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Keywords: negative freedom, economic liberty, OECD
JEL Classification: N10, O17, P10

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Abstract

This paper presents historical indices for the main dimensions of economic freedom and an aggregate index for nowadays developed countries -(pre-1994) *OECD*, for short-. Economic liberty expanded over the last one-and-a-half centuries, reaching two thirds of its maximum possible. Its evolution has been, however, far from linear. After a substantial improvement since mid-nineteenth century, World War I brought a major setback. The post-war recovery up to 1929 was followed by a dramatic decline in the 1930s and significant progress took place during the Golden Age but fell short from the pre-World War I peak. A steady expansion since the early 1980s has resulted in the highest levels of economic liberty of the last two centuries. Each main dimension of economic freedom exhibited a distinctive trend and its contribution to the aggregate index varied over time. Nonetheless, improved property rights provided the main contribution to the long-run advancement of economic liberty.

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The current recession provides an opportunity to take stock and address issues recurrently raised by social scientists: How has freedom evolved over time? Did all dimensions of freedom evolve alongside? A distinction has been made between 'negative' freedom, defined as lack of interference or coercion by others (freedom *from*), and 'positive' freedom, that is, the guarantee of access to markets that allow people to control their own existence (freedom *to*) (Berlin, 1958).

A tension has long existed between the view that perceives the extension of freedom as the most effective way to promote welfare and equality, and the view that stresses welfare and equality as prerequisites of freedom (Friedman, 1962; Sen, 1988). In the former, an increase in negative freedom will deliver more positive freedom while, in the latter, an improvement in positive freedom will provide, by increasing welfare, more negative freedom. It has been argued that every society faces a trade-off between preserving individuals' innate (negative) freedom to enhance their wellbeing, and constraining this innate freedom so individuals, by enhancing their positive freedom, achieve wellbeing (See Stroup, 2007). More bluntly, giving priority to entitlements (negative freedom) may "lead to the violation of the substantive freedom of individuals to achieve those things to which they have reason to attach great importance" (Sen, 1999: 66), including being healthy and literate (that is, positive freedom).

Does this trade-off apply in the long run?[2] It is my purpose to investigate whether such a trade-off holds over time, or just during specific periods but, in order to do so, I firstly need to construct measures of negative and positive freedoms. Since a proxy for positive freedom, namely, a new historical index of human development, is already available (Prados de la Escosura, 2014), I will focus on negative freedom here.

As a representation of negative freedom I have chosen economic liberty in which competitive markets play a central role by protecting individuals "against encroachments on the part of the police power"(von Mises, 2006) and providing unanimity without conformity (Friedman, 1962). Personal choice, voluntary exchanges,

[2] Amartya Sen's (1999: 127) contention: "combining extensive use of markets with the development of social opportunities can be seen as part of a still broader comprehensive approach that emphasizes freedoms of other kinds", can be interpreted as a negative answer.

access to markets, and protection of persons and their property from aggressions are its constitutive elements (Friedman, 1962; Gwartney, Lawson, and Hall, 2013).

Research on economic liberty has been mainly restricted to the theoretical level and only in the last decades empirical studies emerged. The expansion of quantitative work has allowed the construction of economic freedom measures such as the Fraser Institute and Heritage Foundation indices. These indices exhibit wide spatial coverage but their time dimension is limited and, in the most comprehensive measure of economic liberty (the Fraser Institute's), only goes back to 1970. The lack of a long-run perspective necessarily reduces the value of the lessons and policy implications derived from them. Moreover, a risk exists of identifying what it is specific to the recent past, with an empirical regularity that applies across space and time.

It is purpose of this paper to provide a long-run index of economic freedom. Thus, I will construct indices for the main dimensions of economic freedom that will be, then, combined into an aggregate *Historical Index of Economic Liberty* (*HIEL*). The sample of countries chosen covers today's advanced nations, more specifically, those included in the OECD prior to its enlargement from 1994 onwards, *OECD*, hereafter.[3] The period considered is that of the spread of modern capitalism, namely, the epoch covering from the emergence of free trade and laissez faire in the mid-nineteenth century to the current recession (Williamson, 2014). During World Wars and their aftermath data are scarcer and less reliable and, from the incomplete evidence available, it can be suggested that economic freedom tended to be curtailed, or suppressed altogether during in these years. Thus, the aggregate index of economic freedom has been computed only for the periods 1850-1914, 1925-1939, and 1950-2007. The paper opens with a brief introduction to the concept of economic freedom and follows with a discussion of the construction of historical indices of aggregate economic freedom and its main dimensions. Trends in economic freedom across the

[3] Pre-1994 OECD members include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxemburg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the UK, and the US. Since I do not have historical data to derived economic liberty estimates for Turkey, Iceland and Luxemburg, they are excluded from my own version of *OECD*. New members since 1994 (Chile, the Czech Republic, Estonia, Hungary, Israel, Poland, Slovak Republic, Slovenia, South Korea, and Mexico) are not considered here.

OECD are, then, presented on the basis of a historical index of economic liberty [*HIEL*]. Later, the main dimensions of economic freedom are examined and their contributions to the historical index of economic freedom assessed. A summary of findings and a research agenda closes the paper.

Among the main findings it can be highlighted that in the last one-and-a-half centuries economic liberty in the *OECD* expanded up to three fourths of its maximum possible, but its evolution was far from linear. World War I interrupted its substantial improvement since mid-nineteenth century, and the post-war recovery did not sustain its momentum collapsing during the Depression and World War II. Since the Golden Age (1950-1973) a gradual improvement took place but only recovered its pre-1914 in 1989 to peak, then, by 2007. The different dimensions of economic liberty compose a complex aggregate image. Improvements in property rights and contract enforcement made the main contribution over the long run. A look at different phases shows that the evolution of freedom of trade and factor flows led both the interwar decline and the post-1950 recovery of economic freedom, while property rights accounted for the expansion of economic freedom up to 1914.

Assessing Economic Freedom

A consensus about the meaning of 'negative' economic freedom appears as a prerequisite for the depiction and appraisal of economic liberty. As Alfred Marshall (1949: 8) put it,

"We need a term that does not imply any moral qualities, whether good or evil, but which indicates the undisputed fact that modern business and industry are characterized by more self-reliant habits, more forethought, more deliberate and free choice. There is not any one term adequate for this purpose: but *Freedom of Industry and Enterprise*, or more shortly, *Economic Freedom*, points in the right direction".

The concept and measurement of economic liberty has met the reticence of those who associate it to the Chicago School (Paldam, 2003).[4] However, it is precisely the ideological adscription of the designers of economic freedom indices what has

[4] This reticence is reinforced by the claim of a publication bias in the literature on economic freedom and growth (Doucouliagos 2005). Interestingly, such reticence is not found when measures of positive freedom, such as the human development index, have been produced.

been pointed out as a guarantee of its rigorous measurement (de Haan, Lundström, and Sturm, 2006). Identifying 'negative' economic liberty with 'market' freedom may be the appropriate way of making the index acceptable.[5] Thus, in the construction of a historical index of economic liberty the focus will be on the idea of market freedom.

Aside ideological connotations, measuring economic liberty faces a serious challenge, as a largely discretional approach is unavoidable (de Haan, 2003). Any assessment of economic freedom would require measures based on objective institutional rules, both formal and informal, as similar formal institutions can function very differently depending on the cultural environment (Tabellini, 2010). However, despite conceptual and practical difficulties assessing economic liberty provides, as Milton Friedman pointed out, an opportunity to explore its different dimensions and to understand its meaning (Block, 1991).

Economic Freedom Dimensions

A country will be depicted as economically free in so far privately owned property is securely protected, contracts enforced, prices stable, barriers to trade small, and resources mainly allocated through the market. Assessing the consistency of a nation's institutions and policies with these requisites is the purpose of any index of economic freedom.

Which dimensions of freedom should be included in a historical index of economic liberty and which proxies used for them, deserves careful consideration. In the Fraser Institute's (2010) *Economic Freedom of the World* (*EFW*) index -which has a wider spatial and time coverage than the Heritage Foundation index-, five main areas or dimensions of economic freedom are considered: size of government, legal structure and security of property rights, sound money, freedom to trade internationally, and regulation.[6] I will examine each of them and decide on the basis of

[5] In fact, during the discussions that preceded the launching of the first set of economic freedom indices David Friedman recommended the new index to be described "as something everyone knows that people with our political bias are in favour of, call it market freedom"(Block, 1991: 211).

[6] Other depictions of economic liberty are available. For example, La Porta et al. (2004) assess economic freedom in the mid-1990s in terms of a subjective index of security of property rights, regulation (steps

conceptual and practical criteria which ones to include in the *Historical Index of Economic Liberty*.

In the selection of the indicators to approximate the dimensions of economic freedom a dilemma arises between institutional (*de jure*) settings and outcomes (*de facto*) measures (Heckelman, 2000; De Haan and Sturm, 2003). In principle, institutional settings tend to be favoured as outcomes can be much influenced by the government's policy stance (Quinn and Toyoda, 2008). However, in a context of formal and informal institutions, objective rules may not capture the institutional environment (Woodruff, 2006). Furthermore, the degree of enforcement varies across countries and over time. Thus, outcomes -even though they may fail to reflect the durable rules, procedures or norms associated to the term "institutions" (Glaeser et al., 2004)-, provide a second best solution. Besides, data constraints will force the inclusion of both institutional and policy measures –that is, the rules and the outcomes of the game- even in a contemporary index of economic liberty. Therefore, any attempt to provide a long run perspective on economic liberty will definitively need to rely on outcomes.

Once relatively uncontroversial dimensions of economic freedom are chosen, the next stage is to compute a reduced form for each of them that it is consistent over space and time and in which cardinal and objective indicators should be given preference over ordinal and subjective ones. Then, a combination of the reduced measures for each dimension into a single index of economic liberty needs to be decided. An additional challenge is the choice of countries. A limited set of countries for which longitudinal data of reasonable quality exists seems advisable, as country estimates derived on the basis of heroic assumptions determine the outcome.

Following the procedure employed in the construction of the Fraser Institute's *EFW* index, when the indicator's value is inversely related to the degree of economic freedom (e.g., taxes on trade), it has been transformed into index form using the expression

$$I_{ij} = 10*(V_{MAX} - V_{ij}) / (V_{MAX} - V_{MIN}) \qquad (I)$$

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a start-up business requires to be legal and level of workers protection), and the extent of state ownership of commercial banks.

Where V_{ij} represents the value of country i indicator at year j and V_{MAX} and V_{MIN}, its maximum and minimum values

Alternatively, when the value of the indicator is directly related to the value of economic freedom (i.e., the chosen measure for property rights), it is the following expression the one used,

$$I_{ij} = 10*(V_{IJ} - V_{MIN}) / (V_{MAX} - V_{MIN}) \qquad (II)$$

Thus, in either case the resulting index of economic freedom ranges between 0 (minimum) and 10 (maximum).

Let us now examine *EFW*'s five areas one by one and assess the available information to construct indices for economic liberty dimensions.

Size of Government

The government, as provider of protection of the individual from coercion, is essential for economic liberty (Friedman, 1962). Freedom of economic activity implies "freedom under the law, not the absence of all government action" (Hayek, 1960: 193). To carry out its legitimate and limited role–which includes law and order, defence, protection of property rights, contract enforcement, and provision of public goods-, the government requires resources that can be acquired through taxation, borrowing, or by issuing money. However, any government capable of these tasks is also capable of confiscating the wealth of its citizens (Djankov et al., 2003). Thus, only when the government is not enforcing the general law but trying to achieve some specific purpose, economic liberty is threatened.

A widely shared view is that the more a society relies on the market, the larger is its economic freedom. Thus, it is assumed that below a certain threshold government spending provides public goods but, above it, distorts individual choice (Chauffour, 2011). The insurmountable challenge is establishing a threshold below which government's taxation and expenditure are compatible with economic freedom for any country at any point in time. Such difficulty explains why the share of government in total consumption has been accepted as a short-cut on the grounds that as it rises, public decision-making substitutes for personal choice and, consequently, economic freedom declines (Gwartney et al., 1996).

However, it is the character of government action rather than the volume of its activity what is at stake. In weak fiscal states, the inability to raise tax revenues reduces the provision of public services, so the share of government in total consumption remains low (Beasley et al., 2013), but this does not imply lower government interference in individual economic decisions. Thus, "a government that is comparatively inactive but does the wrong things may do much more to cripple the forces of the market economy than one that is more concern with economic affairs but confines itself to actions which assist the spontaneous forces of the economy" (Hayek, 1960: 194-195).[7]

From a historical perspective, it is far from clear that countries with low government expenditures have necessarily allocated their spending toward the protective functions of government more efficiently than those with large ones. In Europe, since the late eighteenth century, fiscal centralization -that allowed states to collect larger tax revenues-, went hand-in-hand with parliamentary control of public spending, resulting in limited government and extended economic freedom (Dincecco, 2011). Increasing government spending, meanwhile, shifted from being mainly military to providing education and infrastructure (Cardoso and Lains, 2010). In Europe, the government share in total consumption has increased with per capita income over the last two centuries (Prados de la Escosura, 2007). The rationale is that, in advanced (open access) societies, as citizenship expands, the government provides public goods lowering the cost of market participation for individuals (North et al., 2009).

In empirical terms, the inclusion of either taxes or the relative share of public consumption in total consumption in an index of economic freedom has been challenged on the grounds that if the tax system was agreed upon voluntarily, the level of taxes does not restrict freedom (de Haan and Sturm, 2000). However, it may be objected to this argument that economic freedom is often cut down in an attempt to

[7] For example, in Spain and Portugal during the central decades of the 20th century, under Franco's and Salazar's dictatorships, the state interfered with the market while the share of government within total consumption was comparatively small as social transfers were low in the absence of the welfare state (Espuelas, 2012).

reduce inequality or increase wellbeing (Holcombe, 2002; Stroup, 2007; Fraile, 2011).[8] In such a case the trade off between positive and negative freedom would be confirmed. A relevant empirical objection to the inclusion of the government share in consumption in *HIEL* is that it may be redundant as other dimensions of economic freedom already capture the potential distortion of individual choice resulting from government restrictions.

For all these reasons I have decided to exclude the size of government (Area 1, in the Fraser Institute's *EFW* index) from the historical index of economic liberty.[9]

Legal Structure and Property Rights

Rule of law, security of property rights, judicial independence, and impartial courts are major components of a legal structure consistent with economic liberty. Unfortunately, regulatory constraints and the consistency of a country's legal system with economic freedom over space and time are hard to quantify.

Two indicators that aim at capturing the legal framework and the protection of property rights from a long-run perspective can be employed. The first one is Polity IV's "constraint on the executive" (*EXCONST*), which is meant to measure the independence of the legislature and judiciary from executive control (Marshall, Gurr, and Jaggers, 2013). Its use rests on the assumption that constraints on the executive percolate through to lower levels of government. The "constraint on the executive" measure is not free from objections. For example, Glaeser et al. (2004), argue that it is an endogenously constructed measure of political outcomes rather than of durable institutional constraints.[10]

[8] Chauffour (2011) rejects the inclusion of the relative size of government as an indicator of economic freedom because the size of government captures entitlement rights that represent 'positive' rather than 'negative' freedom.

[9] It is worth pointing out that Chauffour (2011) also excluded Area 1 from his revised version of the EFW index. An alternative solution would be to use the deviations of the government share in total consumption from the pattern associated both to time and per capita GDP as an indicator of restrictions of economic freedom. However, the objections discussed above would still persist.

[10] The reason for such critical assessment is that rapid changes can be observed in EXCONST without any parallel changes in the country's constitution (Glaeser et al., 2004).

EXCONST ranges from 1 to 7, with higher values corresponding to more checks and balances on executive powers and a more accountable executive. Here I have normalized *EXCONST* between 0 and 10 to make it homogeneous with the rest of the indicators of economic liberty (See Appendix on Sources).

The second indicator is "Contract Intensive Money" (*CIM*), proposed as a way of measuring compliance with contracts and the security of property rights by Clague et al. (1999). *CIM* designates the percentage of deposits in money supply:

$$CIM = (M2 - C) / M2 \qquad \text{(III)}$$

Where *C* is currency outside banks and *M2* is money supply, including currency outside banks, current and term deposits.

The rationale that lies beneath this indicator is that when economic agents trust that contracts will be respected and operate in an assumed safe environment, they hold a larger proportion of their money as deposits -as it is not risky and provides a more attractive option than cash-, so *CIM* tends to increase. *CIM* measures the proportion of transactions that rely on third party enforcement and, hence, provides an indicator of the security of property rights.[11] A caveat is, nonetheless, necessary: in a context of high inflation *CIM* may be a defective measure of contract enforcement (Clague et al., 1999).[12]

A shortcoming of *CIM* estimates for countries in early stages of economic development derives from the use by the public of alternative options to deposits, such as, for example, bills of exchange, that constituted money as economic agents accepted them in their transactions, enlarging in practice money supply beyond legal status money (Cuartas-Morató and Rosés, 1998; Engdahl and Ögren, 2008). In the *OECD*, this problem affects mainly countries in the European Periphery during the

[11] Clague et al. (1999), use factor analysis to show that for a group of institutional and financial indicators *CIM*, measures of political and civil freedom, the degree of property rights' definition, and of the frequency of revolutions and coups d'état, have a heavier load in factor 1, while financial development variables appear in factor 2. They, hence, conclude that *CIM* is mainly a measure of property rights enforcement. For a discussion of *CIM* as a measure of contract enforcement in historical perspective, see Prados de la Escosura and Sanz-Villarroya (2009).

[12] As Clague et al. (1999, p. 205) stress, "inflation reduces the value of money, raises nominal interest rates, and therefore provides an incentive to shift money from currency and noninterest-bearing accounts into interest-paying time deposits or into foreign currency accounts. This increases CIM".

second half of the nineteenth century and its consequence is possibly a downward bias in the level of *CIM*. In the Netherlands, the persistence of the *prolongatie* - a form of interest-bearing demand deposits backed by securities-, by providing a substitute for demand deposits, explains its slow development in Dutch commercial banking (Jonker, 1997). As a crude correction, I have assumed a "floor" of 0.2 for *CIM*.[13]

In the construction of the transformed index, the range within which *CIM* fluctuates, 1 and 0, has provided the upper and lower bounds. Then, the index has been normalized between 0 and 10 to match the rest of the *HIEL* components.

A third potential indicator derives from Nardulli et al. (2013) rule of law measures: "Legal-order" which represents "efforts to embed a law-based order in its constitution", and "Legal-infra", that captures the degree to which "law has evolved into a relevant and independent societal force". The "Legal-order" measure does not include countries without written constitutions, such as the UK, so just for this reason it cannot be used here.[14] In the case of "Legal-infra", it is hard to understand why the rule of law is weaker in Scandinavia than in Southern Europe, or, for the same token, in capitalist than in socialist countries.[15] Perhaps the fact that "Legal-infra" is proxied by legal periodicals and legal education programmes explain such a striking result. Therefore, I have decided not to include the "Legal-infra" into the property rights index.

Thus, the index of economic freedom in the area of legal structure and property rights has been obtained as the arithmetic average of the transformed indices for the

[13] The countries (and years) affected by this upwards correction are: Finland (up to 1888), Italy (1869), Japan (up to 1882), Portugal (up to 1873 and isolated episodes until 1911), Spain (up to 1880//3), and Switzerland (up to 1854).

[14] When the difference between "Legal-order" and "Legal-infra" is computed, less developed countries in the European Periphery tend to cast positive values, while the opposite occur for the most advanced ones. This finding may reflect the theoretical nature of the "Legal-order" measure, which receives a relative high score in the developing countries, as opposed to the more empirical "Legal-infra" in which its score is relative low.

[15] "Legal-infra" indices show, for example, Sweden or Finland systematically below Southern European countries. Furthermore, socialist countries, such as the Soviet Union or Cuba, are above Western European countries in terms of both legal order and infrastructure.

variables *EXCONST* and *CIM*.[16] Given the way in which both *EXCONST* and CIM are constructed, with higher values representing higher degrees of liberty, their values have been transformed into index form using expression (II).

Money

A reliable and efficient monetary system is essential to protect property rights and, hence, economic freedom. Monetary policy's main contribution to economic freedom is to provide a regime of stable prices that facilitates steady, non-inflationary economic growth (Friedman, 1991). Inflation erodes the value of property held in monetary instruments. Furthermore, high and volatile inflation rates distort relative prices and alter long-term contracts, making difficult for individuals to plan for the future. Consequently, when governments finance their expenditures by creating money, it amounts to expropriating the property and, hence, violating economic freedom (Gwartney et al., 2013).

The Fraser Institute's measures of sound money aim at assessing the consistency of monetary policy and institutions with long-term price stability. They include "money growth" -measured as the differential between the average annual growth of the money supply in the last five years and the average annual growth of real GDP in the last ten years–, as high rates of monetary growth lead to inflation; the inflation rate; and the standard deviation of inflation –as a measure of volatility-.

Historical evidence can be gathered to replicate these measures over the long run. Contemporary indices of economic freedom, such as the Fraser Institute or the Heritage Foundation's, address, however, a context of inflationary forces, so the possibility of deflation is not contemplated. Phases of sustained decline in the aggregate price level were common before World War II, especially under the Gold Standard. Although a distinction can be made between "good" deflations, that arise from positive supply shocks associated to productivity-driven growth (such as those of 1873-1896 and 1921-1929) and "bad" deflations, associated with recessions (1919-1921 and 1929-1933) (Bordo and Filardo, 2005), the practical decision made here has

[16] Were "Legal-infra" to be included in the aggregate index, the trend would not alter significantly although the level would be lower.

been, nonetheless, to treat symmetrically the cases of deflation (or negative money growth), and inflation (or positive money growth), as it is price stability what guarantees economic liberty as regards sound money.[17]

As the money indicators examined represent outcomes rather than institutional constraints, the usual objection applies. Moreover, it has been argued that the three indicators considered may be redundant (de Haan and Sturm 2000).[18]

In the construction of economic liberty indices for money upper and lower bounds have been set, following the *EFW* Index, at 50 and 0 rates for money growth and for inflation (usually measured by the CPI), and 25 and 0 for the variability of inflation (usually measured by the GDP deflator).

International Trade

Free trade represents a key dimension of economic liberty as it provides individuals with the widest possible choice of goods and services and facilitates specialisation along comparative advantage. By not interfering with the freedom to enter and compete in international factor and commodity markets, governments promote economic freedom.

