Levy Economics Institute of Bard College

Summary

Contents

Contents (continued)

LETTER FROM THE PRESIDENT

Dear reader,

We have been applying the Levy Institute's unique macroeconomic model to the task of analyzing the pandemic's economic impact and assessing the prospects for recovery—most recently in Greece and, now for the first time, Italy. In our latest report on the Greek economy, we partnered with the INE-GSEE to estimate the impact of a renewed lockdown and two alternative policy scenarios. My coauthors, Christos Pierros, Nikos Rodusakis, and Gennaro Zezza, and I find that while the disbursement of EU funds would help hasten Greece's recovery, getting closer to the pre-pandemic growth trend requires further fiscal action—action more targeted to addressing Greece's employment crisis. In our report on Italy (written before the second COVID-19 wave had emerged), Francesco Zezza, Gennaro Zezza, and I find that the OECD's near-term projections for the Italian economy are overly optimistic. Moreover, we caution that the government's seeming commitment to pair the use of European funds with an attempt at reducing Italy's public debt through expenditure cuts not only aims at the wrong target, it is likely to fail on its own terms. We then project the impact an alternative scenario, centered on a substantial increase in Italy's public sector employment.

In the United States, electoral developments have made another round of pandemic relief legislation more likely, with early reports suggesting a repetition of the CARES Act model. In his policy note, Jan Kregel proposes an alternative to this approach—one centered on direct "social provisioning" to support a strict lockdown. The aforementioned political changes have also placed the prospect of federal aid to state and local governments back on the agenda. Alex Williams, an alumnus of our Graduate Programs in Economic Theory and Policy, explains in his policy brief why the conventional moral hazard objection to such aid is misplaced, and that the real moral hazard lies in leaving fiscal federalism up to shifts in the political winds.

As the conventional wisdom continues to move in the direction of a more active use of fiscal policy, Jan Toporowski uses the work of Michał Kalecki to develop a framework for analyzing the impact of government debt management—a framework that hinges on distinguishing between the government's "functional" and "financial" balances and that would, in his view, enable more effective fiscal policy.

Continuing her work analyzing the interactions between the COVID-19 crisis and overlapping inequalities (of race, gender, and income), Luiza Nassif-Pires joins Laura Carvalho and Eduardo Rawet to evaluate the disparate public health impact of the pandemic in Brazil—particularly along racial lines—and the role that fiscal policy measures have played in mitigating the effects of the crisis with respect to income inequality. A working paper by Michelle Holder, Janelle Jones, and Thomas Masterson describes similar evidence of inequality in the disproportionate burden the government-mandated shutdowns have placed on Black women in the United States. To meet the challenges that still lay ahead, in their contribution Leonardo Burlamaqui and Ernani T. Torres Filho outline a Minskyan approach to the post-pandemic recovery.

Other working papers in this issue cover a wider variety of topics. Harold M. Hastings, Tai Young-Taft, and Chih-Jui Tsen apply network dynamics observed in ecosystems to investigate the role networks play in stabilizing and destabilizing economic systems. Jörg Bibow describes the evolution of John Maynard Keynes's analysis of instability, illustrating that, contrary to standard interpretations, the *General Theory* is indeed a general theory, while Lorenzo Esposito and Giuseppe Mastromatteo focus specifically on the implications of Keynes's "beauty contest" metaphor in the modern economy; two papers by Tanweer Akram and Huiqing Li apply a Keynesian perspective to their exploration of bond yields in the UK and Japan. In what he calls the "Kansas City" approach to Modern Money Theory (MMT), L. Randall Wray traces the theory's development from its origins in the mid-1990s through today. Applying MMT to an open economy, Emilio Carnevali and Matteo Deleidi find evidence that its prescriptions can be effective at boosting employment, but not without causing inflation in non-dollar economies. Two papers evaluate the quality of match used to create synthetic datasets for studying time poverty effects: the first, by Fernando Rios-Avila, looks at data used in the Levy Institute Measure of Time and Consumption Poverty (LIMTCP) for Ethiopia and South Africa and the second, by Erica Aloè, evaluates the match for the Levy Institute Measure of Time and Income Poverty (LIMTIP) for Italy. Jerome De Henau and Susan Himmelweit apply a version of the Levy Institute's macrosimulation method developed for South Africa, Turkey, and the United States to create a macro-micro model for assessing the gendered employment impacts of government expenditure. Two final working papers addressing fiscal issues round out this issue, with Lekha S. Chakraborty, Pinaki Chakraborty, and Ruzel Shrestha evaluating budget credibility at the subnational level in India, and Bendreff Desilus advocating for fiscal policies grounded in the principles of functional finance to foster equality in Argentina, Brazil, and Mexico.

In this issue, we also acknowledge the crucial role played by those who have helped support our programs of late—their contributions have been pivotal in sustaining our research efforts during this challenging period.

Be well and, as always, I welcome your comments.

Dimitri B. Papadimitriou, *President*

Program: The State of the US and World Economies

Strategic Analysis

## What's Ahead for the Greek Economy?

DIMITRI B. PAPADIMITRIOU, CHRISTOS PIERROS,
NIKOS RODOUSAKIS, and GENNARO ZEZZA
Strategic Analysis, December 2020

In partnership with the INE-GSEE (Athens), Institute President Dimitri B. Papadimitriou, Research Associates Christos Pierros and Nikos Rodousakis, and Research Scholar Gennaro Zezza analyze the prospects for the Greek economy over the 2021–22 period, including evaluation of two alternative policy scenarios. Since the previous projection (in May 2020) by Papadimitriou, Michalis Nikiforos, and Zezza, a second COVID-19 wave has led to a renewed lockdown, worsening the near-term outlook for the Greek economy.

With data available for the first half of 2020, the authors note that real GDP fell 15.2 percent (year-over-year) in 2020Q2. While the GDP data for Q3 were not yet available, they note worrying trends in key sectors. For instance, for the period January–September 2020, travel receipts fell by more than 78 percent compared to the same period in 2019—with 6.2 million fewer foreign visitors. Declines have been seen, on a year-over-year basis, in both industrial production and retail trade indices. In the first half of 2020, gross value-added declined for the majority of sectors. The only significant exceptions to the widespread contraction were found in the construction and public administration sectors. Of those businesses whose activities were suspended by the pandemic and associated lockdown measures, the impact has been greatest in the accommodation, food, and arts and entertainment sectors.

The unemployment rate was at 16.8 percent as of August 2020, but the authors emphasize that this actually understates the extent of the current labor market crisis (due in part to the

Figure 1 Greece: Change of Employed, Unemployed, and Inactive Persons (thousands people, year-over-year) and the Unemployment Rate (percent)
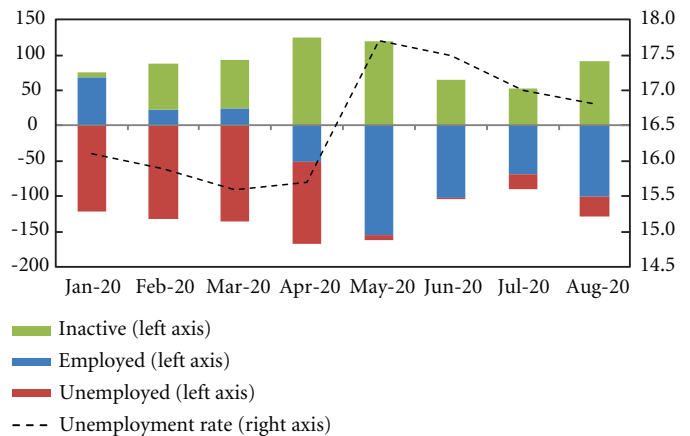
Source: ELSTAT and authors' calculations

number of people considered "inactive" due to pandemic restrictions). A more complete picture is obtained by analyzing employment more broadly (see the breakdown in Figure 1).

Since April of 2020, the Greek household sector's steady deleveraging has been somewhat mitigated, likely due to the reduction in income flows. Meanwhile, net new loans to nonfinancial corporations (NFCs) rose significantly since March—aimed, as the authors observe, toward providing liquidity (not new investment). Moreover, amounts in arrears have increased for both households and NFCs. It is also notable that while the share of nonperforming loans had been declining pre-pandemic (for consumer, housing, and corporate loans), this trend essentially stopped in 2020Q2. Overall, they warn, the fragile financial state of households and NFCs, due to reductions in cash flow and liquidity, has the potential to destabilize the financial sector through contagion effects. They note that one of Greece's four largest banks, Piraeus Bank, is already in financial distress, and faces the prospect of being nationalized. Given these financial background conditions, Papadimitriou, Pierros, Rodousakis, and Zezza recommend that fiscal support measures meant to provide liquidity, much of which have taken the form of loans to firms, be provided instead as grants and subsidies (for both households and NFCs).

In laying out their baseline projection for the Greek economy through 2022, the authors note that the major shocks to supply and demand, as well as the relative dearth of data, call for a degree of caution when utilizing any macroeconomic

model. On the basis of estimates they derive for the impact of the pandemic and associated shutdowns on private expenditure and exports in the first two quarters of 2020, they assume that private expenditure will experience a downturn in 2020Q4 as severe as what occurred in Q2, and that gradual improvement will begin in 2021Q3.

Their baseline scenario projects real GDP to contract by 10.8 percent in 2020 (which is worse than the −10.4 percent projection made by Papadimitriou, Nikiforos, and Zezza in May), and to grow by 3.4 percent and 5.3 percent in 2021 and 2022, respectively. Primary budget deficits would increase to 7.5 percent of GDP in 2020 in the baseline scenario, and then shrink to 6.8 percent in 2021 and 4.2 percent in 2022.

In the first alternative scenario, the authors assume that Greece will begin receiving its share of the European Union's recovery funds in 2021Q3, with €2 billion projected to be spent each quarter until the end of 2022. (Since the funds are still subject to final approval, this may impact the size and timing of their release, the authors caution.) Their simulation shows that this scenario would lead to a faster recovery compared to the baseline: in 2021, real GDP would grow 6.1 percent (versus 3.4 percent in the baseline) and in 2022 it would grow 8.6 percent (versus 5.3 percent).

Since the use of EU funds will be constrained in ways that may not necessarily match the particular needs of the Greek economy—most urgently the precarious state of employment—the authors analyze an additional scenario. In the second alternative scenario, the government would guarantee minimum-wage jobs to all unemployed and inactive persons (those marginally attached to the labor market) willing and able to work. The program is assumed to begin in 2021Q2 and expand to employ a maximum of 300,000 people by 2022Q1, for an outlay of €630 million per quarter. Combining the recovery funds with a job guarantee program would come the closest to returning Greece's real GDP to its pre-pandemic trend (see Figure 2).

www.levyinstitute.org/pubs/gr_sa_12_20.pdf

When Will Italy Recover?

DIMITRI B. PAPADIMITRIOU, FRANCESCO ZEZZA, and GENNARO ZEZZA

This strategic analysis extends the Levy Institute's stock-flow consistent macroeconomic model to the Italian economy for the first time. Institute President Dimitri Papadimitriou, Research Associate Francesco Zezza, and Research Scholar Gennaro Zezza detail the pandemic's impact on the Italian economy so far (as of September 2020) and produce a baseline projection for 2020–21. They observe that the debate has turned to the benefits that can be derived for the Italian economy from an influx of European funds. However, Papadimitriou, Zezza, and Zezza warn that the net positive impact of using the European funds (the "Next Generation European Union" [NGEU] funds) to support the economy could be mitigated by a commitment to cut other public expenditures in an attempt to reduce Italy's public debt.

