

## Political and Economic Freedom, and the Social Orders

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### Abstract

The aim of this paper is to contribute to a theoretical underpinning of the economic freedom–political freedom relationship. In this endeavor we use the theory of social orders (North et al. 2009) to interpret the Hayek-Friedman Hypothesis (HFH), which leads us to propose a new interpretation. The core insight of this *weak* form of the hypothesis is that economic freedom is a necessary condition for *maintaining* political freedom in open access orders, that is, once achieved, political freedom needs economic freedom to be stable; but the HFH is not relevant for limited access orders. Our empirical investigations, based on cluster analyses together with other methods (survival probabilities, panel regressions) by using a panel database for 130 countries for the period 1970-2005 provide support for the *weak* interpretation, and the results are robust.

**Key words:** economic freedom, political freedom, institutions, social orders

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## 1. Introduction

The view that economic freedom is a prerequisite of political freedom originates from Hayek's 1944 book *The Road to Serfdom* and Friedman's 1962 book *Capitalism and Freedom*. This conjecture is generally referred to as the Hayek–Friedman Hypothesis (HFH). While a relatively large number of empirical investigations try to falsify or verify the HFH, theoretical works on the direction of causality between the two freedoms are still missing. However, theoretical arguments would be of great importance since the explanation of the causal relationship is rather unclear in the two books.<sup>1</sup>

As a complement to this empirical literature, our aim in this paper is to contribute to a theoretical underpinning of the economic freedom–political freedom relationship. In this endeavor, we will argue that the theory of social orders developed by North et al. (2009) offers a context in which the economic freedom–political freedom relationship can also be given theoretical underpinnings. At the same time, this theoretical framework, which gives an account of the social orders developed in human history as a result of a co-evolution of economic and political institutions, also calls for an interpretation of the economic freedom–political freedom relationship which differs from those present in the literature. This *weak* interpretation of the HFH which we will put forth in the paper suggests that there is no “once and for all” relationship between the two freedoms: based on the theory of North et al. (2009), our major argument will be that the HFH is not relevant for limited access order countries, but its prevalence is an inherent attribute of open access order countries, and here economic freedom is a necessary condition for *maintaining* political freedom.

We will formulate several propositions stemming from this argument and will investigate them empirically. In our theoretical model the natural empirical method is cluster analysis, which allows us to identify the four clusters corresponding to the various economic freedom–political freedom combinations of the social orders. We will use an unbalanced panel database for 130 countries for the period 1970-2005, in which political freedom is measured by the Freedom House's indexes of civil liberties and political rights, and economic freedom is

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<sup>1</sup> In some instances Friedman and Hayek consider economic freedom a precondition for political freedom: “[h]istory suggests only that capitalism is a necessary condition for political freedom” (Friedman 1962:10), or “[i]t is far more important to realize that only within this system (*capitalism – added by the authors*) is democracy possible” (Hayek 1944[1971]:70); in other instances Friedman refers to the relationship between the two freedoms as being mutually reinforcing or “by no means unilateral” (Friedman 1962:10); or again elsewhere the causality seems to run in the reverse direction, that is, from political freedom to economic freedom: “[e]conomic freedom was the outcome of a free growth of economic activities which had been the undesigned and unforeseen by-product of political freedom” (Hayek 1944[1971]:12).

measured by the Fraser Institute's Economic Freedom of the World (EFW) Index.<sup>2</sup> In line with our theoretical framework, our major concern will be the clusters' stability and democratization–liberalization paths: we will use various techniques, e.g., survival probabilities and panel regressions to check for these. The results are robust and provide support for our conjectures.

The rest of the paper is organized as follows. In Section 2 we will summarize the empirical results of the literature on the HFH. Then, in Section 3, we will present the theoretical framework, provide a new interpretation of the HFH and lay down our hypotheses. Section 4 will deal with the empirical analyses, and Section 5 will conclude.

## **2. The empirical account of the economic freedom–political freedom relationship: a review**

There is a relatively widespread literature which, by applying the econometric methods developed mainly in growth econometrics, examines the nature of the relationship between economic and political freedom. What, in most cases, lies behind these investigations is the view that economic, political and civil freedom go hand in hand, and they are mutually enhancing.<sup>3</sup> One major branch of the relevant literature is primarily interested in investigating the effects of economic freedom on development; and as a by-product tries to test whether higher economic freedom correlates with a higher level of other kinds of freedom.

In this spirit, Dawson (1998) deals with the relationship between the two kinds of freedom. He finds that while it is true that political freedom promotes economic freedom, it is also true that a change in economic freedom promotes political freedom. One of the conclusions drawn by Farr et al. (1998) is not perfectly in line with Dawson's argument: by running the Granger-causality test on the sample of 78 industrial and non-industrial countries between 1971 and 1995 they come to the conclusion that higher GDP per capita leads to higher political freedom, while higher economic freedom does not.

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<sup>2</sup> Political freedom is present in situations in which citizens are completely free to participate in the political process; elections are fair, competitive and corruption-free; and different political parties can participate in the political process. Civil liberties include freedom of the press, association, religion and speech. Economic freedom is understood as what is measured by the Economic Freedom of the World (EFW) Index (Gwartney and Lawson 2009).

<sup>3</sup> Later we will differentiate between three possible interpretations of the HFH. This separation is not made here, because it is not made in the literature we are just about to review.

The causality of the reverse direction is investigated by De Haan and Sturm (2003) since they pose the question of whether more democracy<sup>4</sup> leads to more economic freedom, or whether an autocratic regime is in a better position to introduce liberalization measures. When examining this question on a sample of developing countries with robust regression methods and panel regression they find that the level of civil and political freedom and the length of the period a country has been a democracy predicts the change in economic freedom, and this relationship is robust; that is, it is not the result of some outliers in the sample.

Similarly to De Haan and Sturm (2003), Lundström (2002:11-32) examines the effect democracy has on economic freedom in a sample of 58 developing countries during the period between 1975 and 1995. Using different robustness checks, she concludes that, beside the EFW Index itself, two of its four components are significantly increased by more democracy: “government operations and regulations” as well as “restraints on international exchange”. Framing the problem in a broader context, Giavazzi and Tabellini (1995) focus on economic and political liberalizations. Using difference-in-difference estimation, they analyze empirically the effects and the interactions of the two liberalization processes on economic performance, macroeconomic policy and structural policies. They find on the one hand, that economic and political liberalizations are mutually reinforcing, and on the other hand, that the sequence of reforms matters: countries that first liberalize the economy and then become democracies do much better than countries that pursue the opposite sequence.

Thies (2007) results by confirming the findings of others with regard to the effect of economic freedom on economic growth, also adds to our understanding of the relationship between economic and political freedom. For the period 1975-2005, he finds that political freedom is positively associated with economic freedom, and furthermore, that political freedom is a cause of economic freedom. There is, however, only weak evidence that economic freedom is a cause of political freedom. That a democracy should not be a barrier to the extension of economic freedom either is shown by Greskovits (1996), who, with the example of Eastern–Central Europe (as opposed to that of Latin-America) demonstrates that democracy is not necessarily a “threat” to market-oriented reforms. On the contrary, democratic institutions make it possible for these reforms to take place in a predictable way.

Still in this fashion, Vanssay et al. (2005) give an empirical answer to the question of what it is that gives a country more economic freedom. From the regressions, they come to a not particularly surprising conclusion that a country with a high level of economic freedom will

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<sup>4</sup> Democracy is used in the sense of political freedom.

have a parliamentary political system, in which the chief executive is not a military officer, does not serve special interests and does not control both houses of the parliament. Furthermore, a high-level of economic freedom is associated with a low-level of political concentration and a high-level of decentralization (federalism). However, when dividing the sample into OECD and non-OECD countries the test is rather inconclusive.

Some authors come to a skeptical conclusion concerning whether political freedom is needed for a higher level of economic freedom. Bearing in mind that economic freedom is to a large extent shaped by economic policy, the argument of Mulligan, Gil and Sala-i-Martin (2004) that democratic countries do not have better economic policies than autocratic ones, weakens the claim that political freedom enhances economic freedom. They emphasize that economic policy outcomes are affected to a much greater extent by factors other than democracy, such as population, income or legal origin. Moreover, they do not find any systematic relationship between democracy and various characteristics of public policies such as government consumption, education or social spending, or redistribution. These results show that the constraint which encourages politicians towards better policies is not democracy, at least not when it comes to the usual measure of fiscal policy. This conclusion is in line with that of De Haan et al. (1999), stating that even if one looks at democracies, it is relatively difficult to show that government spending is shaped by the dispersion of parties within the government. They find that this can only be concluded if one looks at the growth of the central government's debt. In concert with these results Besley and Kudumatsu (2008) provide reasons to explain why an autocratic leader may apply "better" policies than a democratic one: one group should be powerful enough, that is, they should be sure that their group will remain in power even if they decide to fire the leader, and distributional issues should be important enough.

