

Infrastructure Investment and the Economic Outlook

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Chairman Manchin, Ranking Member Barrasso, and members of the committee. Thank you for the privilege of appearing today to discuss infrastructure investment and the economic outlook. I hope to make three main points:

- The federal government has a natural role in the provision of infrastructure, and an effective infrastructure strategy can raise trend productivity.
- At present, the economic risks tend toward over-stimulus and inflation. Care should be taken not to exacerbate these risks.
- The design of an infrastructure strategy should reflect the above two considerations and take advantage of the natural role for the private sector in broadband, energy, and other sectors.

Let me discuss these in turn.

The Economics of Infrastructure Investment

The basic economics of public infrastructure are straightforward. Highways, to take a concrete example, can be shared among many drivers and benefits everyone simultaneously. Once it is provided for one trucker or driver, will be available for all. For this reason, conventional private market methods often work poorly in providing the right amount of infrastructure, and the public sector becomes involved.

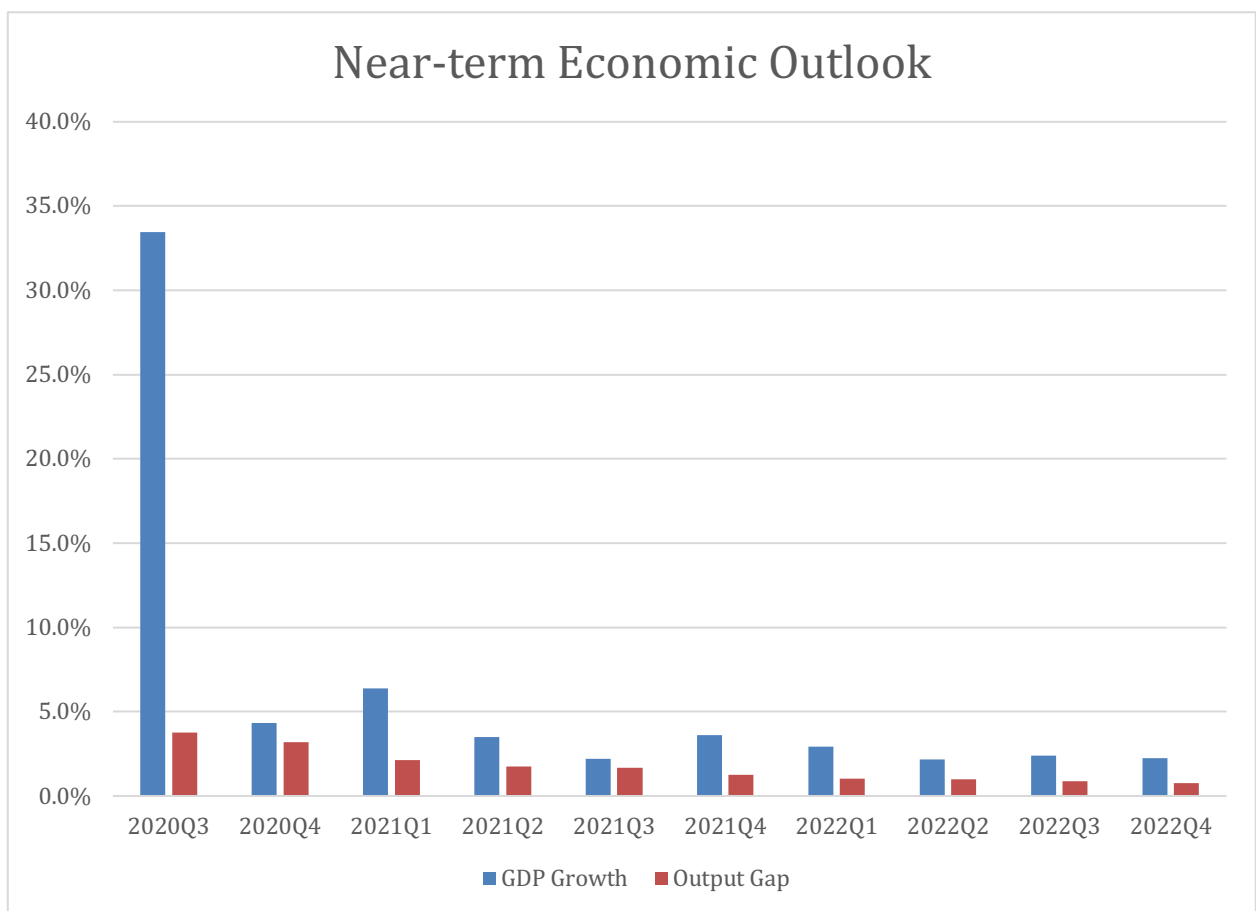
That does not change the fact that the infrastructure is valuable and provides benefits to the population. If a \$100 infrastructure investment provides $\$B$ on average annually in benefits to the population over its lifetime, the social rate of return on investments is $\$B/100$ or b per year.

