

TABLE 6. ASSUMED AUTO AND LIGHT TRUCK SALES WITH ENACTMENT OF H. R. 5133, UNDER ALTERNATIVE ASSUMPTIONS ABOUT NEW CAR PRICES (In thousands of units)

| | 1985 | 1990 |
|--|--------|--------|
| High (Assuming No Price Increases) a/ | | |
| Low-volume imports | 553 | 682 |
| High-volume imports | 1,365 | 700 |
| Total imports | 1,918 | 1,382 |
| Total domestic | 11,082 | 13,618 |
| Total auto and light truck sales | 13,000 | 15,000 |
| Increase in domestic sales due to bill | 1,332 | 2,368 |
| Middle (Assuming Price Increase of \$500) | | |
| Low-volume imports | 523 | 645 |
| High-volume imports | 1,365 | 700 |
| Total imports | 1,888 | 1,345 |
| Total domestic | 10,483 | 12,882 |
| Total auto and light truck sales | 12,371 | 14,227 |
| Increase in domestic sales due to bill | 733 | 1,632 |
| Low (Assuming Price Increase of \$1,000) | | |
| Low-volume imports | 495 | 610 |
| High-volume imports | 1,365 | 700 |
| Total imports | 1,860 | 1,310 |
| Total domestic | 9,915 | 12,184 |
| Total auto and light truck sales | 11,775 | 13,494 |
| Increase in domestic sales due to bill | 165 | 934 |

SOURCE: Congressional Budget Office.

- a. These sales estimates assume no retaliatory actions by other nations. For net impacts including those caused by retaliation, see Chapter IV.

- o Direct increases in employment among motor vehicle manufacturing companies;
- o Indirect increases in employment among the firms that supply the auto manufacturers, the firms that supply these suppliers, etc.; and
- o Additional increases in employment stimulated by increased income and employment in auto-related industries, as well as employment stimulated by overall increases in aggregate output.

This chapter examines only the first two groups--jobs directly and indirectly tied to automobile production. The third group is discussed in the following chapter, as is the impact of foreign retaliation on employment levels. This chapter also makes no provision for future increases in productivity, which could be substantial between now and 1990. This restriction is also removed in the following chapter.

This chapter analyzes two different techniques for estimating the additional hours of employment that would be created within current manufacturing processes for each new domestic vehicle sale stimulated by H. R. 5133. The first technique is based upon employment estimates compiled by the Bureau of Labor Statistics (BLS). The second technique relies on industry studies of automobile manufacturing. These studies have estimated the additional productive worker hours required to produce a car. Both the BLS-based approach and the industry analyses include indirect as well as direct employment.

Neither approach includes jobs involved in distributing, retailing, financing, or insuring the manufactured vehicles. H.R. 5133 could profoundly affect the firms involved in those activities. For example, U.S. car dealerships might gain employment while imported car dealerships might lose jobs; longshoremen might lose jobs unloading foreign cars while employment within U.S. railroads and trucking could rise as domestic transportation of vehicles increased. Nevertheless, the total number of these jobs would probably decline only slightly, because the total number of vehicles sold, both U.S. and imported, would decline by only 5 to 10 percent. No loss of retailing jobs or other post-production jobs has been included in any of the estimates discussed here.

BLS-Based Technique. According to the BLS, about 716,100 workers were directly employed in the motor vehicle industry in 1981.^{16/} In addition, the BLS estimates that, for each direct job in automobile manufacture, there are 2.35 indirect jobs in industries that provide parts, supplies, or services to the automobile manufacturing industry. These indirect jobs chiefly provide basic steel products, iron and steel forgings, truck transportation, wholesaling, and other business services (Table 7). Applying the 2.35 ratio to the BLS count of direct employment results in total auto-related employment of 2.4 million workers in 1981--716,100 directly employed in the automobile industry and 1,682,835 more indirectly employed in associated industries. At the 1981 domestic production level of 7.8 million vehicles (cars and light trucks) this implies a total labor content (direct and indirect) of 523 hours per vehicle.^{17/}

