
Epilogue

The Future of the Automobile

Mass personal automobility appears to have a new lease on life. In contrast with the disappointing past, disillusioning present, and clouded future of mass transit in the United States, the renaissance in automotive technology is making cars safer, less polluting, and more energy efficient with every model year. Predictions of the imminent death of the automobile have given way to a new optimism. The MIT Report comes to the particularly rosy conclusion that “the automobile’s future as the prime means of personal transport is quite secure because of the flexibility of the basic concept and robustness of automotive technology. . . . [T]here is no basis whatever for projecting that in the end auto technologists will fail to cope. Thus, the auto industry can continue to be one of the world’s foremost manufacturing activities far into the future, serving the need for personal transportation in developed and developing nations.”¹

Notably, however, the futurists are merely projecting that present trends will persist for another decade and a half to the year 2000. Thus they deal with a sociological rather than a truly historical time span. The long-range future of mass motorization—say, over the next half-century—remains as problematic and clouded as that of mass transit.

There can be no doubt that the automobile will continue into the twenty-first century to be the dominant mode of personal transportation in the advanced capitalist countries and that there will be some growth in automobile ownership and use in both the advanced socialist countries and the Third World. The MIT Report forecasts that by 2000 demand for passenger cars will have increased to 48.8 million units and that 536 million passenger cars will be owned in the world, versus an actual demand of 30.5 million cars and ownership of 396.2 million in 1979. Demand for commercial motor vehicles is expected to increase from 10.8 million units

in 1979 to 18 million units in 2000, and commercial motor vehicle ownership from 86.4 million units to 142.5 million units. The composite MIT forecast for both passenger cars and commercial motor vehicles is that by 2000 world demand will be 66.75 million units, the world stock of motor vehicles 678.5 million units.

Other forecasts are only slightly more conservative. The Organization for Economic Cooperation and Development (OECD) estimates that by 2000 there will be 529 million passenger cars in the world and that world demand for automobiles will have increased from 35.2 million units in 1985 to 46.6 million units, with demand in the North American market increasing from 12.4 to 13.4 million units and in Western Europe from 11.2 to 13.6 million units. The OECD projects that the North American share of the world market for cars will have declined from 35 percent in 1985 to 29 percent in 2000, and the Western European share from 31 to 29 percent, while the Latin American share will have increased from 7 to 12 percent, the Asian from 18 to 19 percent, the African from 2 to 3 percent, and the Eastern European from 6 to 8 percent.

Of far more significance than these optimistic short-term projections of total world demand and ownership is that replacement demand is expected to climb from 58 percent of total world demand in 1980 to 76 percent by 2000, with replacement demand being as high as 87 percent in both North America and the EEC countries and nowhere in the world lower than the 50 percent estimated for Latin America. The OECD further foresees that population densities will place ultimate saturation points on automobile densities at 700 cars per thousand persons in the United States, 600 per thousand in France and Germany, and 450–500 per thousand in Italy, Japan, Sweden, and the United Kingdom. Should demand in these advanced capitalist countries increase as anticipated, ultimate saturation of the world market for cars will be a reality very early in the twenty-first century.

Thus the world market for motorcars is projected to become saturated on the criterion of replacement demand in the very near future and on the criterion of ecology in the foreseeable future at levels that would leave the private passenger car “the prime means of personal transport” only in the United States and a few of the world’s other affluent nations. Public transit undoubtedly will remain by far the most important means of personal transport in Eastern Europe and at least as vital as the private passenger car in Western Europe and in Japan. Even in most developed nations the automobile is not now the prime means of personal transport; and especially in the socialist countries, but also throughout Western Europe and in Japan, social policy historically has limited automobile ownership and use to levels well below their potentials given a free

market. There is every reason to expect that such policy will continue and grow firmer as petroleum resources dwindle in an oil-short world. The Third World will continue to depend overwhelmingly on foot and animal traction for personal transportation, unless an unlikely revolutionary change occurs in the distribution of the world's wealth. Indeed, the idea of mass personal automobility serving the transportation needs of the "developing" nations compounds a myth into an absurdity, for the world currently is divided into two types of nations—the overly developed and the never-to-be developed.

