

America's Productivity Disappointment

If you were offering advice to the next U.S. president, what policies would you suggest to boost stagnant productivity in the United States, which has been running below 2 percent for nearly two decades?

More than two dozen policy experts share their thoughts.



The place that is currently the most broken and offers the greatest opportunities is expanded immigration and a path to citizenship.

JASON FURMAN

Aetna Professor of the Practice of Economic Policy, Harvard University's Kennedy School, and former Chair, President's Council of Economic Advisors

Productivity growth slowed around 2004 and has been disappointing ever since. Some people have been excited about the pickup in productivity growth in the second half of 2023, but that excitement is premature—productivity growth is highly volatile and the strong growth in 2023 is just payback after the negative productivity growth in 2022. It is possible that generative artificial intelligence will save us, but it is not in the data yet.

The productivity slowdown has many causes and correspondingly many solutions. But the closest thing to a magic bullet we have is more immigration. Productivity comes from people, and the more talented people contributing to our productivity growth, the better off we will be. Much of the generative artificial intelligence that might prove to be our productivity salvation was developed by immigrants. Many of the companies that are working to adapt and implement these advances in ways that work for businesses—and thus that businesses would be willing to pay for—are run by immigrants. Allowing in more immigrants, including stapling a green card to all STEM degrees, would make a big contribution.

But it not just high-skilled immigration that matters for productivity growth. There are more than ten million unauthorized immigrants in the United States. They face high levels of uncertainty. Just like a business facing uncertainty reduces its investment, unauthorized immigrants are less likely to match with the right job, move to the place they are most productive, or start a business. A process of immigration reform that allows these people to come out from the shadows and get a path to citizenship would also help boost productivity growth.

Immigration is one important form of openness, but openness more generally contributes to productivity growth. This includes openness to trade, to capital flows, to people, or to ideas. But of all of these, the place that is currently the most broken and offers the greatest

opportunities is expanded immigration and a path to citizenship for the people already in the United States.



The question is this: how do we increase GDP faster than hours worked?

LAWRENCE B. LINDSEY

Former Governor, Federal Reserve

Sometimes the term “productivity” takes on a mystical aura in the political mindset. In reality, it is just output per worker, and the question becomes how do we increase GDP faster than hours worked? Doing this often conflicts with other political objectives.

For example, our current open-border immigration policy is a productivity destroyer. A recent study by the Congressional Budget Office found that if current immigration continued until 2028, long-run GDP would increase by 2 percent while the amount of workers would rise by 3 percent. That means output per worker drops by a full percentage point and real wages drop 0.8 percent.

Additionally, output per worker is positively correlated to the level of capital available per worker. CBO found that rapid immigration lowers investment in labor-saving and productivity-enhancing technology because the benefits of replacing workers goes down as the cost of labor cheapens.

Increasing the capital stock means lowering the real after-tax cost of capital. The changes made in the 2017 Tax Cuts and Jobs Act helped do this by allowing faster depreciation and full expensing of business capital purchases. The lower corporate tax rate also helped. The other major way a president can lower capital costs is by reducing the federal budget deficit. Currently, the deficit consumes most national saving after factoring in depreciation.

Cost-benefit analysis is a necessary safeguard against passing counterproductive government regulation. On his first day in office, President Biden signed an executive order that ended traditional cost-benefit analysis in the regulatory review process and substituted the worthiness of the project in terms of achieving various social objectives. Doing something that costs more than the benefits lowers GDP and therefore productivity.

Consider the new regulation mandating electric vehicle production by 2030. The productivity-maximizing approach would be to let each consumer decide for themselves whether to buy an electric or internal combustion vehicle. But the productivity lost by foregoing this approach is dwarfed by the logistical challenges of mass EV adoption. Converting the entire fleet to EVs would require between 15 and 25 percent more power generation, something that has been flat for fifteen years and will take a long lead time to build. The lack of charging stations is an issue currently. Home charging stations would overwhelm neighborhood grids if all residents added chargers. Already some regions are running out of spare power capacity and are finding it difficult to operate infrastructure such as server farms that are critical for new industries. This is only going to get worse in the next few years. And there would be nothing like an electricity shortage to destroy even the nation's current level of productivity.



