TOP INCOME SHARES IN GREECE FROM DICTATORSHIP TO CRISIS:
1967–2017

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The paper calculates the top income shares in Greece from 1967 (the seizure of power by the military dictatorship) until 2017 (the aftermath of the debt crisis). This long-run perspective allows for the examination of the relationship between inequality and institutional transformations, namely democracy, finance, and crisis. We find in particular that (a) transition to democracy did not affect the income share of the top decile, whereas social democracy had a significant negative impact; (b) financial development and liberalization substantially increased all top decile shares; and (c) debt crisis, consolidation, and recession increased the share of the upper ranks of the top decile.

JEL Codes: D3, O15

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1. INTRODUCTION

The political and economic determinants of income distribution are long debated issues in the political economy literature. In terms of top income shares, the influential works of Kuznets (1953) and Piketty (2001) have employed administrative tax data and Pareto distributions to estimate national time series. Building on their approach, a number of national studies emerged, such as those included in the collective volumes of Atkinson and Piketty (2007, 2010), as well as more recent works including, among others, Foellmi and Martinez (2017) for Switzerland, Alvaredo *et al*. (2018) for the Middle East region, Chancel and Piketty (2019) for India, and Bartels (2019) for Germany.

Other strands of the inequality literature have examined the impact of broad historical transformations, institutional settings, and economic events, such as transition to democracy, financial expansion, and economic crises. Democracy is often associated with improved opportunities for upward mobility and therefore could reduce inequality. However, the surveys of Gradstein and Milanovic (2004) and Acemoglu *et al*. (2015) do not confirm any empirical negative relationship between democracy and inequality. On the contrary, credit constraints play a critical role in theoretical models of inequality; therefore, financial liberalization could relax such constraints for the poor and provide better conditions for economic activity and success. Yet, the empirical findings of Roine *et al*. (2009) and de Haan and Sturm (2017) do not verify this relationship. Finally, economic crises initially reduce the incomes of the rich through the devaluation of financial assets but the subsequent recessions disproportionally hurt the poor (Roine et al., 2009; Atkinson and Morelli, 2011).

The present paper explores the above questions for Greece for the period 1967–2017. First we calculate the top income shares using administrative tax data, national accounts, and the Pareto distribution, and then we follow their evolution under different economic, political, and institutional arrangements. The first published series of top income shares in Greece were those constructed by Chrissis and Livada (2013) for 1957–2010 with a similar approach. Our main difference is that we use the individual income instead of the household income from tax data and we provide a more detailed and explicit choice of variables from national accounts data, resulting in rather higher shares, although with broadly similar trends (see appendix for a comparison with this and other, survey-based, studies). In particular, we report the income share of the top 10 percent of the population (top decile) which we decompose further to the top 10-6 percent, the top 5-2 percent, the top 1 percent (top percentile), and the top 0.1 percent. This provides an overview of the aggregate distribution of pre-tax income between the "broadly" rich and the rest of the population as well as the internal composition between high, middle, and lower ranks of the rich.

This half-century-long perspective allows an examination of the extent to which broader historical developments have affected the evolution of income distribution. Indeed, during this long period, Greece has undergone substantial political and economic transformations that would presumably play critical role. To frame these transformations, we divide our period into six shorter ones, according to more or less discreet political and institutional arrangements. Therefore, we have the "Dictatorship" 1967–1974, the "Democracy" 1974–1981, the "Social Democracy" 1981–1989, the "Stabilization/Finance" 1989–2001, the "Eurozone" 2001–2009, and the "Crisis" 2009–2017. Evidently, this periodization has some degree of arbitrariness and the periods overlap, but it provides adequate ground for our purposes. Moreover, the respective cutoff dates are broadly consistent with structural breaks in our income shares series.

Our main findings can be summarized as follows: The transition to democracy in 1974 did not have any significant impact on the top decile share as it broadly continued the trends that were already present in the dictatorship. However, the period of social democracy achieved a major redistribution away

from the top decile leading to historical low levels. This was reversed during the economic stabilization and financial development and liberalization of the 1990s when the top decile fully recovered its previous losses. Finally, the debt crisis and the subsequent recession were beneficial for the top decile (especially the higher ranks); however, the recovery seems to work at the opposite direction.

