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Path dependence, the COVID-19 crisis, and inequality in the United States

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This paper considers both secular and medium-run trends to argue that the US economy was already vulnerable to shocks before the COVID-19 crisis. Long-run trends have shown a pattern of secular stagnation and increasing inequality since the 1980s, while the economy has displayed hysteresis during the sluggish recovery from the Great Recession. The immediate policy response through the Coronavirus, Relief and Economic Security (CARES) Act highlighted the coordinating role of fiscal policy on the economy, but also showcased limits, especially with regard to the paycheck protection program. The historical trajectory of the US economy before the COVID-19 crisis cast serious doubts on recent cries of ‘overheating’ and inflationary pressures that should supposedly arise from the \$1.9 trillion relief package just signed into law by President Biden. Projecting forward to the long run, redistribution policies may provide useful first steps in reversing the trends of rising inequality and declining productivity growth that the US economy has seen over the last few decades.

Keywords: path dependence, COVID-19, inequality, secular stagnation

JEL codes: E21, E24, E25, O41

1 SECULAR STAGNATION AND PATH DEPENDENCE IN THE ‘BEFORE TIMES’

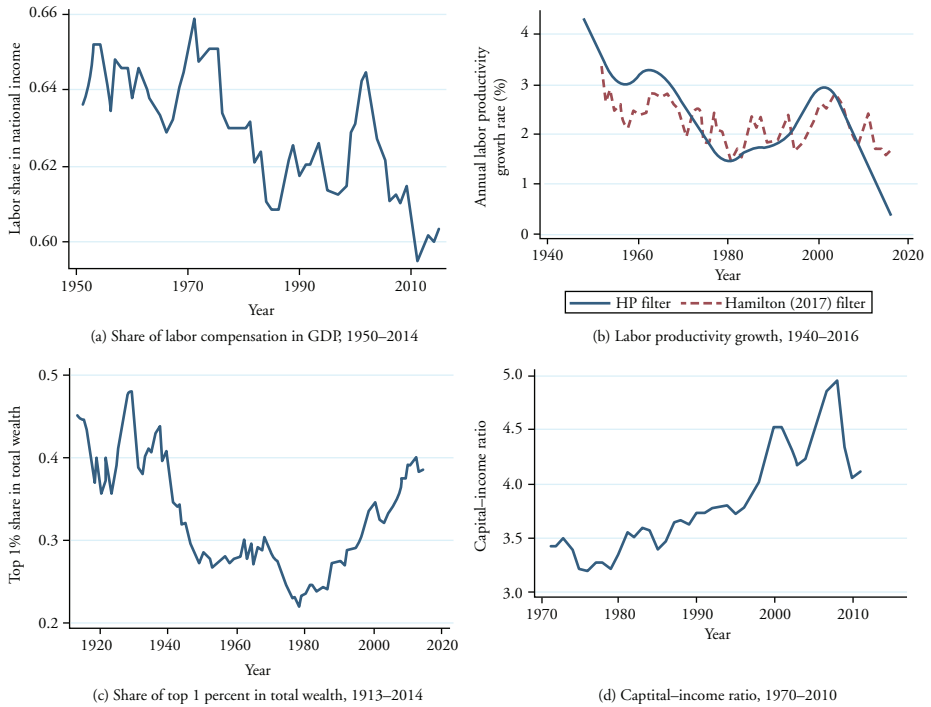
Secular and medium-run trends that both characterized the US economy before the COVID-19 crisis point to how vulnerable the economy was to a shock.¹ Long-run trends, illustrated in Figure 1, show that the United States’ economy has been characterized by: (i) a long-run downward trend in the labor share in GDP, down from basically two-thirds of GDP to less than 60 percent in the late 2010s; (ii) a clear downward trend in labor productivity growth despite a rise in the 1980–2000 period; (iii) a U-shaped pattern in the top 1 percent wealth share, with a marked increase after the 1980s; and (iv) an increase in the capital–income ratio.

