

# Free to escape? Economic freedoms, growth and poverty traps

Donatella Saccone<sup>1,2</sup> | Matteo Migheli<sup>2,3</sup> 

<sup>1</sup>University of Gastronomic Sciences, Bra (CN), Italy

<sup>2</sup>OEET-Turin Centre on Emerging Economies, Torino (TO), Italy

<sup>3</sup>Department of Economics and Statistics “Cognetti de Martiis”, University of Turin, Torino (TO), Italy

## Correspondence

Matteo Migheli, Department of Economics and Statistics “Cognetti de Martiis”, University of Turin, Lungo Dora Siena 100, I-10153 Torino (TO), Italy.  
Email: [matteo.migheli@unito.it](mailto:matteo.migheli@unito.it)

## Abstract

New evidence on the relationships between economic freedoms and poverty traps is provided. Methodologically, a new way to classify countries into clusters is used, which stresses the relative position of economies with respect to each other. The paper investigates whether economic freedoms have any impact on shifts from one cluster to another, towards either better or worse situations. Moreover, it analyzes the contribution of economic freedoms to avoid falling into a poverty trap. The impacts of the five macro-components of the index are studied separately. The results show that economic freedoms help economies to grow and to avoid poverty traps.

## KEYWORDS

economic freedom, economic growth, poverty traps, transitions

## JEL CLASSIFICATION

I32; O43; O47

## 1 | INTRODUCTION

Solow (1956) theorized the possibility that some poor countries would have fallen into a so-called poverty trap. Their lower savings rates would indeed have led them to steady states characterized by less capital and lower income per capita than those of affluent countries.<sup>1</sup> Of course, countries should avoid poverty traps, which economists and policy-makers see as a highly undesirable

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.  
© 2022 The Authors. *Review of Development Economics* published by John Wiley & Sons Ltd.

outcome; consequently, many different economic policies have been designed and implemented over time for countries to escape from or elude such traps (Kraay & McKenzie, 2014). Both national governments and international financial organizations such as the World Bank and the International Monetary Fund have therefore pursued policies aimed at promoting economic growth, especially in developing and (since the 1990s) transitioning countries.

Starting from the early 1980s, the so-called *Washington Consensus* inspired most of the policies which, grounded in liberal and neoliberal theories, suggested liberalizing economies to render them as close as possible to perfect market economies set on the best path to fast and sustainable economic growth (Sachs et al., 2004). Implicitly, following this recipe would have minimized the risk of falling into poverty traps. In the wake of such a policy orientation, some research and policy-evaluation institutions developed indices to measure the degree of economic freedom of a country, with the aim of assessing both the performance of economies in this respect and the effects of the latter on economic growth. Although different indices measuring the level of economic freedom of countries now exist, their representation of the phenomenon generally does not vary significantly: Doucouliagos and Ulubasoglu (2006) prove that the effects of economic freedom on economic growth do not vary with the index used. Eichengreen et al. (2013) show that the existence of traps depends on the definition of categories (i.e. low-, middle-, and high-income countries): the adoption of a relative rather than an absolute definition of thresholds between these categories leads to different results and conclusions about the existence of and the escape from poverty traps.

Starting from the latter conclusion, this paper contributes to the extant literature on the impact of economic freedom on economic growth (measured as the growth of income per capita) by adopting a new classification of economies, based on a measure that stresses relativity in the positioning, to define poverty traps; and by applying such a relative classification to study how economic freedom is associated to the transition of countries from one category to another and focusing in particular on recessions and advancements. The reason for highlighting relativity is that, while absolute thresholds either need continuous updates to keep reflecting the evolving situation or risk of representing states that progressively lose adherence with reality, relative measures update automatically, as they follow the same processes that govern the underlying variables. In particular, this paper adopts the classification of economies proposed by Saccone and Deaglio (2020), where countries are clustered into four groups: poor, emerging, booming, and affluent. The methodology considers the relative position of countries with respect to both the world average per-capita income and the world mean of its growth rate. The simultaneous comparison of each country against these means allows us to evaluate them according to their relative status (level of income per capita) and dynamics of per-capita income (growth rate); such a strategy therefore combines the two variables that the literature has traditionally used separately. The third section of the paper discusses this procedure in more detail.

The main aim of the paper is not to classify countries into the four categories individuated by such a procedure nor to study the impact of economic freedom on the position of each country in a cluster. In fact, Saccone and Deaglio (2020), who originally proposed the classification, already presented an econometric analysis of the factors determining why a country belongs to one category rather than to another at specific periods of time. However, they only marginally explored the factors driving the transitions of countries across categories over time through a simple statistical analysis of frequencies and means for selected cases, also considering the role played by economic freedom, and concluded by calling for a more sophisticated investigation of the transition patterns. The present paper answers such a call and, more specifically, aims to study how economic freedom is associated with the transition of countries from one category to another by

focusing in particular on recessions and advancements. The purpose is to understand whether economic freedom allows economies to avoid poverty and to follow virtuous growth paths, using the aforementioned clustering strategy.

Following Carlsson and Lundström (2002) and Berggren (2003), the analysis presented in the paper will consider not only an aggregate index of economic freedom (namely, that provided by the Fraser Institute) but also its components. Indices of economic freedom, indeed, include sets of indicators ranging from law enforcement to inflation stability: the literature (see Carlsson & Lundström, 2002; Ott, 2018) clearly shows that different components of these indices have different effects on economic growth, from negative to positive. The inclusion of the synthetic index in empirical analysis is important, as it allows for assessing the overall weighed impact of all its components. Therefore, on the one hand, the aggregate measure answers the question whether economic freedom (generally speaking) enhances growth; on the other hand, its decomposition allows us to understand which aspects are beneficial and which are not, allowing for precise policy recommendations. Given the composite nature of the indices of economic freedom, throughout the paper the plural “economic freedoms” will be preferred to its singular form.

The results of the analysis set out in this paper show that economic freedom is in general a positive ingredient for transitioning to higher clusters and allows poverty traps to be avoided. However, some caveats are in order: on the one hand, when economies are characterized by high levels of income inequality, they do not benefit from economic freedoms; on the other hand, some components of the index seem to have a rather negative effect on countries with incomes per capita below the world average, while the opposite holds for those above such a threshold. In other words, economic freedoms should be implemented cautiously and policy-makers should try to follow optimal sequencing of reforms.

The rest of the paper is structured as follows. Section 2 provides a general review of theoretical and empirical studies on the relationships between growth, poverty traps, and economic freedom. Section 3 presents the methodology and data used in the empirical analysis. Section 4 reports and discusses the main findings. Section 5 concludes.

## 2 | LITERATURE REVIEW

This section presents and critically discusses some of the most relevant works that assess the existence of poverty traps, their causes and solutions. The second part of the section surveys the works on measures of economic freedoms and their relationships with growth and poverty traps.

The literature on growth and development in economics has often inquired into the problem of so-called poverty traps (Nurske, 1953; Azariadis & Stachurski, 2006), situations such that poor countries are condemned to poverty by their own characteristics, which endogenously recreate poverty.<sup>2</sup> Solow (1956) and Swan (1956) are examples of theoretical models that predict the existence of poverty traps for countries, whose savings rate is insufficient to allow capital to accumulate enough to bring the country to an affluent steady state. Phillips and Sul (2009) propose an econometric strategy that allows for clustering countries into five groups, according to their per-capita income in 1970 and 2003. The authors show that the majority of countries remained in the initial group (including that of poor economies) over the 34 years considered; nevertheless, a few countries were able to leave their club to transition to another characterized by higher income. In other words, the authors suggest both the existence of poverty and middle-income traps and the possibility of leaving them for affluence. Brasington et al. (2010) propose a theoretical model based on human capital accumulation and technological progress: they show

that, if two regions have different levels of economies of agglomeration, with one stronger than the other in this respect, then the former will attract more human capital than the latter, which will therefore end in a (relative) poverty trap. The same paper proposes also an empirical test of the model, based on US data, which confirms the theoretical prediction showing that some areas are weaker attractors of human capital than others. Consequently, the former grow faster than the latter. Also population growth may be responsible for trapping countries into poverty: Fanti et al. (2013) show that poor countries with low fertility rate may remain stuck in poverty if the slow population growth entails low or no savings (and therefore capital) accumulation. Ghatak (2015) reviews different theories that have tried to explain the existence of such traps; the author reminds us that insufficient physical and human capital accumulation are the most often cited causes for the existence of poverty traps. Indeed, according to the mainstream models of growth, these insufficient accumulations are also the result of imperfect markets of both physical capital and education and of frictions on financial and international markets. In addition to capital accumulation, the quantity of exported goods and the complexity of their mix are positively associated with escaping from poverty traps: economies that are able to trade in a complex variety of goods are indeed much more likely not to meet such traps (Pugliese et al., 2017).

Regional, national and international policy-makers have tried several different interventions to solve the problem. Manh-Hung and Makdissi (2004) consider a rural economy trapped in poverty and theoretically show that positive technological shocks in the form of technology transfer may be effective in making such an economy evade the trap. Traverso (2016) identifies industrial growth, increase in agricultural yields, emigrants' remittances and a fast decline in fertility rates as the main drivers of the Bangladeshi exit from poverty trap.

For the sake of completeness, it is important to highlight that some authors do not agree on the existence of poverty traps. Easterly (2006a, 2006b) rejects the idea that poverty traps exist. Indeed, the author claims that simple regressions are sufficient to prove that some countries (particularly concentrated in Asia) were able to take off, grow and reach high levels of income during the 52 years between 1950 and 2001. However, also the idea that takeoffs characterize developing countries is rarely supported by the data. Therefore, traps exist in the form of slow growth, which widens the difference between low-income slowly growing countries and the faster-growing countries. Grasseti et al. (2018) indeed depict a more complex scenario, showing that the theoretical model may have multiple equilibria, some corresponding to poverty traps, others to takeoff and boom.

The Washington Consensus, with its neoliberal recommendations, has shaped economic policies for growth during the period between the 1980s and 2000s (Rodrik, 2006). In the wake of these reforms, indices to evaluate the degree of economic freedom of economies have been created. Moreover, in the early 2000s growing attention was paid to the establishment of opportune institutions to support economic growth. The quality of many of them, like the legal system and the monetary institutions, is now included in the most common indicators of so-called economic freedom.

Studies on the relationship between economic freedom and growth started about 15 years after the establishment of the Washington Consensus and show mixed results. Goldsmith (1995) and Islam (1996) provide the first results that suggest a positive link between the two variables, although Islam (1996) highlights that such an effect is detectable only in affluent countries, while no effect appears to be in place in low- and middle-income economies. Karabegovic et al. (2003) obtain similar results for US states and Canadian provinces (i.e. developed areas). Conversely, Akin et al. (2014) find that economic freedom enhances growth and that this effect is stronger in low- and middle-income countries, while Doucouliagos and Ulubasoglu (2006) show a positive

effect of economic freedom on growth for 82 countries between 1970 and 1999, independently of their initial level of income and the measure of economic freedom used. Kouton (2019) focuses on middle- and low-income economies, analyzing sub-Saharan countries between 1996 and 2016 and finding a positive link between economic freedom and growth.

In general, all the above-mentioned studies seem to find a certain level of association between economic freedom and growth, which could also imply an impact on poverty traps. Aixalá and Fabro (2009) consider 187 countries between 1976 and 2000 and show that economic freedom Granger-causes economic growth, suggesting therefore that this may help to avoid poverty traps: indeed, if economically free countries grow faster than others, then the former are more likely to avoid traps than the latter. There is also direct evidence in favor of the positive effect of economic freedom on the probability of escaping poverty traps. Apergis and Katsaiti (2018) analyze a panel of countries between 1992 and 2014 and show that economic freedom and democracy decrease the risk of poverty. According to Han and Wei (2017), economic freedom does seem to favor growth and then the exit from poverty traps for low-income countries.