The authors note that Italy was the first European country to be significantly affected by the COVID-19 pandemic, leading the government to implement a shutdown of nonessential economic activities. This caused GDP to fall by 5.6 percent in 2020Q1 (year-over-year), followed by an even more dramatic 17.7 percent drop in Q2. Moreover, they note that under a burden of austerity, Italy's economy had still been struggling to recover from its previous economic crises (the Great Recession and the European sovereign debt crisis) when the pandemic hit: at the end of 2019, Italy's real per capita GDP was still 7 percent below its peak (2008Q1).

With respect to the impact of the COVID-19 crisis, the authors explain that the Italian economy experienced the largest drop in production since 1995 (when the quarterly GDP

Figure 2 Greece: Real GDP under Alternative Assumptions (€ billions, 2010 prices)
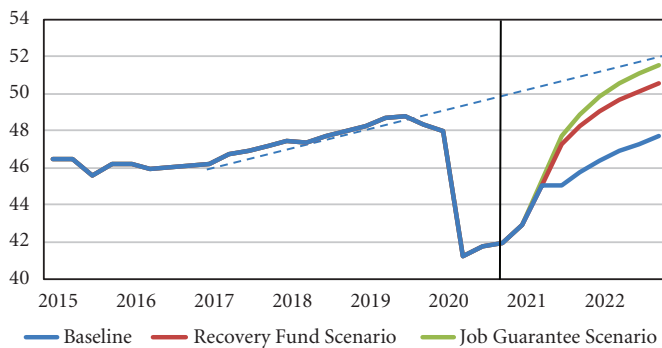
Source: Authors' calculations

series began): in 2020Q2, domestic demand fell by 9.7 percent and net external demand dropped by 2.4 percent. Forty-five percent of firms suspended their activities between March and May 2020, and the industrial production index reached a historic low in April. Against this background, they point out that the government's fiscal support measures for 2020—€100 billion, or roughly 5 percent of Italy's 2019 GDP—will end up amounting to a relatively weak response if, as is also expected, Italy's GDP falls by more than 10 percent in 2020. Moreover, the authors note that, as of September 2020, only 20 percent of the government's announced fiscal measures had been spent.

Papadimitriou, Zezza, and Zezza assess the OECD's most recent projections for the Italian economy (while noting that detailed information on sectoral accounts for 2020Q2 were not yet available as of September). First, they simulate the Levy Institute's macroeconomic model for Italy for the first two quarters of 2020 in order to ascertain estimates of the pandemic's Q1 and Q2 impact. This reveals that consumption was 7 percent lower than the model would have predicted (prepandemic) for 2020Q1 and 10 percent lower than what would have been predicted for Q2; for the same periods, investment was, respectively, 9 percent and 10 percent lower than expected. Next, they estimate what would need to happen to the components of GDP for the OECD's 2020 projection—which assumes recovery begins in 2020Q3 with a 12.7 percent increase in GDP over the previous quarter and a further 4.5 percent increase in 2020Q4—to come to pass. Their calculations reveal that, in 2020Q3, consumption would have to increase by 16 percent, exports by 30 percent, and imports by 11 percent for the OECD projections to hold. Given continued uncertainty about the pandemic, they write, these projections appear overly optimistic. The authors thus construct their own baseline scenario on the assumption that consumption and trade do not "overreact" to an easing of the lockdown in 2020Q3: in this case, GDP will drop by 12.1 percent in 2020 and recover by 6.8 percent in 2021. (This baseline scenario does not take into account additional fiscal support that may be enabled by the release of European funds.) The public debt ratio would increase to 156 percent of GDP and stabilize at this level in 2021.

Papadimitriou, Zezza, and Zezza argue that the public debate in Italy has focused too much on the purported need to avoid increasing public debt. As long as the European Central Bank continues its bond purchasing programs, Italy's government should have no problems getting funding from the markets, they write. Concerns about public debt have also influenced the discussions about NGEU funds. Should these funds materialize (which, as of September 2020, were estimated to amount to just under 2 percent of Italy's 2019 GDP, net of any expected repayments), it would be too little, too late, in the authors' assessment. Moreover, they point to the Italian finance minister's recent comments suggesting that the disbursement of NGEU funds would be paired with spending cuts with an eye to controlling public debt. Papadimitriou, Zezza, and Zezza warn that austerity measures tend not to achieve significant reductions in debt ratios because they have a greater negative impact on the denominator (national income) than the numerator. Strengthening GDP growth, they argue, is the superior alternative, and toward that end the authors endorse a proposal to substantially increase public sector employment in Italy. They simulate the impact of such an increase in employment beginning in 2021Q1, which would entail quarterly expenditure of €17 billion until the end of the 2021. This fiscal expansion would increase the real GDP growth rate by 2 percentage points in 2021 and the debt ratio would be slightly lower, relative to the baseline scenario. www.levyinstitute.org/pubs/sa_oct_20.pdf

Alternative Macro Policy Response for a Pandemic Recession

JAN KREGEL
Policy Note 2020/6

In the context of second (and third) waves of COVID-19 infections throughout the world, Senior Scholar Jan Kregel proposes an alternative policy approach to the economic problems created by the pandemic.

Kregel observes that in the pandemic's initial stages, mainstream analysts focused on the impairment of production and disruption of global supply chains, and the pressure this might put on supplies and prices. As the virus spread to Europe and the United States and workers lost their jobs or were furloughed, the focus shifted to the negative impact on demand. The policy discussions tended to harken back to the sort of measures employed during the Great Recession: greater fiscal stimulus paired with low or zero interest rates. This was, Kregel

argues, the wrong place to start conceptually, as it was based on a misunderstanding of the fundamental economic problems created by the COVID-19 crisis.

For his alternative approach, Kregel advocates beginning with the concepts of uncertainty and expectations. He observes that although initial reactions to the virus were informed by experiences in the recent past (SARS and MERS), it quickly became clear that transmission and mortality rates were far greater, and healthcare capacity became an urgent matter. With asymptomatic spread combined with testing shortages in places like the United States, the uncertainty was "complete and total," as Kregel writes. The only sensible response was a full-scale lockdown to stop the contagion. In that sense, the challenge was to manage expectations in order to enable the reduction of R_0 (roughly, the rate at which the virus is passed through the population) to below 1—the central economic problem, Kregel explains, was to ensure that the lockdown could be sustained until that public health objective was reached.

The appropriate policy response in such circumstances is not traditional recession-fighting "stimulus" policies, according to Kregel. Complete lockdown entails not working, which entails no demand for labor and little opportunity to spend income anyway; as such, a guarantee of employment or income is not what is called for, in Kregel's view. Instead, confidence can be restored by pairing a strict lockdown with a guarantee of survival through "social provisioning"—a guarantee that the basics would be provided through central government organization. The problem with income transfers, Kregel comments, is that in a pandemic lockdown the market mechanism is effectively suspended. Instead of SNAP (the Supplemental Nutrition Assistance Program), for instance, what is needed is something more like a variant of the Civilian Conservation Corps that would ensure everyone has enough to eat through direct provisioning of food—"the reorganization of the food-service sector into a food-distribution sector," as Kregel envisions it.

Kregel also observes that the "stimulus" approach focuses exclusively on incomes, with costs and sales forgotten. What is required in a lockdown, in his view, is a balance between costs and incomes. Firms with no sales and no earnings do not require loans to support payroll if households' survival can depend instead on the aforementioned subsistence (of food, medicine, and other necessities) through direct provisioning. With respect to fixed costs (rents, mortgages, etc., for households

and firms), Kregel's alternative approach would call for the suspension of all such payments to avoid increases in debt levels that would create difficulties during a post-lockdown recovery. This, along with suspension of trading in capital assets, is key to an equitable sharing of the burdens during lockdown, in his view—there is no privileging of rental or capital income over labor income. In this framework, deficit spending is not the central focus, Kregel explains. Although a certain amount of expense is necessary, the point is not government money, it is organizational ability and speed, all guided by the overarching goal of providing an equitable means of sharing the costs of the lockdown. As for the equity issues raised by essential workers, Kregel proposes a progressive tax on those who are able to work from home during quarantine paired with a supplement for the incomes of sanitary support workers and others bearing increased risks.

In reality, the United States opted for neither a strict lockdown nor direct social provisioning. And although Kregel notes that economists are predicting significant unemployment for the end of 2020, he emphasizes an additional obstacle to a successful post-pandemic economic recovery. For many economic units, cash inflows have been insufficient to meet cash outflows for debt service, even after taking the various stimulus programs into account. As the current stimulus plans are set to expire, this gap will increase, Kregel suggests. The gap has been financed in part by the Federal Reserve's buyer-of-last-resort policies and increases in borrowing on the part of the nonfinancial corporate sector. With reference to Hyman Minsky's terminology, Kregel describes the pandemic crisis as having increased the number of "Ponzi units" in the economy—those borrowing to meet financing costs. This process, he warns, increases financial fragility and sets up the possibility of the next "Minsky moment" coming alongside a wave of unemployment.

www.levyinstitute.org/pubs/pn_20_6.pdf

Ecology, Economics, and Network Dynamics

HAROLD M. HASTINGS, TAI YOUNG-TAFT, and CHIH-JUI TSEN
Working Paper No. 971, September 2020

As economic systems become more complex, it becomes more relevant to study them applying network dynamics observed in ecosystems, contend Research Scholar Tai Young-Taft, Harold M. Hastings, and Chih-Jui Tsen, Bard College at Simon's Rock. Highlighting developments in the literature that inform our present understanding of stability and complexity, the authors seek to provide a better understanding of the role networks play in both stabilizing and destabilizing economic systems.

The authors suggest that the growing interconnectedness of economic systems—where real and financial companies operate independent of national boundaries and global supply chains have become increasingly complex—has made it more difficult to manage and forecast economic trajectories governed by a broad range of time scales, from the milliseconds in high-frequency trading to a decade or more for major infrastructure projects. To build a model capable of making sense of these trajectories in a high-dimensional state space, they turn to existing literature on complex systems, with the school of thought based on studies from the 1950s by Robert MacArthur and G. Evelyn Hutchinson positing that systems become more stable as they gain complexity while evidence from Robert M. May's work suggests that increasing the number of interactions in a system makes it less so. The key to ascertaining which outcome will prevail, the authors suggest, lies in establishing how the strength of the interactions scale with the number of interactions.

In May, a system's stability is related to its size, connectance, and mean interaction strength, mathematically formalizing concepts such as "too big" and "too connected." MacArthur and Hutchinson's studies considered an energy network, where flow into a node was divided among different pathways; increasing the network's size resulted in a decrease in the average interaction strength and increased stability. Applying the same principles to the financial system, for example, by diversifying portfolios, may not have the same effect, and Hastings, Young-Taft, and Tsen note that the mechanisms that are part of the system's design or evolution have the potential to increase instability in the face of unanticipated shocks. By assuming the present is like the past and risks could be accurately modeled, the authors argue the system was allowed to grow too big and too connected, triggering Minskyan dynamics that transmitted the Lehman shock through the economy.

