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Article

# Freedom and equality in democracies: Is there a trade-off?

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## Abstract

In political philosophy, economic theory and public discourse, there is a seemingly endless debate on what the essence of equality and freedom is and what relation between the two is essential to a good political order. Views range from the conviction that too much socio-economic equality jeopardises freedom to the position that a certain level of equality is necessary for the proper realisation of freedom. Building on these conflicting normative claims, we look at data from more than 50 established and emerging democracies for a period of more than 20 years to investigate whether there is indeed a trade-off between freedom and equality or whether they are mutually reinforcing. In the process, we distinguish between two types of equality – political and socio-economic. Our findings suggest that there is a positive relationship between freedom and both types of equality – even if we control for the level of economic development.

## Keywords

Freedom, political equality, socio-economic equality, trade-off, comparative politics, democracies

There is little disagreement among political philosophers, democratic theorists or empirical researchers of democracy that freedom and equality are the two core principles of liberal democracy. What is highly disputed, however, is the meaning of the two democratic principles and the proper relation between them that makes for a good political order. Building on centuries of political thought, more recent views on this question range from the firm conviction that too much socio-economic equality jeopardises political and individual freedom (Nozick, 1974; von Hayek, 1944, 1960) to the position that a certain level of socio-economic equality is necessary for the proper realisation of freedom (Dworkin, 1981; Phillips, 2004; Rawls, 1971; Sen, 1993).

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In short, normative conceptions range from a trade-off<sup>1</sup> between the two principles to one being a necessary condition for the other.

The purpose of this paper is twofold. First, we present the most prominent and relevant perspectives in this debate and draw an ideal typical distinction between a liberal-libertarian and an ‘equalitarian’ camp.<sup>2</sup> On this basis, we deduce conflicting normative assumptions on the relationship between political freedom and two types of equality – political and socio-economic – in democracies. In the second part of the paper, we put these assumptions to an empirical test using a sample of more than 50 established and emerging democracies for a period of more than 20 years in order to investigate whether there is indeed a trade-off between the two core principles of democracy. Our analyses show that – even if we control for economic development – there is a positive association of freedom and political as well as socio-economic equality, contradicting normative assumptions in political philosophy of a trade-off between freedom and equality.

## **Tocqueville’s trade-off between freedom and equality – and its opponents**

Tocqueville’s book *Democracy in America* ([1835/40] 1994) is probably the most obvious example of a work in democratic theory that identifies a trade-off between freedom and equality. Tocqueville links this trade-off directly to democracy and its effects on the two principles and their association: ‘There is in fact, a manly and lawful passion for equality that incites men to wish all to be powerful and honored. [...] Not that those nations whose social conditions is democratic naturally despise liberty; on the contrary, they have an instinctive love of it. But liberty is not the chief and constant object of their desires; equality is their idol’ (Tocqueville, [1835/40] 1994: 53). Tocqueville sees a fundamental tension between freedom and equality in general and between majoritarian democracy and individual freedom in particular. The relentless drive towards political and social equality in democracies raises the threat of a tyranny of the majority, confronting the people with the choice between democratic freedom and democratic tyranny. The problem of America’s democracy, in particular, is the unrestricted power of the majority. Too much political equality in politics, society and economy weakens the institutional guarantees for individual and minority rights.

Tocqueville’s argument rests on the assumption that individuals have a clear preference for equality. The same assumption holds at the macro-level of the political order. Democracy unleashes struggles among groups and individuals alike for more equality. It triggers political action for the equalisation of power, property and status among citizens at the expense of freedom. Therefore, every democratic political order has to institutionalise controls to secure freedom in order to prevent a tyranny of the equality-driven majority.

Rousseau’s work ([1762] 2003) constitutes the antipode to the trade-off argument in classical political philosophy. What is relevant for our purposes here is Rousseau’s argument that people can only be free if they remain politically equal. Political equality, in turn, can only be achieved if social inequality is as little as possible. Men are essentially free and equal in the ‘state of nature’, but the progress of civilisation and the inequality arising from private property destroyed both – first equality and then freedom. In order to restore the complementarity of freedom and equality, a form of direct democracy needs to be established whereby citizens constitute a collective body capable of protecting and securing both principles. Here, we also find a clear distinction between two types of equality: political equality, in the form of direct democracy incorporating all citizens, and socio-economic equality, which is endangered by private property. Socio-economic equality later even became the *conditio sine qua non* for free and equal societies in the writings of Marx and other leftist philosophers. Tocqueville, however, followed a different logic in positing a trade-off, referring rather to an equality of customs, ambitions and political rights than of socio-economic

resources, wealth and income. Nevertheless, it is worth asking whether such an extension becomes necessary in the context of modern democracies and of continuously rising levels of socio-economic inequality (Piketty, 2014).

