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 analysis, survival probabilities and probit regressions, by using a panel database for 130 countries for the period 1970-2005 provide support for the *weak* interpretation.
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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.[1]

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. 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 measured by the Fraser Institute's Economic Freedom of the World (EFW) Index.[2] As the first step, in line with our theoretical

[1] 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).

[2] 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

model, we will identify the four clusters corresponding to the various economic freedom–political freedom combinations of the social orders. Here our major concern will be the stability of the clusters and we will use various techniques, e.g., survival probabilities, to provide evidence for our propositions. As the second step, we will transform our propositions into testable hypotheses and will turn to probit regression analyses to check them. The results 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 propositions. 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.[3] 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.

The causality of the reverse direction is investigated by De Haan and Sturm (2003) since they pose the question of whether more democracy[4] leads to more economic freedom, or

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freedom is understood as what is measured by the Economic Freedom of the World (EFW) Index (Gwartney, Lawson and Hall 2011).

[3] 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.

[4] Democracy is used in the sense of political freedom.

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 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 19th 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[5] 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[6], 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).

(2) Semi-strong interpretation (economic freedom is a necessary condition of political freedom): without economic freedom political democratization will not be very probable, and

[5] It is beyond the scope of our paper to present this literature in more detail.

[6] 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.

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[7] have emerged in human history to control violence, each creating inherently different institutions. These are as follows: foraging or primitive order[8], 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 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

[7] By social order they mean the complex of military, political, economic and religious institutions of social organization.
[8] The primitive order, since it is a characteristic of hunter-gatherer societies, is not analyzed in the book.

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[9] 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 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

[9] 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.

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 Economic Freedom of the World (EFW) Index as a measure of economic freedom, while political freedom is the mean of civil liberties and political rights – measured and published by 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). Since the theory suggests that different social orders may have different combinations of political and economic institutions, as a first step in our empirical investigations, cluster analysis seems to be a fruitful method for our purpose.

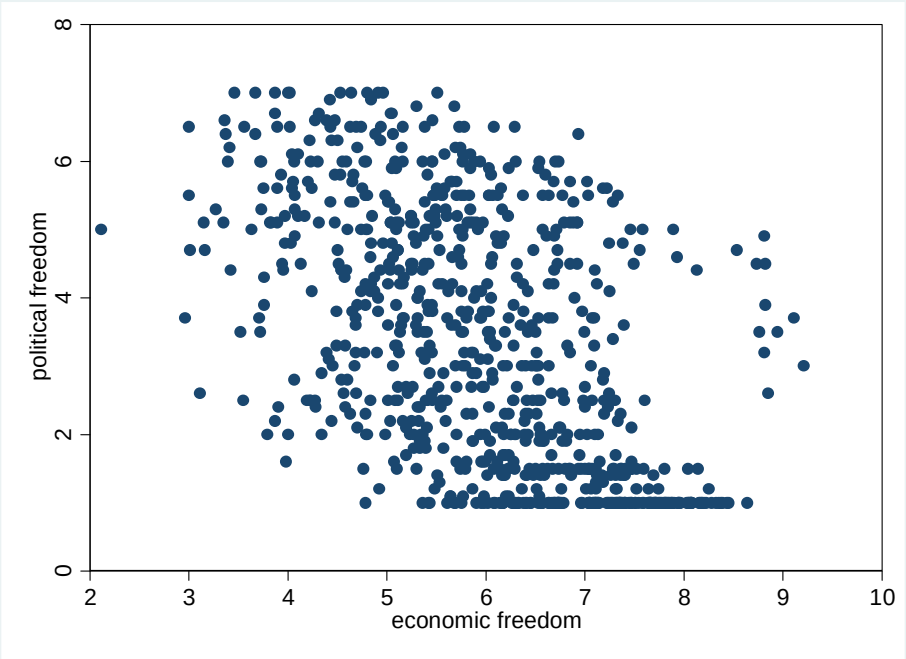

Figure 1: Scatterplot between economic freedom and political freedom[10]

4.1. Cluster analysis

4.1.1. The four clusters

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 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

[10] 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.

- 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 Tables A1-A4 in the Appendix, for development data on the clusters see Table A5 in the Appendix). The four clusters correspond clearly to Lawson and Clark's (2010) categories (see Table 1 and Figure 2).