Nevertheless, this aggregate computation overstates the number of labor hours that would be created by each additional sale stimulated by H. R. 5133, for several reasons. First, the BLS number is an average and includes many jobs that must be done regardless of sales volume. When sales volumes increase, some employment would not increase proportionally. For example, setting up the plant and tools for a specific model must be done once whether it is a high sales year or as a low sales year. Statistics for domestic output and domestic employment of Ford Motor Company show that one Ford worker produced 12 to 17 vehicles per year between 1976 and 1980--an average of around 15 cars per worker per year. But between 1976 and 1978--when production grew rapidly--Ford added only 37,000 more employees to produce 875,000 more vehicles--an average of 24 additional vehicles per additional worker. Similarly, when production fell sharply by 1,940,000 vehicles between 1978 and 1980, the number of workers dropped by 77,000--a decline of 25 vehicles per employee reduction (Table 8). These figures show that much of the employment associated with automobile manufacturing does not vary directly with output. That is, much of the automobile-industry employment reflected in the BLS numbers would not change with normal fluctuations in output. Indeed, if the statistics from Ford are typical, the average employment per car as

16. This includes 352,400 in motor vehicles and car bodies (SIC 3711) and 363,700 in motor vehicle parts and accessories (SIC 3714).

17. Assumes 1,700 hours per worker per year.

TABLE 7. COMPOSITION OF LABOR FOR MOTOR VEHICLE MANUFACTURING

| Economic Sector | Jobs per \$1,000,000 in Sales (In 1972 prices) |
|--|---|
| Blast Furnaces and Basic Steel Products | 2.2 |
| Iron and Steel Foundries and Forging | 2.1 2.0 |
| Non-Electrical Machinery, N.E.C. | 1.0 |
| Motor Vehicles | 15.1 |
| Truck Transportation | 1.0 |
| Wholesale Trade | 4.3 |
| Business Services, N.E.C. | 1.4 |
| Total, Non-Automotive Manufacturing | 35.5 |
| Total, All Sectors | 50.6 |
| Ratio: Non-Automotive Manufacturing/Motor Vehicles | 2.35 |

SOURCE: Bureau of Labor Statistics, 1979 Employment Requirements Table, October 23, 1981.

TABLE 8. AVERAGE AND MARGINAL VEHICLES PER WORKER, AS ILLUSTRATED BY DOMESTIC OPERATIONS OF FORD MOTOR COMPANY

| | U. S. Payroll (thousands) | U. S. Production Cars and Trucks (thousands) | Vehicles per Worker |
|---------------------------------|---------------------------------|--|------------------------|
| Average, by Year | | | |
| 1976 | 220 | 3,215 | 15 |
| 1977 | 239 | 3,970 | 17 |
| 1978 | 257 | 4,090 | 16 |
| 1979 | 239 | 3,227 | 14 |
| 1980 | 180 | 2,150 | 12 |
| Marginal Changes | | | |
| Change between 1976 and 1978 | +37 | +875 | 24 |
| Change between 1978 and 1980 | -77 | -1,940 | 25 |

SOURCE: Unit Factory Sales of Cars and Trucks, Ford U. S.; and Average Number of U. S. Employees, Moody's Industrial Manual, 1981, Vol. I, p. 1,193.

derived from the BLS figures overstates the marginal increase in employment per additional vehicle sold by about 60 percent.

Second, the BLS numbers include many jobs that produce parts or supplies for the aftermarket--that is, not for new cars, but for the fleet of more than 125 million vehicles now operating. If the BLS estimate of automotive employment is assigned only to new cars, then the resulting hours per car could be overstated by about 30 percent because much of

this employment is unrelated to new cars. 18/ Eventually, once H. R. 5133 has been fully phased in for many years, the bill would increase domestic aftermarket activity by about the same percentage that it increases the domestic new car sales market. But in 1990, the full effect of the bill on aftermarket employment would be smaller than this, and this employment impact is overestimated by about 20 percent if the BLS number is applied.

Third, the BLS estimate includes all automobile-related workers and does not differentiate by the size of car they are building. Estimates from the Transportation Systems Center show that large and intermediate cars require about 17 percent and 40 percent more labor hours, respectively, than subcompact cars. Because H. R. 5133 would curtail subcompact cars, their domestic replacements would most likely be subcompact cars also. As a result, the BLS average, which includes larger cars, overstates the labor content of affected vehicles by roughly 10 percent.

Finally, the BLS numbers include some jobs in the production of heavy trucks and motor buses. Including these non-automotive jobs in the basis used to estimate the job per vehicle causes the resulting figure to overstate the appropriate number somewhat.