Automobility is incredibly expensive and can be supported at the current American level only in super-affluent America. How long it can be supported even here remains to be seen. The average fixed cost per day of owning a passenger car in 1985 was \$6.69, with operating costs at an average of 27.2 cents per mile. The average 1985 expenditure for a new car was \$11,629, or 22.7 weeks' income for a family earning the median income of \$27,144. The futurists are holding continued American prosperity as a constant in their calculations, even though it is not a variable but an imponderable in an era of mounting gigantic trade deficits and stagnating economic growth.

Despite some impressive recent advances in automotive technology, there is no alternative in sight to the internal-combustion engine burning a petroleum product. Improvements in storage batteries over the years have failed to result in a viable electric car for all-around use, and powering cars by electric fuel cells, much less by nuclear or solar power, is still in the dream stage of development. World petroleum resources not only are dwindling but are largely controlled by the OPEC cartel, which sets far higher crude oil prices than would result from a free market. Further, OPEC nations know the uses of oil as a political weapon and have engaged in oil diplomacy that includes cutting off crude oil supplies to adversaries. No one can estimate how these imponderables will affect automobility over even the immediate future.

On the other hand, it is indisputable that mass transit at present can utilize a wider variety of types of energy than can the motorcar, and the preponderance of evidence is that mass transit is also more energy efficient. Furthermore, although cars have become far safer and less polluting than they were two decades ago, mass transit remains safer and cleaner still, as well as considerably cheaper when all costs are considered.

A major stake that the advanced capitalist countries have had in the continuation of mass personal automobility has been the centrality of automobile manufacturing to their national economies. For example, about one out of every six jobs in the United States in 1982 was in the motor vehicle and related industries. In 1977—the most recent year for

which such figures are available—automobile dealers accounted for 28.5 percent of all retail trade in the United States, automotive wholesalers for 11.7 percent of all wholesale trade, and automotive service establishments for 12 percent of all service business.

Should the MIT Report's optimistic prediction materialize—a 62-percent increase in motor vehicle output over 1979 by the year 2000—the world automobile industry undoubtedly will be able to remain prosperous well into the twenty-first century by filling replacement demand alone for some 678.5 million motor vehicles. “This 62-percent increase in total output, when translated into broader economic terms, means that the motor vehicle industry is almost certain to continue as the world's largest manufacturing enterprise,” the report concludes. “Therefore the key question about the future of the automobile and its industry . . . is not whether the future holds security and growth for the industry as a whole but rather which producers at which locations in the world will account for the increases in output.”

Conventional wisdom has assumed that the twenty final assemblers in the automobile industry in the advanced capitalist countries would be reduced by 2000 to perhaps as few as six truly multinational “mega-producers.” The MIT Report identifies “four factors that alter this vision of the future. These are the introduction of microprocessor-controlled flexible production methods, the ready availability of new product technologies, the perfection of a new system of social organization for the production process, and the failure of the world's auto purchasers to demand a single size and type of car.” For these reasons it is anticipated that “there are likely to be about as many automakers 20 years from now as today. Departures from the industry will be minimal. . . . The declining minimum efficient scale in manufacturing will give the medium-size and specialist producers a more level field on which to compete. . . . In addition, new forms of cooperation being developed among final assemblers will increase the survivability of specialists and medium-line producers.”

