

# **Government Space Programs by Region**

## **International Space Reception**

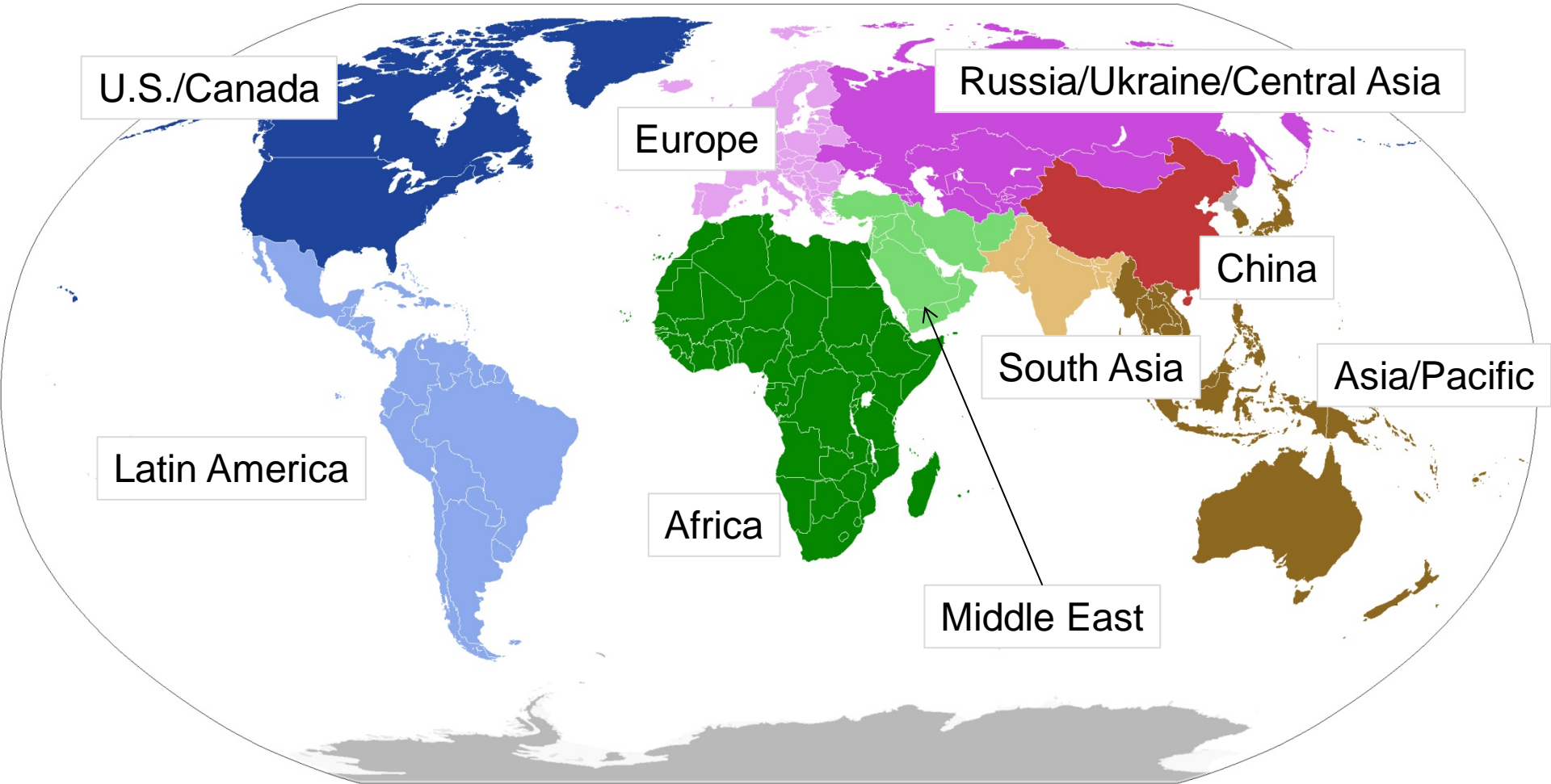
Carissa Christensen  
Managing Partner

July 24, 2013



**THE TAURI GROUP**

# World Regions



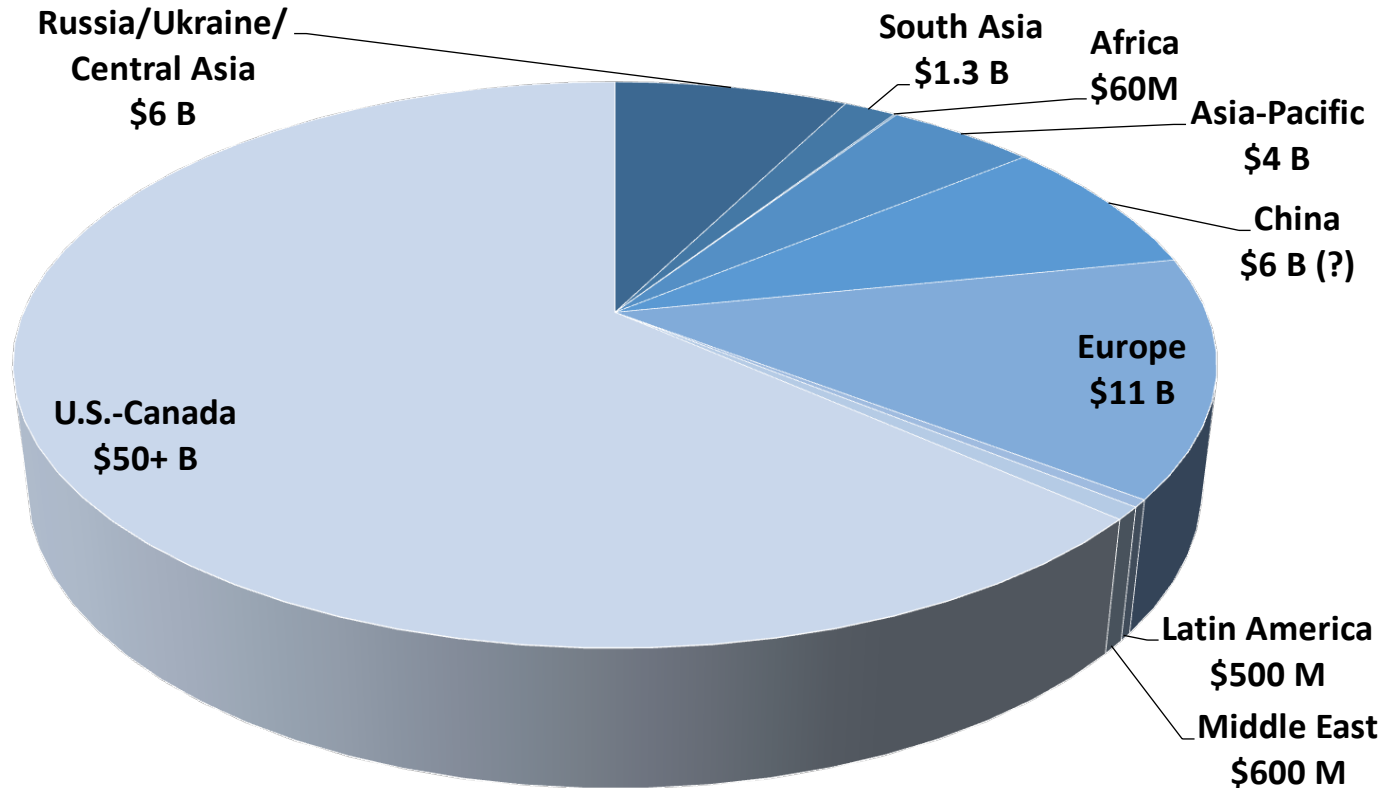
# Nations with Government Space Budgets Covered in Analysis

- ✦ **U.S./Canada**
- ✦ **Africa**
  - Nigeria
  - South Africa
  - Algeria
  - Egypt
  - Angola
- ✦ **Asia-Pacific**
  - Japan
  - South Korea
  - Australia
  - Taiwan
  - Malaysia
  - Thailand
  - Vietnam
  - Indonesia
- ✦ **China**
- ✦ **Latin America**
  - Brazil
  - Argentina
  - Chile
  - Venezuela
  - Peru
  - Mexico
- ✦ **Middle East**
  - UAE
  - Iran
  - Turkey
  - Israel
- ✦ **Russia/Ukraine/  
Central Asia**
  - Russia
  - Ukraine
- Azerbaijan
- Kazakhstan
- ✦ **South Asia**
  - India
  - Pakistan
- ✦ **Europe**
  - France
  - Germany
  - United Kingdom
  - Spain
  - Italy
  - The Netherlands
  - Finland
  - Sweden
  - Romania
  - Austria
- Sweden
- Poland
- Denmark
- Norway
- Czech Republic
- Luxembourg
- Portugal
- Switzerland
- Ireland
- Greece
- Hungary



# Approximate Government Space Budgets by Region

- ✦ Seven space budgets exceed \$1 billion: U.S., ESA, Russia, France, Japan, China, India
- ✦ Regions spending less than \$1 billion: Africa, Latin America, Middle East



**Total:  
~\$75B**

***Government Space Budgets by Region***

# U.S./Canada



## Major Players

United States • Canada

