Homoploutia: Top Labor and Capital Incomes in the United States, 1950–2020

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Abstract

Homoploutia describes the situation in which the same people are rich in the space of capital and labor income. We combine survey and administrative data to document the evolution of homoploutia in the United States since 1950. In 1950, 10% of top decile capital-income earners were also in the top decile of labor income. Today, this indicator is 30%. This makes the traditional division to capitalists and laborers less relevant today. We find that the increase in labor income inequality contributed to the rising homoploutia, which in turn explains 20% of the increase in interpersonal income inequality since 1986.

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1 Introduction

In classical political economy, and often implicitly in functional income distribution studies, it is assumed that there are two distinct groups of people: capitalists, who receive most of their income from ownership (capital), and workers, who receive most of their income from working (labor). In classical political economy, this was clear: capitalists were not only assumed to be richer than workers, but to have their entire income come from property. Similarly, few workers were thought as deriving a part of their income from ownership of property. Under such "classical capitalism," workers and capitalists (rentiers) were two separate groups of people, with the compositions of their personal income reflecting their positions in the process of production. Typically, of course, capitalists were at the top of the income distribution and workers in the middle or at the bottom.

In recent functional income distribution studies that have documented the increase in the capital share in many countries (Karabarbounis and Neiman, 2014; Gutiérrez and Piton, 2020) that assumption is implicit. A concern these studies express with the rising capital share is that it is likely to lead to higher interpersonal income inequality (Piketty, 2014; Wolff, 2017; Kuhn, Schularick and Steins, 2020). This is so because capital income is more unequally distributed than labor income and is highly concentrated in the hands of the rich. If capital and labor income shares were similar across the income distribution (*i.e.*, across poor and rich individuals), a rising overall capital share would not affect the interpersonal income distribution.

New findings on the United States show, however, that the dichotomy between capitalists and workers may no longer hold (Milanovic, 2019; Smith et al., 2019; Atkinson and Lakner, 2021). In fact, an increasing percentage of people who are capital-income rich are also labor-income rich. Using tax data from 1962 to 2016, Atkinson and Lakner (2021) show that the positive association between capital and labor incomes has risen, after a dip between the mid-1960s and mid-1980s, across the entire US income distribution. However, at the top

that association is asymmetric: top labor earners are more likely to be among top capitalists than the reverse. Following that line of research, but focusing only on the top of the income distribution, and using data from household surveys, Milanovic (2019)[Ch. 2] shows that the percentage of people who are in the top income decile and simultaneously in the top decile by both capital and labor income has steadily increased in the United States from around 15% in 1980 to almost 30% in 2017. Eisfeldt, Falato and Xiaolan (2021) document similar findings and show that "equity-based compensation has transformed high-skilled labor from a pure labor input to a class of 'human capitalists'."

A capitalism revealed from these studies is clearly a different capitalism from the classical. Milanovic (2019) called this phenomenon, of people rich in both capital and labor incomes, *homoploutia*, from the Greek word *homo* for equal, and *ploutia* for wealth or "richness." In this paper we define the phenomenon, and document and analyze the evolution of homoploutia in the United States over the past 70 years. We also study the link between the rising homoploutia and the rising interpersonal income inequality.

Homoploutia breaks the strong capital-labor segregation that exists under classical capitalism. If it were to spread to the rest of the distribution, it would also break the link between the rising capital share and rising interpersonal inequality. In this paper, however, we are concerned with homoploutia at the top only. It poses two new problems. First, having the rich who are rich in terms of both property and skills (human capital) may lead to the creation of an upper class that is well protected against unfavorable macro developments in either labor (unemployment) or capital (decline in asset values) because it has sufficient resources from the other factor to fall upon. It thus may share little with the rest of the population, being more reliant on one income source (mostly labor). Second, from an ethical point of view, high taxation of a homoploutic upper class becomes more difficult: the rich are not mere passive coupon-clipping rentiers of the classical capitalism, but hard working wage-earners.

To quantify homoploutia we use the intersection between the top decile of capital-income

recipients and labor-income earners (top10K-top10L or $H_{10,10}$). Under classical capitalism, we would expect $H_{10,10}$ to be small, and even close to zero. The more different it is from zero, the more we move away from the capital-labor dichotomy, at least at the top of the income distribution. We then estimate $H_{10,10}$ in the United States since 1950 by using three datasets which allow covering different time periods: the Luxembourg Income Study (LIS, 2020), the US Distributional National Accounts (Piketty, Saez and Zucman, 2020), and an augmented version of the Survey of Consumer Finances (Kuhn, Schularick and Steins, 2020). We find that homoploutia was low after World War II, has increased by the early 1960s, and then slightly decreased until the mid-1980s. Since 1985 it has been sharply increasing: In 1985, about 17% of adults (and of households) in the top decile of capital-income earners were also in the top decile of labor-income earners. In 2018 this indicator was about 30%. In all years, the homoploutic top, *i.e.*, the intersection of the top decile of capital-income recipients and labor-income earners, belongs to the top total income decile. The homoploutic members are therefore fully contained within the top income decile.

A special problem when studying homoploutia, often not entirely solvable, arises due to the definitions of capital and labor income. While the latter is more or less uniformly defined in various data sources, the definition and coverage of capital income differ significantly between the sources. There is no theoretical consensus as to what is income from property (*e.g.*, treatment of capital gains and losses, income from private pensions, *etc.*).

Furthermore, there are problems of mislabeling and underestimation. Smith et al. (2019) show that a bulk of corporate income considered by tax data as capital income is in effect a return to management and entrepreneurial characteristics of firm owners, and should be reclassified as labor income (partly as a result of the 1986 tax reform). In a companion paper (Smith et al., 2022), they argue that the reclassification reduces the observed decline in the labor share by a third. Tax data, as this example shows, suffer from issues of mislabeling, driven by changing tax rules and making tax-payers reclassify their income to minimize taxes. This problem alone makes comparisons between years difficult when using tax data only. On

the other hand, while household surveys are conceptually more accurate in their definition of capital income, they suffer from under-reporting of capital income at the top. Most (around two-thirds) of the underestimation occurs among the top one percent of income recipients (Yonzan et al., 2022). The sources of data thus differ in how they define and cover capital income, and hence how capital (and labor) shares are estimated. We pay special attention to this problem in the paper but cannot solve it, as we have to take the microdata from the sources, some of which go back 70 years, as given.

We also study the drivers of homoploutia. In particular, we look at the relationship between $H_{10,10}$ and overall capital share, and the relationship between $H_{10,10}$ and the marginal distributions of capital and labor incomes. These relationships are contingent on what happens elsewhere. For example, the marginal distributions of capital income and labor income may have become more unequal, leading to increasing overall inequality, while leaving $H_{10,10}$ unaffected. Similarly, if there is an increase in the capital share, raising, for example, all capital incomes proportionally, homoploutia may be unaffected. The composition of the top 10% of capital recipients will remain the same and whether $H_{10,10}$ will go up or down will depend on changes in the top 10% of labor-income recipients. The latter can go either way and so could $H_{10,10}$. In conclusion, for homoploutia to increase it is not sufficient that one of several factors (correlation between capital and labor incomes, marginal distributions of capital and labor incomes, or the capital/labor share) moves in a given direction, regardless of what happens to the other factors. Yet, in practice, we find a strong and robust positive relationship between homoploutia and labor income inequality. This leads us to formulate a hypothesis about the possible mechanisms that drove US homoploutia up in the recent period.

The understanding of these relationships allows us to study the link between rising homoploutia and the rising interpersonal income inequality in the United States during the past 35 years. According to tax data, the income share of the richest decile increased between 1986 and 2020 by 10 percentage points, from 37% to 47% (Piketty, Saez and Zucman, 2020). We

find that ceteris paribus, the increase in homoploutia has contributed 2 percentage points, or 20%, to this increase.

This paper contributes to different threads of literature. From an empirical perspective its primary contribution is describing how homoploutia evolved in the United States between 1950 and 2020. This allows a better understanding of the dynamics of income inequality over that period. Studying homoploutia is also important for political economy and social mobility, and studies of capitalist systems. It is relevant for economic theory more generally, as many models in various subfields of economics assume a strict division to capitalists and workers (see recent examples such as Debortoli and Galí (2017); Walsh (2017); Carroll and Young (2018); Bilbiie (2020); Broer et al. (2020)). The increase in homoploutia is thus an additional stylized fact that macroeconomic models should be able to match. Furthermore, pointing out the increase in homoploutia has practical relevance when estimating top income shares while making assumptions on how missing income is redistributed. It may also be important for designing tax policy, especially considering the taxation of capital income.

The rest of the paper is organized as follows. Section 2 defines homoploutia and describes how it is measured. Section 3 specifies our data sources and presents the main results. Section 4 discusses the link between homoploutia and interpersonal income inequality. We conclude in Section 5.

2 What is Homoploutia?

We first discuss how homoploutia is defined and measured. There are various ways in which it could be defined. One could look at how many of the top one-percenters by capital income are also top one-percenters in terms of labor income (we denote this by top1K-top1L or $H_{1,1}$). This definition would focus on the very narrow sliver at the top (see Appendix A). In this paper, our focus will be on a somewhat wider group, the intersection between the top decile of capital-income recipients and the top decile of labor-income earners (top10K-top10L or

$H_{10,10}$). As already mentioned, under classical capitalism, if there is a negative correlation between the two sources of income, we would expect $H_{10,10}$ to be small, and potentially close to zero. The more different it is from zero, the more we move away from the capital-labor dichotomy, at least at the top of the income distribution.

Formally, we define the top10K-top10L measure as

$$H_{10,10} \equiv \frac{10}{N} \sum_{i=1}^{N} \mathbf{1}_{top10K}(i) \cdot \mathbf{1}_{top10L}(i) = 10 \cdot \Pr\left(top10L \cap top10K\right) , \tag{2.1}$$

summing over all households/individuals i, where N is the population size (or number of households). It follows that $H_{10,10}$ is the same as 10 times the probability of being at the top decile of labor income *and* at the top decile of capital income.

Importantly, $H_{10,10}$ is independent of monotonic transformations in the marginal distributions. Thus, a change in homoploutia could affect total income inequality independently from a change in labor income inequality or capital income inequality. We will return to this point and make use of this property in Section 3.3 and Section 4.

