Levy Economics Institute of Bard College

Summary

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LETTER FROM THE PRESIDENT

To our readers:

This issue of the *Summary* begins with a Strategic Analysis by myself and Research Scholars Michalis Nikiforos and Gennaro Zezza under the State of the US and World Economies program in which we identify the four main structural problems for the US economy and how the feedback effects between them not only explain the origin of the 2007–9 crisis, but also account for the weak recovery that has followed. In this report, we estimate the macroeconomic benefits of recent proposals designed to reduce inequality through changes in tax policy. Also under the State of the US and World Economies program, Senior Scholar and Director of Research Jan Kregel offers a policy note arguing that tariff-centered strategies for addressing bilateral imbalances are ineffective and the key to addressing global imbalances lies instead in a reform of the international financial system. A policy note by Paolo Savona outlines a proposal to increase the supply of safe assets in Europe to address the imbalances created by the eurozone setup, suggesting that it would increase growth and employment, as well as strengthen the international role of the euro. Working papers in the program include a paper by Yeva Nersisyan and Senior Scholar L. Randall Wray employing methods inspired by John Maynard Keynes's 1940 pamphlet, *How to Pay for the War*, to estimate the costs of the Green New Deal (GND) in terms of resource requirements; Harold M. Hastings, Research Scholar Tai Young-Taft, and Thomas Wang apply game theory to the exploration of the dynamics of the spread of 10-year Treasury notes and the federal funds rate to better understand when to reduce interest rates to prevent recessions; and Michalis Nikiforos extends Albert Hirschman's concept of shifting involvements to explain the relationships between capital and labor that result in fluctuations in distribution and growth.

The Monetary Policy and Financial Structure program features four working papers. The first, by Jan Kregel, considers the basic principles underlying our understanding of money and how to apply them to ensure the distribution of financial resources is the result of democratic decisions. Plamen Nikolov and Paolo Pasimeni focus on fiscal policy's role in stabilizing the economy after a shock, using the extension of the US federal unemployment benefit system in response to the Great Recession to draw lessons for supranational economies without a common fiscal capacity, and Zengping He and Genliang Jia trace the evolution of China's monetary policy framework to assess the strengths and weaknesses of reforms undertaken in response to marketization. In a posthumously published working paper, Senior Scholar Fernando Cardim de Carvalho examines early 20th century experiments with economic planning in the United States and France to ascertain the possibilities and limitations of planning in capitalist societies.

A working paper under the Employment Policy and Labor Markets program by Research Scholar Fernando Rios-Avila and Fabiola Saavedra Caballero applies data from the American Community Survey for 2010–16 to estimate the effects of the education-occupation mismatch on both employers and employees.

Two final working papers, both by Rios-Avila, come under the Distribution of Wealth and Income program. The first proposes a strategy to apply the standard Oaxaca-Blinder decomposition to a continuous group variable using a varying coefficient model to analyze heterogeneous dose-treatment effects when endogeneity in terms of self-selection is expected, employing his methodology to examine obesity's impact on wages. The second focuses on the use of influence functions and recentered influence functions (RIFs) for analyzing the robustness of distributional statistics to small disturbances in data, and introduces three Stata commands for RIF regressions and RIF decompositions, demonstrating their application through an investigation of changes in inequality in the United States.

As always, I welcome your comments and suggestions.

Dimitri B. Papadimitriou, *President*

Program: The State of the US and World Economies

Strategic Analysis

Can Redistribution Help Build a More Stable Economy?

DIMITRI B. PAPADIMITRIOU, MICHALIS NIKIFOROS, and GENNARO ZEZZA

With the US recovery on the verge of becoming the longest on record, Institute President Dimitri B. Papadimitriou, and Research Scholars Michalis Nikiforos and Gennaro Zezza caution that, while long-lived, the recovery has also been the weakest of the postwar era—and the chances of a recession are the highest they have been since 2007–9. In line with previous Strategic Analyses, Papadimitriou, Nikiforos, and Zezza identify four main structural problems for the US economy: (1) weak net export demand; (2) fiscal conservatism; (3) income inequality; and (4) financial fragility. According to the authors, these structural problems and the feedback effects between them not only help explain the factors that led to the crisis of 2007–9, they also account for the weakness of the current recovery and will play the key roles in the next recession. In addition to presenting their analysis of the prospects and challenges for the US economy, the authors evaluate the macroeconomic impact of tax policy changes designed to address one of these structural problems: rising income inequality.

Despite a significant decrease in the unemployment rate, Papadimitriou, Nikiforos, and Zezza point out that the employment–population ratio is still less than halfway from returning to its precrisis level. More concerning, they note, is that the jobs that have been created have largely been low-productivity, low-paid jobs. As for the foreign sector, despite the administration's focus on trade, the US trade deficit has been increasing over the last two years and in 2018 reached its highest (nominal) level ever recorded. The deterioration of the trade balance can be attributed to the worsening of the trade deficit of nonpetroleum goods (were it not for the improvement in the trade balance of petroleum goods, they point out, the overall trade deficit would be close to 7 percent or more). Looking ahead, the weakening of US trading partner economies is a source of concern for US exports. The authors observe that 2018 brought a significant change in fiscal policy. The tax law signed in December 2017, together with spending increases that passed in 2018 (lifting previously imposed spending caps), marked a turn toward looser fiscal policy. In a previous report, they projected that the tax cuts would have only a minimal impact on growth, due to the cuts being heavily skewed in favor of high-income households and large corporations, and they point out that this analysis has been largely borne out by events. By contrast, they underscore that the lifting of the spending caps produced a more significant impact on demand (per dollar)—further confirmation that the austerity of the last decade was a serious policy error. Finally, while the household sector has continued to consolidate its balance sheets, creating a drag on demand, the debt liabilities of nonfinancial corporations are at record highs. The authors point to a number of reasons to be concerned about this debt growth, including a rise in the share of "zombie firms" and the share of corporate bond issuers with a BBB rating. In combination with the fragility of private sector balance sheets, the authors point to the overvaluation of the stock market as a source of financial instability for the US economy.

