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The Macroeconomic Consequences of the American Jobs Plan

INTRODUCTION

President Biden has unveiled the American Jobs Plan, the part of his Build Back Better agenda focused on investing in the nation's infrastructure. There is no argument that the U.S. infrastructure needs are great. The nation has underinvested in infrastructure for decades. This weighs more and more heavily on businesses' competitiveness and the economy's productivity growth and is increasing our vulnerability to climate change. The plan's proposed spending on infrastructure is large but spread over the next decade and paid for in significant part with higher taxes on corporations. Despite the higher corporate taxes and the larger government deficits, the plan provides a meaningful boost to the nation's long-term economic growth. There are many potential political impediments to passage of the American Jobs Plan, but we expect that an infrastructure plan similar in spirit and size to what the president has proposed will become law later this year.

The Macroeconomic Consequences of the American Jobs Plan

BY MARK ZANDI AND BERNARD YAROS

President Biden has unveiled the American Jobs Plan, the part of his Build Back Better agenda focused on investing in the nation's infrastructure. There is no argument that the U.S. infrastructure needs are great. The nation has underinvested in infrastructure for decades. This weighs more and more heavily on businesses' competitiveness and the economy's productivity growth and is increasing our vulnerability to climate change. The plan's proposed spending on infrastructure is large but spread over the next decade and paid for in significant part with higher taxes on corporations. Despite the higher corporate taxes and the larger government deficits, the plan provides a meaningful boost to the nation's long-term economic growth. There are many potential political impediments to passage of the American Jobs Plan, but we expect that an infrastructure plan similar in spirit and size to what the president has proposed will become law later this year.

What Biden is proposing

President Biden's proposal on infrastructure hews closely to what he proposed in the presidential campaign. It includes $2.2 trillion in increased government spending over the 10-year period from 2022 to 2031, and $400 billion in tax credits (see Table 1). Corporate taxes increase by $1.8 trillion, equal to about two-thirds of the cost of the plan. The nation's budget deficits thus increase by over $800 billion over the decade on a static basis—that is, before accounting for the economic benefit of the plan on the government's finances.

The biggest boost to spending goes to traditional infrastructure, including transportation projects such as roads, bridges and ports, and to shore up the nation's crumbling water and power infrastructure. Social infrastructure, including education, healthcare and housing, also receives substantially more financial support. To lift the nation's competitiveness, the plan allocates more funds to basic research and development, manufacturing, and broadband. Workforce development funds are also provided to fund the training needed to prepare the workforce for future jobs, including those created by the infrastructure projects.

Corporations shoulder the financial burden of the plan. The logic being that businesses would be the principal beneficiaries of the improved infrastructure. The top marginal corporate tax rate, which was lowered from 35% to 21% under the 2017 Tax Cuts and Jobs Act, would go back up to 28%. Taxes on corporate income earned overseas would also increase, and tax breaks for the fossil fuel industry would end. The plan does increase tax credits for green energy investments and housing.

Infrastructure needs are large

The nation's infrastructure needs are considerable and mounting as infrastructure investment has declined steadily as a share of the nation's GDP. Federal, state and local government spending on infrastructure peaked at close to 6% in the 1950s and 1960s when the Interstate Highway System was built. It fell sharply in the 1970s and again in the wake of the financial crisis in the early 2010s. Infrastructure investment as a share of GDP is currently well below 2% of GDP, the lowest in the data available since World War II (see Chart 1).

The result has been a steady aging of the nation's stock of public infrastructure. For example, the average age of the nation's highways is close to 30 years, double what it was in the 1960s. The average age of the nation's dams is even older. If maintained, this would not necessarily present a problem or urgent need for replacement, but maintenance has not been performed in many cases, and the need for additional spending is intensifying. Take the nation's more than 600,000 bridges. The Department of Transportation classifies more than one-fourth as structurally deficient or functionally obsolete. Many of the larger and most heavily used of these bridges were built in the same period and will reach replacement age—the theoretical life of a bridge is approximately 50 years—around the same time.