However, economic freedom has not always been associated with economic growth. Indeed, although fewer in number, some studies find negative effects (Erdem & Tugcu, 2012) or no causal effect at all of economic freedom on growth (Le Roux, 2015). Doner and Schneider (2016) point out that liberalization policies were not enough to promote economic growth; rather, in some cases, the consequences were disastrous. In order to better investigate the relation between economic freedom, growth, and traps, some authors then focus on the effect of specific components of economic freedom. For instance, Hartwell (2018) claims that economies characterized by small government sizes and effective and efficient protection of property rights fall into the set of those having good institutions that preserve them from the risk of incurring a trap. Analogously, Yiping et al. (2014) analyze financially repressive measures adopted between 1980 and 2010 in 80 countries worldwide: they find that financial liberalization enhances growth in high-income economies, has no effect in low-income countries, and is depressive for those falling in the middle of these two categories. In addition, the authors show that the enforcement of law (one of the dimensions now included in the indices of economic freedom) promotes growth in all the countries considered.

The institutional approach to economic development (Roland, 2014) and growth explains why economic freedom fosters both growth and, prospectively, escape from poverty traps. Van den Berg (2017) provides a synthesis of the mechanisms linking the components of economic freedom to development. Sound legal systems protect property rights and enforce human rights, enhancing investments and personal security (Haggard & Tiede, 2011). Low inflation allows prices to convey the right information about the value of goods and, keeping the purchase power of income stable, sustain consumption (Barro, 2013). Small government sizes mean that governments have small debts and levy relatively low tax rates, taking only small shares of income from the economy (Ram, 1986). In addition, it means that governments are regulators rather than producers of goods and services, leaving production to the private sector, so fostering competition and market stability (Afonso & Furceri, 2010). In the same vein, minimal regulation reduces the rigidities that impede competition on both the goods and services and the labor markets. Finally, freedom to trade internationally allows imports of new technologies and fosters investments in human capital (Schneider, 2005).

Most of the aforementioned works focus on growth, while the core of this paper is escaping from poverty traps and transitioning from one category of countries to another. However, given the definition of such categories provided here, what allows countries to both avoid poverty traps and move from one cluster to another is the difference between the growth rate of their

per-capita gross domestic product (GDP) and that of the rest of the world. In other words, growth differentials are those that mainly explain the trajectories analyzed in this paper. Therefore, the analysis of the determinants of growth is essential and, in particular, differences in terms of economic freedoms allow us to explain the movements of countries between clusters from an institutional point of view.

A last comment on the use of the sub-indices of economic freedom may be relevant here. Given the composite nature of the global index, some components may have different effects in terms of growth and, thus, of the probability of transitioning from one group of countries to another or avoiding traps. Another possibility is that some elements of the index have no impact, while others do have an impact. In such a situation, considering only the aggregate measure of economic freedom might lead to biased recommendations: if only some aspects of economic freedom affect economic growth, policies should focus mainly on those elements, instead of all the components of the index. In other words, the disaggregation and the separate study of the components may allow for refining policies and improving our understanding of the link between institutions, on the one hand, and economic growth and poverty avoidance, on the other.

To sum up, the mixed results of the literature suggest some reflections which should be taken into account in the analysis of economic freedom, growth, and poverty traps and which will be incorporated in the paper. First, even if poverty traps seem to exist, the reality is much more varied and may present some cases of poverty entrapment along with cases of takeoff. As a consequence, the effects of economic freedom on growth and poverty traps can be better typified by considering different clusters of countries and analyzing both advancements and regressions across clusters as well as the permanence in a poor condition. Second, economic freedom is a multidimensional concept encompassing many different aspects and policies, so that its total effect on growth and traps should be studied by decomposing the single effects of its components.

### 3 | METHODOLOGY AND DATA

The literature proposes several different measures of poverty and middle-income traps. In particular, these may be considered in either absolute or relative terms. Glawe and Wagner (2016) and Easterly (2006b) survey these different approaches, showing that some literature adopts an absolute point of view, with income thresholds defined in US dollars and zero per-capita growth representing poverty traps, while others prefer to use positions relative to a benchmark, usually the US or another advanced economy. While the use of a benchmark is useful for considering the performance of each country as a relative matter that can be influenced by world trends that are common to other countries, making reference to a single country, like the USA, can limit the extent at which such trends are taken into account. When discussing the choice between absolute and relative traps, Glawe and Wagner observe that “relative approaches are a good choice for analysing absolute convergence or the income distribution between several countries” and that, as also pointed out by Cherif and Hasanov (2015) and Cai (2012), “the main development objective of every country is to reach the living standards of the most advanced economies. The relative approach allows measuring how far an economy is away from reaching this goal.” This debate retraces the choice between absolute and relative poverty thresholds at an individual or household level. Poverty, indeed, is not only an absolute matter related to the intuition that “every human being has certain basic needs or rights, irrespective of the society,” but also a relative perception “in accordance

to what is considered a ‘normal’ living standard in a particular society” (Notten & Neuborg, 2011). In fact, both the approaches have been adopted by the United Nations to monitor progress towards Sustainable Development Goal #1, “no poverty” (UN, 2019).

As the introduction anticipated, the empirical analysis proposed in this paper rests on a strategy of country classification based on the relative position of each country with respect to the world means of per-capita income and its growth rate (Saccone & Deaglio, 2020).<sup>3</sup> In other words, the performance of each country is measured towards a theoretical *mean economy*, characterized by the average performance of the countries in the world, and poverty traps are defined as situations of *relatively* low income and low growth. The methodology then generates four clusters: (1) *poor countries* characterized by both income per capita and growth rate below average; (2) *emerging countries*, with income levels below average, but growing faster than average; (3) *booming countries*, whose per-capita income and growth rate are both above average; and (4) *affluent countries*, where per-capita income is higher than average, but the growth rates are below average. To the authors’ knowledge, this classification is the only one that combines measures of both income and growth, stressing the relative side and allowing for better including the dynamics of the world economy in the procedure.<sup>4</sup> The analysis presented in this paper focuses on the impact of economic freedoms on the transitions of economies from one of these clusters and, in particular, on recessions and advancements. The final purpose is to understand whether economic freedom allows economies to escape from the first cluster, where a poverty trap is defined as a situation of low income combined with low growth.

The first step is therefore to assign countries to the previously defined groups according to their definitions. The second step is to assess transitions across groups. In particular, transitioning from group 1 to any other group and from group 2 to group 3 or 4 is considered as advancement, while movements towards groups 1 and 2 of economies starting from clusters 3 and 4 and transitions to group 1 for economies previously classified in group 2 are considered as regressions. Clusters 3 and 4 are taken as equally desirable from the perspective of this paper, as they both represent situations far from poverty traps. The empirical analysis, therefore, will not consider transitions between these two groups.

As is better explained below in [Equation 1](#), dummies identifying such transitions, both as advancements to better states and as regressions to worse situations, will thus constitute the dependent variables of the econometric analyses presented afterwards. In particular, these transitions are interpretable as the likelihood of becoming trapped into poverty (regression to cluster 1). Indeed, economies that pass from cluster 1 (growth and per-capita income below the world average) to cluster 2 (per-capita income below the world average, but growth above it) are likely to escape from poverty, as they grow faster than the average. [Table A1](#) in the Appendix shows the transition matrices for each pair of five-year periods on which the econometric analysis is based, as illustrated later in the text. From the figures it emerges that over the years analyzed most transitions were either progressions of poor countries that became emerging economies or regressions of emerging countries to poverty, while transitions from and to the other clusters were less frequent. In parallel, a relevant share of cases is represented by persistence in a cluster, as also the number of countries that remained either poor or emerging is large. This seems to suggest the existence of poverty traps, typified by countries regressing to or remaining in cluster 1, along with cases of temporary or persistent takeoffs, as respectively shown by those economies temporarily advancing to or persisting in cluster 2. Overall, these figures seem to suggest some permeability between the first two clusters, while transitions towards boom and affluence from the first category are much rarer. [Table A12](#) in the Appendix presents the classification of countries in the last available five-year period used in the analysis.

The paper classifies an initial sample of 123 developing and developed countries between 1985 and 2014 that reduces to 87 in the econometric analysis. Given the limitations in existing data sources, the sample size and the time coverage are mainly based on data availability. As better detailed in Table A3, data on GDP per capita and its rate of growth are derived from the Total Economy Database, Conference Board (EKS PPP); the economic freedom index used in the analysis is that provided by the Fraser Institute; the Gini coefficient is taken from the Global Income Dataset, presented by the Global Consumption and Income Project (Lahoti et al., 2016); all the other variables are from the World Bank World Development Indicators. The economic freedom index was first presented in 1996 and calculated every 5 years until 2000, since when the Institute has been calculating it on a yearly basis (Gwartney et al., 1996; Gwartney et al., 2020).

Both the data availability and the limited variability of economic freedoms year on year suggest using 5-year averages instead of yearly data, which reduces the time dimension of observations to six periods. Such a strategy has an additional advantage: the relationship between economic growth, on which the surrounding classification is based, and economic freedoms is likely to be of long-term and structural type, that is, it has effects on the growth trend rather than on short-term variations of GDP per capita. The use of 5-year averages allows the effects of cyclical fluctuations to be diluted. While the literature generally does not find any effect of growth on economic freedom, which means that reverse causality is generally excluded, some controls may instead be influenced by GDP growth and then, implicitly, by the surrounding classification. Therefore, each regressor is introduced in the analysis lagged by one period: this means that we estimate the effect of  $x_{t-1}$  on  $y_t$ , where  $t-1$  refers to the 5-year period prior to  $t$ . This strategy minimizes the problem of endogeneity, at the cost of reducing the time dimension of the panel. Drawing from the empirical literature on economic growth (for a review see Jones, 2016), controls include the age dependency ratio (An & Jeon, 2006; Fougère & Mérette, 1999), income inequality measured through the Gini index (Apergis & Cooray, 2017; Birdsall et al., 2017; d Caraballo et al., 2017), the growth rate of investments and exports (Saccone, 2017), the share of urban population (Henderson et al., 2011), the inflation rate, and the school enrollment rate of female pupils to account for education<sup>5</sup> and women's empowerment (Hakura et al., 2016).<sup>6</sup> Female education is particularly relevant for economic growth and poverty avoidance for several reasons: educated women have lower fertility rates, provide better care to their children, and have more power in household decisions (Subbarao & Raney, 1995). In addition, given the high and positive correlation between female and male education (Lorgelly & Owen, 1999), it is a good proxy for the overall human capital of the countries considered. Finally, as Perrin (2021) shows, female enrollment in primary school is an important indicator of social and economic development. Regressors also include the growth of GDP per capita at time  $t-1$ . Given the nature of the dependent variables, panel logit regressions are run, where the dependent variable is one of the following dummies: *advanced*, which takes value 1 (0 otherwise) if the country belongs to a higher cluster at time  $t$  than at time  $t-1$ ; and *recessed*, which takes value 1 (0 otherwise) if the country belongs to a lower cluster at time  $t$  than at time  $t-1$ .

As highlighted in the previous section, indices of economic freedom are weighed means of different sub-indices, each representing an aspect of economic freedom. In particular, the Fraser Institute includes the following areas in its index.<sup>7</sup>

1. *Size of government* captures the dimension of government spending, the level of taxation, and the direct intervention of a government in the economy (e.g. through the direct ownership of firms): higher values of this sub-index represent lighter presence of the government in the economy.



2. *Legal system and property rights* capture the rule of law and personal property right protection; the higher the score, the stronger this protection.
3. *Sound money* evaluates the stability of the value of money, that is, the score is high when the inflation rate is low and citizens can freely own foreign currencies.
4. *Freedom to trade internationally* includes free movements of goods, services, capital and people; the lower the barriers and the lower the informal trade in foreign currencies, the higher the score assigned.
5. *Regulation* refers to the strength of the internal regulation of labor and credit markets and that of entrepreneurial activities. The lesser the government intervention in this sphere, the higher the score. These dimensions are finally merged into one synthetic measure of economic freedom; however, they represent very different aspects of the economy of countries.

The estimated equation for transitioning from one cluster to another is given by

$$T_{i,t-(t-1)} = \beta_0 + \beta_1 EF_{i,t-1} + \beta_2' \mathbf{X}_{i,t-1} + \varepsilon_i + u_t, \quad (1)$$

where  $T_{i,t-(t-1)}$  is the dummy representing the transition between time  $t - 1$  and time  $t$  for country  $i$ .  $EF_{i,t-1}$  is the index of economic freedom (or one of its components) at time  $t - 1$ , and  $\mathbf{X}_{i,t-1}$  is the matrix of one-period lagged controls. The dependent variable may represent either an advancement or a recession from one group to another.