Along the continuum between the equalitarian and libertarian poles of trade-off and mutual complementarity, there have emerged distinct traditions of thought, if not ideological camps, in philosophy, economics and politics that remain present and influential to this day. These developments were shaped by real-world politics: the limitations on freedom within the communist world served for many liberals as empirical proof that collective socio-economic equality suppresses individual freedom. Despite considerable differences, libertarian liberals such as Nozick and von Hayek, or social liberals, such as Rawls, and Berlin,<sup>3</sup> share the common view that it is freedom that has to be protected from excessive socio-economic equality in modern societies. On the other hand, existing or growing inequalities are seen as fundamental challenges to democracy in the works of Crouch (2004), Habermas (1998), Piketty (2014) and Sen (1999).

We do not deny that individual freedom is desirable independently of its positive (or negative) relation to equality. We also acknowledge that equalitarians may consider equality of such importance per se that they would even pay for it, if necessary, with reduced freedom. This ongoing normative debate between libertarians and equalitarians cannot be decided – neither here nor probably anywhere else, for that matter.<sup>4</sup> However, what can be done is to test whether the widespread ‘Tocquevillian fear’ of a trade-off finds empirical support in contemporary democracies – or, alternatively, whether there is evidence for a positive association between freedom and equality (as argued, for example, by Sen). In other words, it is possible – perhaps even necessary – that both principles are realised by one and the same democratic system. Moreover, do these patterns change if we distinguish political from socio-economic equality? Especially the latter type of equality is deemed by thinkers such as von Hayek, Friedman and Nozick to decrease political freedom. Hence, the trade-off might be reformulated to hold that there is a negative relationship between socio-economic equality and freedom while there is no such – or perhaps even a positive – relationship between political equality and freedom.

The empirical analyses in this paper test the following (conflicting) assumptions about the association of freedom and equality as derived from the libertarian and ‘equalitarian’ camps of political philosophy:

- (1) *There is a trade-off between freedom and equality. Both principles cannot be maximised at the same time.*
- (2) *Freedom and equality possess a mutually reinforcing association. Both principles can be maximised at the same time.*

The first represents the classical Tocquevillian assumption that still dominates the libertarian tradition to the present, while the second represents the equalitarian perspective. Von Hayek’s work, especially his warning of a road to serfdom (1944), and Friedman’s *Capitalism and Freedom* (1962) represent perhaps the most influential works of the libertarian tradition in the 20th century. The equalitarian perspective, on the other hand, is grounded to some extent in Rawls’s social-liberal ‘theory of justice’, together with his emphasis on equal political rights, and in Sen’s concept of a more equal distribution of individual ‘capabilities’ organised by governmental action. A more equal distribution of ‘primary goods’ (Rawls, 1971) or material ‘life chances’ (Sen, 1993, 1999), in turn, enables individuals to enjoy positive freedom. However, this perspective points to different types of equality<sup>5</sup> that might have different associations with political freedom. The perspective shifts from the mere existence of formal political rights to the necessary preconditions enabling

citizens to make use of these rights.<sup>6</sup> The less equally distributed these resources are, the more unequally distributed will be the capabilities to participate in politics. One can argue that the latter requires more intervention by the state; for example, through the provision of public schools and universities, public media outlets, or certain aspects of a social market economy. Such interventions might pose more of a challenge to freedom (e.g. private property) than the provision of political equality. Hence, we add a third assumption as a qualification of assumptions 1 and 2:

- (3) *The validity of assumptions 1 and 2 depends on the type – political or socio-economic – of equality.*

Before presenting our data and methodological approach, it is necessary to highlight that we are not aiming to identify causal relationships between freedom and equality. While part of the literature and theories referenced above makes claims about what causes what, we have chosen a more modest approach, as can be seen in the way the assumptions are phrased. The contribution of our study might best be understood as an ‘identification of patterns’, constituting a first step in testing normative claims and bridging the gap between political philosophy and empirical democracy research. Our findings are meaningful insofar as they investigate the existence of patterns of relationships between freedom and equality, using a rigorous methodological approach and nuanced measures of the empirical realisation of both principles.

