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Inequality, Instability and the Balance Sheet Channel

Since 2008, economists have focused more closely on the topic of income inequality. However, despite the surge in academic and social interest, the macroeconomic implications of inequality have yet to be determined. Our research was therefore motivated by the insufficient awareness regarding the macroeconomic consequences of inequality and the lack of a consensus over existing theories.

Research Question:
How does rising inequality contribute to macroeconomic instability?

Methodology:

This paper focuses on the household sector and the crises emanating therein, and we concentrate on the case of the United States.

- We began our research by conducting an extensive literature survey on income inequality, the effects of income inequality on growth, household consumption and household debt levels. Additionally, our literature survey also examined several consumption theories.
- After taking existing theories into consideration we then developed a simple model of savings, indebtedness and inequality whose implications are tested using a cointegrated VAR model on U.S. data. *More information on the cointegrated VAR model is provided in the box below.*

Findings:
Our main finding is that rising inequality has reduced the saving rate while promoting debt accumulation --and that these shocks are permanent. The toxic combination of lower saving rate and higher debt constitutes a weakening of households' balance sheets, an element of instability in itself, but which can further turn into banking or financial instability.

- Much of the literature suggests that debt turns inequality into instability: inequality generates debt, whose accumulation eventually generates a financial crisis (Rajan 2010, Galbraith 2012, Kumhof et al. 2013, Perugini et al. 2013, van Treeck, 2013)
- Income inequality has a positive long run effect on the share of credit to real GDP (Malinen 2014) while credit growth has long been known to be a powerful predictor of financial crises (Fisher 1933, Kindleberger 1978, Schularick and Taylor, 2009).
- Our model shows that after 1972 the labor share (inequality) becomes a strong positive predictor of the savings rate.
- We conclude that one of the ways to achieve greater macroeconomic stability consists in permanently reversing the course of inequality, which is a solution that enlarges the traditional scope of stabilization policies.

$$\underbrace{\begin{cases}\nearrow \frac{W_{1\%}}{Y}\\ \searrow \frac{W_{99\%}}{Y}\end{cases} \Longrightarrow \nearrow \text{inequality}}_{\textit{income distribution}} \Longrightarrow \underbrace{\begin{cases}\nearrow \text{indebtedness}\\ \searrow s\end{cases}}_{\textit{weaker households' balance sheets}}$$

$$\Longrightarrow \underbrace{\begin{cases}\text{financial instability}\\ \searrow \text{growth / secular stagnation}\\ \nearrow \text{global imbalances}\\ \text{excess reliance on non-household sectors}\end{cases}}_{\textit{consequences}}$$

Consumption Disaggregation by Income Fractile

Research Question:
What explains economic growth and the output gap from an empirical perspective?

Methodology:

This paper adopts the 'data-first' approach of the cointegrated VAR model to decompose a data vector into cycle and trends in order to produce new estimates of the business cycle and long run growth.

Deviations from the steady-state, or cointegrating relationship, form an output gap indicator, which is very good at predicting U.S. recessions and unemployment, and is highly correlated with the official CBO measure. This approach can be applied to any country with expenditure data and is much simpler than the CBO method.

Theoretically, we find support for the age-old accelerator model to explain long run growth and unemployment fluctuations.

Findings:

- The blue line in the following graph shows the output gap estimated through this model. The red line represents the output gap that is estimated by the CBO.
- Short term fluctuations are investment-dominated
- Long-run growth is driven by consumption and indebtedness
- Government spending stabilizes the economy
- **Advantage:** a simpler method than the gold-standard CBO method.

Methodology: The Cointegrated VAR Model

The cointegrated VAR model is an advanced time series econometrics method allowing to split the data into long run relationships (upward sloping line on the graph) and deviations from this average relationship, which are 'corrected for' by the adjustment coefficients α. This means we can isolate long run steady state relationships, particularly useful for the theory of economic growth, from short run fluctuations, which are more relevant to the business cycle.

$$\Delta Y_t = \underbrace{\alpha\beta' Y_{t-1}}_{\text{long run}} + \underbrace{\sum_{i=1}^{k-1}\Gamma_i \Delta Y_{t-i}}_{\text{short run}} + \underbrace{\tilde{\Phi} D_t + \mu_0 + \mu_1 t}_{\text{deterministics}} + \underbrace{\varepsilon_t}_{\text{error}}$$

$$Y_t = \underbrace{C\sum \varepsilon_i + C\mu t}_{\substack{\text{nonstationary}\\ \text{(trend)}}} + \underbrace{C^*(L)\varepsilon_t}_{\substack{\text{stationary}\\ \text{(cycle)}}} + \underbrace{\tilde{Y}_0}_{\substack{\text{initial}\\ \text{conditions}}}$$