The next section presents the method for combining tax data and national accounts to construct the income shares, and Section 3 reports the results for each segment of the rich population throughout our period. The final section discusses the findings and offers some conclusions and questions for further research. The appendices provide econometric tests for the cutoff dates, comparison with other studies for Greece, comparisons with selected countries, and the evolution of macro-variables.

2. Method

2.1. *Tax Data*

We calculate the top income shares combining administrative tax data with national accounts data. The former were published by three different authorities, depending on the period: from 1967 to 2002 we use data from the Hellenic Statistical Authority (ELSTAT), from 2003 to 2011 we use the tables published by the Ministry of Finance, and since 2012 the tables of the Independent Authority for Public Revenue (AADE). In fact, the publication of tax data started as early as 1957 but we omit the first decade and begin in 1967 because from this date onwards tax data were declared (and published) on an individual basis.[1] Beginning from this year makes our results homogeneous, or at least this is the earliest we can apply the individual income approach of this study without seriously compromising the validity of our results.

An additional source of concern is income from financial assets, interest, and dividends, which was withheld in the source and was therefore absent from tax data until 2013. This changed in 2014 generating a break in our series and a sudden jump in the shares of the higher ranks (top 1 percent and 0.1 percent). Still, this does not change much the share of the other segments of the top 10 percent. We chose to report the calculations for the period 2014–2017 to show the evolution of the top income shares in the aftermath of the crisis, keeping in mind that they are not directly comparable with the series up to 2013. Other minor changes in income taxation may have resulted in sudden drops or jumps of the top income shares in specific years; however, such changes could not possibly affect the increasing or decreasing trends that we observe.

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[1]The problem with pre-1967 data is that the wife's income (above some threshold depending on the source) was added to husband's income and taxed accordingly. This practice was abolished in the first months of the dictatorship with the income tax reform 239/1967 that effectively established the individual-based income tax that is still in place.

2.2. *Control Total for Population and Income*

Converting individual incomes to income shares requires additional metrics for total population and income. Starting with population, it is evident that we cannot use the number of tax filers because many individuals did not submit tax declarations. Therefore, we use the adult population (18 or above) from Eurostat, assuming that the income of non-filers is zero. This latter assumption does not affect the estimated shares if the non-filers do not belong to the top income groups.

Aggregate (control) income cannot be derived from administrative data either because certain incomes are tax-exempted and not declared (such as particular transfers and incomes below some threshold) or simply because of tax evasion and fraud. Therefore, we need to turn to national accounts data of the household sector (S14) and choose the relevant components to derive the control income (i.e., the total income before taxes and after social security contributions accruing to individuals and households from all sources, independently of tax treatment and evasion). This is derived from Eurostat since 1995 following the ESA 2010 classification and from the Hellenic Statistical Authority for 1988–1995 with different classification. Fortunately, we can map the components in the different classifications and, thanks to the overlapping year 1995, we can apply backwards the growth rates and construct a single series for the control income.

The specific components of the Household sector accounts that build up the control income are the following. We begin with B2A3N "Operating surplus and mixed income, net" that includes income from individual business and self-employment. In terms of 1988–1995 accounts, this is equivalent to N12 "Net operating surplus." Still, as we care about actually received income, we must subtract the component P12 "Output for own final use" because the latter refers to imputed rents, R&D, etc. that does not generate any kind of receipts. Unfortunately, 1988–1995 accounts do not report the respective component for households; therefore, we approximate it applying the average ratio of P12 to Total Output (P1), which is broadly stable for the period 1995–2007.

Next we add labor income from D1 "Compensation of employees (received)." The equivalent amount in 1988–1995 accounts is R10 "Compensation of employees" which is itself the sum of three separate components (R101 "Gross wages," R102 "Actual social contributions," and R103 "Imputed social contributions"). Income from pensions and social benefits is given by D62 "Social benefits other than social transfers in kind" while for 1988–1995 derives from General Government sector, R64 "Social benefits."