The results of Wu and Davis (1999) support the skeptical view, too. However, as regards the HFH, their conclusion is somewhat ambiguous because, on the one hand, they find that the model that supposes an association between economic and political freedom fits the data better, while on the other hand, they conclude that economic development fosters political freedom independently of any improvement in economic freedom itself.

Taking a slightly different and broader perspective on economic freedom than usual, Pryor (2010) concludes that although there is a cross-sectional positive correlation between political freedom and capitalism, there seems to be no relationship when one looks at historical data going back to the 19<sup>th</sup> century. However strong this conclusion is, Lawson and Clark (2010) come to just the opposite one, examining cross country data over the 1970-2005

period. According to their results, there is hardly any country with “relatively” high political and low economic freedom.

Beside the econometric literature discussing the direct effect between the two freedoms, a fast-growing body of the empirical investigations on economic growth is now identifying indirect channels between economic and political freedoms. The main conclusion that can be drawn from this literature<sup>5</sup> is that some measure of economic development, such as “cosmopolitan values” (Lipset 1959, 1994), income (Barro 1997, 1999, 2000, Paldam 2007) or human capital (Glaeser, La Porta, Lopez-De-Silanes and Shleifer 2004, Glaeser, Ponzetto and Shleifer 2007) may be an intermediate factor between economic and political freedom<sup>6</sup>, if one accepts the commonly held view that economic freedom promotes income and growth (see Czeglédi and Kapás 2009). In sum, the indirect causal relationship suggested by this line of the literature (for us a kind of a digression) is that economic freedom enhances development, and a higher level of economic development helps democratic institutions develop. This interpretation is in line with the results of Faría et al. (2010) who also try to clarify the relationship between economic freedom, income, and political freedom. What they conclude by applying advanced methods using instrumental variables (panel data over a 30-year period with five-year intervals) is that in the short run economic freedom is a better predictor of democracy than income, while in the long run income is the better predictor.

As can be seen from the above brief review, the empirical results concerning the relationship between the two freedoms can hardly be said to be converging toward a widely-accepted result. Besides this, even the basic definitions themselves do not mean the same to different researchers, and there seems to be no consensus on the question of which is the proper method to examine empirically the proposition in question. Possible causality mechanism are also much debated, not to mention the direction of causality. Basically, we see that the above-summarized literature centers around two different interpretations of the HFH. These are as follows:

(1) Strong interpretation (economic freedom is a sufficient condition of political liberalization): economic freedom promotes political freedom, and a rise in economic freedom will consequently be followed by a rise in political freedom (e.g., Farr et al. 1998, Pryor 2010).

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<sup>5</sup> It is beyond the scope of our paper to present this literature in more detail.

<sup>6</sup> Acemoglu et al. (2005, 2008) provides evidence meant to falsify both views, which does not convince Gundlach and Paldam (2008). Fukuyama (1992) also emphasizes that there is no deterministic relationship between democracy and development, and *consequently* capitalism (economic freedom) is compatible with many forms of authoritarian government.

(2) Semi-strong interpretation (economic freedom is a necessary condition of political freedom): without economic freedom political democratization will not be very probable, and an undemocratic country with a higher level of economic freedom will have a better chance of becoming a democracy than one with a low level of economic freedom (e.g., Giavazzi and Tabellini 2005, Lawson and Clark 2010).

To sum up, since neither Hayek nor Friedman provided a well-specified theoretical reasoning of the process or mechanism responsible for the co-movement of political and economic freedom, empirical investigations on the topic suffer from the absence of a theory. In what follows we will argue that the theory of social orders developed by North et al. (2009) proves itself not only a useful theoretical framework for an understanding of the relationship of the two freedoms, but at the same time, calls for a different interpretation of the HFH which, unlike those in the literature, is driven by theory.

### **3. The theoretical framework and the weak interpretation of the HFH**

North et al. (2009) present a powerful new theory of the interaction between law, politics, and economic development, in the framework of which the economic freedom–political freedom relationship can also be given theoretical underpinnings. The starting point from which they develop their ideas is the view that the fundamental problem that any society must solve is the problem of violence. Societies differ in how they can control violence, but basically as North and their co-authors argue, three types of social orders<sup>7</sup> have emerged in human history to control violence, each creating inherently different institutions. These are as follows: foraging or primitive order<sup>8</sup>, limited access order, and open access order. Each order is characterized by a particular system of political, legal and economic institutions, evolved in close connection to one other, able to specify and enforce rules by which individuals interact. As societies develop, their institutions evolve from foraging order to limited access order, which is the default social order, and eventually to open access order.

Limited access orders control violence by political manipulation of the economy to create rents for the ruling elites. These privileges then, in their turn, limit the use of violence by powerful individuals: potential rivals stop fighting (or fight less) when the economic rents they enjoy depend on the continued existence of social order. In this order most valuable resources and markets are controlled by politically connected elites, and the creation of

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<sup>7</sup> By social order they mean the complex of military, political, economic and religious institutions of social organization.

<sup>8</sup> The primitive order, since it is a characteristic of hunter-gatherer societies, is not analyzed in the book.

economic and political organizations is restricted to those belonging to the elites. Thus the prevailing system of political, legal and economic institutions serves to limit economic entry to create rents and then use those rents to credibly commit powerful groups to support the state. Here the ruling elite uses the economic system as a tool to solidify its stability, and the ruler protects the privileges granted to elite groups against encroachment by others.

The limited access order, as conceptualized by North et al. (2009), is clearly an order in which the institutional setting is autocracy, together with only few organizations, most of which are associated with the state. North and his coauthors emphasize that this order is very stable which, however, may undergo an evolution. The *basic* limited access order is the one in which markets are underdeveloped and monopolized. But in countries where the ruling elites are able to credibly commit to not fight, it may be in their interest to promote economic growth through trade and markets, to the extent that these markets can be controlled and provide another source of rent for them. In that way, the *basic* limited access order may develop into *mature* limited access order in which markets are much more developed. But this does not mean that there are competitive markets and free entry, instead the inherent constraints on markets are present here, too, just as in the *basic* limited access order: the creation of economic organization is still the privilege of the elites. While political and civil rights are not guaranteed in the *mature* limited access order, economic freedom is higher compared to the *basic* limited access order. Of course, this does not constitute a state of economic freedom as understood in terms of the HFH.

A third type of limited access order, called a *fragile* limited access order is also distinguished by North et al. (2009). Here the ruling elite can hardly sustain itself in the face of external and internal violence; the organization called the “government” has no monopoly on violence. Countries under this order are very unstable and have a very simple institutional structure for the government. The potential for violence is the major determinant of the distribution of rents; accordingly, no private organizations are supported in this order. *Fragile* limited access order countries are the poorest in the world.

North et al. (2009) argue that only a few (about two dozen) societies have evolved into open access order. So the transition from a limited access order to an open access order is very rare and very difficult, and has three doorstep conditions<sup>9</sup> as they term it. Following the line of reasoning concerning the shift from a *basic* to a *mature* limited access order (see above) which is by no means automatic and irreversible, it becomes clear that an increasing

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<sup>9</sup> These are as follows: (1) rule of law for elites, (2) perpetually lived organizations in the public and private spheres, and (3) consolidated control of the military.

sophistication of organizations, first of all economic organizations, lies at the heart of the whole process. Due to a proliferation of (economic) organizations, the privileges individuals enjoy turn into rights that are associated with their positions; then various institutions are created to protect these rights and allow rights to be extended to a larger segment of the population. But for this process to occur elites must be sure that they will have an advantage when converting their privileges into rights. A consequence of the occurrence of rights is that it opens up parties and politics, and economic and civil organizations, by creating competition in political and economic systems, and this competition limits violence in a very effective way. Accordingly, competitive political and economic systems are the defining characteristic of open access order: on the one hand, the economy contains competitive markets – rather than highly controlled markets to create rents for the elites, and on the other hand, citizen's rights do not depend on a political relationship to those in power, but derive from the fact of citizenship.

