiation. Moreover, expansion of U.S. investment overseas does not meet with universal support. Such investment has in fact been criticized by U.S. labor spokesmen as the inadvisable exporting of jobs, capital, and technology.

Measurement problems regarding service exports is an acknowledged area of difficulty, and some studies on services in the United States have suggested that the magnitude of service activity generated by trade is substantially more significant than previously realized. Nevertheless, it is clear that a major portion of the income from international service transactions is the result of foreign investment. It may be that expanded foreign investment opportunities, as well as expanded trade opportunities, are necessary for the growth of some U.S. service industries, but we should be clear about the distinction.

Our international position in services is not only less comfortable than we have assumed, it is becoming increasingly vulnerable. Many service industries are domestic by nature, but a number of U.S. service industries—insurance, construction/engineering, banking, telecommunications, etc.—have increasingly been looking to international markets as a source of continued growth. Such internationalization is at the very least a natural consequence of advances in communications technology. Telecommunications have made possible the development of efficient global networks for a broad range of services, providing for the rapid transfer of electronic funds as well as drawings and plans by architects and engineers. The United States has established a strong competitive position in many of these new service technologies, and trade in these international services is growing. However, our ability to take advantage of our competitive strengths in these areas is increasingly hampered by a complicated set of formidable barriers imposed by foreign governments.

As services have become more important to our own economy, they have become increasingly important to the economies of our foreign competitors as well. Services now yield more than half the gross national product in fourteen of the most advanced countries. In attempting to expand services exports, U.S. companies are consequently encountering an increasing array of foreign government strategies designed to improve the competitive position of their service industries and more and more non-tariff barriers created by countries attempting to protect their domestic service industries from foreign competition. In many cases, these barriers take the form of barriers to investment, including restricting foreign establishment or ownership of firms, restricting repatriation of fees and profits, and establishing discriminatory tax policies. Some governments are also aggressively linking their service industries with their international goods trade. If an engineering firm from Italy, for instance, designs a dam for a developing nation, the firm will invariably specify that any imported construction supplies and equipment come from Italy.

These foreign government policies promoting the development of domestic service industries and restricting trade and investment in services are having a chilling effect on our services exports and may be contributing to a continuing decline in the services surplus

which began in 1982. Services and investments have been a key foreign exchange earner in the U.S. balance of payments. The Commerce Department's trade statistics for 1983 indicated that the current account was in deficit by a record \$40.8 billion compared with a deficit of \$11.2 billion in 1982. The net service balance was in surplus by \$28.4 billion.

Yet, historically the service trade surplus has actually offset the deficit in the trade of manufactured goods. Since 1981 our merchandise deficit has skyrocketed, and the service sector surplus has shrunk by at least 20 percent, declining from \$36 billion to approximately \$28 billion. It is estimated that services trade now accounts for 25 percent of world trade, and the U.S. has a declining share in that trade—15 percent in 1980 compared with 20 percent in 1972. Despite an explosive growth in the international transactions of U.S. service industries, there are signs that the U.S. world market share of this "invisible" trade may be slipping. Comparative BOP data indicate that the U.S. has declined in relative importance as an international provider of services, while countries such as France, Japan and West Germany have increased their share of global service receipts.

The most disturbing aspect of the problem is that the obstacles to trade and investment in services appear to be growing. In 1981, the U.S. Trade Representative catalogued over 250 foreign barriers to services trade and investment. A recent update of that list reflects a disturbing increase. As new and different services continue to emerge, there is reason to fear that foreign barriers to these services will develop. U.S. service industries, in a recent survey undertaken by Price Waterhouse, indicated that foreign barriers are an increasingly serious problem.

Even though services account for an increasing portion of international trade and investment flows, trade in services is not covered by the international rules that regulate trading. As a result, it is open season on an increasingly important segment of world trade. International services transactions are clearly not immune to the impact of foreign government policies and the consequences of a proliferation of restrictions in this area could have profound implications for production, trade and investment across a broad spectrum of our national economic activity.