Characteristics (i), (iii), and (iv) provided the motivation for Thomas Piketty’s (2014) best-selling *Capital in the XXI Century*. The Piketty explanation, which draws from a

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1. The expression ‘before times’ is due to Kai Ryssdal, who conducts the National Public Radio show *Marketplace* in the US. See <https://www.marketplace.org>.

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Notes: Data on the labor share, labor productivity, the capital–income ratio, and the top 1 percent wealth share are from the Federal Reserve, the Bureau of Labor Statistics, Piketty (2014), and the World Top Incomes Database, respectively. Figure 1b plots the trend component of labor productivity growth.

Figure 1 Secular stagnation and inequality in the United States: stylized facts

standard neoclassical growth model with exogenous long-run growth, is well known by now: given an endogenous rate of return to capital r greater than the exogenous growth rate of output per worker g , the capital–income ratio k/y rises. If the elasticity of substitution between capital and labor is above 1, the profit share increases and the labor share falls. Formally, with a constant elasticity of substitution production function $\sigma \in [0, \infty)$, the relation between the capital–income ratio and the profit share π is given by:

$$\pi = \left(\frac{k}{y} \right)^{\frac{\sigma-1}{\sigma}}, \tag{1}$$

which makes it clear that $\partial\pi/\partial(k/y) > 0$ if $\sigma > 1$. As for the downward trend in labor productivity growth, Gordon (2015) – again drawing from the neoclassical growth model – has argued that it is due to the exhaustion of meaningful scientific discoveries in recent decades: an exogenous decline, in other words.

Petach/Tavani (2020) have provided an alternative explanation for the above stylized facts, drawing from contemporary work in the tradition of the classical political economists. Consider a stylized economy populated by ‘capitalists’ who own capital stock, earn profits, consume and save at a rate s^c , and ‘workers’ who supply labor services to

capitalists, earn both labor and capital income, consume, and save. One of the many insights that the discipline of economics got from Roy Harrod (and especially Harrod 1939) is that maintaining balanced growth in a labor-constrained economy requires the accumulation rate g – in turn equal to the capitalist saving rate s^c times the profit share π times the income–capital ratio $u = y/k$ – to equal the sum of the growth rate of labor productivity γ and the growth rate of the labor force n .²

In many recent contributions in both classical and post-Keynesian traditions, the growth rate of labor productivity γ is *conflict-driven*: firms respond to increases in the share of labor in their total costs by adopting more labor-saving technologies.³ Thus, we postulate a functional dependence $\gamma = \gamma(\pi)$, $\gamma_\pi < 0$. The balanced growth condition is then

$$s^c \pi u = \gamma(\pi) + n. \quad (2)$$

In the neoliberal era, the combination of the erosion of labor market institutions (Murota 2018), the rise of globalization (Karabarbounis/Neiman 2014), and the race to the bottom in unit labor costs (Rada/Kiefer 2015), fiscal austerity, and financialization (Skott/Ryoo 2008; Cynamon/Fazzari 2016; Michl 2017) have put downward pressure on the labor share, so that π has risen. Everything else being equal, the accumulation rate in the left-hand side of equation (2) rises, but the long-run growth rate on the right-hand side has *fallen*: restoring balanced growth requires a decline in the income–capital ratio u , or equivalently an increase in the capital–income ratio.⁴