On the basis of historical facts, provided in great number in North et al. (2009), it is clear that a transition from a limited access order towards an open access order, or a transition from a *fragile* or *basic* limited access order towards a *mature* limited access order was initiated by an increase in economic freedom.

To sum up, open access order countries exhibit high levels of economic and political freedoms. And what is more, a high level of both freedoms is an inherent attribute of this order. So, the group of open access order countries is precisely that with which the HFH has to be associated. It is also clear that a violation of the HFH, i.e., a reduction in economic freedom while maintaining the high level of democracy, is against the logic of this order, and accordingly, it cannot be an equilibrium, but a transitory state. The above argumentation can also be expressed from the perspective of the limited access order: the HFH is not relevant for the limited access order; accordingly, a violation of the HFH cannot be a characteristic of this order.

Thus our interpretation of the HFH, which stems from the above theoretical framework, is the following: economic freedom is an important factor that helps maintain political freedom in open access order countries but it does not necessarily have a role in promoting political freedom. This interpretation can be called a *weak* interpretation of the HFH. Put differently, it says that economic freedom is a necessary condition of maintaining political freedom, i.e., once achieved, political freedom needs economic freedom to be stable in this order. Practically, this means that a democratic country with a high level of economic freedom will

have a better chance of not becoming undemocratic than a democratic country with low economic freedom.

As a summary, the following propositions can be made:

(1) There seems to be no “once and for all” relationship between political and economic freedom. High levels of both types of freedom are an inherent attribute of open access orders, while a low level of political freedom is an inherent characteristic of limited access orders which can be sustained both with a low level, or with a relatively high level of economic freedom.

(2) Open access orders are stable systems, accordingly the combination of high levels of economic and political freedom is stable, too, and a reduction in economic freedom should be only transitory in this order.

(3) The HFH is not relevant for limited access orders. Here political freedom is inherently low, which can be sustainable with both high level and low level of economic freedom. But the prevalence of high levels of both freedoms should be transitory in this order.

Below we will conduct empirical investigations with the aim of providing support in favor of the weak interpretation of the HFH.

#### **4. Empirical analysis**

For our empirical analyses we constructed a panel dataset on as many countries as possible over the longest possible period. The bottleneck here has been data on economic freedom. We have stayed within the limits of the commonly agreed measures of both freedoms; accordingly we have used the EFW Index as a measure of economic freedom, while political freedom is the mean of civil liberties and political rights of Freedom House, where both are measured as averages over five year intervals. Economic freedom was measured every five years between 1970 and 2000 and has been measured yearly since then, while political freedom has been measured yearly since 1972. The EFW Index runs between 0 and 10, where higher values represent higher economic freedom, while political freedom is measured on a 7-point scale where lower values represent higher political freedom.

Our political freedom data is the average of political rights and civil liberties over a five-year period that follows (and includes) the year in which the data for economic freedom is measured. The reason for this time-lag in political freedom is the commonly-held view in the literature that it takes time for economic freedom to exercise its full effect. Our unbalanced panel dataset includes 130 countries and covers the years from 1970 to 2005.

Figure 1 is a scatterplot for our full panel dataset. Even a brief look at the figure suggests that it could hardly be said that there is a linear relationship between economic and political freedom, and, as we proposed above, based on the theory of social orders (North et al. 2009) we have good theoretical reasons to reject the linear association of the two freedoms (see our first proposition). Accordingly, we believe that linear regression analyses are not at all appropriate for an investigation of the HFH. Instead, since the theory suggests that different social orders may have different combinations of political and economic institutions, cluster analysis seems to be a fruitful method for our purpose, which allows us to regroup the observations according to the political and economic freedom values, without pre-assuming any casual relationship between the two freedoms.

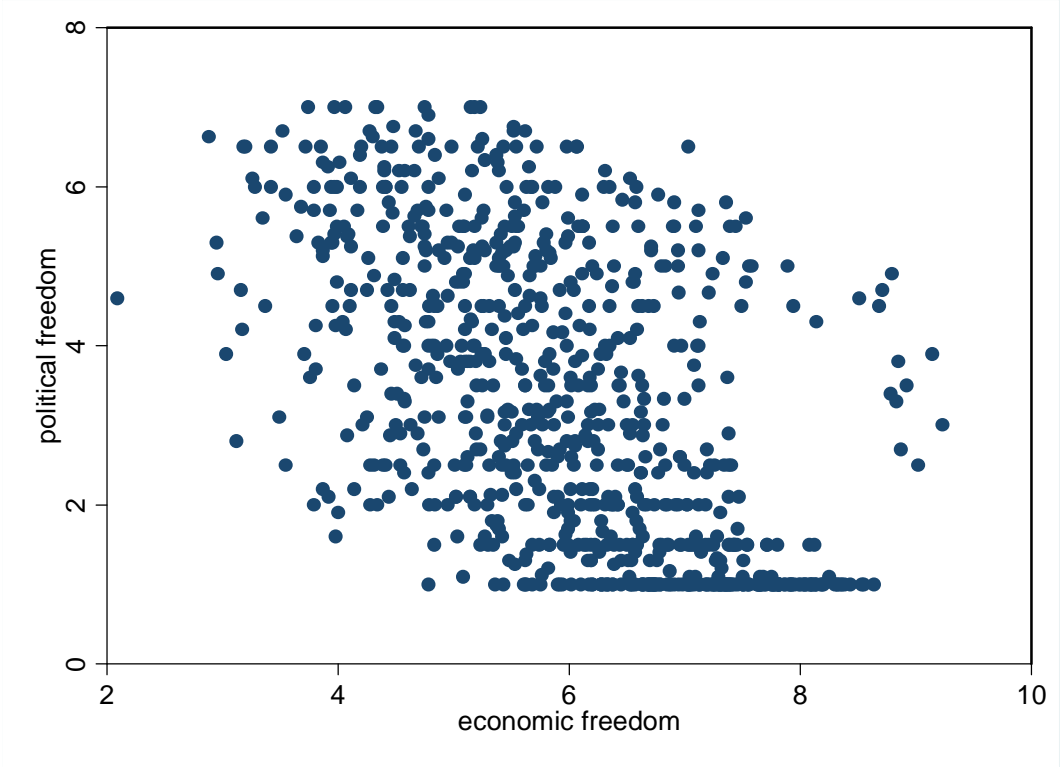


Figure 1: Scatterplot between economic freedom and political freedom<sup>10</sup>

**4.1. Cluster analysis**

We ran a K-means cluster analysis on our panel database. We assume four clusters, an assumption given theoretical underpinning by the theory of North et al. (2009), but also in line with Lawson and Clark (2010) who propose a 4-rubric matrix for the possible (feasible) economic freedom–political freedom combinations. The four clusters defined in advance are

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<sup>10</sup> West and East Germany are treated separately by the Freedom House for the years before 1989, but the EFW Index includes only “Germany” for all years. We used the political freedom of West Germany for the periods before 1989.

as follows: (in the abbreviation of the clusters we stick with those used by Lawson and Clark 2010)

- PF-NEF: high political freedom with low economic freedom
- NPF-EF: low political freedom with high economic freedom
- NPF-NEF: low political freedom with low economic freedom
- PF-EF: high political freedom with high economic freedom

The PF-EF cluster is considered to include open access order countries, PF-NEF represents the violation of the HFH, and the remaining two clusters are deemed to incorporate limited access order countries. Table 1 shows the cluster centers (for the list of the composition of the clusters see Table A1, A2, A3 and A4 in the Appendix).

