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Comments on "The evolution of wealth inequality over half a century: The role of taxes, transfers and technology" by Barış Kaymak - Markus Poschke

Laurence Ales

Tepper School of Business, Carnegie Mellon University, United States

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1. Overview

The distribution of income and wealth in the US has evolved tremendously in the last half century. Income inequality has been steadily increasing since the late 1970s reaching levels today not seen since the late 1920s (see Piketty and Saez, 2001 and their updated series covering up to 2014). Wealth concentration displays a similar pattern increasing since the late 1970s: in 2013 the top 0.1 percent wealth share surpassed 20 percent, up from 7 percent in the late 1970s (Saez and Zucman, 2014).[1] These observed large changes of the income and wealth distribution can only be the result of equally large forces at play. The profession has identified two of these forces. The first force is entirely identified with policy: the US tax and transfer system and it's evolution over time (see for example Alvaredo et al., 2013). The second force focuses on changes of the economic environment: technical change and globalization (see Hornstein et al., 2005; David and Dorn, 2013 and references therein). Both forces affect labor income directly and wealth both indirectly (through earned income) and directly (through changes in estate taxation). The objective of this paper is to disentangle the contribution of each force to the level of wealth and income

E-mail address: ales@cmu.edu

[1] Saez and Zucman (2014) infer wealth by capitalizing the incomes reported by individual taxpayers; differently than the previous paper (Bricker et al., 2015) look directly at survey data. The authors report that the concentration of wealth exhibits slightly smaller values but a similar upward pattern over time.

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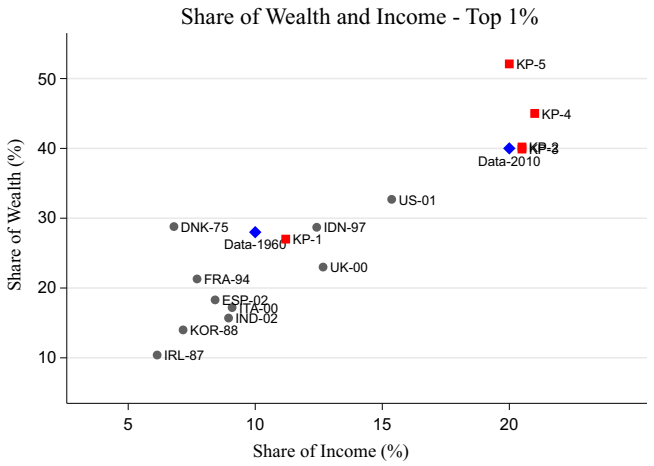

Fig. 1. Share of income and wealth at the top. Labels denote country (ISO code) and the survey year. Wealth data is from the *UNU-WIDER* database (Davies and Sandströ, 2008) income data is from the *World Top Incomes Database* (Alvaredo et al., 2013). Blue diamond shapes denote the benchmark data used in the paper for 1960 and 2010. Red squares denote the long run outcomes of the paper under the different scenarios of Figure 11 in the text: *KP-1* denotes the 1960 benchmark; *KP-2* and *KP-3* (overlaid) respectively include higher wage dispersion and corporate and estate tax cuts; *KP-4* and *KP-5* include top income tax cuts and larger transfers.

inequality we see today. The answer the authors provide is thought provoking: the biggest contributor to the concentration of income and wealth observed in the US is primarily the increased inequality in wages. Hence technical change and not changes in policy is the key driver for inequality. The significance of this result can be understood by juxtaposing the message of Piketty and Saez (2001); in this paper, they document the now famous U-shaped profile for top income shares centered in the 1960s/70s that displays an income concentration as high today as it did in the 1920s. When trying to explain the increase in income inequality observed since the 1970s (Piketty and Saez, 2001) point almost entirely in the direction of policy changes. This is understandable, indeed over the span of nine years from 1981 to 1990 the US has seen three major tax reform reducing the overall taxation of estates and of top incomes.[2]

2. The inner workings of the model

The authors build on a standard stochastic general equilibrium model where workers face labor income risk. The quantitative analysis of these models can become challenging quickly. This is especially so given the interest of the authors in characterizing the entire transition path generated by policy changes. Nevertheless the authors go a long way in enriching the textbook model with a realistic lifecycle, non-linear income taxation (on labor income, corporate earnings, and estates)[3]; and a transfer system from the government that conditions on retirement status (but not on income nor wealth).

The model is designed to generate a very concentrated distribution of wealth by creating heterogenous savings rates across workers; a natural question to ask is what is driving high savings rate especially at the top. In the economy, workers are subject to labor income risk which they are unable to completely insure (agents can save but not borrow). This labor risk is the main driver for wealth accumulation.[4] A potential criticism going back to the similar model in Castaneda et al. (2003) is the realism of the labor income process (this is because the calibration of the income process is performed mostly by matching the concentration of the distribution of income and wealth). However, the authors go to great lengths to provide empirical foundations for their income process. This is an important contribution of this paper and it is possible given the high-quality micro-data presented in Guvenen et al. (2015). For example, a key aspect of the calibration focuses on the downward risk faced by top income earners (workers drawing state z_5 and z_6 representing the top one percent of earners), in the model the year-to-year probability of remaining in the top one percent is equal to 0.75; the US data analogue is equal to 0.74 as reported in Guvenen et al. (2014) (however no information is presented regarding the important transition from z_6 to z_5 which represents a movement within the top one percent of the income distribution but outside of the 0.1 percent). The authors also compare the implied distribution of earning growth in the model with the one in the data. The model

[2] For example: The *Economic Recovery Tax Act of 1981* reduced overall marginal rates by 23 percent, exempted estates below 600 thousand dollars and reduced the estate tax from 70 to 50 percent; The *Tax Reform Act of 1986* lowered the top marginal tax rate to 28 percent; The *Omnibus Budget Reconciliation Act of 1990* increases the top marginal tax rate to 31 percent.