As a result of these four considerations, the 523 hours per car developed earlier on the basis of BLS numbers appear to overstate significantly the likely number of jobs that would be created by each new car sale stimulated by H. R. 5133. While the magnitude of overstatement attributable to each of the four considerations discussed above can only be roughly approximated, the combined effect could reduce the BLS estimate from 523 hours per vehicle to about 225 hours per subcompact

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18. There are few reliable statistics on the fraction of parts that go into new cars and those that go to cars in use. One recent report estimated that replacement parts accounted for about \$36 billion in retail sales in 1981. (David Zola, "Aftermarket, Caught in Recession, Awaits Rebound; Is There Danger?," Ward's Automotive Reports, May 3, 1982.) Relative to the new car market, in which 10.5 vehicles were sold at roughly \$9,000 each, this implies that dollar sales of new cars and replacement parts combined were \$130.5 billion--38 percent higher than dollar sales of new cars.

vehicle. ^{19/} While this adjustment is extremely rough, it illustrates that the BLS statistics, unless carefully applied, may vastly overstate the extent to which additional employment would be generated by H. R. 5133. Indeed, when adjusted for known overstatements, the BLS-based approach yields an estimated labor content per car that is generally consistent with the estimates of the industry studies discussed next.

Industry Studies. Several analysts have attempted to trace through the supplier chain and estimate the labor content embedded in a sub-compact car through detailed examination of industry practices. These studies have generally focused on "productive hours," which exclude over-

19. This computation assumes four adjustments:

| <u>Reason for Adjustment</u> | <u>Adjustment Factor</u> |
|---|--------------------------|
| 1. Marginal labor requirements are less than average labor inputs | 1.60 |
| 2. Some auto workers make replacement parts, not new cars | 1.20 |
| 3. Some auto workers make heavy trucks and buses | 1.10 |
| 4. U. S. plants make some intermediate and standard-size cars | <u>1.10</u> |
| Total effect (1.6 x 1.2 x 1.1 x 1.1) | 2.32 |

Revised Labor Requirement per Car: $523/2.32 = 225$ hours per car

head and fixed costs. One of these studies estimated the labor content (in hours) of a U. S. subcompact car as follows: a/

| | |
|--|-------------|
| Assembly | 31.1 |
| Stamping | 9.6 |
| Engine | 6.8 |
| Transaxle | 6.6 |
| Other Body and Chassis Components, Including Parts Suppliers | <u>91.2</u> |
| Total Hours, Excluding Materials | 145.3 |

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- a. Harbour and Associates, Inc., The Analysis of Japanese Landed Cost Advantage for the Manufacturer of Subcompact Cars (1982).

Assuming that 28 additional hours are embedded in the purchased materials, this leads to a total labor content of 173 hours per subcompact car.

Similarly, General Motors, the most vertically integrated of the U. S. automobile manufacturers, has estimated that it produces one million cars per 75,000 employees. This implies about 193 total hours per subcompact car. 20/ Another industry study estimated that, in 1983-1985, U. S.-produced motor vehicles (excluding heavy trucks) will contain 150 labor hours, excluding materials. 21/ Again, when materials are included, this implies a total of about 178 hours per vehicle. Informal estimates from the Transportation Systems Center show a range of 175 to 180 productive hours per subcompact car, including materials.

20. This computation assumes that 55 percent of the value added is supplied by GM, and that the number of jobs is proportional to value added. It also assumes that there are 1,700 hours per worker year and that the average GM car requires 20 percent more labor than a subcompact car.

21. Martin Anderson, "Smaller Cars, Higher Risks," Technology Review (forthcoming).

In summary, most analyses that have focused on actual automotive plant experience, including those of the chief automotive suppliers, estimate that between 150 and 200 productive hours are required to manufacture a subcompact car. While this range is far beneath the 523 hours that can be derived from BLS data, the preceding section noted that several adjustments to the BLS data are necessary in order to describe the likely impacts of marginal changes in domestic subcompact sales that would occur if H. R. 5133 is enacted. When these adjustments are made, the BLS data indicate a total labor content of about 225 hours per subcompact car.

Estimated Impact on Jobs. For consistency with both the adjusted BLS data and the industry studies, this paper assumes that 200 hours are required per subcompact car. In line with the BLS ratio, it assumes that 60 of these hours are furnished directly by the automobile manufacturing companies, and that 140 are provided indirectly by the chain of suppliers.