	Cluster			
	PF-NEF	NPF-EF	NPF-NEF	PF-EF
Political freedom	2,84	4,72	5,59	1,34
Economic freedom	5,32	6,64	4,63	7,04

Table 1: Cluster centers in the case of 4 clusters

Let us take a look at the composition of the clusters. The PF-EF cluster, as expected in the spirit of our theoretical framework, includes all “classical” open access order countries, such as for instance Australia, Belgium, Germany, Japan, the UK or US (20 countries in total). What is more, these open access order countries are classified into this cluster for the whole period. Another group of open access order countries are the post-socialist countries such as Hungary, the Czech Republic, Latvia or Lithuania, due to their successful political and economic transformation. As for the remaining countries which, at least at first glance, do not seem to be open access orders, there is a need for further investigation as regards whether they fulfill the doorstep conditions laid down by North et al. (2009) (see footnote 9). To check this we turned to Gollwitzer and Quintyn (2010) who systematically collect data on this matter, but only for developing countries. We applied their method to collect data for the remaining countries. We faced two problems when collecting the data, however. Although Gollwitzer and Quintyn (2010) use many different data sources, some of them were unavailable for some countries in our sample; in addition, there is a considerable overlap between the data they use and our economic freedom data. Thus, taking into account all data constraints, we ended up

using only five<sup>11</sup> of the eight measures of Gollwitzer and Quintyn (2010). Based on the averages of these variables as rough measures for the fulfillment of doorstep conditions, there seems to exist a third group of open access orders that includes some “emerging” cases such as Uruguay, Peru, Chile and Taiwan that meet the doorstep conditions; and South Africa and Israel that are on the verge of doing so. There remain, however, some countries that are classified for various periods as being in this cluster, but clearly do not pass the doorstep conditions (e.g., Costa Rica, Jamaica, El Salvador, Botswana, Namibia).<sup>12</sup>

Taking all the above into account, our proposition concerning the association of the open access orders with the HFH runs as follows: a high level of democracy with high economic freedom gives a very stable status quo only in open access order countries. But this does not mean that a high level of democracy with high economic freedom is a characteristic only of an open access order country; instead, this may prevail, but with less stability elsewhere, too. This proposition supports the weak interpretation of the HFH.

The PF-NEF cluster, which violates the HFH, is diverse as regards its member-countries. One group of countries here is that of the post-socialist countries, after as well as before, the fall of communism (e.g., Albania from 1990, Hungary in 1985 and 1990, Poland in 1990 and 1995, Romania from 1990 to 2000 and Latvia in 1995). After a while, the most advanced post-socialist countries caught up with the most developed countries in terms of political and economic freedom, which clearly means that these countries are included in this cluster for a given period because the political transformation was faster than the economic one. Accordingly, we do not see their being here as a violation of the HFH, but rather as a phase in their institutional development. However, some “classical” open access order countries such as Italy or Iceland fell back for a very short period of time into this cluster (probably because of larger government intervention in the economy), so their being here is clearly transitory, as suggested by the theory, too.

This cluster also includes several developing countries for various years from Latin America, Africa and Asia. What is interesting, and seems to contradict the idea arising from the theory, namely that countries’ being in this cluster should be transitory, is the fact that some countries are here for a long period of time: India and Colombia for the whole period, and, for instance, Ecuador, Turkey, Senegal and Argentina for almost the whole period.

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<sup>11</sup> These are as follows: the existence of rules for the elite, the elite’s respect for and compliance with the decisions of the courts, the ease of creating organizations, military interference in political life, the level of armed violence.

<sup>12</sup> Data is missing for a few countries (e.g., Belize, Barbados, Malta, Trinidad and Tobago). Data is available upon request.

However, for countries such as Israel and South Korea their being here has to be seen as a phase in their liberalization–democratization development (see the next section). Some countries such as Belize or Mauritius, which are classified into the PF-EF cluster for certain periods, are also here for some other periods, which shows that they are on the verge of open access order. All in all, except for very few cases; this cluster is a “passage-way”, as is also suggested by the theory.

The other two clusters (NPF-NEF and NPF-EF) include non-democratic (limited access order) countries. In the NPF-NEF cluster one finds those autocracies that did not liberalize their economies, and are the poorest countries in the world (e.g., Democratic Republic of Congo, Malawi, Nigeria, Iran). Some post-socialist countries are also here in their early transition years. Countries in the NPF-EF cluster have liberalized their economy, such as Singapore for the whole period, Thailand and Guatemala in several periods, South Korea in 1980, and the oil countries (Bahrain, Kuwait, and United Arab Emirates). The NPF-NEF cluster comprises *basic/fragile* limited access order countries; the NPF-EF *basic/mature* limited access order countries.

#### **4.2. Cluster stability**

As argued above, what the weak interpretation of the HFH suggests is that the PF-EF cluster should be the most stable, while the PF-NEF cluster should be unstable. As for the other two clusters, based on North et al. (2009) they should be relatively stable since limited access orders, which these two represent, are seen as stable orders. So, an examination of cluster stability is one way to investigate the HFH.

However, counting the cases in each cluster does not provide information as regards cluster stability because it does not reveal whether a cluster includes many countries which have been in that cluster for only a short period of time, or fewer countries which have been there for a longer period of time. A useful but simple way to obtain information on the stability of each cluster is to look at the average number of periods spent in a cluster once a country is in a given cluster. After having done this simple calculation (see Table 2) it turns out that in line with the weak interpretation of the HFH, the PF-EF cluster seems to be very stable because once a country becomes a member of this cluster it will remain there for the longest period (4.62 periods, that is, 23 years).

The NPF-NEF cluster is also relatively stable, which is not a surprise since autocracies can be long-lasting, and as our results show autocracies that do not liberalize their economies

(low economic freedom) emerge more frequently than autocracies that do. As for the cluster that violates the HFH (the PF-NEF cluster), what can be concluded here is that this cluster is the least stable because the fluctuation is very high.

	Cluster			
	<b>PF-NEF</b>	<b>NPF-EF</b>	<b>NPF-NEF</b>	<b>PF-EF</b>
Number of countries that spent at least one period in the cluster	74	49	55	65
Average number of periods spent in a cluster once a country is there	2.72	2.61	3.53	4.62

Table 2: Data on cluster stability

However, we do not intend to suggest that far-reaching propositions can be reached on the basis of Table 2. The simple conclusion that arises from this table is that the weak interpretation of the HFH is not refuted, even if it is not given strong support. So, further investigations related to cluster stability may be useful. In this spirit we created a matrix (Table 3) which shows the probabilities in which cluster changes occurred, including those in which a certain country did not change cluster. A number in row *i* and column *j* of Table 3 shows what fraction of the countries that had been in cluster *i* in year *t* moved to cluster *j* in year *t*+5. Consequently, the main diagonal of the matrix shows the share of those countries in each cluster that remained in the same cluster between two five-year long periods. For instance, the matrix shows that 19.5 percent of the cases in which a country was in the cluster PF-NEF in year *t* was followed by a switch of the same country to the cluster PF-EF until the year *t*+5. Such a matrix can be called a transitional matrix, because it provides an estimate of the probabilities with which a country switches to another cluster between two consecutive periods.

		cluster in period <i>t</i> +5			
		<b>PF-NEF</b>	<b>NPF-EF</b>	<b>NPF-NEF</b>	<b>PF-EF</b>
cluster in period <i>t</i>	<b>PF-NEF</b>	0.661	0.081	0.063	0.195
	<b>NPF-EF</b>	0.184	0.674	0.092	0.051
	<b>NPF-NEF</b>	0.151	0.134	0.715	0.000
	<b>PF-EF</b>	0.029	0.013	0.000	0.959

Table 3: Transitional matrix

These probabilities reaffirm that the PF-EF cluster is the most stable: a country that had been in this cluster remained there for the next period in 96 percent of the cases. Another

important result is that the most probable move for a country in the PF-NEF cluster (violating the HFH) is towards the PF-EF cluster, which is in line with what we proposed above. This may also suggest that the PF-NEF status is not stable, and probably a country's being here is only transitional, representing either a phase in its democratization-liberalization developmental path, or a fall back from the PF-EF cluster.

Furthermore, while Table 3 provides support for the weak interpretation of the HFH, similar support for the other two interpretations cannot be concluded. According to the strong interpretation, the main output direction for the cluster NPF-EF should be the PF-EF cluster. This claim is hardly affirmed, since this output possibility is the least probable. The semi-strong interpretation could be given support by a result showing that the probability of entering the PF-EF cluster from the NPF-EF would be greater than entering it from the PF-NEF. This prediction is also falsified by the data in Table 3. The weak interpretation can be given much more support. The change that clearly violates the claim that economic freedom is a necessary condition for sustaining political freedom, a move from the PF-EF cluster to the NPF-EF, is very rare. In fact, there are only three such cases in our sample: Hong Kong between 1980 and 1985, the Philippines between 2000 and 2005, and Thailand between 2000 and 2005.