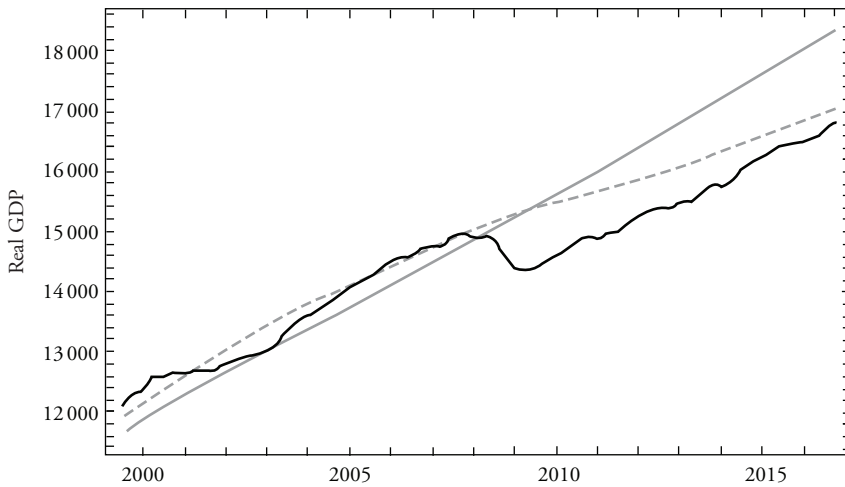
As for the increase in wealth concentration, the famous Pasinetti (1962) theorem has the following implications. First, even when workers save, their saving rate is irrelevant for the long-run accumulation rate of the economy: in fact, it does not feature in equation (2). Second, however, differential saving propensities of course matter for the distribution of wealth between classes. Third, when embedded in models of secular stagnation, the Pasinetti result implies an inverse relationship between the output–capital ratio u and the capitalist wealth share (Ederer/Rehm 2020). The intuition is as follows: long-run utilization is inversely related to the savings-to-income ratio in the economy, and the latter increases in the capitalist wealth share, given that capitalists have a higher saving propensity than workers. Thus, and once again from a classical political economy perspective, the worker squeeze that occurred in the United States during the neoliberal period is responsible for both secular stagnation and rising wealth inequality in the country.

Regarding the Great Recession and its aftermath, Figure 2 is another familiar one, comparing the actual GDP trajectory in black with two series of potential output calculated by

2. This is easily visualized under a Leontief technology. Denote labor productivity by A , the labor force by N : the employment rate will be defined as $e = uk/(AN)$. In balanced growth, technical progress should take the Harrod-neutral form, so that the growth rate of u should be zero. The growth rate of employment, say $g_e = g - (\gamma + n)$, will be constant only if $g = \gamma + n$ as stated above. With a smooth production function, employment stability is guaranteed by movements in the real wage and capital–labor substitution.

3. This literature is surveyed extensively in Tavani/Zamparelli (2017). The conflict-driven nature of technical progress has proven to hold both when considering the so-called *direction* of technological change, that is, the relative rate of labor vs capital-augmenting innovations, and the *intensity* of technical change, that is, the long-run growth rate of labor productivity. For a classical microeconomic foundation of the latter, see Tavani/Zamparelli (2021); for empirical validations of this hypothesis, see Marqueti (2004) and De Souza (2017).

4. Note that this implies an elasticity of substitution of less than one, not higher; and it holds even with an elasticity of substitution equal to zero (Petach/Tavani 2020) but with a purely Harrod-neutral profile of technical change.



Source: Congressional Budget Office.