*Mr. President,
take these six
commonsense steps.*

SCOTT BESSEANT
Founder and CEO, Key Square Group

The United States could be jolted from its two-decade productivity slump with six commonsense steps: trim the ever-expanding regulatory burden, encourage capital deepening and investments in research and development, crack down on abusive trade practices, commit to restrain ultra-loose monetary policy, halt unchecked immigration, and rein in the shocking fiscal deficits.

First, an ever-expanding U.S. regulatory burden over the past twenty years has strangled domestic investment and caused productivity growth to deteriorate. Of course, sensible environmental and worker protections should be applied. However, the acceleration in the regulatory morass and uneven enforcement over this century to date, especially in the past three years, creates a bureaucratic impediment that stifles workers' productivity and employers' incentives. For example, guidelines in the recently passed Chips and Science Act contain a variety of investment-stifling regulations, such as mandating

an equity strategy to attract economically disadvantaged individuals and preferential treatment for select groups. These matters should be addressed directly via a skills-enhancing program. It is no surprise that Intel's Ohio plant and TSMC's Arizona plant are not competitive with similar facilities in Taiwan. Prioritizing social engineering over investment retards productivity growth.

Second, U.S. tax policy must continue to incentivize domestic investment by reducing the after-tax cost of capital. One simple way to do this is to lower the tax rate on capital as did the Tax Cuts and Jobs Act in 2017. Obviously, renewing the TCJA's sunset provisions should be a priority. Making them permanent would be a strong signal that an administration and Congress are serious about boosting productivity growth.

Third, unfair and abusive trade practices by U.S. trading partners push American workers into low-wage, low-productivity service jobs. Productivity growth is typically much higher in the manufacturing sector than in services. By not pushing back on abusive trade practices, the United States allows the hollowing out of our manufacturing base, and we make U.S. productivity growth subject to the whims of foreign industrial policy.

Fourth, the Federal Reserve's persistent, loose monetary policy since the Great Financial Crisis has allowed corporate zombies to continue in existence and has caused a broader misallocation of capital. Financial engineering gives an illusory wealth effect. Only productive investment can drive a nation's standard of living over the long run.

Fifth, the massive flood of undocumented workers into the U.S. workforce creates destabilizing model uncertainty for U.S. businesses. Why pay to increase worker skills or automate production processes when there is an ever-expanding supply of cheap labor? Optimizing output per worker becomes less imperative when a company can decrease its wage bill by drawing on a burgeoning labor pool.

Finally, as the U.S. fiscal position deteriorates, debt service will crowd out productive investment. Managements will curtail spending on productivity-enhancing equipment and training in anticipation of a financial shock. A plan for reducing the deficit using many of the supply-side solutions outlined above will create a virtuous cycle of lowered debt costs, business confidence, and rising productivity growth.

We must have the perspicacity to understand that our two-decade productivity stagnation can be alleviated by a sequence of sensible and credible steps. An ongoing series of economic bad habits have taken their toll. Implementing the above six policies would upshift productivity with limited disruption.

The views presented in this article are purely the opinions of the author and are not intended to constitute investment, tax, or legal advice of any nature and should not be relied on for any purpose.



I have long advocated time-limited wage insurance to provide a better safety net for job losers.

ROBERT E. LITAN

Non-Resident Senior Fellow in Economic Studies, Brookings Institution

Productivity growth, which drives advances in average living standards, could not be more important. But when it comes to policy advice on how to increase it, economists face stiff challenges.

First, while we know that in general, more government support of basic research and development, improvements in education, and more investment in capital equipment and public infrastructure each make workers more productive, we don't know with precision how much. In any event, success on all these fronts combined is unlikely to lift the growth rate by much more than few tenths of a percentage point. Trying telling that to the president and expecting a rave response.

Second, details matter, and remain subjects of dispute. For example, is education best improved by more school choice, paying teachers more, reducing class sizes, or something else? Should tax policy or direct subsidies be used to encourage more private investment? And where additional spending is recommended, the net impact on productivity growth will be reduced somewhat depending on how that spending is financed. Additional taxation could discourage work or investment incentives. More borrowing, all else equal, should raise interest rates, which would have some offsetting negative effects on investment.

Third, there is some good productivity news, though it's not the product of any specific government policy. I refer, of course, to the artificial intelligence revolution which is just beginning. AI, the most important technology since electricity, provides the best chance in decades for boosting productivity growth well above 2 percent. But there are also dangers to AI, even if remote. We need more publicly funded research to better understand how to reduce those dangers. Transparency requirements are also needed. But my advice to any president is not to over-regulate AI, since its productivity growth upside is just too great.