Employing the stability–complexity relationship for random linear systems (with and without noise) as a prototype for modeling the dynamics of networks, the authors use the example of an ecosystem where increased complexity is correlated with reductions in variability, which in turn increases stability. However, they assert that better definitions of stability and complexity are needed when making predictions to account for concepts such as resistance to and resilience from systemic shock that may affect the magnitude of the response. Adding two mathematically oriented concepts (Lyapunov stability and structural stability) to those explored in the existing literature further demonstrates their supposition that though a system may approach stability in one environment, it may become fragile in another with respect to exogenous forces affecting its dynamics. They illustrate their point in a diagram of an economy that "falls off a cliff" when it becomes too large: the probability of falling off the cliff increases as Lyapunov stability increases, though other exogenous forces (such as increased investor confidence) can prevent failures. Other types of random networks—such as "small world networks," which are scale free and in which degree distribution follows a power law, and modular networks (such as the power grid)—offer more evidence that the more complex a system becomes, the more it is subject to instability.

Raising questions related to May's coauthored 2008 work, "Ecology for Bankers," the authors discuss the nature of stability as it applies to complex economic systems and conclude that the structure of the world trade network—essentially a small world network dominated by two dozen economies—limits our ability to accurately detect instability.
www.levyinstitute.org/pubs/wp_971.pdf

Program: Monetary Policy and Financial Structure

The General Theory as "Depression Economics"?: Financial Instability and Crises in Keynes's Monetary Thought

JÖRG BIBOW
Working Paper No. 974, October 2020

Research Associate Jörg Bibow traces the evolution of John Maynard Keynes's writings on financial instability and market disruptions, beginning with his 1913 *Indian Currency and Finance* through his 1936 *The General Theory of Employment, Interest and Money*, to illustrate how Keynes's analysis in the *General Theory* is not a special case of "depression economics," as standard interpretations tend to assert.

Bibow begins with Keynes's first major work on monetary economics, *Indian Currency and Finance*, which concerns India's financial structure and identifies vulnerabilities, such as a lack of available development financing, in what he considers its "dual" banking system of Western and traditional institutions. Bibow notes that Keynes worried about the fragility of internal financing arrangements, where India's currency, which faced strong seasonal demand, had become absolutely inelastic and the country lacked a central bank to provide lender-of-last-resort support in a crisis. This work earned Keynes appointments to various commissions on finance and currency and, says Bibow, shaped his long-term thinking on asymmetry in creditor–debtor positions and its impact on international relations.

His next major work, *The Economic Consequences of the Peace*, published in 1919, criticized the Treaty of Versailles's excessive debt obligations that would eventually cause hardship throughout the newly globalized economy; by making it impossible for Germany to meet its obligations without general deflation, Bibow contends Keynes recognized that a Wall Street lending boom would only delay a depression. In 1923, *A Tract on Monetary Reform* analyzed price level disturbances during World War I and its aftermath, concluding that monetary policy's primary aim should be internal equilibrium rather than an external commitment (i.e., the gold standard) to avoid economically and socially harmful cyclical fluctuations.

A Treatise on Money, published in 1930 and, according to Bibow, the theoretical lens through which Keynes viewed the early stages of the Great Depression, posits that disequilibria between investment and saving drives the forces underlying the business cycle. While mostly quiet on instability, the resulting policy prescriptions recognize banks' pivotal role as credit providers and liquidity creators in a properly functioning financial system. Bibow quotes various memos throughout the period presenting Keynes's concerns about the precarious financial situation in the United States, advising against the Fed's tight money policy that he saw pushing the economy toward a depression.

During the depression that inevitably arrived, Keynes's activities in the financial markets informed his works, including "Economic Possibilities for Our Grandchildren," an optimistic essay on the prospects of solving economic problems through technological progress, and "The Great Slump of 1930," advocating for bold, internationally coordinated central bank policy. However, Bibow notes Keynes's outlook changed during a visit to America in 1931. With the US crisis spreading globally, his lectures prescribe lower interest rates and debt-financed public construction projects to increase investor confidence and reverse the downward trends; citing the financialization of the banking system and its separation from the real economy, he suggested it might be too little, too late. His visit to Germany in 1932 confirmed his fears about the Versailles treaty's consequences and, suggests Bibow, the lectures delivered there demonstrate Keynes's conception of the Great Depression as a financial crisis rather than a business downturn and that the resulting "competitive panic to get liquid" was behind a general collapse in prices that endangered the entire financial structure. It is this lecture, and the two revised versions he gave in Cambridge, that Bibow contends are critical to interpreting the *General Theory*.

Taking stock of Keynes's views over the period, Bibow asserts that despite his deep understanding of the issues that precipitated the Great Depression as described in the previous publications, Keynes hardly addresses them in the *General Theory*. Instead, says Bibow, Keynes's assumption of a constant money stock exemplifies the generality of the *General Theory*. By ruling out a declining money stock, Keynes was also able to refute the then-popular quantity theory of money and highlight the role real demand and money wages play in determining the

activity and price levels at any given time, leading him to conclude that neoclassical theory represented a special case that was applicable only under full employment conditions.

Addressing the flawed understanding of the *General Theory* first suggested by J. R. Hicks in 1934, Bibow points to Irving Fisher's more-well-received theoretical work of the time as standing in opposition to Keynes's approach and Milton Friedman's proclamations that Keynes was theoretically wrong as contributing to the persistence of this misinterpretation. Though Bibow finds hope for a new understanding in the aggressive and unconventional policy responses to the 2008 crisis, he concludes that while policy has changed, theory has not, and the mainstream still fails to engage in the relevant (Keynesian) monetary economics.

www.levyinstitute.org/pubs/wp_974.pdf

The Trade-off between Inflation and Unemployment in an MMT World: An Open Economy Perspective

EMILIO CARNEVALI and MATTEO DELEIDI
Working Paper No. 973, October 2020

The outbreak of the 2008 financial crisis generated growing interest in economic theory among the general public, contend Emilio Carnevali, Northumbria University, and Matteo Deleidi, University College London, and Modern Money Theory (MMT) stands out as one idea that has seen increased debate, particularly with respect to its potential to generate inflation. Focusing on MMT's treatment of inflation from an open economy perspective, the authors build a stock-flow consistent (SFC) model to test the impact of a job guarantee program, finding that while MMT-style fiscal policy can be effective in boosting employment in their simulation, full employment cannot be achieved without generating inflation under the conditions of their model.

Tracing the history of MMT's development, Carnevali and Deleidi point out that discussions around the theory are sometimes oversimplified and distorted, but the recent publication of the first MMT-based macroeconomics textbook centralizes and clarifies the ideas comprising the theory, the most important of which is that a sovereign issuer of a currency faces no financial constraints. This idea—grounded in the theory of money's origins in works by A. Mitchell Innes, Georg Friedrich Knapp, and John Maynard Keynes—posits that a sovereign currency is a creation of the state and taxes "drive" money because the government accepts their own currency back in payment. With proponents claiming their theories can be uniformly applied to the nearly 80 percent of countries considered to be sovereign currency issuers, the authors note some literature describes a spectrum that features different degrees and levels of sovereignty, offering different degrees of available policy space.

According to MMT (and based on the work of Keynes and Michał Kalecki), inflation occurs when the system is fully utilizing its productive capacity both in terms of capital and labor. To calm inflationary forces resulting from the distributional struggle between different economic sectors, Carnevali and Deleidi describe the second fundamental role for taxes: curbing the nongovernment sector's effective demand and freeing real resources to put toward the public purpose. However, the authors suggest inflation may materialize before full capacity utilization is reached and instruments are needed to manage the trade-off between inflation and employment in an orderly way. MMT's key policy proposal of a government-funded job guarantee, where participation is higher in recessionary conditions and its practice of buying labor off the bottom narrows distributional conflict and the related inflationary tendencies, could be one such tool.

To finance such a job guarantee program, MMT asserts a sovereign currency issuer does not first need to raise revenue, but can credit the appropriate accounts at the central bank—a process Carnevali and Deleidi say is often mischaracterized as a recipe for (hyper)inflation when viewed through the mainstream lens of the quantity theory of money. To test the hypothesis that expanding the monetary base is inflationary, the authors build a structural vector autoregression model using monthly data from the St. Louis Federal Reserve, assuming an exogenous interest rate and endogenous money base. Their findings indicate that an increase in the monetary base does not increase prices, confirming MMT's assertions. However, when the model is applied to non-US data, results are not as clear cut. Following the Harrodian tradition of modeling a country's external position and determining the impact of a current account deficit on a currency's value, Carnevali and Deleidi find that for most of the non-dollar currencies there are some inflationary consequences.

Following the literature on SFC models, the authors build their two-country, open economy model with flexible exchange rates (the United Kingdom in this example), adding a sector of commercial banks they consider essential to assessing the reactions to the shock of the government increasing expenditure to implement the job guarantee. Carnevali and Deleidi demonstrate how the spending moves through the economy and find that while expansionary fiscal policy in the form of a job guarantee can be effective in boosting employment as far as there is spare capacity in the system, the program's implementation is followed by a long-lasting currency depreciation and domestic inflation.

www.levyinstitute.org/pubs/wp_973.pdf

In the Long Run We Are All Herd: On the Nature and Outcomes of the Beauty Contest

LORENZO ESPOSITO and GIUSEPPE MASTROMATTEO
Working Paper No. 972, September 2020

The resurgence of heterodox ideas in the wake of the 2008 crisis has provided an alternative understanding of herd behavior with the Keynesian conception of the "beauty contest" (BC) at its core, according to Lorenzo Esposito, Bank of Italy and Catholic University of the Sacred Heart (Milan), and Giuseppe Mastromatteo, Catholic University of the Sacred Heart (Milan). Asserting that the BC concept is typically misapplied in the literature, they suggest that it is not simply a consequence of irrational or biased agents' actions but is instead a driving force behind capitalism's evolution into modern corporations, where the separation of ownership and management make them more akin to financial assets, corporate strategies are designed to appease shareholders, and managers employ the BC strategy to minimize losses in the face of uncertainty.

Esposito and Mastromatteo contend that uncertainty and conventions (as described by the BC metaphor) are at the heart of Keynes's theories on how the market operates. In what they maintain is both a strength and a weakness of the system, capitalists must constantly innovate in the face of competition, but this creates uncertainty over market reactions. To hedge against the uncertainty and resist the competition, it became conventional for firms to concentrate, often becoming so large that mismanagement could have catastrophic effects economy wide. Writing at the time corporations were first beginning to grow to such a size, Keynes observes that preserving a corporation's reputation had become more important than maximizing profits, and managers were resorting to conventions to maintain stability. Esposito and Mastromatteo point to the simultaneous rise of the institutional investor reinforcing the application of conventions in corporate strategies, thereby reducing diversity in firms' behavior systemwide.

Delving deeper into the nature of conventions, which Keynes did not specifically define in his work, the authors define them as socially shared behaviors that arise informally and become more convenient to follow as they become more widespread, noting that though they may not produce optimal results, it is wise to adhere to them as long as they rule the market. By applying current knowledge to predict future outcomes through the "projective convention," agents are able to act in spite of uncertainty. To illustrate how such conventions operate in modern financial markets, Esposito and Mastromatteo use investment as a proxy for innovation, contending that because innovation also is a proxy for uncertainty, investing in financial assets is inherently uncertain business. Taming this uncertainty requires that rational investors follow conventions until the innovation begins the cycle anew.