## Data and measurement

To test the aforementioned assumptions, we use data from three sources. The Democracy Barometer offers information on political freedom and political equality over time for a large number of countries (Merkel et al., 2014a, 2014b). The database provides a nuanced measurement of democratic quality and its sub-dimensions for established and emerging democracies, applying a mid-range concept of democracy that goes beyond mere legal or constitutional provisions but also takes into account the empirical realisation of democracy (Bühlmann et al., 2012). All in all, more than 100 indicators are used, thereby reducing problems of reliability. Fortunately, the Democracy Barometer not only seeks to ensure congruence between theoretical concept and empirical measurement, but also offers – taking up the suggestion of Munck and Verkuilen (2002: 12ff.) – a hierarchy of indicators ranging from the lowest level to the more abstract functions and principles of democracy (Merkel et al., 2014a). For our analyses, we use the Democracy Barometer’s measures of freedom and equality, which – together with control – constitute the three principles of the quality of democracy as defined by the project (Bühlmann et al., 2012). Each principle, in turn, consists of three sub-dimensions called functions (individual liberties, rule of law, and public sphere for freedom, and transparency, participation, and representation for equality), which are broken down into components, subcomponents and, finally, indicators that are then measured by the Barometer.

The Democracy Barometer’s concept of *freedom* incorporates property rights and their protection vis-à-vis the state, in accordance with the Lockean tradition and the particular emphases of the neo-liberals von Hayek and Friedman. However, it goes beyond this narrow economic core to encompass individual liberties such as physical integrity as well as freedom of religion, opinion, information and movement. It also includes the right to organise and form social alliances as well as the strength of civil society itself. *Equality* is conceptualised as political equality in the Democracy Barometer – excluding, for example, socio-economic inequalities. The general idea is that all citizens must have equal access to political power, *de jure* and *de facto*. Citing the project’s description: ‘Political equality thus aims at the equal formulation, equal consideration, and equal

inclusion of all citizens' preferences. Inclusive participation, representation, and transparency are required to reach this goal' (Bühlmann et al., 2012: 521f.).

The scales applied in the Democracy Barometer are not fixed, which eliminates problems of comparability over time and indistinctiveness at very low or very high levels that are present in many other democracy measures (Giebler, 2012). Instead, the project normalises all indicators at the lowest level in comparison to extreme values of the most established democracies. As a result, a value of 0 represents the lowest standard in an established democracy; a value of 100 represents the highest standard.<sup>7</sup>

In addition, we require a reliable indicator for socio-economic equality. Socio-economic equality – or socio-economic inequality, for that matter – can be measured in various ways. For this paper, we have decided to use the net Gini coefficient (post-transfer and post-tax) as a representation of income inequalities. Our decision is based, first and foremost, on the need for data that are available for as many countries as possible as well as an extended period of time. In addition, there is a long tradition of research, both concerning the validity of the measure itself and applying it to substantive research questions. However, there is also a long debate regarding the measure's comparability across geographical entities and points in time (Solt, 2009, 2014). Hence, we use the Standardised World Income Inequality Database (Solt, 2014), which is not only the most comprehensive data source but is also based on a sophisticated procedure for generating comparable data.<sup>8</sup> The procedure does not change the original scale. Hence, the theoretical range of the indicator runs from 0 (no net income inequality) to 100 (maximum net income inequality).

