Wilson, Valerie, and William Darity Jr. 2022. *Understanding Black-White Disparities in Labor Market Outcomes Requires Models that Account for Persistent Discrimination and Unequal Bargaining Power.* Washington: Economic Policy Institute. https://www.epi.org/unequalpower/publications/understanding-black-white-disparities-in-labor-market-outcomes/.

COMMENT BY

BENJAMIN MOLL   Bartscher, Kuhn, Schularick, and Wachtel approach a controversial question with high-quality empirical evidence. The result is a very valuable contribution to the literature on both monetary policy and racial inequality. To make this contribution, the authors combine household balance sheet data for Black and white households since the 1950s from an impressive data compilation effort by Kuhn, Schularick, and Steins (2020) with time series estimates of the response of asset prices and unemployment rates to monetary policy shocks.

The authors' main finding is that interest rate cuts have opposite effects on racial income and wealth inequality. On the one hand, they decrease the racial unemployment gap and therefore the percentage gap between Black and white earnings. On the other hand, they increase asset prices and therefore the racial wealth gap. The key to the latter result is large and very persistent estimated asset price increases in response to interest rate cuts (the instrumental variable local projections results in their figure 8) and that white households hold portfolios that are more concentrated in assets with rising prices such as equities. The authors conclude that "monetary policymakers face a trade-off: monetary accommodation widens racial wealth inequality as it reduces income inequality."

In parts of the paper, the authors compare the size of these earnings and wealth effects (see, e.g., their figure 1) and advance a more provocative version of this conclusion, namely, that "the reduction in the earnings gap pales in comparison to the effects on the wealth gap" and that "our analysis therefore does not bode well for the suggestion . . . that a more accommodative monetary policy helps alleviate racial inequalities."

Much of my comment will focus on the question whether and to what extent unrealized capital gains generated by falling interest rates are comparable to earnings changes. I will first draw on discussions of this and related issues in the last one hundred years of economic thought. I will then comment on a strategy the authors use for making this comparison, namely, to translate capital gains into consumption effects. Finally, I will draw on some of my own work that is relevant to the question at hand (Fagereng and others 2022).

APPLES VERSUS ORANGES? At various points in the paper, Bartscher, Kuhn, Schularick, and Wachtel compare the earnings gains from accommodative monetary policy with the corresponding capital gains. This is, of course, an easy comparison to make: after all, both quantities are in dollars. However, a naïve comparison like that in the authors' figure 1 risks overlooking an important fact: the capital gains calculated by the authors are *unrealized* capital gains and do not automatically yield higher cash flows, disposable income, or consumption. This raises the question whether this comparison in fact amounts to a comparison of apples and oranges? Put differently: Are unrealized capital gains income? In particular, those generated by a decline in interest rates?

Unrealized capital gains in the history of economic thought. The question whether unrealized capital gains are income has a long tradition in economics, going back to work by Haig (1921) and Simons (1938). In their work the answer is yes: their proposed income definition—which is now known as "Haig-Simons income"—includes unrealized capital gains. A frequent next step in this line of argument is that capital gains should be taxed on accrual rather than realization.

However, this view soon received pushback, for example, in Nicholas Kaldor's classic book *An Expenditure Tax* (1955).[1] One excerpt is worth citing: "We may now turn to the other type of capital appreciation which reflects a fall in interest rates rather than the expectation of higher earning power. This in a sense is in an intermediate category . . . since the rise in capital values in this case [comes] without a corresponding increase in the flow of real income accruing from that wealth" (44). This has the following implication: "For in so far as a capital gain is realized and spent . . . the benefit derived from the gain is equivalent to that of any other casual profit. If however it is not so realized, there is clearly only a smaller benefit" (ibid.).

Kaldor's message is clear: if earnings are apples, unrealized capital gains due to declining interest rates are oranges. This difficulty, along with some other ones, ends up critically influencing Kaldor's thinking about taxation: he concludes that it is exceedingly difficult to define a notion of income that would form a good tax base. Kaldor's solution: an expenditure tax— hence the title of his book.