Papadimitriou, Nikiforos, and Zezza turn to recent proposals by Senators Elizabeth Warren and Bernie Sanders and Representative Alexandria Ocasio-Cortez that would increase the rate of taxation on very high incomes and net worth. The authors stress that the main justification for these policies is political: addressing concerns that extreme inequalities in income and wealth can be turned into extreme inequalities in political influence. However, their analysis shows that such policies could also have a beneficial impact on the economy when paired with an equivalent rise in public spending.

In the first scenario, Papadimitriou, Nikiforos, and Zezza analyze the impact of the wealth tax proposed by Senator Warren: an annual 2 percent tax on household net worth above $50 million, with an additional 1 percent tax on net worth above $1 billion. The tax would generate roughly 1 percent of

GDP per year in extra revenue, after accounting for potential tax avoidance and evasion. In the second scenario, they simulate a 10 percentage point increase in the average tax rate paid by the top 1 percent of the income distribution. After taking into account the increased disincentive to report or generate income, it is estimated the tax would raise total revenues by roughly 1.3 percent of GDP. In both scenarios, which run through the period 2019–23, the revenue increases are matched by an equivalent increase in government spending. This matching assumption, the authors explain, helps isolate the macroeconomic effects of redistribution. In both scenarios, the overall multiplier of these policies is 1.7: a 1 percent of GDP increase in tax revenues from the richest households, paired with an equivalent increase in public spending, generates a 1.7 percent increase in GDP. In the second scenario, this translates to a 2.2 percent overall increase in GDP.

When the income growth of households with a high propensity to consume (lower- and middle-income households) stagnates, while the majority of income growth flows to those (wealthy) households with a lower propensity to consume, overall US consumption, and therefore demand and GDP growth, is weakened, the authors explain. The fact that the current recovery is the slowest in the postwar era is in part the result of four decades worth of income redistribution toward the top. The authors point to further macroeconomic benefits from reducing inequality that are not explicitly captured in their simulations. Beyond the impact on aggregate demand, inequality may also be a factor in the slowdown of productivity growth, since the stagnation of real wages has blunted the motivation to introduce labor-saving technical advances. Moreover, income inequality plays a role in exacerbating financial fragility. The trend toward greater inequality has been accompanied by growing financialization of the economy, in terms of the ratio of total financial assets to GDP. Given the high saving rate of the richest households (the counterpart of their lower propensity to consume), rising inequality results in a significant increase in liquidity that helps drive this financialization and is a major contributing factor to financial market instability. Meanwhile, households with stagnant market earnings must turn to greater household borrowing to increase consumption, making most household balance sheets more fragile. This is part of a precarious economic structure in which (given weak net export demand and relatively strict government budgets) growth will tend to be either fragile and debt-driven (as it was in the lead-up to the 2008 crisis) or anemic (as it has been in the current recovery, with households unable or unwilling to increase their debt-financed spending).

The authors stress that tax policy changes are only part of the solution to rising inequality. They explain that a more comprehensive effort would require addressing the primary distribution of income, likely through structural change in labor and product markets.

www.levyinstitute.org/pubs/sa_apr_19.pdf

Global Imbalances and the Trade War

JAN KREGEL

Policy Note 2019/2, May

In the context of ongoing trade wars along several fronts, Senior Scholar and Director of Research Jan Kregel argues that tariff-centered strategies to address bilateral imbalances cannot succeed, and that a reform of the international financial system is the key to addressing global imbalances while supporting growth.

Understanding the flaws of current strategies requires an understanding of how the structure of international trade and finance has evolved. The postwar international financial system was designed to support reconstruction of the European economies and the reestablishment of trade—the structure of international finance was in that sense subordinated to the restoration of the trading system. Moreover, such trade was primarily undertaken as the bilateral exchange of domestically produced final goods and services.

The present structure of trade and finance differs significantly from this sketch of the Bretton Woods system. With the development of global supply chains, investment seeks the lowest-cost, globally distributed production and assembly of intermediate inputs. Thus, the main driving factors in the current system are internationally diversified corporate investments and trade that takes place in intermediate, semifinished goods. And as Kregel points out, international finance now dominates trade—a sort of reversal of the relationship conceived at Bretton Woods. The rise in the trade of intermediate products has brought about an increase in cross-border funding, and a growing number of financial institutions have moved to foreign markets, generating an increase in the international exchange of financial assets that is independent of trade flows.

The predominance of global supply chains makes many of the official statistics used to measure trade flows misleading and renders some international adjustment mechanisms less relevant. Going forward, the question is how international adjustments can be achieved in this context without depressing (national and global) growth. In a world in which trade is not primarily undertaken in domestically produced finished products, Kregel argues, tariffs cannot achieve this sort of adjustment.

With respect to the bilateral imbalance between the United States and China, adjustment would require the United States to spend less and save more and China to spend more and save less. Noting that adjustment requires cooperation from both countries to be accomplished, Kregel argues that tariffs have the least possibility of success and will leave the two countries worse off. Moreover, for adjustment to occur, the United States would need to reduce its government deficit in addition to lowering consumption. In other words, while an external deficit dampens domestic demand, policies that would eliminate the imbalance require expenditure (private and public) to be reduced—further reducing growth and employment. This is why adjustment requires global policy coordination, according to Kregel, because attempting to reduce the external deficit by reducing domestic demand can only succeed if exports increase sufficiently to compensate for that loss of demand—and this can only occur if other countries decrease their saving and increase their demand for imports. Without this compensating move on the part of foreign countries, Kregel explains, the net result is a decrease in global income and employment (and little impact on external imbalances).

Apart from seeking adjustment through domestic demand management, an alternative would be to attempt to manage or control capital markets by influencing interest rate differentials, capital flows, and the exchange rate. Tariffs are an inefficient tool for achieving adjustment because they have no direct effect on domestic consumption or investment; nor do they directly impact domestic financial conditions, international capital flows, or exchange rates. And as Kregel emphasizes, the present international system is one in which financial flows, rather than trade flows, largely determine imbalances. In the current system, adjustment requires management of capital flows, and short-term tariffs have little impact on these flows. Meanwhile, tariffs disrupt existing global supply chains and heighten uncertainty, thus reducing global investment.

