

# GLOBAL INFRASTRUCTURE MARKET AND US-KOREA STRATEGIC PARTNERSHIP

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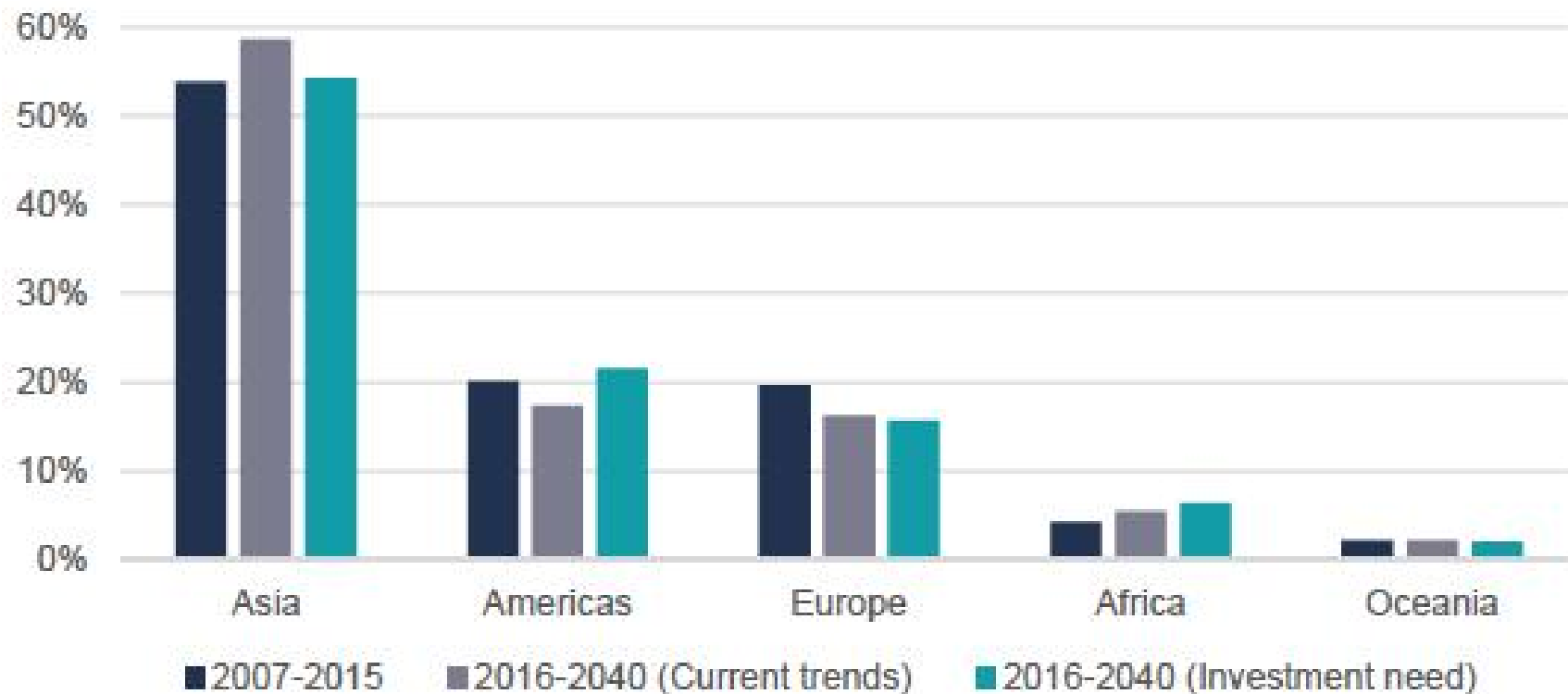
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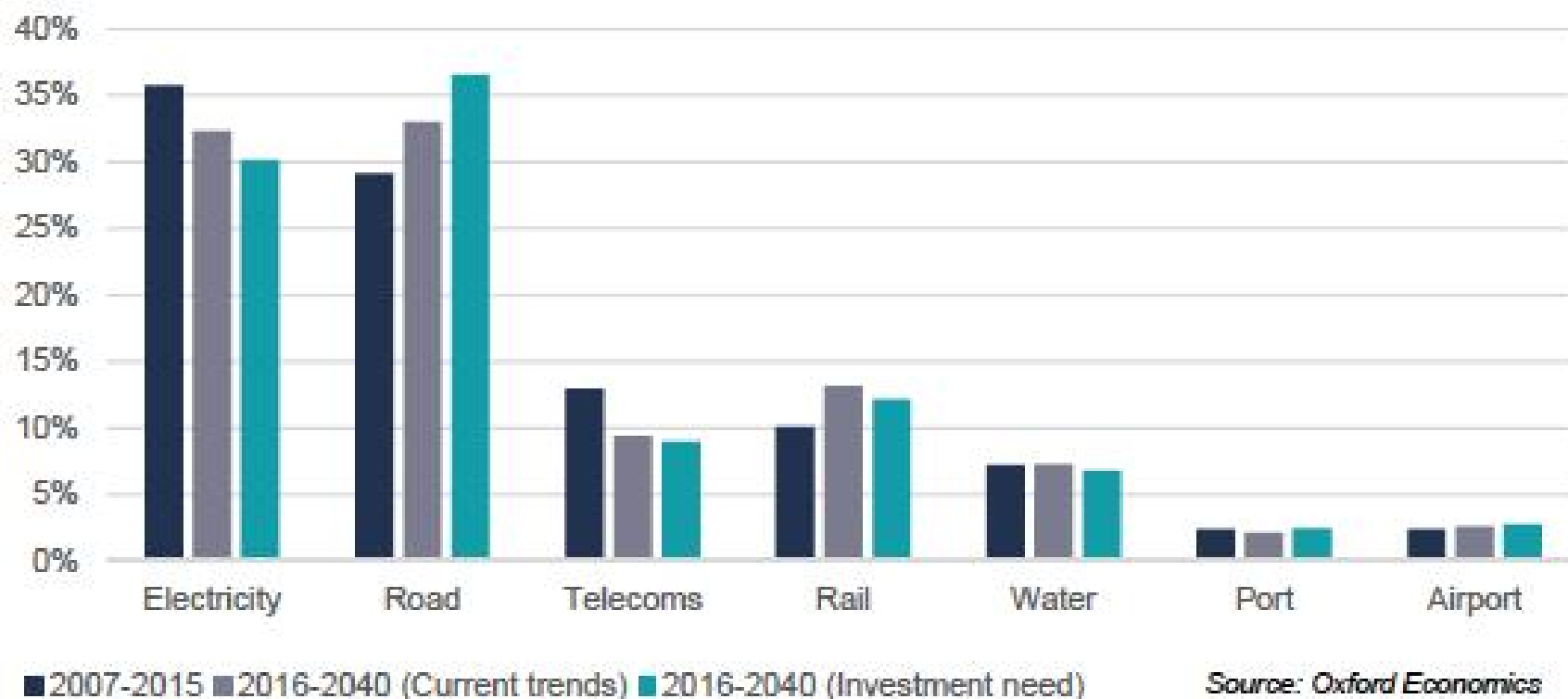
September 3, 2019

