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A HIGHER-FIDELITY COST ANALYSIS OF PROJECT APOLLO

Abstract

Project Apollo is the most successful human spaceflight endeavor in history, yet there is a lack of detail on how and when the United States spent its billions of dollars to achieve its one giant leap. NASA's official reported cost of Apollo was \$25.4 billion over the lifetime of the program. However, it omitted the costs of major programs, such as the Command and Service Module, the Lunar Module, and the Saturn V. Additionally, the reported cost represents a one-dimensional sum that obscures variances in spending throughout the program and leads to an inaccurate inflation-adjustment that ignores varying inflation rates between 1961 and 1973. A higher-fidelity analysis of Project Apollo's cost—one with year-by-year and program-by-program breakouts—would allow for a more accurate inflation-adjustment, give insight into changing spending needs, and provide relevant context as the United States once again turns its sights on a crewed return to the Moon.

The work presented here is a new, rich dataset that seeks to address shortcomings in existing cost reporting. Detailed Project Apollo spending data was reconstructed from annual reporting submitted to Congress by NASA over the fiscal years 1960 to 1973. With detailed year-by-year spending data, it is possible to calculate a refined inflation-adjustment using NASA's New Start Inflation Index (NNSI), designed for aerospace projects by the agency's Office of the Chief Financial Officer. This inflation-adjusted data can be used to make direct comparisons with major Artemis programs: including the Space Launch System, Orion crew capsule, crewed lunar landers, and lunar robotic exploration efforts. This reconstruction generates a total Apollo cost of \$25.8 billion. Using the inflation-adjustment techniques discussed above, Project Apollo cost approximately \$259 billion in 2020 dollars. The inflation-adjusted amounts for the production and development of the Command and Service Module, Lunar Module, and Saturn V is \$38 billion, \$23 billion, and \$66 billion, respectively, and can be analyzed by year.