In order to assess economic freedom in international trade the *EFW* includes a variety of restraints: tariffs, quotas, and exchange rate and capital controls. From a historical perspective, a distinction between the pre- and post-World War II periods needs to be made, as differences in regime and data availability require different indicators.

Until the Great Depression, when quotas and other non-tariff barriers were introduced, tariffs represented the main instrument of Government interference. Let's briefly examine them as a potential indicator of freedom to trade.

When a nominal tariff (*NT*) is expressed as a proportion of the value of the traded good, is called *ad valorem*.

[17] I am grateful to James Gwartney and Robert Lawson for their advice on this point. For a discrepant view, see Bagus (2003).

[18] It has also been argued that inflation is a tax, so some of the objections about the use of the share of government in total consumption as a measure of economic freedom would apply here too (de Haan and Sturm, 2000)

$$NT_{ij} = T_{ij}*Q_{ij} / P_{ij}*Q_{ij} \qquad \text{(IV)}$$

Where *T*, *P*, and *Q* represent, respectively, the tariff, price, and quantity of the traded good *i* in year *j*

Since this is an *ex post* measure, the demand of the traded good is already affected by the tariff, and the extent to which it does is determined by its price elasticity. If the demand of imported goods is highly elastic, the total tariff revenue (ΣT_i*Q_i) to the value of total imports (ΣP_i*Q_i) ratio, that is, the so-called *Weighted Nominal Protection*, [*WNP*], will be lower than if the demand is less elastic. Thus, *WNP* will usually be a downward biased measure of restrictions to trade, in which the size of the bias will depend on the value of the price elasticity, but also on the share of the good within the value of total trade. Ideally, then, tariff protection should be measured by applying the tariff rates to the composition of trade prior to the introduction of the tariff (Tena-Junguito, 1999). Such bias may occasionally represent a serious shortcoming of *WNP*. For example, during the World Wars, *WNP* declined in most European countries as the increase in tariffs had a prohibitionist effect (or as imports were forbidden altogether). This prohibitive effect has led researchers and agencies to designing alternative measures such the "unweighted nominal protection" (*UNP*) in which a simple arithmetic average of nominal protection on individual commodities is computed ($UNP = \Sigma T_i / \Sigma P_i$) (Liepmann 1938). Unfortunately, historical data on this measure is only available for a group of European countries at benchmark years over 1913-1931.[19]

Lacking a better alternative, weighted nominal protection (*WNP*) provides a long-run measure of restrictions on international commodity trade, especially up to the 1930s. Hereafter, non-tariff barriers (*NTB*) expanded, in particular, the manipulation of the exchange rate but, nonetheless, tariffs and *NTB* tend to be correlated over the long run (Clemens and Williamson, 2004, 2012). In the *EFW* index, *WNP* is measured as the ratio of customs revenues to the current value of imports plus exports of goods. The inclusion of exports in the denominator allows for the fact that

[19] Of the *OECD* countries considered here, Liepmann (1938) only provides what he labelled "potential tariff levels" (that is, unweighted nominal protection) for nine of them (Austria, Belgium, Denmark, Finland, France, Germany, Italy, Sweden, and Switzerland) at the years 1913, 1927, and 1931. Alternatively, estimates of effective protection, if available, would be a better option.

some countries also tax exports reducing, hence, the freedom to trade internationally. Nonetheless, the results of computing *WNP* with and without exports in the denominator are closely correlated. Given data restrictions, I have chosen to stick here to the conventional measure, that is, the ratio of customs revenues to the current value of imports.[20]

It is worth noting that *WNP* is an indicator of restrictions to commodity trade and leaves aside international flows of capital and labour, so an additional measure of free mobility of factors is needed.

Choosing freely where to live is a basic right of human beings so, from a global and long run perspective, restrictions to international labour mobility constitute an important constraint on economic liberty (von Mises, 1978; Pritchett, 2006; Clemens, 2011). Unfortunately, measures of international mobility of labour capturing institutional settings are only available for a few countries (Timmer and Williamson, 1998; Sánchez-Alonso, 2013).[21] Alternatively, migration rates could be suggested as an outcome measure but, since in addition to institutional constraints they capture many other elements (demographic patterns, international economic conditions, etc.), a distorted picture of economic freedom would emerge from its use. Moreover, the possibility exists of an integrated international labour or capital market with hardly any geographical mobility of workers or capital flows (Obstfeld and Taylor, 2004).

Fortunately, international evidence on monetary regimes and the exchange rate facilitated the construction of an index of capital mobility that captures institutional settings prior to 1950. I have assigned over a 0-10 range to each country depending on its currency convertibility. Alas the values assigned in this exploratory exercise are largely discretional. Thus, before 1914, a value of 10 has been assigned to

[20] In the case of countries that belong to the European Union (or to its customs union forerunners), since tariffs are collected at supra national level, their *WNP* level has been derived by projecting forward the figure for the last available year with the average *WNP* for the whole area. Clemens and Williamson (2004) opted alternatively for applying the ratio of import duties to the value of imports for the entire EU to each member country starting from the year it joined the European Union.

[21] Timmer and Williamson (1998) provide indices for only four OECD countries (Australia, Canada, the U.S.A., and the U.K.) plus Argentina and Brazil between mid-nineteenth century and 1930. The discretional nature of these indices is highlighted by Sánchez-Alonso (2013).

those countries in the Gold Standard. For countries that did not belong to the Gold Standard, with convertible currencies or bimetallic standards, as well as for those shadowing the Gold Standard, an initial value of 8 has been set.[22] However, each country's value deviates from the initial level on the basis of its exchange rate volatility (*ERV*) against the Sterling (Table 1).[23]

Table 1

Assigned Capital Mobility Values to Degrees of Exchange Rate Volatility before 1914

Exchange Rate Volatility	Capital Mobility Value
< 0.05	8
<0.1 >0.05	7
<0.2 >0.1	6
<0.3 >0.2	5
<0.4 >0.3	4

In the Interwar years (defined here as the period 1925-1939), before the reintroduction of the Gold Standard as a Gold Exchange Standard, a value of 5 was attributed to the following countries: Belgium, Denmark, Greece, and Italy during 1925-26; France, Ireland, Norway, and Portugal over 1925-28; Japan (1925-29), and Spain (1925-30). Countries in the Gold Exchange Standard were assigned a value of 8, lower than prior to 1914, as the international capital market was subjected to major dislocations and capital flows tapered in the 1920s and, especially, during the Depression (Eichengreen, 1992; Obstfeld and Taylor, 2004).

Then, after the convertibility into gold was suspended in the UK (1931), a value of 5 has been assigned to those countries whose currency was pegged to the Sterling. Thus, it applied Australia, New Zealand, Canada, Ireland, Portugal, Norway, Sweden, and Greece (after 1936). In the case of France, after the Gold Standard was abandoned

[22] This allows for the fact that a country could be on/off the gold standard and have open/close capital account. I owe this remark to Kevin O'Rourke.

[23] Data come from Flandreau and Zumer (2004) who described this measure as an index of vulnerability: I replicated the index for missing dates and countries on the basis of the information in Bordo and Schwartz (1996), Eichengreen (1992), Eichengreen and Flandreau (1996), the League of Nations (various years), and Reinhart and Rogoff (2003, 2004, 2010).

(1936), the value attributed to the Franc was also 5 and this also extended to those currencies in the "gold bloc" (Belgium, the Netherlands, Switzerland, Italy). In those cases in which exchange control was introduced but the currency was still pegged to the Sterling or French Franc, the value was reduced to 3. These were the cases of Austria, Belgium (1935), Denmark, and Finland (after 1934), Japan, New Zealand (1939). When in addition to exchange controls there were multiple exchange rates, the attributed value was 1 (Germany since 1932, Austria since 1938, Italy since 1937), and, in the case of Spain, a value of 0 was assigned since mid-1936, when its civil war started.

As for the post-1950 period, Quinn and Toyoda (2008) provide institutional settings measures of openness to capital flows that ranges from 0 to 100 and has been normalized to a 0-10 range in order to match *HIEL* components. This way I was able to complete an index of freedom of capital mobility.

Thus, an aggregate measure of freedom to trade internationally has been obtained as the unweighted average of the transformed indices derived from *WNP* and capital mobility measures for the entire period 1850-2007.

However, additional information is available for the post-1950 that allows us to construct a more precise measure of freedom to trade internationally. Quinn and Toyoda (2008) provide institutional settings measures of liberalization of financial current account restrictions.[24] Another measure of institutional constraints to international trade, the *Black Market Premium* (*BMP*) -defined as the difference (in logs) between the parallel, market-determined and official exchange rates-, can be also computed.[25] On the basis of the average of these two indicators plus *WNP* and capital

[24] Data of measures capturing institutional settings of openness to capital flows and international trade of goods and services over 1950-2004 have been kindly provided by Dennis Quinn. I have provisionally assumed that country's levels for 2004 remained unaltered until 2007.

[25] The *Black Market Premium* has been constructed from data in Reinhart and Rogoff (2003, 2004). In the case of Spain the *BMP* is trade-weighted and derived from Prados de la Escosura et al. (2012) in which a detailed explanation of this choice is offered.

mobility an index of freedom to trade internationally have been constructed since 1950.[26]

As the measures of capital mobility and financial current account restrictions range between 0 and 10, these values have been used as lower and upper bound to derive the freedom indices with expression (II). In the cases of the freedom indices derived from *WNP* and *BMP*, expression (I) has been employed and the upper and lower bound set at 50 and 0 per cent, respectively.

The resulting two indices of freedom to trade internationally have been spliced, accepting the one on the basis of *WNP* and capital mobility for the period considered, 1850-1950, and the more comprehensive, including also current account restrictions and *BMP*, for the post-1950 era.

Regulation

Regulations of economic activities can restrict market freedom entry by interfering with individuals' decision to engage in voluntary exchange.

Historical indicators of regulation in the credit market can be constructed. For example, a measure of the regulation of the private sector credit that aims to capture the extent or, more precisely, the risk of crowding out.[27] In the Fraser Institute's *EFW* it is approximated by the ratio of the government fiscal deficit to gross domestic investment.[28] However, while the relative size of investment (% GDP) increases over time and along per capita income (Prados de la Escosura, 2007), this is not necessarily the case with the budget deficit. The implication is that such an indicator may provide a downward biased measure of economic freedom over time, as the denominator would have a tendency to increase as time goes by. Therefore, I have decided to use,

[26] Until 2011, the *EFW* index included the size of trade sector relative to its expected size of the trade sector based on the population and geographic size of the country and its location relative to the concentration of world GDP. As it has been accepted that this indicator captures, aside from institutional restrictions to commerce, many other determinants of a country's relative trade size, it has been excluded from the EFW since 2012 (Gwartney et al., 2012).

[27] In fact, if negative government saving is offset by an increase in foreign investment no crowding out would take place.

[28] In the construction of the *EFW* index the discussion refers to measuring the ratio of the public deficit to gross domestic saving but it is actually measured in terms of gross domestic investment.

instead, the ratio of the budget balance to GDP, as it would mitigate the bias. The index has been computed with expression (I) and adopting 5 and -20 per cent as maximum and minimum goalposts.

Another measure of credit market regulation is interest rate control that can be approximated in the long run by real short-term interest rates (that, is nominal short-term interest rate less inflation). In the case of the *EFW* index, this measure is constructed on the basis of rating intervals in which countries are graded depending on the extent to which the market determined interest rates, monetary policy was stable, and real deposit and lending rates were positive. In the case of the historical index, though, I have preferred a cardinal rather than an ordinal approach and I constructed an index in which the real interest rate has been transformed using upper and lower bounds (5 and -20 per cent). It is worth noting that in the computation of real interest rates, negative rates of inflation have been previously made equal to zero. Without this transformation, the resulting real interest rates in periods of deflation would exaggerate the measure of freedom from credit regulation. This decision is consistent with the view that it is price stability what guarantees economic freedom.

An index of credit market regulation has been obtained as the unweighted arithmetic average of the indices derived from the ratio of the budget balance to GDP and the real interest rate.

An important facet of regulation of economic activity is, at least since mid-twentieth century, that of the labour market. Employment protection, which expanded with the welfare state, faces a dilemma between flexibility and security: maintaining a well-functioning and flexible labour market while protecting workers against risks. Thus, for example, long-term contracts would, on the one hand, favour on-the-job training but may, on the other, discriminate against those workers on temporary contracts, reducing firms' ability to adjust to market changes (OECD, 2004).[29]

Since the concern here is about negative freedom, the focus will be on the impact of employment protection legislation (*EPL*) on labour market flexibility. Laws and regulations affecting wages and working conditions may restrict negative

[29] A case in point would be minimum wage legislation, which by raising wages of low-skilled workers above market rates may lead to the substitution of capital for labour causing unemployment (DiLorenzo, 1992).

economic liberty. OECD (2008) has computed *EPL* indicators that aim at capturing the cost implications of labour market regulation, a view consistent with the notion that regulating workers' protection is an additional labour cost for firms.[30] The resulting aggregate index of employment protection legislation provides an adequate measure of restrictions to 'negative' economic freedom in the labour market over the period 1985-2008 (OECD 2008). Nicholas Crafts (2006) extended the index back to 1960 and I projected it backwards to 1950 using Gayle Allard's (2005) estimates.[31] I have normalized the index between 0 and 10 in order to keep consistency with the rest of economic liberty measures.

As regards the pre-1950 era, Michael Huberman and his associates have constructed indices of labour market regulation for pre-World War I Europe and the Western Offshoots at benchmark years (1870, 1900, and 1914) (Huberman and Lwechuk, 2003, Huberman and Meissner, 2007).[32] The range of variation of Huberman's index over 1870-1913 is very wide, even though labour regulation was very low compared to that of the late twentieth century, and this makes comparisons between the two periods difficult. Besides, I have been unable to find or to construct measures of institutional settings in the labour market for the first half of the twentieth century.

Therefore, I have decided to restrict the coverage of the index of freedom from labour market regulation to the post-1950 era, which actually is the most relevant from the point of view of constraints on economic freedom.

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[30] Main components of economic freedom in the area of labour market regulation are, according to the Fraser Index: hiring regulations and minimum wage, hiring and firing regulations, centralized collective bargaining, hours regulations, mandated cost of worker dismissal, and military conscription (Gwartney et al., 2013)

[31] Since Crafts' indices are provided at period averages (1960-64, 1965-72, 1973-79, 1980-87), and I needed yearly figures, these average values have been assigned to each year of each period. Allard's (2005) index covers the period 1950-2003, so, alternatively, her estimates could be used over 1950-1985. I have opted out here for the one constructed by Crafts, on the basis of Nickell's data, for 1960-1985.

[32] The Western Offshoots only include Australia, Canada, and the U.S. Huberman and Lwechuk (2003) also computed indices of social protection that combined with the labour regulation indices resulted in what they labelled "labour compact" indices.

Thus, the index of freedom from regulation corresponds to the index of credit regulation between 1850 and 1950 while, from 1950 onwards, has been derived as an unweighted arithmetic average of the indices of credit and labour market regulation.

Trends in Economic Liberty Dimensions

So far, different dimensions of economic freedom have been considered, indicators to capture their evolution, assessed, and indices for four of them constructed (Table 2). Let us look now at their trends.

Table 2

Dimensions of the Historical Index of Economic Liberty (HIEL) and its Components

Legal Structure and Property Rights	***Money***	***International Trade***	***Regulation***
Contract-Intensive Money	*Inflation Rate*	*Nominal Weighted Protection*	*Budget Balance (% GDP)*
Constraints on the Executive	*Inflation Variability*	*Capital Mobility*	*Real Interest Rate*
	Money growth	*Current Account Restrictions, 1950-2007*	*Employment Protection Legislation, 1950-2007*
		Black Market Premium, 1950-2007	

In the evolution of the "legal structure and property rights" dimension of economic freedom, a sustained improvement is observed over the long run, punctuated by the World Wars, with post-war recoveries and a severe contraction in the 1930s (Figure 1). The distinctive behaviour of countries in terms of constraints on government and contract enforcement is captured by the variance of economic liberty (Figure 2). It can be observed a reduction of the dispersion up to 1914, which reversed in the interwar years, and, after stabilizing during the Golden Age, fell again since the late 1970s.

The performance of the "money" dimension shows a sustained improvement to 1880, followed by stability up to 1914. After an incomplete recovery during the Interwar, it was only between the mid-1950s and 1970 when the pre-1914 level was reached. Then, it collapsed in the 1970s, recovering its pre-World War I level in the late-1990s and peaking by 2007. The variance is informative about the extent to which

monetary policies are correlated across countries. Such was the case from the 1860s until the eve of World War I, between 1929 and 1936, in the Golden Age, and from the early 1990s onwards, as shown by its low dispersion, while episodes of high dispersion in the aftermath of world wars and during the 1850s, the late 1930s and the 1970s oil shocks, evidence substantial discrepancies.

The "trade" dimension presents a very different evolution over the long run. Its main feature is that the peak reached by 1914, after a steady increase since mid-nineteenth century, was not overcome until the end of the 1980s, despite recovery episodes in the late 1920s, the Golden Age, and the 1970s. The variance of freedom to trade internationally shows low dispersion during phases of liberalization and increasing divergence when restrictions to liberty occurred, especially between the early 1930s and the 1960s.

Lastly, the "regulation" dimension shows gains up to 1880 and stabilisation in a high plateau until 1914, whose level was recovered in the late 1920s, before collapsing after the Great Depression. The post-1950 recovery never reached pre-World War I levels and, by the mid-2000s, freedom from regulation was similar to that of 1870. The behaviour of freedom from regulation differs, thus, from other dimensions of economic liberty and this is largely due to the increasing regulation of the labour market during the second half of the twentieth century. The dispersion of freedom from regulation is only low in the late nineteenth and early twentieth century. The large variance in the late twentieth century points to discrepancies between countries with credit and labour markets heavily regulated (i.e., Spain), and those in which advances in deregulation were taking place (i.e., the U.K.).

To sum up, the distinctive trends exhibited by the four dimensions of economic freedom, highly coincidental for unweighted and population-weighted averages, compose a complex image of that unobservable variable, economic liberty.[33] Similar trends, but of different intensity, are shared by these dimensions up to World War I, in the interwar years and, again, since the late 1970s, but not during the Golden Age. Hence, the evolution of its main dimensions does not provide a clear-cut view of

[33] For population-weighted averages and its coefficient of variation, see the Appendix, Figures A.1 and A.2

economic liberty's long-run performance. Ascertaining how much progress has economic liberty achieved over time and how much has each contributed to it provides our next challenge.

An Aggregate Index of Economic Liberty

A dilemma emerges at this point: as each dimension of economic freedom stands on its own, should they be considered individually, or merged into an aggregate index? On the one hand, a "dashboard" of indicators allow us to observe the extent to which the different dimensions of economic liberty evolve along side over time. On the other, an inclination exists to collapse all the information into a synthetic index of economic liberty, precluding contradictory trends between its different dimensions.[34]

Development economists tend to favour a "dashboard" strategy, as it stresses multidimensionality. This approach avoids the risks involved in aggregating different dimensions of wide and often elusive concepts, such as liberty or well-being, into a composite index which may blur the meaning of what is really measured (Berggren, 2003). However, by collapsing different indicators into a single scalar, measurement errors in its components can be mitigated, so the aggregate index becomes more informative about the unobservable variable, say, economic liberty, than its components taken individually (Haan et al., 2006).

Recently, Martin Ravallion (2012) depicted the Fraser and Heritage indices of economic freedom, along measures of wellbeing such as the human development index, as "mashup" indices. One of the features of a mashup index is that little or no (economic) theory underlies it, whose components are discretionally assembled, with the only restriction of their availability.[35]

In the case of the historical index of economic liberty there is a theoretical underpinning for the choice of each of its dimensions and, as previously discussed, an economic rationale has been provided for the construction of its indices. Hence, the depiction of mashup index does not seem warranted in this case.

[34] As shown by the widespread practice of summarizing performance into a single scalar shows (i.e., GDP per head, HDI).

[35] How robust are the resulting country rankings to alternative specifications and, especially, what are the implicit trade-offs involved between the variables, are Ravallion's (2012) main concern.

Another issue derives from the number of elements in each dimension index. If the number varies from one dimension to another, the implicit weights assigned to these elements also differ, being inversely related to their number (Heckelman and Stroup, 2005). It can be argued, though, that researchers' priority is to get the most accurate representation for each dimension at each point in time and, in order to do so, they need to make the most of the available evidence. Moreover, this objection is hardly avoidable from a long run perspective since each period requires different measures (for example, restrictions to international trade adopt different forms over time and, hence, different metrics are needed).

In the short history of economic freedom indices, different weighting procedures have been explored without fully satisfactory results (Heckelman and Stroup, 2005). Initially, the Fraser Institute published *EFW* indices that were constructed using alternatively: a) equal weights for each attribute or dimension; b) weights equal to the inverse of the component's standard deviation; and c) on the basis of a survey among experts (Gwartney et al., 1996). Later, it was considered that since the indices for each dimension provided information on a latent variable, unobservable economic liberty, obtaining the values of the parameters in the relationship between the latent variable and the indices for these dimensions appeared crucial (de Haan et al., 2006).[36] Thus, weights to aggregating the dimensions into an overall index were derived with Principal Components Analysis (*PCA*), and, more specifically, from the values of the first principal component' loadings (Gwartney and Lawson, 2000; Caudill et al., 2000).[37] The use of *PCA* has received strong criticism on the grounds that it fails to provide an intuitive link between the choice of the different dimensions of economic freedom to be added up and the value of the

[36] In their pioneering work, Scully and Slottje (1991, 1992) three approaches had been used: a) equally weighting each attribute, so it is implicitly assumed that they are of equal preference in a citizen's utility function; principal components analysis; and employing an instrumental variable or hedonic approach.

[37] PCA combines a set of variables reducing them to a few orthogonal elements that explain in a single index the largest percentage of the variation in the data, without imposing a specific structure on the model. Alternatively, other scholars re-built the Fraser index using absolute value of the first principal components. About the use of actual and modified (absolute) value of the first principal components, see Heckelman and Stroup (2005).

aggregate index (Heckelman and Stroup, 2005). Thus, since 2002, the decision was taken that all dimensions would be weighted equally in the *EFW* index (Gwartney and Lawson 2002).