# GLOBAL INFRASTRUCTURE OUTLOOK

# Regional Share of Global Infrastructure Investment (2007-2040)



# Sector Share of Global Infrastructure Investment (2007-2040)



# Summary of Global Investment Needs (2016-2040)

% OF GDP	CURRENT TRENDS (CT)	INVESTMENT NEED (IN)	GAP (IN - CT)
ROAD	1.0%	1.3%	0.3%
ELECTRICITY	1.0%	1.1%	0.1%
RAIL	0.4%	0.4%	0.0%
TELECOMS	0.3%	0.3%	0.0%
WATER	0.2%	0.2%	0.0%
AIRPORTS	0.1%	0.1%	0.0%
PORTS	0.1%	0.1%	0.0%
ASIA	4.0%	4.4%	0.4%
AMERICAS	1.7%	2.5%	0.8%
EUROPE	2.3%	2.6%	0.4%
AFRICA	4.3%	5.9%	1.7%
OCEANIA	3.5%	3.8%	0.4%
WORLD	3.0%	3.5%	0.6%

# Infrastructure as an alternative investment asset

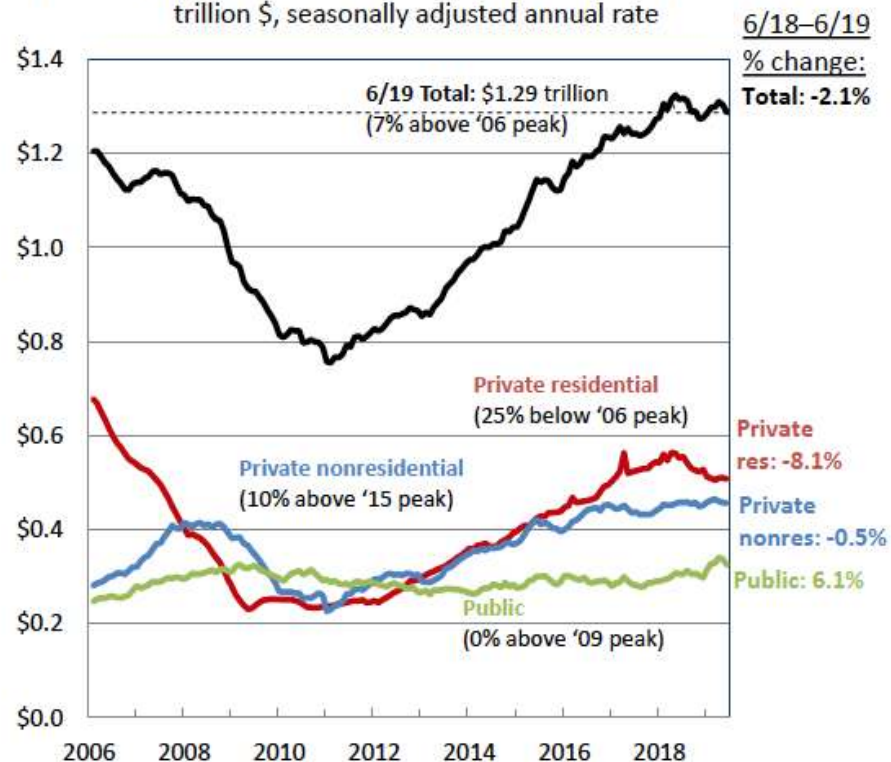
- Financial Investment to infrastructure.
  - Infrastructure is becoming a recognized investment asset class globally.
- Despite the economic uncertainties, interest in capital for investment in infrastructure projects continue to grow.
- More institutional investors flocking to high-quality projects in a persistent high-dollar environment.

# US CONSTRUCTION OUTLOOK (SIMONSON 2019)

# US Construction Spending and Employment 2016-2019

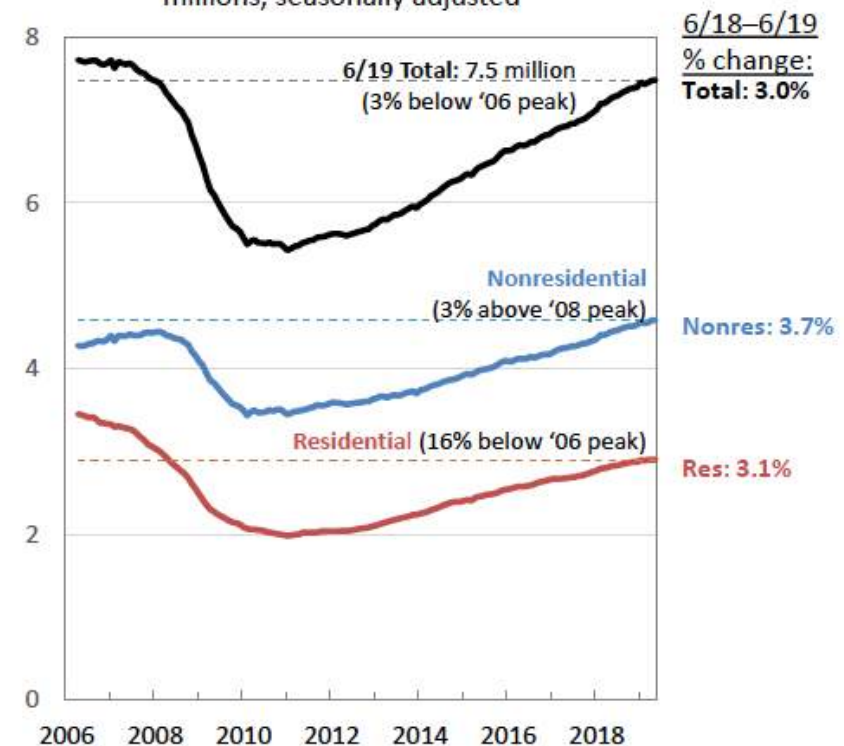
Spending put in place, Feb. '06 (prior peak)–June '19

trillion \$, seasonally adjusted annual rate



Employment, April '06 (peak)–June '19

millions, seasonally adjusted





# Overall US Construction Economy

- The U.S. economy is still expanding but more slowly
  - Consumer, business confidence, stocks are close to or at peak levels
  - Latest data are weak for single-family housing; mixed for apts., manufacturing
  - Concerns about trade, slowing global growth have added to recession risk
- Contractors remain busy and confident
  - Construction employment is growing in most states and spending is up in most project categories