THE EFFECT OF INCREASED FOREIGN COMPETITION: THE CONSTRUCTION INDUSTRY

The architecture/engineering/construction (AEC) industry provides a good example of the importance of international trade in services to U.S. service industries. From 1973 until the early 1980's, overall construction in foreign markets expanded, partly in an effort to offset the decrease in domestic project awards. In fact, in recent years the top 400 U.S. firms (with respect to construction billings) have secured 30 percent of their total work from overseas projects.

These international awards alone translated into revenues of \$54 billion in 1981, but fell 16 percent to \$45 billion in 1982, and fell again 34 percent in 1983 to \$30 billion. Every major market showed a substantial retreat in 1983. Increasingly sophisticated Asian and

European builders are moving onto the scene, crowding out the U.S. industry. While the international construction market was growing in the last decade, the American share of that market was declining dramatically, from over 50 percent in the mid-seventies, to less than 30 percent in 1981. The U.S. market share dropped further in 1982 and 1983. Foreign construction companies are even invading the domestic market, bidding aggressively, and often winning. The top 35 foreign companies won \$3.6 billion worth of construction contracts in the U.S. in 1983, up 28 percent in three years—despite a falling market. Overall, the U.S. construction industry is now only about half its former size.

The reduced presence of the U.S. construction/engineering industry abroad will hurt U.S. machinery and equipment makers, who have counted on sales of some \$25 billion annually for overseas construction projects, and other domestic businesses. Engineering/construction is one of the most important sectors for manufactured exports. Sales generated by construction companies accounted for nearly 20 percent of all U.S. manufactured goods exported last year. Construction industry surveys (1975) indicate that on average one-half of the value of foreign contracts awarded to U.S. firms is procured in the United States. The \$30 billion of awards in 1982 would therefore produce \$15 billion of services and manufactured exports over the life of the contracts. Services would account for approximately 40 percent of the \$15 billion of exports or \$9 billion. The remainder, 60 percent or \$6 billion, would represent manufactured goods, i.e., materials, machinery, and equipment. The U.S. export content is even higher on projects in lesser developed countries.

In a labor-intensive service industry such as the AEC industry, foreign work can also have a favorable impact on U.S. employment. Bechtel studies indicate that 30,000 U.S. jobs are created for each \$1 billion of manufactured exports. While half of Bechtel's projects may be located overseas, 80 percent of the company's employees are located in the United States. The engineering and design work for foreign jobs is performed in domestic offices. Another way to look at this is that the AEC industry's direct contribution to U.S. domestic employment is 6 percent. Employment in the supplier industries adds an additional 3.5 percent for a total of 9.5 percent.

Many foreign builders have long been formidable bidders in the international construction competition and are now gaining additional footholds by moving into new specialities. Newcomers are also gaining ground. These foreign builders are often submitting bids that no U.S. company can come close to matching. Such low bidding by foreign competitors is often making it virtually impossible for U.S. builders to compete. The strong U.S. dollar is one reason for the gap. But even more important are the subsidies and other forms of special support many foreign governments give their national construction companies.

For example, Korea is making a concerted effort to expand and improve the competitive position of its engineering/construction industry. The growth of the Korean GNP throughout the 1970's was due in large part to the repatriation of profits from Korea's foreign construction work: \$5.6 billion in 1979, \$8.6 billion in 1980, and \$13.7 billion in 1981. In recognition of the importance of this indus-

try to the Korean economy, national construction firms must actually be certified for overseas projects. Only the top fifty or sixty companies are encouraged to bid internationally, thus ensuring that only the most qualified can compete. A "construction lending bank" is being developed to help fund overseas projects. An endless array of government support, both visible and not so visible, is in fact provided by many other foreign governments to their countries' firms.

The pressure that foreign competitors are putting on U.S. construction companies is sobering news to those who had hoped the service sector would fill the trade gap left by steel, autos, and other U.S. manufacturing industries. There is a real danger that foreign companies may similarly snare a whole range of once-secure service export sectors, including computer software.

