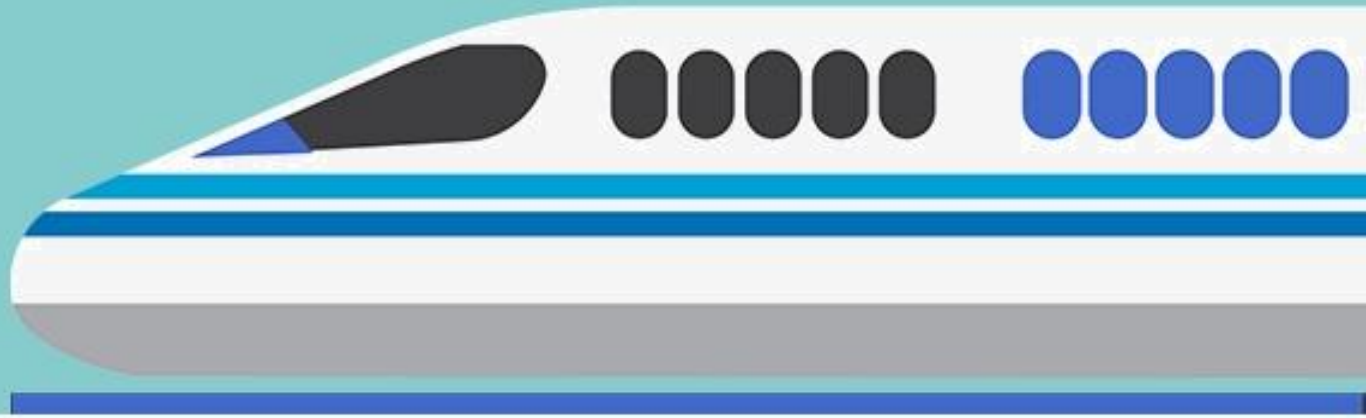
September/October (Septober) Topic Analysis - 2022

Resolved: The United States federal government should substantially increase its investment in high-speed rail



Other Nations

Japan:
- Has had zero passenger fatalities/derailments
- Typically, Japan's riders have upgraded from from train to train – not from car to train

China:
- Has ⅔ of earth HSR
- HSR was in all major cities by 2008
- China is still investing; investment is projected to double
- Also investing in maglev technology

Europe:
- Europe has quite a few medium-speed (technically not HSR)
  - These rails were funded by EU

Comparatively, the US:
- Has less population density
- Limited train culture (most people use automobiles)
- Many infrastructure projects do not get finished (see California HSR, Boston "Big Dig")

U.S. History With High-Speed Rail

- Northeast Corridor: Amtrak (Boston, NYC, Philadelphia, DC) → Only true line in America (though some sources indicate that even this does not qualify as high-speed rail).
- California: approved in 2008, but cost overruns and many delays.
- Texas: private construction was planned, but the company dealt with eminent domain issues and funding problems. The rail was never built.
- Florida: a “High Speed Corridor” was planned, then cancelled.

In other words, the U.S. is notoriously bad at infrastructure...

PRO

Climate Change

- Worldometer '21 → "The United States ranks **1st** in the world for oil consumption, accounting for about **20.3%** of the world's total consumption of 97,103,871 barrels per day."
- Transportation (automobiles) are a significant portion of oil consumption and emissions from oil.
- Post high-speed rail, there is less highway use in China

- Link – high-speed rail replaces automobile usage
  - PR Newswire '21 → "According to a 2015 survey released by the American Public Transportation Association (APTA), if high-speed rail were available today, two-thirds (63 percent) of Americans are likely to use high-speed trains and this jumps to nearly seventy (67) percent when respondents were informed of the costs and time saving benefits of high-speed rail service."
- Link – high-speed rail will likely be funded by renewables, as others have been
  - Frischmann → "HSR is powered by electricity. Compared with driving, flying, or riding conventional rail, it is the fastest way to travel between two points that are a few hundred miles apart and reduces carbon emissions up to 90 percent. Over time, its energy source is likely to get cleaner as renewables generate a greater share of electricity."