Esposito and Mastromatteo assert that in contrast to the behavioral economics lens through which the BC is often viewed, where conventions are the result of biological evolution, one must instead take account of the structural changes and organizational issues of Keynes's time. In their role as long-term lenders, banks of the era were beginning to influence corporate strategies, forcing individual firms within a sector to work against their own interests to maximize sectoral profits. Interest rates, per Keynes, are another expression of conventional behavior that are inversely correlated to the market's liquidity preference; as markets become more dominated by institutional investors and their conventional behaviors, the authors envision an increased need for central bank intervention to maintain liquidity in a crisis.

Recognizing the trends that gave rise to the modern financialized economy and the conventional behaviors that fuel it, the authors propose policymaking focus on thwarting mechanisms to tame herd behavior, with a growing role for the state to balance the power of today's giant financial conglomerates.
www.levyinstitute.org/pubs/wp_972.pdf

The Empirics of UK Gilts' Yields

TANWEER AKRAM and HUIQING LI
Working Paper No. 969, September 2020

Tanweer Akram, General Motors, and Huiqing Li, Central University of Finance and Economics, employ quarterly data on UK gilt-edged securities (gilts) to analyze their nominal yields from a Keynesian point of view. In contrast to the loanable funds view, which sees interest rates as the "price" resulting from the supply of and demand for funds, the Keynesian view holds that the short-term interest rate is the main driver of the long-term interest rate. Because the short-term interest rate moves in tandem with a central bank's policy rate, the authors assert that from this perspective the central bank's policy actions are what drive the long-term rate.

UK gilts, issued by the UK government's Debt Management Office (DMO), are held by domestic and foreign investors and finance the central government's net cash requirements and refinance maturing debt. They are actively traded among both primary and secondary dealers, and can be purchased directly from the DMO. Illustrating the long-term interest rate's evolution in a series of figures that plot the yields and year-over-year percentage point changes in gilts of various tenors (from 2-year and 30-year maturity) against the 3-month Treasury bill from 1990 to 2018, the authors demonstrate the strong correlation over the period under study. Noting that the correlation between the yield and long-term rate is much stronger than that between the year-over-year percentage point change in the yields, their figures also show the percentage point changes gradually decline with the rise in maturity tenor. The short-term rate is also shown to closely follow the Bank of England's policy rate over the same period. With respect to inflation, prior to the global financial crisis yields outpaced inflation, but since then they have tended to decline in tandem; yields are also positively correlated with economic activity as measured by real GDP growth and industrial production.

Akram and Li specify their model using the vector error correction method (VECM), which restricts the long-run behavior of the endogenous variables to converge to their cointegrating relationships while allowing for the modeling of short-run adjustment dynamics, and use a vector autoregression (VAR) model to examine the dynamic relations between the long-term interest rate, short-term interest rate, inflation, industrial production, and the government debt ratio. They then test for unit roots, cointegrating vectors, and structural breaks before estimating their models and testing for misspecification. Interpreting their model with all variables included as their baseline, the authors find a significant long-run relationship between the short- and long-term interest rates, inflation, and the government debt ratio after incorporating structural breaks into the cointegrating vector. There is a positive and significant relationship between the short- and long-term interest rates, such that a 1 percentage point increase in the short-term rate causes a 56.1 basis point increase in the long-term rate.

The authors offer several ways in which their findings are relevant for macroeconomic theory and economic policy formation, including the aforementioned influence the Bank of England can have on long-term interest rates through its policy rate decisions, as well as other monetary policy actions such as forward guidance and yield curve control. Their findings also indicate that a higher UK government debt ratio is not associated with higher yields on gilts and may even exert downward pressure. They contend the combination of these findings broadens the scope for activist monetary and fiscal policy, as the mainstream fear of negative consequences appears largely misplaced given their evidence. Akram and Li suggest their findings, which refute the loanable funds theory of bond yields in support of the Keynesian view, are pertinent in the examination of a wide range of macroeconomic issues, from operational issues in central banking, to fiscal and monetary policy and government debt management.
www.levyinstitute.org/pubs/wp_969.pdf

The COVID-19 Crisis: A Minskyan Approach to Mapping and Managing the (Western?) Financial Turmoil

LEONARDO BURLAMAQUI and ERNANI T. TORRES FILHO
Working Paper No. 968, September 2020

By adding an unprecedented dose of uncertainty to the system, it was already becoming clear at the time of writing in the spring of 2020 that the COVID-19 pandemic would not only take a physical but also an economic toll that most governments lacked the capacity to handle, say Research Scholar

Leonardo Burlamaqui and Ernani T. Torres Filho, Federal University of Rio de Janeiro. Focusing on the impending crisis from a Minskyan standpoint—where finance is at the center of the capitalist system and stability breeds instability—the authors extend Minsky's analysis of the financial fragilization process in their three-pronged analytical framework for assessing and meeting the challenges ahead.

Distinguishing between financial fragility and financial instability (terms they say Minsky used interchangeably), the authors make their first extension to Minsky's theories by defining financial fragility as a long-lasting process that is a function of the decreasing ratio of cash inflows to outflows for every agent in the system except sovereign governments. In their assessment, financial instability is more akin to what is now known as the "Minsky moment" and describes a short-lived and dangerous process that begins as more agents approach a Ponzi position and proceeds to a run for liquidity in the system, which, in the absence of central bank intervention, ends in a financial crash. In their second extension of Minsky's theory, Burlamaqui and Torres Filho add what they call an "asset-liability restructuring process." Following along the lines of Richard Koo's "balance sheet recession," the authors suggest that the resolution of the insolvency problems that trigger a financial crisis often outlasts the crisis itself unless the central bank steps in to facilitate balance sheet restructuring in financial and nonfinancial corporations alike, particularly those considered too big to fail.

Burlamaqui and Torres Filho take January 23, 2020 as the starting point of the COVID-19-triggered crisis, when the shutdown in Wuhan, China injected uncertainty into the system, reversing expectations and sparking a selloff two months later; the resulting liquidity crunch, say the authors, pushed the already fragile system to the point of instability. Financial instability was then triggered as government-mandated shutdowns caused a contraction in cash flows for servicing existing debt commitments, pushing hedge agents to become speculative units and speculative units into Ponzi positions. The response in the United States, where the Federal Reserve's actions to counter volatility in the Treasury market calmed some of the panic and prevented a wave of instability, was not enough to reverse the persistent fragilization, and Burlamaqui and Torres Filho assert that the steps taken going forward to maintain liquidity in the private sector will be crucial in

shaping the recovery. In addition to direct payments to citizens and corporations from "big government," the authors note that Minskyan theory also promotes "big bank" intervention to restore lender confidence and maintain the flow of credit so businesses and households—many already in fragile positions prior to the pandemic—do not become insolvent.

The authors applaud measures that have been implemented in the United States, Europe, and Japan, but advocate for more cooperation between central banks, treasuries, government, and private finance in addressing the solvency crisis ahead. They suggest employing an updated version of the New Deal that is in line with today's economic and social realities as a road map for restoring confidence, restarting local and state tax revenues, helping indebted corporations and households service their debts, and making sure productive capacity is in place to mitigate inflationary pressures while forging a path toward recovery.
www.levyinstitute.org/pubs/wp_968.pdf

Some Empirical Models of Japanese Government Bond Yields Using Daily Data

TANWEER AKRAM and HUIQING LI
Working Paper No. 962, July 2020

Contributing to the ongoing debate about the causes of low and negative bond yields in Japan, Akram and Li model the dynamics of Japanese government bond (JGB) yields using daily data. They argue their findings, which allow for greater degrees of freedom than those obtained with less-frequent data, are relevant for private investors' decisions concerning duration, convexity, speculation, and hedging, as well as for policymakers in assessing the monetary transmission mechanism's effects, managing government debt, coordinating operations between the central bank and treasury, and evaluating financial fragility in real time.

Akram and Li begin with an outline of the two different schools of thought on JGBs' yields. The conventional view holds that JGBs' low yields are unsustainable and Japan will eventually have to deal with adverse economic outcomes like high inflation, currency depreciation, and debt default. Alternatively, the Keynesian view regards the low yields as the outcome of the Bank of Japan's (BoJ) monetary policy actions,

particularly their decision to maintain ultra-low or even negative policy rates. Taking the Keynesian view as their starting point, the authors trace JGB yields' evolution over the past 40 years, noting they fell sharply in the 1990s and remained low, with further declines in the aftermath of the global financial crisis, Tohoku earthquake, and the BoJ's quantitative and qualitative easing program pushing nominal yields into negative territory beginning in 2016. They note other stylized facts of the Japanese economy, namely their low inflation and deflationary dynamics that are well reflected in the deflators for real GDP and various aggregate demand components. Plotting the data on short- and long-term interest rates, they illustrate their close connection over the period under investigation, particularly the strong correlation between JGBs of various maturity tenors and the 3-month Treasury bill yield, as well as the positive correlation between the year-over-year percentage point changes in the same.

In what follows, the authors describe their data, which comprises over 4,500 observations from January 2000 through December 2018, and suggest that the number of observations enables the application of a wider range of models to test their hypothesis and detect structural breaks. Finding the variables to be cointegrated, Akram and Li choose a vector error correction model (VECM) as the most appropriate for their analysis. Beginning with a unit root test in each series, they then conduct tests for the number of cointegrating vectors and structural breaks, eventually estimating their models in a multivariate VECM framework. Their initial model regresses long-term interest rates only on short-term interest rates and produces a coefficient that is negative and highly significant. In the following three models, adding control variables (i.e., inflation, equity index, and exchange rate) still produces a coefficient that is highly significant, though inflation changes the sign of the coefficient. Diagnostic tests reveal no serious misspecifications.

Employing the model with all control variables as their baseline and normalizing on the long-term interest rate shows there is a significant long-run relationship between the short-term interest rate, equity index, exchange rate, long-term interest rate, and inflation after incorporating structural breaks into the cointegrating vector. They also find a significant positive relationship between the short- and long-term interest rate such that a 1 percentage point increase in the short-term rate increases the long-term rate by 369.1 basis points. Stability tests based on recursive estimation confirm the model's coefficients are stable.

The authors contend their empirical evidence fits well within the Keynesian perspective and provides a good explanation for JGBs' persistently low yields. In concluding, they propose several macroeconomic theory and policy applications for their findings given the decisive influence the BoJ's policy decisions have on the long-term interest rate.
www.levyinstitute.org/pubs/wp_962.pdf

The "Kansas City" Approach to Modern Money Theory

L. RANDALL WRAY
Working Paper No. 961, July 2020

Synthesizing several strands of heterodox thought, Modern Money Theory (MMT) focuses on describing monetary and fiscal operations in nations that issue a sovereign currency, says Senior Scholar L. Randall Wray, who traces MMT's development beginning in the mid-1990s in the Post Keynesian Thought (PKT) online discussion forum through to today, focusing on what he calls the "Kansas City" approach developed at the University of Missouri–Kansas City (UMKC) and the Levy Institute.