To remove employers' and workers' social security contributions, we subtract D611 "Employers' actual social contributions," D612 "Employers' imputed social contributions," and D613 "Households' actual social contributions." For 1988–1995, we must again turn to General Government sector and use the components R62 "Actual social security contributions" and R63 "Imputed social security contributions."

Finally we add specific elements of D4 "Property income (received)." In particular, until 2013 we include only D45 "Rents (received)[2]" as the other compo-

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[2]Note that pre-1995 accounts do not report rents separately; therefore, we impose the average ratio of rents to property income.

TABLE 1
Mapping of Accounts and Derivation of Control Income

National Accounts 1988–1995		National Accounts 1995–2017
N12—Net operating surplus	Plus	*B2A3N—Operating surplus and mixed income, net*
P14—Output of non-market services	Minus	*P12—Output for own final use—R*
R10—Compensation of employees	Plus	*D1—Compensation of employees—R*
sum of: R101—Gross wages—R R102—Actual social contributions—R R103—Imputed social contributions—R		
General government—R64—Social benefits	Plus	*D62—Social benefits other than social transfers in kind*
General government—R62+R63 Social security contributions	Minus	*Social security contributions*
		sum of: D611—Employers' actual social contributions D612—Employers' imputed social contributions D613—Households' actual social contributions
Rents	Plus	*D45—Rents—R*
Control income 1988–1994		*Control income 1995–2013*
	Plus	*D41—Interest—R*
	Plus	*D421—Dividends—R*
		Control income 2014–2017

nents D41 "Interest (received)," D421 "Dividends," and D422 "Withdrawals from the income of quasi-corporations" were not required in the tax declarations (taxes for interest and dividends were withheld in source). Since 2014, however, interest and dividends were also included in the tax declarations; therefore, the respective components are added in the control income aggregate. The derivation of control income is presented in Table 1.

The main problem arises for the years 1967–1987 that we have only GDP but not detailed national accounts data. To construct the series of control income for these years, we apply the average income/GDP ratio of the years 1988–2017. This linear extrapolation requires stationarity of the ratio, which is confirmed by the KPSS test with intercept only (Kwiatkowski et al., 1992) at all significance levels with an LM statistic of 0.163 (note that the standard Augmented Dickey Fuller test rejects the unit root hypothesis at the 10 percent level but does not reject it at the 1 percent and 5 percent levels).

The control income of the whole period is higher than declared income, even more so in the earlier years. If non-declared incomes do not belong to the top income groups, then our calculations are precise. Otherwise, our calculated income shares are underestimated.

A final, and perhaps the most important, issue about the validity of our series is tax evasion. As both the persons and their respective incomes are derived from
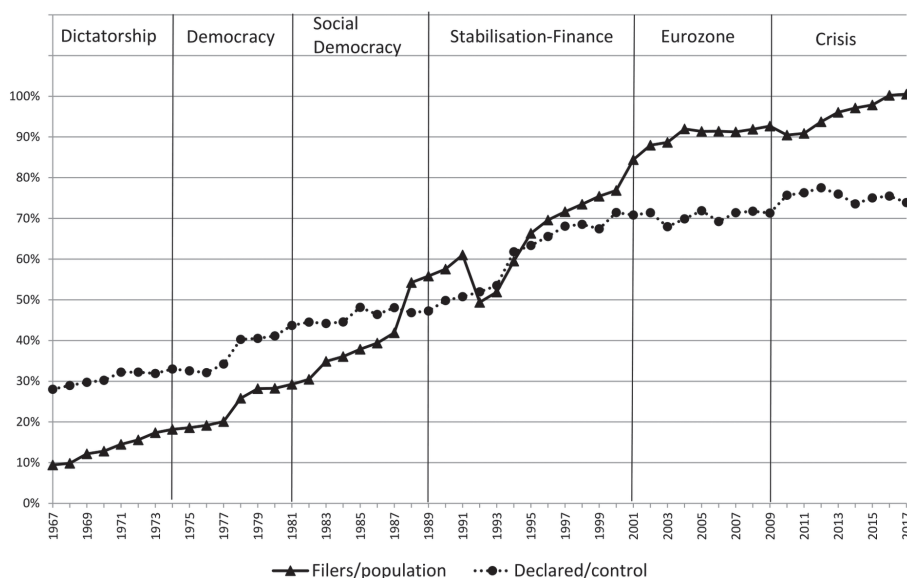
Figure 1. Tax Compliance

