

## 24th SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)

## The space economy in emerging space countries (3)

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## THE ECONOMIC IMPORTANCE OF SPACE APPLICATIONS

**Abstract**

In recent years there has been a growing awareness of how reliant and dependent the economies of developed nations have become on the use of space applications. We have come to accept the fact that satellite communications and navigation systems are the backbone of global “utilities” and that any disruption in their service would create significant economic problems. This paper will address the issues in measuring the dependence on space systems in the private economy and will summarize developing trends that affect the use of satellite systems in the economy. In particular, the impacts on less developed countries may be even greater due to their lack of a wired terrestrial infrastructure and the rapid adoption of wireless telecommunications services. Since most of the available economic statistics worldwide are measured as sales of private firms plus government expenditures, assessing the value of security uses of space systems and the value of intangibles such as the quality of life are beyond the economist’s models. Therefore, this study focuses on private sector economic indicators of satellite applications. The results show a reliance on space systems for delivery of more mature services such as network television programming, a developing trend toward reliance for timing and navigation services, and the use of satellites for many other communications, financial, and earth observation services. However, history has shown that economies are resilient and that property damage from major disasters and disruptions of many kinds in the past has been small relative to a nation’s GDP. This study will show that some important parts of the economy are reliant on space assets; that there are fewer ways to providing substitute services quickly if these are disrupted; and that a disruption will result in economic losses, inconvenience, and even possibly more major injury to economies than disasters such as hurricanes, tsunamis, or solar storms have in past history.