Recently, an endogenous index of economic freedom has been constructed in which its dimensions' weights ultimately derive from its econometric association with real GDP per head (Kešeljević and Spruk, 2013).[38] This approach assumes that, since the association between each dimension of economic freedom and GDP per head differs, the weight of each dimension in the aggregate index of economic freedom ought to be different. However, economic freedom has an inherent value, which in no circumstance is acquired through its association with per capita income. In fact, the Kešeljević-Spruk approach defeats its own purpose as it makes the index of economic liberty dependent on per capita income and, hence, precludes exploring the relationship between these two variables.[39] Valuing all dimensions of economic freedom alike, as the *EFW* index does, amounts to an agnostic recognition of the difficulty to apprehend such an unobservable variable as economic liberty.

Thus, I have opted for a composite historical index of economic liberty (*HIEL*) that aims at capturing unobserved economic freedom as an unweighted additive combination of its four dimensions (property rights, money, international trade, and regulation).[40] Thus,

$$HIEL = (IEL_{\text{property rights}} + IEL_{\text{money}} + IEL_{\text{trade}} + IEL_{\text{regulation}}) / 4 \qquad \text{(V)}$$

which ranges between 0 and 10.

How robust are the resulting trends in economic freedom to alternative weighting procedures is a legitimate question. Thus, as a sensitivity test, I have computed, using *PCA*, alternative weights for each of the three main phases, 1850-1913, 1913-1938, and 1950-2007, as it could be argued that dimensions' weights do

[38] The authors employ the IV-2SLS panel data estimation methodology to a panel of 135 countries over 1996-2011. Scully and Slottje (1991, 1992) pioneered the instrumental variable or hedonic approach.

[39] Naturally, a rather different issue is whether each dimension of economic freedom may have a distinctive relationship with growth, so a disaggregated approach in the econometric research of the economic freedom-growth connections may be advisable.

[40] Alternatively, a geometric average could be used but, since there is no reason to reduce the substitutability of each dimension of economic freedom, this approach has been discarded.

not remain constant over time, as well as for the whole time span, 1850-2007. The weights for each dimension, derived from the eigenvectors or loadings of the first principal component (that accounts for almost half of the variance) are provided in Table 3. It can be observed that the resulting weights are not far from the equal weights suggested by the agnostic approach.

Table 3

Dimension's Weights derived from the First Principal Component's Loadings

	1850-1914	1925-1939	1950-2007	1850-2007
Property Rights	0.27	0.24	0.27	0.19
Money	0.28	0.26	0.26	0.30
International Trade	0.22	0.21	0.31	0.27
Regulation	0.24	0.29	0.16	0.25

Source: Appendix

A long run view of the evolution of economic liberty in the OECD can be derived as an average of countries' levels. In Figure 3a trends are obtained on the bases of the unweighted averages for four different country samples (including 21, 20, 18, and 14 countries, respectively) that, as expected, reduce their spatial coverage as we moved back in time. All country samples present, however, the same evolution over the long run.[41] Moreover, when a population-weighted aggregate index is computed for each country sample, the resulting indices of economic liberty are also highly coincidental (Figure 3b). Thus, for the sake of clarity, I am using a single spliced index of economic freedom throughout the rest of the paper (Figure 4). A necessary caveat is that since national economic policies and institutions matter for a country's economic freedom, unweighted averages for OECD countries seem conceptually preferable.

However, before proceeding with the analysis of the results, it seems germane to compare, as a sensitivity test, the post-1950 *HIEL*, -that adds new variables to the indices of freedom in the areas of international trade and regulation (see Table 2)-, and the reduced index (*RIEL*), constructed on the basis of a common set of indicators

[41] As stressed in the introduction of the paper, since comprehensive and reliable estimates for each dimension of economic freedom are not available for the World Wars and their aftermath, the coverage of the estimates is restricted to three periods, 1850-1913, 1925-1939, and 1950-2007 in all tables and figures.

throughout the entire period, 1850-2007. It can be observed that differences are only noticeable since 1980, when the reduced index of economic freedom exhibits higher values (Figure 5). This discrepancy mainly derives from the inclusion in *HIEL* of the index of employment protection legislation (*EPL*) as a measure of regulation in the labour market.

Another relevant comparison to be made is between the indices of economic liberty derived alternatively by weighting all dimensions equally, or by employing *PCA* first principal component's loadings as weights for either the entire time span considered, 1850-2007, or for each of the periods distinguished: 1850-1914, 1925-1939, and 1950-2007 (Table 3). When fixed PCA-weights are employed throughout 1850-2007 (last column in Table 3), the resulting index matches closely the one derived through the unweighted arithmetic average of the dimensions' indices, except for the pre-World War I phase, when the *PCA*-weighted index appears higher (Figure 6). The reason is the larger weight assigned to the area of international trade, in which economic freedom expanded significantly up to 1914, without being offset by the lower weight received by property rights, another dimension in which economic freedom thrived during this period. If, alternatively, different *PCA*-weights are used for each of the three main phases, it can be observed how closely the resulting index matches the equally weighted index, with the *PCA*-weighted index only exhibiting higher levels since the late 1970s (Figure 6). The explanation is found in the area of regulation, as its weight for 1950-2007 is lower when first principal component's loadings are used (19 per cent against 25 per cent in the arithmetic average index). Thus, for the sake of simplicity in the presentation of the results, and given its intermediate position between the *PCA*-weighted indices, an unweighted arithmetic average of each dimension indices seems the best choice to derive a historical index of economic liberty.

How does the historical index of economic liberty (*HIEL*) compare to the Fraser Institute's *Economic Freedom of the World* (*EFW*) index, built on the basis of a much more comprehensive database, for the *OECD* country sample? Since *HIEL* includes only four of the five areas in the *EFW*, it seems fair to restrict the comparison to these four dimensions, excluding the size of government, that is, *EFW4*. Contrasting *HIEL* -a

reduced index that incorporates up to 12 indicators- with *EFW4* -that includes 37 variables- provides a crosscheck on its accuracy.

Figure 8a shows how close a fit casts regressing *HIEL* over *EFW4*. Moreover, the (unweighted) historical estimates*, HIEL*, matches Fraser Institute's *EFW4* at different benchmarks between 1970 and 2007. Their unweighted average for *OECD* countries exhibit similar trends, but levels are systematically lower for *EFW4* (Figure 8b).

A glance at *HIEL* and *EFW4* country ranking (Appendix, Table A.2) shows a high correlation at each benchmark over the last four decades, although declining in recent years, as countries' economic freedom levels converge in *HIEL* and, consequently, its variance drops. Country positions at the top and bottom of the ranking are rather stable and coincidental. It can, then, be concluded that the new historical index matches closely the Fraser Institute's *EFW4*.

Trends in Economic Freedom

Economic liberty (either unweighted or population–weighted) is higher nowadays in the OECD than at any time over the last one and a half centuries and, probably, in history, but its evolution has been far from linear (Table 4 and Figure 4). In the discussion of the estimates five-year averages have been used to mitigate the volatility of the annual indices of economic liberty, largely a result of using outcomes, rather than institutional settings, in its construction.

But by how much did economic liberty improve over the long run? Given the bounded nature of the index, the use of conventional procedures to summarize its evolution -say, the percentage change or the logarithmic rate of growth-, would be misleading as increases achieved at low levels cannot be matched at high levels. It is preferable, therefore, to consider the absolute shortfall of actual economic freedom from the upper bound (a value of 10) at the initial point in time and, then, computing the relative decline in the shortfall over a given period (Sen, 1981). Thus, the improvement achieved in economic liberty is measured as the proportion of the maximum possible. This means that between 1850/4 and 2005/7, the initial gap with respect to the maximum potential level, 3.3 points (3.1 for the population-weighted index), was cut down to 0.9 points for the unweighted estimates (0.8 points for the

weighted estimates). Thus, over the one and a half centuries considered, the shortfall declined by nearly three-fourths [(3.3-0.9)/3.3 =0.73] (Table 4).

Different phases can be established over the long run. From the mid-nineteenth century to the eve of World War I steady advancement of economic liberty took place across the board in the OECD, peaking in 1913. On average, the shortfall shrank to less than half between 1850/4 and 1910/4 (Table 4). Such a result implies that over three-fourths of the overall progress in economic liberty in the OECD up to 2007 had been achieved before World War I. Two sub-periods can be distinguished in the pre-World War I period, with the early 1880s as the turning point. It is in the first one when most of the action takes place and the shortfall was reduced to around half, which implies that two-thirds of the long-term gains in economic liberty were already attained by the early 1880s.

During the first half of the twentieth century economic freedom suffered a severe setback. After a dramatic decline during the war and its aftermath, its level in the first "normal" year, 1925, was similar to that of the mid-1870s. Nonetheless, the recovery was fast and peaked by 1929, when the level of the late 1890s was reached. The Great Depression pushed down economic freedom to the level of 1870. The economic recovery from the Depression did not imply a rebound of economic liberty. On the contrary, by the eve of World War II economic freedom had shrunk to the level of the early 1850s.

Economic freedom expanded in the second half of the twentieth century and peaked at the beginning of the twentieth-first century. However, in between two expansionary phases (the 1950s and, especially, the post-1980 period), economic freedom came to a halt. A quick recovery in the 1950s, after another deep contraction during World War II, stabilised during the 1960s around the late 1920s level (and above it, around the 1900 level, for the weighted index). A new contraction in economic freedom in the early 1970s, coinciding with the end of the Bretton Woods system and the oil shock, pushed economic freedom back to mid-1950s levels. A long swing opened up in the early 1980s, in which economic freedom expanded until the eve of the current recession, reaching the 1913 peak by 1989, with the early 1980s shortfall reduced to half by the mid-2000s (by 40.5 per cent for the weighted index).

Thus, in the last two decades the highest levels of economic freedom have been reached.

But how representative are these results? The aggregate trends discussed so far are the result of combining the evolution of different countries over a long time span and may conceal major discrepancies among them. A simple metric, such as the coefficient of variation, suffices to answer this concern (Figure 7). A sustained process of convergence in economic freedom levels is observed up the eve of World War I, in which the rapid decline in dispersion was punctuated by reversal episodes associated to international economic crisis. Post-World War I dispersion declined sharply until 1932, but never shrank below the level of the early 1890s. It was after the Great Depression when divergence peaked. Discrepant recovery strategies may arguably explain it. Interestingly, the dispersion of the late 1930s persisted during the early 1950s and remained high during the Golden Age. After another divergence episode as a result of the oil shocks, the dispersion declined steadily since the late 1970s, with a rebound at the beginnings of the 1980s, to reach the lowest level ever in the mid-2000s. All in all, and despite severe setbacks in the interwar and early post-WWII era, convergence in economic liberty has taken place across OECD countries during the last hundred and sixty years.

To what extent do the results for *OECD* countries capture global trends in economic freedom? The fact that, at practically any time since the mid-nineteenth century, *OECD* countries represent over half of world GDP, even though a smaller share of population, suggests that the trends presented here provide plausible hypotheses about the evolution of economic freedom at a world scale.[42]

Country rankings are provided in Table 5. It can be observed how the stable positions have been. Up to World War I, Belgium, New Zealand, and, especially, the United Kingdom, dominated the top quartile. In the Interwar, Sweden appears at the top position, followed by, Canada, the U.S., Netherlands, and Switzerland. Then, between 1950 and 2007, three countries remained in the upper quartile: the U.S. -always at the top position-, Canada, and Switzerland. As regards the bottom,

[42] OECD represented around one-fourth of world population until mid-twentieth century, shrinking thereafter to only 15 per cent by 2007.

persistence is stronger. Portugal and Finland, followed by Greece, Spain, and Italy, are the most regular members of the lower quartile during 1850-1914. Then, Portugal, Spain, and Italy were joined at the lower quartile by Austria, and Germany in the interwar years. During the last phase, 1950-2007, Portugal and Spain kept their unenviable position, alongside Greece and, at some distance, France. Thus, countries from the Western Offshoots and the European *Core* stayed at the top over the entire considered period, while Southern European countries lagged consistently behind.

A closer look suggests, however, convergence episodes within *OECD* countries. Thus, in the late nineteenth and early twentieth century, the U.K., Belgium, the U.S., and Canada attained low gains starting from high levels, while the opposite happened in Germany, Australia, or France, in which larger achievements matched a lower initial standpoint. Furthermore, catching up during 1880-1914 comes from the *Periphery*, with countries initially at the bottom experiencing the largest improvements in economic freedom (Italy, Greece, Finland, Portugal, Japan). In another phase of economic liberty expansion, 1950-2007, *Peripheral* countries, including Finland, Spain, Greece and Japan, exhibited a more intense shortfall reduction and catching-up to the European *Core* and the Western Offshoots. This tendency intensified in the post-1980 expansion of economic freedom, when the main improvements corresponded to *Peripheral* countries (Italy, Ireland, Greece, and Spain), alongside Denmark and New Zealand.

Drivers of Economic Liberty

The results provided by an aggregate index of economic liberty may convey the understanding that all dimensions of economic freedom evolved along the same path. However, their individual evolution indicates this was not the case (Figure 1). What was, then, the over time contribution of each dimension to the historical index of economic liberty, *HIEL*?

In Figures 9a-9b a breakdown of the historical index of economic liberty into its main dimensions shows how their shares varied over time.[43] During the 1850-1914

[43] The computation is facilitated by the fact that the historical index is an unweighted average of the four dimensions, so $HIEL = \frac{1}{4} * IEL_{property\ rights} + \frac{1}{4} * IEL_{money} + \frac{1}{4} * IEL_{trade} + \frac{1}{4} * IEL_{regulation}$

period, money and international trade were the main contributors to the level of economic freedom. Then, in the Interwar years, property rights, money, and regulation contributed alike while the share of trade shrank. From 1950 onwards, the largest contributions to the level of economic freedom came from property rights and international trade.

Improvements in economic liberty derived, however, from different dimensions (Table 6). I will proceed gradually to present the results. Firstly, the drivers of economic freedom in the *OECD* in each of the three main phases described will be considered (Figures 10a-10b). Then, I will take a closer look at shorter significant periods, or long swings, within each main phase (Figures 11a-11b). Lastly, individual countries' performance during each of the long swings and phases will be discussed (Figures 12-21).

Over 1850-1914, the improvement in property rights made the main contribution to the shortfall reduction to less than half (two-fifths and half of its total decline for the unweighted and population-weighted indices). Then, during the first half of the twentieth century, it was the collapse of freedom to trade internationally (two-thirds) and, to less extent, monetary distortions (one-fourth), the main responsible for the contraction in economic liberty (around three-fourths). Since 1950, the liberalization of trade and factor flows was the leading force accounting for more than half of the reduction in the economic freedom shortfall (slightly below two-thirds). In the one and a half centuries examined, improvements in the legal structure and property rights emerge as the main force behind long-term gains in economic liberty, accounting for half of the three-fourths reduction in the shortfall.

Then, if we look at the shorter periods, or long swings, in economic freedom, we find that, prior to World War I, it was freedom from regulation what largely makes the difference between the intense gains before the early 1880s (that were slightly above those derived from property rights) and the slower ones afterwards. During the Interwar, it was the collapse of freedom to trade internationally and, to less extent, the increase in regulation (around half and one-third, respectively), what largely accounts for the contraction in economic freedom. A closer look at the post-1950 era allows one to distinguish the leading role of international trade and, to a lesser extent, money (about half and one-third of it, respectively) in the economic freedom

expansion of the 1950s (one-third reduction in the shortfall). During the 1960s and 1970s, increases in regulation and unsound monetary policies represented a deterrent for the advance in economic liberty, as they offset the gains in freedom to trade and improvements in property rights. In the second wave of expanding economic liberty, 1980-2007, trade was the overall leading force of economic liberty, accounting for up to two-fifths of a reduction in the shortfall to one-half.

A similar breakdown at country level provides useful insights (Table 6 and Figures 12-21, in which countries are ranked from top to bottom). Thus, it can be observed that, up to World War I, all countries match the *OECD* pattern, with property rights making the main contribution to the extension of economic freedom. There were exceptions to this common pattern such as the United Kingdom, in which international trade was the major force behind the increase in economic freedom, and Australia and Germany in which regulation led economic freedom gains. It is worth noting that increases in regulation represent the main drawback for of countries' advancement in economic freedom during the 1880-1914 years.

During 1925-1939, the negative role played by international trade is stressed at country level. Exceptions were France, Japan, Spain, and, again, the United States, in which regulation played the leading role in the contraction of economic freedom.

A closer look at the 1950s allows one to highlight the leading role of international trade in the expansion of economic freedom, with the exception of Japan, the United States in which money led over trade. In Austria, Italy, and Australia, money, along trade, also made a major contribution. Deregulation, in turn, played a leading role in New Zealand, Ireland, and Portugal. In the 1960s and 1970s, regulation and price instability represented an obstacle to economic liberty, with Sweden, followed by Germany and Belgium, and, then, Portugal and Ireland, being the most affected countries. In the second wave of expanding economic liberty, 1980-2007, trade drove gains in economic freedom across the *OECD* but for the United States and the United Kingdom, where money played the leading role, and Denmark, Sweden, Netherlands, and Germany where deregulation represented the main force. Over the entire period 1950-2007, there were exceptions to the liberalization of commodity and factor flows as main driver of economic freedom across countries. In Switzerland and Portugal advances in property rights were the leading force (in Spain improvements in

property rights share the role with trade liberalisation), while in the United States improvements in money and property rights made the main contribution.

Over the one and a half centuries examined, improvements in the definition and enforcement of property rights emerge as the driver to long-term achievements in economic liberty across *OECD* countries. The only exceptions are the U.S. and the U.K. in which trade liberalization made the most distinctive contribution and Australia and New Zealand in which it came from deregulation.

Concluding Remarks

An expansion of economic liberty, that reached three fourths of its maximum possible, has taken place in the *OECD* during the last one and a half centuries. Its evolution, however, has been far from linear. After a substantial improvement since mid-nineteenth century that peaked in 1913, World War I brought a major setback. A post-war recovery up to 1929 was followed by a dramatic decline in the 1930s and, by the eve of World War II, the level of economic freedom had shrunk to pre-1850 levels. Significant progress in economic freedom during the Golden Age (1950-1973) fell short from the pre-World War I peak. A steady since the early 1980s has resulted in the highest levels of economic liberty in the last two centuries.

Economic freedom dimensions exhibited different trends, which confirm their complementarity in composing a complex image of economic liberty. During 1850-1914, the improvement in property rights enforcement represented the main contribution to its progress. In the Interwar, the collapse of freedom of trade and regulation accounts for practically all the contraction in economic liberty, but from 1950 onwards liberalization of trade and factor flows has been the main force behind its advance. Over the whole period 1850-2007, the main contribution to the increase in economic liberty came from legal structure and property rights.

A new historical index of economic freedom raises pressing questions. Are there any trade-offs between economic freedom and other kinds of freedom? Have increases in economic freedom had a cost in terms of growth, inequality, wellbeing, and democracy, or, conversely, contributed to their enhancement? Answering these questions provide the next challenge in this research project.

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Table 4. ***Percentage Shortfall Reduction in Economic Liberty in OECD Countries, 1850-2007*** **(five-year averages)**

	1850/4-1880/4	1880/4-1910/4	1850/4-1910/4	1925/9-1935/9	1910/4-1950/4	1950/4-1960/4	1960/4-1980/4	1980/4-2005/7	1950/4-2005/7	1850/4-2005/7
Australia	73.2	-25.1	66.5	-44.7	-85.5	44.9	-16.8	37.0	59.5	74.8
Austria		3.5		-149.2	-83.6	56.3	14.9	23.1	71.4	
Belgium	60.7	-63.2	35.8	-19.2	-34.7	17.4	-24.6	57.7	56.5	62.4
Canada*	-4.4	21.9	18.5	-61.6	-4.0	40.0	-41.0	48.9	56.7	63.3
Denmark	40.1	27.1	56.4	-17.0	-56.8	27.1	-13.8	67.6	73.1	81.6
Finland*	36.8	31.9	57.0	-81.1	-74.7	44.6	19.4	52.3	78.7	84.0
France	69.2	-18.8	63.4	-33.8	-112.1	6.1	12.9	41.8	52.5	63.1
Germany	60.1	21.2	68.5	-78.5	-50.4	61.9	-56.6	30.1	58.3	80.2
Greece	32.1	37.5	57.5	10.4	-122.3	30.1	-16.1	59.1	66.8	68.7
Ireland				-45.2	0.0	20.2	-19.3	59.8	61.8	
Italy*	11.4	35.0	42.4	-44.9	-64.5	31.3	-25.4	60.5	66.0	67.7
Japan		51.5		-67.0	-240.3	49.4	32.2	16.7	71.4	
Netherlands	39.9	26.2	55.6	-37.5	-149.1	36.8	10.3	39.9	65.9	62.3
New Zealand*	30.7	9.5	37.3	-75.1	-115.3	20.9	-1.5	58.6	66.8	55.2
Norway	59.2	7.8	62.4	-4.3	-108.4	22.6	9.0	47.4	62.9	70.9
Portugal	29.7	16.8	41.5	1.4	-33.7	5.5	1.2	55.5	58.5	67.6
Spain	42.8	12.5	49.9	-117.3	-150.7	17.1	35.7	58.1	77.7	71.9
Sweden	52.6	-24.2	41.2	-37.4	-18.4	52.9	-119.4	52.9	51.3	66.1
Switzerland	73.8	16.4	78.1	-79.2	-39.5	4.4	10.3	26.4	37.0	80.8
U.K.	44.9	-2.9	43.3	-98.8	-125.6	16.0	31.9	36.6	63.7	53.5
U.S.A.	24.0	22.8	41.3	-43.7	41.1	29.1	-30.9	20.7	26.4	74.6
OECD										
Unweighted	48.0	16.8	56.7	-50.0	-75.8	30.8	-0.4	48.9	64.5	73.0
Weighted	*44.8*	*22.3*	*57.1*	*-59.2*	*-69.3*	*35.1*	*5.5*	*40.5*	*63.5*	*73.5*