## Highlights

- ✦ Both civil and military space programs
- ✦ Robust industrial space sector supports government activities; business models evolving ('new space')
- ✦ U.S. military/intelligence space budget = nearly half world space program spending

**\$50+ B**



# Europe



## Major Players

ESA • France • Germany • Italy • Sweden • Spain • U.K.

## Highlights

- ✦ 20 member nations in ESA; 2012 budget of \$4 billion euros (U.S. \$5.2 billion)
- ✦ In 2011, for the first time, Germany outpaced France as ESA's top funder
- ✦ Europe has experienced no launch failures in the last 5 years
- ✦ U.K. Space Agency started in 2010

**\$11 B**



# Russia/Ukraine/Central Asia



## Major Players

Russia • Ukraine • Kazakhstan

## Highlights

- ✦ Russia: Currently the sole provider of crew transport to ISS; has said will significantly increase budget
- ✦ Ukraine: Long term plan to develop communications, earth observation, GPS, and space transportation
- ✦ Kazakhstan: Developing capabilities via technology transfer programs with international partners

**\$6 B**



# China



## Major Players

China

## Highlights

- ✦ Currently operating on the 12th Five-Year Plan, 2011-2016
- ✦ Priorities: build a new generation launch vehicle series; Earth observation, communication, space navigation, and scientific satellites; and human spaceflight activities

\$6 B (?)