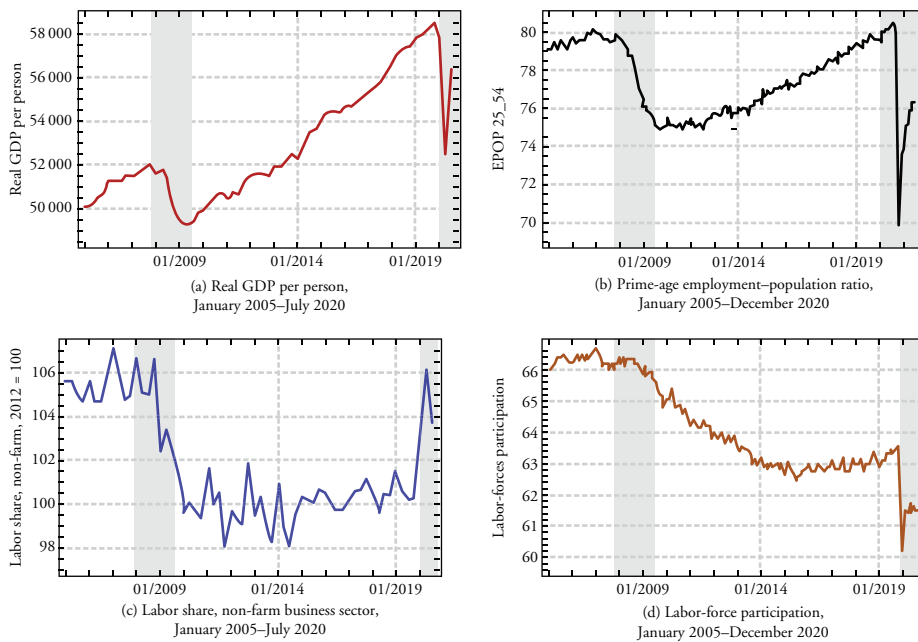
Figure 2 US real GDP (billions of chained US dollars, black) vs the CBO estimates of potential GDP in 2007 (gray) and the CBO estimates of potential GDP in 2017 (dashed)

the Congressional Budget Office (CBO): the solid gray line, which is the trend the CBO projected in 2007, before the Great Recession, and the dashed line, which is the trend the CBO calculated in 2017. When compared to 2017 potential output, the Great Recession looks like the usual V-shaped recession; but if the relevant comparison is with the 2007 trend, it looks much more like an L-shaped recession. Fatas (2019) provides similar calculations for economies in the European Union.

This suggests that the Great Recession has had long-lasting effects, and that the recovery has at best occurred slowly, if at all. There is consensus among mainstream and heterodox economists alike that the US economy has shown strong signs of *path-dependence*: shocks can have permanent effects, especially on levels but perhaps even on growth rates.⁵ As the top-right panel of Figure 3 shows, it took over ten years for the so-called prime-age employment–population ratio (EPOP25-54) to return to its pre-recession level, just before the COVID-19 shock hit the US economy.

A longstanding dispute among classical and post-Keynesian economists is whether aggregate demand matters or not in the long run. Michl (2017: 77) has defined this issue as the ‘discord in the marriage of Classical and Keynesian economics that defines modern heterodox macroeconomics.’ In two related papers, Petach/Tavani (2019) and Tavani/Petach (2021) have attempted to provide a unifying framework in the spirit of what Michl calls ‘irenics,’ that is, the reconciliation of opposing theological doctrines: the classical, supply-driven worldview as opposed to the post-Keynesian demand-driven viewpoint. The exercise in irenics involves looking at aggregate demand as an externality that affects firms’ *beliefs* about the state of the economy. Firms take aggregate demand – which in post-Keynesian economics is usually measured as the aggregate income–capital

5. The actual GDP trend in Figure 2, in fact, looks flatter than the pre-recession trend in potential output, signaling hysteresis affecting the economy’s *growth rate* and not just the level of real GDP.



Notes: Shaded areas indicate recessions. Each series ends at the latest available datapoints (retrieved on 7 January 2021).

Source: Federal Reserve Economic Database.

Figure 3 Selected data for the United States, 2005–2020

ratio u – as given when choosing the rate of utilization of their installed capacity, and do not internalize the effect of their individual decisions on the economy-wide rate of utilization. Accordingly, the utilization rate is not only endogenous to distribution: it also depends on beliefs on aggregate utilization, that can in turn be influenced by fiscal policy. It is path-dependent, in other words. This result conforms with the empirical findings in Gechert et al. (2019), of permanent level effects of fiscal policy on GDP.