BARRIERS TO TRADE IN SERVICES

The export of services presents special problems. These emerge from the nature of the products involved and of the foreign practices that limit U.S. services exporters' market access abroad.

International trade in goods is fairly straight forward—goods are produced in one country and are moved across an international border to another. This process is guided by conventionally understood relationships among traders, and government practices are constrained to a significant degree by the General Agreement on Tariffs and Trade (GATT). In contrast, tradeable services take many forms: they may be embodied in goods (e.g., blueprints, software, films); others are provided either by individuals traveling abroad or through global communications systems (e.g., legal, banking and consulting services); still others require access to or establishment of extensive capital facilities (e.g., shipping, commercial aviation and telecommunications). Trade in services is not generally covered by the GATT and, because of the amorphous character of services, they are vulnerable to a wide range of discriminatory practices that are difficult to regulate and control in addition to many of those applied to goods.

An extensive array of restrictions, maintained by both developed and developing countries, now interferes with the international transactions of U.S. service companies. Some of the restrictions take the same form as those applied to goods, be it through "traditional" measures such as tariffs and import licenses and quotas or through more opaque (i.e., nontariff) means of protection such as subsidies and discriminatory government procurement policies. Many restrictions hamper trade in services by limiting investment opportunities in a foreign country, or by restricting access to data banks, information systems and communications networks. Barriers are sometimes absolute, barring outright foreign participation in a market, or only partial, limiting the scope of activities of foreign firms or placing discriminatory requirements on their operations in order to help domestic firms to compete.

Examples of these barriers abound:

—In Argentina, American accounting firms are limited in regard to the number and type of audits they can perform;

- In Italy, no foreign advertising agency is allowed to operate, and all TV commercials produced outside the country are forbidden;
- France, Japan and many other countries strictly limit the operations of foreign insurance companies;
- The United Kingdom requires foreign air transportation companies to pay higher landing fees and pay for navigational and communications facilities;
- In Germany, foreign telecommunications users are required to use certain domestic, and more expensive, leased lines;
- The Japanese have discriminatory licensing practices, standards and a host of other barriers to telecommunications and data processing services.

Many industries, particularly those dealing in financial services, suffer from both trade and capital restraints. These constraints often have a common purpose: to make it more difficult for foreign firms to compete in the market in question by affecting the ability to perform the service and by undercutting the profitability of firms engaged in the service trade.

Service trade barriers are thus many and varied. In most instances they are established through the regulatory mechanism under which foreign firms receive different treatment than the domestic competition. Many obstacles are in the form of outright denial of foreign firms' ability to do business in the country. Another category of barriers include those that impose unduly harsh requirements on foreigners, such as unreasonably burdensome fiduciary requirements on financial services firms. And, in many sectors, the U.S. service industry is attempting to do business in countries where the service is provided domestically by a government-owned monopoly.

Three broad categories of issues emerge that affect services trade: trade-related investment issues, regulatory issues, and non-tariff barriers to services trade.

Services and Investment

Trade and foreign investment for many services are inseparable. The expansion of the U.S. position as a provider of services is strongly related to its growth as a foreign investor in services. It is precisely for this reason that foreign barriers to U.S. services trade have generally taken the form of restrictions on investment (e.g., restrictions on the opening of local accounting or law offices) rather than on pure "trade."

Many service exports require (or their marketing is greatly enhanced by) physical proximity between producers and consumers. Either the consumer travels to the producers (e.g., tourism and educational services), or the producer seeks to establish an entity in foreign markets (e.g., advertising, accounting, banking, and wholesale and retail trade). U.S. firms seeking to establish a branch abroad often encounter difficult problems associated with the regulation of foreign investment.