The following estimations are presented. First, the next section provides the results for analyses of advancement, that is, transitions from cluster 1 to clusters 2 or 3–4,<sup>8</sup> and from cluster 2 to clusters 3–4. Second, the effect of economic freedoms on recessions is reported (transitions to cluster 1 from the other clusters and to cluster 2 from clusters 3–4). In the first case, the tables presented in the next section will have “Advanced” as column title; otherwise the column title will be “Recessed”. These estimates will provide insight into whether economic freedoms ease the transition from one cluster to another. Third, the analysis focuses on poverty traps more specifically. To this end, panel logit regressions are run that estimate the effect of economic freedoms on the probability of being stuck in poverty or of recessing from a higher cluster to group 1. In these cases, when falling in a poverty trap is at issue, the A dummy indicating whether the country was poor at time  $t - 1$  appears as a regressor.<sup>9</sup> In addition, an interaction term between being poor at time  $t - 1$  and the value of the index or sub-index of economic freedom is added to account for possible mixed effects between the starting cluster and the level of economic freedom.

Table A2 in the Appendix reports some descriptive statistics for the variables used in the analyses. The figures in the table represent the evolution of the main variables in the period analyzed: the effects of the liberalizations implemented as a consequence of the Washington Consensus are visible in the increase in the values of the index and sub-indices of economic freedom, while the growth of exports as a share of GDP over time witnesses the process of trade liberalization that characterized the years included in the study.

## 4 | RESULTS

This section shows the results of the econometric estimations described in the previous section. Tables 1 and 2 present two columns for each model specification: the first reports the results for economies that have advanced, passing from cluster 1 or 2 to superior groups; the second column shows the estimates for transitions in the opposite direction.<sup>10</sup> A second set of tables

**TABLE 1** Panel logit for transition from one status to another: effect of economic freedom. Odds ratios

	<b>Recessed</b>	<b>Advanced</b>	<b>Recessed</b>	<b>Advanced</b>	<b>Recessed</b>	<b>Advanced</b>
Economic freedom index (L1)	0.957 (0.0178)**	1.034 (0.0204)*	0.923 (0.0246)***	1.076 (0.0326)**	0.756 (0.0653)***	1.215 (0.119)**
Economic freedom index × GDP growth (L1)			1.010 (0.00501)*	0.991 (0.00503)*		
Economic freedom index × Gini index (L1)					1.005 (0.00182)***	0.997 (0.00204)*
Age dependency ratio (L1)	0.997 (0.0159)	0.989 (0.0159)	0.998 (0.0153)	0.989 (0.0160)	1.005 (0.0155)	0.985 (0.0161)
Gini index (L1)	1.090 (0.0266)***	0.950 (0.0235)**	1.084 (0.0256)***	0.953 (0.0242)*	0.777 (0.0916)**	1.192 (0.160)
GDP growth rate (L1)	1.013 (0.0774)	0.790 (0.0698)***	0.579 (0.178)*	1.297 (0.392)	0.994 (0.0747)	0.803 (0.0706)**
Share of urban population (L1)	0.986 (0.00993)	0.998 (0.0105)	0.987 (0.00941)	0.998 (0.0104)	0.987 (0.00941)	0.998 (0.0104)
Investment growth rate (L1)	0.568 (0.484)	0.309 (0.330)	0.748 (0.636)	0.320 (0.338)	0.748 (0.636)	0.320 (0.338)
Inflation rate (L1)	1.004 (0.00387)	0.996 (0.00226)	1.003 (0.00331)	0.997 (0.00217)	1.003 (0.00331)	0.997 (0.00217)
Export growth (L1)	10.09 (8.921)***	0.0930 (0.0975)**	8.408 (7.599)**	0.121 (0.129)**	8.408 (7.599)**	0.121 (0.129)**
Share of females enrolled in primary schools (L1)	0.979 (0.0116)*	1.011 (0.0117)	0.980 (0.0110)*	1.011 (0.0117)	0.980 (0.0110)*	1.011 (0.0117)
Constant	0.266 (0.487)	63.07 (129.6)**	2.417 (5.148)	5.220 (12.29)	2.417 (5.148)	5.220 (12.29)
Observations	329	329	329	329	329	329
Number of id	87	87	87	87	87	87

Notes: Odds ratios after panel logit estimates. All the regressors followed by “L1” are lagged one period.

Significance levels:

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ . Standard deviations in parentheses.

(Tables 3 and 4) present the estimates for being trapped in poverty; in particular, these regressions estimate the probability of belonging to the poor cluster, given the level of economic freedoms. Countries can fall into group 1 either because they did not move from it from one period to another, or because they recessed to it from a superior cluster.

TABLE 2 Panel logit for transition from one status to another: effect of the components of the index of economic freedom. Odds ratios

	Recessed	Advanced	Recessed	Advanced	Recessed	Advanced
<i>Government size</i>						
Index of government size (L1)	1.133 (0.159)	0.883 (0.124)	0.714 (0.513)	1.401 (1.007)	1.122 (0.285)	0.891 (0.226)
Government size (L1) × GDP growth (L1)			1.002 (0.0440)	0.998 (0.0438)		
Government size (L1) × Gini index (L1)					1.010 (0.0153)	0.990 (0.0150)
Observations	327	327	327	327	327	327
Number of id	87	87	87	87	87	87
<i>Legal system and protection of property rights</i>						
Index of legal system and property rights (L1)	0.729 (0.0893)***	1.372 (0.168)***	0.270 (0.194)*	3.700 (2.654)*	0.559 (0.149)**	1.788 (0.476)**
Legal system (L1) × GDP growth (L1)			1.060 (0.0549)	0.943 (0.0488)		
Legal system (L1) × Gini index (L1)					1.022 (0.0153)	0.979 (0.0147)
Observations	329	329	329	329	329	329
Number of id	87	87	87	87	87	87
<i>Soundness of money</i>						
Index of soundness of money (L1)	0.829 (0.0814)*	1.207 (0.119)*	0.427 (0.190)*	2.343 (1.044)*	0.756 (0.107)**	1.323 (0.187)**
Soundness of money (L1) × GDP growth (L1)			1.023 (0.0282)	0.977 (0.0269)		

TABLE 2 (Continued)

	Recessed	Advanced	Recessed	Advanced	Recessed	Advanced
Soundness of money (L1) × Gini index (L1)						
Observations	330	330	330	330	1.014	0.986
Number of id	87	87	87	87	(0.00946)	(0.00920)
<i>Trade freedom</i>						
Index of trade freedom (L1)	0.872	1.147	0.460	2.176	0.648	1.543
	(0.107)	(0.141)	(0.284)	(1.344)	(0.136)**	(0.324)**
Trade freedom (L1) × GDP growth (L1)			1.064	0.940		
			(0.0403)	(0.0356)		
Trade freedom (L1) × Gini index (L1)					1.014	0.986
					(0.0131)	(0.0127)
Observations	320	320	320	320	320	320
Number of id	85	85	85	85	85	85
<i>Regulation</i>						
Index of regulation (L1)	0.991	1.009	0.304	3.290	0.854	1.171
	(0.181)	(0.185)	(0.269)	(2.917)	(0.197)	(0.270)
Regulation (L1) × GDP growth (L1)			1.033	0.968		
			(0.0358)	(0.0335)		
Reagulation (L1) × Gini index (L1)					1.025	0.975
					(0.0188)	(0.0179)
Observations	330	330	330	330	330	330
Number of id	87	87	87	87	87	87

Notes: The table presents only the results for the variables of interest. All the regressions presented in the table control for the same set of variables as the regressions presented in Table 1. Odds ratios after panel logit estimates. All the regressors followed by “L1” are lagged one period.

Significance levels:

\*\*\**p* < .01; \*\**p* < .05; \**p* < .1. Standard deviations in parentheses.

TABLE 3 Panel logit for falling in trap: effects of the aggregate index of economic freedom. Odds ratios

	Poor			Emerging	
Index of economic freedom (L1)	0.963 (0.0182)**	0.796 (0.0626)***	0.922 (0.0297)**	0.914 (0.0235)***	0.913 (0.0261)***
Index of economic freedom (L1) × poor (L1)	1.030 (0.0318)	1.025 (0.0310)	1.065 (0.0384)*		
Index of economic freedom (L1) × emerging (L1)				1.031 (0.0342)	1.029 (0.0412)
Economic freedom (L1) × GDP growth (L1)		1.009 (0.00543)*		1.000 (0.0605)	
Economic freedom (L1) × Gini index (L1)			1.004 (0.00166)**		1.006 (0.00189)***
Age dependency ratio (L1)	1.021 (0.0136)	1.026 (0.0140)*	1.021 (0.0137)	0.966 (0.0166)**	0.966 (0.0166)**
Gini index (L1)	1.083 (0.0235)***	0.831 (0.0876)*	1.077 (0.0237)***	1.075 (0.0316)**	1.075 (0.0316)**
GDP growth rate (L1)	0.968 (0.0766)	0.940 (0.0750)	0.552 (0.185)*	1.035 (0.0935)	1.007 (0.357)
Share of urban population (L1)	1.005 (0.00859)	1.006 (0.00859)	1.006 (0.00853)	0.973 (0.0111)**	0.973 (0.0111)**
Investment growth rate (L1)	2.633 (2.190)	3.525 (2.904)	3.151 (2.600)	0.968 (0.874)	0.977 (0.888)
Inflation rate (L1)	1.002 (0.00207)	1.002 (0.00160)	1.002 (0.00192)	0.997 (0.00314)	0.997 (0.00320)
Export growth (L1)	2.995 (2.291)	2.928 (2.118)	2.502 (1.932)	0.592 (0.471)	0.587 (0.471)

TABLE 3 (Continued)

	Poor		Emerging	
Share of females enrolled in primary schools (L1)	0.991 (0.00973)	0.995 (0.00960)	0.993 (0.00972)	0.990 (0.0122)
Poor (L1)	0.529 (1.031)	0.637 (1.207)	0.0692 (0.156)	0.990 (0.0122)
Emerging (L1)				
			0.321 (0.649)	0.357 (0.863)
Constant	0.0197 (0.0349)**	2,810 (13,939)	0.328 (0.786)	115.2 (252.1)***
Observations	329	329	329	329
Number of id	87	87	87	87

Notes: The dependent variable is a dummy taking value 1 if country *i* at time *t* is classified as poor. The dummy takes value 0 otherwise. Odds ratios after panel logit estimates. All the regressors followed by “L1” are lagged one period.

Significance levels:

\*\*\**p* < .01, \*\**p* < .05, \**p* < .1. Standard deviations in parentheses.