	Cluster			
	PF-NEF	**NPF-EF**	**NPF-NEF**	**PF-EF**
Political freedom	2.57	4.60	5.73	1.35
Economic freedom	5.37	6.23	4.62	7.12

Table 1: Cluster centers

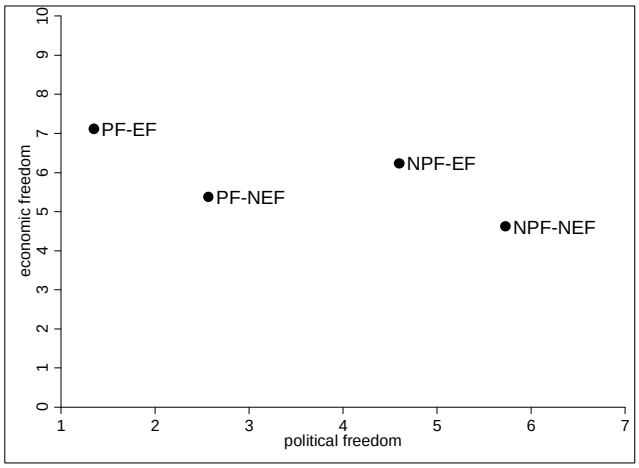

Figure 2: Cluster centers

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, France, Germany, Japan, the UK or US. What is more, 17 of these countries (see Table A4) are classified into this cluster for the whole period, while some of them such as Sweden, Iceland and Italy are not this cluster for one or two 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, there seems to exist a third group of open access orders that includes some "emerging" cases such as Bahamas, Barbados, Chile, Taiwan, Spain, Portugal, Cyprus, South Africa; countries which are in the PF-EF cluster for at least three consecutive periods. There remain, however, some countries that are classified here during various periods, but, at least at first glance, do not seem to be open access orders (e.g., Costa Rica, Ghana, Jamaica, El Salvador, Botswana, Namibia).

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., Hungary in 1990, Poland in 1990 and 1995, Romania from 1995 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, Iceland and Sweden 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 for the whole period, and, for instance, Ecuador, Turkey, Senegal and Argentina for almost the whole period. However, for countries such as Israel and South Korea their being here has to be seen as a phase in their liberalization–democratization development. 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) (for development data see Table A5 in the Appendix). 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 from 1975 to 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.

4.1.2. Stability of the clusters

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 (4.2 periods, that is, 21 years).

	Cluster			
	PF-NEF	**NPF-EF**	**NPF-NEF**	**PF-EF**
Number of countries that spent at least one period in the cluster	70	64	52	66
Average number of periods spent in a cluster once a country is there	2.67	2.80	3.27	4.20

Table 2: Data on the stability of the clusters

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.

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 23.7 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 t+5			
		PF-NEF	**NPF-EF**	**NPF-NEF**	**PF-EF**
cluster in period t	**PF-NEF**	0.598	0.130	0.036	0.237
	NPF-EF	0.189	0.678	0.091	0.042
	NPF-NEF	0.106	0.219	0.675	0.000
	PF-EF	0.046	0.009	0.000	0.945

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 94.5 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 is only one such case in our sample: Hong Kong.

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.

	Survival probabilities in different periods							
	period 1	**period 2**	**period 3**	**period 4**	**period 5**	**period 6**	**period 7**	**period 8**
PF-EF	1.00	0.88	0.82	0.82	0.78	0.78	0.78	0.78
PF-NEF	1.00	0.60	0.35	0.21	0.13	0.07	0.04	0.04
NPF-EF	1.00	0.64	0.34	0.19	0.13	0.06	0.03	0.02
NPF-NEF	1.00	0.63	0.45	0.28	0.21	0.15	0.12	0.08

Table 4: Survival probabilities for the clusters

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 8th period is 78 percent, while for the PF-NEF cluster it is only 4 percent. What is more, the survival probabilities decrease very drastically in this cluster from one period to another. 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.

4.2. Regression analysis

4.2.1. Hypotheses and the model

Above we have obtained some first-hand support for our propositions, but of course we need to find some stronger evidence through more sophisticated investigations. For this purpose, we have to transform our general propositions (1)-(3) laid down in Section 3 into more concrete and testable ones.