In addition, $H_{10,10}$ is equivalent to the probability of being in the top decile of capital-income recipients conditional on being in the top decile of labor-income earners (or vice versa):

$$H_{10,10} = \Pr\left(top10K \mid top10L\right) = \Pr\left(top10L \mid top10K\right) . \tag{2.2}$$

Other partitions are possible. One could be interested in "asymmetric intersections," *e.g.*, the percentage of top 1% capital-income earners who are also in the top labor income decile (top1K-top10L). The advantage of $H_{10,10}$, and similar symmetric intersections, is that the percentage of such (top) capital-income earners in such (top) labor-income earners will be, by definition, the same as the reverse, the percentage of top labor-income earners among the top capital-income earners.

It is also possible to look at *homophtocheia* (*phtocheia* is poverty in Greek), the percentage of

people who are poor in both capital and labor income terms. For example, those that may be in the bottom decile of labor income but also in the bottom decile of capital income. For our present purposes, however, and to better discriminate between classical and homoploutic capitalism, it may be more interesting to look at the presence of rich capitalists among poor wage earners (top10K-bottom10L). This is an analog of the top10K-top10L because high values of top10K-bottom10L should be characteristic of classical capitalism. On the other hand, absence of such intersection may be expected in homoploutic capitalism. As we will see in the next section, the evolution of top10K-bottom10L indeed mirrors that of top10K-top10L over the past 50 years.

We focus on the top or bottom shares, yet it is possible to define homoploutic capitalism in a more expansive way, as the situation where capital and labor shares are the same throughout the income distribution, that is, where the poor receive the same percentage of their total income from capital as do the rich. Such an approach to homoploutia was recently studied by Ranaldi and Milanovic (2022). The difference between these approaches is similar to the difference between studying the inequality of the full distribution using synthetic measures like Gini coefficient, and studying the same income distribution by focusing on the top, as in works that look at the top 1% or 10% shares only. Our paper, in terms of its approach to homoploutia, belongs to the second category.

One may also consider the full joint distribution of labor income ranks and capital income ranks, *i.e.*, the copula of labor and capital incomes. The copula is commonly used in intergenerational mobility studies to describe the probability of children to end up in the jth income rank as adults, conditional on their parents occupying the ith income rank at a similar age. This concept is also used, though less commonly, in the context of the joint distribution of labor and capital incomes (see, *e.g.*, Aaberge, Atkinson and Königs (2018); Alvaredo et al. (2020); Atkinson and Lakner (2021)). We use the copula for the purpose of studying the link between homoploutia and interpersonal inequality in Section 4. Technical details on copulas are discussed in Appendix B.

3 The Evolution of Homoploutia in the United States, 1950–2020

The main empirical result of this paper is the characterization of homoploutia in the United States since 1950. The primary indicator we use for this purpose is the share of top decile capital-income earners in the top decile of labor-income earners, the top10K-top10L, which we denote for brevity as $H_{10,10}$. The estimation of $H_{10,10}$ requires individual or household income microdata that cover the top decile of both labor and capital income.

3.1 Data

We use three data sources:

- Luxembourg Income Study (LIS, 2020): A cross-national harmonized database based on household surveys (for the United States it is based on the Current Population Survey (CPS, 2020)). The data are available for the years 1974, 1979, 1986 and 1991–2019.

- The US Distributional National Accounts (DINA) Micro-Files (Piketty, Saez and Zucman, 2020): The US DINA combine tax, survey, and national accounts data, and capture 100% of national income in the United States. The data are available for 1962, 1964 and 1966–2020.

- The SCF+ (Kuhn, Schularick and Steins, 2020): The SCF+ is an augmented version of the Survey of Consumer Finances (SCF), a household survey conducted every three years by the Federal Reserve. In the SCF+ archival data were added to the SCF and harmonized to account for the years that precede 1983. For our purposes, the data cover the years 1950–1971 (every three years), 1977, 1983 and every three years between 1989 and 2016.

Table 1 presents the income definitions and the units used in the three datasets as detailed in their codebooks. In LIS and SCF+ the unit, *i.e.*, the income recipient we consider, is a household. In the US DINA it is an equal-split adult.[1] The income definitions are also not identical among the datasets.

Table 1: Income and unit definitions in LIS, US DINA and SCF+

Dataset	Capital income	Labor income	Units (recipients)
LIS	Cash payments from property and capital (including financial and non-financial assets), including interest and dividends, rental income and royalties, and other capital income from investment in self-employment activity. Excludes capital gains, lottery winnings, inheritances, insurance settlements, and all other forms of one-off lump sum payments.	Total income from labor of all household members, including cash payments and value of goods and services received from dependent employment, profits/losses and value of goods from self-employment, as well as the value of own consumption.	Households
DINA	Housing asset income + equity asset income + interest income + business asset income + pension and insurance asset income + interest payments + capital share of net mixed income	Compensation of employees + labor share of net mixed income + sales and excise taxes falling on labor	Equal-split adults
SCF+	Income from rent, interest and dividends	Income from wages, salaries, self employment, professional practice	Households

The differences between the datasets matter for two main reasons. First, for the interpretation of the results. For example, Smith et al. (2019) show that a bulk of corporate income considered by tax data as capital income is in effect a return to management and entrepreneurial characteristics of firm owners, and should be reclassified as labor income. In Appendix C we address the impact of such potential mislabeling on our results. The source for this mislabeling could be partly related to the 1986 major tax reform (Feldstein, 1995; Auerbach and Slemrod, 1997), which may have led to changes in the distribution of income between labor and capital among top earners (Slemrod, 1995; Smith et al., 2019). For example, income that was previously recorded as corporate income and earned in the form of dividends, *i.e.*, capital income, could be recorded after 1986 as labor income (if S-corporation income is passed through to personal business income). Yet, such changes are very unlikely

[1]This means that individuals in tax units that are composed of more than one income-contributing individual are assumed to contribute each an equal part to the total income (see Alvaredo et al. (2020) for more details).

to be a major determinant of the evolution of homoploutia, as we document below and in Appendix C. In addition, a part of the differences in the results between the different sources must be due to the differences in the income definitions.

Using the three data sources allows both covering a period of 70 years and testing the robustness of the estimates by comparing between them. To estimate $H_{10,10}$ we detect in each year the income thresholds above which units are to be included in the top decile of labor income and of capital income. Then we count the number of capital-income earners in the top decile who are also included in the top decile of labor income.

While the juxtaposition of the different data sources is in and of itself of great value, some sources have advantages over the others. In particular, the US DINA has the advantage of being mainly based on tax returns. Thus this source enjoys a larger sample size and, most importantly, more accurate description of top incomes compared to survey data (Yonzan et al., 2022). This is important for measuring homoploutia, a concept focusing on top income earners. For this reason, most of the analyses below will be based on the US DINA. Yet, in some cases, especially when also discussing low income earners, we will also use survey data.[2]

3.2 Main Results

The main results are presented in Figure 1. Broadly speaking, it shows that homoploutia was low after World War II, when $H_{10,10}$ was about 10%. $H_{10,10} = 10\%$ is indeed what we would expect in the case of absence of positive correlation between capital and labor incomes: With a purely random distribution of labor incomes among capital-income recipients $H_{10,10}$ would be 10%. Homoploutia increased by the early 1960s, rising to about 25%, and then slightly decreased until the mid-1980s. Since 1985 it has been sharply increasing: In 1985,

[2]The US DINA, unlike the LIS and SCF+, is a dataset based on the fusion of various sources: tax returns, surveys, and national accounts. As such, it involves many adjustments to raw data, as documented in Piketty, Saez and Zucman (2018). Appendix C shows that when comparing the baseline estimates of homoploutia to those obtained using unadjusted fiscal income data, the results do not qualitatively change.

about 17% of adults in the top decile of capital-income earners were also in the top decile of labor-income earners. In 2018 this indicator was about 30%.

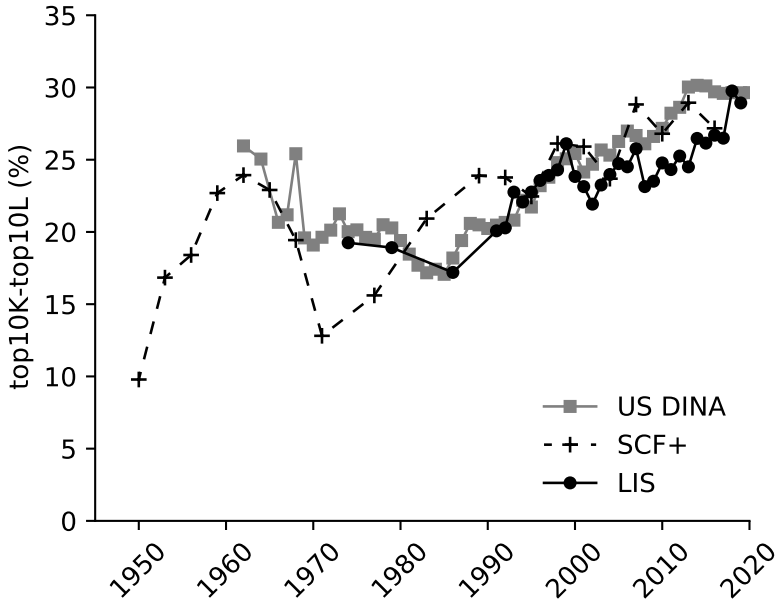

Figure 1: The evolution of homoploutia in the United States, 1950–2020. The figure shows top10K-top10L, the share of top decile capital-income earners in the top decile of labor-income earners, based on three data sources: US DINA (Piketty, Saez and Zucman, 2020), SCF+ (Kuhn, Schularick and Steins, 2020) and Luxembourg Income Study (LIS, 2020).

Figure 1 also shows that the different data sources are in agreement with one another, despite differences between their methodologies and raw data. Excluding one year in which the SCF+ seems to significantly underestimate homoploutia (1971, in which the SCF+ sample size was uncommonly small, roughly 2–4 times smaller than in other years (Kuhn, Schularick and Steins, 2020)), the various estimates are always within less than 5 percentage points from one another and follow a very similar trend. This is especially the case after the mid-1980s, when all three sources move in unison.

In particular, the current levels of homoploutia are the highest to be recorded. This is indicative, among other things, of how the US capitalist system has evolved over time. Not only that "capital is back" (Piketty and Zucman, 2014) in the sense that the capital-income ratio and the capital share of income have increased in the past few decades, but also that the

traditional division to capitalists and laborers, which may have been relevant when $H_{10,10}$ was low, is much less relevant today. Thus, periods characterized by high interpersonal inequality, high capital-income ratio, and high capital share of income in the past are fundamentally different from today.