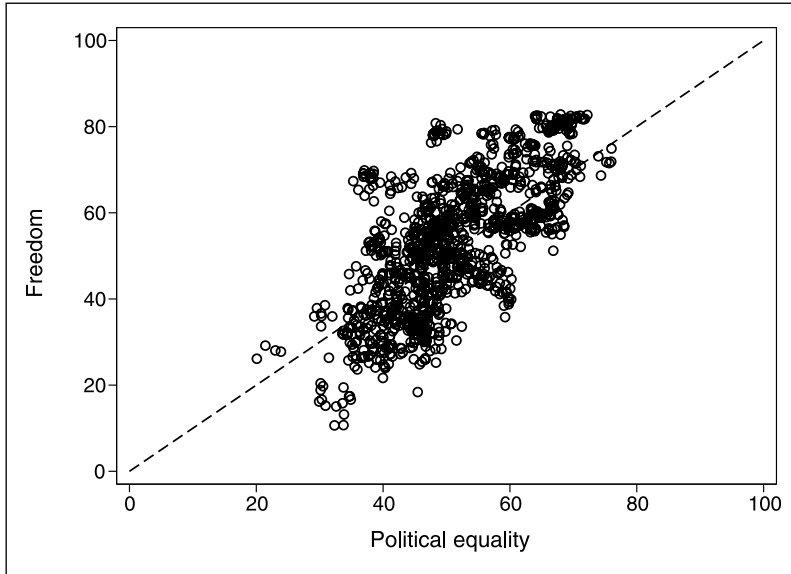
Finally, we include a measure of economic development in our stochastic models as a control. Thus, we eliminate the possibility that high levels of freedom and/or any relationship between freedom and the two types of equality identified in our models are confounded by the positive relationship between societal wealth and democratic quality. We have chosen GDP per capita measured in constant 2005 US\$ as a widely used indicator. The data are taken from the Quality of Governance dataset (Teorell et al., 2015), which provides data originally collected by the World Bank (2014).

Merging the three data sources, we are left with yearly data on 54 countries for the period (mostly) from 1990 to 2012 – all in all, 1141 cases (country years).<sup>9</sup> The sample is unbalanced, meaning that not all countries have data corresponding to all 23 years. However, the average number of country years available is high at 21.1, with the lowest being 11 for Peru. We do not expect this to be problematic for our analyses. Nevertheless, we take this particularity of our data into account whenever possible.

The most limited of our three data sources is the Democracy Barometer, which only covers a medium-sized number of countries.<sup>10</sup> After initially covering only the 30 most established democracies, the Democracy Barometer expanded its sample by about 40 countries (Merkel et al., 2014c: 6) – most of them established democracies as well, but also including new, less established democracies. As a result, not all the countries qualify as liberal democracies for the whole period under analysis. However, as the project relies on relative and not fixed scales, the Democracy Barometer is able to account for such non-democratic episodes. Moreover, our research design (see below) provides powerful tools for dealing with the particularities of countries and, by extension, the somewhat heterogeneous sample of countries.

## Testing the assumptions

What is the empirical relationship between freedom and equality? As a first step, we present in Figure 1 the graphical association of freedom (y-axis) and political equality (x-axis). Clearly, the figure shows a positive relationship between freedom and equality. High levels of political freedom



**Figure 1.** Freedom and political equality ( $N = 1141$ ).

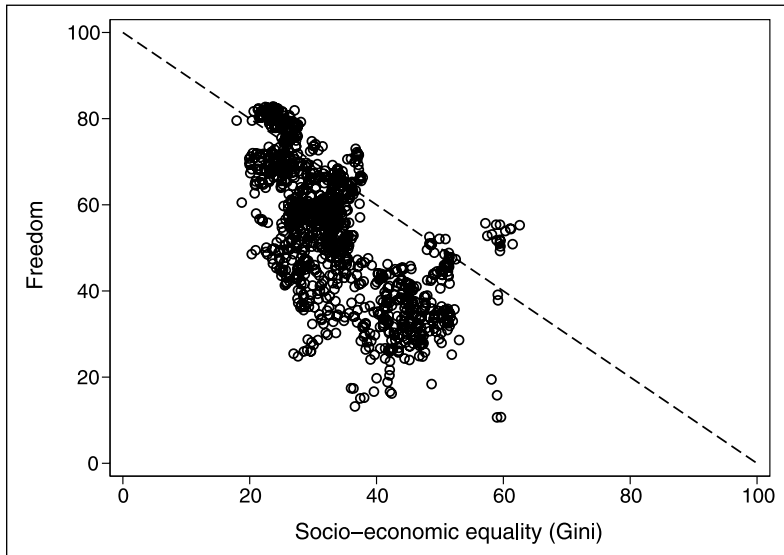
go hand in hand with political equality and vice versa. Realising both core principles of democracy at the same time, then, is not at all impossible. This finding holds for all levels of both principles. The pattern is neither more nor less prominent at low values or high values of freedom or equality.

We added a dashed line to the figure simply to represent identical values on both axes. The cases are more or less equally distributed above and below the line. This indicates that freedom translates nearly one-to-one into political equality and vice versa. These findings strengthen normative considerations that freedom and equality have to be considered ‘co-original’ in democracies.