Reducing Oil Dependency

- High-speed rail switches energy away from oil
  - GRR (Global Railway Review) '21 → "The USHSR state that there is no more powerful tool to decarbonise the transportation sector than world-class high-speed rail, and outlines: High-speed rail is all-electric and can be powered by clean, renewable energy"
- Less oil dependency on major oil exporters
  - Lessen the impact of oil shocks:
    - Oil shocks potential caused by international conflict
    - With oil dependency, other nations can instantly snowball the US into recession – goes global
    - Oil dependency has caused the US to intervene in and destabilize places like Latin America, Middle East, etc.
  - U.S. Department of Energy → "However, most of the world's oil reserves are still concentrated in the Middle East, and about 71% are controlled by Organization of the Petroleum Exporting Countries (OPEC) members. This gives OPEC considerable influence over the oil market. Oil price shocks and price manipulation by OPEC have cost our economy dearly in the past—about $2 trillion from 2004 to 2008"
  - Center for American Progress '10 → "The United States is spending approximately $1 billion a day overseas on oil instead of investing the funds at home, where our economy sorely needs it... Our reliance on oil from these countries could have serious implications for our national security, economy, and environment."

Revitalizing the Steel Industry

- The United States steel industry is currently failing.
- Investment in high-speed rail requires use of steel, thereby revitalizing the industry.
- Potential Impacts →
    - Military Benefits (steel industry is critical in building military equipment)
        - Implications to U.S. hegemony worldwide and hard power
        - Potential implications to regional conflicts in which the U.S. is involved
    - Economic Growth
- U.S Office of Energy Efficiency and Renewable Energy → "The steel industry is critical to the U.S. economy. Steel is the material of choice for many elements of manufacturing, construction, transportation, and various consumer products."

Connectivity / Investment

- The quick transportation of products, materials, equipment, innovation, etc. improves the productivity of an enterprise (be careful, since HSR may negatively affect the productivity of non-urban institutions)
    - Workers commute more quickly (easier for highly skilled workers to commute)
        - American Public Transportation Association → "Congestion on our nation's roads costs $140 billion in lost time and productivity. The U.S. population is projected to grow by another 100 million people in the next 40 years. The population growth is creating mega-regions that will not prosper unless they can be freed from the stranglehold of highway and airport congestion. At the same time, the United States cannot build enough highway capacity or airport runways to meet demand."
- Commerce increases, since trade is easier.
- Government investment yields positive economic benefits.
    - American Public Transportation Association → "Every $1 invested creates $4 in economic benefits. Upgrading passenger operations on newly revitalized tracks, bridges and rights of way is spurring business productivity along corridors. The rail services will connect America's economically vital mega-regions and help keep them mobile, productive, efficient and internationally competitive."
    - HSR investment further spurs investment into the manufacturing industry.
- Improved connectivity may better help mobilize war infrastructure or the materials used to build it, improving U.S. military capabilities.

Job Growth

- High-speed rail investment in California generated jobs.
    - American Public Transportation Association → "Building high-speed rail will create hundreds of thousands of jobs. Every $1 billion in investment creates 24,000 jobs. These are highly skilled jobs that will revitalize the domestic rail industries supplying transportation products and services. Many additional jobs are created through the commerce fostered through the economic activity and development which they spark."
        - An investment of just $50 billion thereby generates over a million jobs.
- Workers (especially in suburban or rural areas) experience improved access to jobs

Urban Wage Growth

- High-quality workers are attracted to urban areas.
  - Commute times are reduced enabling workers to commute further.
  - Intercity linkages improve the accessibility of strategic cities.
  - Local markets expand.
- Yu, Lang, and Li '22 → "Du and Peng (2017) also found that the opening of a high-speed rail attracted more senior-level talent in the development of the city [16]. High-speed rails create convenient intercity linkages that lure high-quality workers."
  - [Be careful, as this card concedes that housing costs go up in the city]
- Improving worker quality raises wages, improving overall economic prosperity.