TABLE 4 Panel logit for falling in trap: effects of the aggregate index of economic freedom. Odds ratios

	Poor		Emerging		
<i>Government size</i>					
Index of government size (L1)	1.199 (0.179)	0.701 (0.433)	1.150 (0.261)	1.207 (0.229)	1.151 (0.238)
Government size (L1) × GDP growth (L1)		1.010 (0.0410)		1.023 (0.0472)	
Government size (L1) × Gini index (L1)			1.012 (0.0136)		0.992 (0.00140)
Government size (L1) × Poor (L1)	0.784 (0.179)	0.746 (0.177)	0.797 (0.193)		
Government size (L1) × Emerging (L1)				0.592 (0.168)*	0.549 (0.178)*
Observations	327	327	327	327	327
Number of id	87	87	87	87	87
<i>Legal system and protection of property rights</i>					
Index of legal system and property rights (L1)	0.631 (0.0800)***	0.266 (0.160)**	0.337 (0.101)***	0.539 (0.0880)***	0.773 (0.173)
Legal system (L1) × GDP growth (L1)		1.151 (0.0651)**		0.877 (0.0585)**	
Legal system (L1) × Gini index (L1)			1.019 (0.0128)		1.045 (0.0148)***
Legal system (L1) × Poor (L1)	1.629 (0.372)**	1.492 (0.351)*	2.066 (0.533)***		
Legal system (L1) × Emerging (L1)				1.916 (0.403)***	2.586 (0.687)***

TABLE 4 (Continued)

	Poor		Emerging	
Observations	329	329	329	329
Number of id	87	87	87	87
<i>Soundness of money</i>				
Index of soundness of money (L1)	0.766 (0.0857)**	0.485 (0.182)*	0.723 (0.120)*	0.725 (0.0721)***
Soundness of money (L1) × GDP growth (L1)	1.013 (0.0276)		1.044 (0.0315)	0.666 (0.0822)***
Soundness of money (L1) × Gini index (L1)	1.010 (0.00792)			1.034 (0.00995)***
Soundness of money (L1) × Poor (L1)	1.271 (0.197)	1.238 (0.190)	1.323 (0.232)	
Soundness of money (L1) × Emerging (L1)			1.311 (0.202)*	1.125 (0.211)
Observations	330	330	330	330
Number of id	87	87	87	87
<i>Trade freedom</i>				
Index of trade freedom (L1)	0.926 (0.111)	0.162 (0.0985)***	0.573 (0.125)**	0.592 (0.113)***
Trade freedom (L1) × GDP growth (L1)	1.117 (0.0473)***		0.915 (0.0496)	0.710 (0.161)
Trade freedom (L1) × Gini index (L1)	1.038 (0.0136)***			1.025 (0.0132)*
Trade freedom (L1) × Poor (L1)	0.992 (0.218)	0.972 (0.207)	1.303 (0.316)	

(Continues)



TABLE 4 (Continued)

	Poor		Emerging	
Trade freedom (L1) × Emerging (L1)				
		1.060	1.159	1.463
		(0.225)	(0.245)	(0.377)
Observations	320	320	320	320
Number of id	85	85	85	85
<i>Regulation</i>				
Index of regulation (L1)	0.904	0.180	0.657	0.488
	(0.164)	(0.142)**	(0.189)	(0.118)***
Regulation (L1) × GDP growth (L1)		1.072		0.990
		(0.0500)		(0.0494)
Reagulation (L1) × Gini index (L1)			1.035	1.025
			(0.0173)**	(0.0179)
Regulation (L1) × Poor (L1)	1.194	1.167	1.483	
	(0.325)	(0.321)	(0.475)	
Regulation (L1) × Emerging (L1)			0.941	0.980
			(0.325)	(0.393)
Observations	330	330	330	330
Number of id	87	87	87	87

Notes: The table presents only the results for the variables of interest. All the regressions presented in the table control for the same set of variables as the regressions presented in Table 3. Odds ratios after panel logit estimates. All the regressors followed by “L1” are lagged one period.

Significance levels:

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ . Standard deviations in parentheses.

Table 1 presents the results for the effects of the global index of economic freedom on the probability of transitioning from a worse to a better state and vice versa. The figures suggest that economic freedom has an overall positive effect on advancements: the odds ratios are greater than 1 and statistically significant. Consistently, the index presents odds ratios smaller than 1 for the probability of recessing. The table also presents the results when interactions between first the economic freedom index and the level of GDP growth and then between the economic freedom index and the Gini index are added to the model; the literature suggests that economic freedoms may have different effects according to the different levels of growth and inequality. The figures in the table seem to confirm these previous conclusions: the interaction between the index of economic freedom and the level of GDP growth at time  $t - 1$  suggests that, for a given level of income growth, higher levels of economic freedom are more likely to produce a recession than an advancement of the country. Nevertheless, such an effect is rather small and overcompensated by the “pure” effect of economic freedom. Figures 1 and 2 present the simulated values of marginal effects of economic freedom on the probability of advancing from an inferior to a superior cluster for given values of per-capita GDP growth rate and Gini index, respectively. The interpretation of the graphs is as follows. At the chosen level of GDP per capita growth or Gini index, a change in the value of the economic freedom index equal to the value reported on the horizontal axis of the graph engenders a change in the probability of advancing equal to that readable on the vertical axis. For the sake of likelihood, the range of the possible values of the index of economic freedom is constrained within the interval observed in real data (i.e. the extreme values, although theoretically possible, are excluded as they do not characterize any country in the sample). The graphs suggest that economic freedom contributes to advancing at all the chosen levels of growth and inequality. Nevertheless, there are some differences: indeed, the contribution decreases as income growth increases. The results shown in the figures are compatible with those presented in the tables (in fact, the simulated marginal effects are based on the results of the panel estimates).<sup>11</sup> Similar comments apply for the interaction between the Gini index and that of economic freedom.

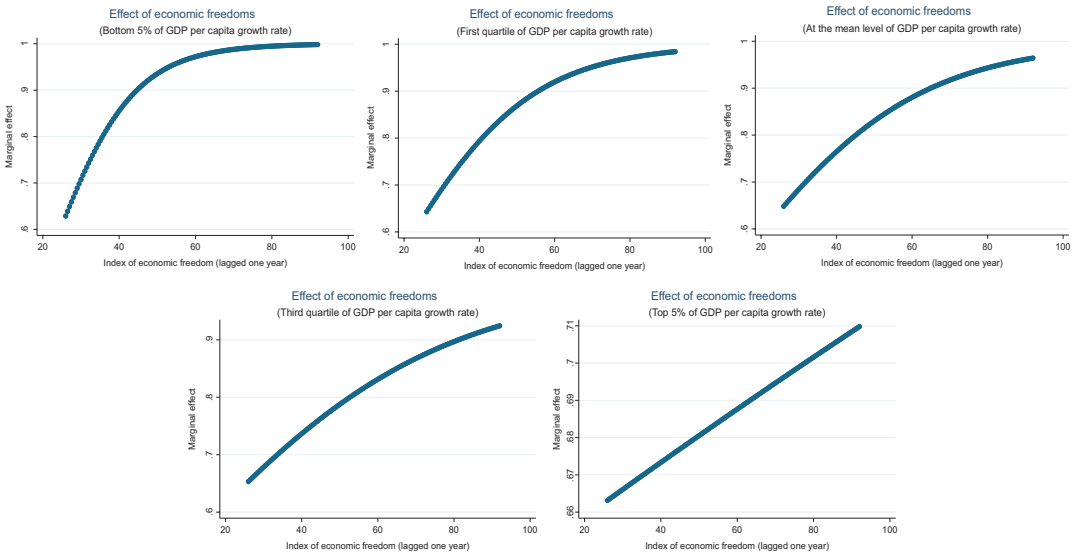


FIGURE 1 Marginal effects of economic freedoms on the probability of advancing from an inferior to a superior cluster, at different levels of per capita income growth [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

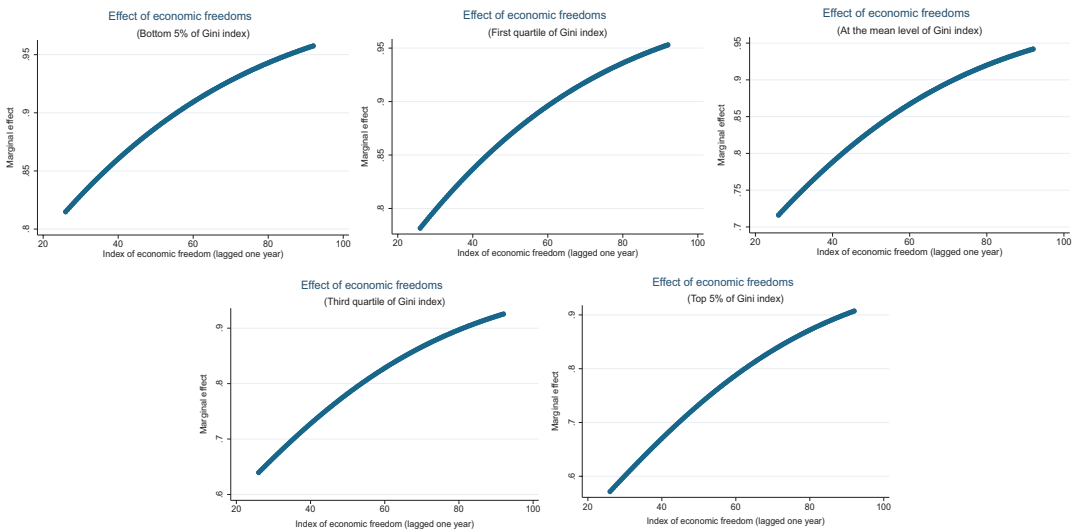


FIGURE 2 Marginal effects of economic freedoms on the probability of advancing from an inferior to a superior cluster, at different levels of Gini index [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/roec.12888)]

The results of the regressions that alternatively include the five components of the index of economic freedom one at a time are shown in Table 2 (full results are available upon request). The figures suggest that not all the components of the aggregate index have an effect on transitioning from one cluster to another. In particular, the size of the government expenditure and the level of regulation of the economy have no effect either on moving from low to high clusters, or vice versa. Instead, sound money and strong protection of property and personal rights enhance transitions from poverty and progression to better situations, suggesting that these two components of the index are the best horses to bet on in designing policies aimed at avoiding falling into poverty traps. The odds ratio for trade freedom becomes statistically significant only when the interaction between it and the Gini index is added as a regressor. The odds ratios of the interaction variables are never statistically significant, suggesting that the effect of each component of the index on transitions between clusters does not depend on growth or income inequality. While this may seem contradictory with respect to the results presented in Table 1, we should remember that the aggregate index implicitly contains interactions between its components, while the introduction of one of these at a time rules out such interactions. Therefore, it may happen that, once these are accounted for, the overall effect of economic freedom on movements between clusters differs with income growth and inequality. Such a possibility suggests that further research should inquire into the effects of the interactions between the components of the indices of economic freedom.

The role of economic freedom in determining whether a country is likely to fall into a poverty trap is shown in Table 3. Here the interactions between the values of the indices and a dummy indicating if the country was also poor in period  $t - 1$  are added. Indeed, this variable indicates the effect of economic freedoms on the probability that a country belonging to the poor cluster at time  $t - 1$  will still fall in the same cluster at time  $t$ . The figures show that higher levels of economic freedom at time  $t - 1$  are associated with lower probabilities of belonging to the cluster of poor countries. The odds ratios of the interaction terms between the index and being previously classified as poor and of the related dummy are not statistically significant. These results suggest that the effect of economic freedom in determining whether a country is at risk of being trapped

in poverty does not depend on its starting point: both already poor countries and economies that start from a better situation have the same probability of being trapped in poverty if they rank low in terms of overall economic freedom. Moreover, for a given level of economic freedom, higher levels of income inequality are associated with a higher risk of belonging to the cluster of poor countries, suggesting that economic freedoms may exert detrimental effects when implemented in highly unequal societies. Along with the evidence provided in [Table 1](#) which is in favor of economic freedoms as a way to promote advancements and help countries to avoid falling into a poverty trap, policy-makers should also pay attention to other aspects, such as income inequality which should be attenuated before proceeding with liberalizations.

[Table 4](#) is analogous to [Table 2](#), as it reports the effects of the single components of the index of economic freedom on the probability of being poor.<sup>12</sup> The figures highlight that almost all the components of the index of economic freedom (apart from government size) have some effect in helping countries avoid poverty traps. However, the results present light and shadow; indeed, the contribution of the legal system seems to be unexpectedly that of increasing the probability of being persistently trapped in poverty. While the odds ratios for the indicator alone are less than 1 and statistically significant, the interaction terms are much higher than 1 and, again, statistically significant. Mehlum et al. (2003) propose a theoretical model that may help to explain this result: poor countries are characterized by the presence of a small number of firms owned by the plutocrats of the country; in addition, in these countries foreign companies invest largely in the exploitation of natural resources and land. Efficient legal systems, combined with corrupt politicians who enforce legislation that is favorable to such mechanisms (e.g. protectionism, low taxation for foreign companies) may protect the status quo, lowering the number of new entrants to the markets.<sup>13</sup>

A sound monetary system has always a negative effect on the probability of falling into a poverty trap; in other words, sound money, as measured by the index, promotes growth out of the poverty cluster. The freedom to trade exhibits analogous positive effects in helping countries to avoid traps. Finally, and partially consistently with McKinnon (1982, 1991), the sub-index for the regulatory component has no effect on the probability of being stuck in poverty traps (the odds ratio is statistically significant in one case, but is not robust to different specifications). In addition, income inequality combined with deregulation and trade liberalization seems to hinder the economic performances of countries: liberalizing highly unequal economies appears to be counterproductive. As suggested by the literature, there is an optimal sequence for implementing reforms, and the data presented in this paper support such a conclusion. In sum, most of the figures in [Table 4](#) confirm what is highlighted by other tables. With the exception of the index of the quality of the legal system and the government size, the other components of the index of economic freedom seem unambiguously to decrease the probability of falling into a poverty trap, especially when the reforms are implemented in less unequal countries.