Figure 2 complements the result in Figure 1. Its left panel shows how the average labor income rank of top 10% capital-income earners changed from the 1960s onward. The evolution of this average rank resembles the evolution of $H_{10,10}$. During the late 1970s and 1980s, the average rank was limited within percentiles 45–50, meaning that on average, top 10% capital-income earners had below median labor income (with a purely random distribution of capital and labor incomes, the average rank would have been 50). The average rank had increased since to about percentile 60–65 in the late 2010s. The results using both LIS and US DINA are consistent.

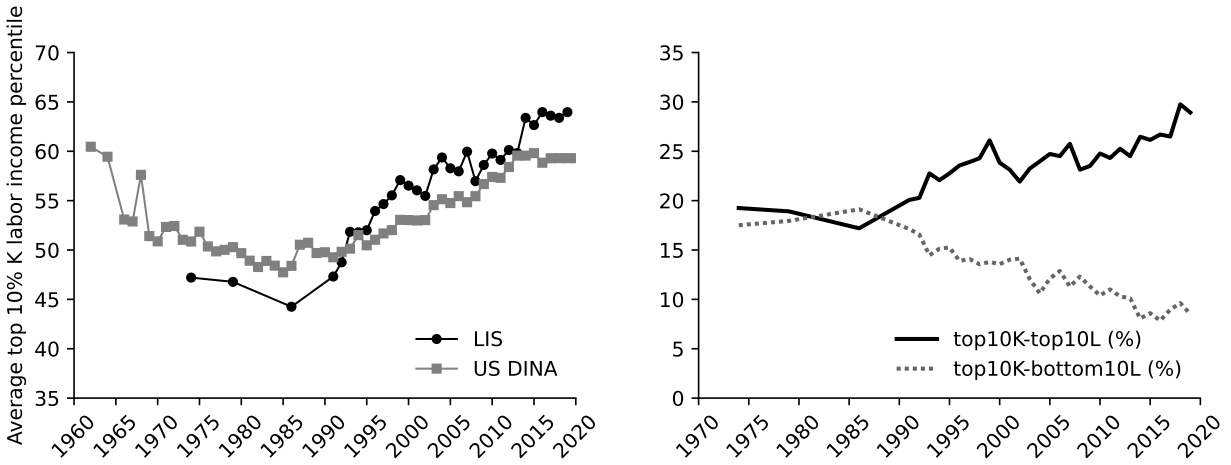

Figure 2: Additional facets of rising homoploutia. Left: The average labor income percentile among the top 10% capital-income earners in the United States, 1962–2020, based on LIS data (LIS, 2020) and US DINA (Piketty, Saez and Zucman, 2020); Right: The top10K-top10L and top10K-bottom10L in the United States, 1974–2019, based on LIS data.

The data do not only allow describing the evolution of homoploutia using the share of top decile capital-income earners in the top decile of labor-income earners. We also consider the share of top decile capital-income earners in the bottom decile of labor-income earners, the top10K-bottom10L. Such individuals or households are closer to the traditional definition

of 'capitalists', who are capital rich and do not work. The right panel of Figure 2 depicts the evolution of top10K-top10L and top10K-bottom10L using LIS data and shows that the two measures roughly mirror one another. While the top10K-top10L increased from 17% to about 30% between 1985 to 2019, the top10K-bottom10L decreased from 19% to less than 10% during the same period.[3]

We note that in all years, the homoploutic top, *i.e.*, the intersection of the top decile of capital-income recipients and labor-income earners, belongs to the top total income decile. The homoploutic members are therefore fully contained within the general top of the income distribution, meaning that today, about a third of the general top (when defined as the top *income* decile) is homoploutic. In addition, it is theoretically possible for homoploutia to increase without a simultaneous increase of the share of total income received by the homoploutic top. That would potentially make the increase in homoploutia of less importance and less intuitive. Yet, in practice, the top10K-top10L and the share of total income of the homoploutic top follow a similar trend (see Appendix D).

3.3 Drivers of Homoploutia

The increasing homoploutia and the falling share of top capital-income earners in the bottom labor income decile may indicate that an older generation of capitalists was replaced by another, characterized by much higher labor income ranks. What is driving this evolution of homoploutia? In part, the rising homoploutia may be driven by the abundance of individuals who earned high wages, saved a large share of their wages, invested it, and after some years began receiving large capital incomes. It might also be driven by an increasing importance of inheritance, received predominantly by individuals in the higher labor income ranks. Moreover, whatever the cause of the original movement toward higher homoploutia, it is likely that in the next generation homoploutia would even increase. This is because individuals

[3]As suggested above, when considering the bottom income earners, using LIS data can be more reliable than using the US DINA. For this reason the right panel of Figure 2 uses LIS data.

born to capital-rich families that can invest heavily in children's education would likely command high wages. In this sense, high homoploutia is an important mechanism that could limit social mobility.

To disentangle the different effects rare detailed longitudinal microdata, which include information on inheritance and saving, are required. Nevertheless, we can shed light on such effects in the absence of these data by considering four key variables:

- Marginal labor income inequality (quantified, *e.g.*, by the top 10% labor income share)
- Marginal capital income inequality (idem as above)
- The capital share of income
- $H_{10,10}$ (top10K-top10L)

These variables are a priori independent in the sense that there is no clear mechanical relationship between them. For example, there is no reason for a change in labor income inequality to mechanically lead to a change in any other variable. Therefore, robust statistical links between the variables may be indicative of deeper mechanisms at play. The evolution of these variables from 1962 onward is described in Figure 3.

To map these relationships, we use the US DINA. We regress $H_{10,10}$ on the other three components. We consider the entire period covered by the US DINA (1962–2020), and then focus on the years 1986–2020, in which the changes in all of the variables were most visible. We also regress $H_{10,10}$ on each of the other three variables (capital share of income, top 10% labor income share and top 10% capital income share) separately. The results are presented in Table 2.[4]

[4]The p-values in Table 2 are taken using the most conservative error estimate when considering an OLS regression and also different specifications of heteroskedasticity- and autocorrelation-consistent covariance estimators including the Newey-West estimator, to account for the autocorrelation and heteroskedasticity that typically characterize regressions of time series. For robustness we also considered longer and shorter time periods for the regression. They leave the main result unaffected: only labor income inequality is robustly and significantly associated with $H_{10,10}$.

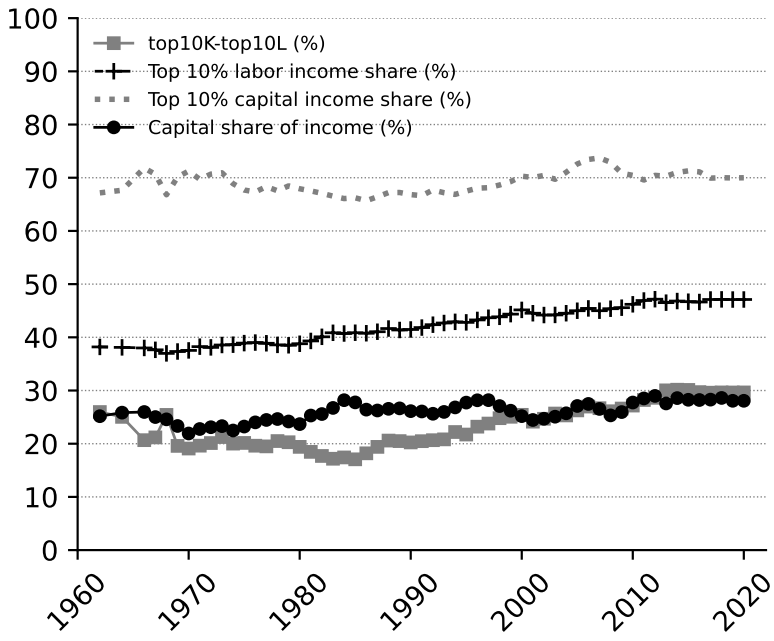

Figure 3: The evolution of homoploutia and its potential drivers: top 10% labor income share, top 10% capital income share, and the capital share of income. All data are taken from the US DINA (Piketty, Saez and Zucman, 2020).

Table 2: Regression results for the relationship between $H_{10,10}$, the overall capital share of income (S), the top 10% labor income share (L) and the top 10% capital income share (K). The values in brackets represent p-values.

	Full model (1962–2020)	Full model (1986–2020)	Overall capital share only (1986–2020)	Top lab. share only (1986–2020)	Top cap. share only (1986–2020)
	$H_{10,10} = \alpha + \beta_S S_i + \beta_L L_i + \beta_K K_i + \epsilon_i$	$H_{10,10} = \alpha + \beta_S S_i + \beta_L L_i + \beta_K K_i + \epsilon_i$	$H_{10,10} = \alpha + \beta_S S_i + \epsilon_i$	$H_{10,10} = \alpha + \beta_L L_i + \epsilon_i$	$H_{10,10} = \alpha + \beta_K K_i + \epsilon_i$
β_S	0.28	0.22	1.55		
	(0.380)	(0.152)	(0.109)		
β_L	0.66	1.53		1.74	
	(0.003)	(< 0.001)		(< 0.001)	
β_K	0.71	0.18			1.32
	(< 0.001)	(0.067)			(< 0.001)
R^2	0.72	0.97	0.29	0.96	0.57
Obs.	57	35	35	35	35

The regression results show that there is a strong and robust positive relationship between homoploutia and labor income inequality with high explanatory power. No other variable

provides both high explanatory power and robust statistical association to $H_{10,10}$. In particular, while the positive association between $H_{10,10}$ and the capital share of income is statistically robust, it lacks substantial explanatory power.[5]

The strong association between $H_{10,10}$ and the top 10% labor income share is further demonstrated in Appendix E. It shows how the evolution of these two measures is almost identical after 1985.

Two possible mechanisms for the increase in homoploutia are thus supported by data. First, as described, it is possible that following the increase of labor income inequality over the 1970s and early 1980s high-wage earners were able to save a large share of their wages, invest it, and then begin receiving large capital incomes. Another possible mechanism is that the growing labor income inequality made top labor incomes more attractive to the capital-rich, who were less incentivized to engage with the labor market while labor income inequality was relatively low. This can be reinforced by higher bargaining power that such workers may have due to their high capital incomes. This mechanism is similar to mechanisms suggested for the increase in wage inequality (Katz and Murphy, 1992) and executive compensation (Piketty and Saez, 2003; Philippon and Reshef, 2012).[6]

We also note that the observed trend in homoploutia is not mechanically driven by changes in the compensation structure of executives in the past decades. While executives are paid more through stock options and shares today than a few decades ago (Philippon and Reshef, 2012; Smith et al., 2019), this change does not lead to higher top10K-top10L. First, bonuses and exercised non-statutory stock options are accounted for as labor income. Thus, such a structural change would affect the composition within labor incomes rather between labor income and capital income. In addition, capital gains are excluded from our capital income

[5]This remains the case when also including the full period 1962–2020, in which β_K is significantly higher than zero in all models, but in the model $H_{10,10} = \alpha + \beta_K K_i + \epsilon_i$ provides an R^2 of 0.35.