# Concerns of US Construction Economy

- Impact of trade policies on materials costs and on demand for construction
- Ongoing labor shortage, worsened by hostile immigration policy
- If interest rates rise, may cut demand for income-producing projects, new homes

# Public Works: Roads, Transportation, Sewer/Water

- Any federal infrastructure funding increase won't occur until 2020 or later
  - State highway funding and toll projects are increasing
- Many new and ongoing public and private airport projects
  - Selective increases in transit construction
- Water & sewer/wastewater spending are approaching record levels after large drop in 2016-17

# Power & Energy, Manufacturing, Amusement, Communication

- Solar, wind power are growing
- Oil & natural gas pipelines have hit court & regulatory delays
  - New drilling is down as oil, gas prices fall
- Manufacturing construction is benefitting from energy projects
  - Tariffs, foreign retaliation, slowing global economy are major concerns
- Amusement & recreation spending is irregular; a few big stadiums
  - Funding for local, state, federal parks keeps eroding
- Communication may revive as wireless firms build out 5G networks

## Education and Healthcare

- Rising house & commercial property values are supporting school district tax receipts & bond issues for preK-12 projects
- Rising stock prices help private school & college capital campaigns
- Health care spending is shifting from hospitals to standalone special-care facilities (urgent care, surgery, rehab, hospices) and doctors' offices

# Developer Financed Projects: Retail, Warehouse, Office, Hotel, Data Centers

- Retail now tied to mixed-use buildings & renovations, not standalone structures
- Warehouse growth is still benefiting from e-commerce; more local than huge regional distribution centers likely in future
- Office employment is still rising but space per worker is shrinking
  - more urban & renovation work than suburban office parks
- Hotel pipeline is still large but sector is very interest-rate sensitive
- Data centers remain a strong niche but no data available on how strong

# Emerging Trends/Outlooks in Infrastructure Development

- Larger public sector engagement
- Data analytics for efficiency
- Complexity and challenges in Mega projects
- Opportunities in the emerging markets
- Sustainability effort continues
- Adaptation of new technologies
- Focus on Customer/End User
- Interdependency among infrastructure

# KOREA-US STRATEGIC PARTNERSHIP



# Lessons Learned from Others: Business-driven vs. Technology- oriented

- Business driven: European
  - Civil Infrastructures, Building Construction
  - ACS, Vinci, Strabag, Skanska
- Technology oriented: Japanese, European, USA
  - Industrial, Process Plants, Hi-Tech Construction
  - Bechtel, Fluor, Tecnicas Reunidas, JGC

# Business-Driven Strategy

- Sustain Competitive Advantage through Diversification
  - Vertical Integration, Operations and Maintenance, Emerging Market
- Organization Re-structuring
  - By regions and by specialties
- Maximize revenue through Public-Private Partnership
- Merger and Acquisitions
  - Difficult to implement and high risk strategy; Focus on Specialty E/C
- Enterprise Risk Management
  - Feasibility, Profitability, Risks, Opportunities

# Technology-oriented Strategy

- Project Management, Engineering, Procurement
  - Engineering, Project Management Consulting
  - Front End Engineering Design (FEED)
- Long Term Strategic Alliance with owners
  - Oil and Gas sector
  - Operations and Maintenance
- Diversification and Localization
  - Long Term: 40-50 years
  - Obayashi, Kajima in the United States

# Future Strategy for Korean Companies

- Financial Investments
  - Money talks!!
- Operations and Maintenance
  - Aging Infrastructure in advanced countries
  - Opportunities in developed and developing countries
- Smart Cities
  - Integration of Hi-tech, IT, and Construction
- Healthcare, Geriatric Facility
  - Integration of preventive and integrative healthcare and hi-tech building

# Questions or Comments? Thank you!

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## Journal of Management in Engineering

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School of Business  
Department of Decision Sciences  
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