

The Economically Efficient Composition of Rural Infrastructure Investment

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By its very genesis, the USDA was identified with the encouragement of innovative activity and with the implicit recognition that private-sector investment alone would not suffice to achieve optimal innovation in the agricultural sector.

BRIAN D. WRIGHT, 2012

OUR MISSION INVOLVES FOUR QUESTIONS

- 1** Why is public-sector investment in rural Infrastructure good public policy?
- 2** How much should the public-sector spend on rural infrastructure and for what?
- 3** Going forward, how does this public-sector role differ from what we have done in the past?
- 4** Implications, Lessons Learned and Next Steps

Economists Prefer Markets. . . But. . .





CONDITIONS MUST BE MET

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CONDITIONS MUST BE MET

- 1** All costs and benefits from a transaction must be borne by and accrue to the transaction's participants.
- 2** The good or service must be "excludable". That is, a would-be seller must be able to exclude would-consumers who are unwilling to pay the seller's price.
- 3** The production technology must be such that two or more sellers can satisfy the market, while incurring costs that are just as low as a single seller would incur to satisfy the same market demand.*
- 4** Both sides of a transaction must have (or be able to get) the same information about the good or service for roughly the same information cost.

TYPICAL TYPES OF MARKET “FAILURES”

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Externalities - costs or benefits from a transaction borne by people who are neither buyer nor seller.
- 
Public Goods - exist when a would-be seller is unable to exclude would-consumers from consumption. It makes non-zero prices impossible.
- 
Natural Monopoly - exists when a single seller can satisfy the market demand at a unit cost that is lower than the unit costs incurred by two or more sellers producing the same level of market output. This ignores contestable markets.
- 
Informational Asymmetries - exist when one side of a transaction can acquire important information at costs that are significantly lower than information costs for the other side of the transaction.

TWO ADDITIONAL CONSIDERATIONS

- 1** **NETWORK Externalities** - A network externality exists when existing network users gain a benefit (or incurs a cost) because of incremental user's decision to join (or withdraw from) the network.
- 2** **Unnatural Monopolies** - Natural monopolies are largely a function of production technologies. Acquiring and exercising monopoly power is also possible in markets that would, otherwise, sustain effective competition. Mostly, we prohibit this through antitrust laws, but there are cases where we actually sanction monopoly by extending intellectual property rights.

REMEDIES AND TOOLS

- 1** The idea is to manipulate or influence the market to generate outcomes that look and feel like what a less flawed, freely functioning market would produce.
- 2** Remedies can only be imposed by jurisdictions with the authority to compel or prohibit specific behaviors.
- 3** The following tools can be used individually or in various inventive combinations.
 - **Taxes**
 - **Prohibitions and Fines**
 - **Public Investment**
 - **Public Operations**
 - **Subsidies**
 - **Economic Regulations**
 - **Secondary Market Creation**

APPLICATION TO RURAL INFRASTRUCTURE

Secretary Perdue's Prepared Opening Statement on Rural Infrastructure

(WASHINGTON, D.C., March 14, 2018) — U.S. Secretary of Agriculture Sonny Perdue will testify before the [Senate Committee on Commerce, Science, and Transportation](#) at 10:00 a.m. ET today. **These are the Secretary's remarks submitted to the record. They are embargoed until the conclusion of the hearing.**

Statement
Release No. 0056.18

Contact: USDA Press
Email: press@oc.usda.gov

The Promise of Rural America

Good Morning Chairman Thune, Ranking Member Nelson, and distinguished Members of the U.S. Senate Committee on Commerce, Science, & Transportation. It is an honor to be with you today. I thank you for the opportunity to appear before you to provide comments on the rural component of the President's Rebuilding Infrastructure in America proposal.

Throughout his campaign and since he has been in office, the President has made rural American infrastructure a priority – for our economic growth and job creation. I will share his vision because if we're going to "Do Right and Feed Everyone," we need to connect cash crops to markets, milk from the dairy farms to processors, timber to lumber mills, clean water to rural households, roads to schools, and teachers to students, and patients to doctors.