The stability of the clusters, especially the stability of the PF-EF cluster, can be approached from a different angle, too, by calculating survival probabilities as suggested by Kaplan and Meier (1958). In our case survival probability  $p_{it}$  (in Table 4) is the estimation of the probability of a country's being in a certain cluster in a certain period, provided that the given country entered the given cluster. Survival probabilities for period 1 are 1 by definition. Survival probabilities for each cluster in period 2 are calculated as the ratio of the number of those countries that were in the given cluster for two periods and the number of those that were in the same cluster in period 1 (and were in a different cluster in period 2); those countries whose data are unavailable for period 2 affect neither the denominator nor the nominator of this ratio. The survival probability for further periods is the product of these survival probabilities from one period to the other.

It is clear from Table 4 that the most stable cluster is the PF-EF one: having once entered this cluster, the chance of a country's remaining in the same cluster in the 8<sup>th</sup> period is 83 percent, while for the PF-NEF cluster it is only 14 percent. What is more, the survival probabilities decrease very drastically in this cluster from one period to another, a feature which is not characteristic of any other cluster. This shows in our opinion that countries are

basically here for a transitory period. All in all, survival probabilities provide support for what we have argued above.

	Survival probabilities in different periods							
	period 1	period 2	period 3	period 4	period 5	period 6	period 7	period 8
<b>PF-EF</b>	1.00	0.94	0.88	0.86	0.83	0.83	0.83	0.83
<b>PF-NEF</b>	1.00	0.64	0.39	0.22	0.18	0.18	0.14	0.14
<b>NPF-EF</b>	1.00	0.49	0.43	0.37	0.33	0.26	0.26	0.26
<b>NPF-NEF</b>	1.00	0.72	0.52	0.34	0.23	0.21	0.14	0.09

Table 4: Survival probabilities for the 4 clusters

### 4.3. Democratization–liberalization paths

The transitional matrix (Table 3) also suggests the most probable democratization–liberalization (transformation) route towards the PF-EF cluster, the analysis of which adds new insights to the previous ones. The cluster from which a country will most probably arrive in the PF-EF cluster (provided that it is not already in that cluster) is the PF-NEF. Countries arriving in the PF-NEF (again, if it is not here already) will most probably come from the NPF-EF cluster, while countries arriving in the NPF-EF will come most probably from the NPF-NEF. That is, the most probable route to achieve a full transformation is NPF-NEF → NPF-EF → PF-NEF → PF-EF. There is not much difference however between moving from NPF-NEF → NPF-EF (0.134) and from NPF-NEF → PF-NEF (0.151). As a result, the “typical” democratization–liberalization path may follow the shorter route NPF-NEF → PF-NEF → PF-EF. The two possible transformation paths that seem to emerge from the cluster analysis are shown in Figure A3, where the dotted arrows show the longer path and the solid arrows the shorter path.

The longer democratization–liberalization path seems to be followed by countries beginning with a right-wing (non-communist) autocracy. All these steps were taken by Chile and South Korea, but the institutional evolution of Greece, Spain, and Portugal has also been similar, with the exception that they began in the NPF-EF cluster. The typical country for the shorter transformation is a post-socialist country such as Bulgaria, Hungary, or Romania. The post-socialist transformation does not really support the strong interpretation of the HFH, or the semi-strong interpretation, since here political freedom improved with a low level of economic freedom.

It is worth noting that, of those 13 countries that were in the NPF-NEF cluster in 1970 only 3 had developed into the PF-EF cluster (Chile, South Korea, Peru) by 2005. And overall in our sample only 8 countries of those that began in the NPF-NEF cluster after 1970 have reached the PF-EF cluster. The rest of those that began in the NPF-NEF cluster have been oscillating between the NPF-EF and the PF-NEF (provided that they did not remain in the NPF-NEF).

Since, in terms of probabilities, there is only a very slight difference between the two paths, we tried to obtain more accurate information on which path is the most probable. The graph of Figure A3 suggests that the association between the two freedoms can be described with a regression line with one or two breaks, depending on the path. If the shorter path (NPF-NEF  $\rightarrow$  PF-NEF  $\rightarrow$  PF-EF) is the typical route, then there is only one break because the improvement in economic freedom is greater when political freedom is sufficiently high. If the longer path (NPF-NEF  $\rightarrow$  NPF-EF  $\rightarrow$  PF-NEF  $\rightarrow$  PF-EF) is more common then it would be appropriate to suppose two breaks. In this case the slope of the regression line should change twice. The most important difference between the two possible paths is that the longer one includes a reduction of the slope (in absolute value) because democratization occurs together with a worsening of economic freedom. In this spirit, we ran fixed effects panel regressions between the economic freedom and political freedom variables, including two dummy variables to test whether it is more appropriate to suppose two breaks than one, and whether there is a negative change (in absolute value) in the slope of the line suggested by the dotted line in figure A3. Dummy<sub>1</sub> equals 1 if the political freedom variable is greater than the political freedom level of the cluster center of the PF-NEF cluster and zero otherwise, while dummy<sub>2</sub> equals 1 if the political freedom variable is higher than the political freedom level of the cluster center of the NPF-EF variable (see Figure A3 in the Appendix). To test the idea that the transformation paths may have different slopes we included interaction terms between the dummies and the political freedom variable.

The assumption that the democratization–liberalization path includes a digression to the NPF-EF cluster (dotted arrows in Figure A3) can be formulated by making specific assumptions concerning the signs of the coefficients of the interaction terms. To be precise, both interaction terms should have a significant coefficient such that the first interaction term should have a coefficient with a positive sign, while the second should have one with a negative sign. The results in column 2 in Table 5 do not confirm this assumption, since both interaction terms have an insignificant and positive coefficient.

The supposition regarding the shorter transformation (solid arrows in Figure A3) receives more support. Column 3 in Table 5 shows the results achieved when only the first interaction term (the one with  $\text{dummy}_1$ ) is included. Now its coefficient is significant with the expected positive sign, showing that for countries with a lower level of political freedom, the association between political and economic freedom is not the same as the similar association for those with a higher level of political freedom. Among the countries with relatively high political freedom an increase in political freedom is associated with a higher increase in economic freedom than among the countries with relatively low economic freedom. In column 4 we repeated the same regression, using  $\text{dummy}_2$ . The results are similar. Thus, although the smoother democratization–liberalization path seems to be more probable, the breaking point is not necessarily at the cluster center of the PF-NEF cluster (see Figure A3 in the Appendix).

	Dependent variable: economic freedom			
	1	2	3	4
Constant	6.914 (59.62)***	7.533 (30.71)***	7.543 (30.79)***	7.083 (47.34)***
Political freedom	-0.286 (-8.26)***	-0.633 (-4.85)***	-0.640 (-4.91)***	-0.362 (-6.69)***
Dummy <sub>1</sub> ×political freedom		0.284 (1.49)	0.402 (2.83)***	
Dummy <sub>2</sub> ×political freedom		0.217 (1.33)		0.246 (2.05)**
Dummy <sub>1</sub>		-0.509 (-0.89)	-0.928 (-2.53)**	
Dummy <sub>2</sub>		-1.003 (-1.30)		-1.12 (-1.75)*
Number of countries	130	130	130	130
Number of observations	820	820	820	820
R-square (within)	0.104	0.119	0.116	0.111
R-square (overall)	0.306	0.331	0.338	0.308

Table 5: Panel regression results for economic and political freedom

Of course, the results in Table 5 do not say anything about causation and they are not decisive in themselves, but they allow us to adjust our analysis of the transformation paths quite well, which is in line with the theory we presented in section 3. The main conclusion of the regression analysis we wish to highlight is that the positive association between the two freedoms is stronger when political freedom is high enough and economic freedom is also not too low. This gives some support to our proposition that the HFH is not relevant for limited access orders (see proposition 3) in which economic freedom is low.

#### 4.4. Robustness checks

To provide robustness checks for the above analyses we have done two things. Firstly, we repeated the cluster analysis with 4 clusters, but by using another measure for economic freedom, and secondly, we repeated it with 5 clusters.

Since both Friedman and Hayek put the institutions of private property at the center of their explanation, there is some sense using, besides the EFW index, a measure of the security of property rights as an indicator of economic freedom, which must be considered a stronger measure of this freedom. As such we used the Area 2 index (the “legal system and the security of property rights”) of the EFW Index. The cluster centers are shown in Table 6, for the sake of comparison, together with those in which the EFW Index was used (the list of the composition of the clusters is available upon request).