Kregel suggests the solution lies in reform of the international financial system. Eventually, China's income growth will no longer depend on external stimulus; at that point, China's imports will increase and their current account surplus will decrease. However, this requires an international financial system not oriented around the US currency. The solution is not, Kregel stresses, to replace the US dollar as the international reserve currency with the remninbi. The problem stems not from the use of the US dollar per se, but from the denomination of international financial flows in an individual country's currency. Here Kregel recommends John Maynard Keynes's proposal for an international clearing union.
www.levyinstitute.org/pubs/pn_19_2.pdf

A Proposal to Create a European Safe Asset

PAOLO SAVONA
Policy Note 2019/1, April

According to Paolo Savona, Commissione Nazionale per le Società e la Borsa (CONSOB), a consensus has formed that the eurozone's economic governance mechanisms need to be reformed. However, the progress that has been achieved thus far falls short of what is required to increase growth and employment and strengthen the international role of the euro. Savona notes that while there has been some progress on, for instance, the banking union and reform of the European Stability Mechanism (ESM), he argues that this will not be sufficient to address the central imbalances created by the eurozone setup.

Savona identifies three crucial interrelated elements that are missing from the current package of reforms: a common insurance scheme for bank deposits, the regulation of banks' sovereign exposure, and the existence of a common safe asset. He outlines a proposal to increase the supply of safe assets through the ESM and explains how the plan could be made economically and politically satisfactory to all member-states. Moreover, he suggests that increasing the supply of safe assets provided by a common European issuer would facilitate progress on the two other missing elements: deposit insurance and sovereign exposure.

Progress on the creation of a European safe asset has been hindered by fears that some member-states could use the instrument in such a way as to lead to the mutualization of debt, by the belief that excessive conditionality could limit the usefulness of the instrument, and by concerns that unnecessary debt restructuring might be imposed.

In addition to facilitating progress on other reforms of the eurozone system, Savona explains, the creation of the safe asset would improve member-states' policy options. In particular, Savona focuses on interest payment burdens faced by member-states with high debt-to-GDP ratios. These high debt levels constrain the ability to use public expenditure in ways that would improve growth and employment. The compression of public investment has an impact on long-run growth prospects, which has spillover effects for the euro area as a whole. Savona points out that, as a percentage of GDP, the member-states that spend the least on interest payments are also the ones that spend the most on public investment, and vice versa (with the notable exception of Germany, which spends less than it should on public investment, Savona observes, even while it has one of the lowest interest burdens in the euro area). Lower interest payments facilitated by the common issuance of a safe asset would allow member-states to free up fiscal resources to be used on public investment while still hitting their fiscal targets. The conventional approach to dealing with high debt levels in the eurozone—running large primary surpluses for long periods of time—is untenable and ineffective, according to Savona, and the scarcity of safe assets and fragmentation of bond markets are at the heart of the problem.

He outlines a number of criteria that would make the creation of the European safe asset economically and politically viable. In Savona's proposal, the safe asset would be issued by the ESM, which would make loans to member-states that would carry the same interest rates the ESM would pay on its own liabilities. The interest rates would be equal for all member-states, and over time the loans' maturities could be extended with maturity transformation. The loans would have the same distribution key as the European Central Bank capital key. He notes that the ESM already has the mandate to support member-states in case of their inability to resort to financial markets, and he proposes extending this mandate to allow the ESM to lend to members under normal circumstances as well. By giving the ESM's claims a higher ranking than other member-states' liabilities, Savona suggests the ESM's creditworthiness would be protected, contagion risks would be eliminated, and policy conditionality would be unnecessary.

Reducing the cost of debt for member-states would free up space for public investment while maintaining budget discipline. Moreover, by enabling the creation of a truly European bond, which would be the main asset used by the European banks, banks could gradually reduce national exposures on their balance sheets. As a result, banks' perceived risks would be reduced, which could enable progress to be made on the European Deposit Insurance Scheme.
www.levyinstitute.org/pubs/pn_19_1.pdf

How to Pay for the Green New Deal

YEVA NERSISYAN and L. RANDALL WRAY
Working Paper No. 931, May 2019

In response to mainstream estimates that put the cost of implementing the Green New Deal (GND) as high as $90 trillion, Yeva Nersisyan, Franklin & Marshall College, and Senior Scholar L. Randall Wray employ methods outlined in John Maynard Keynes's 1940 pamphlet, *How to Pay for the War*, to estimate the GND's "costs" in terms of resource requirements. Arguing that from a Modern Money Theory (MMT) perspective affordability is never a question, the authors set out to gauge whether enough national resources exist to achieve the GND's goals without sparking inflation.

Nersisyan and Wray argue that climate change is a threat to human life and we must approach it as the moral equivalent of war. Contending that the situation is similar to that faced by the United States in the run-up to World War II, where the reorganization and reallocation of resources allowed us to "snatch from the exigency of war positive social improvements" (Keynes 1940), they present a plan for reducing private resource use and moving the appropriate resources toward the GND. Beginning from Keynes's assertion that war planning is not a financial, but a real resource issue, they attempt to estimate how much to reduce current aggregate private demand to release resources without creating inflationary excess demand. Assuming that the increased output will go to the "war" (GND programs), while workers will see income increases, some purchasing power will need to be withdrawn to avoid price increases and inflation. It is here the authors point to the role of taxes, not as a means to finance the GND, but as one way to reduce demand.

Turning to the GND's "costs," Nersisyan and Wray point out that parts of the program will be resource creating and result in cost reductions elsewhere; therefore, it is misleading to simply tally projected dollar amounts. They refute claims that the US economy is near full employment, noting that there is substantial excess capacity that can be mobilized toward GND projects. They also suggest that operating close to full capacity will create more capacity, and that targeting investments toward lagging sectors while employing underutilized resources through the GND will counter the tendency for growth to boost income and spending at the top.

They cite the spillover effects from the job guarantee (JG) portion of the GND as an example of one place where benefits could outweigh the costs. By providing a job and basic wage to anyone willing to work, the JG mobilizes excess capacity and operates as a commodity price support program. Using estimates from the Levy Institute's research project report, "Public Service Employment: A Path to Full Employment," the authors suggest that while in financial terms the JG is a cost, in real terms it is a source of resources. Under the assumption that JG workers will mostly be directed to labor-intensive GND projects, the authors find that they can provide resources needed for green projects in an amount equal to 1 percent of GDP. Similarly, net resource costs for the greening of the power grid, public infrastructure investment, provision of care services in the community, and Medicare for All are much lower than mainstream projections when potential savings are accounted for. Additional resources can be freed by ending "forever wars," which the authors assert results in a $1 trillion reduction in "unproductive" spending annually.