Since these early contributions, a sizable and growing theoretical and quantitative literature in macroeconomics and household finance has examined the effect of asset price changes on wealth and welfare inequality.

---

1. See also Paish (1940), who does not reference Haig (1921) and Simons (1938) but makes a similar point.

See, for example, Whalley (1979), Gomez (2019), Gomez and Gouin-Bonenfant (2020), Catherine, Miller, and Sarin (2020), İmrohoroğlu and Zhao (2022), Moll (2020), Greenwald and others (2021), Cioffi (2021), Fagereng and others (2019), and Fagereng and others (2022). Several contributions pursue lines of argument similar to Kaldor's, namely, that unrealized capital gains, in particular those due to falling interest rates, should be treated differently from income gains. I especially recommend Whalley (1979), who provides a beautifully clear graphical analysis of a two-period model similar to that in Moll (2020), as well as the nontechnical expositions by Cochrane (2020) and Krugman (2021).

The authors' solution: from capital gains to consumption. Bartscher, Kuhn, Schularick, and Wachtel are, of course, aware of the difficulty involved in comparing earnings gains with unrealized capital gains. They therefore propose to look at the consumption effects of capital gains rather than the capital gains themselves. The idea is simple: if households realize their capital gains (i.e., if they sell the asset whose price appreciates) and consume the proceeds, this gets around the apples versus oranges problem.

Unfortunately, the authors' SCF+ data do not feature information on households' consumption. They therefore use an estimate for the marginal propensity to consume (MPC) out of capital gains from the literature, namely, a cross-regional estimate of 3.2 percent from Chodorow-Reich, Nenov, and Simsek (2021), and apply this estimate to the wealth gains of both Black and white households. Thus, a wealth gain for white households of $18,900 yields a consumption gain of $.032 \times \$18,900 = \$605$, and a wealth gain for Black households of $3,300 yields a consumption gain of $.032 \times \$3,300 = \$105$, so that the relative consumption gain for white households is $\$605 - \$105 = \$500$, which is considerably larger than the accumulated relative earnings effect for Black households of $134. A practical difficulty is that the literature does not feature separate estimates of such MPCs out of capital gains by race. The authors address this shortcoming with a simple back-of-the-envelope calculation: they calculate how large differences in Black and white MPCs would have to be in order to offset the relative income effect. They find that "Black MPCs would have to be roughly three times larger than white MPCs for the relative consumption effect from capital gains to be as large as the relative earnings effect" and argue that such large differences in Black versus white MPCs are implausible.

This is a very useful and convincing line of reasoning. Given the data constraints faced by the authors, in particular the absence of consumption information, it is probably also the best they can do. In my view, however, it is still not fully satisfactory. My main hesitation is that the estimated

consumption effect is the outcome of multiplying three numbers estimated using completely separate data sets: household balance sheet positions from the SCF+ are multiplied with time series estimates of asset price responses to monetary policy shocks to get the wealth gains; these are then further multiplied with an MPC estimate from the cross-regional analysis in Chodorow-Reich, Nenov, and Simsek (2021) to get consumption effects. It is therefore unclear to what extent interest rate cuts actually translate into higher asset prices and higher consumption for the households in the SCF+.

   Alternative solution: equivalent variation of asset price changes. It is therefore worth asking: Are there any alternative ways to "translate the oranges into apples"? In recent work, Fagereng and others (2022) show that the answer is yes: one can translate asset price changes due to interest rate cuts into a money metric welfare measure that is comparable to income gains. More precisely, we provide a sufficient statistics formula for the equivalent variation of asset price changes. In the context of rising asset prices due to interest rate cuts, the formula answers the following question: What is the equivalent transfer the individual would have to receive to experience the same welfare change as from the asset price increase?[2] The formula takes the following form:

$$Welfare\ Gain_i = \sum_{t=0}^{T} R^{-t} \left(Sales_{it} \times Price\ Deviation_t \right)$$

where i denotes the individual, T is the length of the sample period, $R > 1$ is a discount rate, $Sales_{it}$ are the net sales of the asset by the individual in year t, and $Price\ Deviation_t$ is the deviation of the asset price due to interest rate cuts. Under some additional assumptions, this price deviation can be computed as the percentage change over time in the asset's price–dividend ratio:

$$Price\ Deviation_t = \Delta\% \left(\frac{Price}{Dividend} \right)_t.$$

Intuitively, an interest rate cut is an example of a discount rate shock, as in Campbell and Shiller (1988). It thus leads to an increase in the asset's