To arrive at our weak interpretation, the strong interpretation of the HFH must be weakened in two ways. First, the HFH does not claim to be relevant for all countries irrespective of their political and economic institutions; instead, we only claim that it holds in the set of open access orders. Second, the HFH does not claim to be symmetric in the sense that what is true under undemocratization is also true under democratization. Our argument is only concerned with the deterioration of political freedom (undemocratization).

With these restrictions in mind, some hypotheses of a more operational kind can be derived from our general propositions in Section 3 in the following form.

(1) The probability of a change in political freedom is not related to economic freedom among limited access order countries.

(2) A higher level of economic freedom reduces the probability of a reduction in political freedom within open access orders.

(3) The probability of a change in political freedom will be greatest among those open access orders in which the HFH is violated.

As a test of the above hypotheses we ran probit regressions in the following forms:

(1)

$$\left(\text{increase in political freedom}\right)_{i,t,t+4} = \beta_0 + \beta_1 \times \left(\text{political freedom}\right)_{i,t} + \beta_2 \times \left(\text{economic freedom}\right)_{i,t} + \varepsilon_{i,t}$$

(2)

$$\left(\text{decrease in political freedom}\right)_{i,t,t+4} = \beta_0 + \beta_1 \times \left(\text{political freedom}\right)_{i,t} + \beta_2 \times \left(\text{economic freedom}\right)_{i,t} + \varepsilon_{i,t}$$

(3)

$$\left(\text{change in political freedom}\right)_{i,t,t+4} = \beta_0 + \beta_1 \times \left(\text{political freedom}\right)_{i,t} + \beta_2 \times \left(\text{economic freedom}\right)_{i,t} + \varepsilon_{i,t}$$

where

$(\text{increase in political freedom})_{i,t,t+4}$ is the frequency with which political rights *or* civil liberties have *improved* during the five years between year t and t+4,

$(\text{decrease in political freedom})_{i,t,t+4}$ is the frequency with which political rights *or* civil liberties have *deteriorated* during the five years between year t and t+4,

$(\text{change in political freedom})_{i,t,t+4}$ is the frequency with which political rights *or* civil liberties have *deteriorated or improved* during the five years between year t and t+4,

$(\text{political freedom})_{i,t}$ is the average of political rights and civil liberties in country i in year t,

$(\text{economic freedom})_{i,t}$ is the level of economic freedom in country i in year t.

We will first ask the question whether greater economic freedom has an effect on the probability of a change in political freedom in open access orders different from that which it has in limited access orders. Then we will also test the hypothesis that higher economic freedom has an effect on the probability of a decrease in political freedom in open access orders which is larger than the effect it has on the probability of an increase in political freedom in limited access orders. That is, the probit regressions to follow can be seen as a sort of testing of the claim that the HFH does not work in the same way in each kind of social order.

The problem is, of course, how to identify different kinds of orders. We will apply two methods. First, we will use our classification which comes from the above cluster analysis and associate the countries in the PF-EF cluster with open access orders and those in NPF-NEF and NPF-EF with limited access orders. Our intention here is to use the clusters as proxies for different social orders (see Section 4.1.1.) Second, we will use the index developed by Gollwitzer and Quintyn (2012) to obtain an alternative measure for the same purpose.

4.2.2. Clusters as kinds of social orders

Tables 5a, 5b and 6a, 6b show the answers our data give to the two questions we have just raised. Tables 5b and 6b show the marginal effects on the means calculated from the results of

Tables 5a and 6a. The results of Tables 5a and 5b support our claim that greater economic freedom makes political institutions more stable in the case of open access orders. In the total sample the effect of economic freedom on the probability of a change in political freedom is significant at the one percent level even if political freedom is added as a determinant (columns 2 and 3 in Tables 5a and 5b). However, when splitting the sample into two parts – members of the PF-EF cluster and the rest – it is only the PF-EF cluster within which the relationship still holds statistical significance at the usual significance level. Column 5 in Table 5b shows that a one-unit change in economic freedom will reduce the probability of a change in political rights or civil liberties in the next five-year interval by 0.160. This effect is almost twice as large as the one derived for the full sample (column 3 in Table 5b). These results confirm our hypothesis (1) derived in Section 4.2.1, since the change in political freedom seems to be affected within that sample of countries which we call open access ones, while the same effect cannot be observed within the group featuring the rest of the countries.