Countering calls for increasing taxes on the rich, Nersisyan and Wray claim MMT does not see this as a benefit except to the extent that it releases resources and reduces inequality. If the released resources are not sufficient for GND requirements and inflation pressures arise, the authors suggest a modest and progressive payroll tax, similar to Keynes's suggested program of "forced" savings in the form of deferred compensation—which would not be lost income, as workers would receive it as increased retirement income—to act as a sinking fund until resource demands decline and productive capacity increases.

The authors claim that the net costs of the GND are less than 2 percent of GDP annually over the decade it will take to fully implement the program and are minimal compared to the costs of doing nothing. They conclude that with the right mix of policies, we can use the crisis before us as an opening for progressive change without raising taxes or sparking inflation.

www.levyinstitute.org/pubs/wp_931.pdf

When to Ease Off the Brakes (and Hopefully Prevent Recessions)

HAROLD M. HASTINGS, TAI YOUNG-TAFT, and THOMAS WANG

Working Paper No. 929, May 2019

Harold M. Hastings, Bard College at Simon's Rock and Hofstra University, Research Scholar Tai Young-Taft, and Thomas Wang, Bard College at Simon's Rock, investigate the dynamics of the spread between the 10-year Treasury rate and the federal funds rate to better understand when to reduce interest rates in order to prevent recessions. The authors note that several studies find the yield curve (particularly the spread between interest rates on 10-year Treasury notes and 3-month Treasury bills) to be a useful predictor of recessions. Following on the work of one study that looked at the spread lagged six months, they apply control theory in an attempt to ascertain if there are other useful measures of the yield curve and if six months is the optimal lag for predicting, and possibly preventing, recessions.

Contending that peaks in the federal funds rate are often followed by the start of a recession 6–16 months later, the authors propose a modified version of the yield curve, namely the 10-year Treasury rate minus the effective federal funds rate, as their observable. Though others have rejected this modified spread, Hastings, Young-Taft, and Wang suggest that because the Federal Reserve directly controls the federal funds rate, with only indirect control over the 3-month rate, the federal funds rate (which is closely related to the 3-month rate) can be regarded as a control variable. They suggest that their modified spread is as effective at predicting recessions over the last 50 years as other definitions found in the literature, noting that their spread gave a sharper signal of the dot-com bubble of the early 2000s.

Using techniques from nonlinear dynamics, the authors study the temporal evolution of their yield curve. They begin by defining the state space of an economic system as one that contains variables such as the inflation rate, unemployment rate, and interest rates, among others. Employing Takens' embedding theorem and lag plots to model the dynamics of the yield curve (the macoreconomic attractor), the authors indicate that lag plots of smoothed data can uncover significant linear and nonlinear patterns, while Takens' embedding theorem is used to reconstruct an *n*-dimensional attractor through plotting sequences of lagged observations of one signal from the attractor for an appropriate time lag; via the "timelag" program in the fractal package in R, they find that 26 months is optimal. Hastings, Young-Taft, and Wang explore the correlation dimension of the spread using the "corrDim" package fractal in R to yield a tangled lag plot in two dimensions. Given the limited amount of data, and because frequent sharp peaks and troughs in economic time series may be attributed to noise, the authors detrended and somewhat smoothed the data with lowess in R to determine dynamics on a reasonable time scale by removing noise and any longer-term trend. The authors choose lowess for detrending over other standard algorithms (such as moving averages) to perform a nonlinear separation of time scales so that Takens' embedding focuses on an empirically appropriate timescale, yielding a ~2-dimensional attractor in a 3-dimensional space. Their graph of the time series of the spread suggests a time scale of 7–10 years for a full cycle; therefore, the 26-month lag approximates a quarter of a cycle. They contend that their results indicate that cyclic dynamics can be captured with the spread, apparently describing the credit/liquidity cycle in the macroeconomic system.

The authors employ dynamical models to demonstrate that a dimension of ~2 is reasonable, finding they are consistent with typical simplified economic models, and that both seem to pick up cyclical dynamics, suggestive of competitive business cycles in a financial economy. In a final step, they find Sugihara causality from the yield curve to GDP growth, as well as evidence for a cycle in causality with peaks at time offsets of around 7–10 quarters in addition to the peak at lag 0, implying that the growth effects of changing the spread may not peak for 7–10 quarters.

Hastings, Young-Taft, and Wang note there are some limitations to their model, but plan to extend their work to sectoral analysis, analysis of yield curves with multiple maturities, and market microstructure analysis of Treasury issuance, including various yields and comparisons across and between countries.

www.levyinstitute.org/pubs/wp_929.pdf

Induced Shifting Involvements and Cycles of Growth and Distribution

MICHALIS NIKIFOROS

Working Paper No. 924, February 2019

Research Scholar Michalis Nikiforos extends Albert Hirschman's concept of shifting involvements beyond the representative "consumer citizen" to explain the dynamics between labor and capital that result in fluctuations in distribution and growth. Positing that an increase in the political activity (or "involvement") of capitalists results in an increase in their profit share, while an increase in involvement by labor results in an increase in the wage share, Nikiforos builds a model to examine distribution shifts in the United States throughout the 20th century.

Noting that the increase in inequality of the last four decades resembles the period prior to the Great Depression, but stands in contrast to the period between the mid-1930s and the 1970s (when labor activism increased and inequality decreased), the author cites Gunnar Myrdal's circular cumulative causation, which suggests that as one class becomes richer, they are more able to tilt the distribution in their favor. Today's manifestation of this process, including the passage of the Tax Cuts and Jobs Act of 2017 and the repeal of the Affordable Care Act, favors capitalists. According to Nikiforos, this is the result of 40 years of involvement on behalf of capital, beginning with the economic crisis and stagnation of the 1970s. However, this involvement carries a cost and the potential effects of a change in distribution can be destabilizing, especially when both classes push for further increases in their share irrespective of its effect on economic activity. Nikiforos asserts that the resulting predator-prey dynamics provide an interesting framework for examining the long-run performance of the US economy in the 20th century, where too much of an increase in the profit or wage share induced a crisis that resulted in a shift in involvements (for example, the inequality of the early 20th century led to the Great Depression and the New Deal).