Notes: The ratio filers/population is the ratio of individual tax returns to control (adult) population. The ratio declared/control is the ratio of declared income to control income.

administrative data, any systematic change in their tax compliance would introduce some bias in our calculations. To begin with, this is a standard problem with administrative tax data, where individuals have a clear incentive to understate their incomes, and cannot be answered in any straightforward way. To the best of our knowledge, none of the studies using similar sources has pursued this issue, because there are no data to support or deny this assumption. Note, however, that the problem does not stem from tax evasion in general but from tax evasion by the top income ranks. To the extent that the rate of tax compliance (i.e., declared/actual income) of these population groups remained constant, the calculation of their income shares would be consistent, albeit underestimated, regardless of the tax evasion of the remaining population (because we use the control income as denominator).

Evidently, we cannot measure directly this rate of tax compliance; therefore, we use an indirect way. Figure 1 shows the evolution of two ratios that serve as rough measures of tax compliance: individual tax returns to control population (filers/population) and declared income to control income (declared/control).

As we can see they both increased substantially throughout our period. In 1967 about 10 percent of the adult population filled a tax return, whereas in 2017 the total adult population did so. As a result, the top decile share is derived by applying the Pareto distribution to the total number of filers in the first couple of years, falls to 50 percent of filers in 1977, 20 percent in 1992, and reaches 10 percent in 2002. In terms of declared income, some 30 percent of the control income was declared in 1967 and some 75 percent in 2017. This much faster increase of tax filers (90 percentage points) compared to declared income (45 percentage points) implies that additional filers were well below the average income and evidently even more so

compared to the top incomes. Far from proving the stability of top incomes' tax evasion, this finding indicates that the observed progress in tax compliance is mostly an outcome of the gradual introduction of lower income population into the tax records, rather than of any systematic change in the tax evasion behavior of the top income groups. Variations in this behavior are still possible, although we find it unlikely they affected the trends of the income shares in any significant way.

Overall, our data series is far from perfect and because of underestimation biases they should be better viewed as lower bounds of the respective shares. We believe this is the best that administrative and national accounts data have to offer. At any rate, our major concern is the direction of change of the top income shares following major political/institutional arrangements, rather than their exact level for each individual year.

2.3. *Pareto Approximation*

Income brackets vary considerably between years and do not generally coincide with the percentiles we are trying to estimate. Following the standard procedure of similar studies, we apply the Kuznets–Piketty approach assuming that top incomes are well described by the Pareto distribution.

In brief, given a population with incomes above some threshold k, the Pareto distribution defines a cumulative distribution function $F(y)$ that gives the share of population with income below y:

$$F(y) = 1 - \left(\frac{k}{y}\right)^a, \quad k > 0, \quad a > 1,$$

where a is the parameter that determines the shape of the distribution.

Differentiating $F(y)$ with respect to y, we obtain the density function $f(y)$ of the distribution, i.e., the share of population with income exactly y:

$$f(y) = \frac{ak^a}{y^{1+a}}.$$

The average income $E(y)$ of individuals with income greater than k is given by:

$$E(y) = \int_k^\infty yf(y) = \frac{a}{a-1}k \equiv bk.$$

According to the above equation, the ratio $E(y)/k$ is equal to a constant $b \equiv a/(a-1)$. Therefore, by setting any arbitrary k we can directly observe $E(y)$ from tax data, calculate the parameter b (or a), and derive the relevant income shares.

