

# **How Railroads Affected America, India, and International Trade**

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# Trade Talks Episode 36: The Railroads Episode: America, India, and Intranational Trade

What was this episode all about?

To summarize, this episode of Trade Talks discusses the impact that railroad development, in the US and India in particular, impacted the economy, trade, market access, and overall quality of life.

Dave Donaldson, from MIT, spoke on many factors derived from the implementation of railroads that have changed the way our countries work with one another, as well as in the inner workings within them as well.

# Railroads impact on the United States

- In the 1850s, America began heavily investing in railroad development, mostly through private investment
- This development began in the northeast, but quickly spread throughout the west and southwest regions of the US
- In the 1890s, the US railway networks tripled, and now the average person had efficient access to a railroad line
- Once the railroad networks started to expand, so did trade
- Easier to move from point A to point B = easier to trade across regions
- This led to increased trade flows, and thus the effects of trade began to take over
- Certain regions began specializing, and goods moved from their place of origin to places across the country that could not produce them
- Once trade began to boom, economic flow also improved
- This increased the peoples market access
- **So, in the US:**
  - Human mobilization increased
  - Trade flow increased
  - Trade costs decreased
  - Market access improved
  - Transport cost distance decreased

# Railroads impact on India

- According to information from the academic work titled, “*Railways in Colonial India: An Economic Achievement?*” by Dan Bogart and Latika Chaudhary
- From the 1870s to 1930s, India built over 60,000 km of railroad networks
- India is a poster child for an economy that was transformed by railroads
- Before the development of railroad networks, India did not have an efficient way to transport goods
- At this time, the focus was not on private investment either, the Indian government had the final say on the location of each railroad line that was implemented in the country
- The railroad networks improved India’s connectedness, and therefore also improved their economy
- Similar effects from railroads in the US
- Trade costs decreased
- Specialization occurred
- Efficiency of mobility increased
- Elasticity increased
- Trade flow goes up

# Market Access

- According to The Quarterly Journal of Economics, *RAILROADS AND AMERICAN ECONOMIC GROWTH: A “MARKET ACCESS” APPROACH* by Dave Donaldson and Richard Hornbeck
- “We measure countries’ market access by constructing a network database of railroads and waterways and calculating lowest-cost county-to-county freight routes” (Donaldson, Hornbeck, 3)
- By measuring market access, we are able to distinguish a more numerical impact from these railroad systems, which proved that the railroads accomplished many things for the economy and trade systems
- “Our analysis anticipates substantial declines in consumer welfare and total population in the absence of the railroads. Our estimates neglect further potential impacts on other sectors and technological growth, yet we hope our ability to measure and analyze impacts of “market access” will spur further research on the aggregate impacts of railroads throughout the U.S. economy.” (Donaldson, Hornbeck, 5)