Nikiforos traces the involvement of the two classes through the 20th century using union membership and public-interest groups as proxies for labor involvement and corporate lobbies and business-friendly networks as proxies for capital's involvement, demonstrating that as the power of each grew, so too did the share of income they garnered. Giving particular attention to the period since the 1970s (when he asserts the last major shift occurred), he cites the increasing number of public affairs offices, reinvigoration of the US Chamber of Commerce, stronger connections to the media, and rise of political action committees (PACs) and super PACs as evidence of business's increasing involvement over the era, with the political power of capital increasing as a result.

To model these changes, the author determines the involvement of each class, assuming that capitalists start with a target level of distribution and shift their involvement in response to discrepancies between the target and actual profit share, taking account of the involvement's marginal cost. To determine the target level of profit share, he assumes it is a positive function of the current share and a negative function of the "wage-ledness" of the economy, with capitalists targeting the highest possible profit share. As increased involvement on behalf of capital results in an increasing share of profits, further advancements of its position become easier. The involvement of labor is determined in a similar (though not identical) way, with a change in involvement serving as a response to the difference between the target and actual income share. The resulting equations for the change in involvements allow one to define the change in the profit share, revealing that distribution is unstable.

Nikiforos asserts that the two main forces that cause the instability are the positive effect of a class's share of income on its targeted share of income and the increasing returns to involvement, while stability requires that both classes are more interested in the macroeconomic performance of the economy over increasing their targeted share of income. He concludes by making further distinctions between the cycles of wage-led and profit-led growth with a discussion of their cooperative and conflictual subregimes, contending that the cooperative portion of the cycle provides justification for social-democratic policies while the conflictual portion validates trickle-down policies.

www.levyinstitute.org/pubs/wp_924.pdf

Program: Monetary Policy and Financial Structure

Democratizing Money

JAN KREGEL

Working Paper No. 928, May 2019

Asserting that in the Western interpretation of democracy, government exists to protect property rights, and absence of property means exclusion from participation in governance, Jan Kregel advocates for a greater role for government in the financial system to democratize money and finance.

Kregel suggests that the divergence between capital and labor results from capitalists' monopoly on access to finance; therefore, democratizing money requires equal opportunity for property ownership to ensure full participation in governance, with equal access to the banking system to finance ownership. Proposals for how to achieve this must consider how money comes into existence and supports capital accumulation. Kregel summarizes the "metallist" approach to money creation, which posits that money's value comes from the value of the precious metal embodied in a coin, arguing that this explanation lost its merit with the introduction of bank notes and deposits. The "quantity" theory of money, which dominated from the 16th century until the modern era, attempted to reconcile the divergence between nominal and real values by limiting the quantity of what represented money to the quantity of the commodities it represented.

This theory, where nominal money is created based on fractional reserve deposit banking at government-regulated private banks, allowed for the expansion of lending and capital accumulation, which, Kregel argues, resulted in the Great Depression and the Great Recession, as well as the trend rise in income inequality over the last half century.

In the alternative "chartalist" interpretation, money creation is not based on a single physical commodity (such as gold). Under this theory, which dates back to medieval Europe until the 18th century, "imaginary" or "state" money is a notional unit of account used to express prices, define obligations in time contracts, and keep books, and, according to Kregel, it is best suited for use as the basis for any plan to democratize money.

Presenting his argument through an outline of nine basic principles for understanding money, Kregel asserts that the first follows Keynes's definition of money of account and relates to the crucial role money as a purely notional unit of account plays in a capitalist system. The second principle reflects observations of banking operations in the 19th century following Joseph Schumpeter's characterization of money as a unit of account in a balance sheet or clearing system, where it is written off one account and added to another without the use of bank notes. The remaining principles relate to the role of bankers as bookkeepers who control the entries on balance sheets, and the transformation of banking from the provision of payment services for a fee to the provision of their own liabilities as means of payment in the modern financial system. Here the profit motive drives bankers to provide alternative means of payment through the issue of their own liabilities, a move that Kregel contends disrupts Schumpeter's circular flow of equilibrium of debts and credits, resulting in bank default risk and the need for government regulation. Augmenting this risk is the proliferation of financial innovation, the process of which follows Georg Friedrich Knapp's and Keynes's assertions that bank money and state money are analogous—with the latter often descended from the former—forming the basis for the chartalist theory of money creation. The final principle notes that in the current financial system private banks control the issue of deposits denominated in state money.

Kregel concludes that there are two ways to democratize finance. The first is to amend the current system by nationalizing banks or controlling the quantity and quality of assets created by private banks. The alternative is a national clearing house operated by the government or central bank in which a debit entry is equivalent to government debt, leaving all default risk to be borne by the government, with the distribution of financial resources the result of democratic decisions.
www.levyinstitute.org/pubs/wp_928.pdf

Fiscal Stabilization in the United States: Lessons for Monetary Unions

PLAMEN NIKOLOV and PAOLO PASIMENI
Working Paper No. 926, April 2019

Plamen Nikolov, European Commission, and Paolo Pasimeni, European Commission and Institute for European Studies at Vrije Universiteit Brussel, assert that because the interaction between monetary, fiscal, and structural policies determines how the economy responds to shocks, the right mix is crucial to ensuring stability. Focusing on fiscal policy's role, they look at the federal unemployment benefit system in the United States and its extension in response to the Great Recession to assess its ability to stabilize the economy after a crisis and try to draw lessons for supranational economies without a common fiscal capacity, such as the European Monetary Union (EMU).

Noting that both intertemporal and interregional stabilization are integral for mitigating the impact of macroeconomic shocks, the authors highlight the peculiarity of the EMU as a monetary union without a political union as a situation that limits its ability to smooth shocks, as demonstrated by the experience of the Great Recession. Additionally, the European Union's budget is small compared to its member-states' budgets (therefore, its net redistributive and stabilization functions are weak), and its aggregate fiscal stance is a result of national fiscal policies. Given the EMU's "reverse vertical fiscal imbalance"—where the central budget depends on upward transfers from member-states—policy coordination has proven difficult, leading to imbalances. Nikolov and Pasimeni suggest that a common fiscal authority with the power to levy direct taxes, borrow, run deficits, and facilitate cross-border fiscal transfers could minimize distortions.