Infrastructure investment is in significant part a casualty of the nation's fiscal

Table 1: American Jobs Plan

Annual budget cost, $ bil

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2022-2031
Net deficit impact	19.1	103.0	197.2	235.2	253.0	180.0	78.0	-1.5	-79.0	-137.1	848.0
Total spending	110.5	248.9	319.3	368.3	380.0	305.7	222.2	147.5	81.3	34.9	2,218.7
Transportation	34.0	70.4	99.2	117.2	129.6	78.8	48.2	24.5	11.4	4.1	617.3
Federal infrastructure	1.1	2.8	4.5	5.3	5.6	4.5	2.8	1.1	0.3	0.0	28.0
Water	0.9	5.3	11.9	16.4	18.6	19.0	15.0	8.4	4.0	1.8	101.2
Housing/construction	0.9	13.6	26.4	34.9	41.7	41.3	29.0	16.2	7.7	0.9	212.6
Education infrastructure	3.9	9.7	15.5	18.4	19.4	15.5	9.7	3.9	1.0	0.0	97.0
Power infrastructure	8.0	16.0	18.4	19.6	20.0	12.0	4.0	1.6	0.4	0.0	100.0
Broadband infrastructure	0.6	3.0	8.0	15.6	18.4	18.8	16.4	11.4	3.8	1.0	97.0
R&D	4.7	10.2	15.5	22.4	27.2	28.1	25.8	20.5	15.2	8.3	177.8
Manufacturing	25.8	54.0	55.0	53.2	34.1	26.7	19.2	16.7	7.3	4.1	296.1
Workforce development	4.1	10.6	11.5	11.9	12.0	12.1	12.2	12.2	8.1	1.6	96.1
Medicaid expansion of services	26.7	53.3	53.3	53.3	53.3	48.9	40.0	31.1	22.2	13.3	395.6
Tax credits	5.7	25.0	60.2	54.3	60.2	61.7	44.9	39.7	31.2	21.8	404.7
Green energy tax credits	5.4	20.2	50.9	42.0	45.5	47.1	34.7	34.0	28.5	21.5	329.8
Housing tax credits	0.3	4.8	9.3	12.3	14.7	14.6	10.2	5.7	2.7	0.3	74.9
Revenue raisers	-97.1	-170.9	-182.3	-187.4	-187.2	-187.3	-189.1	-188.7	-191.5	-193.9	-1,775.4
Corporate tax rate increase	-53.0	-90.0	-92.0	-94.0	-96.0	-96.0	-94.0	-93.0	-93.0	-94.0	-895.0
International tax reform	-29.0	-59.0	-69.0	-73.0	-71.0	-70.0	-73.0	-73.0	-76.0	-77.0	-670.0
Book tax	-8.9	-14.8	-14.2	-13.5	-13.5	-14.6	-15.2	-15.7	-15.4	-15.7	-141.4
Eliminate fossil fuel preferences	-5.2	-6.1	-6.1	-5.9	-5.7	-5.8	-5.9	-6.0	-6.1	-6.2	-59.1
Corporate tax enforcement	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-10.0

Sources: White House, Moody's Analytics

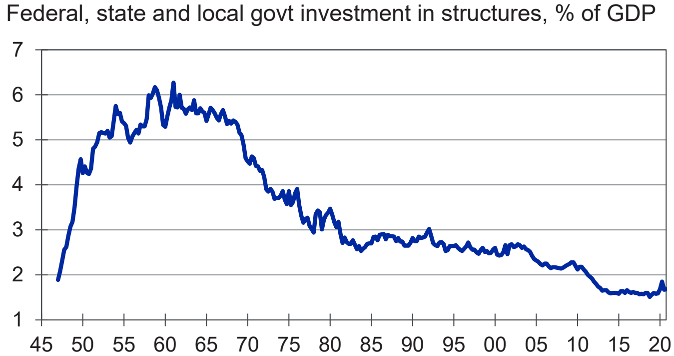
pressures. Policymakers have worked to limit any increase in government spending as a share of GDP, and as non-discretionary government spending has increased, most significantly on healthcare, it has squeezed out discretionary spending, including on infrastructure. The federal gasoline tax, historically an important source of revenue to fund transportation infrastructure spending, has remained at 18.3 cents per gallon since 1993. This while the cost of construction for public infrastructure has increased substantially faster than overall inflation.