Magnetic Levitation

- A national U.S. high-speed rail network would likely require magnetic levitation.
  - Operating costs for maglev trains are less than non-maglev trains.
    - Magnetic levitation is far more efficient
  - Magnetic levitation may be required to connect huge metropolitan hubs across the nation.
- Magnetic levitation plays a role in the biomedical industry
  - Abbott → "Maglev has other applications as well — and it has great potential for use in healthcare. In 2010, a group of medical researchers at the University of Texas and Rice University used magnetic levitation to develop three-dimensional tumour models. Researchers injected magnetic iron oxide and gold nanoparticles to cancer cells, added the cells to a Petri dish, then installed a coin-sized magnet on top of the dish. The magnet lifted the cells, and as they grew, suspended in the liquid, they resembled tumour cells. Researchers created models from the cells in the hope that one day they could lead to better cancer treatments.Recognizing the potential for maglev technology, Abbott has made strides of its own in developing a left ventricular assist device for heart failure patients who need haemodynamic support. The LVAD's outcomes are made possible by Full MagLev™ Flow Technology, which improves the blood flow in a pump using full magnetic levitation to reduce the trauma to blood passing through the system. As a result, complications are minimised, improving the patient's quality of life. Maglev undoubtedly has a future in society — and its potential to be applied to healthcare seems limitless."

Housing Costs

- Across the United States, housing in urban areas have become too expensive for the working class. The high population density of cities further magnifies high prices.
- High-speed rail makes housing more accessible.
    - HSR decentralizes cities: workers who can't afford high prices of cities can live further away but keep working in the city.
    - Housing developments would be constructed in less populated areas, which generally have fewer zoning restrictions.
- Harvard International Review '19 → "Turning to the question of population dispersion and home prices, we found that lower-productivity individuals moved further out of dense cities into HSR-served outlying regions, since the Shinkansen lowered commuting costs to exurban areas with more affordable housing. The opposite happened with higher-productivity individuals, who either stayed or moved into the more amenity-rich cities. This increased GDP per capita and decreased population density in those cities. […] [T]he average price of housing in metropolitan areas ended up lower than it would have been absent HSR. […] It is self-evident that HSR increases the convenience of living in outlying suburbs of crowded and expensive cities, making housing more affordable for people working in those cities. As a result, the experience of Japan over the 55-year span of HSR linking cities throughout the country is instructive for policy makers in the United States."

CON

Cost

- High-speed rail costs range, but sources tend to indicate that it is INCREDIBLY expensive.
  - Millsap '21 → "Finally, the cost of HSR is outrageous. Current estimates for California's HSR system come in at $80 billion for 520 miles, or $154 million per mile. Amtrak estimates that it would cost $500 million per mile to turn its Northeast Corridor route into a true high-speed system. At these prices, it would cost at least $1 trillion to build a national HSR system, and likely much more."
  - US construction costs comparatively more than other nations due to bureaucracy, corruption, huge energy use, planning failures, etc.

- This has numerous potential implications.
  - If funded by taxes, it likely would have negative implications on the middle class.
- If financed by debt...
  - Developing markets lose investment as investors flock to more financially secure U.S. bonds.
  - Deficit spending may worsen or prolong inflation.
  - Debt has implications on interest rates.
    - Crowding-out effect: high public-sector spending lowers private-sector spending (often due to a rise in interest rates).

Little Use

Many judges will tend to think instinctively that infrastructure is a positive, so CON teams can frame the argument as follows: is THIS specific investment the best use of funds?

- High-speed rail will likely have incredibly low ridership.
    - Car Dependency – Chik '21 → "The flow of passenger vehicles on highways dropped 18.5 per cent, while that of goods vehicles fell by about 14.5 per cent following high-speed rail connection, analysis of new passenger and freight traffic data from all highways and national roads in China from 2009 to 2016 showed."
        - Is this a lot? Is this enough to trigger the Aff impacts?
        - The source explains that road freight only really decreased because passengers "opted out of slower trains in favour of high-speed rail," allowing road freight to fill conventional trains. Does the U.S. have enough of a "train culture" to see similar results?
    - The U.S. has low population density, so it will be far harder to effectively connect groups of people.
    - Geography – mountains, forests, etc. – may present hurdles in implementation.
    - Shelf Life: climate change will wreak havoc on infrastructure
    - Time/cost delays – it would likely take decades to build a HSR system.