	probability of a change in political rights or civil liberties in a five year interval					
	total sample		PF-EF cluster		three other clusters	
constant	2.754 (10.00)***	1.271 (3.68)***	2.226 (2.56)***	1.150 (1.23)	0.964 (2.92)***	1.118 (2.76)***
economic freedom	-0.393 (-9.07)***	-0.243 (-5.15)***	-0.375 (-3.06)***	-0.458 (-3.61)***	-0.022 (-0.37)	-0.029 (-0.48)
political freedom		0.178 (5.51)***		1.178 (6.25)***		-0.028 (-0.63)
pseudo R^2	0.100	0.132	0.030	0.196	0.000	0.001
number of observations	813	813	277	277	536	536

Table 5a: Probit regressions on the change in political or civil rights within different clusters

	probability of a change in political rights or civil liberties in a five year interval					
	total sample		PF-EF cluster		three other clusters	
economic freedom	-0.145 (-9.15)***	-0.089 (-5.19)***	-0.135 (-3.07)***	-0.160 (-3.68)***	-0.006 (-0.37)	-0.008 (-0.48)
political freedom		0.065 (5.62)***		0.412 (5.91)***		-0.008 (-0.63)
number of observations	813	813	277	277	536	536

Table 5b: Probit regressions on the change in political or civil rights within different clusters, marginal effects at the means

In Tables 6a and 6b we compare the effect of greater economic freedom on the increase in political freedom within the observations outside the PF-EF cluster with its effect on the decrease in political freedom within the PF-EF cluster. The results are less persuasive but are slightly supportive of what we are saying. First, in the full sample the probability of both an

increase and a decrease in political freedom is reduced by greater economic freedom (and less political freedom) as shown in columns 2, 3, 6 and 7 of Tables 6a and 6b. As is shown in columns 4 and 5, outside the PF-EF cluster the probability of an increase in political freedom is not reduced by greater economic freedom at a ten-percent significance level even if the level of political freedom is controlled for as in column 5. When it comes to the probability of a decrease in political freedom within the PF-EF cluster, on the other hand, the effect is negative and significant at the ten percent level (column 9). In addition the magnitude of this effect is larger in absolute value than what we saw in column 5 in Table 6b.

	dependent variable: probability of							
	an increase in political rights or civil liberties in a five year interval				a decrease in political rights or civil liberties in a five year interval			
	total sample		PF-NEF, NPF-EF, and NPF-NEF clusters		total sample		PF-EF cluster	
constant	1.889 (7.83)***	0.395 (1.20)	0.729 (2.45)***	0.317 (0.89)	1.688 (7.03)***	0.921 (2.70)***	0.443 (0.42)	-0.013 (-0.01)
economic freedom	-0.323 (-8.21)***	-0.175 (-3.91)***	-0.083 (-1.54)	-0.067 (-1.22)	0.324 (-8.17)***	-0.248 (-5.32)***	-0.208 (-1.40)	-0.257 (-1.88)*
political freedom		0.181 (6.29)***		0.076 (2.08)**		0.092 (3.23)***		0.555 (3.52)***
pseudo R^2	0.067	0.103	0.003	0.010	0.068	0.077	0.010	0.062
number of obs.	813	813	536	536	813	813	277	277

Table 6a: Probit regressions on the decrease and increase in political or civil rights within different clusters

	dependent variable: probability of							
	an increase in political rights or civil liberties in a five year interval				a decrease in political rights or civil liberties in a five year interval			
	total sample		PF-NEF, NPF-EF, and NPF-NEF clusters		total sample		PF-EF cluster	
economic freedom	0.128 (-8.20)***	-0.069 (-3.91)***	-0.032 (-1.54)	-0.026 (-1.22)	-0.125 (-8.17)***	-0.096 (-5.33)***	-0.048 (-1.40)	-0.057 (-1.89)*
political freedom		0.072 (6.28)***		0.029 (2.08)***		0.036 (3.22)***		0.122 (3.47)***
number of obs.	813	813	536	536	813	813	277	277

Table 6b: Probit regressions on the decrease and increase in political or civil rights within different clusters, marginal effects at the means

Tables 6a and 6b support our hypothesis (2) because the results show that while economic freedom reduces the probability of a decrease in political freedom within open access orders, its does not increase that within the limited access ones. That is, while the weak interpretation

of the HFH seems to hold within open access orders, the strong version does not seem to hold within the limited access ones.