For example, accounting firms confront right of establishment problems abroad because of local laws that are written in such a way as to virtually exclude any foreign national from practicing in the foreign market. Some foreign transportation companies have

an open right to serve U.S. markets while U.S. transportation companies have a difficult time getting into the foreign country. However, the relationship between market access for services and foreign investment necessarily makes efforts to improve access difficult, particularly in developing countries. These countries often view attempts by developed nations to liberalize trade in services as simply a means of increasingly foreign investment.

Yet, services are closely linked with our goods trade, especially as it applies to U.S. investment abroad. Between 1948 and 1982, for instance, U.S. direct investments abroad returned, net of any outflow of funds attributable to it, a total of \$211.7 billion to the United States. These investments represent key earnings assets providing income for our own country and employment here at home. U.S. Department of Commerce figures show that one third of U.S. exports are shipped to American companies abroad. Our investment stake around the world is a key ingredient in our ability to earn foreign exchange to cover the expenses of our imports.

Governments have been wary of negotiating multilateral rules to discipline the policy measures employed to implement controls on foreign investment. As a result, capital and exchange controls, as well as investment incentives and export performance requirements, have become popular ways to limit foreign competition in the home market and to restrict trade in important service sectors (particularly financial services).

Trade-related investment restrictions are an essential part of the problem that needs to be addressed, if the problems of the financial services industry and many other service industries are to be resolved. Admittedly, there is some strong opposition to dealing with investment issues because of the fear of loss of sovereignty over domestic economic management. However, the importance of investment issues—particularly for the financial services industries—requires that such problems not be ignored. The negotiation of investment issues is particularly critical for the United States.

Service firms may often find it necessary to establish operations (i.e., invest) in the countries to which they export. Yet, governments have traditionally separated trade issues from investment issues, developing separate disciplines in each area. Trade rules, covering “the right to sell” abroad, have tended to be more comprehensive than investment rules. If countries are to embark on the formulation of rules for trade in services, and support for such an effort is increasing, they must determine whether this can be done in a meaningful way without dealing with the more sensitive issue of investment in services. It is important to determine to what extent trade in services and investment in services can be distinguished and how important it is to be able to make that distinction clear. In order to properly manage issues that affect service exports, countries must, therefore, determine whether they should be dealt with as investment or trade problems and how each should be handled.

Regulatory Barriers

In most cases, regulations are simply a fact of life and a constant cost of doing business in a particular market. However, they have a particularly significant impact on trade in services. Tradeable serv-

ices are often provided by industries that governments choose to regulate within their domestic economies for reasons relating to consumer protection (e.g., natural monopolies, standards of competence for professional services, and public health), national security, domestic sovereignty, or nationalistic cultural concerns. Examples include broadcasting, telecommunications, transportation, advertising, and professional services. Countries tend to think of these industries, unlike those producing goods, in domestic as opposed to international terms.

Concerns about regulatory barriers to trade in services focus on the uncertainty created by haphazard rule-making and enforcement, and discrimination against foreign firms that can accompany such regulations. The former is endemic to the governmental process, but can be exacerbated when there are overlapping jurisdictions within a country (as with U.S. federal/state rules for banking and insurance), often the subject of complaint by our foreign competitors.

While many regulations are in place to achieve reasonable domestic objectives, others often have the intended effect of discriminating against foreign suppliers in pursuit of nationalistic economic goals. Barriers may take many forms such as denying or delaying necessary licenses; discriminatory taxation; discriminatory government procurement; limits on access to foreign exchange; restricted access to imported equipment and intermediate services; restrictions on the composition of management; domestic employment and sourcing requirements and other performance requirements; and outright limits on market shares. Many of these practices can create serious problems. In Brazil, for example, all accountants are required to have a degree from a domestic university and, in Argentina, television commercials made outside the country are banned. The three principal regulatory barriers cited by U.S. service industries are: restrictions on right of establishment of foreign ownership; restrictions on repatriations of fees, royalties and profits; and discriminatory tax policies.