Note: * starts in 1860/4

Table 5. *OECD Country Ranking of Economic Liberty, 1850/54-2005/07*

1850/54		1855/59		1860/64		1865/69		1870/74		1875/79		1880/84	
U.K.	8.4	U.K.	8.7	U.K.	9.0	U.K.	8.9	U.K.	8.9	U.K.	9.1	Belgium	9.1
U.S.A.	7.9	New Zealand	8.5	Australia	8.6	New Zealand	8.8	New Zealand	8.7	Australia	9.1	U.K.	9.1
Netherlands	7.8	Belgium	8.5	New Zealand	8.5	Australia	8.8	Australia	8.6	Switzerland	8.9	Switzerland	9.1
Belgium	7.7	Netherlands	8.3	Canada	8.5	Canada	8.6	Belgium	8.5	New Zealand	8.9	New Zealand	9.0
Sweden	7.1	U.S.A.	8.1	Belgium	8.5	Belgium	8.5	Canada	8.4	Canada	8.8	Australia	9.0
Denmark	7.0	Australia	8.0	Netherlands	8.2	Netherlands	8.5	Netherlands	8.1	Belgium	8.7	France	8.9
Norway	6.8	Switzerland	8.0	Switzerland	8.0	Switzerland	8.5	Switzerland	8.1	Netherlands	8.6	Netherlands	8.7
Switzerland	6.5	Denmark	7.5	Denmark	7.8	Sweden	7.7	U.S.A.	7.9	Sweden	8.5	Norway	8.7
Spain	6.3	Germany	7.3	Sweden	7.4	Norway	7.6	Sweden	7.9	U.S.A.	8.3	Sweden	8.6
France	6.3	Sweden	7.2	Norway	7.3	Denmark	7.5	Norway	7.7	France	8.3	Canada	8.5
Australia	6.2	Norway	6.9	Germany	7.3	France	7.3	Denmark	7.6	Norway	8.2	U.S.A.	8.4
Portugal	5.8	France	6.8	France	7.1	Germany	7.3	Germany	7.6	Germany	8.1	Germany	8.2
Greece	5.8	Spain	6.6	Italy	7.0	Greece	7.2	Greece	7.0	Denmark	8.0	Denmark	8.2
Germany	5.6	Portugal	6.3	Portugal	6.7	U.S.A.	7.2	Spain	7.0	Austria	7.9	Austria	8.0
		Greece	5.8	U.S.A.	6.6	Italy	7.1	France	7.0	Spain	7.7	Spain	7.9
				Spain	6.6	Portugal	6.9	Italy	7.0	Japan	7.4	Japan	7.8
				Greece	6.4	Spain	6.7	Portugal	6.6	Italy	7.1	Italy	7.4
				Finland	5.5	Finland	6.3	Finland	6.5	Finland	7.0	Finland	7.1
										Greece	6.9	Greece	7.1
										Portugal	6.8	Portugal	7.1

1885/89		1890/94		1895/99		1900/04		1905/09		1910/14		1925/29	
U.K.	9.3	U.K.	9.2	U.K.	9.3	Switzerland	9.3	U.K.	9.3	Switzerland	9.2	Switzerland	8.9
Australia	9.1	Belgium	9.2	Switzerland	9.2	U.K.	9.1	Switzerland	9.2	New Zealand	9.1	U.K.	8.9
Belgium	9.0	Norway	9.0	Belgium	9.1	Belgium	9.1	Belgium	9.1	U.K.	9.1	Canada	8.9
New Zealand	9.0	New Zealand	9.0	Norway	9.0	Netherlands	9.0	New Zealand	9.1	Netherlands	9.0	New Zealand	8.8
Norway	8.9	Switzerland	9.0	Netherlands	9.0	Norway	9.0	Netherlands	9.1	Japan	8.9	U.S.A.	8.8
Switzerland	8.9	Netherlands	8.9	New Zealand	9.0	New Zealand	9.0	Norway	9.0	Canada	8.8	Sweden	8.8
France	8.8	Australia	8.9	France	8.8	France	8.9	Australia	8.9	U.S.A.	8.8	Netherlands	8.8
Netherlands	8.6	Canada	8.8	Australia	8.7	Australia	8.8	Japan	8.9	Norway	8.8	Japan	8.7
Sweden	8.6	France	8.8	Canada	8.7	Canada	8.8	France	8.9	Australia	8.7	Australia	8.6
U.S.A.	8.5	Sweden	8.7	U.S.A.	8.7	Japan	8.7	Canada	8.8	Denmark	8.7	Finland	8.5
Canada	8.5	U.S.A.	8.7	Sweden	8.6	Sweden	8.7	U.S.A.	8.7	France	8.6	Denmark	8.4
Germany	8.2	Germany	8.4	Germany	8.5	U.S.A.	8.5	Germany	8.5	Germany	8.6	Norway	8.3
Denmark	8.2	Denmark	8.3	Japan	8.3	Germany	8.5	Italy	8.4	Belgium	8.5	Ireland	8.3
Japan	8.2	Japan	8.2	Denmark	8.3	Italy	8.3	Denmark	8.3	Sweden	8.3	Austria	8.2
Austria	8.1	Spain	7.8	Austria	8.2	Austria	8.3	Sweden	8.2	Italy	8.3	Belgium	7.9
Spain	7.9	Austria	7.8	Spain	7.6	Finland	8.0	Spain	8.1	Greece	8.2	Germany	7.7
Italy	7.7	Italy	7.4	Finland	7.5	Denmark	8.0	Austria	8.0	Spain	8.2	France	7.6
Greece	7.3	Finland	7.3	Italy	7.5	Spain	7.9	Finland	8.0	Austria	8.1	Italy	7.2
Finland	7.2	Greece	7.1	Greece	7.2	Greece	7.3	Greece	7.7	Finland	8.1	Greece	7.0
Portugal	6.9	Portugal	6.7	Portugal	6.8	Portugal	7.2	Portugal	7.2	Portugal	7.6	Spain	6.6
												Portugal	6.6

Table 5. ***OECD Country Ranking of Economic Liberty, 1850/54-2005/07*** **(cont.)**

1930/34		1935/39		1950/54		1955/59		1960/64		1965/69		1970/74	
Norway	8.7	Sweden	8.4	U.S.A.	9.3	U.S.A.	9.4	U.S.A.	9.5	U.S.A.	9.4	U.S.A.	9.3
Sweden	8.7	U.S.A.	8.3	Switzerland	8.9	Canada	9.2	Canada	9.2	Canada	9.2	Canada	9.1
Netherlands	8.6	Netherlands	8.3	Canada	8.7	Switzerland	9.1	Germany	9.2	Germany	9.1	Switzerland	8.9
Switzerland	8.5	Norway	8.3	Ireland	8.2	Germany	8.9	Sweden	9.1	Switzerland	9.0	Germany	8.8
Japan	8.4	Canada	8.2	Belgium	8.0	Sweden	8.6	Switzerland	9.0	Sweden	8.9	Austria	8.6
U.K.	8.4	Denmark	8.1	New Zealand	8.0	Australia	8.5	Australia	8.7	Australia	8.7	Sweden	8.5
Denmark	8.3	Switzerland	8.1	Sweden	8.0	Ireland	8.4	Ireland	8.6	Austria	8.6	Denmark	8.5
Canada	8.3	New Zealand	8.0	Germany	7.9	Denmark	8.4	Denmark	8.5	Ireland	8.4	Netherlands	8.5
Belgium	8.3	Australia	7.9	Denmark	7.9	New Zealand	8.3	Netherlands	8.5	Denmark	8.4	Australia	8.4
New Zealand	8.2	U.K.	7.8	U.K.	7.9	Belgium	8.3	Austria	8.5	Netherlands	8.3	New Zealand	8.2
U.S.A.	8.1	Japan	7.8	Australia	7.7	Netherlands	8.3	New Zealand	8.4	Japan	8.3	Japan	8.2
Ireland	8.0	Ireland	7.5	Netherlands	7.6	U.K.	8.2	Belgium	8.4	New Zealand	8.2	Finland	8.2
Greece	8.0	Belgium	7.4	Norway	7.5	Austria	8.0	U.K.	8.2	Finland	8.2	Ireland	8.1
Australia	7.9	Greece	7.3	Italy	7.2	Italy	8.0	Japan	8.1	Italy	8.2	U.K.	8.1
France	7.9	Finland	7.2	France	7.1	Norway	7.9	Finland	8.1	U.K.	8.2	Belgium	8.0
Finland	7.7	France	6.7	Portugal	6.7	Japan	7.9	Italy	8.1	Belgium	8.1	France	7.9
Spain	7.7	Portugal	6.7	Finland	6.6	France	7.4	Norway	8.0	Norway	8.1	Italy	7.8
Austria	7.2	Germany	5.9	Austria	6.5	Finland	7.3	France	7.3	France	7.4	Norway	7.7
Germany	7.1	Italy	5.9	Japan	6.3	Greece	6.9	Greece	7.2	Portugal	6.7	Portugal	6.5
Italy	7.0	Austria	5.6	Greece	6.0	Portugal	6.8	Portugal	6.9	Greece	6.5	Spain	6.3
Portugal	6.6	Spain	2.7	Spain	5.4	Spain	5.6	Spain	6.2	Spain	6.3	Greece	5.8

1975/79		1980/84		1985/89		1990/94		1995/99		2000/04		2005/07	
U.S.A.	9.2	U.S.A.	9.3	U.S.A.	9.4	U.S.A.	9.4	U.S.A.	9.5	U.S.A.	9.4	U.S.A.	9.5
Canada	8.9	Switzerland	9.1	Switzerland	9.3	Switzerland	9.3	New Zealand	9.5	Canada	9.4	Canada	9.5
Switzerland	8.9	Canada	8.9	Canada	9.1	Canada	9.3	Canada	9.4	Ireland	9.3	Denmark	9.4
Austria	8.7	U.K.	8.8	U.K.	9.0	New Zealand	9.2	Ireland	9.3	Finland	9.3	New Zealand	9.3
Germany	8.6	Germany	8.8	New Zealand	8.9	Ireland	9.1	Switzerland	9.3	Switzerland	9.3	Switzerland	9.3
Netherlands	8.5	Japan	8.7	Japan	8.9	U.K.	9.0	U.K.	9.3	Denmark	9.3	Ireland	9.3
Denmark	8.3	Austria	8.7	Netherlands	8.9	Denmark	9.0	Denmark	9.3	U.K.	9.3	Finland	9.3
Finland	8.3	Netherlands	8.6	Germany	8.9	Netherlands	8.9	Norway	9.1	New Zealand	9.2	U.K.	9.2
Japan	8.2	Australia	8.5	Australia	8.8	Austria	8.9	Australia	9.0	Germany	9.1	Netherlands	9.2
Australia	8.1	Finland	8.5	Austria	8.8	Japan	8.9	Finland	9.0	Sweden	9.1	Belgium	9.1
Ireland	8.1	New Zealand	8.4	Ireland	8.7	Australia	8.9	Sweden	9.0	Netherlands	9.0	Germany	9.1
New Zealand	8.1	Ireland	8.3	Finland	8.7	Norway	8.8	Belgium	8.9	Norway	9.0	Norway	9.1
Sweden	8.1	Denmark	8.3	Denmark	8.7	Belgium	8.8	Netherlands	8.9	Australia	9.0	Australia	9.0
U.K.	8.0	Norway	8.2	Sweden	8.4	Germany	8.7	Germany	8.9	Italy	9.0	Italy	9.0
Norway	7.9	Belgium	8.0	Norway	8.4	Sweden	8.6	Austria	8.8	Austria	9.0	Sweden	9.0
Belgium	7.9	Sweden	7.9	Belgium	8.2	Finland	8.6	Japan	8.7	Belgium	8.9	Austria	9.0
France	7.7	France	7.6	France	8.2	France	8.5	Italy	8.7	Spain	8.9	Spain	9.0
Italy	7.5	Italy	7.6	Spain	8.1	Italy	8.4	Spain	8.7	Japan	8.8	Japan	8.9
Greece	6.8	Spain	7.5	Italy	8.0	Spain	8.3	Portugal	8.6	Portugal	8.7	Greece	8.7
Spain	6.6	Portugal	7.0	Portugal	7.6	Portugal	8.2	France	8.5	Greece	8.6	Portugal	8.7
Portugal	6.4	Greece	6.8	Greece	7.4	Greece	7.7	Greece	8.2	France	8.5	France	8.6

Table 6. ***Drivers of Economic Liberty: Decomposing the Percentage Change in Shortfall in OECD Countries, 1850-2007*** **(five-year averages)**

	1850/4-1910/4					1850/4-1880/4				
		Due to#					Due to#			
	TOTAL (%)	Prop. Rights	Money	Trade	Regulation	TOTAL (%)	Prop. Rights	Money	Trade	Regulation
Australia	**66.5**	0.23	0.36	-0.03	0.44	**73.2**	0.14	0.32	0.00	0.54
Belgium	**35.8**	0.48	0.26	0.40	-0.21	**60.7**	0.39	0.16	0.24	0.16
Canada*	**18.5**	1.89	-0.05	-0.43		**-4.4**	-4.46	0.57	3.14	
Denmark	**56.4**	0.30	0.21	0.28		**40.1**	0.16	0.24	0.25	
Finland*	**57.0**	0.32	0.15	0.19		**36.8**	0.00	0.12	0.36	
France	**63.4**	0.58	0.10	0.16	0.16	**69.2**	0.48	0.11	0.17	0.23
Germany	**68.5**	0.31	0.22	0.06	0.42	**60.1**	0.13	0.25	0.07	0.55
Greece	**57.5**	0.52	0.28	-0.04	0.26	**32.1**	0.58	0.38	-0.27	0.36
Italy*	**42.4**	0.85	0.04	0.17	-0.06	**11.4**	0.76	0.14	-0.35	0.46
Netherlands	**55.6**	0.33	0.25	0.25	0.16	**39.9**	0.06	0.28	0.35	0.32
New Zealand*	**37.3**	0.24	0.55	-0.30	0.51	**30.7**	0.17	0.58	-0.50	0.75
Norway	**62.4**	0.71	0.06	0.25	-0.02	**59.2**	0.53	0.06	0.24	0.16
Portugal	**41.5**	0.43	0.32	0.04		**29.7**	0.17	0.41	0.11	
Spain	**49.9**	0.61	0.22	0.08	0.04	**42.8**	0.57	0.26	0.05	0.06
Sweden	**41.2**	0.51	0.08	0.35	0.06	**52.6**	0.64	0.01	0.24	0.11
Switzerland	**78.1**	0.33	0.26	0.11	0.31	**73.8**	0.24	0.28	0.14	0.35
U.K.	**43.3**	0.23	0.28	0.47	0.02	**44.9**	0.15	0.08	0.46	0.31
U.S.A.	**41.3**	0.67	0.06	0.41	-0.14	**24.0**	0.67	0.14	0.16	0.03
OECD										
Unweighted	**56.7**	0.40	0.20	0.14	0.23	**48.0**	0.29	0.22	0.13	0.34
Weighted	**57.1**	0.48	0.16	0.16	0.23	**44.8**	0.33	0.19	0.13	0.39

Notes: * 1860/4-1910/4 and 1860/4-1880/4
The four columns add up to 1.

Table 6. ***Drivers of Economic Liberty: Decomposing the Percentage Change in Shortfall in OECD Countries, 1850-2007*** **(five-year averages) (cont.)**

	1880/4-1910/4				
		Due to#			
	TOTAL (%)	Prop. Rights	Money	Trade	Regulation
Australia	**-25.1**	-0.82	-0.08	0.32	1.58
Austria	**3.5**	-0.46	-0.52	1.78	1.08
Belgium	**-63.2**	0.27	0.02	0.01	0.70
Canada	**21.9**	0.66	0.07	0.26	0.01
Denmark	**27.1**	0.64	0.14	0.33	-0.11
Finland	**31.9**	0.91	0.21	-0.13	0.01
France	**-18.8**	-0.61	0.26	0.34	1.00
Germany	**21.2**	1.56	0.01	-0.06	-0.52
Greece	**37.5**	0.44	0.14	0.25	0.14
Ireland					
Italy	**35.0**	0.88	0.00	0.37	-0.24
Japan	**51.5**	0.65	0.03	0.22	0.09
Netherlands	**26.2**	1.04	0.19	0.00	-0.22
New Zealand	**9.5**	0.58	0.38	0.63	-0.59
Norway	**7.8**	3.93	0.01	0.33	-3.27
Portugal	**16.8**	1.08	0.09	-0.12	-0.04
Spain	**12.5**	0.86	-0.01	0.25	-0.11
Sweden	**-24.2**	1.09	-0.22	-0.16	0.28
Switzerland	**16.4**	1.90	-0.06	-0.33	-0.51
U.K.	**-2.9**	-1.93	-5.13	0.02	8.04
U.S.A.	**22.8**	0.68	-0.05	0.76	-0.39
OECD					
Unweighted	**16.8**	1.03	0.13	0.23	-0.40
Weighted	**22.3**	1.02	0.05	0.27	-0.34

Table 6. ***Drivers of Economic Liberty: Decomposing the Percentage Change in Shortfall in OECD Countries, 1850-2007*** **(five-year averages) (cont.)**

	1910/4-1950/4					1925/9-1935/9				
		Due to#					Due to#			
	TOTAL (%)	Prop. Rights	Money	Trade	Regulation	TOTAL (%)	Prop. Rights	Money	Trade	Regulation
Australia	**-85.5**	0.07	0.34	0.54	0.05	**-44.7**	0.00	-0.03	0.91	0.12
Austria	**-83.6**	-0.41	0.49	0.75	0.21	**-149.2**	0.63	-0.08	0.44	-0.07
Belgium	**-34.7**	0.22	0.22	1.29	-0.73	**-19.2**	0.56	-0.61	0.89	0.16
Canada	**-4.0**	0.95	0.89	-0.23	-0.61	**-61.6**	-0.01	0.09	0.50	0.42
Denmark	**-56.8**	-0.54	0.06	1.21	0.27	**-17.0**	0.02	-1.55	1.92	0.61
Finland	**-74.7**	-0.68	0.36	1.07	0.24	**-81.1**	-0.12	0.29	0.58	0.26
France	**-112.1**	0.20	0.35	0.42	0.03	**-33.8**	0.00	-0.08	0.47	0.60
Germany	**-50.4**	-0.25	0.25	1.31	-0.31	**-78.5**	0.45	-0.34	0.82	0.07
Greece	**-122.3**	0.17	0.24	0.51	0.07	**10.4**	-1.95	2.09	-0.49	1.36
Ireland	**0.0**					**-45.2**	0.04	-0.01	0.64	0.34
Italy	**-64.5**	-0.45	0.41	0.60	0.44	**-44.9**	-0.02	-0.04	0.56	0.51
Japan	**-240.3**	0.16	0.30	0.42	0.12	**-67.0**	-0.01	0.23	0.27	0.51
Netherlands	**-149.1**	-0.02	0.15	0.60	0.27	**-37.5**	-0.04	-0.08	0.77	0.35
New Zealand	**-115.3**	0.09	0.12	0.65	0.14	**-75.1**	0.05	0.06	0.59	0.30
Norway	**-108.4**	0.13	0.11	0.59	0.18	**-4.3**	0.95	-4.39	2.76	1.68
Portugal	**-33.7**	0.64	0.01	0.27	0.07	**1.4**	-3.29	10.61	-6.60	0.28
Spain	**-150.7**	0.30	0.13	0.31	0.26	**-117.3**	0.09	0.31	0.20	0.39
Sweden	**-18.4**	-2.52	0.89	2.57	0.06	**-37.4**	0.09	-0.44	0.83	0.52
Switzerland	**-39.5**	0.57	-0.10	0.29	0.24	**-79.2**	0.09	0.02	0.58	0.32
U.K.	**-125.6**	0.02	0.13	0.96	-0.11	**-98.8**	-0.01	-0.04	0.73	0.32
U.S.A.	**41.1**	-0.01	-0.14	0.79	0.36	**-43.7**	0.08	0.20	0.07	0.65
OECD										
Unweighted	**-75.8**	-0.03	0.25	0.66	0.11	**-50.0**	0.20	-0.07	0.57	0.29
Weighted	**-69.3**	0.03	0.33	0.58	0.05	**-59.2**	0.16	-0.01	0.49	0.36

Table 6. ***Drivers of Economic Liberty: Decomposing the Percentage Change in Shortfall in OECD Countries, 1850-2007*** **(five-year averages) (cont.)**

	1950/4-2005/7					1950/4-1960/4				
		Due to#					Due to#			
	TOTAL (%)	Prop. Rights	Money	Trade	Regulation	TOTAL (%)	Prop. Rights	Money	Trade	Regulation
Panel A										
Australia	**59.5**	0.06	0.30	0.49	0.15	**44.9**	0.02	0.40	0.37	0.20
Austria	**71.4**	0.15	0.35	0.48	0.01	**56.3**	0.08	0.42	0.37	0.13
Belgium	**56.5**	0.51	0.22	0.61	-0.34	**17.4**	0.22	0.61	0.85	-0.68
Canada	**56.7**	0.18	0.11	0.57	0.14	**40.0**	0.05	0.27	0.60	0.08
Denmark	**73.1**	0.14	0.08	0.67	0.11	**27.1**	0.08	-0.03	0.97	-0.02
Finland	**78.7**	0.05	0.20	0.70	0.06	**44.6**	0.06	0.30	0.64	0.00
France	**52.5**	0.27	0.44	0.50	-0.21	**6.1**	-3.64	2.49	1.20	0.95
Germany	**58.3**	0.25	0.20	0.88	-0.33	**61.9**	0.14	0.15	0.78	-0.07
Greece	**66.8**	0.26	0.21	0.65	-0.12	**30.1**	0.25	0.40	0.44	-0.09
Ireland	**61.8**	0.10	0.07	0.82	0.00	**20.2**	-0.06	0.09	0.52	0.45
Italy	**66.0**	0.08	0.29	0.44	0.18	**31.3**	0.07	0.44	0.44	0.05
Japan	**71.4**	0.21	0.33	0.47	-0.01	**49.4**	0.29	0.44	0.24	0.03
Netherlands	**65.9**	0.21	0.12	0.54	0.12	**36.8**	0.16	0.17	0.63	0.03
New Zealand	**66.8**	0.09	0.03	0.77	0.11	**20.9**	0.06	0.35	0.13	0.46
Norway	**62.9**	0.14	0.06	0.64	0.15	**22.6**	0.04	0.28	0.54	0.14
Portugal	**58.5**	0.82	0.02	0.51	-0.35	**5.5**	0.25	0.15	0.12	0.48
Spain	**77.7**	0.40	0.10	0.42	0.08	**17.1**	0.13	0.18	0.69	0.00
Sweden	**51.3**	0.11	0.26	0.82	-0.20	**52.9**	0.03	0.22	0.56	0.19
Switzerland	**37.0**	0.50	0.01	0.46	0.02	**4.4**	1.32	-0.74	0.65	-0.24
U.K.	**63.7**	0.15	0.05	0.83	-0.02	**16.0**	-0.15	0.34	0.56	0.26
U.S.A.	**26.4**	0.50	0.56	0.16	-0.23	**29.1**	0.33	0.67	-0.09	0.09
OECD										
Unweighted	**64.5**	0.24	0.19	0.59	-0.01	**30.8**	0.08	0.34	0.51	0.07
Weighted	**63.5**	0.24	0.24	0.54	-0.02	**35.1**	0.12	0.39	0.44	0.05