	Cluster							
	PF-NEF		NPF-EF		NPF-NEF		PF-EF	
	The measure of economic freedom							
	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index	Area 2 index
Political freedom	2,84	2,14	4,72	5,18	5,59	4,71	1,34	1,22
Economic freedom	5,32	5,52	6,64	6,07	4,63	3,05	7,04	8,74

Table 6: Cluster centers in case of 4 clusters

While in fact the clusters are the same, clustering based on the Area 2 index accentuates further what we have proposed previously as regards the clusters’ association with social orders. The PF-EF cluster, i.e., the one in which a high level of democracy is combined with a high level of economic freedom, is even more sharply separated from the other clusters because both kinds of freedom are higher than when clustering on the EFW Index (see Figure A1 and A2 in the Appendix).

When looking at the composition of the clusters, the conclusion is that there is not too much change. As for the PF-EF cluster, when economic freedom is measured by the Area 2 index this cluster is very close to the *ideal* suggested by the theory: it is very clearly concentrated on open access orders (“classical”, post-socialist and “emerging”, see our discussion in section 4.1).<sup>13</sup>

<sup>13</sup> When economic freedom is measured by the Area 2 index, the number of countries that spent at least one period in this cluster is significantly reduced (40 as opposed to 65, see Table 7).

We analyzed cluster stability in this case, too, and the results reaffirm what we obtained previously; the results are even more closely in line with the propositions of the theory as shown in Table 7. We estimated the transitional probabilities as well and the results are very similar to those in which economic freedom was measured by the EFW Index in Table 3.<sup>14</sup>

	Cluster							
	PF-NEF		NPF-EF		NPF-NEF		PF-EF	
	The measure of economic freedom							
	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index <sup>15</sup>	Area 2 index <sup>16</sup>
Number of countries that spent at least one period in the cluster	74	77	49	55	55	65	65	40
Average number of periods spent in a cluster once a country is there	2.72	2.91	2.61	2.51	3.53	3.46	4.62	4.73

Table 7: Data on cluster stability

As another robustness check, we ran a cluster analysis with both the EFW Index and the Area 2 Index as measures of economic freedom, but assuming five clusters in advance. The idea behind this is to check whether the inclusion of the fifth cluster affects the “character” of our four clusters.

The results are interesting. The PF-EF cluster remained where it was, and virtually the same applies to the NPF-EF cluster, too. But the fifth cluster affected the remaining two clusters in such a way that both shifted to the “extremes”: the NPF-NEF cluster exhibits even less political freedom, and the PF-NEF cluster moved closer to the PF-EF cluster (see Figures A1 and A2 in the Appendix). The fifth cluster lies between these two clusters. We consider this a “transition” cluster from which countries can theoretically move either to NPF-EF or PF-NEF clusters. The cluster centers are shown in Table 8.

This five-cluster case (list of the composition of the clusters is available upon request), we think, also underpins the weak interpretation of the HFH: the shift of the PF-NEF cluster – which violates the HFH – towards the PF-EF cluster (as compared to the four-cluster case), where the HFH holds, may mean that the violation of the HFH cannot be too “sharp”, meaning that countries with a high level of political freedom cannot restrain their own

<sup>14</sup> The results can be provided upon request.

<sup>15</sup> When pre-1990 West Germany and post-1990 Germany are seen as one country these numbers are changed to 64 countries 4.69 periods on average.

<sup>16</sup> When pre-1990 West Germany and post-1990 Germany are seen as one country these numbers are changed to 39 countries 4.85 periods on average.

economic freedom to too great an extent. The analysis in our view also sheds light on the causes of a country’s finding itself in the PF-NEF cluster: basically politically free (democratic) countries can fall into this cluster due to an economic policy which reduces economic freedom. This claim is supported by the fact that this cluster includes such developed “welfare states” as France (1975-1985), Greece (1975-1995), Italy (1970-1985), Norway (1975), Portugal (1975-1985), Spain (1975-1985) and Sweden (1970-1980). Another group of countries is that of the post-socialist countries such as Albania (2000-2005), Bulgaria (1990-2005), Estonia (1995), Hungary (1990-1995), Latvia (1995), Poland (1990-2000), Romania (1995-2005), Slovakia (1995-2000). In addition, it includes countries from Latin-America, Asia, and Africa with relatively high political freedom but low economic freedom (e.g., Venezuela 1975-1990, Senegal 2000-2005 and South-Korea 1985-1995).

	Cluster									
	Transition		PF-NEF		NPF-EF		NPF-NEF		PF-EF	
	The measure of economic freedom									
	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index	Area 2 index
Political freedom	3,98	3,05	2,21	1,77	4,70	4,94	5,91	5,53	1,26	1,13
Economic freedom	4,75	3,75	5,71	6,26	6,69	6,34	4,70	3,17	7,28	8,94

Table 8: Final cluster centers in the case of 5 clusters

When the same five-cluster analysis is run with the Area 2 index as a proxy for economic freedom, the general conclusion is not much different. The cluster centers are shifted in the same direction as above; most notably the PF-NEF cluster becomes freer in both a political and economic sense, with the result that it includes some countries that are clearly open access orders but which have (or used to have) a relatively large government or a more “interventionist” view on economic governance, such as France (1975, 1995), Norway (1975), or New Zealand (1975). It also includes advanced transition countries (e.g., Croatia (2000-2005), Estonia (1995-2005), Lithuania (1995-2005), Hungary (1995-2005), the Czech Republic (1995-2005), Poland (1990-2005), Slovenia (2000-2005)), as well as countries with less political, but more economic freedom (Hong Kong (1975,1985), Taiwan (1995-2005)).

The five-cluster case sheds much light on the democratization–liberalization process compared to the four-cluster case. The position of the Transition cluster suggests that political and economic freedom develop very often in a step-by-step process (from the NPF-NEF cluster), but the “results” of this development are very fragile, demonstrated by the frequent

falling back in any value, such as when a country moves towards the NPF-EF cluster (as is also suggested by the theory of North et al. 2009). Such fall-backs include Bangladesh in 1980, Central Africa and Russia in 2000, or Chile and Pakistan in 1975 or Zimbabwe in 1985.

As in the four-cluster case we calculated the average periods spent in a given cluster and created the transitional matrix in order to take a first look at the stability of the clusters (see Table 9 and Table 10, respectively).

	Cluster									
	Transition		PF-NEF		NPF-EF		NPF-NEF		PF-EF	
	The measure of economic freedom									
	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index	Area 2 index	EFW Index <sup>17</sup>	Area 2 index <sup>18</sup>
Number of countries that spent at least one period in the cluster	53	59	73	63	48	47	48	56	58	33
Average number of periods spent in a cluster once a country is there	2.21	2.68	2.67	2.67	2.60	2.70	3.10	3.03	4.09	4.94

Table 9: Data on cluster stability in the case of 5 clusters

		cluster in period t+5				
		Transition	PF-NEF	NPF-EF	NPF-NEF	PF-EF
cluster in period t	Transition	0.43	0.26	0.16	0.15	0.01
	PF-NEF	0.07	0.66	0.05	0.01	0.21
	NPF-EF	0.10	0.12	0.68	0.06	0.04
	NPF-NEF	0.22	0.02	0.09	0.66	0.00
	PF-EF	0.00	0.06	0.01	0.00	0.93

Table 10: Transitional matrix in the case of 5 clusters<sup>19</sup>

What we concluded from the similar table from the four-cluster case is even more sharply shown by Table 10. The strong interpretation of the HFH is clearly refuted by the fact that the probability of leaving the cluster NPF-EF to move to PF-EF is very low (0.04) and when this cluster is left it is usually to move to PF-NEF or the Transition; and the latter again is virtually

<sup>17</sup> When pre-1990 West Germany and post-1990 Germany are seen as one country these numbers are changed to 57 countries and 4.16 periods on average.

<sup>18</sup> When pre-1990 West Germany and post-1990 Germany are seen as one country these numbers are changed to 32 countries and 5.06 periods on average.

<sup>19</sup> Economic freedom here is measured by the EFW Index. We estimated the probabilities for cases when economic freedom is measured by the Area 2 index and the results are very similar. The results can be provided upon request.

never left to move to cluster PF-EF. The semi-strong interpretation is not supported, since the probability of entering the PF-EF cluster from PF-NEF is more than five times as high as entering it from cluster NPF-EF. But the weak interpretation is strongly supported, because a deterioration of political freedom accompanied by high economic freedom (a switch between cluster PF-EF and NPF-EF) is very uncommon. The sole country where this occurs is Hong Kong, which went through such a change between 1980 and 1985.