To investigate the potential stabilization impact of fiscal transfers, the authors look at unemployment insurance

(UI) in the United States. Organized as a federally funded, but state run, program, UI's top-down architecture helps prevent moral hazard, as states have a clear preference for underfunding the system to avoid capital flight. They argue that the program plays several roles, including the maintenance of purchasing power and macroeconomic stabilization during downturns, suggesting it was one of the most relevant discretionary actions taken by the US government in response to the Great Recession. To model the importance of such programs in federal-to-state-government risk sharing and intertemporal stabilization, they present a series of regressions to estimate the relative importance of various channels, measuring the degree of risk sharing in terms of a change in each variable from the previous period. When time fixed effects are excluded, the beta coefficients (interpreted as the relative weights of cross-border risk sharing due to net factor income, fiscal transfers, savings, and borrowing on credit markets) measure the amount of smoothing of both asymmetric shocks and shocks that are common to all 50 US states simultaneously; including time fixed effects, the beta coefficients show the amount of an asymmetric shock that is smoothed by each channel. The authors argue that the difference in the regressions' coefficients with and without the time fixed effects can be used to estimate a program's capacity to stabilize common shocks. Using available data on federal budget items such as taxes paid, and Social Security, UI, and Medicare benefits, they assess the effects of programs that are designed to meet long-term convergence goals, but also play an unintended stabilization role.

Their results indicate that 21 percent of common and asymmetric shocks are smoothed through the operation of the federal budget, with items such as federal corporate income taxes, Social Security benefits, and federal grants playing the greatest role, though the stabilization effect is not correlated with the item's size in terms of percentage of GDP. With respect to asymmetric shocks only, they find around 10 percent are smoothed through the fiscal channel. Considering only the role of UI and its extension through the American Recovery and Reinvestment Act of 2009, Nikolov and Pasimeni find that it changed the smoothing of the common and idiosyncratic income shocks for the average state by 6 percentage points, contending the results prove the effectiveness of an ad hoc, contingent fiscal measure in stabilizing a large common shock.

They conclude the federal budget can provide relevant and efficient channels for stabilization, independent of the revenue or expenditure's size, suggesting that even a small federal budget with the ability to collect taxes and pay benefits can have a significant stabilizing effect.
www.levyinstitute.org/pubs/wp_926.pdf

An Institutional Analysis of China's Reform of their Monetary Policy Framework

ZENGPING HE and GENLIANG JIA
Working Paper No. 925, April 2019

Zengping He, Renmin University of China, and Genliang Jia, Renmin University of China and Collaborative Innovation Center for China Economy, trace the evolution of China's monetary policy framework to assess the strengths and weaknesses of the reform undertaken in response to the marketization of the 21st century.

Beginning with the abandonment of the credit quota system in 1998 in favor of a quantity-targeting monetary policy framework, the authors note the attempt to control the money supply (as measured by M2, with an additional indicator known as the "social financing scale" added in 2001) was a legacy of the planned economy. Though preferable to a price target, they assert that the quantity target is unsuitable for monetary policy operations because of the difficulty in achieving the target, given that the market demand for reserves is interest inelastic and the central bank must meet these demands to maintain stability. Comparing the target with the actual reported growth in M2, they demonstrate that the target was often missed, sometimes by 10 percent or more. Other issues with the quantity target include the lack of transparency in target setting contributing to interest rate fluctuations and financial innovations making M2 a weak indicator of financial activity.

Arguing that an interest rate target would be preferable, He and Jia discuss the current interest rate maintenance mode in China, where, similar to the United States, the central bank sets an interest rate corridor—with the floor being the interest rate paid on excess reserves and the ceiling set by the interest rate on borrowing from the central bank—enabling them to accommodate market demand for reserves while stabilizing the interest rate. However, with the People's Bank of China (PBOC) subject to quotas under the quantity targeting framework, the authors suggest they could not effectively set a ceiling for the interest rate corridor. Additionally, constrained open market operations, financial innovation, and foreign capital inflow fluctuations add to the difficultly in estimating and meeting market demand for reserves, further impeding the PBOC's ability to achieve its interest rate target.

In 2013, the PBOC implemented a series of reforms and introduced new monetary policy tools to address these issues. The Standing Lending Facility (SLF) provided a means for setting a ceiling to the interest rate corridor by supplying reserves on demand to financial institutions, and, beginning with the SLF's maturity in 2015, the interbank offered rate has remained within the corridor. The reform of open market operations with the establishment of short-term liquidity operations (SLO) in 2014 provided a means for offsetting the fluctuations in the market rate, especially during the Spring Festival period, when demand increases. He and Jia note that the SLO's success encouraged further reforms to facilitate "peak shaving and valley filling," including conducting open market operations on a daily basis beginning in 2016 and the 2018 establishment of a contingent reserve arrangement for provision of reserves during high-payment-flow periods.

The authors argue that these reforms have been successful, but more needs to be done. They point to the PBOC's practice of announcing official benchmark rates impeding its coordination with the upcoming target rate and a 2015 change in the required reserves assessment method as two places where reforms have fallen short, but suggest the most crucial issue is the missing role of the Treasury. Given the Treasury's role as a creator and destroyer of money in a modern public finance system, He and Jia contend that the 2001 establishment of the Treasury Single Account was a step in the right direction, though further reform is needed to improve coordination between the Treasury and the central bank to deal with the fiscal effects on reserves as a result of open market operations.

www.levyinstitute.org/pubs/wp_925.pdf

Economic Planning under Capitalism: The New Deal and Postwar France Experiments

FERNANDO CARDIM DE CARVALHO

Working Paper No. 923, February 2019

In a posthumously published paper, Senior Scholar Fernando Cardim de Carvalho examines US and French experiences in the early 20th century through a Keynesian lens to ascertain the possibilities and limitations of planning in capitalist societies.

Cardim de Carvalho begins with a discussion of the US economic conditions preceding the crash of 1929, suggesting that sectoral imbalances following World War I, particularly between manufacturing and agriculture, resulted in a structural crisis that could not be addressed by an increase in public spending to stimulate demand. Inheriting the crisis from President Hoover, President Franklin Roosevelt recognized that deep institutional reforms were needed, and he believed that relief could come in the form of planning. Though the efficacy of planning was proven through totalitarian experiments in Germany and the Soviet Union, it remained to be seen if it could work in an economy where private agents were free to not accept directives.