Table 6 ***Drivers of Economic Liberty: Decomposing the Percentage Change in Shortfall in OECD Countries, 1850-2007*** **(five-year averages) (cont.)**

	1960/4-1980/4					1980/4-2005/7				
		Due to#					Due to#			
	TOTAL (%)	Prop. Rights	Money	Trade	Regulation	TOTAL (%)	Prop. Rights	Money	Trade	Regulation
Australia	**-16.8**	-0.05	0.85	-0.16	0.35	**37.0**	0.10	0.32	0.44	0.14
Austria	**14.9**	0.88	-0.14	1.73	-1.47	**23.1**	0.07	0.31	0.27	0.34
Belgium	**-24.6**	-0.71	0.23	0.13	1.35	**57.7**	0.18	0.11	0.38	0.34
Canada	**-41.0**	-0.23	0.73	0.27	0.24	**48.9**	0.05	0.32	0.36	0.26
Denmark	**-13.8**	-0.62	0.65	-0.30	1.28	**67.6**	0.04	0.23	0.35	0.38
Finland	**19.4**	0.09	-0.51	1.21	0.21	**52.3**	0.01	0.33	0.58	0.09
France	**12.9**	2.34	-0.55	0.24	-1.04	**41.8**	0.23	0.43	0.46	-0.13
Germany	**-56.6**	-0.18	0.12	-0.07	1.13	**30.1**	0.10	0.28	0.10	0.53
Greece	**-16.1**	0.21	1.06	-0.96	0.69	**59.1**	0.26	0.29	0.40	0.05
Ireland	**-19.3**	-0.22	0.88	-1.24	1.59	**59.8**	0.07	0.28	0.38	0.27
Italy	**-25.4**	-0.21	0.66	0.05	0.50	**60.5**	-0.01	0.33	0.31	0.37
Japan	**32.2**	0.04	0.26	0.89	-0.19	**16.7**	0.01	-0.51	1.31	0.20
Netherlands	**10.3**	0.82	-0.53	1.34	-0.63	**39.9**	0.12	0.23	0.17	0.48
New Zealand	**-1.5**	-2.80	14.28	-22.37	11.89	**58.6**	0.03	0.24	0.49	0.24
Norway	**9.0**	0.66	-1.12	1.05	0.40	**47.4**	0.11	0.16	0.62	0.11
Portugal	**1.2**	36.52	-14.02	6.28	-27.78	**55.5**	0.09	0.32	0.42	0.17
Spain	**35.7**	1.00	-0.10	0.19	-0.09	**58.1**	-0.01	0.23	0.50	0.28
Sweden	**-119.4**	-0.03	0.19	-0.08	0.92	**52.9**	0.05	0.23	0.15	0.58
Switzerland	**10.3**	0.69	-0.19	0.73	-0.22	**26.4**	0.26	0.25	0.31	0.18
U.K.	**31.9**	0.31	-0.58	1.54	-0.28	**36.6**	0.16	0.64	0.11	0.09
U.S.A.	**-30.9**	-0.18	1.28	-0.29	0.19	**20.7**	-0.01	1.21	0.04	-0.23
OECD										
Unweighted	**-0.4**	-32.94	25.99	-30.38	38.32	**48.9**	0.09	0.28	0.39	0.24
Weighted	**5.5**	2.54	-1.80	2.60	-2.35	**40.5**	0.08	0.34	0.37	0.22

Table 6. ***Drivers of Economic Liberty: Decomposing the Percentage Change in Shortfall in OECD Countries, 1850-2007*** **(five-year averages) (cont.)**

	1850/4-2005/7				
		Due to#			
	TOTAL (%)	Prop. Rights	Money	Trade	Regulation
Australia	**74.8**	0.21	0.34	0.00	0.45
Belgium	**62.4**	0.60	0.24	0.25	-0.13
Canada*	**63.3**	0.64	0.02	0.32	
Denmark	**81.6**	0.46	0.18	0.24	
Finland*	**84.0**	0.51	0.10	0.21	
France	**63.1**	0.63	0.16	0.21	0.01
Germany	**80.2**	0.40	0.21	0.09	0.31
Greece	**68.7**	0.55	0.25	0.17	0.06
Italy*	**67.7**	0.85	0.07	0.18	-0.11
Netherlands	**62.3**	0.57	0.22	0.21	0.00
New Zealand*	**55.2**	0.19	0.27	0.20	0.34
Norway	**70.9**	0.65	0.04	0.33	-0.01
Portugal	**67.6**	0.63	0.21	0.29	
Spain	**71.9**	0.66	0.15	0.30	-0.14
Sweden	**66.1**	0.79	0.05	0.24	-0.08
Switzerland	**80.8**	0.33	0.26	0.14	0.27
U.K.	**53.5**	0.38	0.14	0.36	0.12
U.S.A.	**74.6**	0.43	0.06	0.50	0.01
OECD					
Unweighted	**73.0**	0.49	0.17	0.21	0.12
Weighted	**73.5**	0.51	0.14	0.22	0.15

Note: * 1860/4-2005/7

The four columns add up to 1.

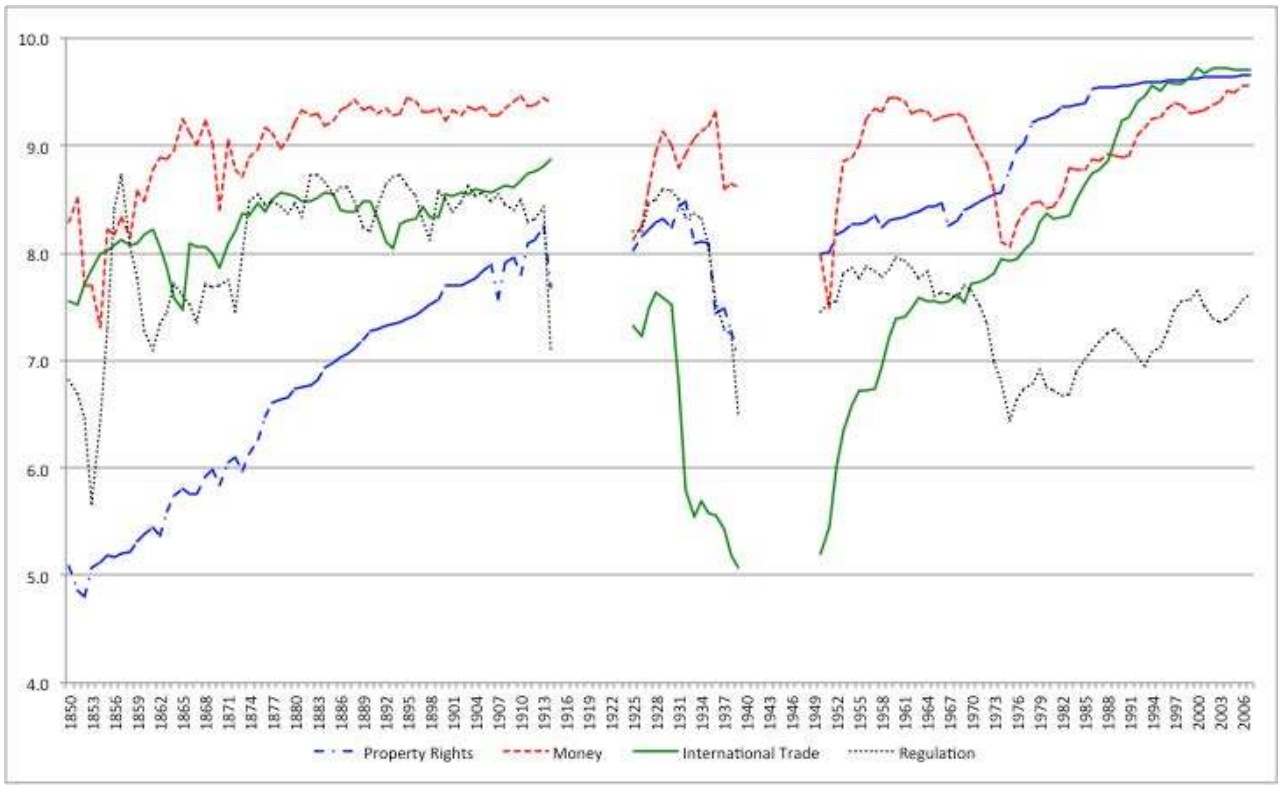

Figure 1. ***Economic Liberty Dimensions, 1850-2007*** (unweighted averages)

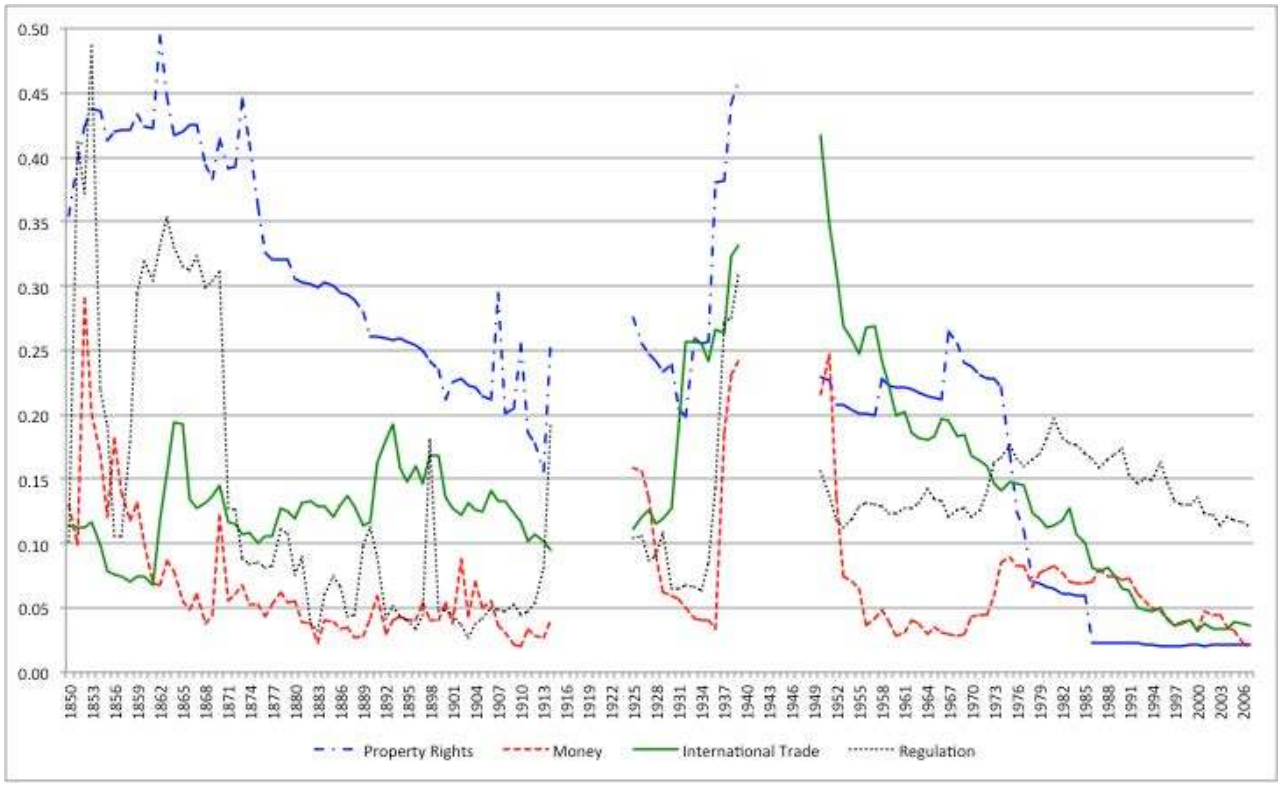

Figure 2. ***Dispersion of Economic Liberty Dimensions, 1850-2007***
(coefficient of variation) (unweighted averages)

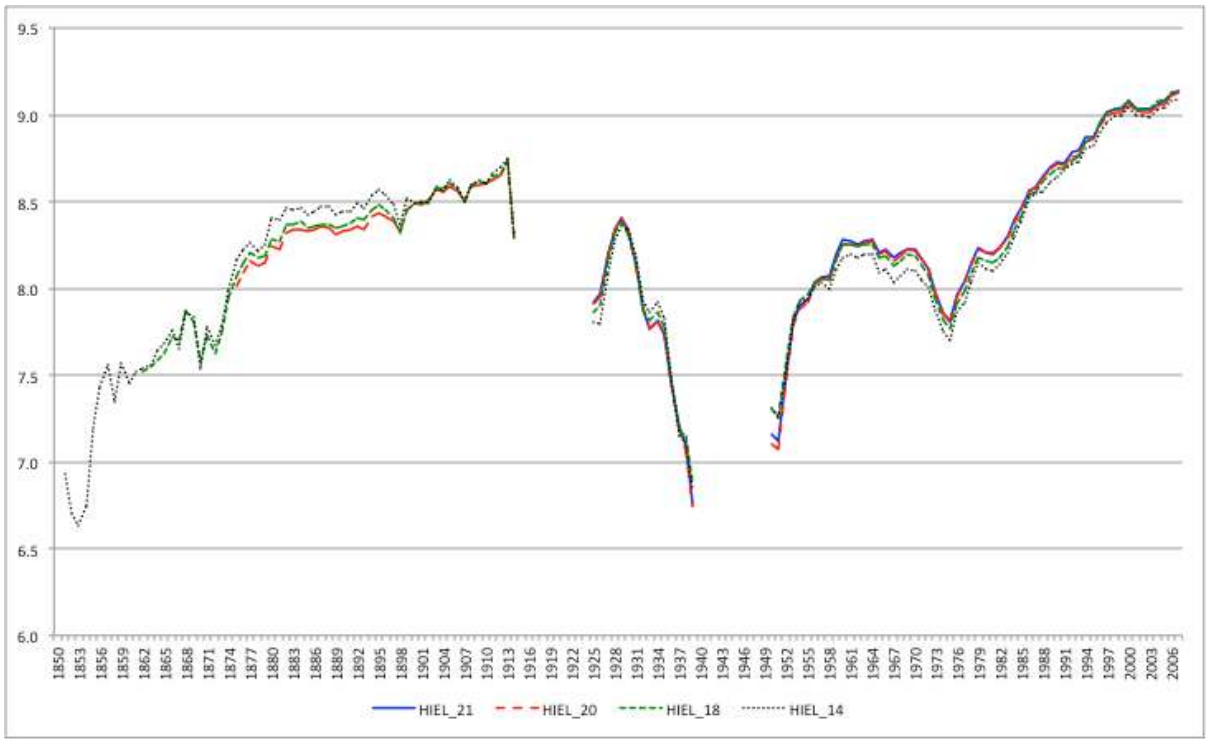

Figure 3a. ***Indices of Economic Liberty: Alternative Samples*** (unweighted averages)

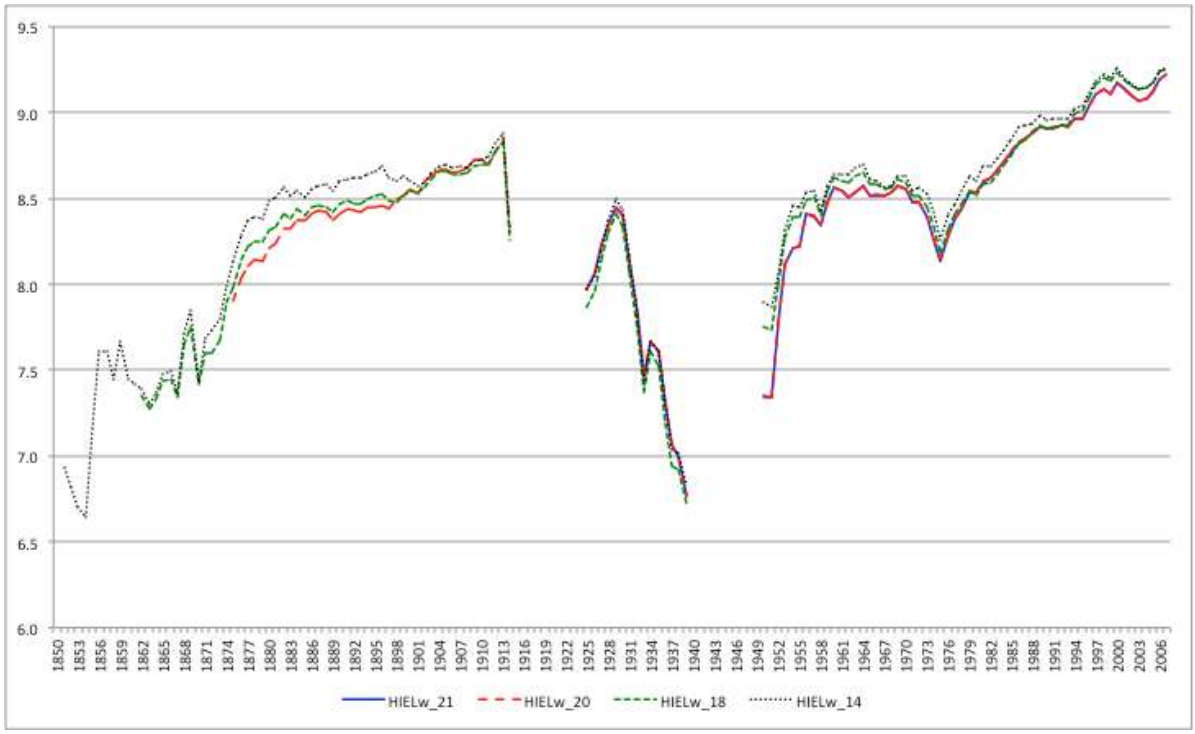

Figure 3b. ***Indices of Economic Liberty: Alternative Samples*** (population-weighted averages)

Note: The number after *HIEL* indicates the number of countries included in each sample.
HIEL14 (1850-2007), Australia, Belgium, Denmark, France, Germany, Greece, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, U.K. and U.S.A.
HIEL18,(1862-2007), those in *HIEL14* plus Canada, Finland, Italy, and New Zealand
HIEL20 (1875-2007), those in *HIEL18* plus Austria and Japan
HIEL21 (1925-2007), those in *HIEL20* plus Ireland

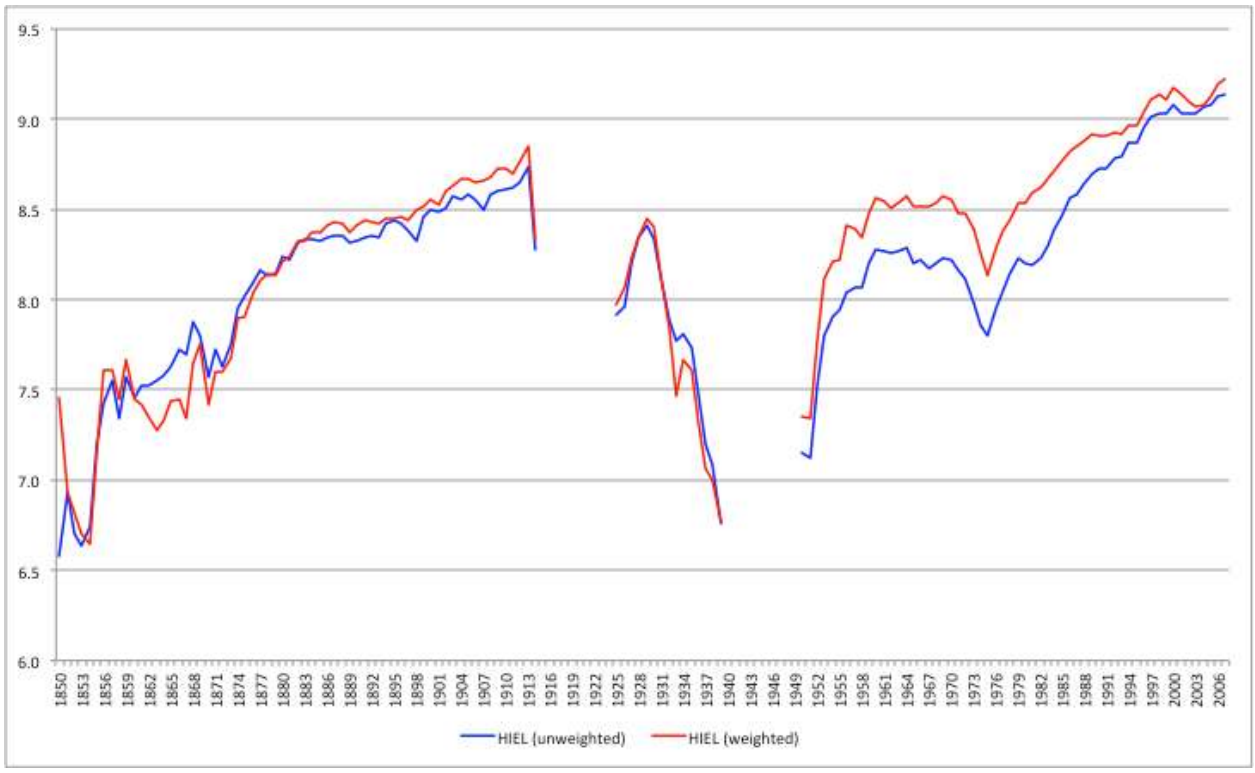

Figure 4. ***Historical Indices of Economic Liberty (HIEL) in OECD, 1850-2007: Unweighted and Population-weighted Averages*** (spliced)