3. Results

3.1. *The Top Decile*

The evolution of the top decile income share is shown in Figure 2. In the early years of the dictatorship, it was close to 29 percent of total income but fell to about
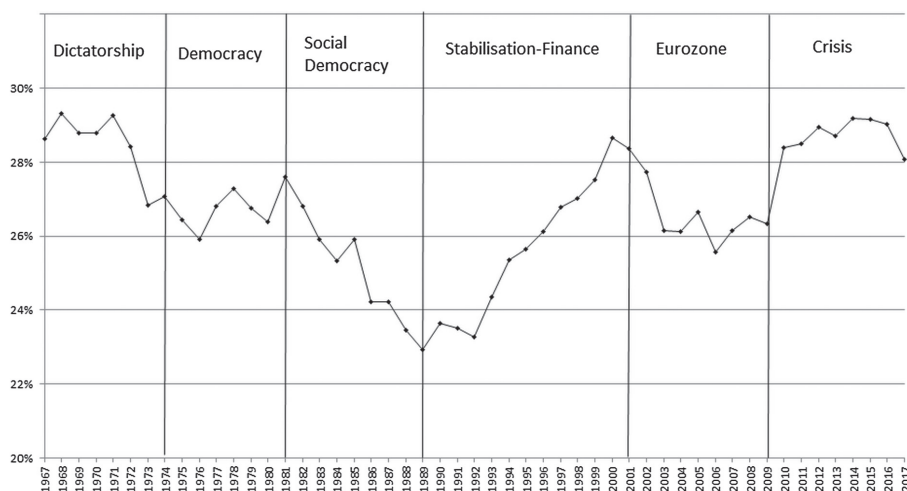
Figure 2. Income share of the Top Decile

27 percent in the last 2 years of the regime (1972–1973). Interestingly, this drop did not continue after the restoration of democracy (1974) and the top decile share fluctuated around this level until the early 1980s. Democracy did not trigger any radical redistribution, at least in the aggregate share of the top decile.

Redistribution did happen only after the social democratic government took office in 1981 and generated a major and consistent decline of the top decile share. The share of the top decile fell to 23 percent by 1989, which was the historical low of the whole period.

However, this was reversed in the next decade that was particularly beneficial for the top 10 percent: during the stabilization policies of the early 1990s and the subsequent financial expansion, the top decile share fully recovered its previous losses and reached about 29 percent at the turn of the century.

This did not last long, as the early years of the formal accession into the Eurozone resulted in a drop of the top decile share to about 26 percent, something uncommon to the European experience (see appendix). The share stabilized around this level until the eruption of the debt crisis in 2009–2010.

Following the official bailout and a series of aggressive fiscal consolidation and labor market deregulation policies, the share of the top decile jumped above 28 percent in 2010 and remained around this level before falling again with the recovery in 2016.

The changes in the evolution of the top decile share are confirmed by the Bai–Perron test that identifies breaks in both 1981 and 1990 but not in 1974. The same test also finds breaks in 2003 and 2010 capturing the end of the rising shares during the Eurozone period. Similarly, Markov regime switching identifies the period 1984–1995 as the "low" regime of the top decile share, broadly corresponding to the decline during Social Democracy.
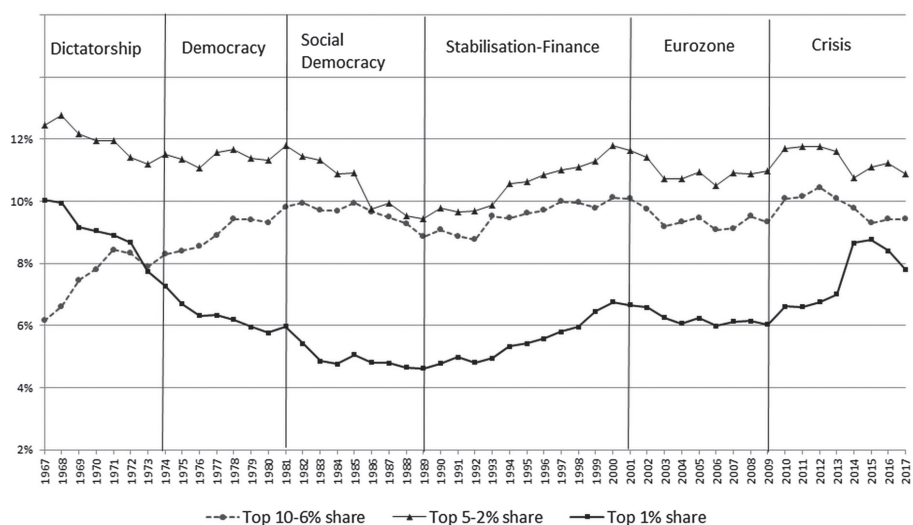
Figure 3. Composition of the Top Decile