Fourth, it is vital to recognize that the flip side of stronger productivity growth is more job churn: more job gains, but also more job losses. That's why automation, and now

AI, scares people. Scared people support politicians who want to thwart change rather than accommodate it. That's why, if we want productivity-enhancing policies that will benefit us all in the long run, we must also do a much better job insulating job losers in the short run against the pain of those losses. And that's why I have long advocated time-limited wage insurance to provide a better safety net for job losers, regardless of the reason for job loss. Structured properly, wage insurance not only eases the economic pain of job loss, but by paying out only when job losers find new jobs that pay less than previous ones, can limit spells of unemployment. I hope to see that idea come to fruition in my lifetime, ideally before the AI-induced productivity boost is thwarted by the opposition it has already aroused.



The next president should adopt a two-pronged strategy.

MICHAEL MANDEL

Chief Economist and Vice President, Progressive Policy Institute

On an aggregate level, American labor productivity gains are stagnating at only 1.6 percent annually since 2019, though the United States is still significantly outperforming Europe and Japan. But U.S. policies to boost productivity and living standard gains must clearly differentiate between leading-edge sectors such as information and retail trade—which have consistently high productivity growth—and lagging sectors such as agriculture, construction, utilities, and manufacturing—which have very slow or negative productivity growth.

In particular, policymakers should adopt a two-pronged approach to productivity. Sectors such as agriculture (0.5 percent productivity growth since 2019), construction (-1.3 percent productivity growth), utilities (0.4 percent productivity growth), and manufacturing (-0.1 percent productivity growth) have persistently pulled down overall productivity gains. These are also the sectors at the heart of the recent inflationary surge, with sharply rising prices for goods such as food, housing, and automobiles undercutting living standards. The weakness in domestic productivity growth in these sectors, especially manufacturing and agriculture, has

also left the United States vulnerable to future supply chain shocks and further worsened the housing shortage.

So policymakers should focus on diffusing leading-edge technology to these lagging sectors. That means more government investment in applied research in translating new technology into products that are usable by small farmers, small construction firms, and small manufacturers. This might include, for example, the expensive task of training AI chatbots specifically designed to help farmers make good decisions in the face of climate changes. Policymakers should also take a close look at concentration in these sectors, which may be holding back innovation.

The second prong of productivity policy involves building on the gains in high-productivity-growth sectors such as information (5.2 percent productivity growth since 2019) and retail trade (3.6 percent productivity growth). These sectors had smaller price bumps during the inflationary surge because of productivity gains and strong investment in broadband networks, data centers, and e-commerce fulfillment facilities.

To keep productivity growth and investment strong in these sectors, policymakers should be judicious about regulation. That means identifying and dealing with anti-competitive actions, but otherwise supporting growth. Note that Europe has tried a more aggressive regulatory approach, with little positive impact on productivity growth. From 2019 to 2023, productivity in the EU information and communications sector only grew at a 1.5 percent rate.

Nobody has a magic bullet for boosting productivity growth. But focusing policy on the lagging sectors seems more likely to pay off.



*Focus on
five priorities,
Mr. President.*

MARCO ANNUNZIATA

Cofounder, Annunziata+Desai Advisors

Here is the advice I would give the next U.S. president: Mr. President, remember that productivity in our economy is driven by two forces: innovation,

and the right conditions for innovation to be deployed at scale, including a risk-taking culture and a strong profit motive. Government can almost never create innovation, but it can (and should) almost always create the conditions for innovation and productivity to blossom. To boost U.S. productivity growth, you should focus on five priorities.

First, foster a culture of excellence. Talent diversity is important and discrimination must be fought, but the focus in universities, in the research ecosystem, and throughout the economy must be on excellence, on performance, on the quality of the teaching and of the research and business outcomes—not on social engineering.

Second, innovation requires freedom. Any policies that create a climate of censorship will inevitably inhibit innovation and productivity.

Third, incentive policies should be technology-agnostic. Government can decide to incentivize specific goals. But the best way to do it is to promote the goal and leave it up to science and industry to identify the best ways of reaching it. Subsidizing specific technologies is too often a waste of money, diverting resources and efforts away from what will potentially turn out to be the best solutions.