2. Our sufficient statistics formula is a first-order approximation to the welfare gain and so the equivalent variation also equals the compensating variation, that is, the net revenues of a planner who must compensate the individual for the asset price deviation, bringing the individual back to their welfare in the baseline scenario. The formula shown here is for the case of one asset; Fagereng and others (2022) extend it to multiple assets in a straightforward manner.

valuations as measured by its price–dividend ratio. The formula follows from an application of the envelope theorem and thus holds to first order.[3]

The formula for welfare gains generates two main insights. First, what matters are asset transactions, not asset holdings. Intuitively, higher valuations are good news for prospective sellers (those with $Sales_{it} > 0$) and bad news for prospective buyers (those with $Sales_{it} < 0$). A particularly interesting case is an individual who owns assets but does not plan to buy or sell ($Sales_{it} = 0$). For such an individual, rising asset prices are merely "paper gains," with no corresponding welfare implications. Second, asset price changes are purely redistributive. When asset prices rise, there is a redistribution of welfare from sellers to buyers. But since for every seller there is a buyer, summing the formula across all parties and counterparties of financial transactions in the economy implies that the welfare gains aggregate to zero.[4]
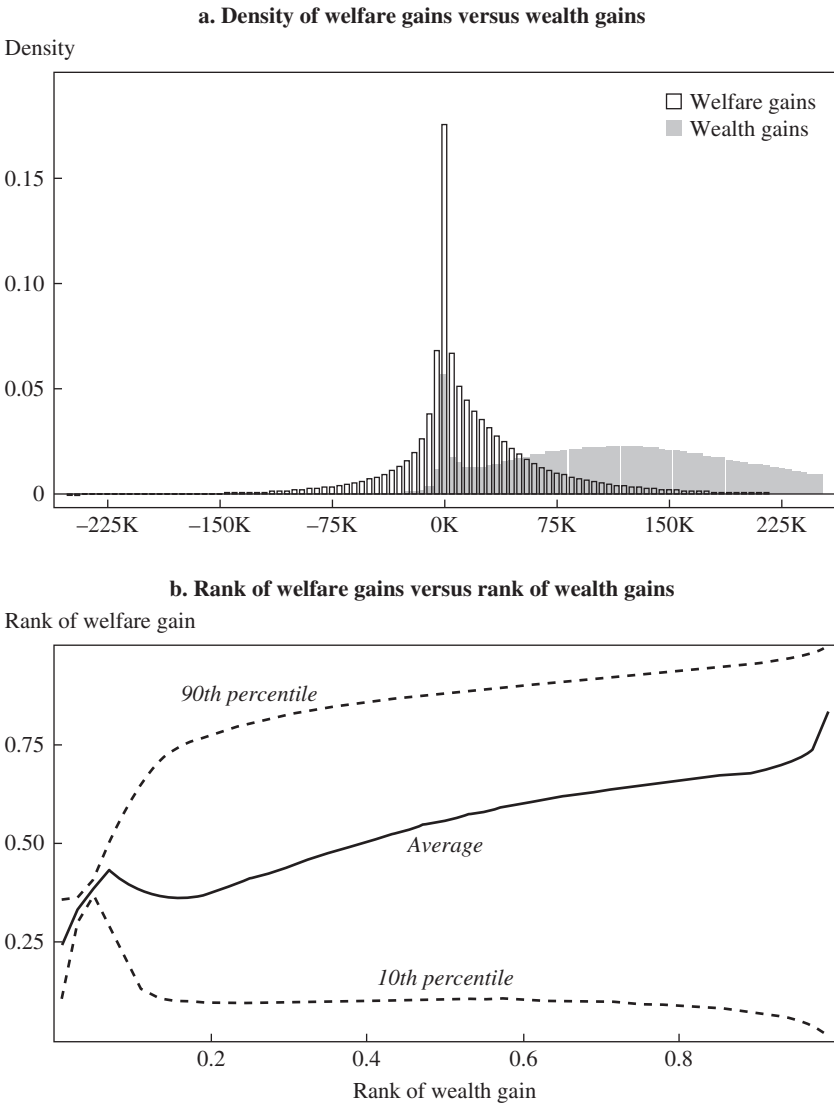
In Fagereng and others (2022) we operationalize this approach using Norwegian administrative panel data on asset transactions for the time period 1994 to 2015 so as to identify the winners and losers of historical asset price changes over this time period (all asset price changes, not just those due to monetary policy). The result is the histogram labeled "Welfare gains" in figure 1, panel a. As expected, the figure shows substantial dispersion, that is, there are some large winners and some large losers, reflecting large sales and purchases; at the same time, the welfare gains and losses are centered around zero, reflecting the purely redistributive role of asset price changes.