As above, the matrix suggests a typical route of transformation from NPF-NEF to PF-EF (provided it happens). Thinking backwards, starting from the cluster PF-EF, this suggests the following route NPF-NEF → Transition → PF-NEF → PF-EF; that is, the cluster NPF-EF is not part of a typical transformation route. This is again bad news for the strong and semi-strong interpretation of the HFH because this route suggests that transformations usually begin with a substantial improvement in political freedom, and a marginal improvement in economic freedom. Paradoxically enough, even if this is the most probable way of transformation looking at period-by-period changes, it does not mean that this transformation was fully carried through by any countries. Actually, hardly any country went through exactly the same steps, and the only example is Hungary between 1980 and 2000. Although the changes were simultaneous, it was political, not economic change which was dominant at the beginning of the transformation (see Kornai 2000). Thus, an improvement in economic freedom is not a trigger of the process.

Conclusions stemming from survival probabilities calculated in a similar fashion to those above are almost the same (see Table 11).

	Survival probabilities in different periods							
	period 1	period 2	period 3	period 4	period 5	period 6	period 7	period 8
<b>PF-EF</b>	1.00	0.83	0.81	0.78	0.78	0.78	0.78	0.78
<b>PF-NEF</b>	1.00	0.64	0.53	0.31	0.11	0.08	0.08	0.00
<b>NPF-EF</b>	1.00	0.49	0.46	0.38	0.34	0.27	0.27	0.27
<b>NPF-NEF</b>	1.00	0.59	0.37	0.24	0.22	0.20	0.15	0.10
<b>Transition</b>	1.00	0.46	0.19	0.06	0.03	0.00	0.00	0.00

Table 11: Survival probabilities for the five-cluster case

The most stable cluster is clearly the PF-EF, while the least stable is the Transition. It is important to note that the two clusters including limited access order countries, namely the NPF-EF and the NPF-NEF clusters, are not as stable as was detected with 4 clusters. But the proposition stemming from our theoretical framework – that the PF-NEF cluster is not stable

and countries' being here is rather a transitory phenomenon – receives some empirical support here, since after 3 periods the survival probability declines very sharply.

## 5. Conclusions

In this paper we used the theoretical framework developed by North et al. (2009) to interpret and investigate the HFH: since in this framework social orders are conceptualized as a result of the co-evolution of economic, political and legal institutions, it also gives theoretical underpinnings to the economic freedom–political freedom relationship. The theory of North et al. (2009) allowed us to interpret the HFH in a different way from other interpretations prevalent in the literature on empirical investigations of the HFH. One aspect of our weak interpretation of the HFH is that the HFH is relevant only for the open access order; the other is that economic freedom is a necessary condition for *maintaining* political freedom in this order; that is, once achieved, political freedom needs economic freedom to be stable. Our empirical investigations, based on cluster analyses together with other methods (e.g., survival probabilities, panel regressions) provided support for the weak interpretation of the HFH, and the results are robust.

Our empirical investigations also enabled us to say something about democratization–liberalization paths. One puzzling aspect of what we concluded is that although we found that it is more common to find a “smooth” transition which begins with an improvement in political freedom occurring before an improvement in economic freedom (see also Zhenhui and Haizeng 2008), historical facts concerning the development of the “classical” open access order countries (the US, the UK or France) presented in North et al (2009) suggest that it should be the other way round. Obviously we could not solve this great puzzle in this article, but we can offer a suggestion which could help better understand the problem. We argue the HFH holds *per definitionem* for open access orders in its weak form, an assertion which does not say much about the way economic and political freedom evolved into a level we experience today; it rather concerns the problem of how to preserve political freedom once we have achieved it. When this argument is confronted with historical facts, our hypothesis would be that once western countries had become open access orders, they needed economic freedom to maintain political freedom.

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## Appendix

**Table A1: Composition of the cluster PF-NEF**

Albania	1990-2005
Argentina	1970, 1980-1990, 2005
Bangladesh	1990-1995
Belize	1985
Benin	1990-2005
Bolivia	1980-1990, 2005
Botswana	1980-1990
Brazil	1975-2005
Bulgaria	1990-2000
Central African Rep.	1995
Colombia	1970-2005
Congo, Rep. of	1990
Croatia	1995
Cyprus (Greek)	1975
Dominican Republic	1980-1995
Ecuador	1975-2005
El Salvador	1980-1990
Fiji	1975-1980, 1990-2000
Gabon	1990
Ghana	1995-2000
Greece	1975, 1985
Guatemala	1970, 1985
Guinea-Bissau	2005
Guyana	1995-2005
Honduras	1980-2005
Hungary	1985-1990
Iceland	1975
India	1970-2005
Indonesia	2000-2005
Israel	1970-1995
Italy	1975
Jamaica	1980-1990
Kuwait	1980
Latvia	1995
Lithuania	1995
Macedonia	2005
Madagascar	1990-2005
Malawi	1995-2005
Malaysia	1970
Mali	1990-2005
Malta	1980-1985
Mauritius	1975-1980
Mexico	1975-1985, 1995
Morocco	1975
Mozambique	2005
Namibia	1990-1995
Nepal	1980-1995
Nicaragua	1995-2005
Niger	2000,-2005
Nigeria	1975
Pakistan	1985-1990
Panama	1990
Papua New Guinea	1985-2005
Paraguay	1990, 2000-2005
Peru	1980-1985
Philippines	1985-1990
Poland	1990-1995
Portugal	1975
Romania	1990-2000
Senegal	1980-2005
Sierra Leone	2000-2005
Slovakia	1995
Slovenia	1995
South Africa	1990
South Korea	1985-1990
Spain	1975
Sri Lanka	1980-1985, 1995-2000
Tanzania	2000-2005
Thailand	1980-1985
Trinidad & Tobago	1975-1985
Turkey	1970-1975, 1985-1990, 2000-2005
Ukraine	1995-2005
Venezuela	1990-2005
Zambia	1990

**Table A2: Composition of the cluster NPF-EF**

Armenia	2005
Azerbaijan	2005
Bahrain	1980-2005
Bangladesh	2000 2005
Brazil	1970
Chile	1985
Cote d'Ivoire	1985, 2000
Egypt	1985, 2000-2005
Fiji	1985, 2005
Gabon	2000-2005
Georgia	2005
Greece	1970
Guatemala	1975, 1980, 1990-2005
Haiti	2000-2005
Hong Kong	1985-2005
Indonesia	1985-1995
Iran	2005
Jordan	1985-2005
Kenya	2000-2005
Kuwait	1985, 1995-2005
Malawi	1990
Malaysia	1975-2005
Mexico	1970
Mexico	1990
Morocco	1970, 1995-2005
Nepal	2000
Nigeria	2000-2005
Pakistan	1995, 2005
Panama	1975-1985
Paraguay	1980, 1995
Peru	1995
Philippines	1970, 1980, 2005
Portugal	1970
Russia	2005
Singapore	1970-2005
South Africa	1970-1985
South Korea	1980
Spain	1970
Sri Lanka	2005
Taiwan	1970-1990
Thailand	1970-1975, 1990, 2005
Tunisia	1990-2005
Turkey	1995
Uganda	2000-2005
United Arab Emirates	1980-2005
Uruguay	1980
Vietnam	2005
Zambia	2000-2005
Zimbabwe	1995

**Table A3: Composition of the cluster NPF-NEF**

Albania	1995
Algeria	1980-2005
Argentina	1975
Bangladesh	1975-1985
Benin	1980-1985
Bulgaria	1985
Burma	1980-2005
Burundi	1975-2005
Cameroon	1980-2005
Central African Republic	1985-1990, 2000-2005
Chad	1985-2005
Chile	1970-1980
China	1980-2005
Congo, Dem. Rep.	1970-2005
Congo, Republic of	1980-1985, 1995-2005
Cote d'Ivoire	1980, 1990-1995, 2005
Ecuador	1970
Egypt	1975-1980, 1990-1995