4.2.3. Using the measure of the doorstep conditions to identify open access orders

One obvious shortcoming of the above analysis is that we used the same data to indentify open access orders as we used to check our predictions concerning the relationship between economic and political freedom. For the results to be more persuasive we need an alternative source of data to identify different kinds of social orders. One possibility is the data from Gollwitzer and Quintyn (2012) who make the first attempt to test the theory of North et al. (2009). They create three different measures which have a quantitative evaluation of the three doorstep conditions (see footnote 9) and conclude that the theory's predictions are basically correct.[11]

One problem is that their index of the first doorstep condition includes some components of the EFW index (e.g., impartiality of the courts, integrity of the legal system) but this seems to be a minor problem. There is a more important conceptual difficulty that makes the use of the Gollwitzer and Quintyn (2012) data less obvious for us, which is the continuous – as opposed to discrete – nature of the doorstep conditions. Gollwitzer and Quintyn's (2012) data reflect a continuous understanding of the conditions. That is, in their view, being an open access or limited access order is a matter of degree.

Our interpretation in the spirit of North et al. (2009), however, suggests a discrete understanding. As a consequence of this conceptual difficulty we cannot expect a perfect corroboration of our hypotheses when using the Gollwitzer and Quintyn (2012) data. What we can expect is that those hypotheses that we claim to hold among open access orders will be more articulate characteristics of those countries that are open access orders to a larger extent as measured by Gollwitzer and Quintyn (2012).

The most important prediction we can make is that a higher level of economic freedom will have a larger effect on the probability of a decrease in political freedom among those countries that are "more open" (in the sense of Gollwitzer and Quintyn 2012) than the effect it has on the probability of an increase in political freedom among "less open" countries.

In the following we will split the Gollwitzer and Quintyn (2012) sample into two halves, a "less open" sample for the countries in which the overall index (D_overall) is lower than the

[11] Their main concern is how the doorstep conditions are interrelated with different political and economic outcomes which they measure by the level of democracy, GDP per capita and income inequality.

median value (0.97) and a "more open" one consisting of those for which the overall index is higher than, or equal to, the median. As a result, our "more open" sample consists of 55 countries while the "less open" one consists of 53.

As Tables 7a and 7b show, the prediction cannot be rejected in the sense that there seems to be no statistically significant relationship between the change in political freedom and the level of economic freedom within "less open" countries (columns 6 and 7), while the relationship is statistically significant in the "more open" sample with a direction which could be expected: more economic freedom reduces the probability of a change in political or civil freedom (columns 4 and 5). In addition, the results in Table 7b show that the magnitude of the effect of the economic freedom on the probability in question is larger than in the total sample (columns 4 and 5 as opposed to columns 2 and 3 in Table 7b). These results, again, give corroboration to hypothesis (1) for the same reason as the results in Tables 5a and 5b did.

	probability of a change in political rights or civil liberties in a five year interval					
	total Gollwitzer and Quintyn (2012) sample		"more open" countries (D_overall>=0.97)		"less open" countries (D_overall<0.97)	
constant	3.104 (9.69)***	1.776 (4.44)***	3.836 (-7.54)***	2.020 (3.80)***	1.301 (4.65)***	1.854 (2.85)***
economic freedom	-0.445 (-8.82)***	-0.311 (-5.74)***	-0.568 (-7.54)***	-0.402 (-5.44)***	-0.093 (-1.10)	-0.124 (1.39)
political freedom		0.155 (4.35)***		0.318 (4.44)***		-0.083 (-1.26)
pseudo R^2	0.119	0.145	0.156	0.237	0.270	0.255
number of obs.	664	664	358	358	306	306