Turning to socio-economic equality, there seems to be a negative relationship between inequality and freedom (Figure 2). Higher levels of freedom are associated with lower levels of socio-economic inequality. In other words, we see the same substantive relationship as in Figure 1. The distribution of cases runs from the upper left to the lower right simply because high Gini coefficients represent less equal societies. Again, the evidence points to mutual compatibility, not mutual exclusivity. The vast majority of cases are located below the dashed line. In comparison to Figure 1, higher values of political freedom are necessary to find equally high levels of equality. However, this is probably of lesser relevance as the two measures presented in Figure 2 are constructed with very different techniques and by very different means.

Considering together the evidence provided by the two figures, we find no support for a trade-off but strong evidence for a positive association. Hence, assumption 1 has to be rejected in favour of assumption 2. At the same time, there is no clear-cut difference based on the type of equality, which speaks against the need to differentiate between the two types of equality with respect to their association with political freedom.

As a second step, we apply more rigorous testing of the three assumptions beyond eye-balling. In fact, the scatter plots presented above might even be misleading due to the hierarchical data structure. Hierarchical, in this case, refers to the time-series nature of the underlying data, given that we have repeated measurements for each country. The relationship between freedom and the



**Figure 2.** Freedom and socio-economic equality ( $N = 1141$ ).

two equality measures can vary across countries and such a variation may not be reflected in the overall association – whether in the plots themselves or in any empirical analysis that does not control for the hierarchical data structure.

However, such tests are far from straightforward if the underlying data basically consist of a time-series dataset. Mere correlation analysis to test the relationship of any two of the measures is insufficient because the calculation is unable to control for the nested structure of the data. Moreover, we expect high levels of autocorrelation, meaning that values at  $t_1$  are correlated with values at  $t_0$ . In other words, it is highly likely that, for example, a country's level of political freedom in the year 2001 'depends' first and foremost on its level of political freedom in 2000. Therefore, correlation analysis, the most prominent approach for testing for non-causal association, would overestimate any relationship, in terms of both magnitude and significance levels.

Instead, we estimate two random-effects linear growth models with a correction for first-order autocorrelation. This enables us to control for the aforementioned peculiarities of our dataset. Such models make it necessary to define a quasi-causal relationship by choosing one of the indicators as the dependent variable. For the models in Table 1, we picked freedom as the dependent variable and the two measures of equality as independent variables and included a second independent variable to control for time effects. Again, we are not proposing a directional test in terms of causality but, rather, chose such a model in order to address other, more relevant data issues. As the libertarian camp proposes a negative effect of equality on freedom, using the latter as the dependent variable makes intuitive sense. The models allow for random-intercepts – level differences of the dependent variables across countries – and for a random-coefficient for the effect of freedom on the dependent variables. The latter specification accounts for significant country differences regarding the relationship between freedom and the two types of equality.<sup>11</sup> Taking both types of random estimates together, we end up with a very flexible design able to account for – among other factors – the various histories, developmental trajectories and levels of democratic quality of the countries under study. Finally, we add GDP per capita (in US\$100) as a control for the level of economic development.



**Table 1.** Random-effects growth models.

Level 1: <i>N</i> = 1141 Level 2: <i>N</i> = 54	Model 1 (DV: Freedom)		Model 2 (DV: Freedom)	
	Coefficient	Std. Error	Coefficient	Std. Error
<i>Fixed-effects parameters</i>				
Political equality	0.196**	0.075		
Socio-economic equality			-0.173*	0.086
Time	-0.217***	0.046	-0.180**	0.068
Economic development	0.039***	0.006	0.050***	0.006
Intercept	467.5***	90.90	406.6**	135.2
<i>Random-effects parameters</i>				
$\sigma^2_{u1}$ (Equality measure)	0.185***	0.052	0.015	0.041
$\sigma^2_{u0}$ (Intercept)	419.1***	117.8	64.72	90.72
$\text{cov}_{u01}$ (Equality measure, intercept)	-8.040***	2.373	-0.860	1.729
Autocorrelation (AR 1)	0.842***	0.036	0.955***	0.025
$\sigma^2_e$ (Within-individual variance)	19.73***	4.455	76.27	42.92

Notes: 'Equality measure' refers to political equality in Model 1 and socio-economic equality in Model 2. All models have been estimated with Stata 14's `mixed` command with the full-maximum likelihood specification, unconstrained random-effects, and corrections for autocorrelation.

\*\*\*=  $p < 0.001$ , \*\*=  $p < 0.01$ , \*=  $p < 0.05$ .