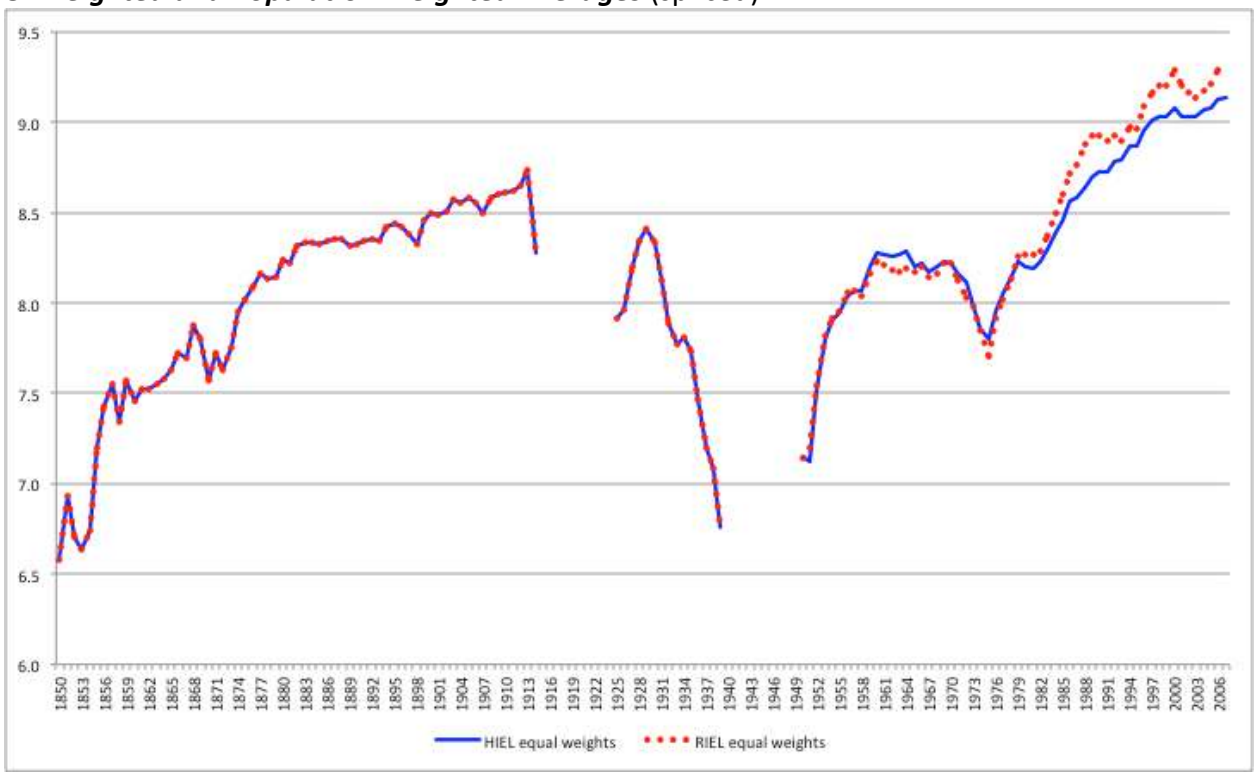

Figure 5. ***Alternative Historical Indices of Economic Liberty with Full (HIEL) and Reduced (RIEL) Set of Indicators for 1950-2007*** (average spliced estimates (Unweighted)

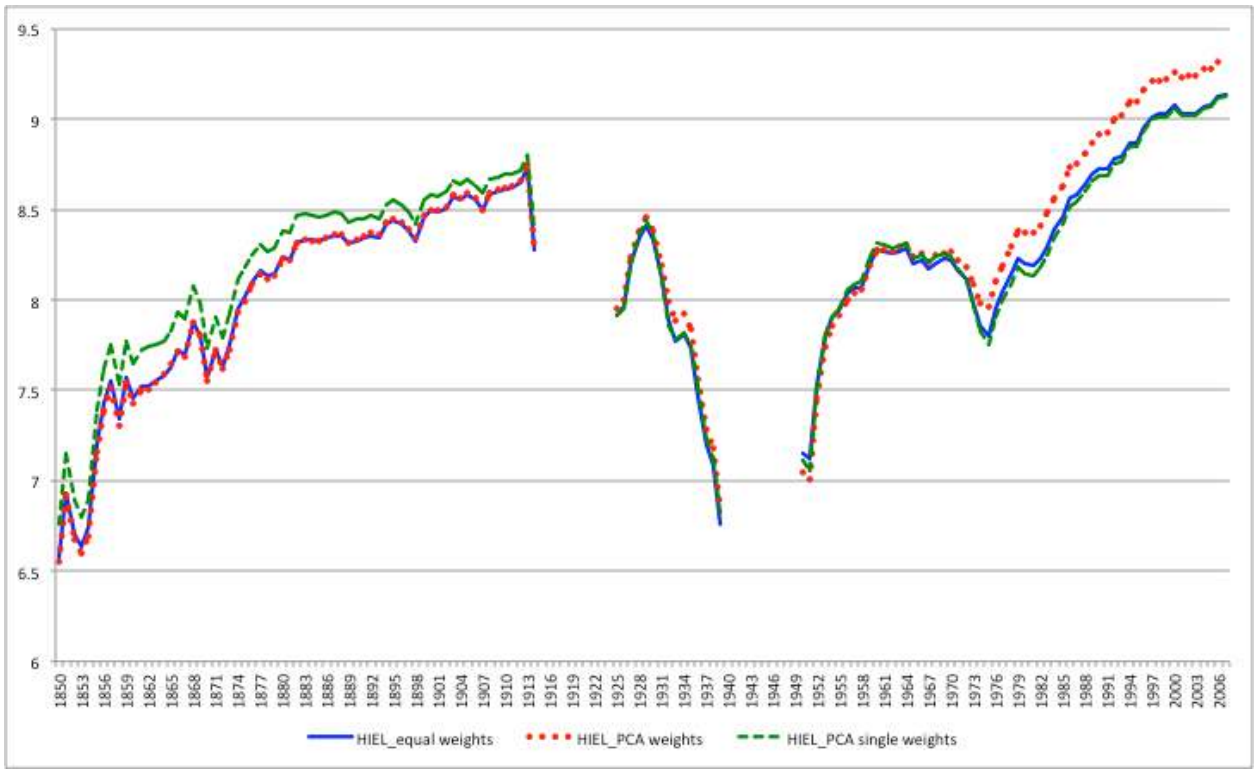

Figure 6. ***Alternative Historical Indices of Economic Liberty (HIEL) with Equal and PCA Weighting*** (average spliced estimates) (Unweighted)

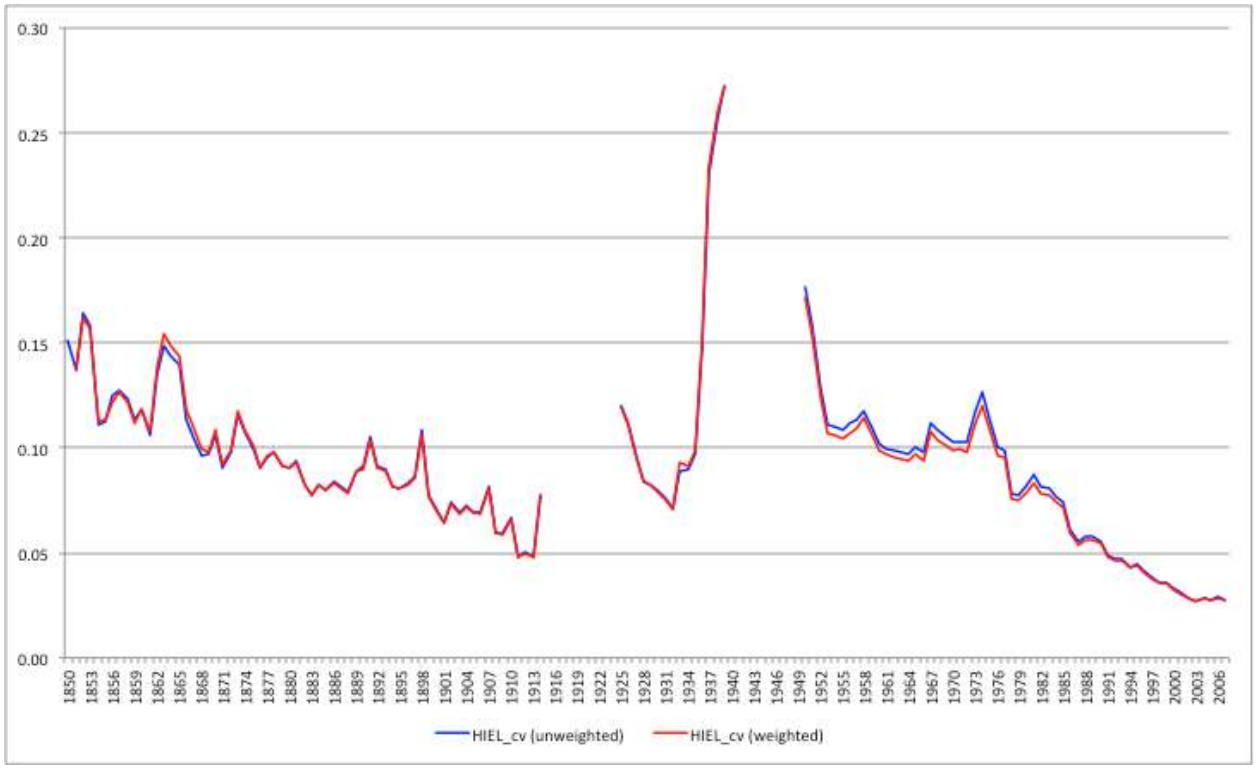

Figure 7. ***Dispersion of Economic Liberty in OECD Countries, 1850-2007*** coefficient of variation) (Unweighted and Population-weighted)

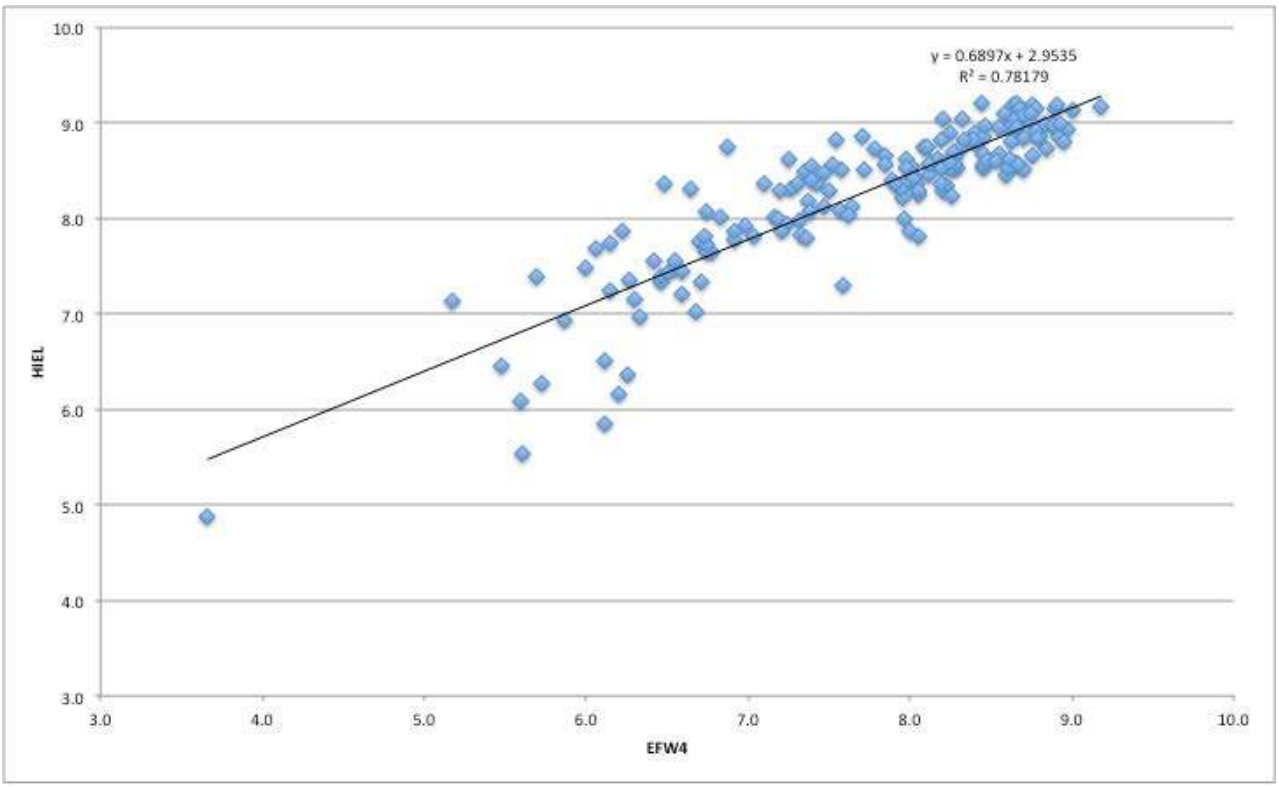

Figure 8a. ***Historical Index of Economic Liberty (HIEL) [vertical] and Fraser Institute's Index of Economic Freedom (EFW4) [horizontal], 1970-2005/7***
Sources: See the text and Gwartney et al. (2012)

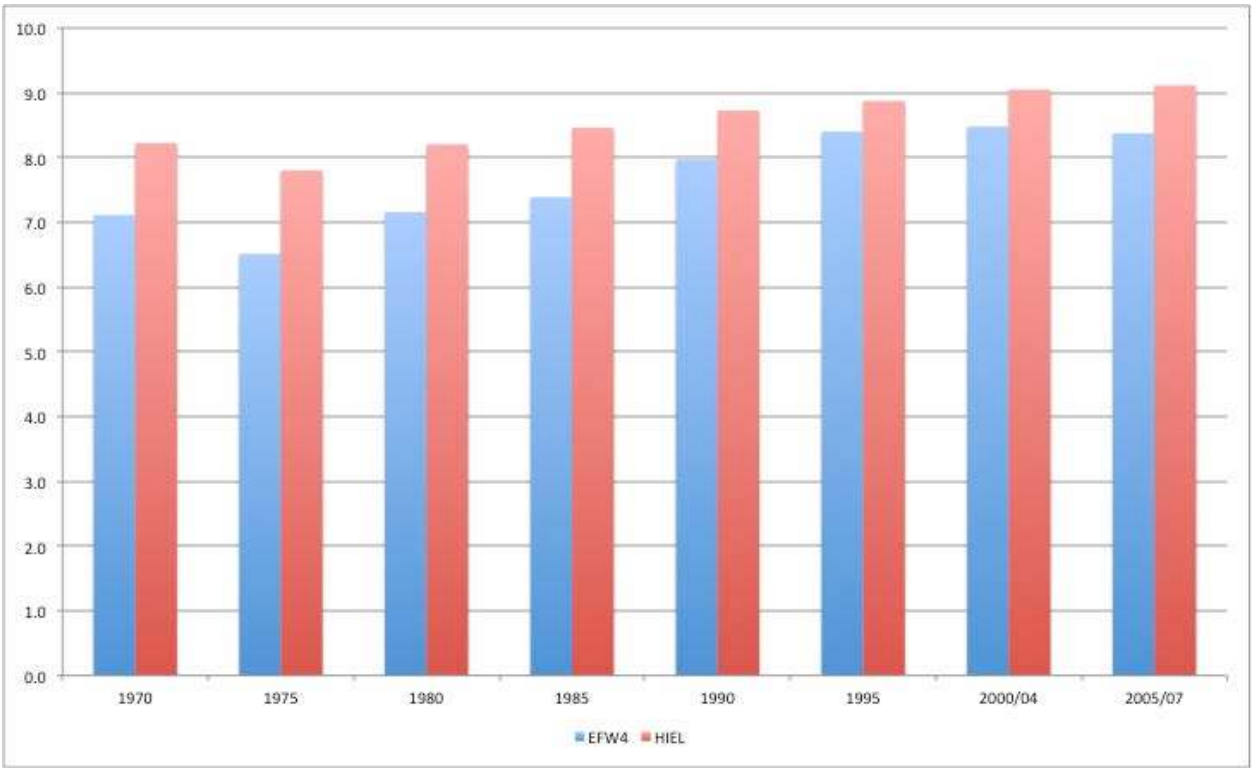

Figure 8b. ***Historical Index of Economic Liberty (HIEL) and Fraser Institute's Index of Economic Freedom (EFW4), 1970-2005/7***
Sources: See the text and Gwartney et al. (2012)

Figure 9a. ***Economic Liberty and its Dimensions: OECD, 1850-2007*** (unweighted average)

Figure 9b. ***Economic Liberty and its Dimensions: OECD, 1850-2007*** (population-weighted average)

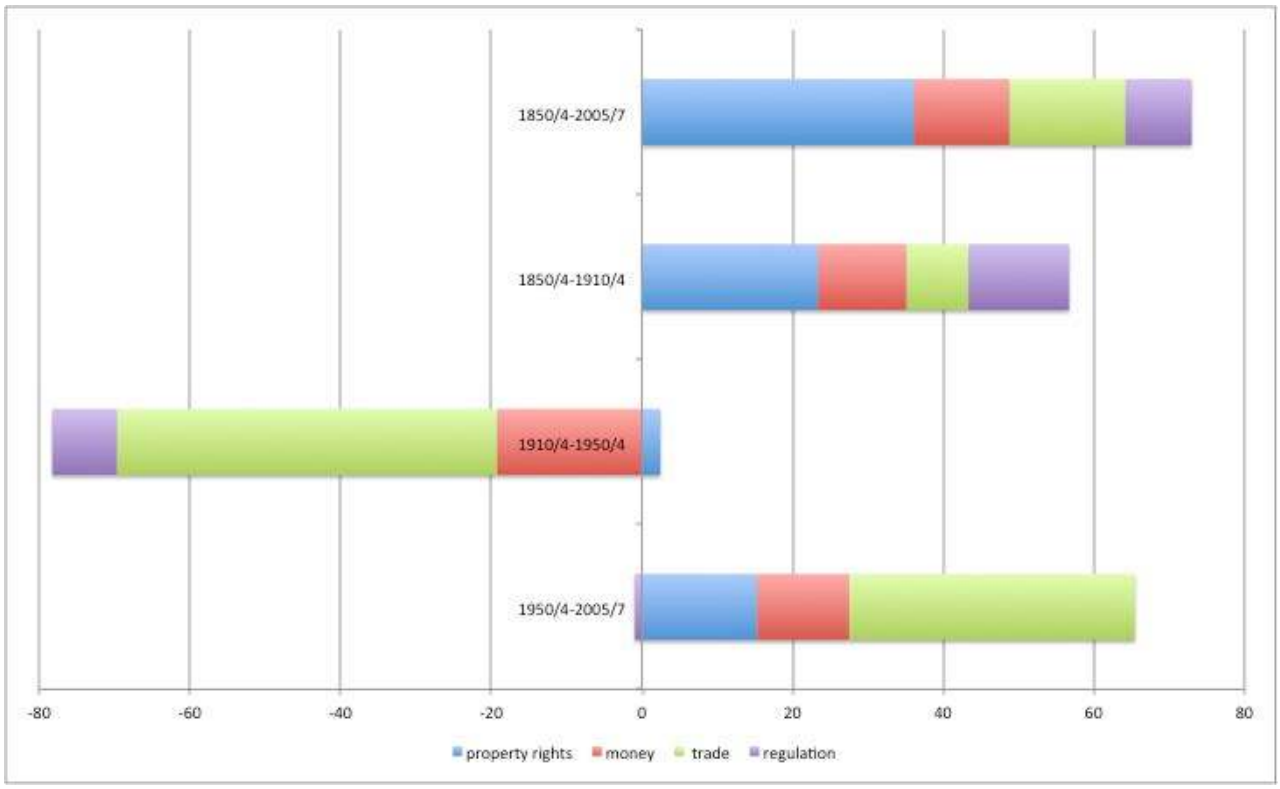

Figure 10a. ***Drivers of Economic Freedom over Main Phases: Decomposing the Percentage Shortfall in the OECD, 1850-2007*** (unweighted average)

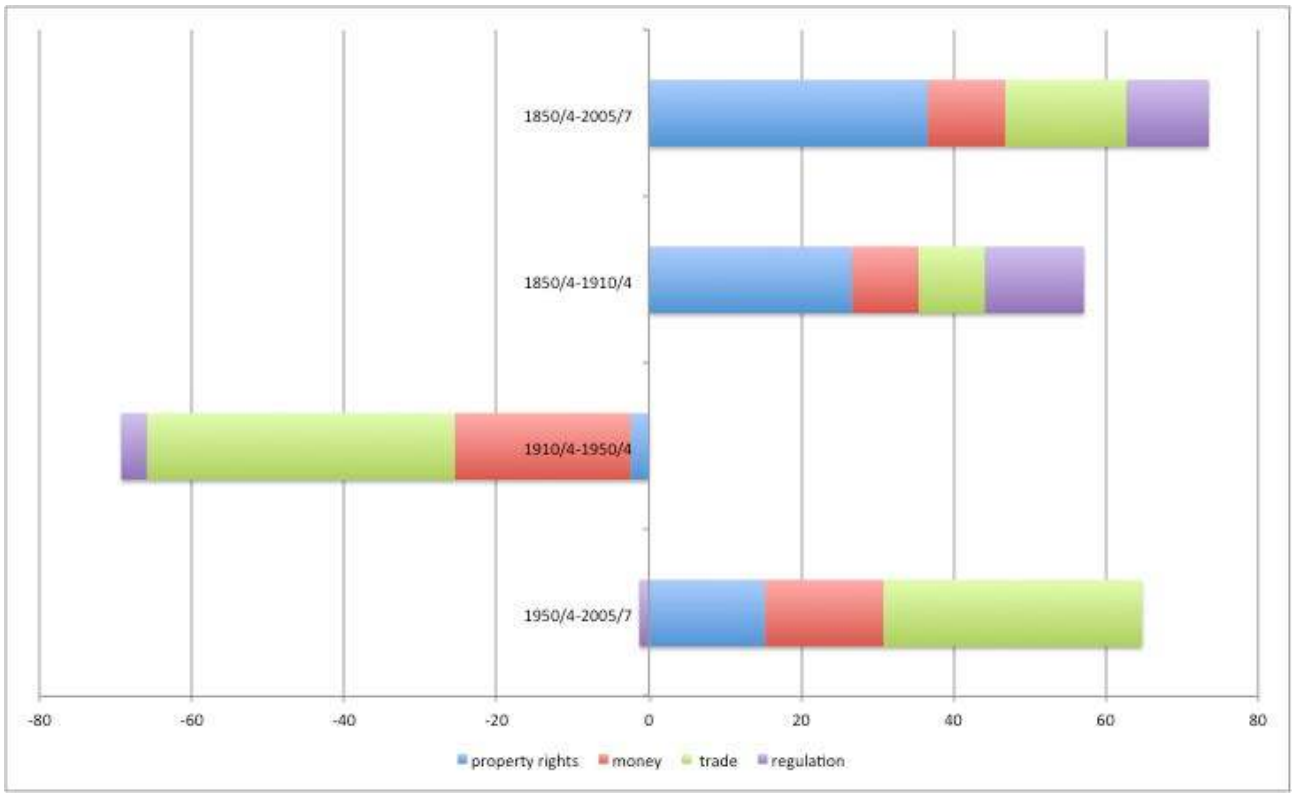

Figure 10b. ***Drivers of Economic Freedom over Main Phases: Decomposing the Percentage Shortfall in the OECD, 1850-2007*** (population-weighted average)