In addition, as more domestic cars are sold, year after year, the number of domestic cars in use would also increase above the number that would otherwise have been in use. This would result in a greater demand for domestic replacement parts, and employment in industries that manufacture these parts would increase, adding about 5 percent to the increase in the number of auto-related jobs in 1985, and about 10 percent in 1990. These additional employment requirements are included in the totals presented here.

Together with the middle estimate of increased domestic sales that would be generated by H. R. 5133 (shown back in Table 6) these labor-content assumptions imply that about 64,000 additional direct jobs in automobile manufacturing would be created by H. R. 5133 in 1990, and about 147,000 additional indirect jobs in supplier industries (Table 9). The total number of jobs that would be created in 1990, assuming no retaliation by other countries and ignoring general economic effects stemming from increases in auto-related employment and production, would be 211,000. The figure would be different at different levels of car prices, ranging from 121,000 jobs if prices increased by \$1,000 per vehicle to 307,000 jobs if prices did not increase.

This analysis assumes that the chief effect of H. R. 5133 on jobs would be through increased sales of domestic cars rather than through increases in the domestic content of U. S. cars. The increase in jobs created by

TABLE 9. ESTIMATED INCREASES IN EMPLOYMENT AFTER ENACTMENT OF H. R. 5133 UNDER ALTERNATIVE ASSUMPTIONS ABOUT NEW CAR PRICES (In thousands of jobs) ^{a/}

| New Car Prices | Direct Jobs in Automobile Manufacturing | | Indirect Jobs in Supplying Industries | | Total Jobs | |
|---|---|------|---------------------------------------|------|------------|------|
| | 1985 | 1990 | 1985 | 1990 | 1985 | 1990 |
| High (Assuming No Price Increases) | 49 | 92 | 116 | 215 | 165 | 307 |
| Middle (Assuming Price Increase of \$500) | 27 | 64 | 63 | 147 | 90 | 211 |
| Low (Assuming Price Increase of \$1,000) | 6 | 36 | 15 | 85 | 21 | 121 |

SOURCE: Congressional Budget Office.

- a. The estimates shown do not account for the employment impacts of retaliatory actions taken by other nations, nor do they include increases stimulated by the effect of increases in auto-related production on the economy generally, nor do they allow for productivity increases. For discussion of these effects, see the following chapter.

increased domestic content in U.S. cars could be negligible for two reasons. First, it is generally felt that the net importation of automobile parts for U.S. manufacturers, which now represents about 5 percent of total parts, will continue to be less than 10 percent in 1990 even without domestic content laws, according to a survey of parts supplier executives,

government administrators, and marketing executives. ^{22/} Second, U. S. manufacturers could increase their average domestic content by terminating captive imports such as the Dodge Colt, which is manufactured by Mitsubishi. These models could still be imported by their manufacturers as separate makes, subject to the 100,000 vehicle limit at which domestic content requirements first apply. In short, although H. R. 5133 sets clear limits on the amount of imported parts that could be used by U. S. automakers, there is no reason to assume that imported content would rise above these limits in any case. Accordingly, this paper assumes that the number of jobs created by H. R. 5133 through increased use of domestic parts by U. S. automakers would be negligible compared to the increase in jobs that would be created through larger sales volumes.

Comparison with Other Analyses

Both the Administration and the UAW have analyzed H. R. 5133, coming to widely divergent conclusions about its effects on jobs. ^{23/} As in this chapter, their analyses have not included the impacts of retaliation. Nor have they included the increases in general employment that would be stimulated by the increased production and earnings in automobile manufacturing and supplier industries. Nor have they allowed for future increases in productivity. Accordingly, this is a convenient juncture at

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22. Arthur Andersen and Co., The Michigan Manufacturers Association, and the University of Michigan, U. S. Automotive Industry in the 1980s: A Domestic and Worldwide Perspective (The Second Delphi Forecast--July 1981) pp. 11-13. One of the panels (the technology experts) estimated a much higher net trade deficit in parts by 1990--possibly 17 to 20 percent.
 23. The Administration analysis is contained in the brief description, "Domestic Content Requirements for U.S. Motor Vehicle Sales: An Economic Assessment," reproduced as Appendix A. The UAW analysis is described in correspondence from Douglas A. Fraser to the Honorable Sam M. Gibbons dated July 7, 1982 (see Appendix B).

which to compare the estimates of the Administration and the UAW to those presented here.