Macroeconomic benefit

Increasing infrastructure investment by over 1% of GDP over the next decade as President Biden has proposed has both near-term and long-term benefits. Near term it has a large so-called multiplier—the increase in GDP for a dollar increase in investment. In an economy with high unemployment and significant slack in the economy, like today, the one-year multiplier on traditional infrastructure spending is close to an estimated 1.5, among the highest compared with other types of federal government spending and tax policy (see Chart 2). With close to 3 million more workers still permanently unemployed as a result of the COVID-19 pandemic, an infrastructure plan that provides new jobs in communities across the country would be particularly effective.

Chart 1: Infrastructure Spending Flags

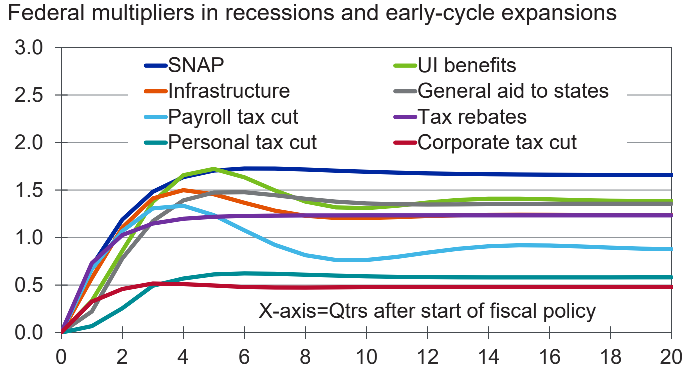
Federal, state and local govt investment in structures, % of GDP



Sources: BEA, Moody's Analytics

Chart 2: Infrastructure's Big Bang for Buck

Federal multipliers in recessions and early-cycle expansions



Sources: BEA, Moody's Analytics

Long term, economic research is in strong agreement that public infrastructure provides a significantly positive contribution to GDP and employment. It lowers business costs and thus improves competitiveness and productivity, allows workers to live closer to where they work and thus reduces commute times, improves labor participation, and reduces carbon emissions.

There is more debate on whether public infrastructure spending boosts GDP by as much as private capital does. One reason for this is that, unlike private investment, federal investment is not driven solely by market forces or maximizing economic returns. Federal infrastructure also has the goal of improving quality of life, reducing inequities, supporting the work of the federal government itself, and addressing other objectives that policymakers may have. The federal government also imposes various requirements that can increase the costs of the projects that it funds. We estimate the average return on private capital to be close to 10%—that is, a $1 increase in private investment, all else being equal, increases GDP by 10 cents over a year—while it is almost 7% for public infrastructure.[i]

Even so, this is an especially economically propitious time to increase infrastructure investment, since the return on that investment is substantially greater than the government's cost of financing given the extraordinarily low interest rates. Thirty-year Treasury yields are just over 2%, while the return on almost any public infrastructure project is likely to be meaningfully greater than that.

Quantifying the American Jobs Plan impact

We use the Moody's Analytics model of the U.S. and global economies to determine the impact on the economy of three scenarios.[ii] The first scenario is that neither the infrastructure plan nor the American Rescue Plan were passed into law. That is, President Biden was unable to pass any major fiscal policy legislation. The second scenario is that only the ARP was passed into law. And the third scenario is that both the ARP and the infrastructure plans are passed into law.

The Moody's model is similar to those used by the Federal Reserve Board and Congressional Budget Office for forecasting, budgeting and policy analysis. The model has been used to evaluate the plethora of fiscal and monetary policies implemented during the COVID-19 pandemic.

To determine the long-term economic impact of the infrastructure plan, the Moody's model is simulated over the decade through 2030. This is consistent with the Congressional Budget Office's horizon for the federal government's budget and policy analysis. The assumption is that the plan will become law later this year under budget reconciliation rules and implemented beginning in 2022. That is, no other significant fiscal policy changes are legislated.

Monetary policy is determined in the model based on the Federal Reserve Board's newly announced framework for conducting monetary policy in which the Fed has committed not to begin normalizing interest rates until the economy is at full employment and inflation has been consistently above the Fed's 2% inflation target. All the scenarios assume that the worst of the COVID-19 crisis and its economic fallout are over, and that the pandemic will wind down this summer.