Rapid changes in technology are beginning to have a profound effect on the regulatory process. National—and state—frontiers are increasingly blurred when business is conducted via electronic data flows; in these circumstances, regulators have an almost impossible task in accounting for the level and kind of economic activity within their jurisdiction. Such problems have encouraged the movement towards deregulation in the U.S. economy, a trend which also has begun to take root in the United Kingdom and Japan.

Efforts are currently underway within the OECD to reduce restrictions imposed through unjustified regulatory barriers. However, restrictions on telecommunications services, and the cross border flow of data in particular, appear to be providing fertile ground for a new wave of controls.

In most instances it would appear reasonable to accord foreign firms the right to compete on equal terms with local firms—with the standard exceptions for narrowly-defined national security, health and safety, and prudential concerns. The discrimination issue—or the extension of national treatment safeguards to the

services sector—should be a key focus of any negotiations on services trade.

Competition Between Private Firms and Government Monopolies

Many important service industries are highly regulated by national governments because the services they supply are perceived as vital to national sovereignty, well-being, and security. In fact, many countries provide such critical services through government-owned or controlled monopolies. In the case of communications, for example, Postal, Telegraph and Telephone (PTT) administrations are often given responsibility for the delivery of telephone, telex, mail and other communications services. As a result of this philosophy, government monopolies in many countries operate in services to a greater extent than in the goods-producing sector. At present, the United States is an exception to this rule as private firms are responsible for providing most services. To a lesser extent, several other industrial countries are moving to increase service industry competition in their markets. The differences in regulatory philosophy raise significant questions. The management of competition and cooperation between privately-owned and publicly-owned service concerns is likely to be a recurring issue for trade in services. The issue is whether monopolies could be required to adopt arms-length relationships between their monopoly activities and their activities as competitors internationally, as competitors domestically in other services, and as suppliers of services.

Non-tariff Barriers to Services Trade

A number of the problems affecting individual service industries are obstacles more directly affecting trade. In some instances, these obstacles are actually problems pertaining to merchandise trade, rather than to services *per se*. Duties on advertising materials and educational equipment are problems of this type, as are "mixing regulations" stipulating that a certain portion of the goods used in construction projects must be of local origin.

A number of the trade problems, however, directly affect the export of services produced by individual industries. Particularly significant are problems related to government procurement practices and to government subsidies of various types. These problems are generally similar to non-tariff problems faced by goods exporters. While such non-tariff problems affect a number of service industries, they are particularly troublesome in the motion pictures, insurance, construction/engineering, and transportation industries. For example, restrictions in the construction/engineering field largely involve subsidies, and to a lesser extent, discriminatory government procurement policies.

These non-tariff trade barriers would be the most readily amenable to being addressed directly in the GATT context. GATT rules focus on trade in goods and now cover services only to the extent that they are incidental to goods trade. During the Tokyo Round of Multilateral Trade Negotiations (MTN), contracting parties addressed for the first time non-tariff measures that are increasingly distorting international commerce. Interpretive codes negotiated during the Tokyo Round attempt to cover trade distortions caused by subsidies, licensing controls, and restrictive government pro-

curement policies. Services issues were to be included in the Tokyo Round, but negotiators agreed to postpone attention to this area because of the degree of complexity of the effort to extend GATT rules to non-tariff measures. Application to services would raise additional difficulties and effectively make a simple blanket extension of relevant GATT codes to services impossible. Nevertheless, some of the principles embodied in the articles and codes of the GATT could be relevant to services trade.

Both the GATT Government Procurement and Subsidy Codes already cover certain services transactions to a limited extent. The former covers the procurement of "services incidental to the supply of products"; the latter prohibits certain transport and freight subsidies which benefit industrial exports. In addition, Article IX of the Procurement Code commits signatories to "explore the possibilities of expanding the coverage to include service contracts" during the review of Code provisions which is currently underway in Geneva.

TRANSBORDER DATA FLOWS

To illustrate exactly what is at stake for U.S. service companies, it is helpful to explore in greater depth one group of services trade barriers that is proving particularly troublesome: barriers to the international flow of information through computer-based telecommunications systems, in short, transborder data flows.