A crucial implication of path-dependency is that one should expect economies to generally operate with slack capacity: as such, fiscal policy assumes a coordinating role on the economy, similar to the seminal contribution by Cooper/John (1988), where even supply-driven economies are not, in fact, supply-constrained in equilibrium. In this context, and as shown in Tavani/Petach (2021), a fiscal expansion in an economy with under-utilized resources will not only increase utilization, but also have progressive effects on the labor share.⁶ The long-run effects of fiscal policy on the economy's growth rate depend on the driving forces behind technological progress. With a Kaldor–Verdoorn growth law based on dynamic increasing returns, the growth effects of fiscal policy are bound to be temporary. With endogenous, conflict-driven technical change, these effects are bound to translate into permanent growth effects (see Tavani/Petach 2021): if the wage share rises

6. In ongoing work (Petach/Tavani 2021), we showcase the progressive effects of fiscal expansions on the distribution of wealth.

following a fiscal expansion, and the growth rate of labor productivity is directly related to the wage share, it will permanently increase.

Summing up, the 'before times' left much to be desired. The trajectory of the US economy has been characterized by secular stagnation and worrisome distributional trends – both regarding income and wealth – since the 1980s. The aftermath of the Great Recession appears to have featured strong path-dependence: certainly in levels, possibly in growth rates. Both features made the economy vulnerable to shocks.

2 THE COVID-19 SHOCK AND THE POLICY RESPONSES IN THE UNITED STATES

As shown in Figure 3, the economic effects of the Great Recession pale in comparison to the economic damage caused by the COVID-19 pandemic. Due to the combination of behavioral restraint by the public and government-imposed lockdowns, real GDP per capita fell by about 10 percent between March and May of 2020, to only partially bounce back once the lockdowns were lifted. The prime-age employment/population ratio has followed a similar trajectory; so did the labor-force participation rate, already much below its average value before 2009.⁷ As for the labor share, the counter-intuitive spike one sees corresponding to the onset of the pandemic highlights two issues that are peculiar to the pandemic. First, compositional effects: most of the job and wage losses in spring 2020 occurred in low-paying service sectors, while high-wage workers stayed in their jobs. A simple accounting exercise will reveal that such a situation determines an increase in the labor share. In fact, as the effects of the pandemic became more widespread, the labor share started to decline, conforming with intuition. Second, consider the very definition of the wage share as the ratio of the average real wage over average labor productivity. A decline in labor productivity, which relates to supply-driven forces at stake in the pandemic, lowers the denominator of the fraction, while the numerator stays constant or falls by less, at least for the workers who kept their jobs during the crisis.

2.1 The CARES Act of 2020 and the American Rescue Plan Act of 2021

The policy response to the pandemic shock in the second quarter of 2020 consisted of three pillars: direct transfers to households; extensions and increases in unemployment insurance (UI); and direct transfers to firms to cover payroll costs (the paycheck protection program). The analysis carried by Raj Chetty's website Opportunity Insights has suggested that direct transfers have been most effective at stimulating demand at the bottom of the income distribution, while less effective for upper-income quintiles. This finding conforms with standard Keynesian economics, because it supports the idea that marginal propensities to save increase with income.⁸ The extension and increases (\$600 in federal

7. Importantly, there is an extremely worrisome gender dimension to the problem of labor-force participation, where most of the decline is due to women leaving the labor force because of care obligations within the household. US Vice President Kamala Harris noted in February 2021 that as many as 2.5 million women have left the labor force during the COVID-19 crisis. See <https://www.nytimes.com/2021/02/18/us/politics/women-pandemic-harris.html>.