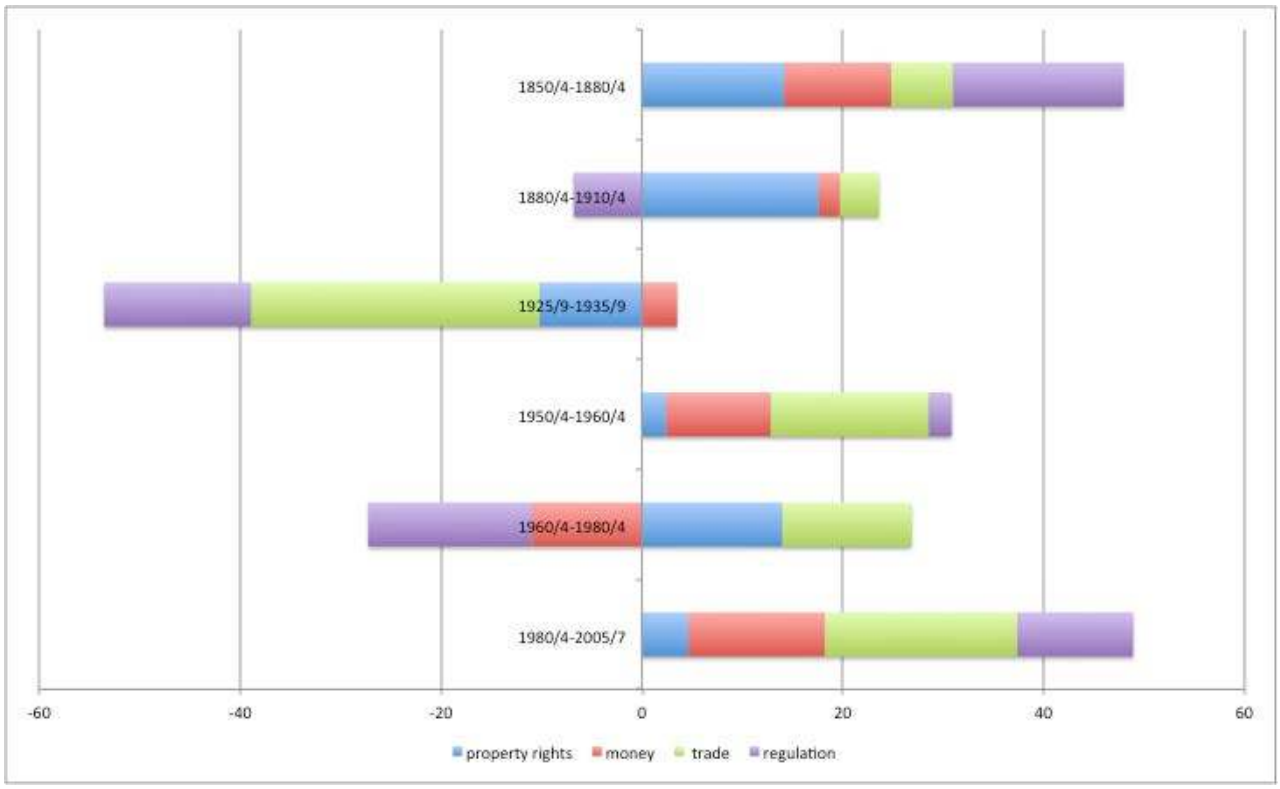

Figure 11a. ***Drivers of Economic Freedom over Long Swings: Decomposing the Percentage Shortfall in the OECD, 1850-2007*** (unweighted average)

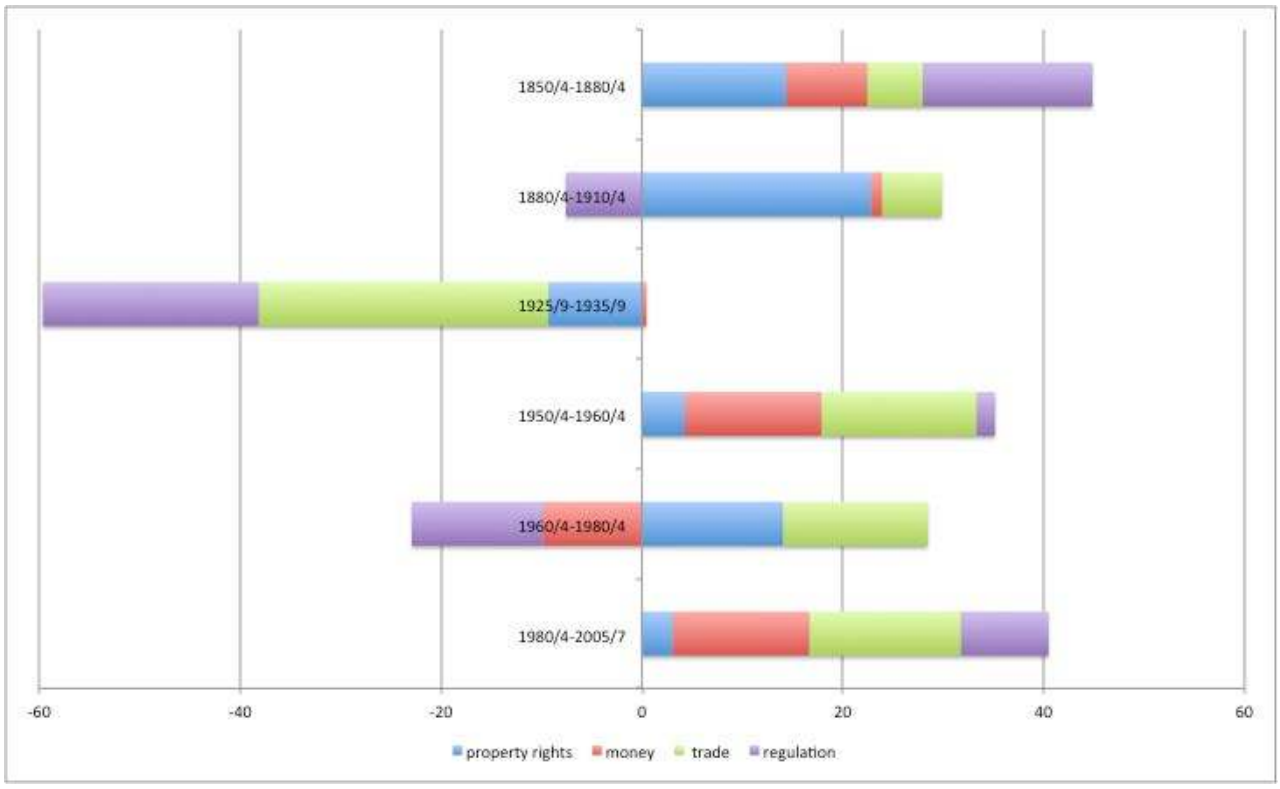

Figure 11b. ***Drivers of Economic Freedom over Long Swings: Decomposing the Percentage Shortfall in the OECD, 1850-2007*** (population-weighted average)

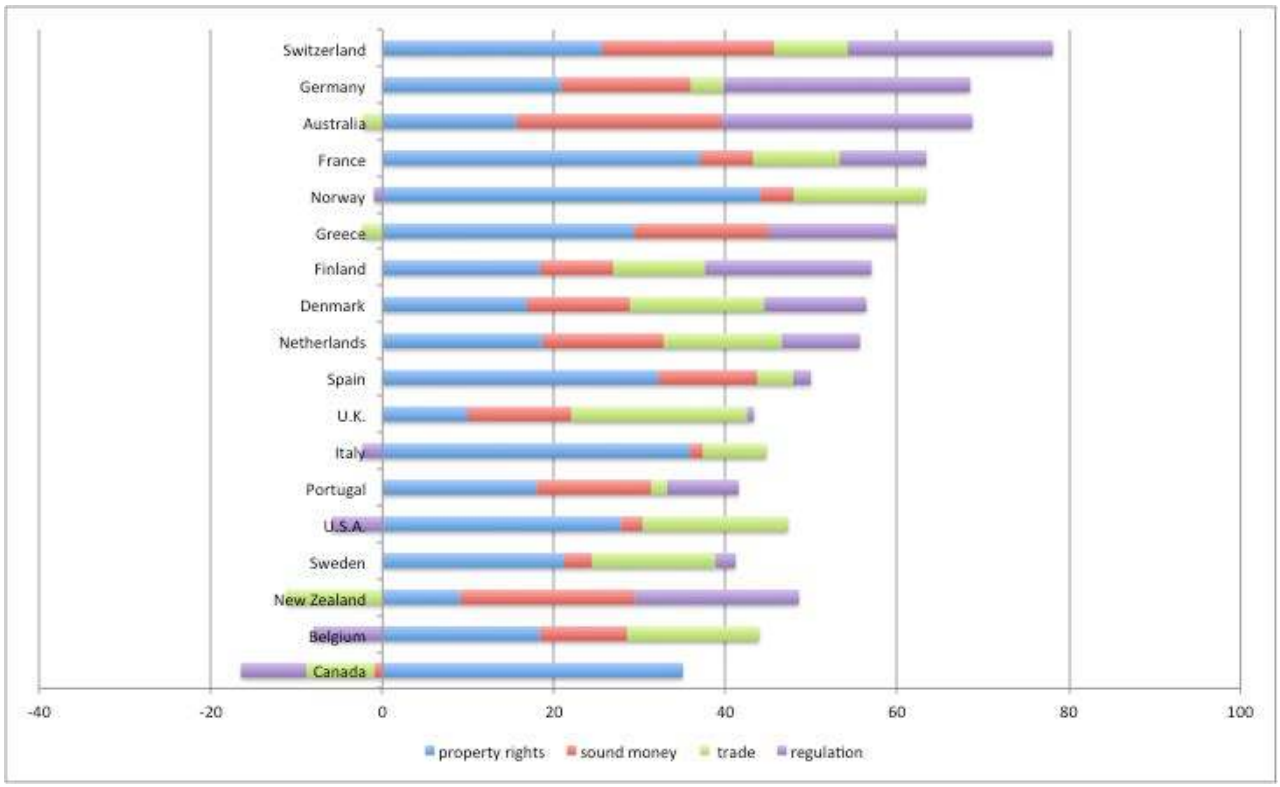

Figure 12. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1850/4-1910/4***

Note: Data for Canada, Finland, New Zealand, and Italy correspond to 1860/4-1910/4

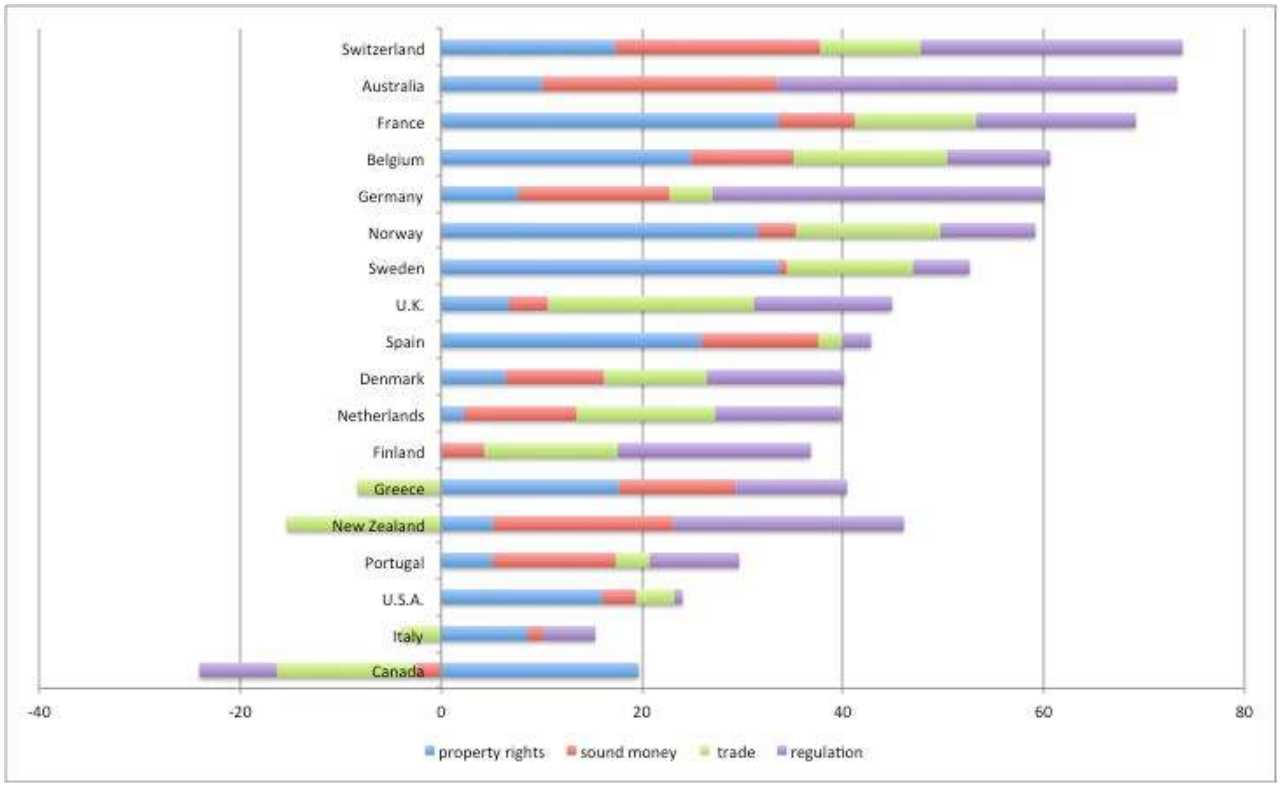

Figure 13. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1850/4-1880/4***

Note: Data for Canada, Finland, New Zealand, and Italy correspond to 1860/4-1880/4