# Asia-Pacific



## Major Players

Japan • Australia • Indonesia •  
Thailand • Malaysia • South  
Korea • Taiwan

## Highlights

- ✦ Mix of established key players and new entrants
- ✦ Japan, then Australia, South Korea have largest budgets
- ✦ Newer entrants developing infrastructure and Earth observation capabilities

**\$4 B**



# South Asia (Indian Subcontinent)



## Major Players

India • Pakistan

## Highlights

- ✦ India has established infrastructure and capabilities, with ambitious future plans
- ✦ Pakistan's space budget grew 1200% from 2005 to 2009 (to \$70 M)

**\$1.3 B**



# Middle East



## Major Players

Israel • Saudi Arabia • Turkey

## Highlights

- ✦ Newer entrants such as Turkey and Saudi Arabia focused on developing human capital and infrastructure
- ✦ Israel's space activities include indigenous launch capability

**\$600 M**

# Latin America



## Major Players

Argentina • Brazil • Mexico •  
Venezuela

## Highlights

- ✦ 8 civil and military operational satellites
- ✦ Investment focus: Earth observation, telecommunications satellites, and small launch vehicles
- ✦ Interest in regional space agency

**\$500 M**



# Africa



## Major Players

Algeria • Nigeria • South Africa • Egypt

## Highlights

- ✦ Focused on developing indigenous space capabilities in remote sensing, communications, and science
- ✦ In 2009, Algeria, Nigeria, Kenya, and South Africa formed the African Resource Management Constellation (ARMC); each country contributes a satellite and gains access to all acquired data