With the manufacturing sector receiving an increasing share of national income at the expense of rural producers and monopolistic practices allowing businessmen to retain more net income, the decreasing demand resulting from the insufficient purchasing power led to a structural crisis. Asserting that the "country demands bold, persistent experimentation" to reduce inefficiencies, in 1933 the Roosevelt administration passed the National Industrial Recovery Act (NIRA), creating the National Recovery Administration (NRA) to find ways to remove critical imbalances that had accumulated in the economy. The NRA set standards for social rights (such as workers' rights to organize and minimum wages, among others), but allowed each industry to plan its activities and coordinate pricing policies to reduce cutthroat competition. The same year, the Agricultural Adjustment Act (AAA) was passed to achieve and preserve parity between agricultural and manufacturing prices. Though experts at the time indicated these measures might not be sufficient for economic recovery, the author notes that Roosevelt chose the most conservative of the options to maximize stakeholder participation, with the resulting codes and coordination working as uncertainty-reducing devices to increase investor confidence and prevent further deterioration in the economy. However, as the economy recovered, the programs lost support among the business community and, by 1936, both the NRA and AAA were declared unconstitutional by the Supreme Court, marking an end to the experiment.

The motivation for indicative planning in France was the destruction left by World War II, which necessitated all available resources be efficiently mobilized in the shortest period of time. With so much uncertainty around the viability of investments, Cardim de Carvalho argues that planning was a way to inform private agents about the likely trends of the immediate future to help them orient their decision making. The General Planning Commissariat, comprised of employers, workers, and civil servants, formulated plans to reconstruct productive investment in basic and capital goods, but left the decisions on how to achieve these goals up to individual firms, with the government monitoring progress through social accounting. As in the United States, once the immediate needs were addressed through planning, the social cohesion around those plans turned to conflict. Though indicative planning survives in France, its effects began to weaken in the 1960s and it has lost more influence as the industrial economy moves to one that is service based.

Claiming that the underlying motivation behind the planning experiments in both the United States and France was to reduce uncertainty around business decisions, Cardim de Carvalho turns the discussion to the Keynesian nature of the programs in both countries, suggesting they follow Keynes's call for "socialization" of investment to achieve macroeconomic stability and full employment. He notes that, as in the American and French planning experiments, Keynes intended for this socialization to stand in contrast to authoritarian planning by regulating investment as a whole and not its composition, and by keeping it as neutral as possible from the point of view of resource allocation.

Cardim de Carvalho concludes that capitalism is marked by conflict between social classes and the planning programs in the United States and France were an attempt to work within the market system to correct the inefficiencies of free competition. Though the official programs did not survive after the social emergencies that necessitated them had passed, the author asserts that in the absence of planning, governments can still influence the growth path of the economy through public investment choices.

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Program: Employment Policy and Labor Markets

It Pays to Study for the Right Job: Exploring the Causes and Consequences of Education-Occupation Job Mismatch

FERNANDO RIOS-AVILA and FABIOLA SAAVEDRA CABALLERO
Working Paper No. 922, February 2019

With the existing literature showing that an education-occupation mismatch has implications for both employers and employees, Research Scholar Fernando Rios-Avila and Fabiola Saavedra Caballero, Université Catholique de Louvain, use data from the American Community Survey (ACS) for 2010–16 to estimate the effects of the mismatch on workers with higher education degrees.

The authors claim that the current worldwide increase in educational attainment, technological change, and job specialization has changed the question about training from how much schooling one should have to what field of education will provide the highest returns. However, job market frictions mean that not all individuals will end up in an occupation that matches their skill set, creating an education-occupation mismatch that can be measured both vertically (by quantity of education required) and horizontally (by type of education required). In their study, Rios-Avila and Saavedra Caballero employ an objective measure of the horizontal mismatch to estimate the effect that the mismatch's less efficient allocation of resources will have on productivity and wages.

To build their match quality indices, they assume a static labor market with a fixed and exogenous number of workers with specific qualifications and available jobs for each occupation. They also assume all workers are identical except for their educational background and they only look to maximize wages, while employers hire and pay employees based on their productivity. Defining the upper (everyone works in a job they are trained for) and lower bounds (all jobs are assigned randomly), the authors create two indices of match quality: the first uses a ratio of the observed proportion of workers with specific educational qualities in a given occupation divided by the expected proportion of workers under the assumption of no assortative matching, where higher values of the index suggest a better match; the second uses the upper and lower bounds to assess the concentration of workers, given the observed distribution of field of education to occupation, compared to the upper and lower bounds.

Focusing only on 2016 in their econometric analysis, Rios-Avila and Saavedra Caballero use ACS data on the field of bachelor's degree for individuals ages 25–64 to create a sample of over three million observations, breaking them down into 173 degree fields and 453 occupation categories. The authors assign each person an index of match quality based on their degree field and occupation classification and use the log of annual wage income as the dependent variable in the wage analysis, finding that both of their indices are highly correlated. A summary of selected demographic statistics based on both indices suggests that workers who are younger, married, or white tend to have better matched jobs and that those with a better match earn higher wages.

In their formal analysis of the wage penalty associated with match quality, the authors estimate standard income equations. In addition to typical demographic characteristics, they also include information about educational attainment above a bachelor's degree, presence of serious disability, and English-speaking ability as proxies for skill. They find that the results are as expected, with sizable wage differences based on age, sex, and race, with a small but statistically significant wage difference by immigration status. Those with a disability or who lack English ability are heavily penalized, while those with a graduate degree receive higher wages. The match quality measures from both of the author-created indices have a significant impact on wages, with a one standard deviation increase in the quality of job match resulting in an increase in wages of between 6.5 percent and 7.3 percent, implying a wage premium of more than $4,000 based on a median annual wage of $65,000.

Investigating why one would choose a job with a less-than-ideal match, the authors discuss how certain demographic characteristics contribute to job-market frictions, and these aspects of self-selection regarding job choice and education may affect the relationships in their methodological approach. They conclude that a better understanding of the education-occupation match effects could help workers and employers reduce the individual and institutional resources that are often wasted when investing in education.

www.levyinstitute.org/pubs/wp_922.pdf

Program: Distribution of Wealth and Income

A Semi-Parametric Approach to the Oaxaca-Blinder Decomposition with Continuous Group Variable and Self-Selection

FERNANDO RIOS-AVILA

Working Paper No. 930, May 2019

Fernando Rios-Avila proposes a strategy to extend the standard Oaxaca-Blinder (OB) decomposition to a continuous group variable using a semiparametric approach known as the varying coefficient model. After abstracting from a generalization of the Heckman selection model to account for endogenous selection, he asserts that this strategy can be useful for analyzing heterogeneous dose-treatment effects when endogeneity in terms of self-selection is expected. Rios-Avila employs his methodology to examine obesity's impact on wages.