As the importance of information industries has grown, many foreign governments in both advanced and developing countries have erected barriers to the electronic movement of data. Such restrictions on transborder data flows may be imposed for a variety of frequently ambiguous reasons. Governments often have very real and legitimate interests in regulating or restricting transborder information flows to protect their sovereignty and national security, to preserve their national cultural identity, and to safeguard the personal privacy of their citizens.

However, restrictions and regulations on transborder data flows have increasingly been imposed for clear government economic objectives: to maintain jobs, to protect "infant industries" or to preserve established industries. They have thus come to resemble classic tariff and nontariff barriers to trade.

Barriers to transborder data flows fall into the following categories:

- Discriminatory pricing of data transmission services;
- Local content laws requiring the processing of data within a country, as a condition for transborder transmission;
- Mandated use of national data networks, eliminating any element of choice in the marketplace;
- Restrictions on the use of leased lines that deny users the ability to offer competitive services;
- Policies that provide the basis for customs duties and taxes on information crossing national borders.

These restrictions burden international users with higher costs, lower efficiency, reduced ability to compete with protected national industries, problems of committing capital in the face of future un-

certainty, and in a worst case scenario, an inability to transfer information and thus continue to operate in certain countries.

Restrictions on transborder data flows are critical because free movement of data is central to the operations of service firms. American Express provides a useful example. The company must move information across national borders with speed, accuracy and reliability. It could not function without rapid, unhindered global communications, which it uses in a wide variety of ways:

- For authorization of a quarter-million credit card transactions each day throughout the world;
- For rapid execution of over \$10 billion a day in international banking transactions;
- And for response to 500,000 daily messages directing high-speed trading in securities, commodities, bonds, Treasury bills and a host of other items.

Nor are financial services companies—banks, insurance companies, investment services, etc.—alone in their interest in international information flows. Firms involved in engineering and construction, transportation, management consulting, accounting and a number of other services also rely heavily on transborder data exchanges for virtually every aspect of their international business. Indeed, to a great extent, it is the new technology of computing and telecommunications which has made the international exchange of services possible.

Increasingly, goods-producing firms also rely heavily on high-speed data flows for the coordination of production and marketing; for planning, accounting and financial management; for inventory control and sales coordination; for employee systems, including payroll, personnel and human resource planning; and for the communication of complex engineering and design computations. Computerized information and telecommunications systems have become essential in virtually every major economic activity, and information technologies have, therefore, become a vital factor in increasing productivity and growth at the macroeconomic level.

The costs associated with putting these information systems in place are enormous, involving long lead times and large investment commitments for equipment, research and development, and systems engineering. For example, the total cost of developing, operating and maintaining American Express' information processing systems and communications networks now runs up to \$400 million annually—an amount that equals three-quarters of the company's earnings last year. These costs make U.S. service companies very vulnerable to changes in government policy regarding transborder data flows and these changes in policy are occurring with increasing frequency.

EFFECT OF BARRIERS

Increasing foreign barriers and intensified competition threaten the position of U.S. suppliers, both at home and abroad. Restrictions on services can affect a wide variety of producers throughout the economy, in both the goods and services sectors. The liberalization of trade in services is important not only to banks, transport firms and insurance companies, and engineers, but also to auto-

makers, steelmakers and other industries that seek to maintain international competitiveness in a rapidly changing world market.

With the decline in some of the traditional trade and capital restrictions, the impact of existing controls on service transactions has become more transparent and the threat of new restrictions has become more dangerous. Indeed, in light of the increasing integration of services in manufacturing processes, restrictions on services can be a very effective new way to impede all types of trade, both of goods and services alike. Clearly, there is a serious potential danger to trade if such restrictions proliferate. As we move to an increasingly global economy, U.S. economic policy must provide leadership in developing international standards and procedures.