An important question is: How do these welfare gains compare to wealth gains from rising asset prices, that is, the unrealized capital gains emphasized by Bartscher, Kuhn, Schularick, and Wachtel? The second histogram in figure 1, panel a, labeled "Wealth gains," plots exactly this quantity. The main observation is that while welfare gains are centered around zero, wealth gains are centered at a large positive value. This reflects the fact that wealth gains accrue to all asset holders while welfare gains only accrue to asset sellers.

---

3. The formula omits an effect that may be important in practice: that rising asset prices loosen collateral constraints, thereby allowing for more borrowing and consumption. The formula can be extended to take this effect into account.

4. However, since there are financial transactions between sectors of the economy (i.e., between households, the government, and foreigners), we can have a case in which the household sector as a whole benefits, but necessarily at the expense of another sector. In our empirical implementation in Fagereng and others (2022), we find that the welfare gains of the Norwegian household sector approximately aggregate to zero.

Figure 1. Comparing Welfare Gains (Equivalent Variation) and Wealth Gains

a. Density of welfare gains versus wealth gains

Density

b. Rank of welfare gains versus rank of wealth gains

Rank of welfare gain

Source: Fagereng and others (2022); reproduced with permission.

While this exercise shows that welfare and wealth gains have different densities, it is silent on the correlation between the two variables. To focus on this question, figure 1, panel b, plots the average rank of welfare gains versus the rank of wealth gains. If welfare gains are perfectly correlated with wealth gain, the result would be a 45 degree line from zero to 1. Conversely, if welfare gains are unrelated to wealth gain, the result should be a horizontal line at 0.5. Reality is somewhere in-between: empirically, some individuals with large asset positions buy and hence lose in welfare terms; conversely, others with small positions sell and hence win. This finding also shows up in the wide bands for the 10th and 90th percentile welfare gains: within any given wealth gain rank, some individuals experience a very low welfare gain and others experience a very high one.

CONCLUSION The implications of these considerations for the work of Bartscher, Kuhn, Schularick, and Wachtel are clear: care is needed when comparing earnings gains and unrealized capital gains. In my view, a fully satisfactory comparison would require a data set with information on three variables: either all of household income, wealth, and *consumption*; or all of household income, wealth, and *asset transactions*. Unfortunately, neither is available in the United States.[5]

Given the difficulty of comparing earnings gains and unrealized capital gains as well as the data limitations in the United States, the authors' provocative conclusion that accommodative monetary policy hurts overall racial inequality should be taken with a grain of salt. At the same time, the less provocative part of their conclusion stands: monetary policy seems to face a trade-off with respect to racial inequality in that interest rate cuts widen racial wealth inequality as they reduce earnings inequality. This is an important finding and constitutes a very valuable contribution in itself.

REFERENCES FOR THE MOLL COMMENT

Campbell, John Y., and Robert J. Shiller. 1988. "The Dividend-Price Ratio and Expectations of Future Dividends and Discount Factors." *Review of Financial Studies* 1, no. 3: 195–228.