Table 7a: Probit regressions on the change in political or civil rights within "less and more open" countries

	probability of a change in political rights or civil liberties in a five year interval					
	total Gollwitzer and Quintyn (2012) sample		"more open" countries (D_overall>=0.97)		"less open" countries (D_overall<0.97)	
economic freedom	-0.161 (-9.12)***	-0.112 (-5.81)***	-0.225 (-7.60)***	-0.159 (-5.49)***	-0.027 (-1.10)	-0.036 (-1.40)
political freedom		0.056 (4.43)***		0.126 (4.53)***		-0.024 (-1.27)
number of obs.	664	664	358	358	306	306

Table 7b: Probit regressions on the change in political or civil rights within "less and more open" countries, marginal effects at the means

Since the choice of the median value of the overall doorstep measure to separate open access orders from limited access ones is necessarily arbitrary we tried another threshold. This is based on the suggestion of North et al. (2009) saying that there are roughly two dozen

countries that can be described as open access orders.[12] Ranking the countries according to the overall doorstep condition does, however, not show a great difference between the countries ranked 24th and 25th (1.24 as opposed to 1.23). There is a slightly larger change (0.05 index points) after the 30th country (Taiwan). In Table 8a and 8b we re-estimated the coefficients of Table 7a and 7b by using the index value of Taiwan (1.21) as a threshold instead of the median.

In this case higher economic freedom does reduce the probability of a change in political rights or civil liberties at a 5 percent significance level even within the "less open" countries, but this effect is still definitely smaller (columns 2 and 3 versus columns 4 and 5 in Table 8b). That is, the results give less support to hypothesis (1) because they do not say that the strong interpretation of the HFH cannot be observed. They do say, however, that the effect described by the weak form is larger than the one described by the strong one.

	probability of a change in political rights or civil liberties in a five year interval			
	"more open" countries (D_overall>=1.21)		"less open" countries (D_overall<1.21)	
constant	4.536 (-5.62)***	1.433 (1.15)	1.413 (3.97)***	1.804 (3.91)***
economic freedom	-0.717 (-6.14)***	-0.430 (-3.19)***	-0.106 (-1.71)*	-0.129 (2.01)**
political freedom		0.756 (1.78)*		-0.061 (-1.29)
pseudo R^2	0.161	0.286	0.270	0.255
number of observations	209	209	455	306

Table 8a: Probit regressions on the change in political or civil rights within "less and more open" countries with the "two dozen" rule

	probability of a change in political rights or civil liberties in a five year interval			
	"more open" countries (D_overall>=1.21)		"less open" countries (D_overall<1.21)	
economic freedom	-0.258 (-6.11)***	-0.161 (-3.31)***	-0.030 (-1.71)*	-0.129 (-2.01)**
political freedom		0.283 (1.64)		-0.061 (-1.29)
number of observations	209	209	455	306

Table 8b: Probit regressions on the change in political or civil rights within "less and more open" countries with the "two dozen" rule, marginal effects at the means

To take a further step, Table 9a and 9b compares the effect of economic and political freedom on the decrease in political or civil liberties for "more open" countries with the effects of the same variable on the increase in political or civil freedom in "less open ones".

[12] Note that our cluster analysis also supports the "two dozen" rule since we indentified roughly two dozen countries in the PF-EF cluster (see Section 4.1.1).

What we expect from these regressions is that the coefficient of economic freedom should be larger in absolute value when the regression is run with the probability of a decrease in political freedom within the "more open" group compared to the coefficient of economic freedom when the regression is run on the "less open" sample with the probability of an increase in political freedom as a dependent variable.

The results in Table 9a and 9b confirm our predictions. As can be seen in columns 2-3 and 6-7 on the full Gollwitzer and Quityn (2012) sample the probability of an increase in political freedom as well as that of a decrease is reduced by greater economic freedom. However, with the "less open" sample a higher level of economic freedom does not affect the probability of an increase in political freedom (column 5) or the effect is only significant at a 10 percent level (column 4) and the effect is smaller than the effect on the probability of an increase in political freedom within the "more open" countries which can be seen by comparing column 4 and column 8 in Table 9b or comparing columns 5 and 9. This, in the same manner as the results of Tables 6a and 6b, is a support for hypothesis (2) inasmuch as it shows that within open access orders the weak HFH is a clearer pattern than the strong one within the limited access ones.