Fourth, boost investment in infrastructure, including both traditional and digital infrastructure. In many western countries, the quality of traditional infrastructure has been deteriorating for years, causing delays, transportation bottlenecks, and inefficiencies. Upgrading basic infrastructure should be a priority, but it should be done with an eye to how emergent technologies are likely to transform our needs—for example as regards the increasing number of electric vehicles and the promise of self-driving cars and trucks. A more robust and extensive digital infrastructure is also essential to foster the diffusion of digital-industrial technologies, along with the additional efficiency-improving solutions that will gradually be enabled by artificial intelligence.

And last, productivity also comes from high-quality human capital. Here there are two key action items. First, improve the quality of the education system, which in the United States and many other western countries has deteriorated (as documented in the latest OECD PISA report) and not just because of ill-advised pandemic school closures. Second, combat the well-documented adverse impact on cognition that comes from digital technologies. Social media apps must be treated for what they are: addictive substances with amply demonstrated harmful effects on cognition and mental health, especially on the younger generations.

The stakes are high. During the 1996–2005 period, U.S. productivity growth averaged 3 percent per year, courtesy of the first digital revolution. Since then, the rate has halved to 1.5 percent per year. If the previous fast pace had been maintained, the U.S. economy today would be 30 percent larger. Productivity accelerated in 2023,

suggesting that innovation might be starting to pay off. Creating the conditions for sustained faster productivity growth is imperative to ensure future prosperity as well as to maintain U.S. economic and geopolitical leadership.



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A policy that welcomes legal immigrants, including but not limited to those with advanced skills, will benefit society.

Over the past two decades, U.S. productivity growth has slowed to pace of about 1.5 percent, down from the longer-run trend of 2 percent. What can policymakers do to restore the higher long-run growth rate in productivity?

We see three possible sources for increases in productivity growth. First, there is the potential contribution from generative artificial intelligence. While we doubt that AI will live up to the current hype, it may very well be a tool that improves productivity for a wide spectrum of the workforce.

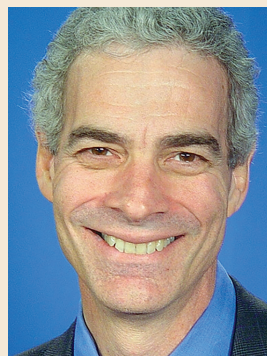
Another potential contributor is pandemic-spurred innovation. Here, the most important is working from home. While compelling people to work from home probably reduced productivity, it also led to the spread of technologies

that make remote work more effective. Over time, leaving open the option for remote work can be a source of significant long-run efficiencies. For example, it can help improve the matching of worker skills and employer needs, while reducing the necessity for wasteful relocation.

The theme of better labor allocation should play an important role in policy options to boost productivity. Research shows that innovation and productivity gains are closely linked to research and development—and to concentrations of highly trained scientists. So policies that promote the development of talent—for example, by ensuring broad access to advanced STEM education for those that cannot afford it—should form the basis for any long-run productivity-enhancing effort. Similarly, policies that encourage labor force flexibility and improved job matching—such as more flexible zoning in and near R&D cities—can speed the transition to a more productive economy.

Finally, if sustained, the recent pickup of business dynamism likely would contribute to faster productivity growth. Projected firm formation on a quarterly basis over the next two years is currently more than 40 percent above the average of the pre-pandemic decade. To encourage a continuation of this favorable trend, policymakers need to ensure a stable macroeconomic and financial environment that supports startup investment and risk taking.

In closing, since real growth is the sum of productivity growth and employment growth, it is equally important to ensure that the pool of available workers and talent is growing. Here, the most critical thing is immigration. A policy that welcomes legal immigrants, including but not limited to those with advanced skills, will benefit society.



I am very optimistic that we are in the early stages of a sustained pickup in productivity and potential growth.

MICKEY D. LEVY
Visiting Scholar, Hoover Institution, and Member, Shadow Open Market Committee

While productivity gains languished in the United States in the elongated expansion following the 2008–2009 financial crisis, they have stepped up since the pandemic and I am very optimistic that we

are in the early stages of a sustained pickup in productivity and potential growth. There are policy initiatives the government can take that would facilitate stronger productivity gains.