[6]We note that in the case where labor incomes are highly mobile intragenerationally, we should not have expected increasing homoploutia based on the described mechanisms. However, there is evidence that labor income mobility in the United States is very limited (year-to-year rank correlation of about 0.9), and stable over time (Kopczuk, Saez and Song, 2010). Thus in practice this does not pose a concern to the suggested interpretation of the empirical results.

definitions in all datasets (even when included they have a small impact on the estimates, see Appendix C). Executive pay is also relevant only for a small group within the top labor income decile, mostly restricted to the top percentile (Smith et al., 2019), so it cannot be a dominant factor in the top10K-top10L trend (see Appendix C). We also find that potential mislabeling of business income as either labor or capital income (Smith et al., 2019) cannot explain the trend in homoploutia after 1985. Furthermore, Appendix C includes a comparison between the top10K-top10L and the top10W-top10L: the share of adults in the top decile of wealth holders who are also at the top decile of labor income earners. The comparison shows very high similarity in levels and in trends. This further establishes the robustness of the main results, but also indicates that mislabeling of capital income cannot explain the observed trends and levels.[7]

3.4 The Demographics of the Homoploutic Elite

In addition to documenting the evolution of homoploutia and its drivers, it is possible to characterize the homoploutic elite: Who are the people included in the intersection of the top decile of labor income and capital income, and how did their characteristics evolve over time? For that purpose we use the US DINA. This allows characterizing the demographic attributes of the homoploutic elite and their evolution. We note that in general, many socio-demographic and socio-economic characteristics could be instrumental for understanding the nature of homoploutia. This includes education and occupation, for example. Yet, such socio-economic characterization is left for future work, as it would exceed the scope of this paper.

Figure 4 thus focuses on demographic characteristics. It shows how the average age, the share of adults married, the average number of kids (per adult), and the share of females, differs between the general adult population and the homoploutic elite. In particular, we

[7] As discussed in Section 3.1, a part of the potential mislabeling of capital and labor incomes after 1985 can be attributed to the 1986 major tax reform.

observe several regularities: First, women are much less represented in the homoploutic elite than men. Yet, the representation gap has narrowed over time. Until the 1980s only 10% of the homoploutic elite was female, while nowadays it is about 30%. In addition, while in the overall population the share of married adults have gone down massively since 1970, it is still relatively high among the homoploutic elite. Figure 4 also shows that members of the homoploutic elite are generally older and have more kids than the general population. In these demographic characteristics the differences between the homoploutic elite and the general population do not show clear trends over time.

4 Homoploutia and Income Inequality

In addition to the possible causal relationship between labor income inequality and homoploutia, there is a mechanical link between homoploutia and total income inequality. Intuitively, as the association between labor and capital incomes becomes stronger across the entire distribution, we should expect total income inequality to be higher as well. This is because both types of incomes are at least somewhat unequal. If the highest incomes of any type (labor or capital) would be more likely to go to the same households or individuals, then the sum of those incomes, or the total income, will be even more unequally distributed. Thus, the increase in homoploutia in recent decades may have played a role in the rising income inequality in the United States.

Specifically, the past 35 years have seen a rise in the United States in all four variables discussed above (see Figure 3): labor income inequality, capital income inequality, the capital share of income, and homoploutia. Keeping all the others constant, an increase in each of these indicators may mechanically lead to an increase in total income inequality. While the literature has focused so far on the first three, we attempt to describe the relationship between the rise in homoploutia since 1985 and the rise in total income inequality. For this purpose we utilize an important property of $H_{10,10}$ – it is independent of monotonic transformations in

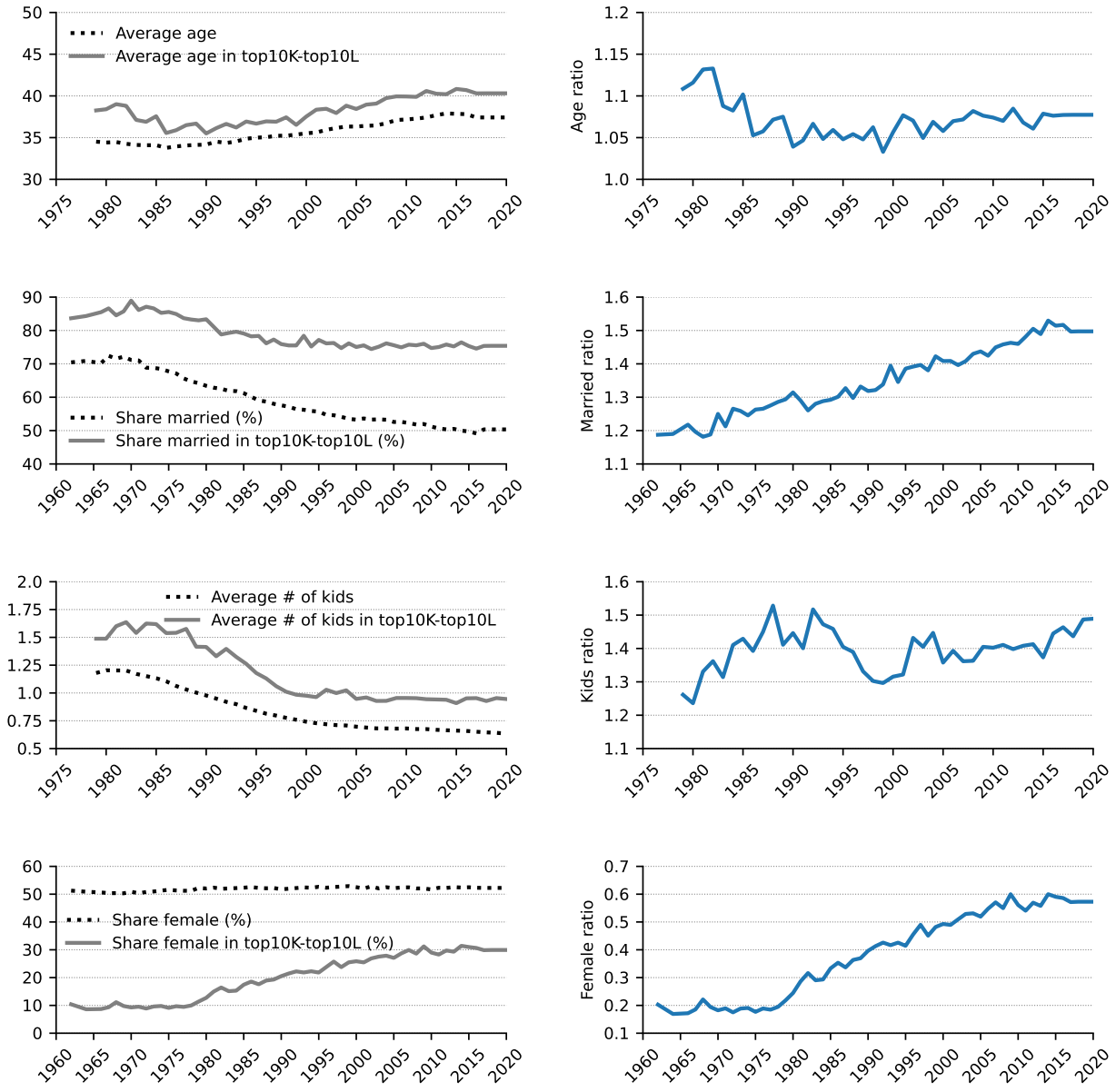

Figure 4: The demographics of the homoploutic elite. The panels on the left compare various demographics between the homoploutic elite (the intersection of the top decile of labor income and capital income) and the entire adult population in the United States. The characteristics are (from top to bottom): average age, the share of adults married, the average number of kids (per adult), the share of female adults. The right panels present the ratio between the statistic among the homoploutic elite and the entire adult population. All data are taken from the US DINA.

the marginal distributions. Moreover, we can compare the relative importance of changes in homoploutia with the importance of the capital share of income, both as factors contributing to the increase in income inequality.

4.1 Homoploutia and Inequality: Static Analysis

To test the impact of homoploutia on total income inequality, we assume that the joint rank distribution of labor and capital incomes follows a Gumbel copula. This has been shown as a good approximation used in the inequality literature in recent years (Saez and Zucman, 2016; Alvaredo, Assouad and Piketty, 2019; Piketty, Yang and Zucman, 2019). Appendix B presents a discussion of this assumption and demonstrates the differences between real copulas and the approximated Gumbel copulas. It is worth noting that the Gumbel copula serves as a good approximation for the joint rank distribution specifically when homoploutia is high. The approximation is less precise when there is a significant share of top capital income earners at the bottom of the labor distribution, but not many top labor income earners at the bottom of the capital income distribution, or vice versa. This could create an asymmetric copula, unlike the Gumbel copula (and other standard copula models, such as Gaussian or Plackett copulas). Despite this limitation, Appendix B (as well as Saez and Zucman (2016) and Piketty, Yang and Zucman (2019)) demonstrates that the Gumbel copula still provides a good description of the joint rank distribution.

Practically, given the marginal labor and capital income distributions (and implicitly the capital income share), we use the copula to match together the two distributions. This way we obtain the joint distribution of labor and capital incomes following Sklar's theorem (Sklar, 1959).[8] By summing the two components we obtain the total income distribution.

Repeating the matching procedure systematically, each time with a different parameter for the copula (and thus for homoploutia), allows us to observe how inequality reacts to changes in homoploutia. This is demonstrated in Figure 5 for the marginal labor and capital income distributions in the United States in 1985 and 2018. It shows how the top 10% total income share mechanically depends on homoploutia. As hypothesized, total income inequality increases with homoploutia. The dependence of the top 10% share on top10K-top10L is

[8]The method used for matching two income distributions using a copula follows the method used by Chetty et al. (2017).

concave, and is steepest for realistic top10K-top10L values, between 10% to 30%.