	dependent variable: probability of							
	an increase in political rights or civil liberties in a five year interval				a decrease in political rights or civil liberties in a five year interval			
	total Gollwitzer and Quintyn (2012) sample		"less open" countries (D_overall<0.97)		total Gollwitzer and Quintyn (2012) sample		"more open" countries (D_overall>=0.97)	
constant	2.046 (7.66)***	0.771 (2.09)**	0.936 (2.28)***	0.182 (0.34)	1.878 (7.19)***	1.369 (3.62)***	1.443 (3.53)***	0.539 (1.04)
economic freedom	0.344 (-7.92)***	-0.220 (-4.43)***	-0.134 (-1.79)*	0.093 (-1.19)	-0.353 (-8.21)***	-0.303 (-5.93)***	-0.315 (-5.03)***	-0.232 (-3.31)***
political freedom		0.154 (4.83)***		0.115 (2.11)**		0.061 (1.92)*		0.145 (2.94)***
pseudo R^2	0.074	0.100	0.008	0.025	0.078	0.082	0.061	0.083
number of obs.	664	664	306	306	664	664	358	358

Table 9a: Probit regressions on the decrease and increase in political or civil rights within "less and more open" countries

	dependent variable: probability of							
	an increase in political rights or civil liberties in a five year interval				a decrease in political rights or civil liberties in a five year interval			
	total Gollwitzer and Quintyn (2012) sample		"less open" countries (D_overall<0.97)		total Gollwitzer and Quintyn (2012) sample		"more open" countries (D_overall>=0.97)	
economic freedom	-0.344 (-7.92)***	-0.088 (-4.43)***	-0.052 (-1.79)*	-0.036 (-1.19)	-0.137 (-8.18)***	-0.118 (5.93)***	-0.104 (-5.01)***	-0.075 (-3.29)***

political freedom		0.061 (4.83)***		0.045 (2.11)**		0.024 (1.91)*		0.047 (2.91)***
number of obs.	664	664	306	306	664	664	358	358

Table 9b: Probit regressions on the decrease and increase in political or civil rights within "less and more open" countries, marginal effects at the means

The analysis of Tables 9a and 9b is repeated with the stricter threshold, too, in Tables 10a and 10b. These results do not mirror the differences we could detect above. As the results in Table 10b show, the marginal effects are roughly the same. For example, with the results in column 3 of Table 10b the prediction is that a one-point increase in economic freedom will reduce the probability of an increase in political freedom or civil liberties by 0.053 in "less open" countries which is just as large as the effect of the same on the decrease in political freedom within the "more open" countries. That is, when this stronger threshold is applied the weak HFH is not shown to be the dominant force in the data – the strong form is there, too.

	dependent variable: probability of			
	an increase in political rights or civil liberties in a five year interval in "less open" countries (D_overall<1.21)		a decrease in political rights or civil liberties in a five year interval in "more open" countries (D_overall>=1.21)	
constant	1.094 (3.46)***	0.686 (1.72)	1.186 (1.52)	0.511 (0.48)
economic freedom	-0.158 (-2.84)***	-0.135 (-2.36)**	-0.341 (-3.00)***	-0.268 (-1.91)*
political freedom		0.066 (1.64)		0.101 (2.94)
pseudo R^2	0.013	0.018	0.052	0.059
number of observations	455	455	209	209

Table 10a: Probit regressions on the decrease and increase in political or civil rights within "less and more open" countries with the "two dozen" rule

	dependent variable: probability of			
	an increase in political rights or civil liberties in a five year interval in "less open" countries (D_overall<1.21)		a decrease in political rights or civil liberties in a five year interval in "more open" countries (D_overall>=1.21)	
economic freedom	-0.062 (-2.84)***	-0.053 (-2.36)**	-0.067 (-2.96)***	-0.053 (-1.90)*
political freedom		0.026 (1.64)		0.020 (1.02)
number of observations	455	455	209	209

Table 10b: Probit regressions on the decrease and increase in political or civil rights within "less and more open" countries with the "two dozen" rule, marginal effects at the means

Our hypothesis (3) is given support by the fact that whenever coefficients are significant they show the positive effect of political freedom and the negative effect of economic freedom, meaning that the probability of the change in political freedom will be the highest when economic freedom is low and political freedom is high. As the results in this subsection show, these effects are larger within open access orders. That is, the violation of the HFH will have a greater chance of leading to a change in political freedom within the open access orders than it has within limited access orders. This can be seen as a support for our hypothesis (3).