3.2. *Inside the Top Decile*

The aggregate picture we described in the previous section hides a lot of internal redistributions among the different ranks of the top decile. Figure 3 presents these differences separating the top decile to the bottom half (i.e., the top 10-6 percent), the middle 5-2 percent, and the top 1 percent.

As we can see, during the dictatorship, it was the upper half (5-2 percent and 1 percent) of the top decile that suffered the major income losses, while the bottom half (10-6 percent) made substantial gains, especially in the earlier years. The restoration of democracy continued a similar trend, with the exception of the share of the "middle" rich (5-2 percent) that was stabilized.

It is evident that during the dictatorship and the restoration of democracy (1967–1981), changes in the income distribution inside the top decile were much more intense than changes in the aggregate share of the top decile. In quantitative terms, the upper rich (top 1 percent) lost about four percentage points and the middle rich (top 5-2 percent) lost about half point of national income. Of these, about three-and-half points went to the lower rich (top 10-6 percent) and the remaining one point to the 90 percent.

As we already saw in the previous section, the aggregate share of the top 10 percent declined substantially during the social democratic period. In the early (more radical) years, the major loses were concentrated in the upper half of the top decile (5-2 percent and 1 percent) leaving the bottom half stable. This changed in the later years of Social Democracy when the bottom half also began to decline, while the top 1 percent stabilized its share. Throughout the social democratic period 1981–1989, the top decile reduced its share by almost five percentage points, half of which were lost by the middle rich (top 5-2 percent), whereas the lower rich (10-6 percent) and the upper rich (top 1 percent) lost around one point each.
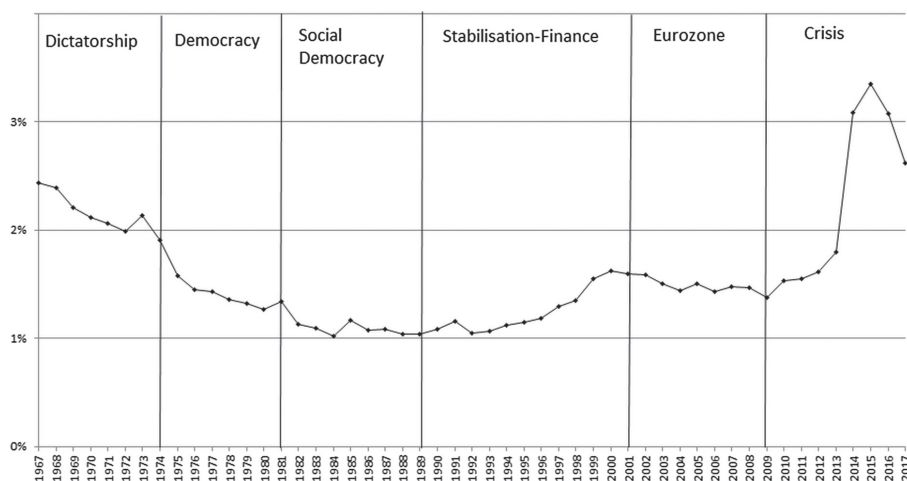
Figure 4. Top 0.1 Percent income Share

Changes in the internal distributions of the top decile income came to an end by the late 1980s. The substantial increase since the 1990s was more or less similar among the different ranks of top incomes. Specifically, by 2001 the top decile had gained five-and-a-half points of national income. Each of the middle and upper rich gained more than two percentage points, whereas the lower rich gained a little more than one percentage point.