Model 1 shows a significant effect of political equality on political freedom, similar to that shown in Figure 1. In general, then, more equality is associated with more freedom, even if a more rigorous test is applied. Hence, we can reject the trade-off assumption. However, the random-coefficient variance estimate  $\sigma^2_{u1}$  is significant as well. This indicates that there is relevant variation regarding the effect of political equality on freedom across countries. In fact, based on our estimation, 95% of the regression coefficients are expected to lie between  $-0.65$  and  $1.04$ . In other words, as the distribution of these coefficients follows a standard normal distribution with a mean of  $0.196$ , a relevant proportion of estimated coefficients is negative. This means that in some cases, more political equality is associated with less political freedom. There is no general trade-off, but there are exceptions to this rule. Furthermore, the random intercept ( $\sigma^2_{u0}$ ) is significant as well. Freedom levels between countries differ to a large degree and these differences are independent of a country's level of political equality. Based on the random effects parameters, we find a significant and negative correlation between the random intercepts and the random coefficients for political equality. In substantive terms, countries showing higher (unexplained) levels of freedom display a weaker association of equality with political freedom and vice versa.

Moreover, political freedom decreases significantly over time in Model 1. The effect is rather small: freedom decreases by one unit over a five-year period. However, it is worth highlighting that such a negative trend exists at all for the period from 1990 to 2012, especially because we are looking at a group of mostly established democracies. On the other hand, economically more developed countries show higher levels of freedom; roughly US\$2500 result in a one-unit increase of the dependent variable.

As Model 2 shows, there is also a positive effect of socio-economic equality on political freedom – again, the negative coefficient is a result of the original coding of socio-economic equality; a higher Gini coefficient is associated with lower levels of freedom. Regarding the time trend and

the effect of economic development, we get results very similar to Model 1. However, we find no evidence of country differences regarding random intercepts or random coefficients as well as no significant correlation between the two. As a result, we have to reject the trade-off assumption for the second type of equality as well. Again, the association is one of a mutually reinforcing character and, in contrast to Model 1, there is no indication of variation in this association: socio-economic equality does not lead to less freedom.<sup>12</sup>

Taking all these results together, we find only little evidence for a negative association between freedom on the one hand and the two types of equality on the other. In general, the trade-off assumption can be rejected. However, the association between freedom and socio-economic equality is somewhat weaker, as indicated by the higher p-value and – to a lesser degree – by the smaller coefficient. Moreover, there is greater variation regarding the association of freedom and political equality and we encourage scholars to conduct more in-depth analyses that go beyond the scope of this short paper.

## Conclusion

In contrast to the far from resolved debate within political philosophy, the empirical relationship between freedom and equality is rather clear-cut – at least in our analysis of 54 established and emerging democracies for the period from 1990 to 2012. Contrary to the traditional libertarian fear of a trade-off between freedom and equality, as proposed originally by Tocqueville and radicalised over a hundred years later by, for example, von Hayek, we find that the two core principles of democracy (freedom and equality) possess a mutually reinforcing association, as argued most forcefully in the work of Sen. Our empirical findings show a rather robust positive correlation between political freedom and political equality. We also proposed that it might be helpful for the debate to distinguish between political and socio-economic inequality; such a distinction, however, turns out to have only minor effects on the interpretation of the association. Surprisingly and contrarily to the general assumption in more recent research on political participation (e.g. Weßels, 2015), we did not find any negative relationship between socio-economic equality on the one hand and *de jure* and *de facto* freedoms on the other, at least not on the aggregate level. This speaks against the simple ‘hydraulic’ suggestion that reducing socio-economic equality will automatically lead to higher levels of political equality and freedom or vice versa. Although weaker than the association of political equality and freedom, our results suggest a positive association of socio-economic equality and freedom as well. We interpret this as a positive sign: it seems that societies and political orders do not have to decide between the two principles but can pursue the maximisation of both freedom and equality. This does not mean, of course, that representatives of normative theory or real-world politics cannot pursue one over the other. We would maintain, however, that any arguments to this end should no longer rest on the claim that the two principles are mutually exclusive in modern democracies. Clearly, our results point in a different direction.

