Was It Demography All Along?
Population Dynamics and Economic Inequality

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Extended Abstract

Over the past century, economic inequality has exhibited periods of decline, increase, and stability, with the most recent data suggesting a decline in the pandemic era. A variety of explanations for these trends have been introduced and evaluated over the years. Inequality has been attributed, at least in part, to the weakening of labor market institutions such as unions and the minimum wage, the rise of international trade, and skill-biased technological trade. This paper evaluates a hypothesis that dates back more than two centuries: that basic demographic trends partly determine the degree of inequality in a society.

The notion that economic opportunities become more scarce can be attributed to Smith (1776), Malthus (1787), and Ricardo (1817). In the postwar era, neoclassical growth models yielded predictions that expansions of the working population would reduce the returns to labor, exacerbating inequality when initial conditions favor the owners of capital. The argument that population increases necessarily limit economic opportunity was challenged in the later 20th century by quasi-experimental evidence drawn from the Mariel boatlift and comparable events (Card, 1990), evidence that has been the subject of more recent critical re-examination.

Increases in population raise not only the number of workers in the economy but aggregate demand; the effect of an influx of population may differ from the effects of an increase in the size of the labor force holding population constant. And the employment-to-population ratio has exhibited broad shifts over the past 70 years.

It is important to distinguish the effects hypothesized here from literature modeling inequality as a function of the age distribution, assuming an exogenous age-earnings profile. It is closer in spirit to studies examining the effect of cohort size on earnings (Easterlin, 1978; Welch, 1979; Murphy et al., 1988), but incorporating the possibility that an increased cohort size might impact the earnings of workers in other cohorts.

The shifting trends in American wage inequality roughly correspond to trends in workforce growth relative to population. The World War II-era decline in inequality occurred during a period of severely restricted immigration and followed a period of low birth rates during the Great Depression. From the late 1940s to the late 1970s, the employment-population ratio fluctuated cyclically in a narrow range between 55 and 58 percent.

The transition to rising inequality around 1980 came in the midst of a 30-year period where the workforce grew at twice the rate of the population, driven by renewed immigration, the “Baby

Boom" generation's entry into the workforce, and rising female labor force participation. From late 1977 until the COVID-19 pandemic, with a brief exception during the 1981-82 recession, the employment-population ratio never fell below 58 percent, a level it never exceeded in the prior three decades.

Most measures of economic inequality exhibit stability for a roughly ten-year period before the pandemic, coinciding with a transition to slower immigration, declining birth rates, stable if cyclical labor force participation, and an aging population. Since 2000, population growth has exceeded workforce growth, a pattern not seen in the latter half of the 20th century. The employment-population ratio, having remained consistently above 61 percent between 1987 and 2008, has remained below that level for the last 15 years.

This paper evaluates the hypothesis that demographic trends drive inequality using a mixture of domestic and international data. In international data, higher birth rates are predictive of greater inequality with a 20 year lag, both in cross-sectional and longitudinal analyses with country fixed effects and controls for baseline measures of inequality. Similar analyses will explore the relationship in data for US states. This relationship is admittedly not amenable to clean quasi-experimental econometric identification. The demographic hypothesis can, however, explain the post-Great Recession stabilization of inequality measures more readily than competing hypotheses. Trade and technological change have not abated over the past 15 years; the Federal minimum wage has not increased; the unionization rate has continued to decline.

With birth rates continuing to decline in the United States and most other nations and an aging population, Census Bureau projections forecast a decline in the working-age share of the population for at least the next 40 years. By 2060, the dependency ratio – the number of young and elderly residents per working-age adult – will reach a level last witnessed in 1970. To the extent demographic trends influence the degree of inequality in the economy, these forecasts suggest that the recent stabilization is in fact an inflection point in the time series, to be followed by a multiple-decade trend toward equality.

Put differently, the well-cited "Race Between Education and Technology" (Goldin 2010) may be mediated by population change. When the workforce is expanding rapidly and technological change eliminates routine jobs, education is the main route to gainful employment. When the workforce is stagnant or shrinking relative to the population, technological change may not operate rapidly enough – the decline in workers may outpace the decline in jobs. The imperative toward educational attainment is greatly reduced – consistent with recent data on postsecondary enrollment, which indicates a significant shift toward the workforce rather than college.