Wray locates MMT's genesis in the PKT's discussion around Warren Mosler's 1996 paper, "Soft Currency Economics," and its definitions of sovereign currency. A conference in the summer of that year focused on building a framework for this new method of macro policy analysis, followed soon after by Wray's book (*Understanding Modern Money: The Key to Full Employment and Price Stability*; Edward Elgar, 1998) and the establishment of two research centers, with UMKC's Center for Full Employment and Price Stability providing the basis for the Kansas City approach, and what Wray calls the "Newcastle" approach developing from different heterodox foundations at the Centre of Full Employment and Equity (CofFEE) in Australia. He recounts his own path to MMT, with Georg Friedrich Knapp's state theory of money, A. Mitchell Innes's writing on the link between the state's money and private credit money, and others reinforcing his rejection of the "barter story" of money's origins in favor of one where money is, as in Abba Lerner, a "creature of the state" that is accepted in

payment and other obligations to itself ("taxes drive money"). Wray asserts that MMT's analysis follows from the recognition that "anyone can create money, the problem is to get it accepted."

Defining money as the unit of account in which records are kept, Wray explains that money began with the practice of recording debts that evolved along two paths—one with implications for the modern justice system and one that created "modern money"—and its social nature is evident in examples throughout history. The universal law of debt, says Wray, requires an issuer of debt to accept it back in payment (what Innes called "redemption"), and concerns not only government-issued liabilities (state money), but also those of the chartered bank and other nonbank entities (credit money) included in Hyman Minsky's pyramid of liabilities. Because government-issued liabilities are at the top of the pyramid, they provide the basis for all other liabilities. Minsky's deep understanding of money and banking—which Wray contends was more suited to analyzing the changes brought on by innovations in the financial system than the horizontalist or *circuitiste* approach—underlies MMT's analysis.

After decades of exogenous money and deposit multiplier approaches dominating the discourse, post-Keynesians embraced an endogenous money approach beginning in the 1980s that Wray says downplayed or ignored the government's role in the system. To fill in these gaps, early proponents of MMT examined the government's balance sheet to determine how spending actually worked, concluding that there is little difference between monetary and fiscal operations, as all government spending takes the form of credits to the bank system while taxing and bond sales removes them, thus rendering the choices of whether to use taxes, borrowing, or money printing to finance spending irrelevant. Unlike households and firms, sovereign currency issuers are not bound by a budget constraint other than those adopted by legislators and, though there is potential to miss targets, MMT does not adhere to theories that claim government debts drive up interest rates. Adding Wynne Godley's sectoral balances approach illustrates how government debts produce net financial wealth for the nongovernment sectors and, following Minsky, MMT calls for "big government" to be a "visible hand" that spends countercyclically to stabilize the economy as it inherently tends toward instability over the course of the cycle, with the central bank ("big bank") acting as lender of last resort.

To formulate policy that achieves full employment, equality, and stability, Wray says MMT prefers Lerner's principles of functional finance and promotes job guarantee programs that raise the wage floor and narrow inequality over a welfare approach that may produce inflation and instability. Such programs, often seen as optional by some, are, according to Wray, integral to the regulation of a sovereign currency's value. Together with flexible exchange rates and interest rate targeting by the central bank, Wray concludes that the MMT framework can be applied to generating both progressive and conservative policy; however, he advocates spending in the public interest that addresses issues currently facing modern economies.
www.levyinstitute.org/pubs/wp_961.pdf

Program: The Levy Institute Measure of Time and Income Poverty

Quality of Match for Statistical Matches Used in the Development of the Levy Institute Measure of Time and Consumption Poverty (LIMTCP) for Ethiopia and South Africa

FERNANDO RIOS-AVILA
Working Paper No. 970, September 2020

Research Scholar Fernando Rios-Avila describes the quality of the statistical matches made in estimating the Levy Institute Measure of Time and Consumption Poverty (LIMTCP) for Ethiopia and South Africa. Because the data required for estimating the LIMTCP is not available from one source, a synthetic datafile must be created by statistically matching two datasets, with base (recipient) data on household demographics, income, and consumption from one survey matched to time use (donor) data from another. For the datasets under study in this paper, the Ethiopian Socio-economic Survey Wave 3 (ESS, 2015/16), South African October Household Survey (OHS, 1998), and South African Living Conditions Survey (SALCS, 2014/15) serve as the base and the Ethiopian Time Use Survey (ETUS, 2013) and the South African Time Use Survey (STATUS, 2000 and 2010) provide the time use data for estimating the total amount of time individuals dedicate to household production.

Rios-Avila describes the sample sizes and survey methods for six surveys employed in the match. Turning to methodological concerns, he begins by defining household-level production thresholds, specifying the reference household as one with at least one nonemployed adult and an income level that falls within a "poverty band" between 75 percent and 150 percent of the official consumption poverty line. Time thresholds are estimated parametrically as a nonlinear function of the number of children, working-age adults, and elderly in the household, in principle representing the predicted average amount of household production required to subsist at the poverty line conditional on household structure.

To transfer the hours individuals spend on household production in the reference group as accurately as possible, Rios-Avila explains that the match should account for a household's membership in the reference group in the donor and recipient files; however, information for constructing poverty band indicators is not available in the time use files for either country under study. Strata variables such as employment status, geographical area, own labor status, type of household, and number of nonemployed adults, children, and total adults in the household are also included in the match, except in the case of South Africa, where the time use survey only captures data on up to two household members and some of these variables are omitted. To account for the discrepancy in employment rates arising from methodological differences between the ESS and ETUS, additional steps are taken to restrict the sample and balance the distribution of selected characteristics, with the reweighted subsample data used in the match.

Prior to the matching process, the data from the two surveys must be aligned to represent the same population with approximately similar characteristics across their weighted samples. Though several years lapsed between collection of the recipient and donor files, Rios-Avila notes that the variables represent structural characteristics that tend to remain stable over time and therefore should be relatively well aligned. Keeping in mind the restrictions and reweighting of the Ethiopian data, a strong balance is already observed for almost all characteristics under study; the data for South Africa also appears to be well aligned and no corrections are applied before implementing the match.

Using the methodology proposed by Levy Institute researchers and employed in the estimation of both the Levy Institute Measure of Economic Well-Being (LIMEW) and Levy Institute Measure of Time and Consumption Poverty (LIMTCP), the Ethiopian and South African surveys are matched between the donor and recipient files in rounds, where a larger share of observations matched in earlier rounds represents a better-quality match. For both countries under study, Rios-Avila finds the bulk of the matches are made in the first round. He continues his assessment by analyzing the ratio of the average value of the transferred variables over the true averages in the original sample across many selected characteristics and strata variables. Providing an alternative analysis that estimates average household production ratios conditional on important strata variables, as well as a kernel density of all ratios, gives a more comprehensive overview of the marginal distribution across all the categorical variables involved in the matching process and further confirms the quality of match for both synthetic datasets.

www.levyinstitute.org/pubs/wp_970.pdf

Program: Distribution of Wealth and Income

Multidimensional Inequality and COVID-19 in Brazil

LUIZA NASSIF-PIRES, LAURA CARVALHO, and EDUARDO RAWET
Public Policy Brief No. 153, September 2020

In a previous public policy brief, Research Scholar Luiza Nassif-Pires led a study examining the feedback loops between the pandemic and racial, gender, and income inequalities in the United States (Public Policy Brief No. 149, "Pandemic of Inequality"). For this current policy brief, Nassif-Pires, Laura Carvalho, University of São Paulo, and Eduardo Rawet, American University, use a similar analytical framework to examine Brazil's experience with COVID-19—a country whose high income inequality and history of slavery predispose it to share similar structural weaknesses in the face of the pandemic, they observe.

Nassif-Pires, Carvalho, and Rawet note that Brazil is suffering from some of the worst per capita numbers in the world

in terms of cases and deaths, and they explore how yawning racial, regional, and class disparities can help account for why COVID-19 has had such a deleterious impact on the Brazilian population. Although they find that fiscal policy has so far been successful at mitigating the crisis's impacts with respect to wage inequality, the existence of structural inequalities along racial lines in particular have resulted in the public health burden of this pandemic being unequally borne.

The authors construct an index to measure the social bases of vulnerability to the virus, focused mainly on risks driven by living and working conditions such as informal employment or cramped living arrangements. The index reveals significant disparities in the risk of infection that break down along lines of race, region, income, and education. Moreover, the overlap of racial inequalities with income or educational inequalities exacerbates these disparities—the authors find this to be especially conspicuous with respect to the intersection of race and low educational attainment. They note that infection, hospitalization, and death rate microdata targeting these intersections of race, gender, and class would help better guide effective public policy.

Nassif-Pires, Carvalho, and Rawet find that the pandemic's disparate public health impact reflects the inequalities identified by their vulnerability index, particularly with respect to infection rates. Nevertheless, the authors explain that the index only reveals part of the story. Social vulnerability alone does not explain the observed disparities in death rates in Brazil, for instance. For a more comprehensive picture of relevant inequalities, the authors focus on the persistence of unequal access to healthcare and variations in the prevalence of comorbidities, both of which contribute to the severity of illness and number of deaths. The authors also reveal that, in terms of the gaps in observed rates of infection and hospitalization for COVID-19, racial inequality appears to have played a more significant role than income inequality.

Nassif-Pires, Carvalho, and Rawet note that Brazil entered the pandemic on the heels of slow GDP growth, high unemployment, and rising inequality—along with ongoing implementation of an austerity program spurred by a new, constitutionally enshrined ceiling on the growth of federal expenditure. With the COVID-19 emergency, those fiscal restraints were temporarily lifted: Brazil mounted a fiscal response equivalent to 6.5 percent of GDP (in health and nonhealth measures), with almost half of this response dedicated to a cash transfer program, Auxílio Emergencial. The authors find that, for the bottom half of the income distribution, this program raised incomes by more than the crisis-induced fall in wages. As a result, poverty was reduced to its lowest level ever recorded and, so far, the impact of the crisis in terms of rising income inequality has been neutralized.

Amidst uncertainty over how long the Auxílio Emergencial will be extended, rising bankruptcies among small firms, and rumblings of a return to an austerity regime, the authors stress that the current fiscal measures must be both retained and enhanced (they recommend more action on credit measures for businesses). Moreover, the effects of structural inequalities on the country's infection rates and death count make it clear that broader policy changes are necessary for addressing other dimensions of inequality, particularly those rooted in structural racism.

www.levyinstitute.org/pubs/ppb_153.pdf

Moral Hazard in a Modern Federation

ALEX WILLIAMS
Public Policy Brief No. 152, August 2020

In the context of congressional negotiations over the next phase of an economic rescue package, Alex Williams, Employ America, expands on his proposal (Policy Note 2020/2, "Stabilizing State and Local Budgets through the Pandemic and Beyond") for trigger-based state and local government fiscal support, in which aid would be tied to local unemployment rates. In this policy brief, he deals with one of the central theoretical objections to providing federal aid to lower levels of government.

One of the key pieces of business before Congress (in August 2020) was the impending crisis in state and local government finances—a combination of collapsing revenues (due to lockdowns and the uncontrolled spread of the virus) and the fact that states have been left to mount 50 separate pandemic response initiatives. Without federal grants, sharp state and local budget cuts and widespread layoffs among public employees would have to be made during a period of double-digit unemployment.