The resources to make this investment must be drawn from the private sector via taxes or borrowing. This reduces the funds available for private investment by (in the example above) a corresponding \$100, which eliminates a potential investment by the private sector.

If the rate of return on the private sector investment is r , then the economics of infrastructure investment can be reduced to the canonical question: Are the benefits greater than the costs? In this instance, is b bigger than r ? If so, it makes sense for public policy to engender infrastructure investment. In particular, if there are productivity-enhancing infrastructure investments where $b > r$, then the infrastructure will raise the productivity of the overall economy.

The Near-Term Outlook

The broad principle outlined above applies to the long-run, trend growth in the economy. This has hardly been the focus of recent policy discussions. Following the precipitous decline in early 2020, the economy began to recover. The chart, below, reproduces the outlook at the time of the passage of the American Rescue Plan (ARP) in March 2021. It shows recent quarterly growth rates of gross domestic product (GDP) and reproduces the recent [economic projections](#) of the Congressional Budget Office (CBO)¹. The blue bars represent the quarter-by-quarter growth rates of GDP (at an annual rate), while the orange bars measure the “output gap” – the difference between the actual level of GDP and the potential for GDP when economic resources are fully employed – as a percentage of potential GDP.



The chart carries two lessons. The first is that the economy was growing and growing rapidly (over 6 percent in the first quarter) at the time of the passage of the ARP. Clearly, the economy was far from recession territory and certainly not a disaster. As a consequence of that growth, the output gap was expected to fall below 2 percent by the middle of this year and below 1 percent by the end of 2022.

In sharp contrast, the ARP was advertised as much-needed stimulus to reverse the course of the economy and restore growth. As noted above, the economy was not in recession and was expected to grow. Moreover, recall that the “theory” of stimulus is that when the economy is below full employment, government stimulus—tax cuts, checks, spending—will boost spending. This will, in turn, stimulate business activity, which will begin a virtuous cycle of additional income to workers, more spending, and more hiring. Because of the virtuous cycle, \$1 of stimulus is expected to have (much) more than a \$1 impact—the “multiplier effect.”

That’s the theory; it just has nothing to do with the current situation and policy debate. Taking the stimulus theory at face value, the \$1.9 trillion size of the package eclipses the economic need. As noted above, currently, real GDP is below potential GDP with the output gap somewhere in the vicinity of \$450 billion (in 2012 dollars). The \$1.9 trillion proposal is a bit over \$1.6 trillion in 2012 dollars. Thus, the ARP was over three times the size of the output gap that was needed to be closed to get the economy back to potential at the time of its passage.

Based on any reasonable economic theory of stimulus, \$1.9 trillion was far too large. It was an especially egregious policy error given that Congress had just passed \$900 billion in stimulus in December 2020. The result will be overheating that will lead to inflated asset prices, inflated prices for goods and services, and an increased risk of economic turmoil.