**\$60 M**

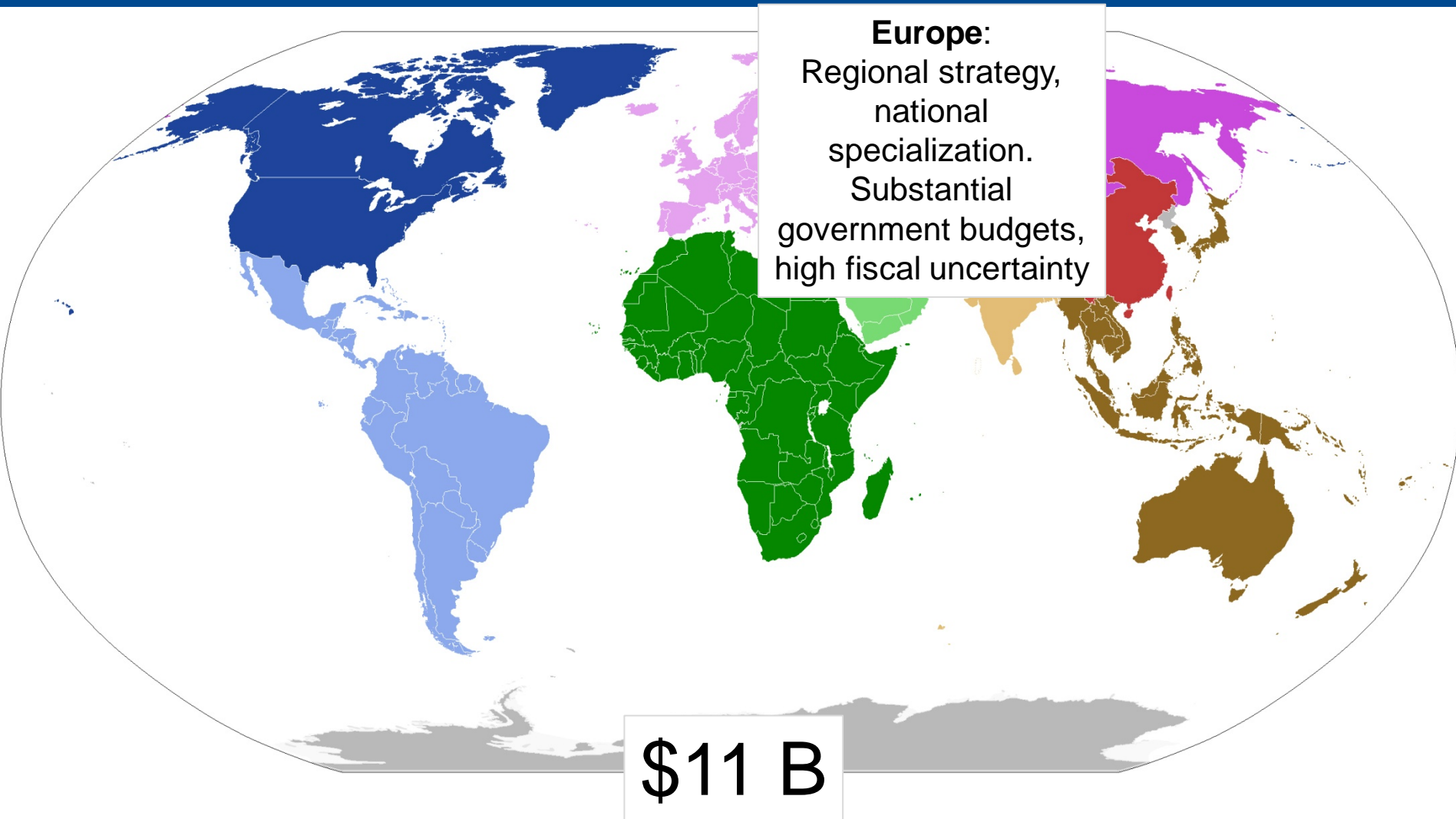


# Summary

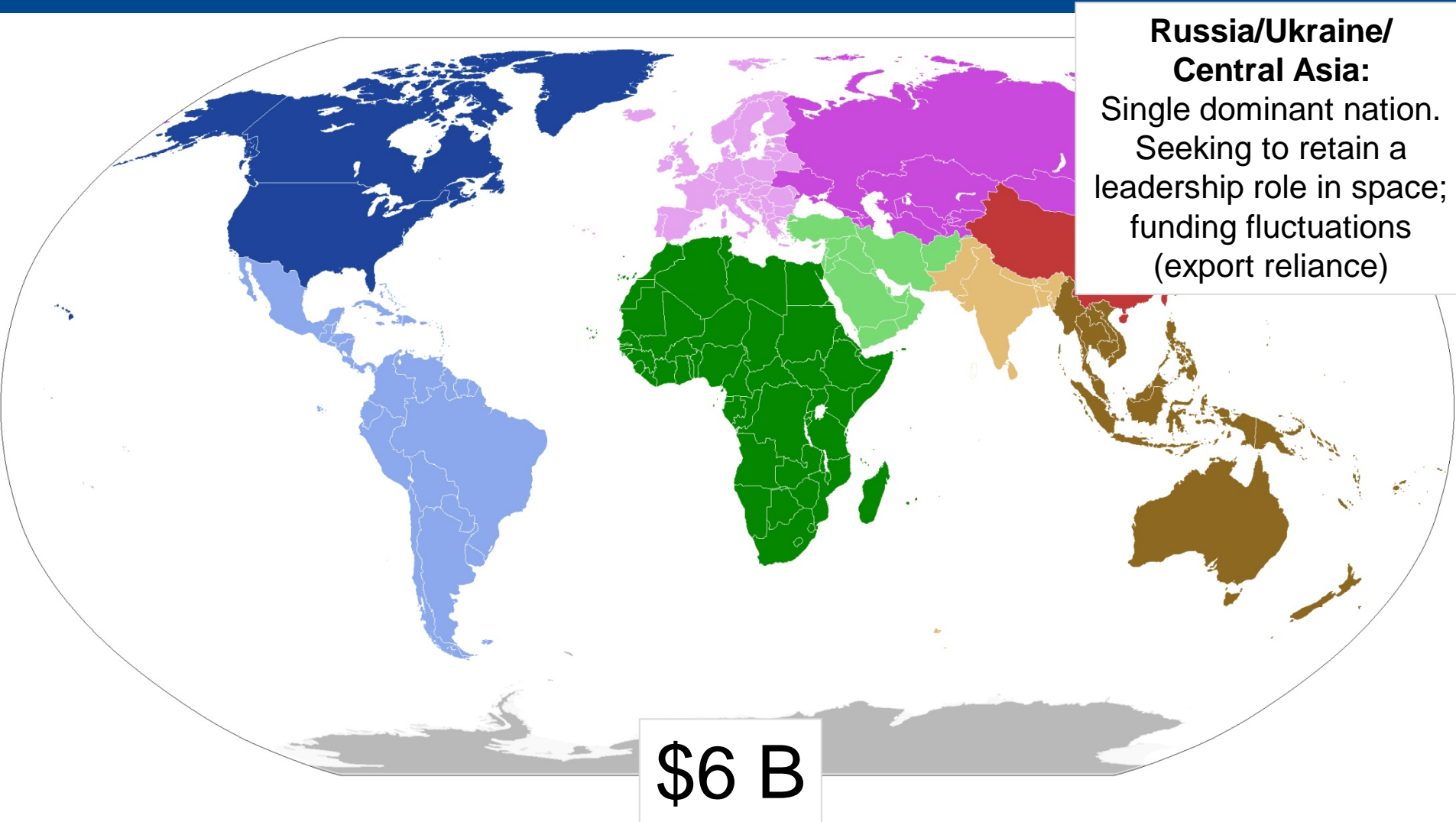
**U.S./Canada:**  
Single dominant  
nation. Massive  
government budgets,  
with future budget  
uncertainty