The UAW estimates that 941,000 jobs would be created or preserved by H. R. 5133; the Administration's midrange projection shows an increase of 98,800 jobs. The middle of the three estimates presented in this chapter is 211,000, between the other two estimates, although much closer to the forecast of the Administration.

The UAW estimates are based upon BLS counts of workers in motor vehicle manufacturing, adjusted to include two things:

- o Additional direct employment in automobile manufacturing that would be created or preserved by H. R. 5133; and
- o Indirect jobs in supplier industries that would be associated with the direct job gains.

The UAW approach overstates the likely increase of jobs for several reasons. First, it relies almost exclusively on BLS estimates of average employment. As discussed earlier, this approach vastly overstates--by 132 percent--the marginal impact on employment associated with the sale of an additional subcompact. Second, the UAW includes in its base employment 37,100 workers employed manufacturing truck and bus bodies and 25,800 workers employed manufacturing truck trailers. Although some of these workers are engaged in making bodies for light trucks, the base employment upon which the UAW estimate is built is about 8 percent too high, relative to the BLS numbers discussed earlier. Third, the UAW assumes that the import share will increase from about 25 percent currently to about 35 percent in 1990 without the bill. If instead the import share is assumed to remain at current levels, then the number of imports curtailed by H. R. 5133 would be about 2,500 instead of the 3,800 or so implied by the UAW assumption. In other words, the UAW assumption about import share increases the estimated employment impact by about 50 percent. Fourth, the UAW implicitly assumes that H. R. 5133 would not increase prices and therefore not alter the total number of cars sold. Under the middle assumptions of Table 6, price increases would cause about 30 percent of curtailed imports not to be replaced by a domestic sale. Fifth, the UAW approach implicitly assumes that total new car sales would be unaffected by H. R. 5133, although likely price increases in response to this bill would probably reduce total sales somewhat.

These factors account for most of the exceptionally large labor impact shown by the UAW analysis. If the UAW estimate is adjusted for these four factors, it becomes close to the middle estimate of Table 9. 24/

The share of sales that would be captured by imports in 1990 is highly uncertain, and the UAW estimate is clearly a possible outcome. However, the other UAW assumptions, which create the huge discrepancy in estimated employment, appear far less defensible. As a result, the UAW analysis of H. R. 5133 appears to overstate significantly the number of new jobs that this bill would create.

The Administration analysis departs from the assumptions of this paper in two important respects. First, the Administration estimates of additional sales and additional jobs reflect a labor content of 265 hours per

24. This adjustment involves four factors:

| | Adjustment Factor |
|--|----------------------|
| 1. Overstatement implicit in using BLS averages to estimate the impact of H. R. 5133 | 2.32 |
| 2. Inclusion of truck manufacturing employees in base | 1.08 |
| 3. Higher import share assumed by UAW | 1.50 |
| 4. Assumption of no price effects by UAW | 1.30 |

Combined effect (2.32 x 1.08 x 1.5 x 1.3) = 4.89

$\frac{\text{UAW Estimated Job Gain}}{\text{Combined Adjustment Factor}} = \frac{941,000}{4.89} = 192,000$

car. ^{25/} This estimate, which is nearly a third higher than the 200 hours assumed here, leads to an estimated employment impact of H. R. 5133 that is also about a third higher. Second, and more importantly, the Administration assumes that a substantial reduction in new car sales would result from H. R. 5133. The Administration's mid-range forecast for a good sales year shows that of the 2.850 million Japanese vehicle sales curtailed by H. R. 5133, only 0.634 million would be captured by U. S. firms. The other 2.2 million sales are apparently lost due to price increases, which average about \$700 per vehicle. This estimated loss of sales appears remarkably high: it implies that a loss of sales of more than 2 percent is associated with an increase in price of 1 percent--a price sensitivity much higher than found in most studies of automobile demand. The effect of this large reduction in sales is to reduce the extent to which employment would increase in response to H. R. 5133. That is, the difference between the Administration's estimate of 98,800 new jobs and the estimate of 211,000 new jobs shown in Table 9 is attributable chiefly to the Administration's assumption that new vehicle sales would be very hard hit by the price increases that would accompany H. R. 5133.

^{25/} This estimate of labor hours per car is not explicitly presented by the Administration, but is implied by the forecasts that it provided, assuming that each job is equivalent to 1,700 worker hours. Various combinations of direct and indirect labor content could have been assumed to reach this total labor content, but no breakdown into these categories is supplied in the Administration's description.