The pickup in productivity in recent years has been generated by a confluence of positive factors:

- The dramatic pace of technological innovations, particularly in generative artificial intelligence, and their rapid implementation into commerce and society;

- The heightened mobility of labor, including work-at-home, that enhances worker efficiencies and job satisfaction and has been associated with increased flexibility of business production;

- The marked increase of business investment in software and research and development as a share of total business investment that underlies U.S. growth; and

- The soaring new business formation.

To facilitate these favorable trends, the government must resist its natural urge to over-regulate industries in which technological innovations are driving rapid changes. This is particularly true of artificial intelligence. U.S. economic growth and higher standards of living have been driven throughout history by disruptive innovations that have displaced some workers and created new jobs. Artificial intelligence's potential contributions to medical technology and the provision of health care, education and skills attainment, and the environment are very positive. The government should monitor technological changes with a longer-run strategy of facilitating growth, and limit its regulation of new technologies.

Second, the government should modify H-1B classification of immigrants to allow a sizable increase in immigration by highly skilled and educated immigrants. There continue to be shortages of high-skilled workers and the United States has a history of successful immigrants who innovate, file for patents, create businesses and jobs, and contribute to society and standards of living. Such positive changes in H-1B immigrants can be achieved through presidential executive order and do not require a contentious Congressional debate about the broader immigration issue.

In general, an orderly immigration policy would enhance U.S. economic growth. Immigration should be encouraged and all immigrants should be documented.

Third, taxes that increase the after-tax costs of capital and deter business investment—either in the form of new taxes or expiration of existing cuts—should be avoided. There are plenty of other sources of tax receipts.

Fourth, the government should take steps to encourage international trade, particularly by reducing tariffs, bureaucratic red tape, and other barriers to trade with friendly nations, and avoiding new tariffs that would dampen trade. History shows that countries that erect barriers to trade suffer the largest economic losses.

There is every reason why productivity and sustained economic growth in the intermediate and longer terms can be materially higher than the experience of the last decade, and the government can play an important role facilitating economic progress and allowing higher standards of living.



The lion's share of our productivity slowdown came from slower growth of total factor productivity.

STEVEN B. KAMIN

Senior Fellow, American Enterprise Institute, and former Director, International Finance, Federal Reserve Board of Governors

U.S. labor productivity growth declined from an average of 2.4 percent annually in the 1990–2007 period to only 1.5 percent during 2008–2023. Some of the decline reflected a weakening of capital accumulation, but the lion's share of it came from slower growth of total factor productivity—the part of output reflecting technology and production know-how—whose contribution fell from 1.1 percentage points to only 0.5 percentage point. The causes of the slowdown of total factor productivity growth are not well understood, but they likely included some combination of slower technological progress, reduced competition and dynamism that limited the diffusion of productivity-enhancing innovations, and technological progress that focused more on consumer content than productive efficiency. Accordingly, boosting growth will require a multiplicity of policies, including stepped-up funding for research and development, diligent enforcement of competition policies, dismantling (recently erected) barriers to international trade, streamlining business regulation, and further support for infrastructure development.

But let's say I ran into the next U.S. president, perhaps while we were both bicycling in Rehoboth Beach, Delaware, and I only had five minutes to talk before his Secret Service escort shooed me off. I would focus on two key measures to revive our country's flagging productivity growth. First, substantially step up investments in human capital. Ultimately, our ability to compete and thrive in a global knowledge economy will depend on the training,

intelligence, and creativity of our workforce. But even though the United States ranks near the top of the OECD in per capita income, it ranks very much in the middle of the pack when it comes to public spending on education as well as test scores in math and science. Upgrading the country's human capital stock will require, first, boosting funding for early childhood care and education, where U.S. national government spending is even weaker (0.33 percent of GDP) relative to the OECD average (0.74 percent) than for K–12. Second, bolster K–12 education, especially in the least-resourced schools serving the least-privileged children. Third, do more to help students both enter college and remain there to complete their degrees. Finally, as four-year colleges aren't right for everyone, expand the provision of workplace training and technical education.

But all of this takes money. And with public deficits and debts already on an unsustainable path, increasing government borrowing is not an option, and no one agrees what spending to cut. This leaves raising revenue as the main option, and the second key measure I would recommend to revive U.S. productivity growth. Total U.S. public tax revenues (federal, state, and local) accounted for about 28 percent of GDP in 2022, well below the OECD median of 35 percent. As long as revenue measures are employed in an equitable manner that avoids creating undue distortions, they need not be at the cost of economic growth. If we are going to prepare our economy and our workforce for the twenty-first century, we will have to pay for it.