To the extent there are principled objections to the federal government providing financial support to states, they tend to rest on flawed theoretical foundations, Williams argues. One of

the more commonly expressed objections is rooted in the argument that federal fiscal aid creates moral hazard. Although sometimes framed in its partisan version as "bailing out high-spending blue states," the broader theoretical argument can be found articulated in the fiscal federalism literature, as Williams shows. If state governments form expectations that they can rely upon federal support, so the traditional argument goes, they will have an incentive to spend beyond their means.

The central weakness of this moral hazard objection, in formal terms, is that it rests on a presupposition that state governments are "agents" in a principal–agent problem. State and local government revenues are extremely vulnerable to the business cycle, and expenditures are also largely dependent on variables outside such governments' control. Moreover, institutional barriers prevent states and municipalities from being able to hedge these risks; borrowing from concepts in corporate finance, Williams observes that they cannot create the necessary capital structure to weather economic downturns. In addition, budgetary contraction contributes to a worsening of local economic conditions, further reducing revenues and renewing the problematic cycle. A government in such a position is, properly understood, a principal with respect to the business cycle, not an agent.

There is a moral hazard problem at work here, Williams points out, but it is not the one suggested by critics of federal aid to state governments and municipalities. Despite the fact that the federal government is the only agent that can backstop state revenues during a crisis, federal lawmakers have an incentive to refrain from doing so. Federal legislators may burnish their reputations for budget discipline while state and local officials face the political price for layoffs and cuts.

The solution to this moral hazard problem, according to Williams, is to link federal support of state and local revenues to specified macroeconomic conditions, rather than the inclinations of federal politicians.

www.levyinstitute.org/pubs/ppb_152.pdf

Quality of Statistical Match Used in the Estimation of the Levy Institute Measure of Time and Income Poverty (LIMTIP) for Italy 2008 and 2014 and Preliminary Results

ERICA ALOÈ

Erica Aloè, Sapienza University of Rome, details the construction of the synthetic datasets created for estimating the Levy Institute Measure of Time and Income Poverty (LIMTIP) for Italy in 2008 and 2014 and assesses the quality of the resulting statistically matched dataset. She reports the results of the LIMTIP estimates, and recommends augmenting standard analysis with the LIMTIP to present a more complete picture of the extent of poverty in both developed and developing economies.

Because the data on households' income and time use required for estimating the LIMTIP are not contained in a single dataset, researchers must create a synthetic dataset through a process of statistical matching. In her assessment, Aloè uses time use data from the Italian Time Use Survey (IT-TUS) for 2008–9 and 2013–14, while the information on demographics and income come from the Italian module of the European Survey of Income and Living Conditions (IT-SILC) for 2009 and 2015. Applying the matching algorithm developed at the Levy Institute (Working Paper No. 690), Aloè combines the IT-SILC's data with information from the IT-TUS to estimate how unpaid care and domestic work are divided among household members in three categories: providing unpaid care for household members (care); sourcing necessary goods and services from outside the household (procurement); and executing unpaid domestic tasks (core).

Using propensity score matching, Aloè estimates the likelihood of a subject in one survey having an observed outcome to a subject with a similar background in the other, as measured by independent variables. Beginning with data taken from these two random surveys (IT-TUS and IT-SILC) of the same population, the target variable is then regressed on variables common in both data files and the predicted value is used to rank records in each file; those with close propensity scores are matched together (nearest-neighbor matching). The common strata variables for the regression were chosen following the procedure outlined in Levy Working Paper No. 793 and

represent those that are relevant in determining the average amount of household production necessary for subsistence at the poverty level of income, including number of children and adults in a household, as well as age, gender, and employment status of individuals in the household, among others.

After harmonizing the variables' definitions and checking that the distributions of the common variables were comparable, Aloè transfers the data from the IT-TUS to the IT-SILC. She divides the reference group into 12 subgroups based on the number of children and adults in the household and further divides these groups by her chosen strata variables to separate the data in each file into 38,400 discrete cells, which she then refines using relevant variables common across both surveys. After running the model, the records for each file are sorted by propensity score and assigned a weight, then matched to their nearest neighbor across the files until all the records are matched.

Applying the synthetic dataset to the LIMTIP, Aloè first calculates time deficits at the individual level and builds time thresholds for personal maintenance, nonsubstitutable household activities, and required hours of household production using the standard average time households with an income around the poverty level spend on these activities; she adds to this hours of work and commuting for employed persons and subtracts this from the total number of hours available in a week to ascertain if the person is time-poor.

Her findings indicate that though the gap shrunk in the period under study, women in Italy suffer from time poverty at a higher rate than men, with more than 55 percent of employed women in Italy registering as time-poor. Monetizing the time poverty of time-poor households by estimating the cost of purchasing substitutes in the market pushes many of these households below the official poverty line—exposing the level of "hidden poverty" present in the economy—which in her study represents an increase of 3.1 percent and 3.6 percent in 2008 and 2014, respectively. Separating her households into four categories (time-poor, income-poor, time- and income-poor, and nonpoor) confirms the significance of household structure, as households with children represent the majority of those that are both time- and income-poor.

www.levyinstitute.org/pubs/wp_967.pdf

Program: Employment Policy and Labor Markets

The Early Impact of COVID-19 on Job Losses among Black Women in the United States

MICHELLE HOLDER, JANELLE JONES, and THOMAS MASTERSON
Working Paper No. 963, July 2020

The widespread devastation wrought by the COVID-19 pandemic has not been a burden shared equitably across race and gender, say Michelle Holder, John Jay College, City University of New York, Janelle Jones, Groundwork Collaborative, and Research Scholar Thomas Masterson. As industries once thought immune to recessions were throttled by government-mandated shutdowns, Black women experienced a greater rate of job loss due to their high levels of concentration in these sectors, while at the same time their overrepresentation in "essential" sectors increased their risk of contracting a disease already shown to have a greater effect on the Black community. Merging feminist theory with a stratification economics perspective, Holder, Jones, and Masterson examine the contours, depth, and causes of the pandemic's disproportionate impact on Black women in the United States and recommend policy to address the cyclical and structural flaws underlying these inequalities.

Prior to February 2020, the US economy was experiencing historically low unemployment levels, even in traditionally underemployed segments of the labor market, a situation the authors note quickly changed as aggregate demand shrunk radically in the wake of shutdowns and leveled businesses in "nonessential" sectors, with unemployment claims between March and April displaying month-to-month changes unseen in over 70 years. Many of the jobs lost were in sectors such as hospitality and entertainment where low wages prevail and women are traditionally overrepresented, so, according to Holder, Jones, and Masterson, it was no surprise that the unemployment rate for women was higher than that of men. A drop in the labor force participation rate (LFPR) during the same period signaled an exodus from the labor market, a phenomenon the authors assert had a greater effect on Black women, whose LFPR is historically higher than other women's. Given this stronger yet more precarious attachment to the

labor force, the authors find Black women experiencing more statistically significant declines in their LFPR and employment–population ratio compared to white women.

Drawing data from the US Census Bureau's Current Population Survey (CPS) for February–April 2020, the authors identify subsets of individuals by race, ethnicity, and gender to analyze labor force trends from the start of the pandemic to the time of writing in May 2020, examining shifts in employment among Black women, white women, and Black men in terms of their occupational and industrial distributions, as well as changes in labor force status, including both employment and hours of employment. Their findings suggest that the two industries with the largest overall share of employment—health care and social services and retail trade—saw significant decreases in employment that were not evenly distributed by race and gender, and Black women experienced a larger-than-average drop in employment over the period given their concentration in these sectors. Over 55 percent of jobs lost by Black women were from the top five industries in which they were concentrated (healthcare and social services, educational services, retail trade, accommodation and food services, and public administration), but industrial segregation only accounts for some of the employment losses by industry. Looking at the data by occupation, the authors find 50 percent of all employed Black women concentrated in five occupations, and the three with the highest concentration of Black women (office and administrative support, healthcare support, and sales and related) all experienced losses since February. Holder, Jones, and Masterson point out that, ironically, occupations where Black women lost fewer jobs than average—healthcare support and healthcare practitioner and technical—are those that put them at higher risk for COVID-19 exposure.

To ameliorate the pandemic's outsized effect on Black women's economic wellbeing, the authors recommend expanded short-term cash assistance, with future programs incorporating automatic stabilizers that target Black women more specifically to ensure aid is not discontinued prematurely. They suggest a similarly targeted approach to full employment policy, where they say Black workers currently bear the burden of policies designed to keep slack in the labor market to prevent inflation, and propose a federal job guarantee program to ensure Black women can always secure well-paying jobs with benefits. Holder, Jones, and Masterson also advocate for the public

provision of healthcare that is decoupled from employment to ensure Black women's physical wellbeing is not subordinated to shareholder profit.
www.levyinstitute.org/pubs/wp_963.pdf

Program: Gender Equality and the Economy

Developing a Macro-Micro Model for Analyzing Gender Impacts of Public Policy

JEROME DE HENAU and SUSAN HIMMELWEIT
Working Paper No. 966, August 2020

Recognizing public policy's potential to produce gendered impacts, Jerome De Henau and Susan Himmelweit, Open University, UK, develop a gender-aware macro-micro analysis of labor demand and supply to improve outcomes and reduce inequality. Their contribution attempts to assess the impacts of government expenditure on care provision versus a similar investment in the construction sector to account for the investment's effects on gender inequalities in employment, earnings, income, and time use.

De Henau and Himmelweit choose to predicate their model on an investment in care because unpaid care responsibilities are the main obstacle to women entering the labor market and, they note, in many Western economies the number of paid care providers has been decreasing in the face of increasing needs. Additionally, increasing wage inequality means that even where they are available, those with care responsibilities are unable to afford market substitutes that would allow them to devote more hours to paid employment. The authors point out that these gendered implications of care policies make them ideal for developing gender-sensitive analysis tools, noting that while investments in care and other social sector spending, such as on education, contribute to human capital formation, they are currently not recognized in the national accounts in the same way as investment in physical infrastructure, leaving them more vulnerable to austerity measures that further increase inequality.

By acknowledging the long-term impact of social spending as infrastructure investment, De Henau and Himmelweit suggest that governments can increase their space for public expenditure. In line with the literature, they divide the paid economy into the social sector, where governments and households invest in human capital, and the "nonsocial" sector, featuring industries whose output is typically considered physical capital, some of which contributes to building physical infrastructure. They list several stylized facts to be incorporated in their gender-sensitive macro model that highlight the differences between the two sectors, including the greater propensity for women to be employed in the social sector, where jobs are labor intensive and use few material inputs, wages are lower for given levels of qualifications, and output has a positive effect on productivity and labor supply in the long run. Ignoring some of these factors at the outset, the authors build a two-sector, demand-side model to predict the gendered and total direct, indirect, and induced employment effects of an investment equal to 2 percent of GDP in either the care or construction sector (typical examples of where social and nonsocial spending is directed) in seven high-income countries. To allocate the newly created jobs to those most likely to get them, De Henau and Himmelweit propose a simplified version of the Levy macrosimulation method developed for assessing policy in South Africa, Turkey, and the United States. Because the care investment changes the nature of the labor market by freeing some of those with caring responsibilities to take employment, they add a variable they call "net gain to employment" to the Levy method to assess at what point such individuals join the labor market and outline how future research could account for other behavioral changes the care provision may prompt.