**\$50 +B**

# Summary

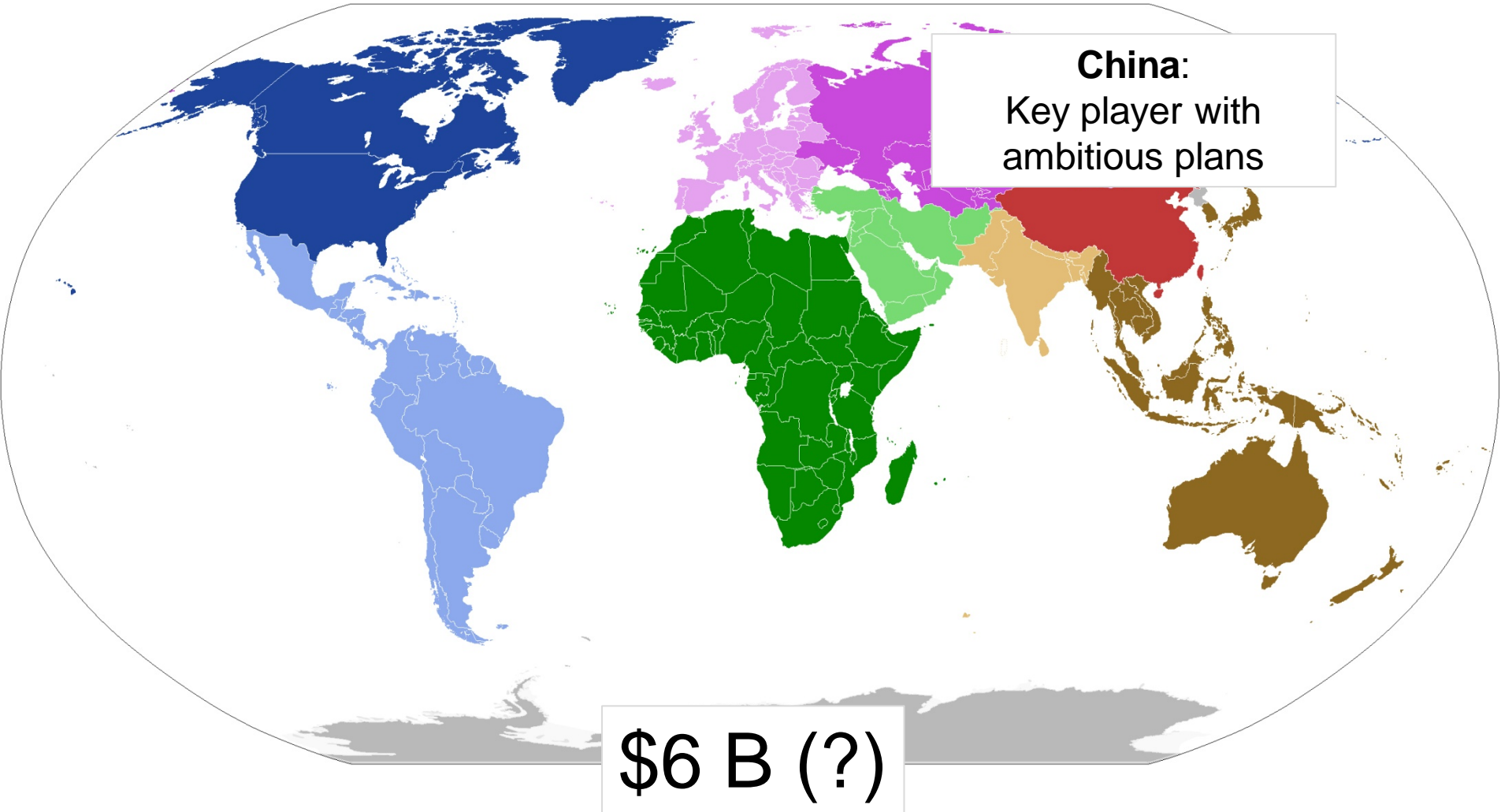


# Summary

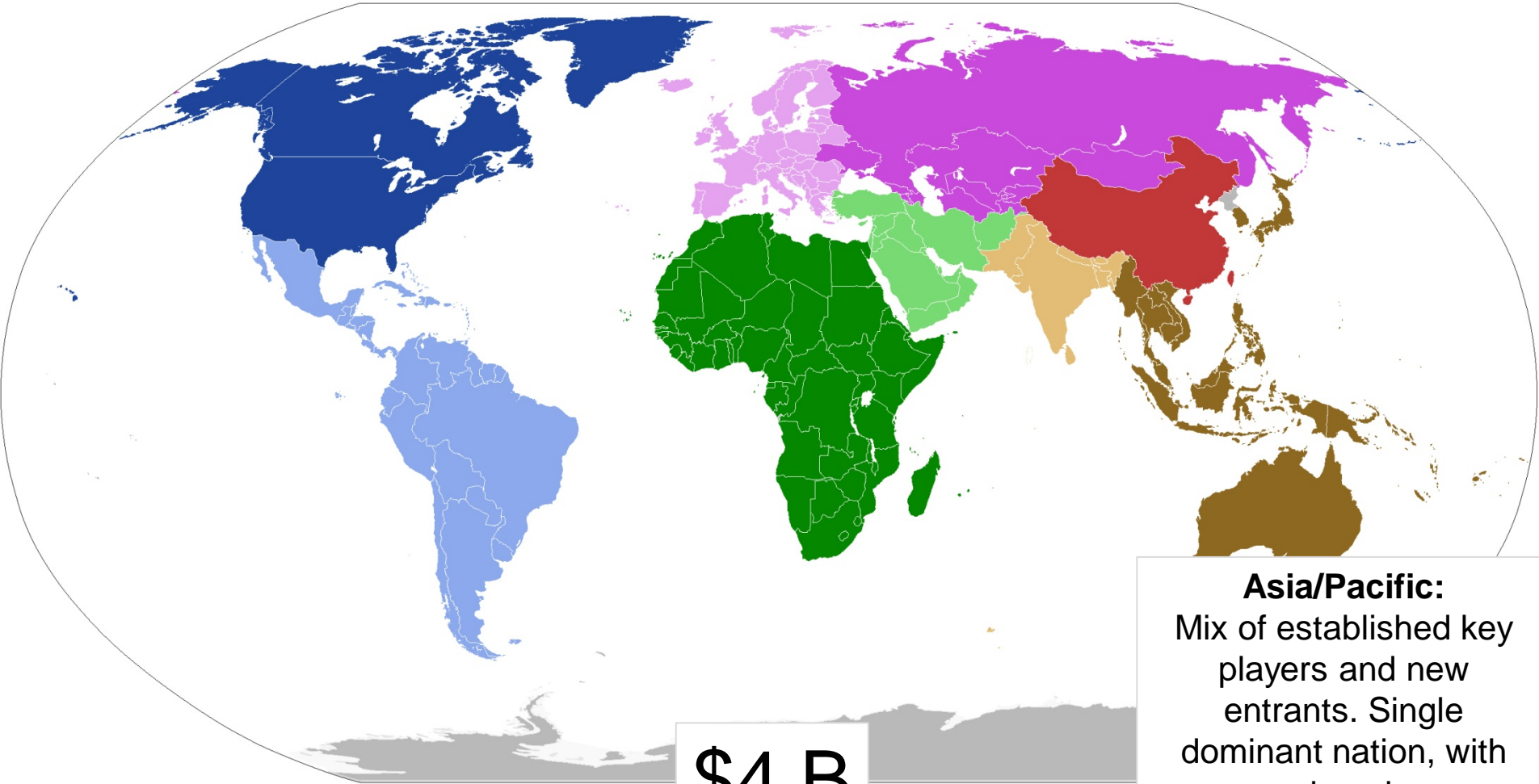




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