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## Notes

1. The meaning of ‘trade-off’ in this debate boils down to the assumption that freedom and equality cannot be maximised at the same time because increasing one sets limits to or even decreases the other.
2. It goes without saying that we cannot present any comprehensive overview of or insight into this debate here. We use the two terms ‘libertarian’ and ‘equalitarian’ to designate, in ideal-typical fashion, the two normative endpoints on the continuum between freedom and equality. Moreover, we use the term ‘equalitarian’ for the sake of distinctiveness and of better fit to the concept of equality. This does not mean that we challenge, for example, the classification of Rawls or Sen as liberal thinkers. However, they and some others assigned to the ‘equalitarian’ camp clearly highlight the relevance of equality for the success of liberal democracy (Rawls: ‘equality of primary goods’; Sen: ‘equality of capabilities’) which stands in contrast to more radical liberals’ (i.e. libertarians’) emphasis on the overarching importance of freedom.
3. Berlin (and later Sen) distinguishes between two concepts of freedom: negative and positive. Freedom in the negative sense means being free from the interference of third parties; positive freedom means a person is free to the extent she can determine her own life without being dependent on others (Berlin, 1969: 122). In the empirical part we will focus on negative freedom alone, because positive freedom overlaps too much with socio-economic equality and because appropriate and reliable data exist only for negative freedom.
4. For a more in-depth discussion of the validity of the normative claims of both camps that links freedom and equality to the concept of self-ownership, see Cohen (1995: ch. 4).
5. Tocqueville does not make a conceptual distinction between socio-economic and political equality.
6. This is developed more cautiously by Rawls in ‘A Theory of Justice’ than by Sen, but is nevertheless visible in his second principle of justice (Rawls, 1971: 302).
7. Values below 0 or above 100 are possible but not present in the underlying sample. A detailed overview of the theoretical concept, the indicators, and the measurement can be found in several publications (Bühlmann et al., 2012; Merkel et al., 2014a, 2014c).
8. Again, we refer to the original author of the data for further information (Solt, 2014). Note that we do not use the multiple imputations provided in the original dataset but limit our analyses to the mere mean of these values for each country year (for a similar strategy, see Banducci et al., 2015). With a very small number of exceptions, the variance of the imputed values for each country year is low. The mean standard deviation equals 0.80, which is very modest in relation to the empirical range of the Gini coefficient that runs from 18 to 62.6.
9. Our sample includes the following countries: Argentina (1990–2006), Australia, Austria, Belgium, Brazil, Bulgaria (1991–2012), Canada (1990–2011), Chile (1990–2011), Colombia, Costa Rica, Croatia (2001–2012), Cyprus, Czech Republic (1993–2012), Denmark, Dominican Republic (1996–2012), El Salvador, Estonia (1993–2012), Finland, France, Germany (1991–2012), Greece, Hungary, Iceland (1992–2012), India (1990–2010), Ireland, Israel (1990–2011), Italy, Japan (1990–2010), Latvia (1992–2012), Lithuania (1992–2012), Luxembourg, Malta (2000–2012), Mexico (1998–2012), Moldova (1995–2012), Netherlands, New Zealand, Norway, Peru (2002–2012), Poland, Portugal, Romania (1996–2012), Slovakia (1993–2012), Slovenia (1991–2012), South Africa (1990–2011), Spain, Sweden, Switzerland, Thailand (1993–2011), Turkey, Ukraine (1994–2012), United Kingdom, United States, Uruguay and Venezuela. If not specified otherwise, data are available for all years between 1990 and 2012.
10. Moreover, the dataset does not provide values for freedom and equality for all countries in the sample, as missing values make it impossible to calculate the respective values. Therefore, we have selected from the whole Democracy Barometer sample those 54 democracies for which we have full data available. Nevertheless, the Democracy Barometer is the only democracy index that is highly sensitive to country variations (in contrast to Polity IV and Freedom House) and indeed measures freedom and political equality in a way that is compatible with our conceptualisation of freedom and equality.
11. Growth curve models enable scholars to estimate more complicated time effects than the overall linear growth as specified in our models. However, and possibly due to the necessary correction for autocorrelation, likelihood-ratio tests do not support the inclusion of any additional time-related random coefficients.

12. There is a second relevant difference between the two models. As we do not aim to test a causal relationship, but rather mere associations, we also run two additional models. If we change the dependent variables – using freedom to predict political and socio-economic equality – we get very similar patterns for the model on political equality. For socio-economic equality, however, the coefficient for freedom slightly misses the 5% threshold of significance. Hence, a subsequent study on causal effects between freedom and equality should probably focus more on socio-economic than on political equality.

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