This is not to say, however, that the automobile industries of Western Europe and the United States will be able to survive the Japanese challenge. The MIT Report finds “a major competitive imbalance among the developed countries” that strongly favors the Japanese auto makers. “Because the present competitive gap between the best Japanese producers and the weakest Western producers is so great, and because the process of adjustment by its nature will require many years to complete, it is evident that the potential for dramatic shifts in share among national auto industries and for disaster for individual producers will persist for many years. To make matters worse, the adjustment process will proceed in a macro-

economic environment that is likely to be only marginally better than that of the period since 1973.”²

Despite this major competitive imbalance among the developed countries, none of the MIT Auto Program participants advocated that Western nations take strong measures to protect their automobile industries. Opinion was divided between participants espousing the classic free-trade position—arguing the abstract benefits of competition, the futility of protectionism, and the specter of a global trade war—and proponents of limited government intervention to preserve jobs. In the real world, protectionism historically has been essential to the development of every national automobile industry, and none has been more protected than the Japanese. The Japanese still do not practice free trade. Western European nations in general have erected strong trade barriers against Japanese auto imports. The Japanese have built automobile plants abroad only in response to threats of strong protectionist measures. And without strong protection the jobs of American automobile workers will continue to move overseas at the same time that employment shrinks some 37 percent in the worldwide automobile industry by the year 2000.

Regardless of these short-term possibilities for the future of the automobile and the automobile industry, it is clear that the Automobile Age—half a century of historical development dominated by the motor vehicle—had ended by the early 1970s. The automobile has not been a historically progressive force for change in American civilization since at least the 1960s. Unlimited accommodation to mass personal automobility ended as government came to recognize automotive safety, pollution, and energy consumption as major social problems and consequently to regulate the automobile industry and to invest in mass transit. Although the automobile industry still provided one out of every six jobs in the United States, its hegemony in our society and economy had been progressively eroded over the preceding generation by the expansion of government, which provided one out of every five jobs by 1970. With increased international involvement, the rise of a nuclear warfare state, and the exploration of outer space, new industries associated with aerospace and electronics, together with the federal government, have become more important forces for change than the mature automobile industry. Significantly, the current renaissance in automotive technology is a renaissance almost entirely engendered by electronic and aerospace technology; the major technological forces for change in American lifeways at present are the computer, the robot, the laser beam, and telecommunications. Nowhere else in the world is the automobile apt to have the all-encompassing impact in the future that it has had on American civilization in the past.

The ending of the Automobile Age undoubtedly marks a significant

turning point in world as well as American civilization. Whether the age of electronics that is already revolutionizing daily life and the life of nations holds a better or a worse future for mankind remains to be seen. So does it remain to be seen whether the renaissance in automotive technology can make mass personal automobility viable even in the most affluent nations long past the turn of the twenty-first century. To project trends further than that would be to engage in futile speculation, for the history that will be made will be the result not of discoverable inevitabilities but of conscious human choice, effort, and striving.

Notes

1 The Automotive Idea

1. William Plowden, *The Motorcar in Politics, 1896–1970* (London: The Bodley Head, 1971), p. 24.
2. “The Woods Electric Vehicle,” *Scientific American* 38 (November 7, 1900): 308.
3. Cleveland Moffett, “Automobiles for the Average Man,” *American Monthly Review of Reviews* 21 (June 1900): 706.
4. Lynwood Bryant, “The Development of the Diesel Engine,” *Technology and Culture* 17 (July 1976): 439.
5. Hiram Percy Maxim, *Horseless Carriage Days* (New York: Harper and Brothers, 1937; Dover paperback edition, 1962), pp. 3–4.

2 The Emerging Industry

1. James M. Laux, *In First Gear: The French Automobile Industry to 1914* (Montreal: McGill–Queen’s University Press, 1976), p. 69. This is the definitive source on the early French automobile industry.
2. S. B. Saul, “The Motor Industry in Britain to 1914,” *Business History* 5 (December 1962): 22–38.
3. Saul, “The Motor Industry in Britain,” pp. 26–27.
4. Saul, “The Motor Industry in Britain,” p. 22.
5. “Salutatory,” *Horseless Age* 1 (November 1895): 1.
6. John B. Rae, *American Automobile Manufacturers: The First Forty Years* (Philadelphia: Chilton, 1959), pp. 8, 203.
7. “Manufacture in New England,” *Motor Age* 1 (September 12, 1899): 4.
8. Gerald R. Bloomfield, *The World Automotive Industry* (Newton Abbot, London, and North Pomfret, Vt.: David and Charles, 1978), pp. 122–123; Rae, *American*