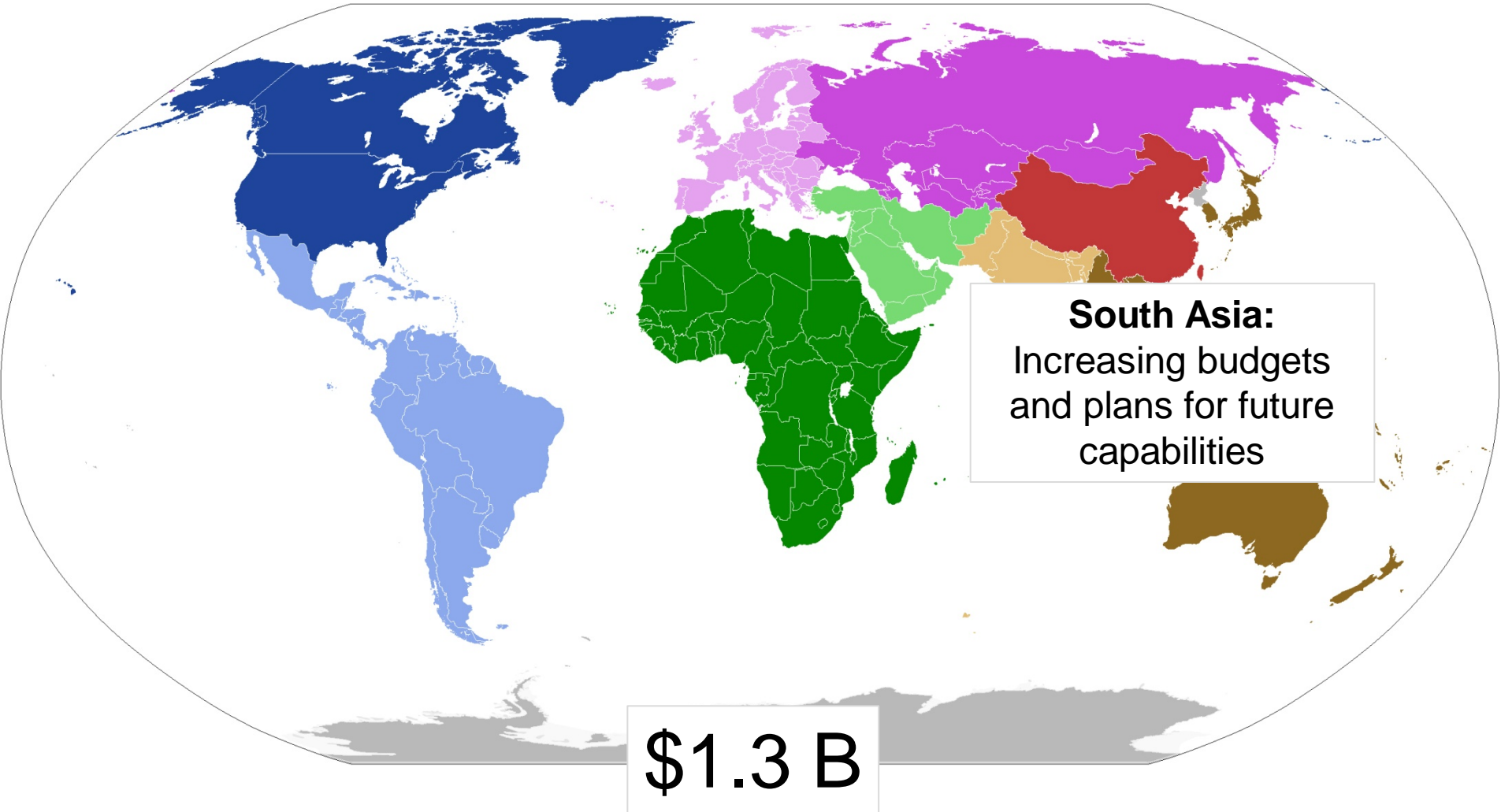
# Summary



## **Asia/Pacific:**

Mix of established key players and new entrants. Single dominant nation, with emerging players increasing spending