[3] The authors encode the US income tax schedule using a two parameters tax function. The two parameters encode the progressivity and the level of average taxes. The corporate tax schedule is quasi-linear with an exception level and a fixed marginal rate above it.

[4] Other papers that try to account for the concentration of wealth in the US have also focused on different mechanisms: the inter-generational bequest motives (De Nardi, 2004), on the heterogenous returns to entrepreneurship (Cagetti and De Nardi, 2006) or in heterogenous preferences for future consumption (Krusell and Smith, 1997).

performs extremely well also among this dimension. The process is capable of providing a high level of kurtosis as advocated in Guvenen et al. (2015). Overall the income process provided by the authors is empirically sound.

3. Results and implications

The authors calibrate the model to match the 1960 US economy (to evaluate the goodness of fit compare *Data-1960* and *KP-1* in Fig. 1) they then progressively "shock" the economy by changing the underlying structure of wage inequality and the tax and transfer system. The changes are introduced over time mirroring the observed changes in policy for the US. The model does an excellent job at tracking the evolution of income inequality over time (see Fig. 8 in the paper); with respect to wealth the model also perform wells, however, it tends to over-estimate the concentration of wealth with respect to the data (see Fig. 9 in the paper). With the calibrated model in hand, the authors are now in a position to disentangle the forces shaping inequality over time. Using their calibrated model they can simply "turn-off" certain changes that have occurred in the data. The result that emerges is striking, the biggest contributor to wealth inequality is the (exogenous) increase in wage inequality; transfers (by dissuading saving during the working life) play a less important role; income tax changes play the smallest role. The result is even more striking once we focus on steady state comparisons. Here the model is able to replicate the observed concentration of wealth and income for 2010 by just changing wage inequality and leaving policy as in 1960 (compare *Data-2010* and *KP-2*|*KP-3* in Fig. 1).

The key message here is that policy seems to have little effect for wealth and almost none for income inequality. This is a strong result; it is natural to ask how robust or general it is. In Fig. 1 I provide some evidence supporting its robustness. Fig. 1 relates the share of income for the top one percent with the respective share of wealth. Together with the authors long run counterfactuals (the red squares) I include data on the wealth and income concentration for a small group of countries (wealth data is from the *UNU-WIDER* database (Davies and Sandström, 2008); income data is from the *World Top Incomes Database* (Alvaredo et al., 2013). The strong relationship that emerges between the two variables is unmistakable. It implies that for a given income concentration policy seem to have little effect in shaping the wealth concentration. This is even more striking considering the heterogeneity of policies (especially the ones affecting the accumulation of wealth) that are represented in the graph.

The model provides an endogenous response of incomes to top marginal rates. By doing so, it connects with the rich literature that (directly in data) has tried to estimate the elasticity of taxable income with respect to marginal tax rates (the ETI). The ETI is a key parameter for the normative analysis of the tax code (see for example Diamond and Saez, 2011). The model can be used as a laboratory to evaluate the responses to a variety of (expected) tax changes. Particularly valuable in this respect is the ability within the model to estimate the long-run ETI. Indeed (Saez et al., 2012) remark that (pg. 12): "*The long-term response is of most interest for policy making although, as we discuss below, the long-term response is more difficult to identify empirically. The empirical literature has primarily focused on short-term (one year) and medium-term (up to five years) responses, and is not able to convincingly identify very long-term responses.*". The model in this paper can correctly identify this long term elasticity separating the impact of technical change from changes in the tax policy being studied. The authors emphasize that overall the literature focusing on ETI might have over-estimated the magnitude of this elasticity, this is due to not correctly controlling for technical change over time.

Before concluding, I want to emphasize a margin that might be missing from the analysis. In the model, wages are exogenous. This implies that no dynamic feedback is present between tax policy and (future) wages. It is easy to think of many links connecting the two. For example, an economic agent expecting future lower tax rates will be faced with a heightened return to human capital accumulation, to idea creation and to entrepreneurship. He might then pursue all or some of these activities with greater intensity. As these activities will grow in intensity they will not only affect the agent own future income but also potentially they will affect the future income of other agents as well. We then have the basis for a model of endogenous technical change where policy changes today may not affect incomes today but will affect wages and thus incomes tomorrow.

4. Concluding remarks

This is an important paper that makes clear the relationship between technical change and inequality. While the positive literature has confronted this relationship from multiple angles, the normative literature has not. A few exceptions are Slavik and Yazici (2014) and my own work in Ales et al. (2015). These papers confront the question on how taxes should respond when faced with redistributive technical change. The focus is on dynamic taxes (the former) and on the income tax schedule (the latter).[5]

The paper concludes by asking "where are we headed"? The authors describe how within the model, the wealth and income distribution slowly converge to the a new steady state far beyond 2020. The model predicts over time a much more concentrated distribution of income and wealth than what we see today. This, of course, is under a scenario where neither technical change nor policy will change from their 2010 levels. It is easy to think that technical change will continue and

[5] Technical change is also hold responsible for the extreme increase in incomes at the top of the distribution. This is due to the heightened leverage available to agents for their human capital and their managerial abilities. For a normative analysis of agents at the top refer to Ales et al. (2014), Ales and Sleet (2015) and Scheuer and Werning (2015).

perhaps accelerate over time. This projected path should increase the urgency in understanding the effect of technical change on inequality and how the policy makers should respond to it.

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