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THE POLITICAL ECONOMY OF THE SPACE AGE

Abstract

Pressures from population growth and limited resources are real. Today world's population is about seven billion. Although it is difficult to forecast the growth of the world population, most observers agree that the world population could hit ten to fifteen billion people in 2050. There is still a debate whether the forecast level of population on Earth will reach the threshold compatible with limited resources. Current studies indicate that, although mineral resources are physically abundant, critical minerals may reach the limits of economic feasibility in the next twenty to thirty years. This may lead to intense rivalries among different powerful nations to control exiting resources on Earth, and to a more unstable world.

Space technology could help in avoiding this conundrum. The exploitation of off-world minerals, which are limited/critical on Earth, is thus creating an opportunity to enlarge the mineral resource base on Earth, and to lead to a more stable world. One important policy debate has centered on the relative roles of governments and markets in the development of the space economy beyond earth orbit. An important conclusion of this debate is that the idea of government as a static bureaucratic organization only needed to fix market failures, leaving dynamic entrepreneurship and innovation to the private sector, is wrong, and that governments have important roles in fostering these changes.

There is a growing perception in social sciences that, in a complex and non-stationary environment, one cannot deduce behavior solely from knowledge of market-delivered information and self-seeking goals of individual agents. Public institutions shaping the vision of the world, behavioral conventions, and interactions between economic agents are important in explaining what economic agents do, what kind of technical progress they expect in the future, how much they invest in innovations, what appropriability mechanisms they build, and how much they cooperate and compete with each other. In summary, laws, policies, and institutions are an important part of the environment that shapes the evolution of space economy.