The infrastructure plan results in a stronger economy over the coming decade, with higher GDP, more jobs and lower unemployment (see Table 2). However, the most immediate impact in early 2022 is to marginally reduce growth, as the higher corporate taxes take effect right away while the increased infrastructure spending does not get going in earnest until later in the year. This changes quickly. By 2023 and throughout much of the midpart of the decade the ramp-up in infrastructure spending significantly lifts growth. The apex in the boost to growth from the plan is in 2024 when real GDP is projected to increase 3.8%, compared with 2.2% if the plan fails to become law.

In terms of jobs, with the infrastructure plan the economy recovers the jobs lost in the pandemic recession by early 2023, not much different than without the plan. But the plan does result in substantially more jobs mid-decade, with employment under Biden's term as president increasing by 13.5 million jobs. This compares with 11.4 million jobs without the plan, and 10.5 million jobs if neither the infrastructure plan nor ARP had become law. Unemployment is also meaningfully lower with the plan, falling to a low of 3.5% by the end of 2024, consistent with the low reached just prior to the pandemic. Labor force participation is also expected to fully recover from the impact of the pandemic by year-end 2024.

Long term, the economy enjoys stronger productivity growth. The improvement is marginal through the first half of the decade but will be measurable by decade's end as the stock of public infrastructure meaningfully increases, adding as much as 0.1 percentage point to annual real GDP growth.

The nation's deficits and debt load are higher, because the infrastructure plan is not fully paid for. On a static basis, the 10-year cumulative deficit increases by nearly $850 billion. On a dynamic basis—accounting for the benefits of the stronger economy on government revenues and expenditures—the 10-year cumulative deficit is expected to be close to $625 billion. This adds close to 5 basis points to 10-year Treasury yields on average over the next decade.

Conclusions

President Biden's American Jobs Plan is a large program that would touch nearly every community in America. It addresses a long-developing problem with our inadequate public infrastructure that is widely understood to be an impediment to the competitiveness of our businesses, economic growth, and the well-being of American households. The plan calls for higher corporate taxes to help pay for the increased infrastructure and the government will experience larger budget deficits, but the economic benefits of the plan substantially outweigh these negatives. Passage of the American Jobs Plan would ensure that the economy quickly returns to full employment, and the plan would provide a meaningful boost to long-term growth.