Since the debt crisis, we observe an initial increase of the top decile share that seems to disappear as the recession moves forward. More specifically, the top 10-6 and 5-2 percent shares started falling around 2012–2013 and stabilized after the recovery in 2016. The top 1 was proven more resilient and kept rising until 2015, to decline later.[3]

Consistent to our visual observations, the Bai and Perron (2003) test finds structural breaks for the top 5-2 and 1 percent during the democracy period, 1977 and 1975 respectively, capturing the stabilized share of the former and the deceleration of the declining share of the latter. For the top 10-6 percent, the first structural break arises during social democracy, in 1982, reflecting the stabilization of the previously increasing share. The recovery of the income shares is captured as early as 1989 for the top 1 percent followed by 1993 for the top 10-6 percent and 1994 for the top 5-2 percent. According to Bai–Perron test, the recovery ends in 2003 for the top 10-6 and 5-2 percent and in 2004 for the top 1 percent; however, it is clear from the graph that this end arrived by 2000. Additional breaks are identified in 2010 for the top 10-6 and 5-2 percent. Note also that the Bai–Perron test finds a break in 1986 for the top 5-2 percent, probably because of the sudden drop.

Markov regime switching marks as "low" regime (i.e., low average share) the period 1967–1976 (mostly the Dictatorship years) for the top 10-6 share, reflecting the increasing share later largely attributed to internal redistributions among the

[3]Note that the jump of the top 1 percent share in 2014 is because of the break in our series as the incomes from interest and dividends were included. See Section 2 for details.

top decile. For the top 5-2 share, the "low" regime covers the years 1986–1994 that is broadly similar to the Social Democracy period. Finally, the "low" regime for the top 1 percent is the whole post-Dictatorship period 1974–2017.

3.3. *The "Ultra-Rich"*

As we can see in Figure 4, the share of the top thousandth (0.1 percent) of the population evolved similar to the top percentile. In the beginning of our period, it stood at around 2.5 percent of total income. This dropped consistently throughout the dictatorship and continued to do so during the restoration of democracy and the first years of social democracy, evidently at a slower pace. It remained constant around 1 percent for almost a decade and rose to 1.5 percent during the financial expansion of the 1990s. It stabilized around this area during the Eurozone period and rose further during the crisis.

Again, the jump in 2014 is explained by the break in our series (see previous footnote) and the inclusion of income from financial assets (interest and dividends). Apparently these are significant income sources for the ultra-rich, and we can safely assume that their exclusion before 2014 results in a substantial underestimation of their income share.

The structural breaks identified by the Bai–Perron test are 1975, reflecting the deceleration of the declining trend, 1987, capturing the stabilization and subsequent recovery and 1999 that was the end of the recovery. The test also identifies 2011 as a structural break, capturing the positive effects of the crisis on the income share of the top ranks of the rich. A similar picture emerges from the Markov regime switching that finds the "low" regime in the period 1975–2012.

4. Discussion and Conclusion

The paper examined the evolution of the top income shares in Greece in light of substantial historical transformations that took place in a period of half-century, mainly the restoration of democracy, the financial expansion, and the crisis. We found that major events had substantial impact on the income share of the rich. Below we put our findings in context and suggest possible directions for further research.

During most of the Dictatorship period, the top decile share was constant at relatively high levels and begun falling only in the last couple of years. What is more striking though is the internal distribution among the top decile with the bottom half (top 10-6 percent) making significant gains, mostly at the expense of the top 1 percent that was losing ground throughout the dictatorship. Interestingly, the share of the bottom half reduced pace in the last couple of years of the dictatorship resulting in the fall of the aggregate top decile share. This may reflect the liberalization attempt of the regime or the different redistributive mechanisms used by dictatorships such as cash transfers as opposed to public goods provisions that are more common under democracies (Kamas and Sarantides, 2019).