Gabon	1980-1985, 1995
Ghana	1975-1990
Guinea-Bissau	1990-2000
Haiti	1980-1995
Hungary	1980
Indonesia	1970-1980
Iran	1970-2000
Jordan	1975-1980
Kenya	1970-1995
Kuwait	1990
Madagascar	1980-1985
Malawi	1975-1985
Mali	1975-1985
Morocco	1980-1990
Nepal	2005
Nicaragua	1980-1990
Niger	1980-1995
Nigeria	1970, 1980-1995
Pakistan	1970-1980, 2000

Paraguay	1985
Peru	1970-1975, 1990
Philippines	1975
Poland	1985
Romania	1985
Russia	1995-2000
Rwanda	1990-2005
Sierra Leone	1975-1995
South Korea	1970, 1975
Sri Lanka	1990
Syria	1970-2005
Tanzania	1970-1995
Togo	1980-2005
Tunisia	1970-1985
Turkey	1980
Uganda	1980-1995
Zambia	1975-1985, 1995
Zimbabwe	1980-1990, 2000-2005

**Table A4: Composition of the cluster PF-EF**

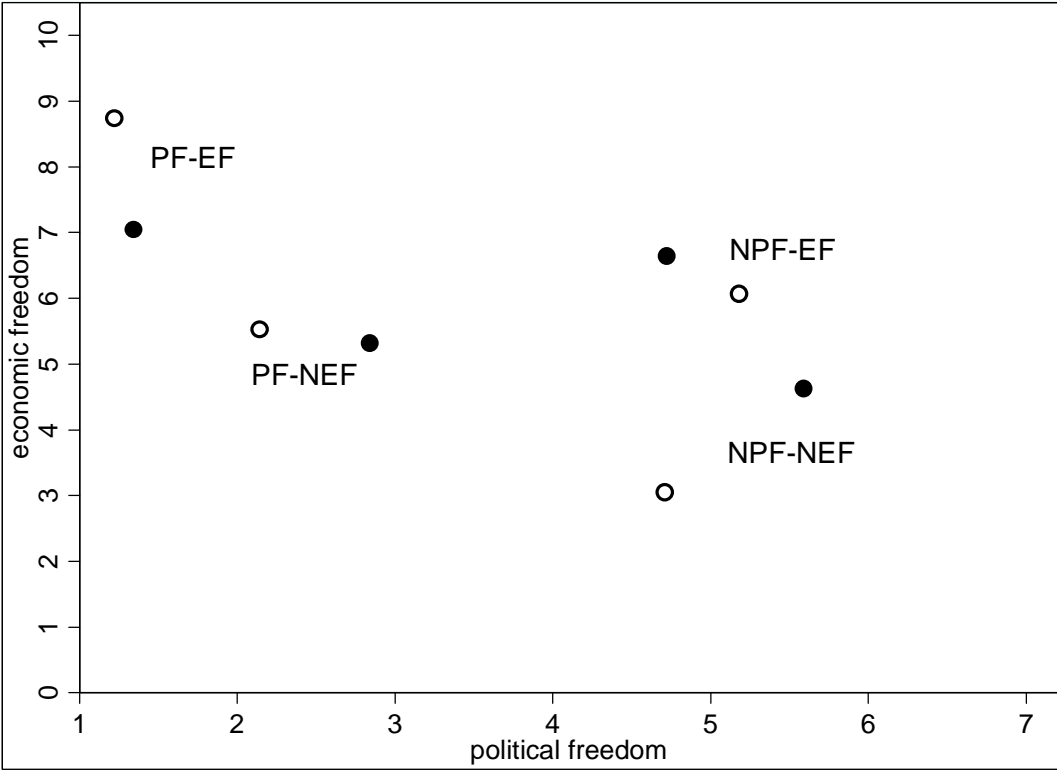
Argentina	1995-2000
Australia	1970-2005
Austria	1970-2005
Bahamas	1975-2005
Barbados	1975-2005
Belgium	1970-2005
Belize	1980, 1990-2005
Bolivia	1995-2000
Botswana	1995-2005
Bulgaria	2005
Canada	1970-2005
Chile	1990-2005
Costa Rica	1975-2005
Croatia	2000, 2005
Cyprus (Greek)	1980-2005
Czech Republic	1995-2005
Denmark	1970-2005
Dominican Republic	2000, 2005
El Salvador	1995-2005
Estonia	1995-2005
Finland	1970-2005
France	1970-2005

Germany (West)	1970-2005
Ghana	2005
Greece	1980, 1990-2005
Hong Kong	1970-1980
Hungary	1995-2005
Iceland	1970, 1980-2005
Ireland	1970-2005
Israel	2000, 2005
Italy	1970, 1980-2005
Jamaica	1995-2005
Japan	1970-2005
Latvia	2000, 2005
Lithuania	2000, 2005
Luxembourg	1970-2005
Malta	1990-2005
Mauritius	1985-2005
Mexico	2000, 2005
Mongolia	2005
Namibia	2000, 2005
Netherlands	1970-2005
New Zealand	1970-2005

Norway	1970-2005
Panama	1995-2005
Peru	2000-2005
Philippines	1995-2000
Poland	2000-2005
Portugal	1980-2005
Romania	2005
Slovakia	2000-2005
Slovenia	2000-2005
South Africa	1995-2005
South Korea	1995-2005
Spain	1980-2005
Sweden	1970-2005
Switzerland	1970-2005
Taiwan	1995-2005
Thailand	1995-2000
Trinidad & Tobago	1990-2005
United Kingdom	1970-2005
United States	1970-2005
Uruguay	1985-2005
Venezuela	1970-1985

**Figure A1: Cluster centers in case of 4 clusters**

Note: full circles: EFW Index, empty circles: the Area 2 index as a measure of economic freedom



**Figure A2: Cluster centers in case of 5 clusters**

Note: full circles: EFW Index, empty circles: Area 2 index as a measure of economic freedom

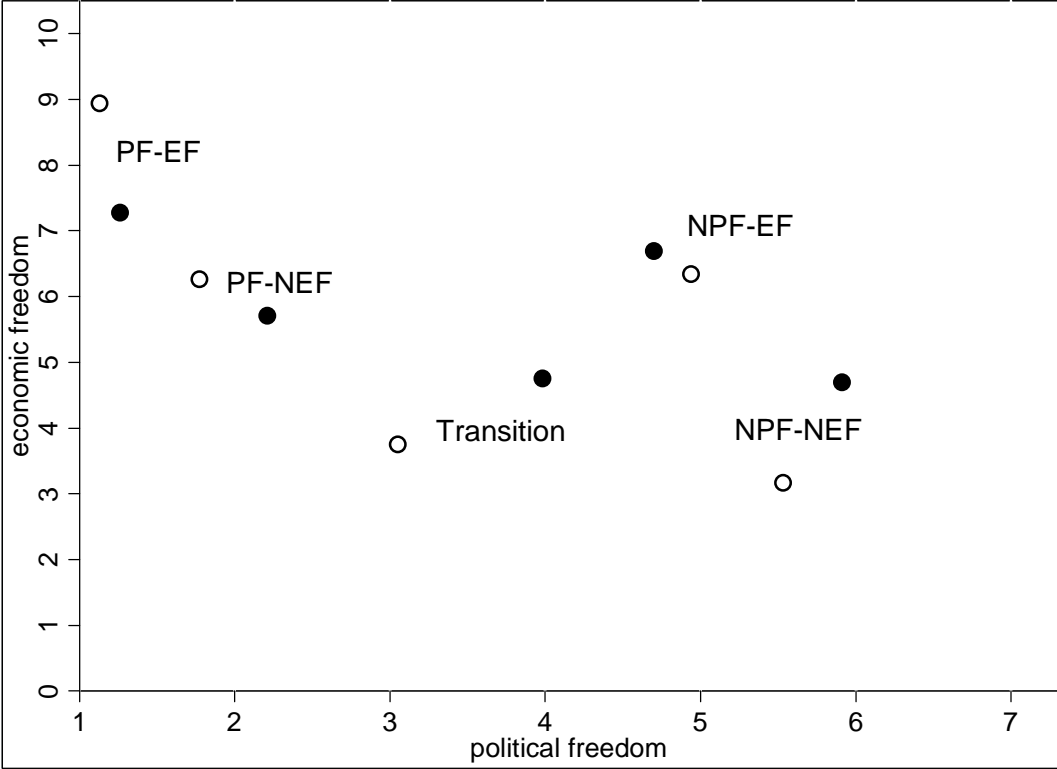


Figure A3: The two democratization-liberalization paths