The Appendix presents some robustness checks: [Tables A4–A11](#) show the results of panel logit regressions for bettering or worsening the position in the ranking ([Tables A4–A7](#)) and for being trapped either in poverty or in the set of emerging countries ([Tables A8–A11](#)). The analyses shown in [Table A4](#) include only the indices (overall economic freedom and its five components), while in the other tables the same regressors as those used in the regressions presented in the main text of the paper are progressively included. While the values of the odds ratios change slightly from one specification to another, the results are qualitatively robust. Moreover, the changes in their magnitudes are relatively small, thus rendering them robust to different specifications of the model.<sup>14</sup> Also the results for being trapped either in the poor or in the emerging group are robust to different specifications.

The results presented in this paper show the importance of the institutions included in the index of economic freedom for growth and poverty avoidance. In particular, the figures in the tables confirm the predictions of the theory: sound legal systems, stability of the value of money (i.e. low inflation rates), light regulation of the markets, and freedom to trade internationally are all positively linked both to relatively high growth and to the probability of avoiding traps. This last result, however, seems to depend positively on the government size, perhaps because large public expenditure has a double positive effect: on the one hand, it increases employment; on the other, perhaps more importantly, it enhances income redistribution as well as providing in-kind transfers, such as free health and education, which promote social mobility and human capital accumulation.

## 5 | CONCLUSIONS

This paper enters an old debate, proposing a new viewpoint based on a classification of economies that combines static and dynamic elements; this provides a relative rather than an absolute criterion for clustering economies which defines poverty traps as a combined condition of low income and low growth. The perspective proposed here allows for widening the availability of viewpoints and therefore evidence about such matters. In addition, the empirical analysis presents an inquiry about the different contributions of the components of one of the most diffused indices of economic freedom. Economic freedom is indeed a multidimensional concept encompassing many different aspects and policies, so that its total effect on growth and traps must be studied by decomposing the single effects of its components.

The results of the empirical analysis show that economic freedom is in general a positive ingredient for transitioning to higher clusters and allows poverty traps to be avoided, at least as they are defined throughout the paper. However, some caveats on the indiscriminate implementation of reforms aimed at increasing economic freedoms are in order. When economies are characterized by high levels of income inequality, they have a slightly greater probability of being trapped in poverty. In fact, some components of the index seem to have a rather negative effect on countries with per-capita incomes below the world average, while the opposite holds for those above the average. In other words, economic freedoms should be implemented cautiously and policy-makers should try to follow an optimal sequencing of reforms. More specifically, governments should pursue strategies aimed at increasing economic freedoms: not only diminishing the fiscal burden on people and firms, but also reforming the judicial system to render it more efficient and ensuring that no or very low protectionist barriers are applied. Nevertheless, countries which are still behind in terms of economic freedoms should proceed with reforms gradually. McKinnon (1991) recalls that, while economic freedoms enhance growth and development, they should be implemented in a precise order, to avoid damaging the economy. In particular, governments should promote trade freedom after strengthening internal markets; this implies that the other goals (decreasing government size, strengthening the legal system, controlling inflation and reducing the burden of market regulation) should be achieved before trade freedom. In addition, the decrease in public intervention must be balanced by an appropriate regulation that ensures fair competition both in the market of goods and services and in that of labor. In addition, the empirical results presented in this paper suggest that governmental intervention in terms of redistribution through the fiscal system may be beneficial for countries to avoid traps.

In addition, as highlighted by the remarks at the end of the literature review, policies should pay attention to the different effects that each component of the overall index of economic freedom has on both transitions from one group of countries to another and trap avoidance. Indeed,

the results presented in the paper show that some elements of economic freedom have opposite effects on the variables of interest and, even when their contributions go in the same direction, the magnitudes of the effects may be noticeably different.

Some issues remain open. The first is the need for a deeper analysis of the effects exerted by the many components and sub-components of economic freedom included in the Fraser index. Indeed, each of the five areas of the index considered in the paper is based on numerous components and sub-components that are measured by about 50 different sub-indicators. However, to the authors' knowledge, no extant study has examined their distinct effect on growth and traps as well as their interactions with other dimensions of development. The second open issue is whether an unambiguous definition of poverty traps really exists. Indeed, as both the extant literature and this paper show, their characterization depends on the definitions adopted by the researchers. Finally, the recent focus of international organizations, national governments, and scholars on inclusive growth calls for an investigation into the contribution of economic freedoms to this new concept of growth.

### ACKNOWLEDGMENTS

Open Access Funding provided by Università degli Studi di Torino within the CRUI-CARE Agreement. [Correction added on 26 May 2022, after first online publication: CRUI funding statement has been added.]

### DATA AVAILABILITY STATEMENT

Data on GDP per capita and its rate of growth are derived from the Total Economy Database, Conference Board (EKS PPP); the economic freedom index used in the analysis is that provided by the Fraser Institute; the Gini coefficient is taken from the Global Income Dataset, presented by the Global Consumption and Income Project (Lahoti et al., 2016); all the other variables are from the World Bank World Development Indicators. For more details about how the Fraser Institute calculates the index of economic freedom and its components, see the *Economic Freedom of the World 2019 Annual Report*, available at <https://www.fraserinstitute.org/sites/default/files/economic-freedom-of-the-world-2019.pdf>.

### ORCID

Matteo Migheli  <https://orcid.org/0000-0001-5051-4462>

### ENDNOTES

<sup>1</sup> Many years after Solow, Gill and Kharas (2007) proposed the existence also of a middle-income trap: this is analogous to a poverty trap, but, while in the latter per-capita income remains stuck at poverty levels, in the former countries grow up to middle levels (between \$10,000 and \$16,000) and then stabilize at those levels, without attaining affluence. Although middle-income traps are not the focus of the present paper, it may be useful to remember that not only poverty traps exist.

<sup>2</sup> In this paper we consider poverty traps at the macro (i.e. country) level; however, this topic is studied also at the micro (e.g. household) level (see, for example, Arunachalam & Shenoy, 2017).

<sup>3</sup> Specifically, the world average per-capita income is calculated as  $\bar{y}_T = \frac{(\sum_{i=1}^n \bar{y}_{iT})}{n}$ , while the mean of the average annual growth rate of per-capita income is given by  $\bar{r}_T = \frac{(\sum_{i=1}^n \bar{r}_{iT})}{n}$ , where  $n$  is the number of countries in the world,  $\bar{y}_{iT}$  the average per-capita income of country  $i$  over period  $T$ , and  $\bar{r}_{iT}$  the average annual per-capita income rate of growth of country  $i$  over the same period. For more details, see Saccone and Deaglio (2020).

- <sup>4</sup> It should be noted that, theoretically, a relative measure of poverty at world level may also consider poor those countries that are rich in the hypothetical case where the world average would correspond to a high level of income. However, in the world as it is today and as it has been over the decades analyzed, this theoretical case does not apply, as for each five-year period the world income average is close to or slightly above the threshold used by the World Bank to divide low- and middle-income from high-income economies. In any case, the relative income threshold in our approach can be easily substituted by an absolute one without losing the proposed classification and the relativity of the dynamics benchmarked to the average growth rate.
- <sup>5</sup> Regressions using other measures of education were also run. However, these different measures were rarely statistically significant. Instead, the explanatory power of female enrollment was shown to be higher. For this reason, the authors chose to use this last variable, as it also allows women's empowerment to be (indirectly) accounted for. In addition, the other measures of education varied over time less than that capturing female enrollment. This phenomenon may be explained as a reflection of the pro-women policies that countries have been adopting.
- <sup>6</sup> For a survey of the controls generally included in regressions see Jones (2016).
- <sup>7</sup> For more details about how the Fraser Institute calculates the index of economic freedom and its components, see the *Economic Freedom of the World 2019 Annual Report*, available at <https://www.fraserinstitute.org/sites/default/files/economic-freedom-of-the-world-2019.pdf>.
- <sup>8</sup> As mentioned before, these two clusters are merged into one for the purpose of the analysis.
- <sup>9</sup> An alternative estimation strategy to panel logit would be panel multinomial logit, accounting for all three possible outcomes at the same time. Such a strategy was also applied, with results qualitatively identical to those provided by the panel logit estimations. The choice of showing the latter rather than the former (which are available upon request to the corresponding author) was dictated by the violation of the assumption of non-orderability of the alternatives. Indeed, multinomial models require this last condition, while it is clear that poverty, emergence, and affluence are rankable.
- <sup>10</sup> Notice that the use of the full panel in the regressions reported in the tables generates sample sizes different from those reported in Table A1.
- <sup>11</sup> The results on the odds ratios of the growth rate of per-capita income reported in the tables can be understood by looking at Table A1, where the transition matrix is reported. In our sample, most advancements are indeed accounted for by countries that moved from the poor cluster (low growth at  $t - 1$ ) to the emerging cluster. Analogously, most recessions are accounted for by countries moving from emersion (high growth at  $t - 1$ ) to poverty. This may explain why sometimes a higher rate of growth is positively associated with the probability of recessing and vice versa.
- <sup>12</sup> The results presented in Table 4 are qualitatively robust to many different specifications and to different estimation strategies.
- <sup>13</sup> A panel regression of the index measuring the quality of the legal system on the indicator of the level of regulation reveals no significant correlation between the two, supporting the possibility that the explanation proposed in the text holds.
- <sup>14</sup> Analyses using variations of the variables of interest were also tried. They are omitted here; however, the results remain qualitatively unaltered, although some statistical significance is lost. This might be due to the small inter-period variations of such variables: indeed, although they vary over time, their changes are small, as is usual with variables measuring institutional characteristics.

## REFERENCES

- Afonso, A., & Furceri, D. (2010). Government size, composition, volatility and economic growth. *European Journal of Political Economy*, 26(4), 517–532. <https://doi.org/10.1016/j.ejpoleco.2010.02.002>
- Aixalá, J., & Fabro, G. (2009). Economic freedom, civil liberties, political rights and growth: A causality analysis. *Spanish Economic Review*, 11, 165–178. <https://doi.org/10.1007/s10108-008-9050-x>