The latter explanation is supported by the fact that similar trends continued during the Democracy period, but the aggregate top decile share remained constant. Democratic institutions, market openness, and—most importantly—substantial

increases of the minimum wage (well above inflation) did not seem to pay-off for the bottom 90 percent during the early years of Democracy. There is no straightforward explanation for the failure of democracy to deliver on income redistribution grounds, although potential answers may consider the persistence of de facto political power as described in the concept of captured democracy (Acemoglu and Robinson, 2015).

Things changed in the Social Democracy period, when the decline of the top 10 percent share is quite evident. So why did Social Democracy succeed where initial Democracy failed? After all, the socialist government faced similar adverse economic conditions (stagflation after the second oil crisis) and made extensive use of the same re-distributional device of the minimum wage. The main difference is that the socialist government introduced many liberal reforms in the civil rights, free unionism, wage indexation, and massive hiring in the public sector. All these combined could have shifted the balance of de facto political power and made a difference in terms of income distribution.

The next decade witnessed an impressive recovery of the top decile share across all its ranks. The 1990s begun with "traditional" recessionary stabilization policies (monetary and fiscal contraction) but were soon replaced by the rather "unconventional" exchange-rate-based-stabilization policy which implies fixing the exchange rate, bringing down imported inflation and allowing lower interest rates by removing currency uncertainty (Detragiache and Hamann, 1997). Consistent to that, the period was also characterized by increased financialization, as exposure to international capital markets fueled domestic credit expansion (and current account deficits). Our findings suggest that improved financial conditions did not support the upward mobility of the poor through the relaxation of income-related credit constraints. On the contrary, it was the rich population that benefited the most from the financial conditions of the period. This is in line with de Haan and Sturm (2017) who find that financial development and liberalization increase inequality, especially under weak political institutions.

The increase of the top decile share during the Crisis and its decline since the recovery were rather expected. A direct outcome of fiscal consolidation was cuts in transfers that hurt mostly low-income earners. In addition to that, an "internal devaluation" policy was pursued targeting nominal wage cuts as a means for lowering domestic prices and the real exchange rate (as participation in the Eurozone did not allow for currency devaluation). This was achieved through labor market deregulation and reduction of the minimum wage that reinforced income inequality. In light of the above, the increase of the top income shares seems rather moderate. What we miss here is income from financial assets (interest and dividends) that would presumably decline at the first stages of the financial crisis and could have an equalizing effect. Unfortunately, income from these sources was not reported before 2014.

A final comment is reserved for public debt, a long-lasting issue for Greece that escalated into the recent debt crisis. As we show in the appendix, where we present the evolution of three macroeconomic variables (namely public debt, inflation, and GDP growth), there is no strong correlation between these variables and the top income shares. For debt, in particular, we can see that its initial rise took place in the 1980s (a period of declining top decile share), whereas it stabilized since

the mid-1990s (a period of rising top decile share) implying a negative relationship. In principle, public debt carries contradictory effects on inequality. Debt-financed social transfers and public-sector hiring could decrease inequality, whereas interest payments to domestic bond-holders could increase inequality. As in our case interest is excluded for most of the series, only the former effect holds, providing some grounds for the negative relationship. However, this is not straightforward because the correlation between debt/GDP and top income shares for our whole period is weak but positive. It may be true that transfers and hiring can affect public debt and inequality to opposite directions, but other factors such as external shocks, GDP growth, and fiscal institutions are far more important for the evolution of debt/GDP ratio with less obvious implications for income distribution. Even if we narrow our time horizon to the 1980s decade, it may be misleading to look only at the top decile and ignore internal redistributions. As we already discussed, it was the top 5-2 percent that suffered the major losses during the 1980s, whereas the share of the upper ranks (top 1 and 0.1 percent) fell only in the first years (1981–1984) and stabilized afterwards; meanwhile, debt kept on rising. At any rate, a more definite answer concerning the relationship between debt and inequality would require further empirical research that falls beyond the scope of this paper.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article at the publisher's web site:

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