Millsap '21 →"In it, he points out all the things working against a U.S. HSR system—geography, relatively low population density, and greater competition from cars and planes than in other countries. These factors still present issues for HSR. Thompson notes that "HSR does not perform well where population density is low or construction costs are exceptionally high." At 87 people per square mile, America's current population density is low compared to countries with extensive rail systems. According to recent estimates, Japan's population density is 863 per square mile, the U.K.'s is 725, Germany's is 603, Switzerland's is 539, China's is 378, and France's is 319."

Harming the Environment

- HSR cuts through and disrupts natural habitats.
- Diesel emissions cause air pollution.
- HSR threatens endangered species.
    - (This is about HSR in California) Dawid '12 →"Potential threats to endangered species, diesel emissions from construction equipment, and wetland impacts, are a few of the obstacles the High Speed Rail Authority must confront[…] Among the most difficult issues will be air quality, which is regulated across eight counties by the San Joaquin Valley Air Pollution Control District. The district worries that the construction project would exacerbate already problematic levels of nitrogen oxides, particulates and volatile compounds."
- Suburban Sprawl: fragmentation, pollution, etc.
- Joffe '21 →"They also estimated that it would take high-speed rail 71 years of operation at medium occupancy to offset its own construction-related greenhouse-gas emissions. Building high-speed rail systems require steel and concrete, the manufacturing of which typically generates greenhouse gases."
    - Time-frame weighing (we do not have 71 years, as climate change will become irreversible after *x* number of years) could be beneficial

Gentrification

- High-speed rail increases value of city property, pushing out low-skilled industries and workers.
    - You could make the argument that this gentrification is perceptual, and doesn't actually require implementation (it only requires a plan/announcement for property values to be marked up)
    - Lin and Xie '20 → "Industrial gentrification occurs when lower-skill or lower-wage industries are displaced by higher-skill or higher-wage industries caused by various driving forces. This research explored the associations of newly launched high-speed rail (HSR) stations with industrial gentrification. Sample data were obtained from business registration records from 2010 to 2018 for areas surrounding the Hangzhou East Railway Station (a new HSR station in newly developing areas) and Hangzhou Railway Station (a pre-existing rail station in developed areas) in China… Empirical results suggest that the newly launched HSR services have induced industrial gentrification in the developed station area."
- People are priced out, and are forced into homelessness or worse areas.
- If the rail takes a while to be built (and gentrification is perceptual), low-income workers on HSR may be forced out of the area and will leave the project, potentially meaning that the project never is even finished (could short-circuit aff impacts).
- Gentrification has a disproportionate effect on racial minorities and immigrants.
    - This argument could be paired with some type of framing regarding racial minorities, immigrants, etc.

Rural Areas

- Brain Drain: rural areas become underdeveloped if individuals flock to cities.
  - Exacerbates hospital shortages, etc.
  - (This explains the general concept of U.S. brain drain) U.S. Congress Joint Economic Committee →"However, mobility comes with a downside: it may lead to brain drain from certain areas of the country, as the highly-educated leave places that offer lower returns for their skills to move to places that offer greater returns.13 Florida has written extensively about the growing geographic divide along the lines of education that is taking place in the United States as a result of increased clustering of the highly-educated into a handful of major cities.14 This trend, he argues, is creating a "new urban crisis" of class segregation.15 "Winner-take-all cities," such as Los Angeles, New York, San Francisco, Chicago, and Boston, claim a disproportionate share of highly-educated Americans and attract the majority of venture capital investments in the country.16 Americans with less education are often either left behind in stagnant economies or pushed out of expensive, dynamic cities"
  - Be careful, since the brain drain argument is pretty non-unique, and it may be incredibly difficult to prove how much worse HSR makes the problem.
- Businesses become priced out and high-skilled workers become more accessible. As less wealthy businesses suffer, wages for low-income individuals falls.
- High-speed rail may end up cutting through farms, putting rural agriculture at risk.