Their results demonstrate that overall the direct effects of a care sector investment are considerably larger than an equivalent investment in construction; given the more intensive use of inputs in construction, there is a larger indirect effect from investment in this sector. The additional household income generated by the new employment also produced induced effects that were greater from the investment in care, as this sector generated more new jobs for women, who have a greater propensity to consume. Because of the gender segregation in both sectors, the construction sector investment produces direct and indirect employment effects that benefit men at a far greater rate. Women benefit more from the direct effects of

the care investment—reducing the gender employment gap for the economy as a whole—while the indirect effects benefit men and women more equally than in the construction investment scenario. Given the evidence, they conclude that traditional investment in physical infrastructure may not be the best way to stimulate employment and urge policymakers to consider not just the economic but also the social benefits of investment in care.

www.levyinstitute.org/pubs/wp_966.pdf

Program: Immigration, Ethnicity, and Social Structure

First Palestinian Intifada and Intergenerational Transmission of Human Capital

SAMEH HALLAQ

Investment in human capital has intergenerational effects and parents' educational attainment is an important factor in determining later-life outcomes for their children. In Palestine, the violence of the First Intifada interrupted education between 1988 and 1993, with closures and curfews that limited access to schools and universities impacting educational attainment. Furthermore, underresourced and overcrowded schools were often closed, particularly at the university level, leading many young adults to abandon education to seek employment in the Israeli labor market. Using data on approximately 4,000 students in grades 5–9 in Palestine's West Bank, Research Associate Sameh Hallaq attempts to estimate the intergenerational transmission of human capital in Palestine to ascertain whether this generation's cognitive skills and school achievements have been negatively affected by their parents' exposure to the Intifada.

Cognitive skills are described in the literature as being transmitted through genetics ("nature") and the productivity effect of parental education ("causal"), with the parent's socioeconomic status playing a role in their decision to invest in their children's education. To separate the causal effect from the unobservable effects of nature, Hallaq builds a model using the instrumental variables (IV) approach that removes potential

endogeneity from the estimated education spillover effects. He draws his data from a cross-sectional micro-level survey of 6,000 students in 100 different West Bank schools, collected from May through September 2013; a smaller sample was then selected to take cognitive tests and complete surveys on health behaviors, and parents answered questions about their own background, including education, exposure to the First Intifada, income, age, and household structure. The primary outcome—cognitive test scores—is measured through a test of numerical, verbal, and figural intelligence, in which female students outperformed males, and the student's GPA for six major subjects in the 2012–13 school year is used as a secondary outcome measuring school achievement. Control variables for student's sex, age, household structure, school type, and variables indicating if the student attended kindergarten and if their locality is affected by the separation wall are also included in the model.

Hallaq estimates the effect of parents' education, controlling for unobservable differences across schools that may influence outcomes. He instruments parental educational attainment by their exposure to the Intifada between the ages of 13 and 19, producing a variation in their schooling that is unlikely to be related to their children's achievement. He notes the adverse long-run effects such exposure may have on household wealth and psychological wellbeing as potential identification threats and includes variables to account for the impact they may have on outcomes.

First-stage regressions indicate, consistent with contextual data obtained during the period, parents' exposure to the Intifada during adolescence affected fathers more than mothers, as men looked for low-skill jobs in the Israeli labor market. Overall, women who were exposed received less education than those who were not, but the period was marked by an increase in female university attendance following the establishment of the Palestinian National Authority. Turning to the impact of parents' education on students' achievement, Hallaq presents the main results of his ordinary least squares (OLS) and IV regressions. Overall, his IV findings are in line with the OLS estimates: both cognitive test scores and student achievement as measured by GPA demonstrate educational spillover in father–daughter and mother–daughter relationships, while the results for parents of both genders and their sons need further analysis to investigate whether they are causal or because

of unobserved characteristics. In a final step, Hallaq applies robustness checks to verify findings and eliminate measurement error in self-reporting of parental education.

Hallaq concludes that his overall results are consistent with those finding significant second-generation impacts to an investment in education. With regard to policy implications, he suggests it is important to estimate these investments' long-run returns in order to build more resilient educational institutions and reduce the degree of inequality in educational opportunity often present in countries experiencing conflict. *www.levyinstitute.org/pubs/wp_965.pdf*

Program: Economic Policy for the 21st Century

Budget Credibility of Subnational Governments: Analyzing the Fiscal Forecasting Errors of 28 States in India

LEKHA S. CHAKRABORTY, PINAKI CHAKRABORTY, and RUZEL SHRESTHA
Working Paper No. 964, July 2020

Suggesting that budget credibility, or the government's ability to accurately forecast macro-fiscal variables, is integral to public financial management, Research Associates Lekha S. Chakraborty and Pinaki Chakraborty, and Ruzel Shrestha, National Institute of Public Finance and Policy (NIPFP), analyze the extent of budget forecasting errors at the state level in India between 2011 and 2016. Budget credibility depends on three sets of numbers—estimates for the current year, revised estimates for the ensuing year, and actual expenditure—with potential macroeconomic consequences for inaccuracies, explain Chakraborty, Chakraborty, and Shrestha. Using Theil's index, they determine if the forecasting errors are systematic or random, noting that a higher percentage of the former indicates less credible estimation strategies that can be improved upon by better modeling.

A review of the literature shows that accurate budgetary estimates are not only important for meeting policy goals, such as generating full employment without creating inflation, they also help rational agents form expectations, with the "signal

effect" of poor fiscal marksmanship indicating policy failure. Findings for Europe indicate that under- or overreporting budget errors is closely correlated with political cycles, a pattern that the authors imply is echoed in India through public expenditure compression—or the intentional manipulation of the budget to meet the Fiscal Responsibility and Budget Management (FRBM) Act of 2003's goal of a fiscal-deficit-to-GDP ratio of 3 percent. Studies for India prior to the implementation of the fiscal rules enshrined in the FRBM indicate both revenue and expenditures were consistently underestimated, though they are inconclusive as to whether they are random or, like public expenditure compression, systematic. Recent empirical literature takes account of FRBM and other new fiscal rules, but only at the federal level. By assessing the magnitude and nature of budget errors in 28 of India's 29 states from 2010–16, the authors seek to fill this gap in the literature and provide the tools for improving future budget forecasts.

Using data from the states' finance accounts and India's Central Statistics Office, the authors define forecast error as the deviation between what was predicted (budget estimates and revised estimates) and the actuals. They construct their model with the mean error (ME) serving as a crude measure of the forecast's quality, the root mean squared error (RMSE) a measure of its magnitude, and Theil's inequality coefficient a measure of budget accuracy. Their ME and RMSE results show that overall the states' budget estimates overestimate revenue receipts by 1.8 percent of gross state domestic product (GSDP), a number that drops to 1.03 percent between the revised estimates and the actuals. Component-wise, they note that grants are overestimated at a higher rate than own tax revenue and tax transfers. Revenue expenditures were overestimated by 1.05 percent of GSDP in the initial estimates, with spending on social services overestimated at a higher rate than that of economic or general services, indicating that public expenditure compression is more frequent in the former sector. Chakraborty, Chakraborty, and Shrestha find that capital expenditures are consistently overestimated at a rate that is four times higher than that of revenue expenditures. Results using Theil's index show errors on both the revenue and expenditure sides, with the revised estimates showing more accuracy than the initial budget estimates. Decomposing the forecasting errors between systematic and random indicates that because they tend to be random, except in a few cases (capital expenditure, for example, on the expenditure side and grants on the revenue side), they cannot be improved upon with better models.

www.levyinstitute.org/pubs/wp_964.pdf

Fiscal Policy in Argentina, Brazil, and Mexico and the 2030 Agenda for Sustainable Development

BENDREFF DESILUS
Working Paper No. 960, July 2020

Bendreff Desilus, La Salle University, considers fiscal policy's potential impacts on reducing inequality in developing economies with a particular focus on Argentina, Brazil, and Mexico and their progress toward meeting the income equality goals enshrined in the United Nations' 2030 Agenda for Sustainable Development. He contends that policies grounded in what Abba Lerner called "functional finance" can be used to generate employment and thus a more equal distribution of income.

In the 1960s and '70s, the countries in this study operated under an import substitution model that enabled rapid growth; globalization, Desilus explains, necessitated a shift to an export substitution model that has provided little benefit to domestic incomes and made Latin America the most unequal region in the world. Though income inequality has been found to limit economic growth, Desilus notes fiscal policies in Argentina, Brazil, and Mexico are more focused on debt reduction through fiscal consolidation than on the public investment required for reducing inequality. Desilus points to recent studies that show monetary policy, focused on interest rate and inflation control, is not able to offset declines in aggregate demand and suggests that using the principles of functional finance—where policy is made with an eye toward goals such as full employment—fiscal policy could instead act as a redistributive instrument that would also foster growth. To effectively employ such policies, he advocates for a better understanding of how they operate to avoid the "fiscal trap" of economic contraction that can result from their misapplication.

Desilus points to the writings of Keynes—who believed the capitalist system needed more than the classical invisible hand to guide it toward egalitarian resource use and that the state was the only entity large enough to regulate aggregate demand to prevent disruptions within the economy—as a starting point for crafting effective fiscal policy. Government

spending during recessions can smooth cyclical fluctuations and build investor confidence, says Desilus, and through the multiplier effect this public investment can increase tax revenues and generate other equality-enhancing benefits. The author suggests that policy can be further refined using Kalecki's insight that workers and capitalists spend their incomes in different ways ("workers spend what they get; capitalists get what they spend") to inform how such spending is targeted; because workers spend what they get, policy should ensure they have enough to generate sufficient aggregate demand to keep the economy growing. This is particularly important in developing countries, Desilus notes, where purchasing power is concentrated within an upper class and demand is unlikely to remain at the necessary levels without government intervention in the form of fiscal and social policies. Similarly, the kinds of investment undertaken is also important, with spending on public infrastructure registering greater returns than any private investment.

Applying these ideas to Argentina, Brazil, and Mexico, which are well-known for their commodity-export-based economies that have suffered from slow growth and widening inequality in the modern era, Desilus indicates they could narrow their income gap by facilitating income growth among lower-income workers through social programs and public transfers to create an economically significant middle class. The UN's 2030 Agenda for Sustainable Development and the International Monetary Fund encourage all countries to adopt such growth-enhancing policies, implying they are particularly beneficial in developing economies with high levels of inequality. However, such polices are not always politically feasible, and those that encourage fiscal consolidation and deficit reduction have been implemented with insufficient results. As the result of jobs existing outside of formal employment arrangements and tax evasion, fiscal revenues as a percentage of GDP are notoriously low in Latin America and "sin taxes" imposed to meet revenue shortfalls while discouraging unhealthy behaviors have not been sufficient. To meet the Agenda for Sustainable Development's equality goals and ensure sustained growth and macroeconomic stability in the modern, global economy, Desilus suggests a new program of bold fiscal policy that will increase real wages by promoting productivity and increasing domestic value-added, while developing social protection strategies to foster greater equality.

www.levyinstitute.org/pubs/wp_960.pdf

Program: Federal Budget Policy

Debt Management and the Fiscal Balance

JAN TOPOROWSKI
Policy Note 2020/5

Jan Toporowski, SOAS University of London, provides an analysis of government debt management and its effect on macroeconomic dynamics using fiscal principles derived from the work of Michał Kalecki. Toporowski makes the distinction between the government's functional balance and its financial balance. The functional balance—which Toporowski argues is the more macroeconomically impactful—consists of government expenditure in the real economy (such as payments for public services, welfare programs, and subsidies for various economic activities) and taxes on incomes and trade. The financial balance is determined by government debt service along with taxes on wealth (in which Toporowski includes financial assets) and profits. The financial balance affects the liquidity of private portfolios and preferences with respect to the composition of those portfolios.