- Akin, C. S., Cengiz, A., & Akar, B. G. (2014). The impact of economic freedom upon economic growth: An application on different income groups. *Asian Economic and Financial Review*, 4(8), 1024–1039.
- An, C. B., & Jeon, S. H. (2006). Demographic change and economic growth: An inverted U-shaped relationship. *Economics Letters*, 92(3), 447–454.
- Apergis, N., & Cooray, A. (2017). Economic freedom and income inequality: Evidence from a panel of global economies – a linear and non-linear long-run analysis. *The Manchester School*, 85(1), 88–105.
- Apergis, N., & Katsaiti, M. S. (2018). Poverty and the resource curse: Evidence from a global panel of countries. *Research in Economics*, 72(2), 211–223. <https://doi.org/10.1016/j.rie.2018.04.001>
- Arunachalam, R., & Shenoy, A. (2017). Poverty traps, convergence and the dynamics of household income. *Journal of Development Economics*, 126, 215–230. <https://doi.org/10.1016/j.jdeveco.2017.02.001>
- Azariadis, C., & Stachurski, J. (2006). “Poverty Traps” in *handbook of growth economic* (Philippe Aghion and Steven Durlaf Eds.). North Holland.
- Barro, R. J. (2013). Inflation and economic growth. *Annals of Economics and Finance*, 14(1), 85–109.
- Barro, R. J., & Lee, J. W. (2013). A new data set of educational attainment in the world, 1950–2010. *Journal of Development Economics*, 104, 184–198. <https://doi.org/10.1016/j.jdeveco.2012.10.001>
- Berggren, N. (2003). The benefits of economic freedoms: A survey. *The Independent Review*, 8(2), 193–211.
- Birdsall, N., Ross, D., & Sabot, R. (2017). Inequality and growth reconsidered: Lessons from East Asia. *World Bank Economic Review*, 9(3), 477–508. <https://doi.org/10.1093/wber/9.3.477>
- Brasington, D., Kato, M., & Semmler, W. (2010). Transitioning out of poverty. *Metroeconomica*, 61(1), 68–95. <https://doi.org/10.1111/j.1467-999X.2009.04062.x>
- Cai, F. (2012). Is there a ‘middle-income trap’? Theories, experiences and relevance to China. *China & World Economy*, 20(1), 49–61. <https://doi.org/10.1111/j.1749-124X.2012.01272.x>
- Caraballo, M. A., Dabús, C., & Delbianco, F. (2017). Income inequality and economic growth revisited. A note. *Journal of International Development*, 29(7), 1025–1029. <https://doi.org/10.1002/jid.3300>
- Carlsson, F., & Lundström, S. (2002). Economic freedom and growth: Decomposing the effects. *Public Choice*, 112(3–4), 335–344.
- Cherif, R., & Hasanov, F. (2015). *The leap of the tiger: How Malaysia can escape the middle-income trap*. IMF Working Paper 15/131. IMF.
- Doner, R., & Schneider, B. R. (2016). The middle-income trap. More politics than economics. *World Politics*, 68(4), 608–644. <https://doi.org/10.1017/S0043887116000095>
- Doucouliaqos, C., & Ulubasoglu, M. A. (2006). Economic freedom and economic growth: Does specification make a difference? *European Journal of Political Economy*, 22(1), 60–81. <https://doi.org/10.1016/j.ejpol.2005.06.003>
- Easterly, W. (2006a). The big push *Dèjà Vu*: A review of Jeffrey Sachs’s ‘the end of poverty: Economic possibilities for our time’. *Journal of Economic Literature*, 44(1), 96–105.
- Easterly, W. (2006b). Reliving the 1950s: The big push, poverty traps and the takeoffs in economic development. *Journal of Economic Growth*, 11(4), 289–318.
- Eichengreen, B., Park, D., & Shin, K. (2013). *Growth slowdowns redux: New evidence on the middle-income trap*. NBER Working Paper No. 18673, National Bureau of Economic Research.
- Erdem, E., & Tugcu, C. T. (2012). New evidence on the relationship between economic freedom and growth: A panel cointegration analysis for the case of OECD. *Global Economy Journal*, 12(3), 19. <https://doi.org/10.1515/1524-5861.1796>
- Fanti, L., Iannelli, M., & Manfredi, P. (2013). Neoclassical growth with endogenous age distribution. Poverty vs low-fertility traps as steady states of demographic transitions. *Journal of Population Economics*, 26(4), 1457–1484. <https://doi.org/10.1007/s00148-012-0446-4>
- Fougère, M., & Mérette, M. (1999). Population ageing and economic growth in seven OECD countries. *Economic Modelling*, 16(3), 411–427. [https://doi.org/10.1016/S0264-9993\(99\)00008-5](https://doi.org/10.1016/S0264-9993(99)00008-5)
- Ghatak, M. (2015). Theories of poverty traps and anti-poverty policies. *The World Bank Economic Review*, 29(S1), S77–S105. <https://doi.org/10.1093/wber/lhv021>
- Gill, I., & Kharas, H. (2007). *An East Asian renaissance. ideas for economic growth*. the World Bank.
- Glawe, L., & Wagner, H. (2016). The middle-income trap: Definitions, theories and countries concerned – a literature survey. *Comparative Economic Studies*, 58(4), 507–538. <https://doi.org/10.1057/s41294-016-0014-0>



- Goldsmith, A. A. (1995). Democracy, property rights and economic growth. *Journal of Development Studies*, 32(2), 157–174. <https://doi.org/10.1080/00220389508422409>
- Grassetti, F., Mammana, C., & Michetti, E. (2018). Poverty trap, boom and bust periods and growth. A nonlinear model for non-developed and developing countries. *Decisions in Economics and Finance*, 41(2), 145–162. <https://doi.org/10.1007/s10203-018-0211-6>
- Gwartney, J., Lawson, R., & Block, W. (1996). *Economic freedom of the world, 1975–1995*. The Fraser Institute.
- Gwartney, J., Lawson, R., Hall, J., & Murphy, R. (2020). *Economic freedom of the world: 2020 Annual report*. Fraser Institute.
- Haggard, S., & Tiede, L. (2011). The rule of law and economic growth: Where are we? *World Development*, 39(5), 673–685. <https://doi.org/10.1016/j.worlddev.2010.10.007>
- Han, X., & Wei, S.-J. (2017). Re-examining the middle-income trap (MITH): What to reject and what to revive? *Journal of International Money and Finance*, 73, 41–61.
- Hartwell, C. A. (2018). Old wine and new bottles: A critical appraisal of the middle-income trap in BRICS countries. *Russian Journal of Economics*, 4(2), 133–154. <https://doi.org/10.3897/j.ruje.4.27726>
- Henderson, V., Storeygard, A., & Weil, D. N. (2011). A bright idea for measuring economic growth. *American Economic Review*, 101(3), 194–199. <https://doi.org/10.1257/aer.101.3.194>
- Hakura, D., Hussain, M., Newiak, M., Thakoor, V., & Yang, F. (2016). *Inequality, gender gaps and economic growth: Comparative evidence for sub-Saharan Africa*. IMF Working Paper Series No. 16/111.
- Islam, S. (1996). Economic freedom, per-capita income and economic growth. *Applied Economics Letters*, 3(9), 595–597. <https://doi.org/10.1080/135048596356032>
- Jones, C. I. (2016). The facts of economic growth. In J. B. Taylor, & H. Uhlig (Eds.), *Handbook of macroeconomics*. North Holland.
- Karabegovic, A., Samida, D., Schlegel, C. M., & McMahon, F. (2003). North American economic freedom: An index of 10 Canadian provinces and 50 US states. *European Journal of Political Economy*, 19(3), 431–452. [https://doi.org/10.1016/S0176-2680\(03\)00008-9](https://doi.org/10.1016/S0176-2680(03)00008-9)
- Kouton, J. (2019). Relationship between economic freedom and inclusive growth: A dynamic panel analysis for sub-Saharan African countries. *Journal of Social and Economic Development*, 21, 143–165.
- Kraay, A., & McKenzie, D. (2014). Do poverty traps exist? Assessing the evidence". *Journal of Economic Perspectives*, 28(3), 127–148. <https://doi.org/10.1257/jep.28.3.127>
- Lahoti, R., Jayadev, A., & Reddy, S. (2016). The global consumption and income project (GCIP): An overview. *Journal of Globalization and Development*, 7(1), 61–108. <https://doi.org/10.1515/jgd-2016-0025>
- Le Roux, P. (2015). The impact of economic freedom on economic growth in the SADC: An individual component analysis. *Studies in Economics and Econometrics*, 39(2), 41–61. <https://doi.org/10.1080/10800379.2015.12097280>
- Lorgelly, P. K., & Dorian Owen, P. (1999). The effect of female and male schooling on economic growth in the Barro-Lee model. *Empirical Economics*, 24, 537–557. <https://doi.org/10.1007/s001810050071>
- Manh-Hung, N., & Makkissi, P. (2004). Escaping the poverty trap in a developing rural economy. *Canadian Journal of Economics*, 37(1), 123–139. [https://doi.org/10.1111/j.0008-4085.2004.006\\_1.x](https://doi.org/10.1111/j.0008-4085.2004.006_1.x)
- McKinnon, R. I. (1982). The order of economic liberalization: Lessons from Chile and Argentina. *Carnegie-Rochester Conference Series, Public Policy*, 17, 159–186. [https://doi.org/10.1016/0167-2231\(82\)90042-2](https://doi.org/10.1016/0167-2231(82)90042-2)
- McKinnon, R. I. (1991). *The order of economic liberalization. Financial control in the transition to a market economy*. John Hopkins University Press.
- Mehlum, H., Moene, K., & Torvik, R. (2003). Predator or prey? Parasitic enterprises in economic development. *European Economic Review*, 47(2), 275–294. [https://doi.org/10.1016/S0014-2921\(01\)00194-5](https://doi.org/10.1016/S0014-2921(01)00194-5)
- Notten, G., & De Neubourg, C. (2011). Monitoring absolute and relative poverty: 'Not enough' is not the same as 'much less'. *Review of Income and Wealth*, 57(2), 247–269. <https://doi.org/10.1111/j.1475-4991.2011.00443.x>
- Nurske, R. (1953). *Problems of capital formation in underdeveloped countries*. Oxford University Press.
- Ott, J. (2018). Measuring economic freedom: Better without size of government. *Social Indicators Research*, 135, 479–498. <https://doi.org/10.1007/s11205-016-1508-x>
- Perrin, F. (2021). Can the historical gender gap index deepen our understanding of economic development? *Journal of Demographic Economics*, in Press. <https://doi.org/10.1017/dem.2020.34>
- Phillips, P. C. B., & Sul, D. (2009). Economic transition and growth. *Journal of Applied Econometrics*, 24(7), 1153–1185. <https://doi.org/10.1002/jae.1080>

- Pugliese, E., Chiarotti, G. L., Zaccaria, A., & Pietronero, L. (2017). Complex economies have a lateral escape from the poverty trap. *PlosOne*, *12*(1), e0168540. <https://doi.org/10.1371/journal.pone.0168540>
- Ram, R. (1986). Government size and economic growth: A new framework and some evidence from cross-section and time-series data. *The American Economic Review*, *76*(1), 191–203.
- Rodrik, D. (2006). Goodbye Washington consensus, hello Washington confusion? A review of the World Bank's economic growth in the 1990s: Learning from a decade of reforms. *Journal of Economic Literature*, *44*(4), 973–987.
- Roland, G. (2014). Institutions and economic development. In *Development economics*. Pearson.
- Saccone, D. (2017). Economic growth in emerging economies: What, who and why. *Applied Economics Letters*, *24*(11), 800–803. <https://doi.org/10.1080/13504851.2016.1229407>
- Saccone, D., & Deaglio, M. (2020). Poverty, emergence, boom and affluence: A new classification of economies. *Economia Politica*, *37*, 267–306. <https://doi.org/10.1007/s40888-019-00166-4>
- Sachs, J., McArthur, J. W., Schmidt-Traub, G., Kruk, M., Bahadur, C., Faye, M., & McCord, G. (2004). Ending Africa's poverty trap. *Brookings Papers on Economic Activity*, *2004*(1), 117–240. <https://doi.org/10.1353/eca.2004.0018>
- Schneider, P. H. (2005). International trade, economic growth and intellectual property rights: A panel data study of developed and developing countries. *Journal of Development Economics*, *78*(2), 529–547. <https://doi.org/10.1016/j.jdeveco.2004.09.001>
- Solow, R. M. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics*, *70*(1), 65–94. <https://doi.org/10.2307/1884513>
- Subbarao, K., & Raney, L. (1995). Social gains from female education: A cross-national study. *Economic Development and Cultural Change*, *44*(1), 105–128. <https://doi.org/10.1086/452202>
- Swan, T. W. (1956). Economic growth and capital accumulation. *Economic Record*, *32*(2), 334–361. <https://doi.org/10.1111/j.1475-4932.1956.tb00434.x>
- Traverso, S. (2016). How to escape from a poverty trap: The case of Bangladesh. *World Development*, *4*(1), 48–59. <https://doi.org/10.1016/j.wdp.2016.12.005>
- UN. (2019). *SDG indicators – metadata*. Available at [unstats.un.org/sdgs/indicators/indicators-list](https://unstats.un.org/sdgs/indicators/indicators-list)
- Van den Berg, H. (2017). *Economic growth and development*. World Scientific.
- Yiping, H., Qin, G., & Xun, W. (2014). Financial liberalization and the middle-income trap. What can China learn from the cross-country experience? *China Economics Review*, *31*, 426–440. <https://doi.org/10.1016/j.chieco.2014.04.009>

**How to cite this article:** Saccone, D., & Migheli, M. (2022). Free to escape? Economic freedoms, growth and poverty traps. *Review of Development Economics*, *26*, 1518–1554. <https://doi.org/10.1111/rode.12868>

## APPENDIX

TABLE A1 Transition matrices between groups

	Poor	Emerging	Booming	Affluent	Total
1985–89/1990–94					
Poor	21	11	2	2	36
Emerging	20	26	0	0	46
Booming	0	2	24	9	35
Affluent	0	0	3	3	6
Total	41	39	29	14	
1990–94/1995–99					
Poor	20	20	1	1	42
Emerging	16	24	0	0	40
Booming	0	1	18	3	22
Affluent	0	1	16	2	19
Total	36	46	35	6	
1995–99/2000–04					
Poor	27	11	0	1	39
Emerging	15	27	0	0	42
Booming	0	2	6	2	10
Affluent	0	0	16	16	32
Total	42	40	22	19	
2000–04/2005–09					
Poor	23	7	0	0	30
Emerging	16	32	0	0	48
Booming	0	2	3	3	8
Affluent	0	1	7	29	37
Total	39	42	10	32	
2005–09/2010–14					
Poor	15	15	0	0	30
Emerging	14	32	0	0	46
Booming	1	1	5	7	14
Affluent	0	0	3	30	33
Total	30	48	8	37	

Notes: The figures reported in the tables represent the number of countries that fall in each cell of the matrix. Column and row totals are also provided.