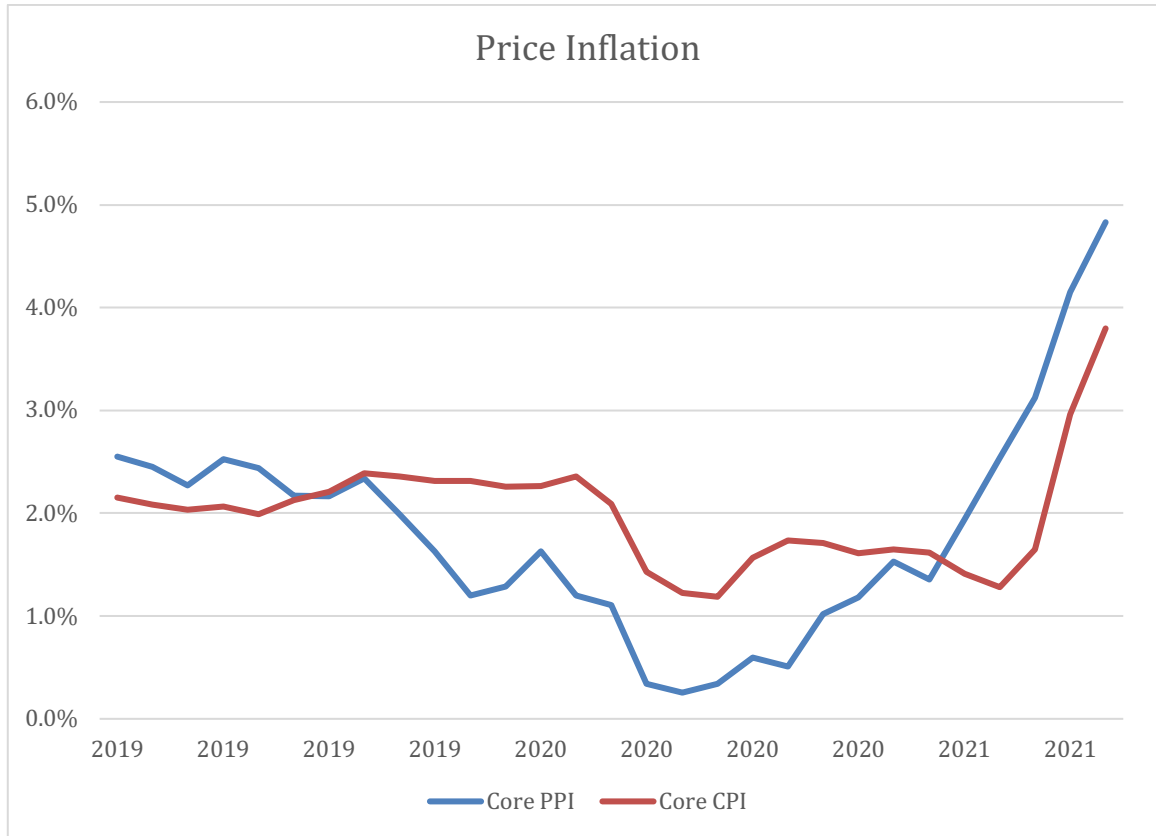
The Inflation Outlook

Due to the unique circumstances of COVID-19, stimulus will enter the economy in stages. Initially, a large amount will be saved as households are unable to make purchases in large swaths of the service sector, especially leisure and hospitality. Thus, the initial impact will be on the prices of assets such as equities, housing, and other savings vehicles. Indeed, the first half of 2021 to date has experienced sharp rises in the stock markets, housing values, commodities, crypto-currencies, and a wide array of asset prices.

These pricing pressures are now showing up in the markets for goods and services. Shown in the chart below are the year-over-year growth rates of the “core” (non-food, non-energy) Producer Price Index and Consumer Price Index (CPI). It is quite clear that since the start of 2021 inflation has been rising and rising sharply.

This raises the question: What next?

I don’t think sustained high inflation is by any means automatic. In the late 1960s policymakers ran the economy very hot – averaging actual GDP 3 percent above potential GDP – for 24 straight quarters, and the result was 15 years of inflation that the Fed ultimately tamed. The ARP is a big mistake, but (thus far) a one-time error. Nevertheless, the data are giving me pause.



In the latest (May) report, year-over-year CPI inflation was 5 percent, the highest in 13 years, while year-over-year core inflation was 3.8 percent, the highest since 1992. Unfortunately, looking over the full years masks the recent, sharp moves in inflation. Core CPI inflation has averaged 6.0 percent in 2021, and much more recently: It rose at an annual rate of 10.4 percent in April and 8.8 percent in May. Things are heating up.

That said, the only way for inflation to become sustained is for wages to start rising as well, producing a wage-price spiral. There is nascent evidence of this as well. Average hourly earnings (for non-supervisory and production) workers averaged 5.5 percent growth in 2020, but rose 9.4 percent and 6.8 percent in April and May, respectively.

So, there are early signs of rising inflation. What would it take to transform it into a lasting phenomenon? Well, for starters, inflation expectations will have to rise, so that people start asking for wage increases in advance to cover anticipated inflation. Expected inflation, as reported in the Michigan consumer sentiment data, has shifted up recently. If this continues, the wage-price spiral can become cemented in the economy.

But the greatest risk is that policymakers continue excessive fiscal stimulus, which would replicate the failure of the late 1960s.