Table 2: Macroeconomic Impact of American Jobs Plan

	REAL GDP						NONFARM EMPLOYMENT						UNEMPLOYMENT RATE, %		
	No additional support		American Rescue Plan		ARP & AJP		No additional support		American Rescue Plan		ARP & AJP				
	2012$ bil	% change yr ago	2012$ bil	% change yr ago	2012$ bil	% change yr ago	Mil	Change, ths	Mil	Change, ths	Mil	Change, ths	No additional support	American Rescue Plan	ARP & AJP
2020Q1	19,011	(5.0)	19,011	(5.0)	19,011	(5.0)	151.9	130	151.9	133	151.9	133	3.8	3.8	3.8
2020Q2	17,303	(31.4)	17,303	(31.4)	17,303	(31.4)	133.7	(18,210)	133.7	(18,208)	133.7	(18,208)	13.0	13.0	13.0
2020Q3	18,597	33.4	18,597	33.4	18,597	33.4	140.8	7,090	140.8	7,089	140.8	7,089	8.8	8.8	8.8
2020Q4	18,794	4.3	18,794	4.3	18,794	4.3	142.6	1,817	142.6	1,817	142.6	1,817	6.8	6.8	6.8
2021Q1	18,853	1.3	19,063	5.8	19,063	5.8	143.0	411	143.2	531	143.2	531	6.3	6.2	6.2
2021Q2	19,039	4.0	19,595	11.6	19,595	11.6	143.5	480	145.5	2,399	145.5	2,399	6.4	5.9	5.9
2021Q3	19,279	5.1	20,037	9.3	20,037	9.3	144.3	810	147.6	2,041	147.6	2,041	6.5	5.4	5.4
2021Q4	19,547	5.7	20,341	6.2	20,341	6.2	145.3	950	149.2	1,592	149.2	1,592	6.3	4.8	4.8
2022Q1	19,845	6.2	20,492	3.0	20,484	2.8	146.3	1,060	150.3	1,079	150.2	1,038	6.0	4.5	4.5
2022Q2	20,051	4.2	20,514	0.4	20,501	0.3	147.3	970	150.8	536	150.8	543	5.7	4.4	4.4
2022Q3	20,238	3.8	20,520	0.1	20,507	0.1	148.2	900	151.1	341	151.1	361	5.4	4.4	4.4
2022Q4	20,403	3.3	20,599	1.5	20,596	1.7	149.1	890	151.5	313	151.4	325	5.1	4.4	4.4
2023Q1	20,551	2.9	20,733	2.6	20,740	2.8	149.9	840	151.9	425	151.8	355	4.8	4.4	4.4
2023Q2	20,693	2.8	20,855	2.4	20,895	3.0	150.7	770	152.3	426	152.2	399	4.6	4.4	4.4
2023Q3	20,836	2.8	20,979	2.4	21,070	3.4	151.4	690	152.7	369	152.6	411	4.5	4.4	4.4
2023Q4	20,964	2.5	21,117	2.7	21,276	4.0	151.9	510	152.9	275	153.3	640	4.5	4.4	4.4
2024Q1	21,078	2.2	21,238	2.3	21,500	4.3	152.3	410	153.2	294	154.1	801	4.4	4.3	4.1
2024Q2	21,179	1.9	21,335	1.8	21,697	3.7	152.6	300	153.6	335	154.8	788	4.4	4.3	3.8
2024Q3	21,291	2.1	21,434	1.9	21,884	3.5	152.9	260	153.8	239	155.5	690	4.4	4.3	3.7
2024Q4	21,409	2.2	21,540	2.0	22,064	3.3	153.1	240	154.0	228	156.1	594	4.4	4.3	3.5
2020	18,426	-3.5	18,426	-3.5	18,426	-3.5	142.3	(8,672.2)	142.3	(8,671.3)	142.3	(8,671.3)	8.1	8.1	8.1
2021	19,180	4.1	19,759	7.2	19,759	7.2	144.0	1,769.7	146.4	4,104.1	146.4	4,104.1	6.4	5.6	5.6
2022	20,134	5.0	20,531	3.9	20,522	3.9	147.7	3,697.5	150.9	4,544.2	150.9	4,521.2	5.5	4.4	4.4
2023	20,761	3.1	20,921	1.9	20,995	2.3	151.0	3,250.0	152.5	1,537.9	152.5	1,579.6	4.6	4.4	4.4
2024	21,239	2.3	21,387	2.2	21,786	3.8	152.7	1,745.0	153.7	1,218.6	155.1	2,671.4	4.4	4.3	3.8
2025	21,676	2.1	21,776	1.8	22,408	2.9	153.6	837.5	154.4	710.6	156.9	1,753.1	4.4	4.4	3.6
2026	22,091	1.9	22,167	1.8	22,825	1.9	154.4	795.0	155.0	625.9	157.8	929.6	4.5	4.5	3.7
2027	22,546	2.1	22,612	2.0	23,196	1.6	155.1	770.0	155.7	727.8	158.6	778.7	4.6	4.5	3.8
2028	23,034	2.2	23,096	2.1	23,663	2.0	156.0	857.5	156.6	888.9	159.5	863.3	4.5	4.5	3.8
2029	23,512	2.1	23,576	2.1	24,191	2.2	156.9	955.0	157.6	949.7	160.4	886.9	4.5	4.4	3.8
2030	23,994	2.1	24,062	2.1	24,733	2.2	157.9	970.0	158.6	979.6	161.2	889.8	4.5	4.4	3.8

Sources: BEA, BLS, Moody's Analytics

Endnotes

i This is somewhat different than the Congressional Budget Office's estimate that the average rate of return on private-sector investment is about 10% and that the average return on federal investment is about half that.

ii A detailed description of the Moody's Analytics model of the U.S. economy is available here. More detailed validation documentation is available on request.

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Mark Zandi is chief economist of Moody's Analytics, where he directs economic research. Moody's Analytics, a subsidiary of Moody's Corp., is a leading provider of economic research, data and analytical tools. Dr. Zandi is a cofounder of Economy.com, which Moody's purchased in 2005.

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Dr. Zandi is the author of *Paying the Price: Ending the Great Recession and Beginning a New American Century*, which provides an assessment of the monetary and fiscal policy response to the Great Recession. His other book, *Financial Shock: A 360º Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis*, is described by the New York Times as the "clearest guide" to the financial crisis.

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