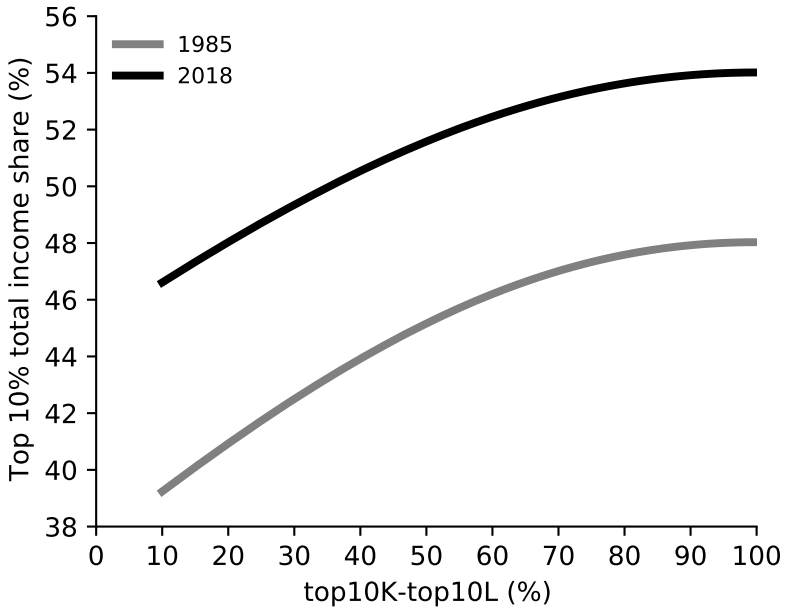

Figure 5: The top 10% total income share in the United States in 1985 (gray) and 2018 (black) as a function of homoploutia. We match the labor income and capital income distributions (from the US DINA) using a Gumbel copula, each time with a different parameter. This is equivalent to changing top10K-top10L (see Appendix B for details on how top10K-top10L is related to the Gumbel copula). We then obtain a joint distribution of labor and capital incomes, which allows, by summing the two income components, to obtain the total income distribution, and estimate how unequal it is.

Figure 5 shows that even with perfect homoploutia, *i.e.*, when the top10K-top10L is 100%, the top 10% total income share is limited. This limit depends on the marginal capital and labor income distributions and on the capital income share. For 2018 it is about 54%, a level classified as "very high inequality" (Piketty, 2014). The figure also shows that, for a given level of homoploutia, overall income inequality will depend on the other three variables (capital share of income, top 10% labor income share and top 10% capital income share), and that in 2018 they were more inequality enhancing compared to 1985.

4.2 Inequality Effects of Homoploutia and Capital Share Increase Over Time

We are interested in further exploring the impact of homoploutia on total income inequality in practice. Specifically, we would like to understand how it interacts with the changing capital share of income. In the static analysis in Figure 5, the capital shares of income were fixed (to those representing 1985 and 2018). In practice, both homoploutia and the capital share of income have increased in the past few decades, and we will quantify their contributions to the increase in total income inequality. This issue is central in current discussions on inequality (Piketty, 2014; Milanovic, 2017), and has importance for policy aiming to impact total income inequality.

For this analysis we look at two counterfactual scenarios from 1986 to 2020. In the first scenario we fix homoploutia to its 1986 level but let the capital share change according to its historical evolution (using the US DINA data). In the second scenario we fix the capital share to its 1986 level but let homoploutia change. In both scenarios we let the marginal labor and capital income distributions change according to their historical evolution. In each scenario we calculate the top 10% total income share every year. The first scenario neutralizes the impact of rising homoploutia on inequality. The second scenario neutralizes the impact of rising capital share.

The results are shown in Figure 6. Both scenarios, as well as the baseline (real) scenario show a similar evolution. This demonstrates that the changes in the marginal distributions are the biggest contributors to the increase in total income inequality. When the impact of rising homoploutia is neutralized there is an increasing distance from the baseline, reaching about 2 percentage points in the late 2010s. Thus, we can say that the rising homoploutia mechanically led to an increase of 2 percentage points in the top 10% income share. This is about 20% of the entire increase in the top 10% income share between 1986 and 2020. The direct impact of the rising capital share on the top 10% total income share is much smaller,

less than half a percentage point over the entire time period.[9]

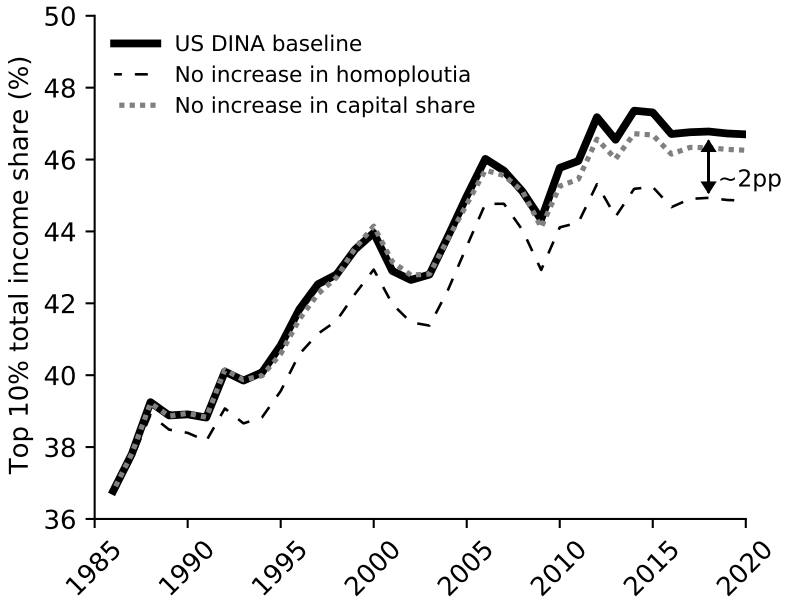

Figure 6: Homoploutia and income inequality. The figure depicts the mechanical impact of rising homoploutia and capital income share on total income inequality, 1986–2020. The baseline result shows how the top 10% total income share has changed between 1986 and 2020. The other lines show counterfactual calculations in which homoploutia is fixed (dashed black) and capital income share is fixed (dotted gray).

These results show that homoploutia works as an independent factor in raising inequality. Even if the capital share were fixed (while allowing the marginal capital and labor income distributions evolve as they did), homoploutia would make the income distribution more unequal. The direct mechanical impact (*i.e.*, regardless of a causal relationship) of homoploutia on total income inequality in the past 35 years has been substantial. We have thus shown first, that statically (in a one-year analysis) greater homoploutia is leading to higher inequality, and second, that over the recent past, homoploutia has played a bigger role in increasing US inequality than the aggregate capital share.[10]

[9]This implies that about three-quarters of the overall increase in inequality was due to more unequal marginal distributions of capital and labor.

[10]Atkinson and Lakner (2021) perform a similar analysis, where they decompose the evolution of the top 1% income share to the labor share of income, the share in total labor income of the top 1% of labor income recipients, the share in total capital income of the top 1% of capital income recipients, and the alignment coefficients of labor and capital incomes. The alignment coefficients (Atkinson, 2007) capture "the extent to which the rankings under income from factor m and total income coincide". Increasing

5 Conclusion

A typical assumption made explicitly and implicitly in classical political economy and in studies of income distributions is that an economy can be thought of as divided into workers and capitalists. Capitalists receive their income from ownership (capital) whereas workers receive their income from working (labor). However, the percentage of people in the top decile of capital income who are also in the top decile of labor-income recipients has steadily increased in the United States from around 15% in 1980 to almost 30% in 2017. Milanovic (2019) called this phenomenon homoploutia. In this paper we formally define homoploutia and the ways in which it is quantified. More importantly, we describe the evolution of homoploutia in the United States from 1950 to 2020.

To quantify homoploutia we use the intersection between the top decile of capital-income recipients and labor-income earners (top10K-top10L). Combining three datasets we find that homoploutia was low after World War II, has increased by the early 1960s, and then slightly decreased until the mid-1980s. Since 1985 it has been sharply increasing: In 1985, about 17% of adults in the top decile of capital-income earners were also in the top decile of labor-income earners. In 2018 this indicator was about 30%.

To better understand what drove the rise in homoploutia we then study its relationship to the capital share of income and the marginal distributions of capital and labor incomes. We find a robust positive relationship between homoploutia and labor income inequality. This suggests that the increasing labor income inequality during the 1970s and 1980s led to an increase in homoploutia. A possible mechanism for this relationship is that the growing labor income inequality made top labor incomes more attractive for capital-rich, who were previously less incentivized to engage with the labor market. It is also possible that the increase in wage

alignment coefficients could be thus indicative to rising homoploutia. Indeed, Atkinson and Lakner (2021) find increasing coefficients since the 1980s, indicating that the stronger association of capital and labor income ranks and total income ranks has been important to the rising top 1% income share. Yet, it is not possible to directly compare these results to the relative importance reported in Figure 6, since the alignment coefficients are affected by monotone transformations in the marginal distributions, unlike our measure of homoploutia. Yet, both findings are inline.

inequality enabled top earners saving large shares of their wages and acquiring capital assets, receiving high income from those assets later on. A thorough study of these mechanisms, including a possible understanding of the lag between changes in labor income inequality and changes in homoploutia, would require detailed panel data, and is left for future work.

It is possible to characterize some of the changes in the nature of the homoploutic elite over time. We find two important transitions. First, women are increasingly more represented in the homoploutic elite. Until the 1980s only 10% of this elite was female, while nowadays it is about 30%. In addition, while in the overall population the share of married adults have gone down massively since 1970, it is still very high among the homoploutic elite. In other demographic aspects, age in particular, we find no clear changes among the homoploutic elite with respect to the overall adult population.

We also study the link between homoploutia and total income inequality in the United States during the past 35 years. The top 10% total income share increased between 1986 and 2020 by 10 percentage points, from 37% to 47% (Piketty, Saez and Zucman, 2020). We find that ceteris paribus, the increase in homoploutia has contributed 2 percentage points, or 20%, to this increase. These results suggest that homoploutia may have played a bigger role in increasing income inequality in the United States than the aggregate capital share. This complements the recent literature on the role of the capital share in the evolution of inequality in the past few decades (Piketty, 2014; Milanovic, 2017; Wolff, 2017).

The current trend of rising homoploutia is potentially unprecedented in modern times. It may have far-reaching implications for social mobility. Having the rich who are rich in terms of both property and skills may lead to the creation of an upper class that has little in common with the rest of the population and that is able, through significant investment in offspring, to transmit these advantages across generations. This, in turn, may lead, as explained, to even higher interpersonal income inequality. It is also possible that the observed evolution of homoploutia in the United States occurred elsewhere, potentially driven by rising labor income inequality (Hoffmann, Lee and Lemieux, 2020). A thorough study

of homoploutia worldwide exceeds the scope of this paper. An additional future step is studying the implications of homoploutia on optimal tax policy. It may well be that in the absence of homoploutia, taxation of capital and labor incomes is theoretically justified to be different from the realistic case, of substantial overlap between top capital-income recipients and top labor-income earners.

