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THE DEVELOPMENT OF SCIENCE IN THE USA AND ITS IMPACT ON THE ECONOMY IN THE SECOND HALF OF THE XX CENTURY

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ABSTRACT

This article discusses the development of science in the United States in the second half of the 20th century and its impact on the economy. Based on historical data, the author studied and analyzed specific aspects of the development of science in the USA in the second half of the 20th century and its impact on the economy based on available scientific literature.

KEYWORDS

Science, economy, United States of America, development

Introduction

In the second half of the XX century, one of the main factors of economic and industrial growth, improvement of the social standard of living was the development of science. The world divided into two camps, the main figures of which were the USA and the USSR, began to compete in the military-technical, economic and political spheres. Attempts to surpass the enemy in all spheres created the need for scientific and technical solutions to the goals and tasks set on both sides of the ocean. In the USA, they began to allocate a substantial amount for the development of innovative technologies.

Main Part

Such state and private monopolistic corporations as General Dynamics, General Motors, Lockheed Corporation, Boeing received funds for research and development of new technology at their disposal. The military was mainly interested in these studies, but the introduction of scientific solutions into the civilian sphere did not prevent it. So the Boeing company, known for its B–29, B – 47, B –52 bombers, created in 1968 the Boeing737 - the most massive civilian aircraft in the world, and in 1970 the Boeing 7471. The famous General Motors company provided the needs of the military in armored vehicles – Hummer. And the General Electric company provides, to this day, the US Air Force with turbojet engines2.

New abbreviations are widely distributed at the specified time under study: NTR and R&D.

In the USA, they were working on creating a special system for implementing the results of scientific research into life. The first and most important thing that American industrial corporations faced during the scientific and technological revolution was the end of the former relatively autonomous existence

[1] http://active.boeing.com/commercial/orders/displaystandardreport.cfm?cboCurrentModel=737&optReportType=AllModels&cboAllModel=737&ViewReportF=View+Repor

[2] http://www.ge.com/b2b

of scientific and industrial complexes and the transformation of science into a direct productive force integrated with production and developing with it in a continuous and organic connection.

As a result, it is scientific and technological progress that has become one of the most important factors of both national and intra-company growth. If up to the first third of the XX century the pace of development of the American economy was determined to a decisive extent by the expansion of capital investments and an increase in employment, then in the 60s the economic growth of the country was already two-thirds ensured by the introduction of new equipment and technology, the associated professional development of the workforce, improvement of the organization and management of production (including by 40% due to technical innovations)[3].

Results and Discussions

The process covering basic and applied research, as well as the development of advanced technologies and medical developments, is commonly called S&T-based military innovation[4], implying direct long-term cooperation and support from the military departments of basic research, applied research and the development of advanced technologies. In other words, a product (product, service, process, method) that has passed these stages is innovative because it is new (or significantly improved). Since it has passed through basic and applied research, and put into use, since it has passed the stage of development of advanced technologies (according to the definition of innovation given in the Oslo Manual[5]. A significant part of the research within the framework is carried out at universities: in general, about 50% of the basic research budget is implemented here, 15% of applied research, 10% of the development of advanced technologies. About 40% of the budget of basic and applied research is spent in one hundred laboratories of the Ministry of Defense located in the United States, 35% through research contracts with industry, the remaining 25% in universities[6].

The transformation of R&D into a key element of competition and the realization of surplus value has naturally placed them in one of the central places among the investment priorities of corporations. If in the entire history of American industry before 1938 It spent only $2 billion on science, then these costs began to grow at an exceptionally high rate, significantly exceeding any other areas of investment. In 1938 - 1947, $5.5 billion was spent on R&D, and in the next decade - $20 billion. and in the next 10 years - 2 times more than in the entire history of the US industry before 1958.1 In turn, in the mid-70s, a similar amount will be spent by it, as expected, every two years[7].

As a result, industry usually turns out to be vulnerable to fluctuations in federal spending on science, and, in particular, during the crisis of 1969 - 1971, the reduction in government orders for R&D in the amount of $ 850 million was more than offset by an increase in the volume of self-financed work by $ 1,631 million[8].

[3] "Chemical and Engineering News"7- февраля, 1972, с. 17

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[7] США: промышленные корпорации и научные исследования Москва, Наука, 1975. см §2

[8] США: промышленные корпорации и научные исследования Москва, Наука, 1975. см §2

Thus, the allocation of funds mainly from three "pockets" (the federal budget, private companies and universities), US science has given its notable results: from 1945 to 1991, 179 Nobel Prize laureates became in the USA, and 17 people in the USSR[9].

Conclusion

To this day, the United States consistently holds the leadership in R&D investments. In 2011, the United States accounted for 34% of global spending in this area. In total, $405.3 billion was invested, which amounted to 2.7% of the country's GDP[10].

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