The standard OB approach is used to analyze how differences in observed characteristics and returns to these characteristics contribute to the average differences in outcomes between two well-defined groups. This approach assumes that outcomes can be estimated using well-specified linear models with exogenous membership into each group to ensure the distribution of errors is statistically independent of group membership; however, the assumption of exogeneity is violated if individuals self-select into one of the treated groups. Following the literature on endogenous selection models, Rios-Avila proposes three alternatives to the model to estimate generalized inverse Mills ratios, which he uses as a correction term in the model specification. Once the selection correction terms have been estimated and applied, the OB decomposition can be implemented. Rios-Avila then estimates a varying coefficients model using kernel regression methods to estimate the coefficients for every point of interest, noting the importance of the choice of bandwidth in the tradeoff between variance and bias.

Applying his model to the relationship between body mass index (BMI) and wages, Rios-Avila compares his results to other studies that find body weight is negatively correlated to wages, particularly for white women. Employing BMI as the continuous group variable for analyzing wage gaps in relation to body weight, he replicates Cawley's instrumental variable approach to estimate the results' sensitivity to changes in the variable's definitions and model specifications. After making some adjustments to the original model's specification to account for the multiple steps involved in his proposed semiparametric methodology, as well as to exclude imputed data, he reestimates Cawley's results and finds the conclusions are robust to model and sample specification changes with only small changes in point estimates. Rios-Avila then includes his selection correction term in the restricted sample to test the sensitivity of Cawley's results, noting that it is equivalent to adjusting for endogeneity through a control function approach, and finds that the results are identical to the standard instrumental variable approach with only marginal changes when interactions are added as instruments.

To implement the OB decomposition, Rios-Avila defines the comparison group as those with a "healthy" BMI (between 18.5 and 25), with the treated group consisting of under- or overweight individuals, based on their specific BMI. He estimates two equations including the sample selection correction term—the first with a sample of the comparison group only and the second using kernel local linear regressions—and then implements the OB decomposition. His results show the selectivity-corrected wage gap for men and women exhibits an inverse-U shape with respect to BMI.

Implementing the OB decomposition analysis, he asserts that the composition effect has a large and statistically significant effect, particularly for men, while the wage structure effect shows a monotonically decreasing but nonlinear trend with respect to BMI. The interaction effect, which accounts for the difference in average wages given the difference in coefficients and characteristics across groups, grows negative with higher BMIs.

Overall, he finds his model may prove useful for the analysis of endogenous treatment effects with varying treatment intensity. With respect to the association between BMI and wages, the model suggests the relationship is nonlinear and that the negative effects for women may be different than those described by Cawley.
www.levyinstitute.org/pubs/wp_930.pdf

Recentered Influence Functions in Stata: Methods for Analyzing the Determinants of Poverty and Inequality

FERNANDO RIOS-AVILA
Working Paper No. 927, April 2019

Influence functions (IFs) and recentered influence functions (RIFs) are statistical tools that can be used to analyze the robustness of distributional statistics (or functionals) to small disturbances in data, and are useful when analyzing and identifying the distributional effects on outcomes in terms of changes in observed characteristics in areas such as labor and health economics, inequality, and public policy. To provide a simplified framework for the use of RIFs in the analysis of outcome distributions, Fernando Rios-Avila offers a brief review of what IFs and RIFs are, describes how they fit in the framework of regression and decomposition analysis, and introduces three Stata commands for the estimation of RIF regressions and RIF decompositions, demonstrating their application through an investigation of changes in inequality in the United States.

When analyzing social welfare, inequality, or poverty, researchers are often interested in analyzing how changes in characteristics of the population translate into changes in the distribution of outcomes. IFs and RIFs are statistics that provide a linear approximation of the influence or marginal contribution an observation has with respect to the construction of any distributional statistic. In combination with standard regression and decomposition analysis, IFs and RIFs can be used to analyze how changes in the distribution of characteristics translate into changes in the distribution of the outcome.

Estimating RIFs varies in complexity, with some statistics requiring intermediate steps to define their corresponding RIF.

To augment the supply of existing commands for facilitating RIF estimations in Stata, Rios-Avila provides three new commands: 1) to estimate RIFs for a large set of distributional statistics; 2) to estimate RIF regressions in the presence of high-dimensional fixed effects; and 3) a wrapper around an existing command for implementing standard and reweighted Oaxaca-Blinder decompositions.

To illustrate the application of the RIF regressions and decompositions facilitated by the new Stata commands, the author analyzes the determinants of the changes in wage inequality in the United States between 1998 and 2018. Using data from the March Current Population Survey from both years, he provides the results of his RIF regression using the Gini coefficient, the income share held by the top 10 percent and lower 40 percent of the population, and poverty severity as the distributional statistics of interest.

Rios-Avila's findings suggest the estimated effects are consistent across models, with small differences in the magnitude of the effect the characteristics have on specific income inequality measures. The RIF regression analysis suggests that increases in the share of single-headed households, number of children living in the household, and number of minority-headed households are related to increases in inequality and poverty, while ageing of the population and improvements in educational attainment have potentially ambiguous effects.

Because both composition and structural factors have changed over the period under study, Rios-Avila implements a decomposition analysis to ascertain how changes in characteristics and their associated returns explain the observed changes in income inequality. The RIF decomposition analysis suggests that between 40 percent and 75 percent of the increase in inequality observed in the United States between 1998 and 2018 is explained by changes in observed characteristics. The detailed decomposition reveals that improvements in education of the householder and the increase in the share of single-headed households have been the main contributors to the rise in income inequality in the United States. Changes in the returns associated with the population's age composition are less precise, but have also contributed to increases in inequality and poverty, with the coefficients effect deepening their impact.

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INSTITUTE NEWS

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Editors: Elizabeth Dunn and Michael Stephens

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