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A The topK-topL for Different Quantiles

We focus our analysis of homoploutia on the top10K-top10L, the share of top decile capital-income earners in the top decile of labor income (and the reverse). Yet, using the fine-grained data of the US DINA it is possible to consider the topK-topL in the United States for any percentile, using the methodology described above. Clearly, the top100K-top100L=100% by design. We also know that the top10K-top10L ranges between 15% and 30%. What about the quantiles in between? What about the very top?

The left panel of Figure A.1 below presents such homoploutia 'profiles' for selected years. It shows how the topK-topL depends on the percentile p for which it is defined. The profile is monotonically increasing between $p = 10$ and $p = 100$. It is flatter or moderately increasing between $p = 1$ and $p = 10$.[11]

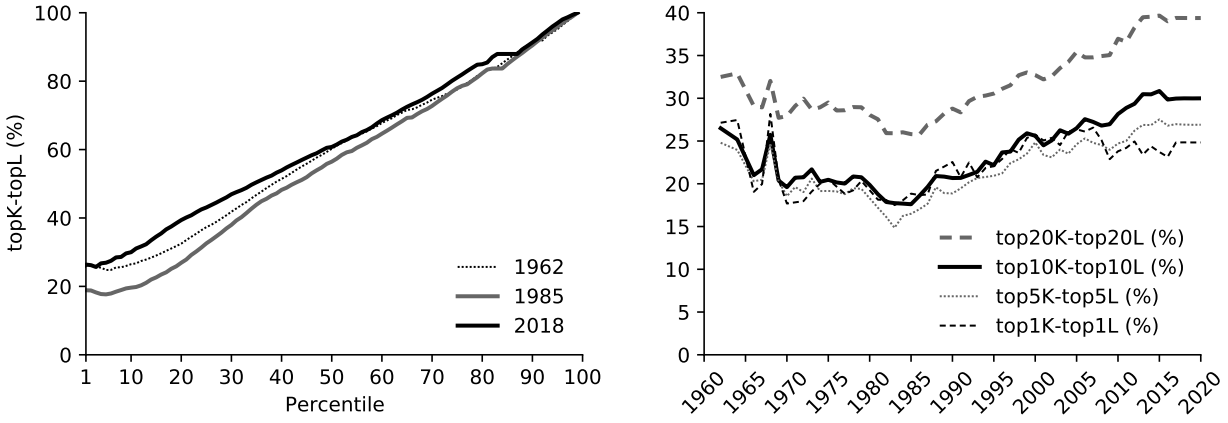

Figure A.1: Left: Homoploutia profiles – the dependence of topK-topL on the percentile p for which the top is defined (*i.e.*, for $p = 1$ it is top1K-top1L; for $p = 10$ it is top10K-top10L) for selected years; Right: The evolution of top20K-top20L, top10K-top10L, top5K-top5L, and top1K-top1L in the United States, 1962–2020 (based on the US DINA (Piketty, Saez and Zucman, 2020)).

The right panel of Figure A.1 depicts the evolution of homoploutia when considering four different symmetrical measures: top20K-top20L, top10K-top10L, top5K-top5L, and top1K-

[11] There is a noticeable discontinuity around percentiles 80–90 in some of the profiles. This could be due to the adjustments used when creating the US DINA data. Yet, we note that this artifact does not appear in all years, and does not seem to matter much qualitatively, given the similar trends in the right panel of Figure A.1.

top1L. It shows that the top20K-top20L and top10K-top10L follow an almost identical trajectory, with the top20K-top20L being about 10 percentage points higher. Within the top decile, the differences are much smaller. The top10K-top10L, top5K-top5L, and top1K-top1L all have similar levels in all years until the mid 2000s, when the top10K-top10L remains slightly higher than the other two measures. Yet, all the measures agree on the substantial increase of homoploutia between the mid-1980s and today.

B Labor and Capital Income Copulas

The measurement of homoploutia was done by studying the evolution of the top10K-top10L. We can have an even closer look at the evolution of homoploutia by looking at the copula of capital and labor income. The copula is the joint distribution of capital and labor income ranks. It can be represented as a bi-stochastic matrix $\mathbf{P} \in \mathcal{P}(N)$, where the element p_{ij} is the probability of occupying quantile j in capital income for those occupying quantile i in labor income, and N is the number of income quantiles. For example, the top10K-top10L is simply the element in the position $(10, 10)$ of the copula that represents the joint labor and capital income ranks, assuming a division into deciles. The top10K-bottom10L is simply the element in the position $(1, 10)$.

Figure B.1 shows such matrices for 1974, 1986, 1995 and 2018 using LIS data. First, it shows a typical shape, similar to characteristic copulas that represent intergenerational mobility, in which the diagonal and the elements near the diagonal are dominant (Jäntti and Jenkins, 2015). It also shows two important asymmetries: first, the top10K-top10L is more pronounced than the bottom10K-bottom10L. In other words, homoploutia is more pronounced than homophtocheia; second, the top10K-bottom10L is more pronounced than the bottom10K-top10L. This may be thought to be the typical feature of labor and capital copulas. As we argued, under classical capitalism, the top10K-bottom10L position will be quite important and even under modern capitalism, it is unlikely to entirely disappear. On the other hand, people who are very capital-poor are unlikely to get to high-paying wage position and to remain capital poor. So we can expect that that position will be rather vacant.

The noticeable asymmetry makes the typical shape of the labor-capital income copula somewhat different from widely used copula models in economics such as Gaussian, Gumbel or Plackett copulas (Trivedi and Zimmer, 2007; Bonhomme and Robin, 2009; Berman, 2022). Nevertheless, the literature widely considers the Gumbel copula as a good approximation

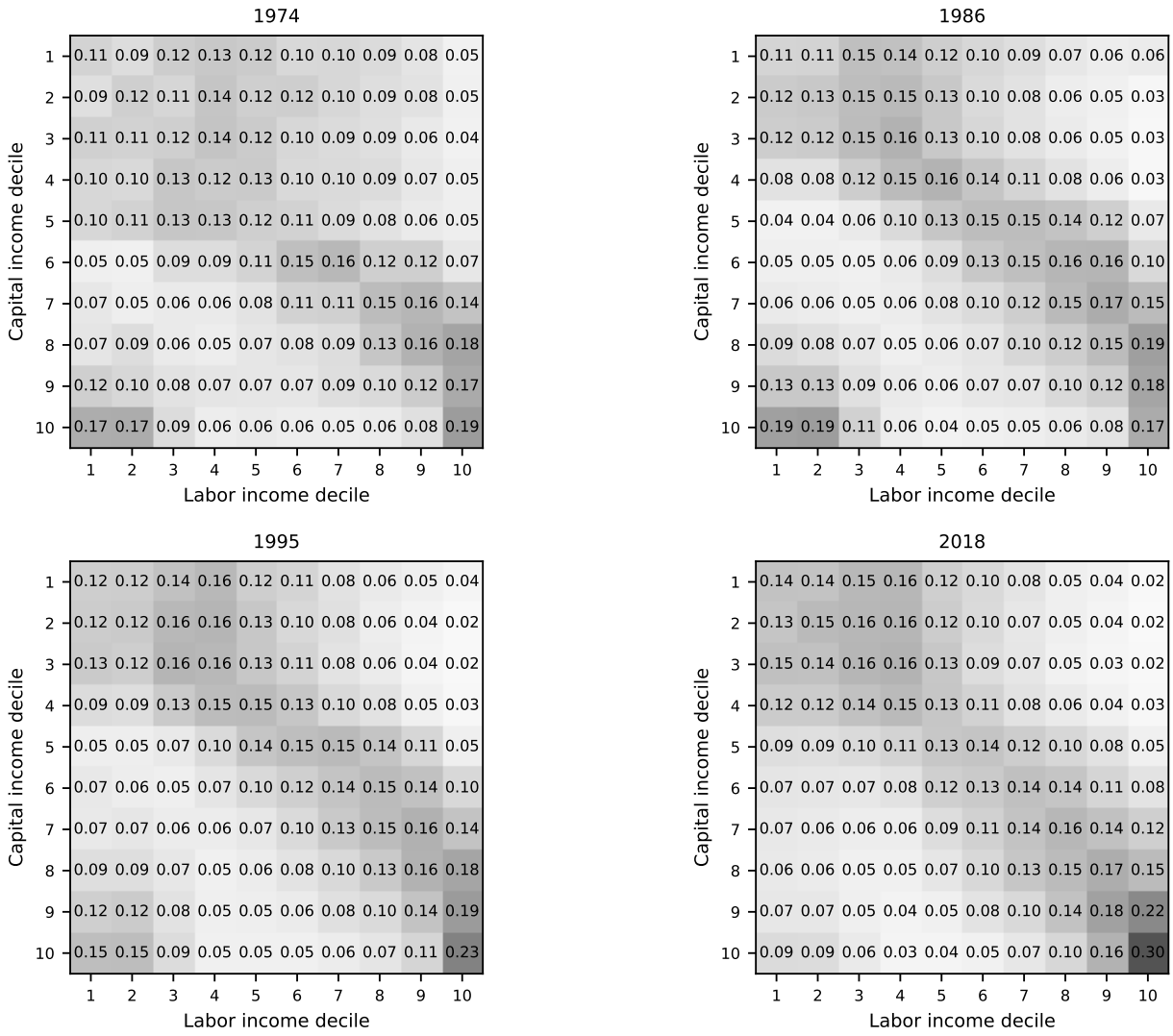

Figure B.1: Labor and capital income copulas for 1974, 1986, 1995 and 2018 in the United States based on LIS data (LIS, 2020).

for the joint rank distribution (Saez and Zucman, 2016; Alvaredo, Assouad and Piketty, 2019; Piketty, Yang and Zucman, 2019; Alvaredo et al., 2020). The approximation is more accurate when homoploutia is high, and less so when it is low, with stronger asymmetry. We follow this convention in the paper, but flag this potential issue. We further address it below.

The copulas in Figure B.1 indicate that while the top10K-top10L and the top10K-bottom10L changed substantially over time, changes outside the upper capital income deciles were

milder. The major increase of top10K-top10L in the past 35 years could have been accompanied by major changes in the entire copula. Since the matrices are bi-stochastic, the increase in homoploutia requires decreasing shares at other parts of the joint rank distribution. Yet, it is almost exclusively accompanied by decreasing shares of top capital-income earners in bottom labor income deciles, as depicted in Figure 2 in Section 3. This is an important finding that indicates stability in the copulas except for the placement of the top capital decile, which has tended to "emigrate" from the bottom labor decile into the top labor decile.