Interconnectivity

More people coming into contact with each other generates links into a couple of impacts:

- Pandemics: diseases which would have previously been contained in a rural area have avenues to spread to densely-populated urban areas. Rural and suburban areas become more susceptible to diseases in cities.
    - Xu, McCluskey, Cressman '13 → "Inter-regional public transportation systems link all major regions on Earth. These systems make it possible for people to travel around the world and, at the same time, serve as a network through which an epidemic can spread worldwide. As indicated by recent epidemic outbreaks, such as SARS and H1N1, a disease can very quickly spread to distant locations through this network."
- Trafficking: HSRs can be exploited for drug or human trafficking
    - Polaris Project →"Like any business, human trafficking typically depends on transportation systems to operate. Traffickers may recruit victims from bus and train stations and will utilize transportation systems to both bring new victims to their trafficking operations as well as to transport current victims to different places where they will be trafficked and abused."
- Terrorism: high density of citizens in specific areas create terrorist targets

Potential Alternatives

- Freeways: cheaper, more revenue, cut down on deaths and gas use, etc.
  - O'Toole '21 → "But the real transportation gap between China and the United States is not high- speed rail; it is freeways.[…] Safety is an issue because urban freeways are the safest of all roads to drive on, and rural freeways are the safest rural roads.[…] Converting 1,000 miles of urban non- freeway arterials to freeways would save about 70 lives per year, while converting 1,000 miles of rural non- freeway arterials to freeways would save about 30 lives per year. The financial reason to build new freeways is simple: new freeways, if located in the right places and priced properly, can pay for themselves. This is unlike high- speed rail or any passenger rail in the United States, which require both operating and capital subsidies."
- Normal Trains – upgrading a low cost, low-risk gamble.
  - Gordon '21 → "HSR requires a lot more work than just buying faster trains. It needs new tracks and signals and often new routes entirely to both reduce the severity of curves and hills to enable faster speeds and to cut travel distances. […] Fortunately, as great as HSR is, we don't necessarily need it to make rail travel appealing again to many Americans. We just need to work with what we have and make it as good as it can be. The U.S. already has an extensive 140,000-mile functional rail network owned and operated by freight rail companies that is also used by Amtrak. If we're going to have decent U.S. rail service in time to make a meaningful impact on emissions, this is our best shot."
- Private Investment – less politics, fewer delays, better decision-making, etc.

Keep in mind, in order for this argument to hold weight in public forum, you must prove that these alternatives WILL be adopted if substantial investment into HSR does not occur. Just saying "this would be better" will not win you a round; you must prove that the U.S. is already heading in that direction (and that investing in HSR means there is less/no investment into these alternatives).

Feasibility

This argument is fairly defensive in nature, so you'd still need offense to win the round. This serves primarily to prevent aff from accessing impacts.

- A high-speed rail system would never be completed in the U.S. (as evidenced by numerous past failures)
  - Corruption
  - Interest Opposition

(This article goes far more in-depth than this list, but these are some of the topics it covers) Gordon '20, "Why the US Sucks at Building Public Transit" →

- "Everything costs too much
- We build highways instead
- We don't plan well
- People don't trust the government to build things so they vote against projects under the assumption they will be executed poorly and waste taxpayer dollars
- We don't give transit agencies enough money to run good service which erodes political support to have more of it
- There are too many agencies at all levels of government, especially at the local level, and not enough coordination between them
- Our newer cities are sprawled out which makes good transit hard, and our older cities are too paralyzed by political dysfunction to expand the systems they have
- As a result of generations of privatization efforts by all levels of government, in the rare event we do actually get to build stuff there is not enough expertise within the agencies to do it well"