8. It is possible that the higher savings accumulated by upper-income households will create the conditions for so-called 'pent-up demand' in 2021. At the time this paper is being written, we do not yet have data on the economic effects of the additional \$600 direct transfers to households which were granted in late 2020.

monies in addition to the state-level UI amounts) in unemployment insurance fulfilled a basic goal of maintaining livelihoods for the large number of workers who were laid off early in the pandemic, especially in the service sector. Progressive economists have also emphasized the effectiveness of UI as an automatic stabilizer. Gechert et al. (2021) show that multipliers of social spending are relatively large at around 1.3 on impact. Josh Bivens of the Economic Policy Institute has argued that UI has high multipliers, rising up to 2 in a recession (Bivens 2020). The item in the Coronavirus, Relief and Economic Security (CARES) Act that has showcased flaws was the paycheck protection program, which was targeted at firms with fewer than 500 employees but which suffered from a variety of glitches that allowed some very large companies to appropriate the funds early on, so that the program ran quickly out of money, leaving many of its target population without aid.

On 11 March 2021, President Biden signed into law the American Rescue Plan Act. This is a massive piece of progressive legislation – almost 10 percent of US GDP – that includes an array of temporary release measures: additional direct transfers to households, extensions and supplements to unemployment insurance, health insurance subsidies, child tax credits, housing assistance, \$350 million in state and local relief, and additional resources geared toward faster vaccine roll-out and the healthcare sector. The plan fulfills a major campaign promise by the Biden administration to provide immediate relief but also to lay down longer-term foundations to ‘rebuild the middle class.’ There is currently little debate in economics about the effectiveness of UI as an automatic stabilizer; one could argue more regarding direct transfers and their aggregate economic effects. However, Fazzari (2021) has argued that the merits of direct transfers are to be found in: (a) the fact that unemployment benefits do not address all of the financial stresses suffered by households during the pandemic, and in particular the income losses determined by women dropping out of the labor force in order to care for children attending school remotely; (b) it can be expected that direct transfer will in fact increase aggregate demand to some extent; and (c) stimulus checks may be used by households in order to partially deleverage, which will provide the conditions for healthier household balance sheets and a stronger recovery.

In terms of the effect of the two rounds of stimulus on the national debt, it can be safely assumed that worries about fiscal sustainability for the US are misplaced. In his 2019 Presidential Lecture at the Allied Social Science Association, Blanchard (2019) argued that if the interest rate on government debt i is less than the growth rate g , then government debt can be safely rolled over without an increase in the debt–GDP ratio.⁹ And even if rates rise, it is likely that the increase will be moderate, given the commitment by the Federal Reserve to keep interest rates low for extended periods. As the economy recovers and GDP resumes growth, the debt–GDP ratio is bound to decrease.

3 LOOKING AHEAD: ARE WE HEADED TOWARD INFLATION?

To conclude this short contribution, I would like to briefly address the most recent debate, initiated by Larry Summers (2021) with a follow-up by Oliver Blanchard (2021), about the risk of ‘overheating’ and rising inflation because of the various rounds of fiscal stimulus and relief packages. In light of the considerations about hysteresis made above, it is my opinion that these concerns are misplaced. The pattern of potential output calculated by the CBO and displayed in Figure 2 has bent downwards substantially since

9. Blanchard (2019) uses r for the interest rate, but to avoid confusion with the rate of return already discussed above, I chose to use i here.

2007, casting serious doubts about both the very notion of potential GDP and consequently our estimates of the output gap in the US (Sahm 2021). If this is the case – and the US economy still had significant underutilized capacity *even before the COVID-19 crisis* – then it is highly unlikely that the fiscal stimulus will result in overheating. It is also quite interesting that Summers has raised inflationary concerns given his insistence in recent years on ‘demand-driven secular stagnation,’ according to which the US economy is operating with excess savings and too little investment, and the consequent persistent spending shortfall, despite extremely low interest rates and the possibility of financial bubbles (Summers 2014). In light of the longer-run considerations about secular stagnation already discussed, the redistribution featured in the fiscal stimulus – which the Biden administration hopefully will follow through with more long-run measures such as the proposed infrastructure plan, rising minimum wages, and more progressive policies in the years to come – could be a first step in reversing the patterns of increasing inequality and secular decline in labor productivity growth in the future.

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