The increasing vulnerability of our service industries can be attributed to several factors, including the fact that our competitors internationally are simply getting better at the game. But we can also point to key factors in the national and international economic policy environment:

- The U.S. government's handling of service trade issues;
- Other governments' competitive strategies; and
- The absence of an international trade organization, like the GATT, specifically charged with coming to terms with trade in services.

While the list of barriers to trade and investment in services recently compiled by the Office of the U.S. Trade Representative is a useful data base, a general inventory of controls provides neither a priority listing of what problems are more important than others, nor does it address whether the problems are amenable to resolution through the negotiation of new trading rules. Moreover, we have not sufficiently reflected upon the existence of and our own commitment to continuing restrictions on service transactions that we impose. These are not insignificant. The Jones Act of 1920, which restricts intercoastal trade in the United States to American bottoms, is but one example.

Services remains an area of relative competitive strength at a time when other sectors are experiencing relative competitive decline. If we fail to learn from the international competitive difficulties we are experiencing in other areas, a similar fate could await our service industries.

CURRENT MULTILATERAL EFFORTS

Since 1982, considerable time has been invested in moving the GATT toward discussions on trade issues in services. The GATT articles and codes presently do not apply to services, but there are a number of similarities in the trade principles established by the GATT that could apply to these sectors. At the 1982 GATT Ministerial, a program of discussion on services in that organization was launched for the first time. Specifically, the Ministerial Declaration called on countries with an interest in services to present national studies outlining the situation in their own services economy and addressing some of the international issues.

The United States submitted its national study to the GATT last December. Canada, the U.K., and the Netherlands have also submitted studies; several more are expected by the fall of 1984. The

objective of these efforts has been to include services in the next round of multilateral trade negotiations in the GATT, which are expected to be launched by the end of 1985 or in 1986.

While services continue to be looked upon by many as an issue beyond the traditional mandate of the GATT, some observers believe that organization holds out the best hope of establishing a meaningful international services regime for three basic reasons: (1) the GATT articles and principles are designed to promote the most liberal trade system possible; (2) the organization consists of developed and developing countries; and, (3) its principles are contractually binding, including dispute settlement procedures that provide for compensating measures.

One policy principle in particular needs to be strongly encouraged if a national consensus on the desirability of liberalizing trade in services is to be created and preserved. This principle is that the liberalization of foreign investment in services must enter directly into any negotiations on liberalizing trade in services. This will be a very difficult principle to have accepted because for decades trade negotiations (overwhelmingly concerned only with physical goods) have kept the two areas strictly separate, and because it is in the investment arena that the most restrictive foreign barriers to services trade exist. However, to ignore the critical nature of the investment issue to service industries would constitute an ostrich-like approach to trade policy.

There are problems attendant to proceeding in the GATT context which must be given serious consideration. First of all, the particular importance of investment issues in regard to services may make proceeding in the GATT context very difficult, as investment concerns are outside GATT's traditional mandate. Moreover, linking negotiations aimed at liberalizing trade and investment in services to trade negotiations involving goods could raise additional problems, if care is not taken. The GATT as an institution for trade negotiations involving goods is well established and basically works relatively well, although it is subject to increasing strain. Expanding GATT's scope to encompass trade and investment in services could add to that strain. While the competitive position of the U.S. as a trader of services is strong across a broad range of service industries, the U.S. position in physical trade is very uneven, with an increasing number of "import-sensitive" industries in various stages of distress. Linking the two sets of negotiations as a matter of commercial policy might precipitate an inadvisable "trading-off" of the interests of goods-producing and service-producing industries in future negotiations. Such trade-offs could provoke a needless backlash against the emerging consensus behind efforts to liberalize trade in services.

In addition to any general multilateral negotiations regarding services trade, work should continue in the OECD on revising the existing Codes on Invisibles and Liberalization of Capital Movements to extend their coverage and incorporate new obligations with regard to national treatment and the right of establishment. Much has already been accomplished in this regard; further progress could greatly facilitate trade talks in the GATT or an alternative multilateral context.