**International Trade**

**Creation of New  
Markets**

**Economic  
Integration**

**Market Access**

# Specialization

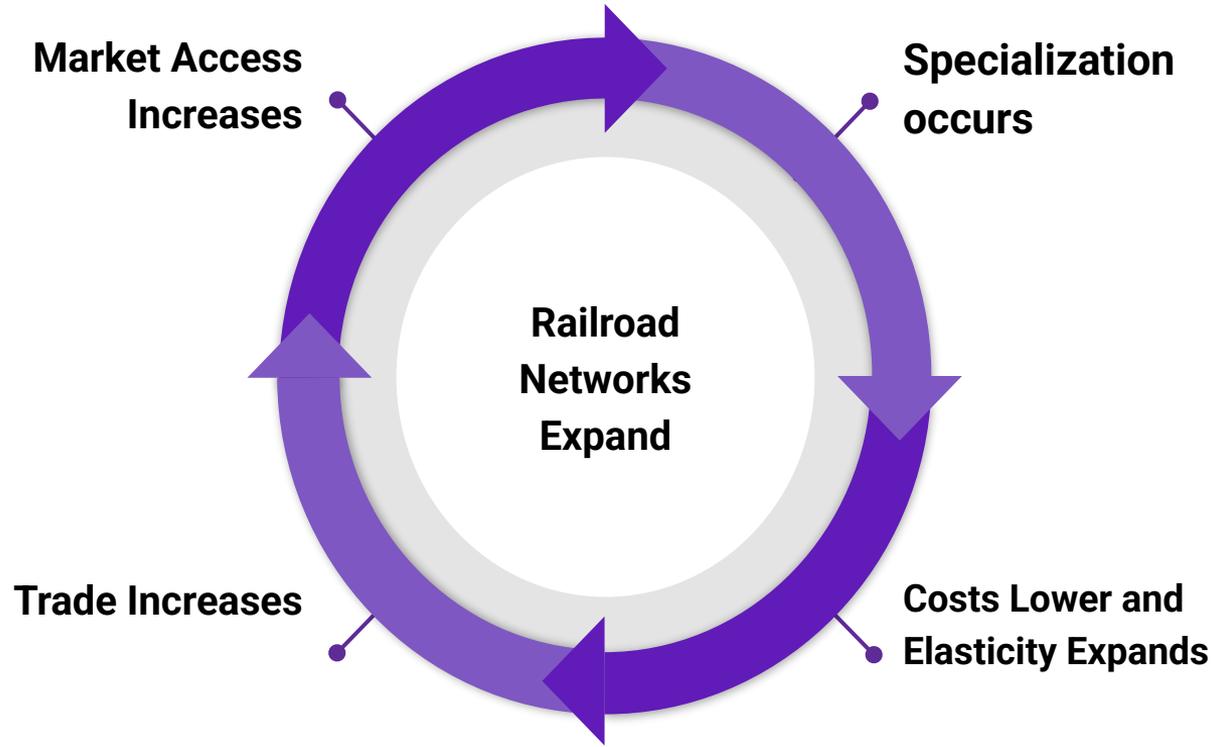
- With the increase of market access and the ability for goods and services to be easily moved from one place to another, the rise of specialization began.
- Now, if Farmer A on the south side of the country grew an abundance of oranges, and Farmer B on the north side of the country grew an abundance of apples, Farmer A could focus on his orange growth, and Farmer B could focus on his apple growth.
- The railroads now made it possible for apples to be shipped efficiently to the south, and oranges to the north, therefore allowing each respective farmer to specialize in their product.

# Costs

- The emergence of railroads **significantly** lowered costs
- Instead of an inefficient, expensive route for goods to be transported far distances, railroads now allowed for a quick and effective way for things to move across miles and miles of land.
- With costs of transportation being lowered, and now the ability to specialize in goods, the costs of the actual goods lowered in turn
- Now, production, transportation, and price have all lowered with the rise of railroads and networks expanding quickly

# Trade Elasticity

- Railroads also allowed for more trade elasticity
- With easier access to new markets, specialization, and lower costs, the elasticity of trade grew as well
- With the ability to trade and receive goods from new areas, rather than your local vendors, consumers were much more likely to pick and choose what options they were buying, and at what cost.
- At a point before railroads, a person may have paid \$2.50 for a gallon of milk. Now, Farmer C is importing his milk to your area and charging \$2.00. This person will now choose to buy Farmer C's milk, causing the elasticity of trade to expand and people to have more say in how much they are willing to pay for certain things.



# Benefits from Railroads

- According to “What If Railroads Didn’t Change the World?” by C Hoyt Bleakley
- As mentioned before, railroads increased market access, trade, specialization, and economic integration
- Railroads also decreased costs, including transportation costs, production costs, cost of final goods, and also the cost of trade over long distances
- According to ‘Freight Rail’s Positive Impact on America’ by the Association of American Railroads, railroads also:
  - Increased investment and spending
  - Optimized fuel efficiency
  - Increased job opportunities
  - Connecting supply chains