Figure B.2 illustrates that the rank correlation and the top10K-top10L are strongly related. There is a close-to-linear relationship between the two, which can be approximated by $H_{10,10} \approx 0.52\rho_{KL} + 0.1$, where ρ_{KL} is the rank correlation. There is also a similar, yet less steep, linear relationship between the rank correlation and the bottom10K-bottom10L.

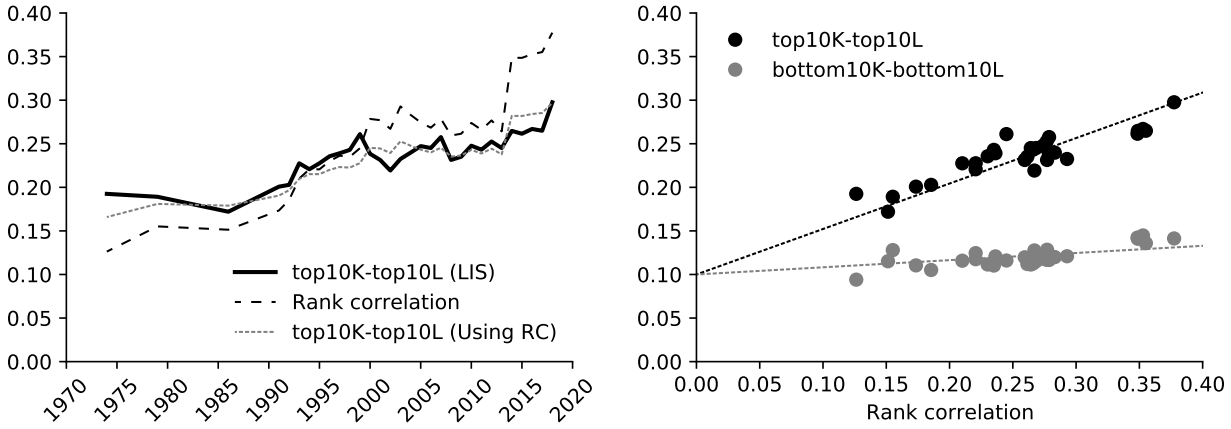

Figure B.2: The relationship between homoploutia measures and the rank correlation in the United States, 1974–2018. Left: The top10K-top10L (solid black) and the rank correlation (dashed black). The dotted gray line represents the top10K-top10L predicted by the linear relationship found between the rank correlation and the top10K-top10L; Right: The association between the rank correlation and the top10K-top10L (black) and between the rank correlation and the bottom10K-bottom10L (gray). The dotted lines are linear fits under the constraint that the top10K-top10L and the bottom10K-bottom10L are 10% for rank correlation of zero.

The strong relationship between these two measures suggests that the copula of labor and capital income ranks has a typical structure, or shape, as already shown in Figure B.1. This

was already used in the literature, for example to create total income distributions from separate labor and capital income distributions (Saez and Zucman, 2016; Alvaredo, Assouad and Piketty, 2019; Piketty, Yang and Zucman, 2019; Alvaredo et al., 2020). The most widely used form to capture this typical structure is by using the Gumbel copula, which uses a single parameter to describe the joint cumulative distribution function of labor and capital income ranks.[12]

We follow this convention. The rank correlation well represents homoploutia with the appropriate transformation ($H_{10,10} \approx 0.52\rho_{KL} + 0.1$). It can also be mapped one-to-one into the Gumbel copula parameter. Thus, there is a mapping of homoploutia into the Gumbel parameter. We use this approximation to study the impact of homoploutia on total income inequality (see Section 4).

The good characterization of realistic copulas using the Gumbel copula also shows that homoploutia and homophtocheia, the concept that the labor income poor are more likely to also be capital income poor, go together but only weakly. While the rank correlation had increased together with the top10K-top10L in the Unites States during the last 4 decades, the bottom10K-bottom10L stayed almost unchanged, with only a mild increase. Indeed, in the Gumbel copula the increase in the bottom10K-bottom10L with increasing rank correlation is much milder than for the top10K-top10L, in the realistic range of parameter values (see also Figure B.2).

[12] For income ranks u and v, and given a parameter θ, the Gumbel copula is $C(u,v) = \exp\left[-\left((-\log(u))^{\theta} + (-\log(v))^{\theta}\right)^{1/\theta}\right]$.

C Dataset Income and Unit Definitions Impact on Homoploutia

Figure 1 (Section 3) shows that the top10K-top10L estimates based on the different datasets are inline with one another. To further demonstrate the robustness of the results it is possible to use the DINA data to produce estimates using different income definitions, where the capital and labor incomes definitions are different from the baseline estimates. The DINA baseline top10K-top10L estimates use personal labor and capital factor income definitions, detailed in Table 1. We can also estimate top10K-top10L using 'personal pre-tax labor income' and 'personal pre-tax capital income', which also include social insurance contributions and income, and income payable to pension funds. A third specification adds capital gains to the personal pre-tax capital income.

Figure C.1 presents the top10K-top10L estimates using the different specifications. It demonstrates that the differences between the specifications matter little to the top10K-top10L estimates, and therefore, to the evolution of homoploutia.

According to the income definitions in Table 1 it is possible that diverting income from wages into capital income from pass-through and closely-held businesses, as discussed in Smith et al. (2019), will mechanically impact the estimated level and trend of homoploutia. Because this phenomenon is mainly restricted to the top 1% it is unlikely to have a large impact when looking at the top10K-top10L. To test that the observed trend in homoploutia is not driven by such diversion (mainly done for tax purposes (Piketty and Saez, 2003; Smith et al., 2019)) we conduct the following exercise: using the US DINA, we exclude the top 1% of the interpersonal income distribution from our sample and re-calculate the top10K-top10L (with and without updating the decile thresholds). The assumption is that diverting income from labor to capital is essentially restricted to the top 1% and characterizes top executives (Smith et al., 2019). This results in slightly lower homoploutia in levels. This is expected because the probability to be in the intersection of the labor income decile and the capital

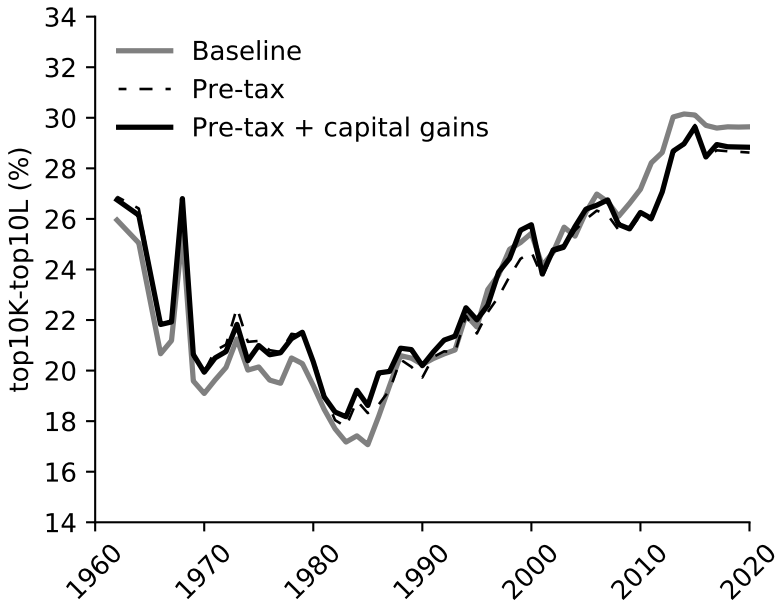

Figure C.1: Robustness of homoploutia estimates to changes in income definition. The baseline estimates (gray) are based on labor and capital factor incomes (see Table 1). The other estimates are based on 'personal pre-tax labor income' and 'personal pre-tax capital income' (dashed black), which also include social insurance contributions and income, and income payable to pension funds. A third specification (solid black) adds capital gains to the personal pre-tax capital income. All data are taken from the US DINA. See Piketty, Saez and Zucman (2020) for full documentation.

income decile is particularly high at the top 1%. However, this has no impact on the trends. The correlation between the estimated top10K-top10L with and without excluding the top 1% is above 0.99 between 1962 and 2020. This is presented in Figure C.2.

We perform an additional test to address the impact of the potential mislabeling of business income as either labor or capital income. In this case, we consider fiscal income in addition to personal factor income. Personal factor income accounts for a larger fraction of the total national income and therefore used in our baseline estimates above (Piketty, Saez and Zucman, 2018). Using fiscal income allows, on the other hand, fine decompositions by income source. We thus test the evolution of homoploutia once when considering all business income as a part of labor income, and once when considering all business income as capital income. In these specifications labor income is defined as the sum of wages and pensions, and capital

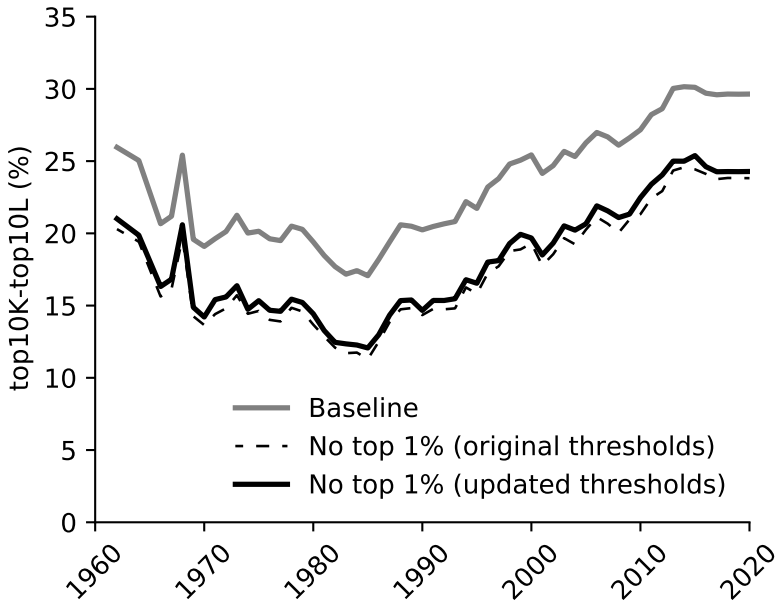

Figure C.2: Robustness of homoploutia estimates to the exclusion of the top 1%. We compare the baseline estimates (gray) to estimates of homoploutia after excluding the top 1% of total income from the US DINA in each year. After the exclusion we estimate the top10K-top10L (based on the remaining 99%) with and without updating the thresholds to be included in the top labor and capital income deciles (black lines).

income is defined as the sum of rents, interest income, dividends and capital gains. Business income is then added to either in the two different cases.