CHAPTER IV. POTENTIAL MACROECONOMIC CONSEQUENCES

The Congressional Budget Office's analysis of the macroeconomic consequences of H.R. 5133 examines the direct effects of the bill on U.S. auto and auto-related industries and its indirect effects on other sectors of the economy. The analysis suggests that the net effects for the U.S. economy in terms of real growth, inflation, and employment, though small, could be negative.

Domestic content restrictions as prescribed by H.R. 5133 pose a number of economic costs and risks for the United States. The analysis concentrates on three areas of possible risk:

- o Inviting retaliatory trade restrictions from our trading partners, a response sanctioned by the articles of the General Agreement on Tariffs and Trade (GATT);
- o Raising domestic auto prices and hence, the overall U.S. rate of inflation; and
- o Lowering the United States' long-run economic growth potential by misallocating economic resources.

Even assuming limited foreign trade retaliation, H.R. 5133 represents a poor substitute for conventional stimulative monetary and fiscal macroeconomic policies.

THE CBO ANALYSIS

The analysis of the effects of H.R. 5133 discussed in Chapters III concentrates on the changes that could occur in the auto and auto-related industries only. Though important, this focus is limited in that it disregards the chain of events the restrictions could initiate both in other sectors of the U.S. economy, and in the economies of U.S. trading partners. Owing to the size of the automotive industry relative to the U.S. econ-

omy's entire manufacturing sector and to the increasing importance of trade within the economy as a whole, these indirect effects can be significant. Using a model that calculates both the direct and indirect effects of economic policy changes, the analysis that follows provides a consistent set of estimates of the full impact of the proposed legislation on the economy as a whole. This analysis, which examines the overall effects under various alternative assumptions, suggests that H.R. 5133 could adversely—though in relatively small ways—affect the performance of the U.S. economy in general.

Assumptions

In Chapter III, the estimates of possible employment, output, and price effects on U.S. auto and auto-related industries constitute the starting point for the macroeconomic analysis. For the CBO's simulation analysis, the reductions in foreign auto sales—amounting to 1.4 million units in 1985 and 2.4 million units in 1990—were transformed into reductions in real merchandise imports of \$4.9 billion in 1985 and \$7.6 billion in 1990. The supply price increase of \$500 per unit assumed for domestic automobiles was transformed into a near 6 percent increase in the durable goods auto consumption price deflator.

Control Simulation

The model used for the macroeconomic analysis was the Wharton Annual and Industry Model. Relevant sectors of this model were modified slightly to conform with the underlying assumptions developed in Chapter III. ^{1/} These modifications essentially involved an adjustment to the model's automobile labor sector to reflect an approximate 3 percent annual rate of growth in labor productivity over the simulation period, and to

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1. Under the direction of the Annual Model managers from Wharton Econometrics, a number of adjustments were made to the model's price sector to obtain more accurate real output and employment responses induced by stimulative policy measures. Accordingly, the simulated price changes reported in Table 10 are presented in terms of fairly wide ranges of possible effects.

allow for a 1 percent increase in the rate of productivity growth in response to the induced increase in production. With these adjustments, the model was simulated over the period 1982-1990 under alternative assumptions regarding domestic auto production levels, auto price changes, and foreign trade retaliation. The results of these simulations, contrasted to the model's control economic outlook, are presented in Table 10.

The projections contained in the control economic scenario shown in the first sets of figures in Table 10 represent a modest recovery from the constrained economic environment of 1982, and hence they portray an economy operating initially far below normal capacity. In this control case, real output growth begins from a 1982 recession low and gradually returns to an average annual real GNP growth rate of 2.7 percent through 1990. The unemployment rate starts from a 1982 nationwide annual average of 9.2 percent and moderates slowly to a 6.5 percent rate by 1990. These initial conditions are critical in determining the magnitude of changes in macroeconomic variables resulting from the changed assumptions. In the control scenario, there exists significant unused capacity within the economy as a whole, and particularly within the auto industry. Consequently, any stimulative policy would improve real economic activity. The resulting multiplier effects therefore exhibit larger potential economic benefits at less economic cost than if the economy were in a healthier condition.