Catherine, Sylvain, Max Miller, and Natasha Sarin. 2020. "Social Security and Trends in Wealth Inequality." Working Paper. Philadelphia: Jacobs Levy Equity Management Center for Quantitative Financial Research. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3546668.

5. The Panel Study of Income Dynamics (PSID) does feature information on all household income, wealth, and consumption. However, it has a number of downsides, including that it surveys households only every two years, potential issues with the reliability of the consumption data, and that it does not accurately capture the very top of the income and wealth distributions.

Chodorow-Reich, Gabriel, Plamen T. Nenov, and Alp Simsek. 2021. "Stock Market Wealth and the Real Economy: A Local Labor Market Approach." *American Economic Review* 111, no. 5: 1613–57.

Cioffi, Riccardo A. 2021. "Heterogeneous Risk Exposure and the Dynamics of Wealth Inequality." Working Paper. https://www.rcioffi.com/files/jmp/cioffi_jmp2021_princeton.pdf.

Cochrane, John. 2020. "Wealth and Taxes, Part II." Blog post, January 3, The Grumpy Economist. https://johnhcochrane.blogspot.com/2020/01/wealth-and-taxes-part-ii.html.

Fagereng, Andreas, Matthieu Gomez, Émilien Gouin-Bonenfant, Martin Holm, Benjamin Moll, and Gisle Natvik. 2022. "Asset-Price Redistribution." Working Paper. https://www.matthieugomez.com/files/apr.pdf.

Fagereng, Andreas, Martin Blomhoff Holm, Benjamin Moll, and Gisle Natvik. 2019. "Saving Behavior across the Wealth Distribution: The Importance of Capital Gains." Working Paper 26588. Cambridge, Mass.: National Bureau of Economic Research. https://www.nber.org/papers/w26588.

Gomez, Matthieu. 2019. "Asset Prices and Wealth Inequality." Working Paper. https://www.matthieugomez.com/files/wealthinequality.pdf.

Gomez, Matthieu, and Émilien Gouin-Bonenfant. 2020. "A Q-Theory of Inequality." Working Paper. https://www.matthieugomez.com/files/qtheory.pdf.

Greenwald, Daniel L., Matteo Leombroni, Hanno Lustig, and Stijn Van Nieuwerburgh. 2021. "Financial and Total Wealth Inequality with Declining Interest Rates." Working Paper 28613. Cambridge, Mass.: National Bureau of Economic Research. https://www.nber.org/papers/w28613.

Haig, Robert Murray. 1921. "The Concept of Income: Economic and Legal Aspects." In *The Federal Income Tax*, edited by Robert Murray Haig. New York: Columbia University Press.

İmrohoroğlu, Ayşe, and Kai Zhao. 2022. "Rising Wealth Inequality: Intergenerational Links, Entrepreneurship, and the Decline in Interest Rate." *Journal of Monetary Policy* 127:86–104.

Kaldor, Nicholas. 1955. *An Expenditure Tax*. London: Routledge.

Krugman, Paul. 2021. "Pride and Prejudice and Asset Prices." *New York Times*, October 5. https://www.nytimes.com/2021/10/05/opinion/low-interest-rates-monetary-policy.html.

Kuhn, Moritz, Moritz Schularick, and Ulrike I. Steins. 2020. "Income and Wealth Inequality in America, 1949–2016." *Journal of Political Economy* 128, no. 9: 3469–519.

Moll, Benjamin. 2020. Comment on "Sources of US Wealth Inequality: Past, Present, and Future." *NBER Macroeconomics Annual* 35:468–79.

Paish, F. W. 1940. "Capital Value and Income." *Economica* 7, no. 28: 416–18.

Simons, Henry Calvert. 1938. *Personal Income Taxation: The Definition of Income as a Problem of Fiscal Policy*. Chicago: University of Chicago Press.

Whalley, John. 1979. "Capital Gains Taxation and Interest Rate Changes: An Extension of Paish's Argument." *National Tax Journal* 32, no. 1: 87–91.