TABLE A 2 Descriptive statistics: average values and standard deviations (in brackets)

	2000–2004							
	Poor	Emerging	Booming	Rich	Poor	Emerging	Booming	Rich
1985–1989								
GDP per capita	6,489.42 (4,679.93)	6,823.51 (4,735.00)	27,815.89 (7,955.82)	42,849.76 (29,442.61)	GDP per capita 7,466.56 (5,198.78)	7,063.11 (5,253.84)	30,027.29 (13,100.98)	45,311.72 (19,672.55)
GDP per capita growth	-0.88 (1.55)	2.95 (2.33)	3.10 (1.32)	-2.07 (3.96)	GDP per capita growth 0.97 (1.95)	5.79 (2.38)	5.15 (1.83)	1.84 (0.94)
Economic freedom index	43.74 (8.95)	52.02 (9.35)	65.18 (13.59)	65.86 (3.18)	Economic freedom index 62.12 (7.76)	61.65 (8.90)	71.00 (7.70)	78.17 (4.96)
Government size	4.88 (1.23)	5.35 (0.85)	4.44 (1.59)	4.31 (1.80)	Government size 6.94 (1.08)	6.05 (1.13)	5.61 (1.09)	5.74 (1.33)
Legal system	4.05 (1.29)	4.53 (1.39)	7.01 (1.26)	6.55 (1.18)	Legal system 4.35 (1.12)	5.36 (1.37)	6.66 (0.95)	8.15 (0.92)
Soundness of money	5.59 (2.42)	5.91 (2.11)	7.61 (2.10)	7.62 (1.25)	Soundness of money 7.13 (1.76)	7.21 (1.54)	8.81 (0.66)	9.27 (0.61)
Trade freedom	2.81 (1.81)	4.53 (1.88)	7.30 (2.02)	6.93 (1.33)	Trade freedom 6.60 (1.67)	6.29 (1.77)	7.83 (1.28)	8.66 (0.71)
Regulation	4.54 (1.19)	5.66 (0.98)	6.25 (1.60)	5.86 (1.91)	Regulation 6.10 (0.71)	5.87 (0.88)	6.59 (0.83)	7.26 (0.79)
Age dependency ratio	81.93 (17.53)	72.61 (17.94)	52.08 (11.77)	61.02 (18.39)	Age dependency ratio 71.85 (17.86)	63.16 (19.37)	47.30 (10.73)	48.90 (6.98)
Gini index	46.49 (15.15)	45.79 (13.52)	32.34 (8.34)	33.66 (8.59)	Gini index 51.75 (7.24)	47.52 (9.03)	37.63 (9.23)	34.54 (7.12)
Share of urban population	41.65 (19.29)	43.95 (22.15)	73.39 (14.50)	75.69 (14.02)	Share of urban population 48.98 (21.93)	47.40 (18.79)	63.33 (23.17)	81.79 (10.42)

(Continues)

TABLE A.2 (Continued)

	Poor	Emerging	Booming	Rich	Poor	Emerging	Booming	Rich
Investments as a share of GDP	21.47 (7.42)	19.93 (8.21)	24.54 (4.21)	24.02 (5.24)	18.57 (5.14)	24.17 (6.66)	25.66 (5.39)	22.43 (2.56)
Inflation rate	17770 (501.53)	34.21 (97.37)	10.00 (16.69)	7.16 (11.21)	13.75 (32.14)	12.69 (24.64)	3.81 (1.90)	1.80 (1.35)
Exports as a share of GDP	22.48 (11.23)	26.89 (18.03)	41.33 (37.02)	38.82 (23.32)	31.70 (18.22)	37.17 (17.47)	50.92 (18.22)	54.12 (41.79)
Share of females not enrolled in primary school	41.99 (28.18)	29.56 (28.62)	8.77 (11.64)	27.69 (24.53)	27.41 (25.73)	24.56 (25.25)	8.23 (9.53)	8.73 (9.86)
	1990–1994							
	2005–2009							
GDP per capita	6,516.57 (4,389.57)	6,108.81 (4,329.85)	34,402.58 (12,890.88)	34,833.23 (16,285.20)	9,458.99 (7,133.99)	8,081.10 (5,372.65)	44,892.37 (32,231.73)	45,051.07 (18,499.54)
GDP per capita growth	-7.93 (5.41)	2.13 (2.57)	2.04 (2.45)	-3.35 (2.86)	1.55 (1.50)	5.55 (3.01)	3.82 (0.99)	0.95 (1.13)
Economic freedom index	46.85 (9.76)	51.62 (10.31)	69.69 (11.22)	65.00 (12.64)	63.43 (8.70)	65.25 (8.67)	72.01 (11.04)	76.82 (3.84)
Government size	4.65 (1.42)	6.17 (1.43)	5.13 (1.45)	3.91 (2.65)	6.83 (1.11)	6.77 (1.22)	6.57 (1.70)	5.81 (1.12)
Legal system	4.78 (1.11)	4.28 (1.44)	7.12 (1.60)	7.16 (1.05)	4.94 (1.36)	5.34 (1.42)	6.40 (1.48)	8.00 (1.03)
Soundness of money	5.12 (2.01)	5.54 (2.33)	8.28 (1.62)	7.22 (1.68)	7.00 (1.78)	7.63 (1.32)	8.58 (0.87)	9.32 (0.43)
Trade freedom	3.61 (1.73)	4.46 (2.02)	7.88 (1.52)	5.55 (1.88)	6.51 (1.11)	6.44 (1.69)	7.68 (1.20)	8.08 (0.55)

TABLE A.2 (Continued)

	Poor	Emerging	Booming	Rich	Poor	Emerging	Booming	Rich
Regulation	4.63 (1.38)	5.37 (1.20)	6.47 (1.38)	4.82 (2.47)	6.41 (0.90)	6.40 (0.79)	6.84 (1.35)	7.22 (0.72)
Age dependency ratio	71.88 (21.13)	77.14 (16.53)	53.72 (12.34)	48.09 (3.10)	68.55 (20.23)	61.46 (19.67)	41.84 (13.20)	47.17 (6.94)
Gini index	42.60 (14.40)	51.46 (9.24)	35.15 (8.33)	22.57 (7.21)	52.01 (7.86)	49.38 (7.13)	43.32 (7.46)	33.06 (5.56)
Share of urban population	45.34 (18.04)	44.32 (21.83)	78.75 (12.93)	70.56 (11.07)	50.05 (20.66)	48.62 (20.38)	68.26 (29.10)	79.47 (11.65)
Investments as a share of GDP	21.32 (9.84)	21.59 (7.38)	23.18 (4.00)	24.82 (4.52)	22.44 (6.33)	25.68 (7.82)	26.53 (7.68)	24.03 (3.55)
Inflation rate	507.73 (897.95)	109.06 (346.25)	5.94 (7.31)	131.34 (257.23)	302.99 (1596.37)	9.39 (4.82)	6.29 (3.89)	2.75 (1.54)
Exports as a share of GDP	31.99 (15.36)	24.88 (15.89)	42.45 (24.80)	30.76 (5.45)	34.72 (18.31)	36.52 (14.74)	71.71 (54.00)	56.15 (40.34)
Share of females not enrolled in primary school	24.17 (25.51)	37.22 (28.31)	12.01 (13.77)	8.19 (15.63)	27.30 (28.52)	21.68 (20.88)	10.96 (11.65)	5.34 (6.98)
<i>2010–2014</i>								
GDP per capita	6,298.54 (4,565.31)	6,706.99 (4,965.22)	36,318.61 (17,883.29)	39,807.47 (18,570.17)	11,244.23 (6,050.37)	8,231.34 (6,435.53)	42,431.03 (18,940.63)	47,198.60 (24,147.39)
GDP per capita growth	0.52 (2.05)	4.71 (3.67)	3.88 (1.45)	1.19 (1.51)	0.65 (1.35)	4.39 (1.60)	3.52 (1.03)	0.62 (1.55)
Economic freedom index	55.65 (11.08)	56.46 (9.25)	72.38 (10.49)	74.01 (8.87)	64.18 (9.80)	65.96 (7.38)	73.68 (8.52)	75.07 (4.01)

(Continues)

TABLE A.2 (Continued)

	Poor	Emerging	Booming	Rich	Poor	Emerging	Booming	Rich
Government size	6.49 (1.32)	5.82 (1.55)	4.70 (1.47)	5.72 (1.84)	6.73 (1.42)	6.95 (1.16)	6.32 (1.32)	5.46 (1.14)
Legal system	4.89 (1.07)	5.69 (0.92)	8.17 (1.20)	7.61 (1.09)	5.03 (1.45)	4.97 (1.22)	6.99 (1.36)	7.72 (1.15)
Soundness of money	4.97 (2.81)	5.37 (2.09)	8.66 (1.70)	8.85 (1.26)	7.73 (1.36)	7.58 (1.81)	8.65 (1.04)	9.30 (0.66)
Trade freedom	6.21 (1.41)	5.75 (2.35)	8.22 (1.59)	8.24 (1.15)	6.29 (1.30)	6.59 (1.58)	7.65 (0.95)	7.90 (0.55)
Regulation	5.40 (1.22)	5.53 (1.13)	6.46 (1.26)	6.58 (1.19)	6.24 (0.97)	6.67 (0.68)	7.27 (1.01)	7.15 (0.64)
Age dependency ratio	75.36 (19.19)	67.62 (17.07)	50.44 (9.06)	50.99 (9.71)	61.07 (19.87)	62.95 (20.64)	43.55 (9.26)	47.49 (9.82)
Gini index	51.86 (8.78)	47.47 (11.31)	33.78 (7.71)	36.91 (9.79)	50.27 (8.55)	49.17 (6.89)	39.00 (7.39)	32.48 (5.65)
Share of urban population	47.71 (20.63)	44.36 (19.61)	74.76 (13.23)	82.79 (10.72)	54.44 (21.86)	48.09 (19.52)	79.39 (15.08)	77.14 (17.10)
Investments as a share of GDP	19.84 (6.34)	23.58 (7.01)	23.94 (3.14)	22.98 (5.47)	22.49 (6.06)	26.74 (8.05)	23.10 (5.34)	20.89 (3.76)
Inflation rate	28.73 (44.50)	63.34 (239.28)	3.53 (3.98)	2.35 (2.33)	8.15 (8.36)	6.40 (5.11)	4.10 (3.63)	1.97 (1.21)
Exports as a share of GDP	31.81 (17.23)	31.75 (17.43)	42.45 (24.80)	51.30 (41.98)	33.36 (12.58)	34.76 (16.57)	89.14 (59.18)	55.85 (34.43)
Share of females not enrolled in primary school	30.14 (26.96)	27.17 (26.33)	7.85 (10.37)	13.03 (13.38)	22.89 (23.77)	20.19 (22.43)	7.53 (7.85)	3.34 (5.73)

TABLE A3 Variable definitions and sources

Variable	Description and source
GDP per capita	GDP per capita, EKS PPP, constant prices. Total Economy Database, Conference Board.
GDP per capita growth	Our calculations on data from the Total Economy Database, Conference Board.
Economic freedom index and its components	Economic Freedom of the World, Fraser Institute, various years.
Age dependency ratio	Age dependency ratio (% of working age population). World Development Indicators, World Bank.
Gini index	Gini index based on income data. Global Income Dataset, Global Consumption and Income Project (GCIP).
Share of urban population	Urban population (% of total population). World Development Indicators, World Bank.
Investments (% of GDP)	Gross fixed capital formation (% of GDP). World Development Indicators, World Bank.
Inflation rate	Inflation, consumer prices (annual %). World Development Indicators, World Bank.
Exports (% of GDP)	Exports of goods and services (% of GDP). World Development Indicators, World Bank.
Share of female not enrolled in primary school	Barro–Lee Educational Attainment Dataset (Barro & Lee, 2013).