The slowdown in productivity growth has been a global phenomenon.

MICHAEL LIND

Contributor, Tablet, Fellow, New America, and author, Hell to Pay: How the Suppression of Wages Is Destroying America (Portfolio, 2023)

The slowdown in productivity growth in the last generation has been a global phenomenon, so it cannot be blamed on bad policies by the United States or any other nation in particular. The most plausible explanation is that the productivity gains from the diffusion of information and communications technologies, including personal

and office computers and internet connectivity, have largely been realized by now. The basic elements of computer technology and ARPANET, the precursor to the internet, were developed between the 1930s and the 1980s. Their commercialization and widespread diffusion followed, enabled by a build-out of wireless transmission infrastructure and servers which by now is mostly complete in developed economies, accompanied by the adoption of online business models by industries ranging from retail to news media.

As Joseph Schumpeter and like-minded economists and economic historians have observed, technological progress tends to be unexpected and driven in spurts associated with transformative “general purpose technologies” like the steam engine, the internal combustion engine, the battery, and the transistor. Compared to new energy sources or new materials, information and communications technologies belong in a lesser but still important tier of general-purpose technologies like telephony and broadcast radio and television. It remains to be seen whether artificial intelligence is more like present-day computer technology or like the more consequential steam engine and internal combustion engine in its effects on society.

From this analysis, two prescriptions follow. The first is the need for perpetual, open-ended government funding for basic research and development, which private investors may be unwilling to pay for because of uncertainty and their inability to monopolize basic discoveries, temporarily or permanently, for profit. Ultimately the laws of physics may impose diminishing returns on the quest for revolutionary new technologies. But the quest must continue, because in the long run a rising standard of living depends almost entirely on technology-driven productivity growth.

While funding the search for the holy grail of new general-purpose technologies, governments should seek to squeeze all the productivity gains they can from inherited technologies, including information and communications technologies. One way to do this is to use subsidies, public product-and-process research and development, and other methods to encourage the mechanization and automation of laggard sectors such as construction, fast food, hospital care, and the harvesting of some crops, in which business models have yet to be transformed by present-day information and communication technology, quite apart from artificial intelligence.

Another method of boosting productivity growth in the absence of radical scientific and engineering breakthroughs is to rig labor markets to encourage the substitution of labor-saving technology by deliberately raising the relative cost of labor. Unfortunately, many of the policies advocated by conventional neoclassical economists and politicians, including swelling low-wage workforces by means of greater unskilled immigration, increasing the number of parental caregivers in the labor market, cutting

retirement benefits to force the elderly to work longer, and expanding wage subsidies for the working poor, reduce the incentives of employers to invest in labor-saving hardware and software, to the detriment of national and global productivity growth.



*Renew engagement
with the world
economy.*

GARY CLYDE HUFBAUER
*Nonresident Senior Fellow, Peterson Institute for
International Economics*

As crooners, Trump and Biden are invariably off-key—except when it comes to the trade song. Then, in perfect harmony, they warble to the music of protection. While the protectionist melody may capture American votes, it does real damage to American productivity.

It is no coincidence that disappointing U.S. productivity statistics started just as U.S. globalization slowed after the Great Financial Crisis. In the false quest to preserve manufacturing jobs and insulate service workers from the global economy, the Obama, Trump, and Biden administrations first hesitated and then opposed new negotiations that would lower U.S. barriers and open markets abroad. They abandoned a fundamental American tenet: the power of competition to drive efficiency and thus productivity. Over the past two decades, the three presidents put efficiency at the bottom of national priorities. Strict United States-Mexico-Canada Agreement rules of origin limit auto, truck, and bus trade with Mexico and Canada. Phony “national security” restrictions first raised the cost of steel, and now obstruct Nippon Steel’s takeover of U.S. Steel. Falsely patriotic Buy America directives ensure high costs and delayed construction for trillions of dollars to be spent on renewable energy and infrastructure projects. Replacing the Francis Scott Key bridge over Baltimore harbor will be the newest casualty. Biden’s Indo-Pacific Economic Framework covers everything except trade liberalization. Trump’s agenda promises 60 percent tariffs against Chinese imports and 10 percent for everyone else.

