Growth, Exports and Regional Economic Evolution

Michael M. Crow and Kyle Whitman
Office of the President
Arizona State University
Per Capita GDP Relative to US Average
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If Arizona matched Colorado’s per capita GDP, the economy of Arizona would be $76.4 billion larger.
Performance of Sectors

1. Admin. support and waste management
2. Retail trade
3. Accommodation and food services
4. Health care
5. Mining
6. Finance and insurance
7. Transportation and warehousing
8. Educational services
9. Wholesale trade
10. Arts and recreation
11. Other services
12. Professional and scientific services
13. Agriculture
14. Manufacturing
15. Information
16. Construction
17. Real Estate
18. Government
19. Management of companies
Exports and Economic Growth

Brings Money In

Exports

Federal Transfers

Tourism

Wages

Purchases

Households

Firms

Takes Money Out

Imports

Federal Taxes

Vacations
Exports per Capita by State, 2011

- Louisiana
- Texas
- Washington

$2,744/person
37th Highest
Growth in Exports Relative to Jan. 2002

United States

Arizona
Composition of Arizona Exports

Mexico

China

Japan

South Korea

Singapore

Thailand

Malaysia

Japan

United Kingdom

Germany

France

Brazil

Canada

Color represents percentage change between 2009-11
Poor performance in overall economic growth and exports is symptomatic of underlying issues:

- History and negative lock-in
- A poorly functioning regional innovation system
Positive and Negative Regional Lock-in

Region A

Region B
Sources of Lock-In

Specific natural resources
Large sunk costs of infrastructure
Economies of scale external to firms
  Presence of specifically trained workers
  Presence of suppliers and collaborators
  Access to externally-produced new knowledge
Local institutions, culture and political inertia
Ties to other regions
Escaping Negative Lock-In

Create new technological paradigm locally

Redeploy core technologies of existing industries to new industries

Infuse to new technologies into existing industries to increase competitiveness

Import new technology or industry from another region
Creating New Technological Paradigms

Arizona’s ability to create, deploy and infuse new technologies is determined by the performance of its regional innovation system.

A regional innovation system (RIS) is set of “interactive knowledge generation and exploitation sub-systems linked to global, national and other regional systems for commercializing new knowledge.”
Regional Innovation System

Knowledge generation and diffusion subsystem
- Public research orgs
- Educational orgs
- Technology mediator orgs, incubators

R&D competencies
Skilled labor
Brokering

Knowledge application and exploitation subsystem
- Customers
- Collaborators
- Clusters
- Industrial firms
- Contractors
- Competitors

Regional policy subsystem
- Policy institutions
- Econ development agencies

Socio-institutional factors

Finance, Subsidies, Innovation Policies

NIS entities
NIS policy instruments
Other RIS
International Organizations
New Tools for Economic Development

We must maintain but move beyond the limited tools of physical infrastructure investment, tax policy and basic research funding.
Strategies to Move Forward

• Upgrade the regional innovation system by improving the performance of individual actors and the increase connections and collaboration between entities.
• Target emerging technologies and industries that do not yet exist
• Aim for sector-level strength rather than product-level competitiveness
• Focus on individuals, both in recruitment and retention
Slide 2: ASU analysis of BEA data.
Slide 3: ASU analysis of BEA data.
Slide 4: ASU analysis of BEA data. Calculation represents 2011 data and is in 2011 dollars.
Slide 5: Data source: BEA
Slide 7: ASU analysis of BEA data. Data presented are location quotients based on industry size as measured by contribution to gross domestic product relative to US.
Slide 8: ASU analysis of BEA data. Data presented are location quotients based on industry size as measured by contribution to gross domestic product relative to US.
Slide 9: ASU analysis of BEA data. Data presented are location quotients based on industry size as measured by contribution to gross domestic product relative to US.
Slide 11: Source: U.S. Census Bureau: Foreign Trade Division USA Trade ® Online
Slide 12: Source: U.S. Census Bureau: Foreign Trade Division USA Trade ® Online
Slide 13: ASU analysis U.S. Census Bureau, Foreign Trade Division data
Slide 14: Source: U.S. Census Bureau: Foreign Trade Division USA Trade ® Online and US Census Bureau: Population Estimates Program
Slide 15: ASU analysis U.S. Census Bureau, Foreign Trade Division data
Slide 16: ASU analysis U.S. Census Bureau, Foreign Trade Division data
Slide 17: ASU analysis U.S. Census Bureau, Foreign Trade Division data.
Color represents change in export value from 2009-2011.
Slide 18: ASU analysis U.S. Census Bureau, Foreign Trade Division and BEA data.