# Negatives from Railroads

- According to 'The Transcontinental Railroad's Dark Costs: Exploited Labor, Stolen Lands' by Lakshmi Gandhi, negatives from railroads include:
- Minority groups were taken advantage of, being forced to do intense labor for little to no compensation
- Working conditions were dangerous and many people were injured or killed
- Railroad expansion devastated animal herds and overtook many Native American tribes and homes
- Deforestation and development

# My Opinion

I think that railroads are very obviously an overall good addition to society and have benefitted the United States, India, and most other countries. Despite the unfortunate impacts that railroads made in their beginning years through the deforestation and development, as well as abuse and unfair treatment of workers, I do not think we would be where we are economically today without them. Railroads paved the way for modern transportation and international trade. Jobs upon jobs were created, and the ability to go from one place to another exponentially increased. Railroads were a trailblazer for modern transportation and trade and I think were an incomparable addition to our world.

# Interaction with another contemporary trade issue:

## **Railroads and Climate Change:**

According to GoRail's article titled 'Five Things to Know: *What Railroads Are Doing About Climate Change* by Betsy Cantwell:

- Railroads account for 40% of long distance travel but only 1.7% of greenhouse gas emissions
- Railroad companies are investing heavily in sustainable technology
- Every North American Railroad is in line with a target approved by the Science Based Target Initiative which focuses on aligning their operations with modern climate science
- Freight networks invested 23 billion dollars per year on ensuring their networks stay connected and battle against any natural issues like wildfires, floods, storms, etc
- “If 10% of the freight shipped by large trucks shifted to rail, GHG emissions would fall by more than 20 million tons annually” (Cantwell, 2024)

# What are the potential long-term impacts?

The future long-term impacts of railroads could still change economies, societies, and international trade. According to National Geographic's "Effects of Transportation on the Economy":

- Economically, railroads might boost industries by making it easier and cheaper to move goods, especially with new technologies like high-speed and automated trains. This could open up new business opportunities, especially in remote areas, and help create industries focused on green energy and sustainable transport.
- In global trade, better rail connections could lower shipping costs even more, speeding up international trade and allowing countries to focus on what they produce best. Future rail networks could make global supply chains faster and more reliable.
- Socially, expanded rail systems could encourage more people to move to cities or different countries for work, and make it easier to access education and healthcare. But it could also lead to environmental problems or the displacement of communities in some areas.

# How do cultural or political factors influence the trade policies related to the issue you presented?

## Politically:

- Expanding rail networks across borders could lead to political tensions or disputes over land use
- Railways may pass through disputed or sensitive territories, causing issues between the arguing parties
- The expansion of railroads may give governments too much control over regions and people
- Private investment may give firms too much control as well and they may take advantage of power
- Countries may have an easier time allying with the ability to travel between themselves via railways

## Culturally:

- For both countries, cultural factors impacted the railway network expansion through the integration of people.
- With the ability to connect lands that were never connected before, people can bring their culture to new places, and slowly change the norms in that society
- Music, literature, food etc can now be brought and exchanged in new places as well
- National identity also may change as people can move easier to new places

# What are some potential unintended consequences of railroad expansion?

Information from PBS' "The Impact of the Transcontinental Railroad"

- **Damage to the environment**
  - Deforestation
  - Pollution
  - Property damage
- **Displacement**
  - Destruction of homes or neighborhoods
  - Ability to overpopulate due to the ease of being able to move from place to place
- **Financial Inequality**
  - Regions may be forgotten if not connected to a major railway
  - Jobs may be lost if technology advances
- **Security Risk**
  - Railways could become targets during times of distress

# What evidence or data did you find most compelling in your presentation, and how did it impact your analysis of the relevant articles you presented?

The most compelling argument that I discovered throughout researching the expansion of railway systems was the fact that they are not as harmful to the environment as other modes of transportation. In fact, learning that railroads were actually sustainable options and worked against negative environmental impacts was a complete shock to me. To learn that they are both environmentally conscious but also the driver for intranational trade and integration across regions pushed me more towards an appreciation for railroad systems than ever.