Toporowski then references Kalecki's proposal to balance a fiscal deficit used to support full employment (that is, a deficit in the functional budget or balance, as Toporowski calls it) with a wealth tax used to finance annual debt service (alternatively, the wealth tax could be replaced by a capital levy). In this proposal, mainly wealthy individuals would pay this tax (but with money returned to those individuals, in the form of interest payments, in proportion to their holdings of government bonds). An additional benefit of this kind of taxation, he argues, is that it does not affect incentives to invest. In the Kaleckian proposal, Toporowski explains, debt payments to ensure a balanced financial budget are sustained with a neutral effect on the liquidity of private portfolios. At the same time, the government, via its functional budget, is still able to engage in deficit financing to support full employment.

Organizing public debt management around this separation between a functional budget and a financial budget resolves a dilemma that can render fiscal policy ineffective, according to Toporowski. The dilemma between using fiscal policy to target the macroeconomy or to target government debt is resolved through the creation of two independent instruments, he argues.

Toporowski compares alternative scenarios in which there are differing combinations of surplus/deficit in the two budget instruments. For instance, "expansionary fiscal contraction" would describe a scenario in which the financial budget surplus is greater than the functional budget deficit. The government has an overall surplus with which to pay down its debt, Toporowski observes, while still stimulating the economy with a functional deficit. In this situation, he observes, monetary resources are being transferred from rentier capitalists (who pay more in taxes than they receive in interest payments) to entrepreneurs, who reap the functional fiscal deficit as profits. (Toporowski qualifies that, ex post, the overall budget cannot have a surplus, since an excess of total revenue over total expenditure is transferred to the financial account to buy government debt or other assets.)

Alternatively, having the functional budget in surplus while the financial budget is in deficit would be an example of "contractionary fiscal expansion." This situation tends to follow from principles of supply-side economics, according to Toporowski, in which wealth taxes are reduced in the hopes of spurring business activity and attempts are made to restrict government (functional) expenditures. However, this scenario leads to slow growth on account of the functional budget surplus, he explains. As a result, the overall budget remains in deficit and government debt rises (unless the functional surplus is greater than the financial deficit). Another aspect of this supply-side scenario is that financial resources are in effect transferred from the real economy to the portfolios of the wealthy. And due to rising liquidity in those portfolios, he argues, this ultimately has the effect of increasing financial instability. Supply-side policies such as reductions in wealth taxes, he concludes, can contribute to a decline in the fiscal multiplier—that is, the effectiveness of fiscal stimulus is reduced by a deficit in the financial balance.

Toporowski emphasizes that this analysis applies in the case of borrowing in domestic financial markets, but is much more complicated in the case of foreign borrowing. He also notes that one advantage of domestic borrowing is that it keeps financial resources within the (domestic) economy. Government borrowing is fixed on terms determined through the central bank's control of interest rates, while open market operations enable control of the liquidity of the wealthy's portfolios, with government bonds "rolled over" and financial budget expenditures limited to interest payments. In such cases, he writes, future generations of taxpayers effectively pay future generations of government bondholders (not the costs of today's government expenditures).

In light of this analysis of debt management, economic stagnation in wealthy countries can be a sign that the wealthy do not "pay their dues" toward government debt service, such that financial resources are diverted from stimulating the real economy toward financial circulation. In poor countries, Toporowski adds, financial instability may result from government debt being insufficiently domestic and the wealthy being insufficiently taxed to pay for debt service.
www.levyinstitute.org/pubs/pn_2020_5.pdf

INSTITUTE NEWS

New Research Associates

Research Associate Christos Pierros is a postdoctoral researcher in the Department of Economics at the National and Kapodistrian University of Athens and a senior researcher at the Labor Institute INE-GSEE. He holds a Ph.D. and an M.Phil. in economics from the National and Kapodistrian University of Athens and an M.Sc. in international economics from the School of Business and Economics, University of Maastricht.

His research interests include theoretical and empirical stock-flow consistent modeling, growth and distribution theory, international macroeconomic theory, and financialization.

Research Associate Nikolaos Rodousakis is a research fellow at the Centre of Planning and Economic Research (KEPE), managing editor of the journal *Greek Economic Outlook*, and a member of the Study Group on Sraffian Economics.

His main educational and research interests are political economy, input-output analysis, theory of endogenous economic fluctuations, and tourism economics. Rodousakis holds a degree in public economics, an MA in economics of production and intersectoral relations, and a Ph.D. in economics from Panteion University of Social and Political Sciences, Greece.

Call for Applications
An Intensive Virtual Course in Gender-Sensitive Macroeconomic Modeling for Policy Analysis
June 28–July 16, 2021

The purpose of this virtual course is to enhance capacity building in research and teaching of gender-sensitive economic analysis, with a focus on care and macroeconomic policy aspects to guide participants toward the formulation of viable research projects focused on addressing care needs in developing countries. The deadline for applications is April 8, 2021.

For more information or to apply, please email AU-Levy Intensive Course Administrator, Thomas Masterson (masterso@levy.org) or visit the seminar website at www.levyinstitute.org/events.

This course is organized by the American University's Care Work and the Economy Project and the Levy Institute and is made possible by the generous support of the William and Flora Hewlett Foundation.

The Institute Thanks Its Supporters for 2019–20

The Levy Institute wishes to acknowledge those who have helped support our work these past two years. Their partnership has helped sustain our independence. As we navigate through this challenging period—reacting to the new questions posed by the pandemic and its aftermath and furthering our pathbreaking research and innovative educational programs—our partners will continue to be a critical part of what comes next.

Donors

The William & Flora Hewlett Foundation
ShahGustafsson Foundation
Morgan Le Fay Dreams Foundation
Organisation for Economic Co-operation and
   Development (OECD)
Stergios G. Mentesidis '12
Taun Toay '05 and Christine Diaz
Goldman Sachs
Rafael Lima de Freitas '04
Dimitri and Rania Papadimitriou
Ben Strubel
Daniel Alpert
Radio Kingston
Tamim Akiki '19
John Joseph Casper
Boriana Handjiyska '02
Drs. Subramani Seetharama and Lavanya Subramani
Kristen Thorne
Vincent Mateo

Michael Greenberger
Damianos Lazaridis Giannopoulos '13
Willy Marcus Hautle
Jan Toporowski
Maureen Hull '86
Joel and Rivka Perlmann
David Hincapie
Richard B. Du Boff
Robert J. Ferrari
James Keenan
Victor Melville
Lara Merling MS '14
Marokey Sawo '20
Abdol S. Soofi
John Anella
Massimo Cingolani
Dr. Milton Masur, MD
Dr. William Van Lear
Anonymous

Levy Economics Institute
Graduate Programs in Economic Theory and Policy

Designed as preparation for a professional career in economic research and policy formation, these programs combine coursework in economic theory, policy, and modeling with the exceptional opportunity to engage in advanced research at the Levy Economics Institute.

Small class sizes, rigorous academics, and faculty-mentored research within a professional environment provide those seeking appointments in the nonprofit and government sectors or in private consulting and investment firms the experience they need. It also provides excellent preparation for students who ultimately go on to pursue a Ph.D.

For more information, including an application checklist and financial aid forms, visit bard.edu/levygrad.

**Levy Economics Institute
of Bard College**

**Graduate Programs in
Economic Theory and Policy**

Application deadlines
Early Decision: November 15 | Regular Decision: April 15

Contact
845-758-7776 | levygrad@bard.edu

Photos by Karl Rabe and Martha Tepepa

INNOVATIVE RESEARCH. EFFECTIVE SOLUTIONS.

Innovation is central to the Levy Institute's strategy for producing research that leads to constructive public policy. Over the past three decades we've developed new, accounting-based macro models and more comprehensive poverty measures. We've devised new approaches to financial regulation, as well as employment strategies to ensure true economic recovery and long-term stability. In areas like macroeconomic and trade policy, income inequality, sustainable development, job creation, gender equity, institutional reform, and democratic governance we've provided the nonpartisan, objective research and analysis policymakers need to make smart decisions.

Your support helps make this work possible. Our donors play a key role in sustaining the independence and impact of our work, which is essential to informing policy debates and developing effective solutions to public policy challenges. They help fund our people, ideas, and outreach. And they provide scholarship support to deserving students in our master's degree programs in economic theory and policy, which are centered on active research initiatives to solve real-world problems.

Become a Friend of the Levy Institute by making a gift today.

We offer a number of ways to give:

Friends of Levy Fund

This unrestricted fund provides the broadest level of support for our core activities. Your gift, regardless of size, helps us advance important research, expand our public outreach, and strengthen our scholarship program. To contribute to the Fund, please use the attached form, or you may donate online at levyinstitute.org.

Matching Gifts

Many employers match philanthropic gifts made by employees or their families, doubling the impact of your gift. You can request a matching gift form from your company's human resources office. Send the completed form to us along with your gift or pledge. We'll do the rest.

Partnerships

Donors may choose to partner with the Institute by directing their gift toward the support of a specific program, research project, or event.

Graduate School Scholarship Fund

Gifts can also be directed to support students in our master's programs. Current opportunities include a gift in the amount of your choosing to the Hyman P. Minsky scholarship fund for our most promising students, the Ifigenia Martinez scholarship fund for outstanding female economists from Latin America, or named scholarships in perpetuity with gifts of $200,000 or on an annual basis with gifts of $10,000 each year.

Planned Giving

Including the Levy Institute in your estate planning is a great way to have lasting impact on our work. For more information, contact the President's Office at 845-758-7700 or check the appropriate box on the form below.

The work of the Levy Economics Institute is literally indispensable, and probably irreplaceable. Levy researchers delve deeply into areas to which other think tanks barely pay attention, such as income inequality, for example. Thank heaven for Levy.

—Alan S. Blinder, former vice chairman of the Federal Reserve Board

--- ✂ ---

Friends of Levy Fund

Support the Levy Institute with a single gift of ☐ $_____ or make a monthly gift of $_____ for _____ months.

Scholarship Funding ☐ $_____

Method of Payment

☐ A check made payable to the Levy Economics Institute of Bard College is enclosed.

☐ Bill my (check one) ☐ American Express ☐ Discover ☐ MasterCard ☐ Visa

Account number   Expiration date

Name as it appears on card

Name as it should appear in donor listings
☐ I would like to remain anonymous in all donor listings.

Address

City   State   Zip

Telephone   E-mail

☐ Please send me details on ways to provide for the Levy Institute in my will or through other estate-planning gifts.

Thank you for your continued support.

Please return your donation to: Levy Economics Institute of Bard College, Blithewood, PO Box 5000, Annandale-on-Hudson, NY 12504-5000

All donations to the Levy Economics Institute of Bard College are tax deductible to the fullest extent of the law. The College is a 501(c)(3) organization.

LIF20