# Summary

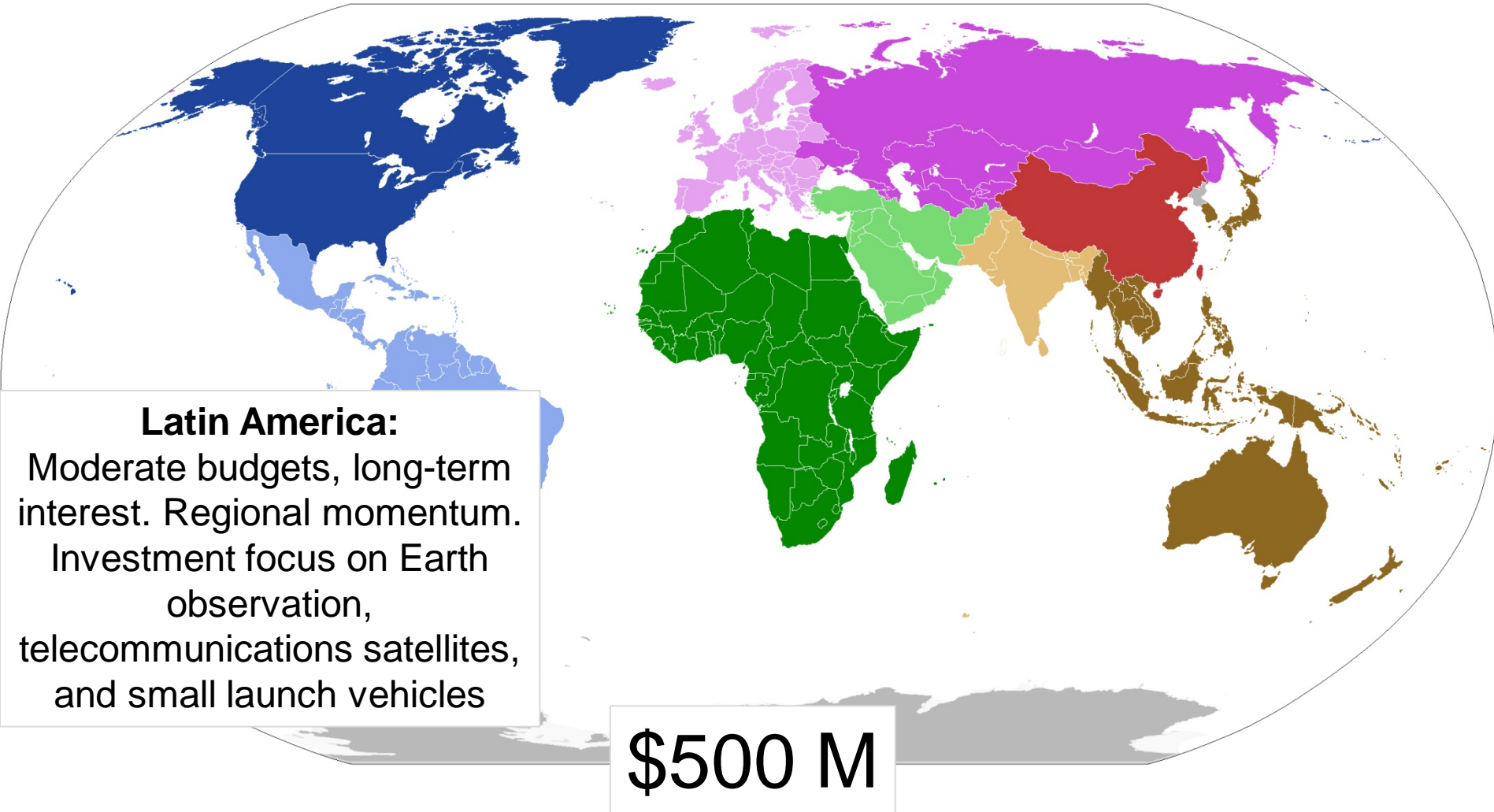


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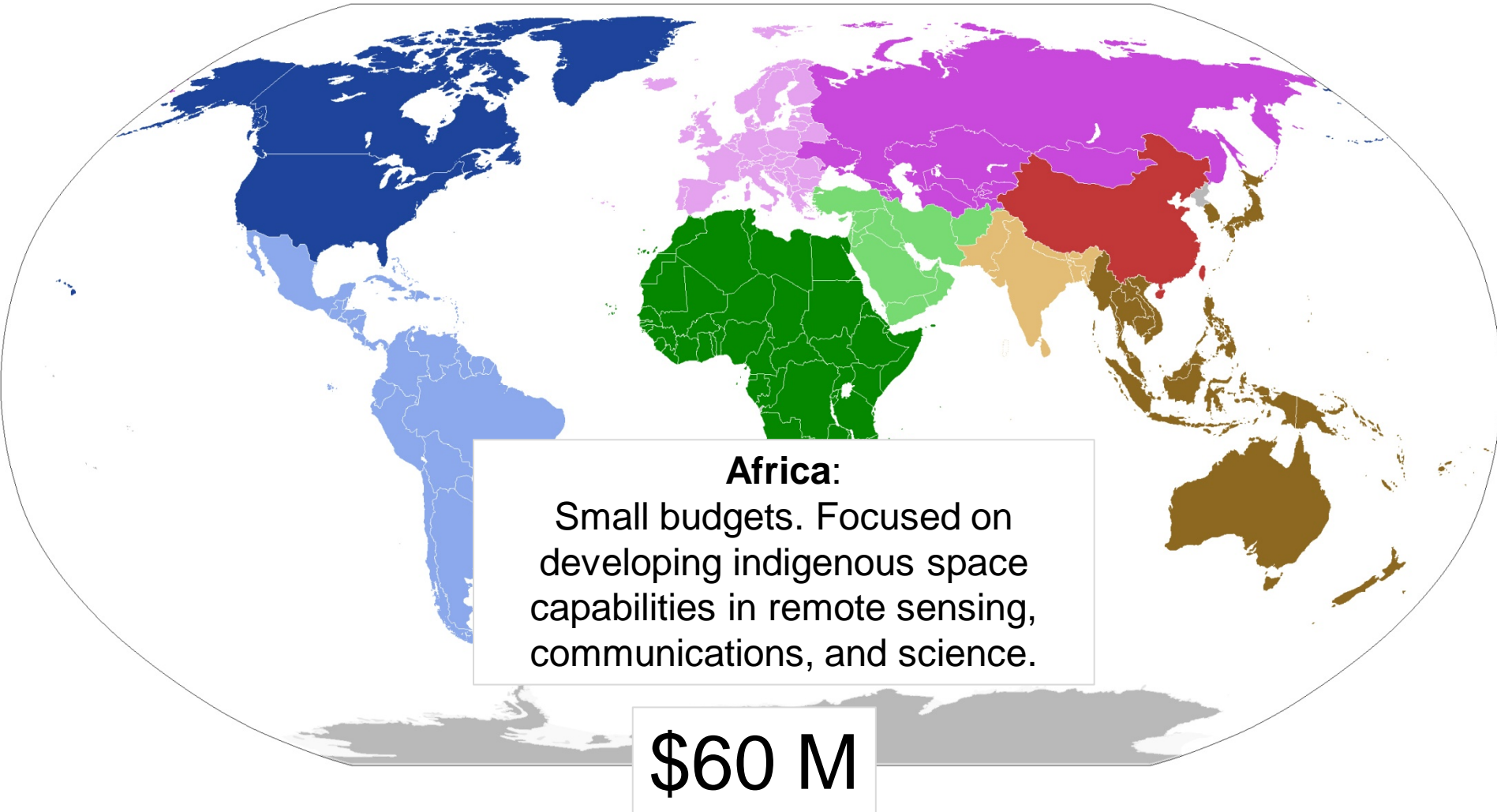
**Middle East:**  
Growing budgets,  
focus on  
infrastructure and  
human capital  
development.  
Complex regional  
dynamics