Parallel to any projected multilateral talks, consideration should be given to undertaking negotiations designed to develop a "stand-still" agreement on taxes and border restrictions that inhibit data flows. Efforts in this regard have been undertaken in the OECD, but progress has been slow. There is a serious potential danger of a proliferation of data controls and the threat of protectionism in this new field should be dealt with quickly. Consideration should be given to attempting to work out a pact among key countries at a conference convened exclusively for that purpose.

SUMMARY

The rapid growth of the service sector will have an important impact on the structure, growth potential and competitive prospects of our economy. Yet, our economic policy does not adequately reflect the increasingly dominant role of our service industries. We have an opportunity to react with foresight and vision to the transformation our economy is undergoing. Instead, we are clinging to an image of our economy that no longer reflects reality, and basing our public policy on data and preconceptions which are no longer relevant or, in many cases, even correct. As a result, we are only minimally aware of the contribution the service sector makes or the policy issues its growth may precipitate.

We seriously risk reproducing the mistakes of the past. Our failure to develop positive strategies regarding the development of our manufacturing industries has helped to precipitate the declining competitiveness of our industrial sector. Service industry growth cannot compensate for this deterioration, and we clearly must make a concerted effort to revitalize our manufacturing industries. However, we will have learned nothing from the painful adjustment we are undergoing if we now make the mistake of focusing all of our energies on formulating the strategies to improve our competitiveness in manufacturing that should have been developed years ago. Any economic strategy that focuses its entire attention on manufacturing and neglects the growing service economy is doomed to failure from its inception. Our service industries will be increasingly critical in fostering the growth we seek, both within and independently of our manufacturing sector.

The rapid growth of the service sector raises policy issues as significant as any we have encountered in manufacturing, and, in some cases, more difficult to resolve:

- Data on the service sector is either woefully inadequate or non-existent, making impossible a realistic and objective assessment of the changes our economy is undergoing and the impact of those changes. Our principal economic indicators do not even effectively measure the contribution of service industries. Statistics on international service transactions fail to provide adequate breakdowns of categories of services trade, inadequately distinguish between service industries, indiscriminately mix services trade with other types of transactions, and fail to differentiate services and investment. As a result, our ability to assess the impact of our service industries in international markets is seriously undercut.
- The failure of our data on international services transactions to sufficiently distinguish services trade and investment has produced a comfortable but dangerous illusion that our trade in services is rapidly expanding. As a result, there has been insufficient concern regarding the international competitive

prospects of U.S. service industries. Barriers to both trade and investment in services are increasing, making the expansion of U.S. service industries in international markets more and more difficult. Yet there is little or no agreement on what needs to be done or how we might best proceed. The international expansion of U.S. service industries depends more than is generally recognized on their ability to invest abroad, yet we have neither a consensus regarding the resolution of international investment issues nor an institutional framework in which to pursue it.

- Service industry expansion has increasingly been posited as a source of badly-needed employment growth. Yet service industries do not readily absorb displaced manufacturing workers, a significant portion of the job growth in services is in low-wage, low-skill employment, and service job growth is beginning to abate as service industry development patterns stabilize and the impact of new technology is increasingly felt in the service sector. The ready mobility of the information-processing central to many service industry operations also suggests that the shifting of manufacturing production from the Northeast to the Sun Belt or to other nations could easily be duplicated in the service sector.

All of these issues must be addressed if we are to develop policies toward the service sector that will promote service industry development while enhancing our overall prospects for growth. We have the opportunity in services to anticipate problems and formulate policies that will maintain the international competitiveness of our service industries and maximize their job creation potential. Our foreign competitors are already making substantial efforts to increase the competitiveness of their service industries and move more aggressively into international markets. If we fail to develop strategies to enhance the competitiveness and the growth potential of our own service sector, we risk creating for our service industries many of the problems we now confront in our manufacturing sector.