With such investments in rural infrastructure, we will create jobs and unleash the full potential of the U.S. economy. Infrastructure is the key to economic success for more than two centuries. If we are to continue to prosper, rural infrastructure needs attention. Our Nation's productivity, prosperity, and hope depend on it.



March 14, 2018

THE INFRASTRUCTURES

- Highways and Highway Bridges
- Freight Railroads
- Navigable Waterways
- Airports
- Water Supply and Wastewater Treatment
- Electric Utilities
- Telecommunications (with an Emphasis on Broadband)

HIGHWAYS AND HIGHWAY BRIDGES

<p>Market Imperfection(s):</p>	<p>Public Goods, with some few facilities, instead, constituting natural monopolies</p>
<p>Traditional Policy Treatment:</p>	<p>Primarily State Construction and Design, that relies on Federal and State Funds Derived through Excise Taxes on Motor Fuels</p>
<p>Forward-Looking Issues:</p>	<p>Alternative Tax Base, Vehicle Automation, Further Impacts of Information Technology on Commercial and Residential Patterns, Truck Size & Weight Issues, Resource Extraction</p>



FREIGHT RAILROADS (CLASS I AND SHORT-LINE)

Market Imperfection(s):	Natural Monopoly*
Traditional Policy Treatment:	Primarily Federal Economic Regulation of Privately Supplied Infrastructure and Operations, Little Public-Sector Investment
Forward-Looking Issues:	Reduced Reliance on Steam Coal, Automated Vehicles, Long-Range Trade Policies, Increased Role of Short-Line Railroads

*In some, but nearly all rail-served markets



INLAND NAVIGABLE WATERWAYS

Market Imperfection(s):	Natural Monopoly, Multipurpose Public Good*
Traditional Policy Treatment:	Federal Infrastructure Construction and Ownership through Combined Federal-User Funding, Federal O&M, Private Commercial and Recreational Users
Forward-Looking Issues:	Infrastructure Age and Reliability, Replacement Costs and Inadequate Funding, Stagnant or declining (coal) traffic, Significant Ag Dependence

*The same infrastructures also support flood control, irrigation, hydroelectric generation, municipal water supply, and recreation.



(GENERAL) AVIATION

Market Imperfection(s):	Network Externality
Traditional Policy Treatment:	FAA-Governed Federal Subsidies of GA Airport Infrastructure Construction and Improvements (Runways, Taxiways, Towers, Nav Aids.)
Forward-Looking Issues:	Potential Privatization of Air Traffic Control, Reduced Subsidies, Substitution of UAVs for manned aircraft



WATER SUPPLY AND WASTEWATER TREATMENT

Market Imperfection(s):	Public Good that Generates External Benefits
Traditional Policy Treatment:	Heavy Federal and State-Level Subsidies, Public Ownership, Environmental Management / Restrictions, Planning, Local Municipal Delivery
Forward-Looking Issues:	Declining Rural Populations and Local Inability to Fund Aging Delivery/Collection Systems that number in the tens of thousands



BROADBAND TELECOMMUNICATIONS

Market Imperfection(s):	Network Externalities, Nascent Competition
Traditional Policy Treatment:	Mixed Public-Sector and Private-Sector Investment, Emerging Regulatory Standards,
Forward-Looking Issues:	Rapidly Unfolding New Technologies and Applications, An Impatient Market Place, and What Is Probably an Unsustainable Mix of Public and Private Roles that, Eventually, Must Be Sorted Out



STUDY CONCLUSIONS (SO FAR)

- 1** Market interactions and private investment guide most economic outcomes. Still, market imperfections create situations where these outcomes can be improved by public-sector intervention.
- 2** Improved efficiency through rural public-sector investment is **important to all Americans**. It is not just a rural issue.
- 3** Rapidly changing technologies are altering both the nature and magnitude of efficient public-sector investments. Simply replicating the past is not the best policy.
- 4** Resources are limited and needs are not. Developing the best possible tools for evaluating competing investment alternatives is important.



Coahoma County, Mississippi
Former Intersection of U.S. 61 and U.S. 49

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