Figure C.3 shows the results of this test. The income definitions matter to the top10K-top10L estimates. Yet, the trend between 1970 and 2000 is almost identical in all three specifications, and the pairwise correlations between the series range between 0.77 to 0.85. This is particularly important for understanding the relevance of the diversion of incomes to equity, pass-through, and closely-held businesses from the mid-1980s onward. A bigger difference between the fiscal income series and the baseline series opens up after 2000, and is unlikely to be driven by potential mislabeling of business income, since the trend in both fiscal-income-based series remains similar after 2000. It is more likely that the difference in trend is due to other differences between factor and fiscal income definitions. In short, while the exact definitions of labor and capital incomes and the labeling of business income matter for the evolution of the top10K-top10L, potential mislabeling of business income cannot

explain much of the documented increase in homoploutia.

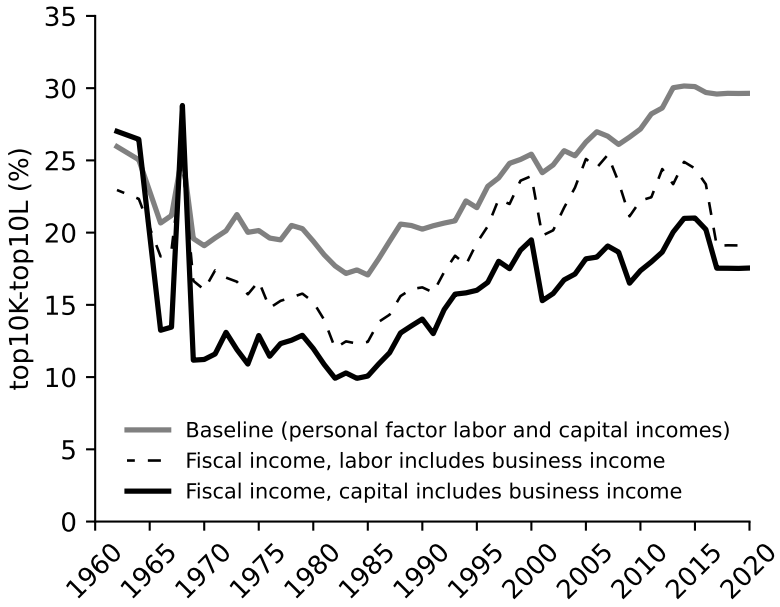

Figure C.3: The evolution of homoploutia with fiscal and factor incomes. We compare the baseline estimates (gray) to estimates of homoploutia when considering fiscal incomes: once when considering all business income as a part of labor income (dashed) and once when considering all business income as capital income (solid black). All data are taken from the US DINA. See Piketty, Saez and Zucman (2020) for full documentation.

Finally, we consider the case of homoploutia where capital income is replaced by wealth. This provides an alternative measure of homoploutia. It is important as it overcomes potential challenges in accounting for capital income. Figure C.4 uses US DINA data to compare the baseline top10K-top10L results to top10W-top10L: the share of adults in the top decile of wealth holders who are also at the top decile of labor income earners. The comparison shows very high similarity in levels and in trends. The key difference between those measures is that the top10W-top10L increased during the 1970s, whereas in this decade the top10K-top10L remained largely flat.

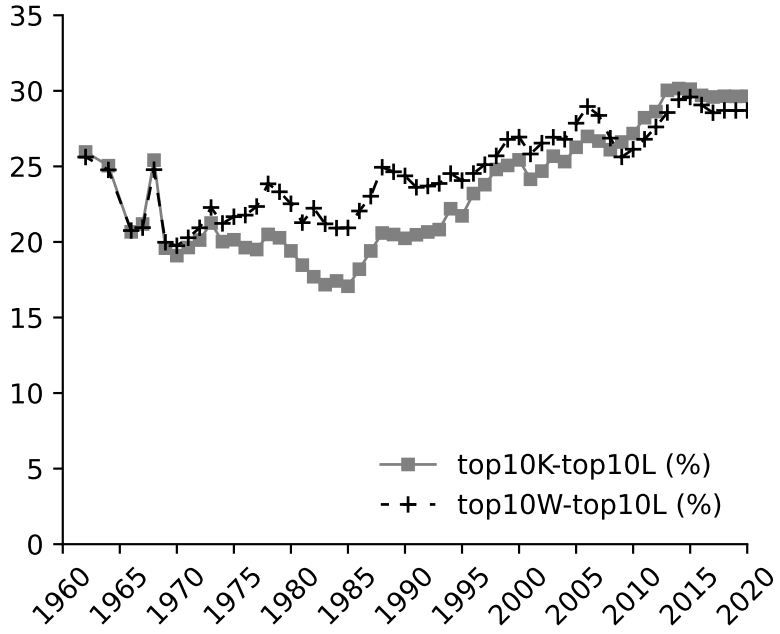

Figure C.4: A comparison between the top10K-top10L and top10W-top10L: the share of adults in the top decile of wealth holders who are also at the top decile of labor income earners. All data are taken from the US DINA.

D The Total Income Share of the Homoploutic Top

The main empirical result in this paper is that the relative size of the homoploutic top – quantified as the intersection between the top decile of capital-income recipients and labor-income earners (top10K-top10L or $H_{10,10}$) – has been increasing in the past few decades. Yet, it is theoretically possible for homoploutia to increase without a simultaneous increase of the share of total income received by the homoploutic top. That would potentially make the increase in homoploutia of less importance and less intuitive. Yet, in practice, the top10K-top10L and the share of total income of the homoploutic top indeed follow a very similar trend. This is presented in Figure D.1.

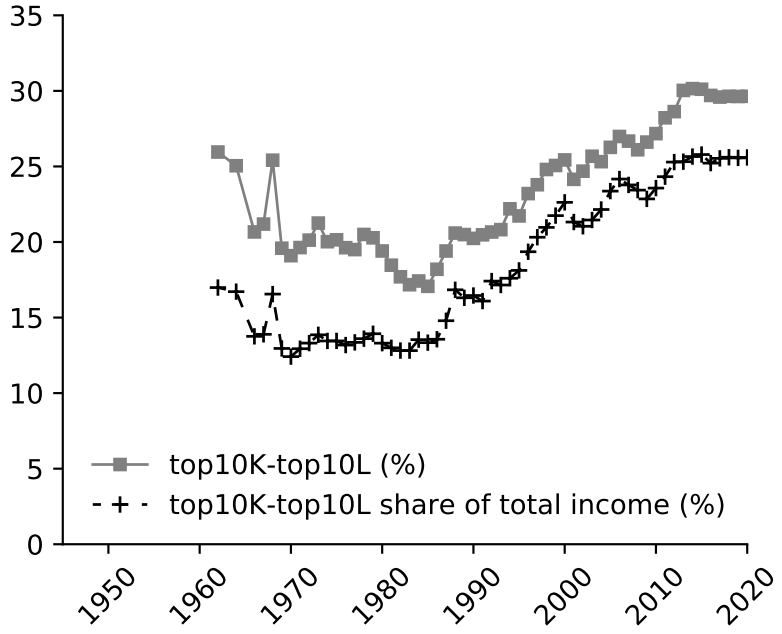

Figure D.1: Homoploutia and the share of total income of the homoploutic top. The gray squares are the baseline estimates of $H_{10,10}$ from the US DINA. The black crosses are the respective total income shares received by the top10K-top10L (also based on the US DINA).

E The Relationship between Homoploutia and the Top 10% Labor Income Share

Section 3.3 discusses potential mechanisms that may have led to the increase in homoploutia in the United States since the mid-1980s. By analyzing the statistical relationship between $H_{10,10}$, the capital share of income, the top 10% labor income share and the top 10% capital income share, we were able to shed light on which hypothesized mechanisms may be at play, and which are unlikely to be relevant. Table 2 shows that there is a strong and robust positive relationship between homoploutia and labor income inequality.

The strong association between $H_{10,10}$ and the top 10% labor income share found in Table 2 is further demonstrated in Figure E.1. It shows how the evolution of these two measures is almost identical after 1985. It also shows that adding the capital share of income and the top 10% capital income share does not provide a significant improvement to the statistical linear model, as indicated in Table 2.

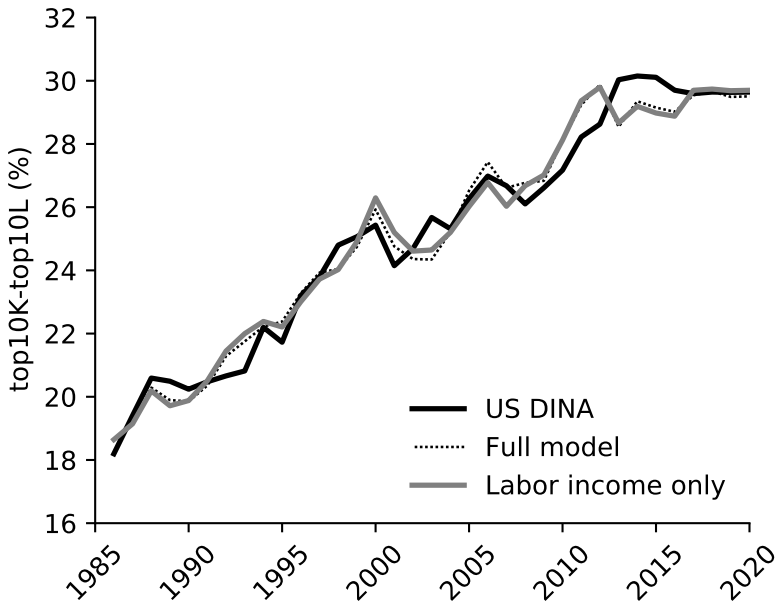

Figure E.1: The statistical relationship between homoploutia, the capital share of income, the top 10% labor income share and the top 10% capital income share. The black line is the baseline estimate of $H_{10,10}$ from the US DINA. The dotted line is the estimate of $H_{10,10}$ when using the linear model $H_{10,10} = \alpha + \beta_S S_i + \beta_L L_i + \beta_K K_i$, with the overall capital share of income (S), the top 10% labor income share (L) and the top 10% capital income share (K) for the period 1986–2020. The gray line is the estimate of $H_{10,10}$ when using the linear model $H_{10,10} = \alpha + \beta_L L_i$ for 1986–2020. The coefficients were taken from Table 2.