Like in other advanced countries, services account for more than 70 percent of the U.S. economy. In world

markets, U.S. firms hold a strong competitive advantage for high-tech services, such as university education, frontier medicine, finance, accounting, and entertainment. Yet within the United States and around the world, services are highly protected by an array of regulations and nationality requirements. The U.S. Jones Act, which inflicts extreme transportation costs on Hawaii, Puerto Rico, and coastal shipping between U.S. Atlantic and Pacific ports, is just one example. Immigration and licensing restrictions on trained foreign doctors are another. With these anti-competitive and productivity-killing policies, it’s no surprise that service sector inflation is especially persistent. Presidential action to remove barriers on a reciprocal basis would boost U.S. exports and drive U.S. productivity. The United Kingdom has floated a services agreement with the United States. Will either Biden or Trump welcome this initiative in 2025?

The recommendation to renew engagement with the world economy seems fated to meet deaf ears in either a Trump or Biden White House. Even so, it is the right recommendation to get American productivity back on track. The force of competition remains a fundamental driver of efficiency. Instead, the next president appears destined to rely on mish-mash industrial policies and silent prayers for an artificial intelligence miracle. He will need all the luck that providence can offer.



*Productivity depends
most of all on
human capital.*

ROBERT DUGGER
*Retired Partner, Tudor Investment Corporation,
and Co-founder, ReadyNation*

Productivity depends on technology and governance, but most of all on human capital. U.S. human capital quality, relative to America’s own needs and compared to other developed economies, is weak and getting weaker, and its governance is increasingly threatened.

The most comprehensive assessment of U.S. young-adult human capital is done by the U.S. Department of Defense. The percentage of young adults aged seventeen to twenty-four who meet the initial standards for military

service is regularly determined by the Department of Defense as part of its recruiting program. The U.S. military and nearly all U.S. businesses need the same people—those who have high school educations at least, have clean criminal records, are not dependent on illegal drugs, and are healthy enough to meet job requirements.

In 2010, the percentage who could not qualify for armed service employment was 69 percent. By 2015, the percentage was 73 percent. In 2021, the most recent survey, the percentage was 77 percent. Privately, senior Army recruiters acknowledge that the current ineligible percentage is over 80 percent.

Comparisons to other developed economies are also unsatisfactory. The OECD's highly regarded PISA survey measures the job readiness of fifteen-year-olds along three dimensions—reading, math, and science. In the 2022 PISA report, U.S. fifteen-year-olds ranked thirty-fourth in math, ninth in reading, and fifteenth in science. These are not scores the United States needs to kick off sustainable productivity increases.

The 2021 OECD survey of citizens with high school educations by generation found that compared to other developed nations, U.S. job eligibility based on education appears to increase with age, indicating that younger citizens are educationally less prepared for work than older ones. Among those aged fifty-five to sixty-four, the United States ranked third in workers with high school educations, but among those aged twenty-five to thirty-four, the United States ranked twelfth—echoing the Department of Defense finding that the 2010 young-adult cohort were more job-eligible than the 2021 cohort.

Productivity also reflects governance. If a nation's productivity is low despite decades of borrowing and spending large amounts of the world's savings, clearly resources are not being well spent. International Monetary Fund data show that the United States is the heaviest of global borrowers. Its net international investment position has been the most negative of all major economies for decades and is becoming steadily more so.

America's decline in human capital quality and debt growth are paralleled by equally steady increases in economic inequality and deepening governance failure due in large part to voter anger, especially in "red states" hurt by globalization. These voters feel cheated by how U.S. policy persistently increases the wealth of the already rich and fails to enable their communities to invest more in family strength, good nutrition, early education, and career training for non-rich households. During the decades of U.S. resource mis-spending, the sectoral interests that benefited became immensely powerful and successfully resisted corrective legislation.

The next U.S. president must overcome the deep resistance of sectoral interests, adjust tax and expenditure policy to reflect twenty-first century realities, and enable

young Americans to acquire the capabilities needed to fully utilize technology and increase U.S. productivity.



The work-outs of the digital revolution in the private sector will determine the course of productivity.