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 the one hand, on cluster analyses together with survival probabilities, and on the other, on probit regressions provided support for the weak interpretation of the HFH.

So, 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. The question of how to obtain high-level economic and political freedom in underdeveloped countries through the liberalization of the economy and democratization, respectively, is a very different one in nature.

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Appendix

Table A1: Composition of the cluster PF-NEF

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

Table A2: Composition of the cluster NPF-EF

Albania	1995
Algeria	2005
Bahrain	1980-2005
Bangladesh	2000-2005
Brazil	1970-1975
Central African Republic	1990
Chile	1985
Colombia	1995, 2000
Congo, Republic of	1990
Cote d'Ivoire	1980-1990, 2000-2005
Croatia	1995
Ecuador	1975
Egypt	1985, 2000-2005
El Salvador	1980
Fiji	1985-1990, 2000-2005
Gabon	1990-2005
Greece	1970
Guatemala	1975-1980, 1990-2005
Haiti	1995-2005
Honduras	2005
Hong Kong	1995-2000

Hungary	1985
Indonesia	1975, 1985-2000
Iran	2005
Jordan	1985-2005
Kenya	1970, 2000-2005
Kuwait	1980-1985, 1995-2005
Madagascar	2005
Malawi	2005
Malaysia	1975-2005
Mexico	1970-1975, 1990-1995
Morocco	1970-1975, 1985-2005
Nepal	2000-2005
Nicaragua	2005
Niger	1990, 2000
Nigeria	2000-2005
Oman	1985-2005
Pakistan	1985-1995, 2005
Panama	1975-1985
Paraguay	1980, 1995
Peru	1995
Philippines	1970-1980, 2005

Portugal	1970
Russia	2005
Rwanda	2005
Senegal	1990-1995
Sierra Leone	1980, 2000
Singapore	1970-2005
South Africa	1970-1990
South Korea	1975-1980
Spain	1970
Sri Lanka	1990-1995, 2005
Taiwan	1970-1990
Tanzania	1995-2005
Thailand	1970-1980, 1990, 2005
Togo	2000, 2005
Tunisia	1990-2005
Turkey	1995-2000
Uganda	1995-2005
United Arab Emirates	1980-2005
Uruguay	1980
Venezuela	2000-2005
Zambia	1995-2005
Zimbabwe	1980, 1995

Table A3: Composition of the cluster NPF-NEF

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

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

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

Table A4: Composition of the cluster PF-EF

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

France	1970-2005
Germany (West)	1970-2005
Ghana	2005
Greece	2000-2005
Guyana	2000
Hong Kong	1975-1990, 2005
Hungary	1995-2005
Iceland	1970, 1985-2005
Ireland	1970-2005
Israel	2000, 2005
Italy	1970, 1985-2005
Jamaica	2000-2005
Japan	1970-2005
Latvia	2000, 2005
Lithuania	2000, 2005
Luxembourg	1970-2005
Malta	1995-2005
Mauritius	1990-2005
Mexico	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	1990-2005
Romania	2005
Slovakia	2000-2005
Slovenia	2000-2005
South Africa	1995-2005
South Korea	1995-2005
Spain	1980-2005
Sweden	1970, 1980-2005
Switzerland	1970-2005
Taiwan	1995-2005
Thailand	1995
Trinidad & Tobago	1995-2005
United Kingdom	1970-2005
United States	1970-2005
Uruguay	1990-2005
Venezuela	1970-1980

Table A5: Development data on the four clusters

	PF-NEF	NPF-EF	NPF-NEF	PF-EF
Government	5.667	6.488	4.912	5.568
Area 2 index	4.824	5.281	3.811	7.688
Per capita GDP	6089.041	8082.600	2451.270	21120.400
Average years of primary education	4.231	3.766	2.834	5.592
Average years of education	6.149	5.666	3.949	9.189

"Government" (size of government) and "Area 2 index" are form Gwartney, Lawson and Hall (2011). Per capita GDP is calculated at 2005 prices in international dollars based on the chain-linked method by Heston, Summers and Aten (2012). Education data are from Barro and Lee (2010) and measure the education level of the population above the age of 15.