Simulation With Restricted Auto Imports, Auto Price Increases, and Foreign Trade Retaliation

In light of the importance of the auto industry to U.S. trading partners, and because the GATT sanctions retaliatory trade restrictions in response to the imposition of quota restrictions, it is not unreasonable to assume that U.S. trading partners would reduce real U.S. exports by an amount equivalent to the reduction in U.S. real imports of autos and auto parts. The results of such retaliation are presented in Table 10. The differences from the control case show that the potential economy-wide costs of foreign trade retaliation exceed the benefits that would accrue to the automotive sector. As a result of the combined import and export quotas, real GNP is suppressed by 0.3 percent by 1990, and the CPI is approximately 0.2 percent above its control level. The simulated employment differences in this exercise indicate that, by 1990 some 70,000 auto

TABLE 10. CBO ESTIMATES OF MACROECONOMIC EFFECTS OF H. R. 5133

| | Control | | | Change from Control with | | | |
|---|---------|---------|---------|--------------------------|---------------|----------------|---------------|
| | 1981 | 1985 | 1990 | Retaliation | | No Retaliation | |
| | 1981 | 1985 | 1990 | 1985 | 1990 | 1985 | 1990 |
| Total Auto Sales (in thousands) | 10,538 | 13,000 | 15,000 | -600 | -800 | -500 | -700 |
| Domestic | 7,761 | 9,750 | 11,250 | +700 | +1,600 | +800 | +1,700 |
| Imports | 2,777 | 3,250 | 3,750 | -1,300 | -2,400 | -1,300 | -2,400 |
| Real Gross National Product (in billions of 1972 dollars) | 1,511.0 | 1,676.8 | 1,923.2 | -0.3% | -0.3% | +0.2% | +0.4% |
| Consumer Price Index (1972 = 100) | 272.4 | 354.6 | 486.4 | +0.2 to +0.4% | +0.1 to +0.3% | +0.2 to +0.4% | +0.3 to +0.7% |
| Employment (in thousands) | 100,414 | 106,840 | 115,134 | -130 | -150 | +170 | +520 |
| Auto | 722 | 801 | 803 | +30 | +70 | +40 | +80 |
| Non-Auto | 99,692 | 106,039 | 114,331 | -160 | -220 | +130 | +440 |
| Unemployment Rate (in percents) | 7.6 | 6.9 | 6.5 | +0.1 | +0.1 | -0.1 to -0.2 | -0.2 to -0.4 |
| Productivity Growth in Auto Sector (in percents) | --- | 3.3 | 2.8 | +0.3 | +0.7 | +0.3 | +0.7 |
| Auto Prices (in percents) | --- | --- | --- | +5.75 | +6.04 | +5.75 | +6.04 |

SOURCE: Wharton Annual and Industry Model and Congressional Budget Office.

jobs are created as a result of the quota-induced U.S. domestic auto production increase, while some 220,000 non-auto jobs are eliminated because of the restrictions imposed on non-auto exports. This asymmetric employment response indicates that the number of jobs lost through restrictions on U.S. exports exceeds the number of jobs created because of reduced auto imports—an outcome consistent with the fact that U.S. export industries are more labor- and skill-intensive than U.S. automotive and related industries.

The export-retaliation scenario in the table clearly shows a loss to the U.S. economy from the domestic content legislation. Less than full foreign trade retaliation could be assumed instead, which would still show risks to economic activity attending the legislation. An assumption that foreign nations retaliate against U. S. exports by only half of the restricted import volume, for example, would nullify all of the economic output and employment benefits derived from simulated auto-import restrictions and increased domestic auto production while retaining some increase in inflation by the end of the period.

Simulation With No Foreign Trade Retaliation

The second of the two simulations contrasted to the control case imposes only the import restrictions and the 6 percent domestic auto price increase assumed to result from the legislation. As expected, the combination of decreased merchandise imports and increased automobile production directly stimulates economic activity. The level of real GNP increases by about 0.2 percent by 1985 and by 0.4 percent by 1990, while the unemployment rate falls by 0.2 to 0.4 percentage points by 1990. Total employment rises by about 500,000 workers, some 80,000 of whom are direct automobile industry employees. ^{2/} The increase induced in non-auto

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2. The direct auto industry employment increases derived from this macro multiplier exercise are roughly consistent with the 64 thousand job microeconomic point estimate developed in the previous chapter. The SIC 3715 and SIC 3713 labor categories were excluded from the microanalysis figure which also excludes indirect macroeconomic feedback employment effects.