JAMES E. GLASSMAN
*Former Head Economist, JPMorgan Chase & Co.,
Commercial Bank*

Productivity is the key to the nation's wellbeing. Innovation and what it does for productivity has lifted living standards five-fold since the mid-twentieth century. Popular opinion often views productivity unfavorably, because jobs lost to innovation tend to be more visible than those created by new technologies. And many have the impression that shareholders benefit more than workers from rising productivity. However, innovation would remain on the drawing boards if it provided little economic value. That's why acceptance by consumers is the litmus test of economic value. Ultimately, rising productivity benefits everyone, directly and indirectly and regardless of how it is monetized, because a rising economic tide provides the resources to support a higher quality of economic life.

Artificial intelligence, the latest twist of the digital revolution, is fueling new productivity optimism. Do the facts support the optimism? The facts might seem to challenge productivity optimism. But a close look behind broad trends offers hope. Why? Productivity growth (real GDP per hour) has increased 2 percent annually on average since the mid-twentieth century. It grew 2.7 percent per year from the end of World War II to the 1970s (for obvious reasons). It slowed to 1.4 percent per year from the 1970s to 1997 (the oil cartel's efforts to boost the relative price of petroleum, the Clean Air Act that improved air quality but took a toll on the economy, and the massive influx of young workers, men and women, into the labor force get honorable mentions). Then, productivity accelerated to 2.7 percent annually on average from 1997 to the middle of the 2000s thanks to the spread of internet technologies. Ironically, amid the entry of artificial intelligence, productivity growth has fallen to just 1.3 percent annually on average in the past two decades even with pandemic-era boosts.

Although productivity growth has been slow in the last two decades, the gradual response to the internet boom in the decade following 1997 is a reminder that it takes time for innovation to reshape the workplace.

The incubation of artificial intelligence in the private sector probably will determine the course of productivity in coming years. But public policy could help in two ways in particular, with very favorable implications for the federal deficit picture as well.

Everyone who commutes two or three hours daily knows the U.S. transportation grid leaves much to be desired. But this has been so for decades, implying that the obstacles to a more economically rational transportation system lie in the decision-making framework that guides infrastructure investment.

Transportation infrastructure is mostly a public good—full of externalities—and that is why it is appropriate for the public sector to guide infrastructure investment. But economic considerations are subordinate to deficit considerations, because such investment is co-mingled with the overall budget. In contrast, private sector investment tends to be guided by the net return on investment; deficit implications are immaterial.

Notably, the return on infrastructure investment is far greater than financing costs. Take the time wasted on the road. Roughly 142 million drive to work every day. Rush-hour drivers lose about one hundred hours annually due to congestion (actual versus posted speed limit), according to INRIX, Inc. Average hourly compensation per civilian worker is \$45 per hour according to Bureau of Labor Statistics data. That implies that the value of wasted commuting time owing to congestion could be well above \$500 billion annually. And that doesn't include the congestion for all other modes of transportation or the burden on commercial activity.

If transportation investment were partitioned from the overall budget and infrastructure were guided by

economic considerations, the public likely would be more receptive to the associated revenue measures. The benefit to productivity would be extraordinary.

The bipartisan Paycheck Protection Program created in March 2020 was an important innovation. It offered businesses loans that were forgivable for two months, if funding support was used to keep employees on the books. The stated purpose of the program was to keep workers attached to their jobs in order to minimize recovery costs when social distancing lockdowns were lifted. The PPP program echoes the spirit of Germany's *Kurzarbeit* (short-work) program that, although not well known in the United States, has been in place for a century and has been emulated by some countries. The German program provides financial support for businesses that triggers automatically when a temporary economic crisis arises. By keeping workers attached to their jobs as much as is possible, the program limits job-skills atrophy and minimizes the cost of finding and training new workers when a crisis passes. Had a more open-ended PPP program been in place in the United States during the covid pandemic, the pandemic financial rescue would have been prompt, more targeted, surely less costly, and less disruptive to the workforce.

The productivity benefit of initiatives that modulate economic shocks is significant. Economies that are less protected from economic shocks ultimately operate at permanently lower economic "altitudes" than those that have better economic cushions. Temporary disruptions leave a permanent scar on the wealth of the nation and potential output, in part because physical limits prevent the workforce from making up for lost ground.

The work-outs of the digital revolution in the private sector will determine the course of productivity in coming years. But government policy could help, especially when it comes to transportation investment and crisis-management mechanisms. ♦

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