**\$600 M**

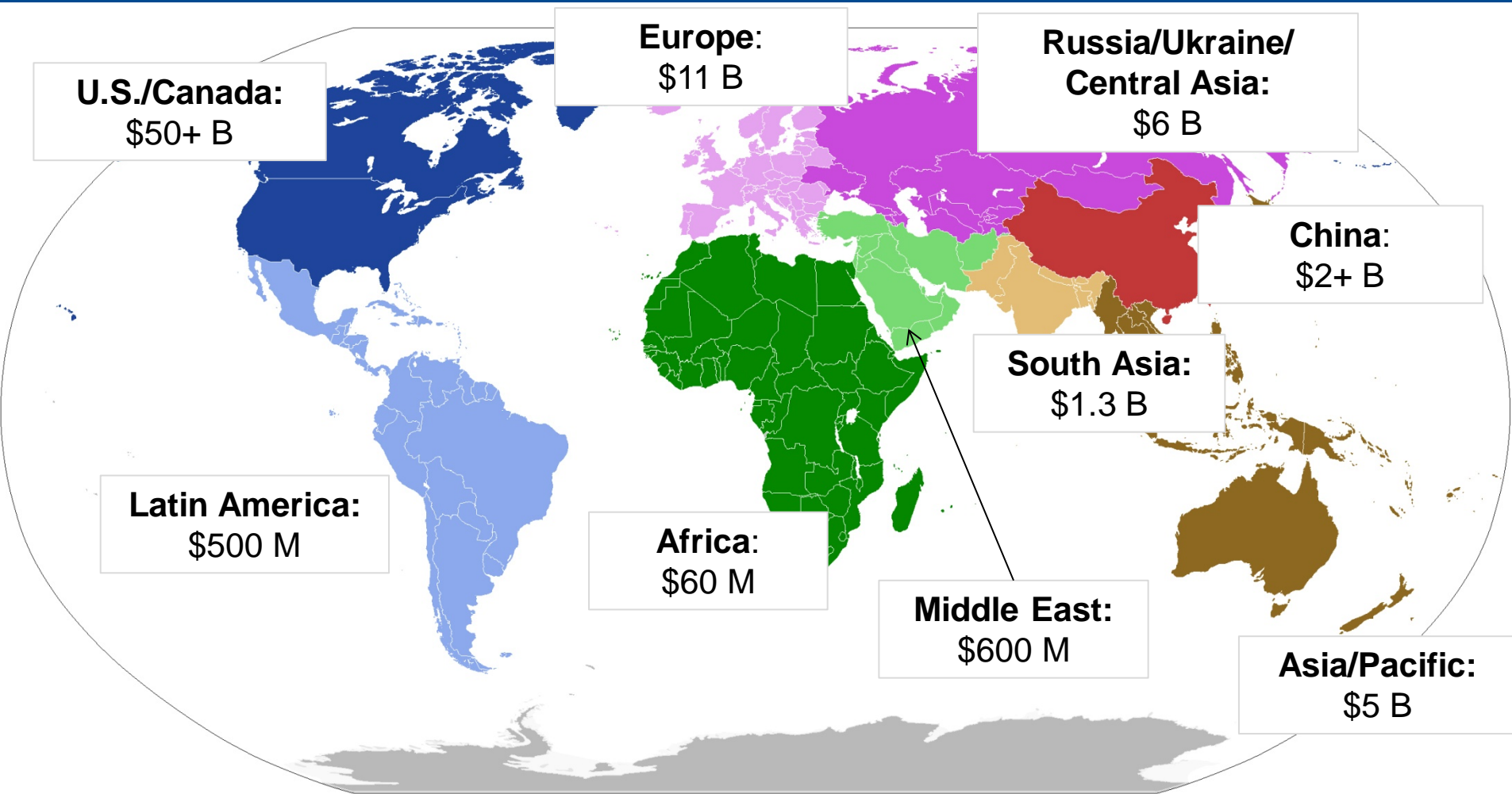
# Summary



# Summary



# Summary



# Thank you!

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# BACKUP



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# Summary

**U.S./Canada:**  
Single dominant nation.  
Massive government budgets, with future budget uncertainty

**Europe:**  
. Regional strategy, national specialization.  
Substantial government budgets, high fiscal uncertainty

**Russia/Ukraine/Central Asia:**  
Single dominant nation. Seeking to retain a leadership role in space; funding fluctuations (export reliance)

**China:**  
Key player with ambitious plans

**South Asia:**  
Increasing budgets and plans for future capabilities

**Latin America:**  
Moderate budgets, long-term interest. Regional momentum. Investment focus on Earth observation, telecommunications satellites, and small launch vehicles

**Africa:**  
Small budgets. Focused on developing indigenous space capabilities in remote sensing, communications, and science. Consortium

**Middle East:**  
Growing budgets, focus on infrastructure and human capital development. Complex regional dynamics

**Asia/Pacific:**  
Mix of established key players and new entrants. Single dominant nation, with emerging players increasing spending