

Kennedy's Apollo Program Reshaped the U.S. Economy

President John F. Kennedy's call on May 25, 1961, for the United States to have a goal of "landing a man on the Moon and returning him safely to Earth" by the end of the decade, put into motion the greatest peacetime mobilization of this nation's scientific, engineering, and technological resources in history. The country's industrial base, which had stagnated for the nearly two decades since President Franklin Roosevelt's mobilization to win World War II, was thrust into becoming the leading technological driver for the real growth of the physical economy.

A very modest level of Federal funding for the National Aeronautics and Space Administration (NASA)—\$20 billion over eight years—was leveraged into the growth of thousands of large and small private companies, and directly over 400,000 highly skilled engineering and manufacturing jobs. In parallel, the new technology developed for Apollo was transferred by the companies developing them to the rest of the economy, with an estimated 4:1 return on the Federal dollar investment.

In order to go to the Moon, President Kennedy recognized, there had to be an explosive growth of new scientific manpower.

Over the course of the 1960s, NASA grants and scholarships were supporting more than 3,600 graduate students per year engaged in space science and technology research. Youth Science Congresses were held at NASA laboratories to engage younger students in discussions with sci-

entists. Scientists who had received their education thanks to the space program, fanned out into every facet of scientific endeavor and American industry.

Recently there has been hand-wringing in the scientific community, industry, and on Capitol Hill about the pathetic number of American students studying science and math. Only bandaid solutions have been proposed, so far. The Apollo program succeeded in creating an entire generation of scientists, because the nation had a mission which captured the imagination of especially the youth.

Along with the creation of the technical capability to tackle the challenge of putting men into space came the challenge of rebuilding industrial capacity to accomplish the mission. Every basic industry, from materials processing to auto manufacturing, joined in.

President Kennedy's investment tax credit, proposed 90 days after he took office, was geared to spur the purchase of capital goods. To assure the investments were *only* in durable goods, the credit applied only to domestic U.S. assets with a life of six years or longer. The combination of the investment tax credit, and the optimism generated by embarking upon the great project of space exploration, led to a record-setting \$40 billion capital spending plan by industry in 1962. The editors of *Fortune* magazine described this as "hitching the economy to the infinite."

A survey in the 1980s by *EIR*, of capital investment in the 1960s, revealed that the private expansion of factories and the purchase of capital goods began *before* one penny in government funding, through NASA, had resulted in any contracts for industrial firms. The private investment was based upon the changes in economic policy, and the expectations from the science-driver Apollo project.

The General Welfare

President Kennedy was aware that a "rising tide would lift all boats," as the technological innovation and productivity gains from the Apollo program diffused through the economy.

But the social context for an Apollo program—from education and health care to civil rights for minorities—would also have to change. In a February 1961 message to Congress on education, President Kennedy stated that "the human mind is our fundamental resource," and called for smaller classrooms, better paid teachers, college scholarships, and investment in plant and equipment.

The same month, in a message to Congress on Health and Hospital Care, the President outlined his plan for guaranteed health care for the population, an expansion of hospitals and other health-care facilities, scholarships for health-care professionals, and a vaccination program, "aimed at the virtual elimination of such ancient enemies of our children as polio, diphtheria, whooping cough, and tetanus. . . ."

As a result of spending approximately \$20 billion over eight years through the Apollo program, American industry remade itself, in order to meet the challenge of exploring the infinite. There has been no more effective way to create greatly expanded skilled employment and force the upgrading of the economic and cultural levels of the population.

Today, when the great reservoir of skilled manpower in the U.S. machine-tool and auto industries is threatened with extinction, Kennedy's Apollo program stands as the paradigm of what should be done.

—Marsha Freeman