Key Issues in Designing an Infrastructure Strategy

The discussion thus far suggests two important criteria for designing an infrastructure program: focus and timing. Consider first the focus of any program. There are a multitude of potential infrastructure investments, and it is not a matter of some of them being “good” and the others “bad.” For example, the administration’s American Jobs Plan contains \$400 billion for “creating jobs and raising wages and benefits for essential home care workers.”² This will be alluring in some quarters but will not raise overall productivity in the economy. As noted above, the key is to generate better trend growth.³

Similarly, the AJP’s \$328 billion to “Improve Housing Stock, Modernize Schools and Child Care Facilities, and Upgrade VA Hospitals and Federal Buildings” is hardly economy-wide, productivity-enhancing infrastructure. Despite any well-intentioned efforts to the contrary, Congress should focus closely on core, productivity-enhancing infrastructure.

The second issue is the timing of the investment program and the associated pay-fors. As noted above, the greatest risk is for fiscal policy to be too stimulative early in the 10-year budget window. Thus, the investment program should focus the spending in the final eight years. And in designing the budgetary offsets, emphasis should be on making sure the initial years are paid for (or more) to reduce the risk of dangerous overheating.

A final consideration is the role of the private sector. This discussion is about the use of (substantial) taxpayer resources to increase infrastructure investment in the United States. But that does not mean that the federal government should be making direct investments across the economy. For example, the importance of expanding broadband infrastructure to bridge the digital divide has become a clear national priority. The existing evidence is that private-sector internet service providers are far more nimble, innovative, and dynamic than the municipal broadband efforts singled out by the administration, however.

Energy-Sector Infrastructure

As another example of the importance of the private sector, consider energy infrastructure. In 2020, global energy investment declined by about 10 percent due to COVID-19 but is expected to rebound in 2021 to nearly the same levels as 2019, about \$1.9 trillion annually. Global investment in the power sector, in particular, is expected to be \$820 billion in 2021, according to the International Energy Agency’s World Energy Investment 2021 report.⁴ The vast majority of this is undertaken by private-sector entities.

Investment in the deployment of low-carbon technologies has grown over the past two decades as technologies have matured and become more cost effective. According to BloombergNEF, investment in low-carbon energy infrastructure (the development of renewable energy sources, carbon capture and sequestration, and electrified transport, among other facilities) has grown globally from just \$31 billion in 2004 to over \$500 billion in 2020. Despite the impact of COVID-19, there was a 9 percent year-over-year growth in 2020. Investment in the United States, which totaled \$85 billion in 2020, is second only to China.⁵

Government investment in energy infrastructure, in the form of grants and loans, has consistently been significantly smaller than the private sector. The Department of Energy's (DOE) Loans Program Office provides direct loans and loan guarantees to incentivize private investment for innovative energy and advanced vehicle technology manufacturing projects. It has disbursed a total of \$30 billion during the past decade, which resulted in 18 operational projects.⁶ The DOE's grant programs for improved energy efficiency and the reduction of energy waste, administered in cooperation with state, tribal, and local governments, received \$375 million in funding in 2020.⁷ Government programs tend to provide funds to those who would not otherwise receive them, but they do not match the scale of annual private-sector investment in the low-carbon energy transition.

In addition, the private sector supports investment in the companies seen to be innovating in the energy sector. In 2020, market confidence in the energy transition led to a 142 percent increase in the value of clean energy shares while oil shares fell.⁸ Private investment afforded to companies and projects alike in the United States is unmatched. It has efficiently led to the growth of low-carbon technologies on a national scale rather than supporting a handful of projects perceived to be too risky.

Thank you, and I am happy to answer your questions.

Notes

¹ I adjusted the CBO projection because the actual GDP for the fourth quarter of 2020 is below the CBO projection. I raised the growth rates of GDP in the first half of 2021 to reach the projected level in Q3 of 2021.

² <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/>

³ For a review of the literature on the economics of infrastructure investment and financing, see: <https://www.americanactionforum.org/wp-content/uploads/2021/04/Diamond-Zodrow-Macro-Effects-of-Tax-Financed-Government-Investment-04-16-2021-R11.pdf>

⁴ <https://www.iea.org/reports/world-energy-investment-2021>

⁵ <https://assets.bbhub.io/professional/sites/24/Energy-Transition-Investment-Trends-Free-Summary-Jan2021.pdf>

⁶ https://www.energy.gov/sites/default/files/2021-03/DOE-LPO_APSR_FY2020.pdf

⁷ <https://www.energy.gov/eere/wipo/about-weatherization-and-intergovernmental-programs-office>
<https://fas.org/sgp/crs/misc/R40913.pdf>

⁸ <https://assets.bbhub.io/professional/sites/24/Energy-Transition-Investment-Trends-Free-Summary-Jan2021.pdf>