TABLE A4 Effects of economic freedom and its components on advancing/recessing. Odds ratios (standard errors in parentheses)

Variables	Advanced		Recessed	
	Odds ratios	Constant	Odds ratios	Constant
Index of economic freedom	1.053 (0.0158)***	0.225 (0.221)	0.950 (0.0143)***	4.445 (4.366)
Government size	0.713 (0.0908)***	59.27 (51.48)***	1.402 (0.178)***	0.0169 (0.0147)***
Legal system	1.484 (0.146)***	0.698 (0.381)	0.674 (0.0662)***	1.433 (0.782)
Soundness of money	1.346 (0.105)***	0.698 (0.381)	0.783 (0.0750)**	0.823 (0.550)
Trade freedom	1.278 (0.123)**	1.215 (0.812)	0.783 (0.0750)**	0.823 (0.550)
Regulation	1.496 (0.225)***	0.509 (0.484)	0.668 (0.100)***	1.964 (1.867)
Observations	331			
Number of id	87			

Note: The index reported in the first column is the only regressor.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .



**TABLE A5** Effects of economic freedom and its components on advancing/recessing. Odds ratios (standard errors in parentheses)

Variables	Advanced		Recessed	
	Odds ratios	Constant	Odds ratios	Constant
Index of economic freedom	1.045 (0.0160)***	0.132 (0.134)**	0.957 (0.0146)***	7.552 (7.665)**
Government size	0.692 (0.0889)***	15.41 (14.84)***	1.445 (0.186)***	0.0649 (0.0625)***
Legal system	1.488 (0.147)***	0.170 (0.131)**	0.672 (0.0665)***	5.876 (4.534)**
Soundness of money	1.286 (0.106)***	0.425 (0.288)	0.777 (0.0642)***	2.352 (1.593)
Trade freedom	1.254 (0.118)**	0.384 (0.311)	0.798 (0.0752)**	2.604 (2.107)
Regulation	1.357 (0.212)*	0.339 (0.328)	0.737 (0.115)*	2.954 (2.861)
Observations	331			
Number of id	87			

Note: The regressions control also for time trend effects.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

**TABLE A6** Effects of economic freedom and its components on advancing/recessing. Odds ratios (standard errors in parentheses)

Variables	Advanced		Recessed	
	Odds ratios	Constant	Odds ratios	Constant
Index of economic freedom	1.045 (0.0272)*	4.568 (9.913)	0.957 (0.0249)*	0.219 (0.475)
Government size	0.771 (0.145)	463.7 (839.9)***	1.297 (0.243)	0.00216 (0.00391)***
Legal system	1.390 (0.217)**	11.74 (18.38)	0.720 (0.112)**	0.0852 (0.133)
Soundness of money	1.337 (0.215)*	8.725 (15.82)	0.748 (0.120)*	0.115 (0.208)
Trade freedom	1.177 (0.193)	49.85 (96.89)**	0.850 (0.140)	0.0201 (0.0390)**
Regulation	1.569 (0.410)*	6.115 (12.23)	0.637 (0.166)*	0.164 (0.327)
Observations	331			
Number of id	87			

Note: The regressions control also for time trend effects and GDP growth rate lagged one period.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

**TABLE A7** Effects of economic freedom and its components on advancing/recessing. Odds ratios (standard errors in parentheses)

Variables	Advanced		Recessed	
	Odds ratios	Constant	Odds ratios	Constant
Index of economic freedom	1.060 (0.0330)*	41.09 (127.0)	0.944 (0.0294)*	0.0243 (0.0752)
Government size	0.853 (0.172)	6,336 (15,964)***	1.173 (0.236)	0.000158 (0.000398)***
Legal system	1.459 (0.284)*	401.9 (1,022)**	0.686 (0.134)*	0.00249 (0.00633)**
Soundness of money	1.422 (0.285)*	131.4 (352.6)*	0.703 (0.141)*	0.00761 (0.0204)*
Trade freedom	1.516 (0.326)*	219.1 (622.5)*	0.659 (0.142)*	0.00456 (0.0130)*
Regulation	1.529 (0.428)	116.7 (339.3)	0.654 (0.183)	0.00857 (0.0249)
Observations	331			
Number of id	87			

Note: The regressions control also for time trend effects and GDP growth rate, and Gini index, urban population share, export growth and investment growth, all lagged one period.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

**TABLE A8** Effects of economic freedom and its components on advancing/recessing. Odds ratios (standard errors in parentheses)

Variables	Poor		Emerging	
	Odds ratios	Constant	Odds ratios	Constant
Index of economic freedom	0.872 (0.0261)***	3,261 (6,412)***	0.902 (0.0245)***	305.9 (553.1)***
Government size	1.841 (0.367)***	0.00499 (0.00686)***	1.420 (0.258)*	0.0272 (0.0333)***
Legal system	0.384 (0.0743)***	73.15 (73.98)***	0.584 (0.0808)***	6.766 (5.317)**
Soundness of money	0.459 (0.0759)***	161.4 (210.1)***	0.583 (0.0911)***	21.96 (27.59)**
Trade freedom	0.543 (0.0987)***	18.41 (23.06)**	0.449 (0.0950)***	79.39 (115.3)***
Regulation	0.334 (0.101)***	358.8 (694.9)***	0.472 (0.119)***	39.42 (65.04)**
Observations	224			
Number of id	87			

Note: The index reported in the first column is the only regressor.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

**TABLE A9** Effects of economic freedom and its components on advancing/recessing. Odds ratios (standard errors in parentheses)

Variables	Poor		Emerging	
	Odds ratios	Constant	Odds ratios	Constant
Index of economic freedom	0.876 (0.0258)***	8,174 (16,967)***	0.891 (0.0269)***	114.8 (224.9)**
Government size	1.920 (0.409)***	0.0284 (0.0453)**	1.413 (0.259)*	0.00921 (0.0140)***
Legal system	0.389 (0.0745)***	287.2 (397.0)***	0.567 (0.0821)***	1.846 (2.058)
Soundness of money	0.467 (0.0783)***	485.1 (756.0)***	0.546 (0.0908)***	6.150 (8.768)
Trade freedom	0.534 (0.0984)***	132.0 (213.9)***	0.445 (0.0960)***	32.15 (54.37)**
Regulation	0.363 (0.110)***	584.4 (1,153)***	0.390 (0.112)***	17.04 (29.99)
Observations	224			
Number of id	87			

Note: The regressions control also for time trend effects.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

**TABLE A10** Effects of economic freedom and its components on advancing/recessing. Odds ratios (standard errors in parentheses)

Variables	Poor		Emerging	
	Odds ratios	Constant	Odds ratios	Constant
Index of economic freedom	0.864 (0.0354)***	15,639 (53,224)***	0.930 (0.0290)**	9.929 (28.40)
Government size	1.588 (0.409)*	0.0217 (0.0598)	1.602 (0.340)**	0.00263 (0.00641)**
Legal system	0.425 (0.104)***	196.0 (505.2)**	0.583 (0.0990)***	2.847 (6.282)
Soundness of money	0.400 (0.0984)***	600.2 (1,630)**	0.627 (0.124)**	1.970 (4.715)
Trade freedom	0.494 (0.120)***	60.42 (167.9)	0.589 (0.151)**	4.913 (13.65)
Regulation	0.254 (0.122)***	3,805 (14,051)**	0.675 (0.192)	0.768 (2.046)
Observations	224			
Number of id	87			

Note: The regressions control also for time trend effects and GDP growth rate lagged one period.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

**TABLE A11** Effects of economic freedom and its components on advancing/recessing. Odds ratios (standard errors in parentheses)

Variables	Poor		Emerging	
	Odds ratios	Constant	Odds ratios	Constant
Index of economic freedom	0.897 (0.0381)**	0.350 (1.445)	0.979 (0.0350)	0.0272 (0.110)
Government size	1.088 (0.250)	0.000108 (0.000433)**	1.460 (0.354)	0.000537 (0.00189)**
Legal system	0.497 (0.138)**	0.00801 (0.0307)	0.666 (0.126)**	0.119 (0.387)
Soundness of money	0.516 (0.126)***	0.0431 (0.156)	0.868 (0.207)	0.0175 (0.0631)
Trade freedom	0.560 (0.148)**	0.00406 (0.0163)	0.967 (0.268)	0.0189 (0.0750)
Regulation	0.381 (0.161)**	0.0866 (0.350)	0.991 (0.348)	0.00585 (0.0236)
Observations			224	
Number of id			87	

Note: The regressions control also for time trend effects and GDP growth rate, and Gini index, urban population share, export growth and investment growth, all lagged one period.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

**TABLE A12** Countries clustered by group. Those included in the analyses are in italics

Poor	Emerging	Booming	Affluent
<i>Albania</i>	Angola	<i>Estonia</i>	<i>Australia</i>
<i>Algeria</i>	Armenia	<i>Hong Kong</i>	<i>Austria</i>
<i>Argentina</i>	<i>Bangladesh</i>	Kuwait	Bahrain
Azərbaycan	Belarus	<i>Lithuania</i>	<i>Belgium</i>
<i>Barbados</i>	<i>Bolivia</i>	<i>Malaysia</i>	<i>Canada</i>
Bosnia and Herzegovina	Burkina Faso	<i>Malta</i>	<i>Cyprus</i>
<i>Brazil</i>	Cambodia	Oman	<i>Czech Republic</i>
<i>Bulgaria</i>	<i>Cameroon</i>	<i>Poland</i>	<i>Denmark</i>
<i>Croatia</i>	<i>Chile</i>	<i>Russia</i>	<i>Finland</i>
<i>Egypt</i>	<i>China</i>	Saudi Arabia	<i>France</i>
<i>Guatemala</i>	<i>Colombia</i>	<i>Singapore</i>	<i>Germany</i>
<i>Iran</i>	Congo Kinshasa	<i>South Korea</i>	<i>Greece</i>
Iraq	Costa Rica	Taiwan	<i>Hungary</i>
<i>Jamaica</i>	<i>Dominican Republic</i>		<i>Iceland</i>
<i>Jordan</i>	<i>Ecuador</i>		<i>Ireland</i>
Macedonia	Ethiopia		<i>Israel</i>
Madagascar	Georgia		<i>Italy</i>
<i>Malawi</i>	<i>Ghana</i>		<i>Japan</i>

(Continues)

TABLE A12 (Continued)

Poor	Emerging	Booming	Affluent
<i>Mali</i>	<i>India</i>		<i>Luxembourg</i>
<i>Mexico</i>	<i>Indonesia</i>		<i>Netherlands</i>
<i>Senegal</i>	<i>Ivory Coast</i>		<i>New Zealand</i>
<i>Serbia</i>	<i>Kazakhstan</i>		<i>Norway</i>
<i>South Africa</i>	<i>Kenya</i>		<i>Portugal</i>
<i>Saint Lucia</i>	<i>Kyrgyz Republic</i>		<i>Qatar</i>
<i>Sudan</i>	<i>Latvia</i>		<i>Slovak Republic</i>
<i>Tunisia</i>	<i>Moldova</i>		<i>Slovenia</i>
<i>Uganda</i>	<i>Morocco</i>		<i>Spain</i>
<i>Ukraine</i>	<i>Mozambique</i>		<i>Sweden</i>
<i>Venezuela</i>	<i>Myanmar</i>		<i>Switzerland</i>
<i>Yemen</i>	<i>Niger</i>		<i>Trinidad and Tobago</i>
	<i>Nigeria</i>		<i>United Arab Emirates</i>
	<i>Pakistan</i>		<i>United Kingdom</i>
	<i>Peru</i>		<i>United States</i>
	<i>Philippines</i>		
	<i>Romania</i>		
	<i>Sri Lanka</i>		
	<i>Tajikistan</i>		
	<i>Tanzania</i>		
	<i>Thailand</i>		
	<i>Turkey</i>		
	<i>Turkmenistan</i>		
	<i>Uruguay</i>		
	<i>Uzbekistan</i>		
	<i>Vietnam</i>		
	<i>Zambia</i>		
	<i>Zimbabwe</i>		

Note: The clusters are relative to the period 2010–14, the last used in the analyses.