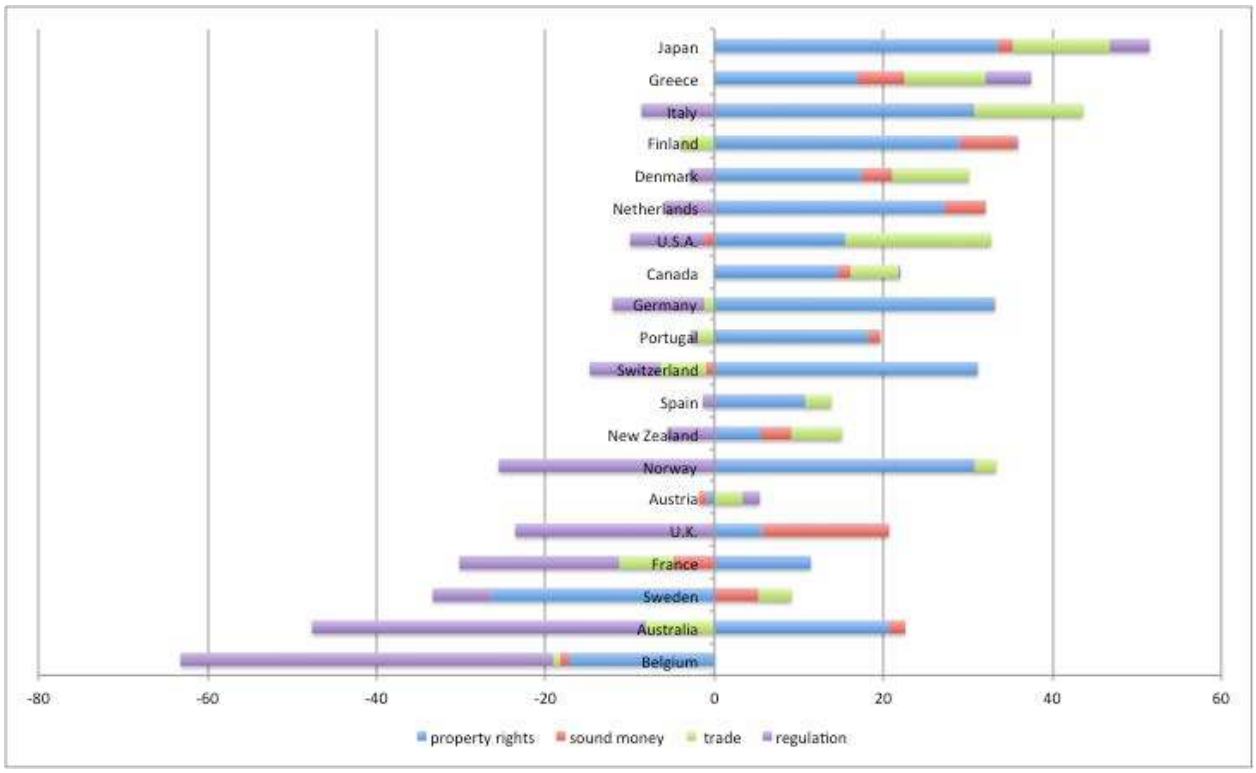

Figure 14. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1880/4-1910/4***

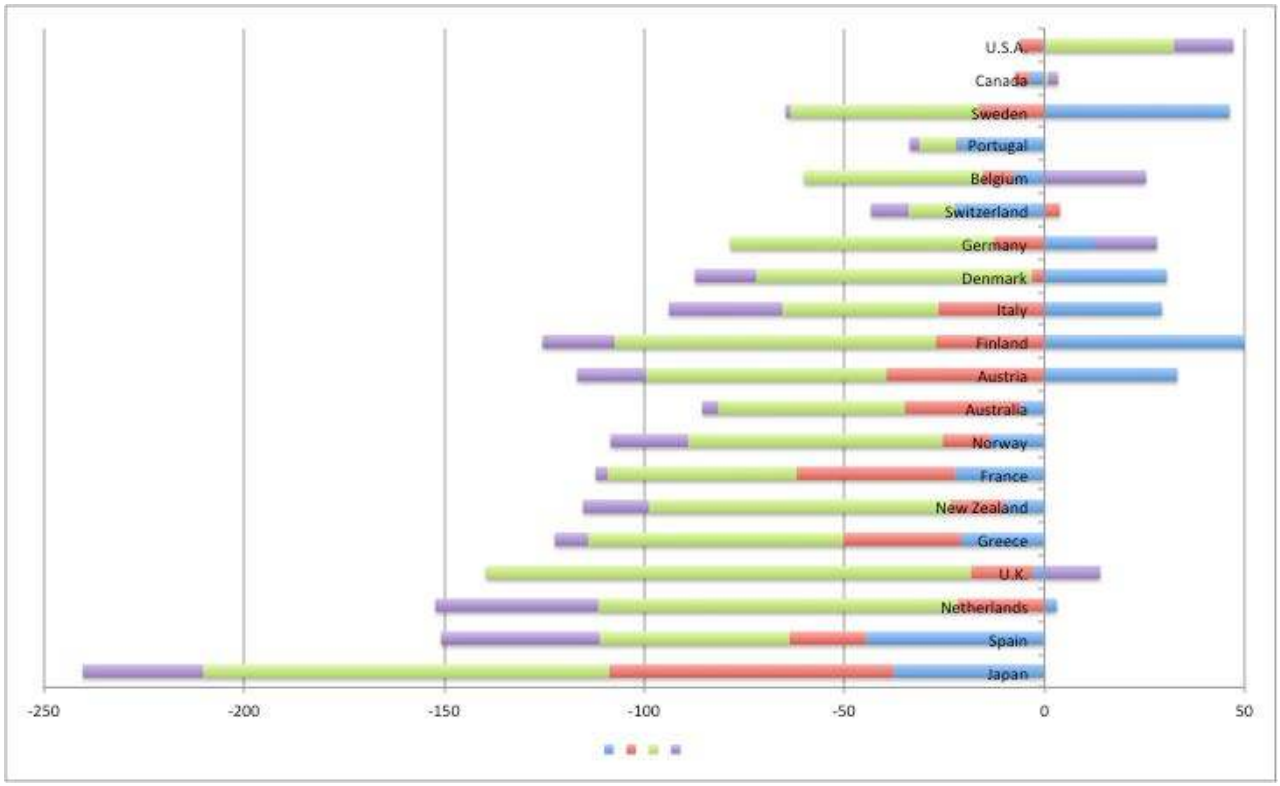

Figure 15. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1910/4-1950/4***

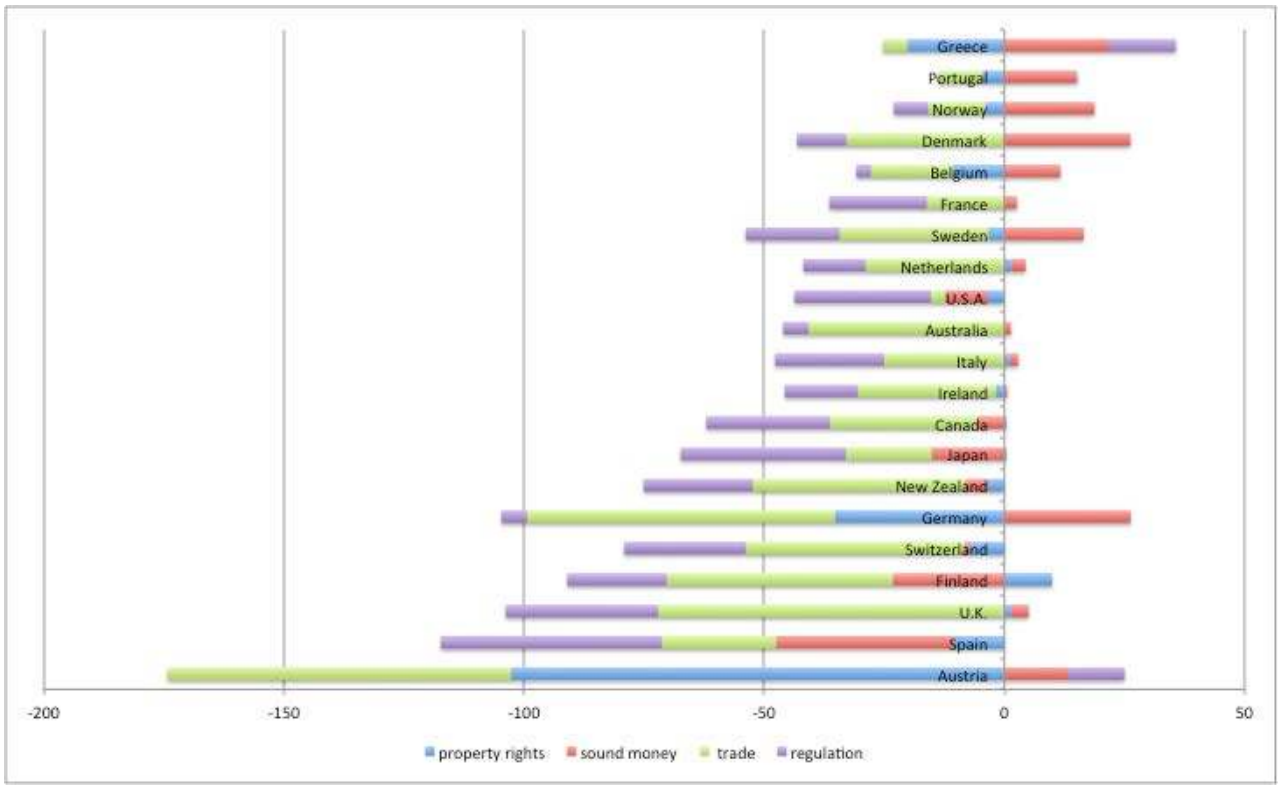

Figure 16. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1925/9-1935/9***

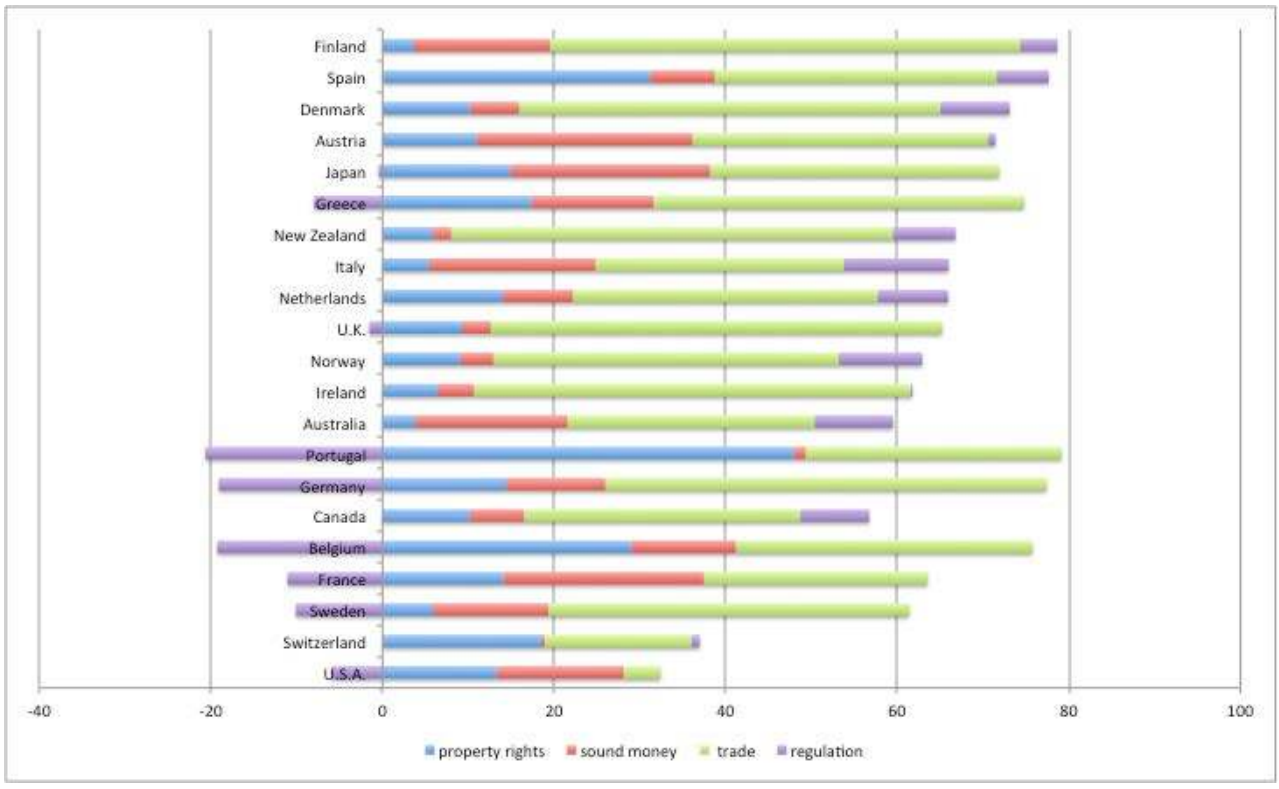

Figure 17. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1950/4-2005/7***

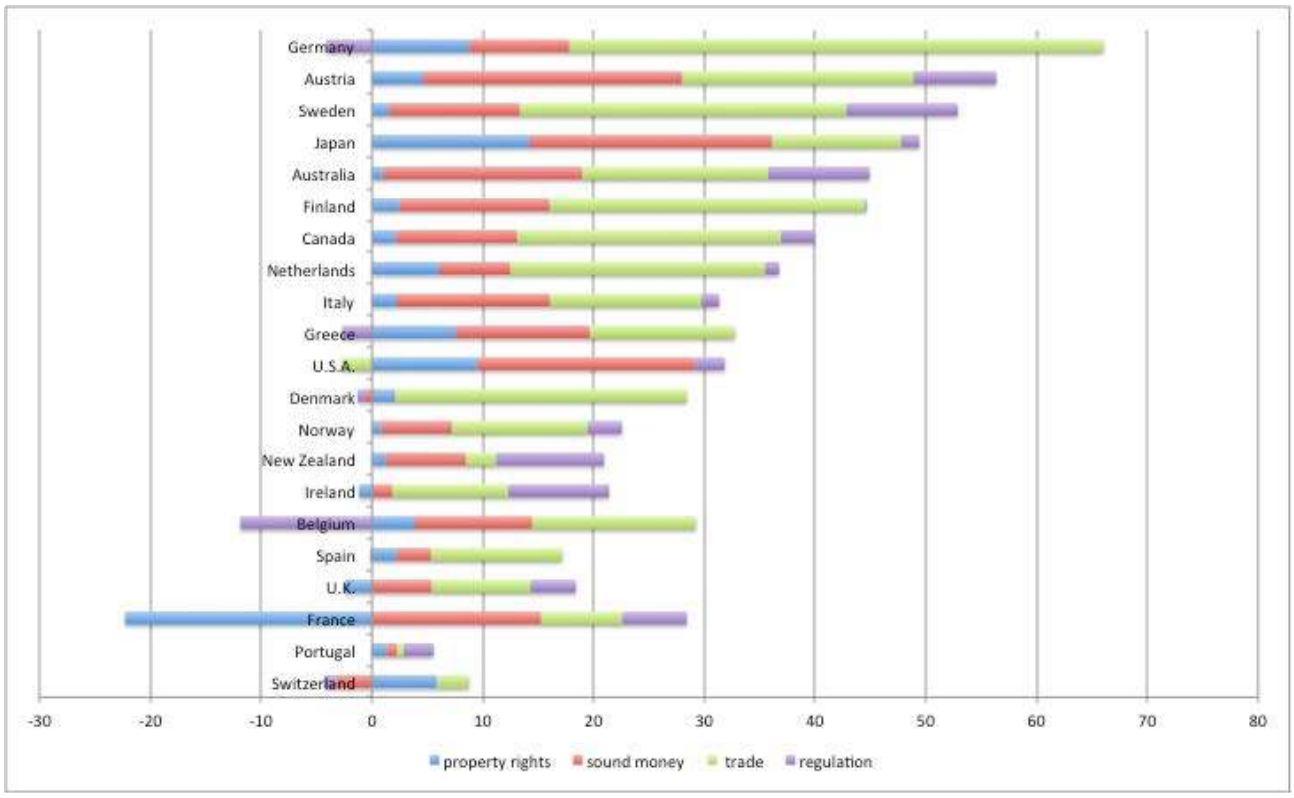

Figure 18. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1950/4-1960/4***

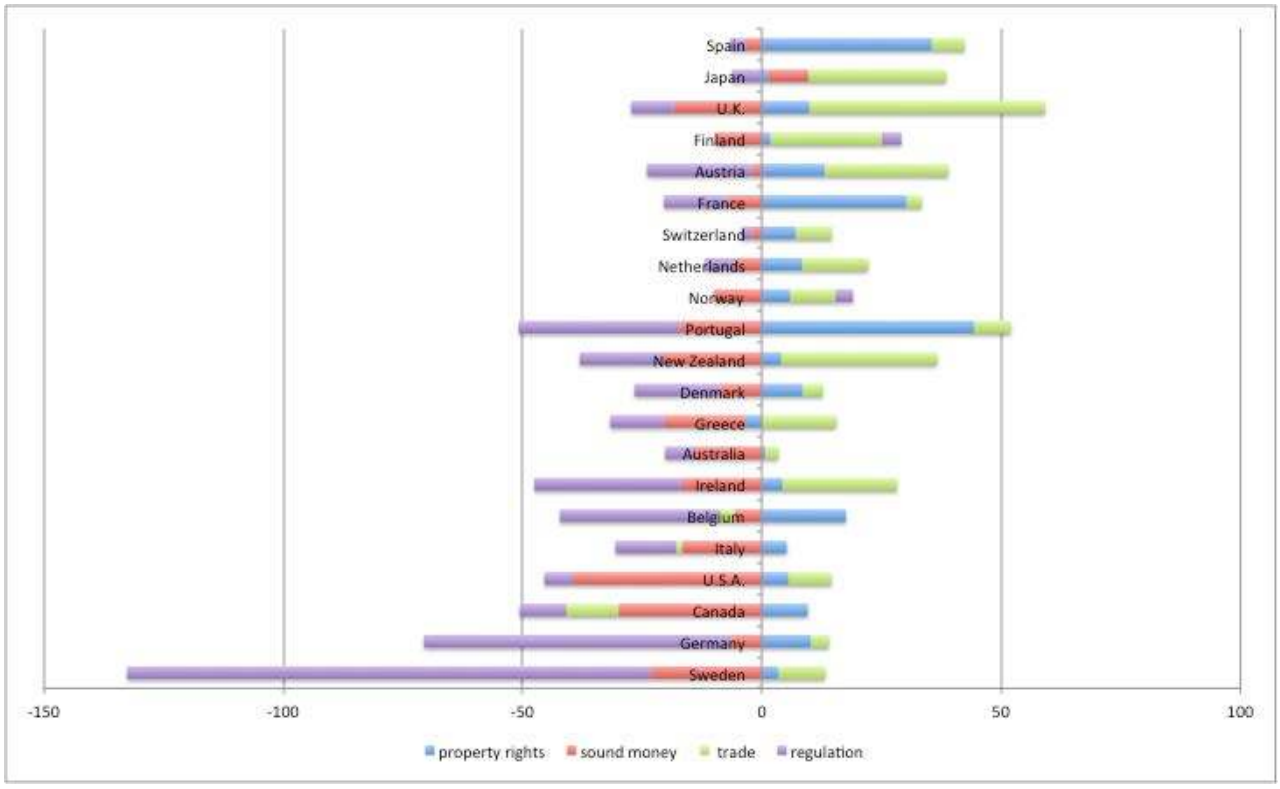

Figure 19. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1960/4-1980/4***

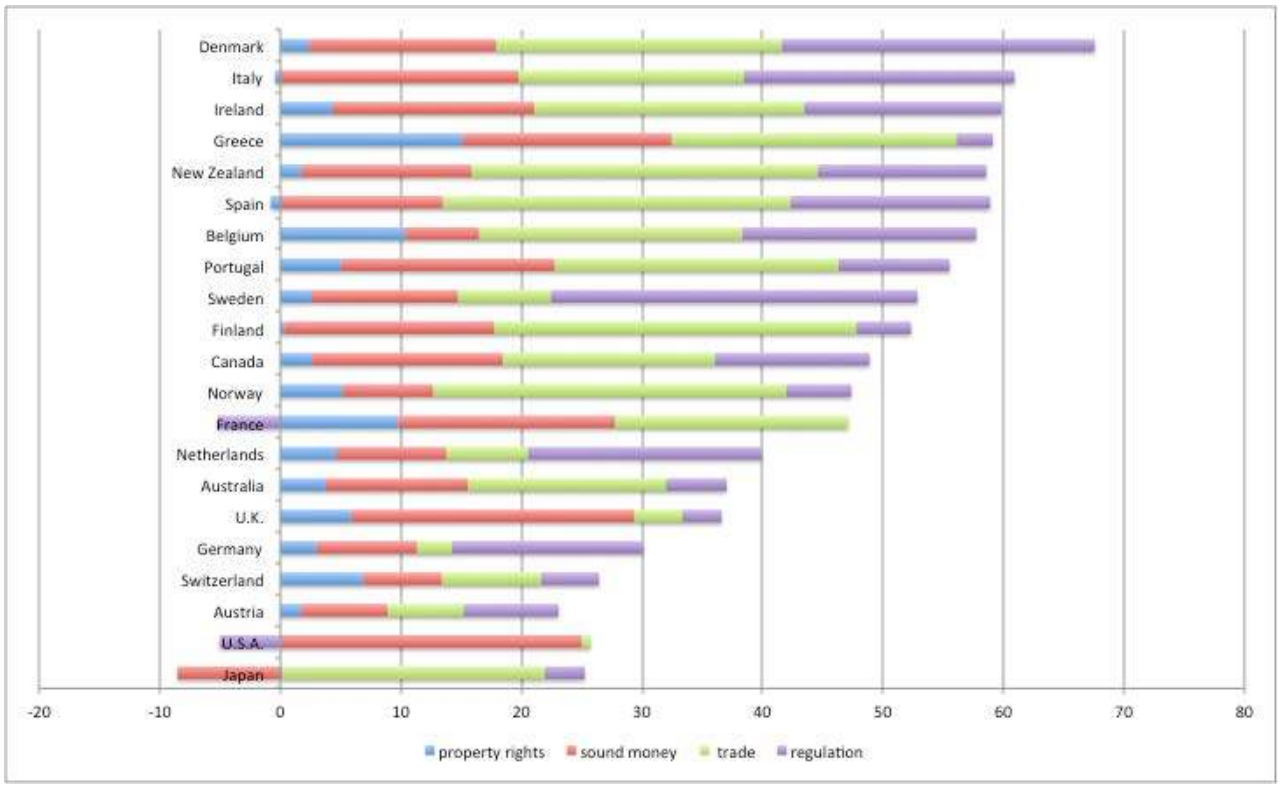

Figure 20. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1980/4-2005/7***

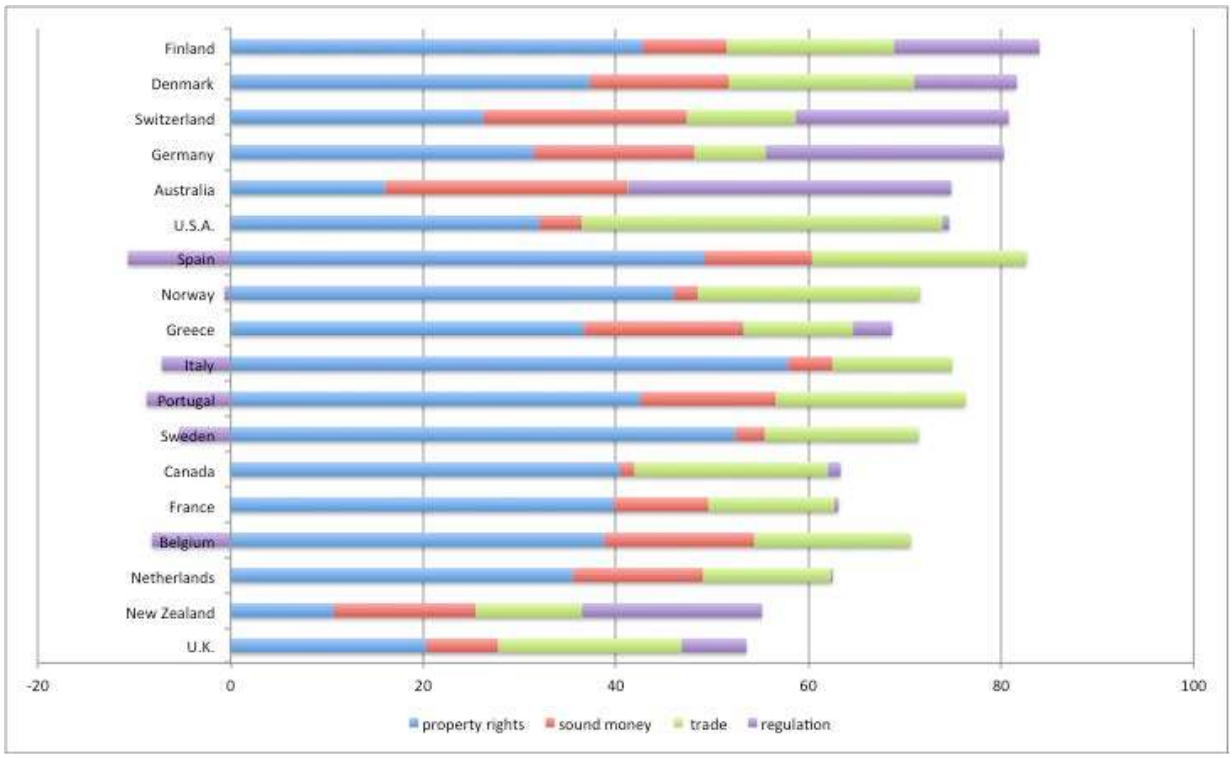

Figure 21. ***Drivers of Economic Freedom: Decomposing the Percentage Shortfall in OECD Countries, 1850-2007***

Note: Data for Canada, Finland, New Zealand, and Italy correspond to 1860/4-1910/4

Appendix A. Table A1. ***Historical Indices of Economic Liberty in the OECD, 1850-2007*** **(five-year averages)**

	OECD	
	Unweighted	Population-Weighted
1850/54	6.7	6.9
1855/59	7.4	7.5
1860/64	7.5	7.4
1865/69	7.7	7.5
1870/74	7.7	7.6
1875/79	8.1	8.1
1880/84	8.3	8.3
1885/89	8.3	8.4
1890/94	8.4	8.4
1895/99	8.4	8.5
1900/04	8.5	8.6
1905/09	8.6	8.7
1910/14	8.6	8.7
1925/29	8.2	8.2
1930/34	8.0	7.9
1935/39	7.3	7.2
1950/54	7.5	7.8
1955/59	8.1	8.4
1960/64	8.3	8.5
1965/69	8.2	8.5
1970/74	8.1	8.4
1975/79	8.0	8.4
1980/84	8.3	8.6
1985/89	8.6	8.8
1990/94	8.8	8.9
1995/99	9.0	9.1
2000/04	9.0	9.1
2005/07	9.1	9.2

Appendix A. Table A2. ***Alternative OECD Country Ranking: Fraser Institute's Index of Economic Freedom (EFW4) and Historical Index of Economic Liberty (HIEL), 1970-2005/7***

1970				1975				1980			
EFW4		**HIEL**		**EFW4**		**HIEL**		**EFW4**		**HIEL**	
Canada	8.7	U.S.A.	9.3	U.S.A.	8.4	U.S.A.	9.1	U.S.A.	8.6	U.S.A.	9.2
U.S.A.	8.2	Canada	9.2	Switzerland	7.7	Switzerland	8.8	Switzerland	8.3	Canada	9.1
Germany	8.1	Switzerland	9.1	Belgium	7.6	Canada	8.8	Canada	8.3	Switzerland	9.0
Belgium	8.1	Germany	9.1	Canada	7.6	Germany	8.5	Netherlands	8.1	Austria	8.7
Switzerland	7.7	Sweden	8.8	Germany	7.5	Austria	8.5	Belgium	8.0	Germany	8.7
Netherlands	7.6	Austria	8.8	Netherlands	7.2	Netherlands	8.3	Germany	7.9	U.K.	8.7
Denmark	7.6	Australia	8.6	Denmark	6.9	Denmark	8.2	Australia	7.3	Japan	8.6
Australia	7.4	Denmark	8.6	Austria	6.7	Sweden	8.1	Austria	7.3	Netherlands	8.6
Finland	7.3	Netherlands	8.5	U.K.	6.7	N. Zealand	8.1	U.K.	7.2	Finland	8.5
Ireland	7.2	Finland	8.4	Ireland	6.5	Finland	8.0	Denmark	7.2	Denmark	8.4
U.K.	6.8	Ireland	8.3	Japan	6.5	Australia	7.9	Finland	7.2	Australia	8.3
France	6.8	Japan	8.3	Finland	6.5	Japan	7.9	Japan	7.2	N. Zealand	8.3
N. Zealand	6.7	U.K.	8.2	Australia	6.4	Norway	7.8	N. Zealand	7.0	Norway	8.1
Japan	6.7	N. Zealand	8.2	Norway	6.3	Belgium	7.7	Ireland	6.9	Ireland	8.1
Norway	6.7	Belgium	8.2	France	6.2	U.K.	7.6	Sweden	6.7	Belgium	8.1
Austria	6.6	Italy	8.0	Sweden	6.1	Ireland	7.6	Norway	6.6	Sweden	7.8
Sweden	6.5	France	7.9	N. Zealand	6.0	France	7.6	France	6.6	France	7.6
Portugal	6.3	Norway	7.7	Spain	5.6	Italy	7.2	Spain	6.3	Italy	7.5
Spain	6.2	Portugal	6.9	Greece	5.6	Greece	6.4	Portugal	6.1	Spain	7.4
Italy	6.1	Spain	6.5	Italy	5.2	Spain	6.1	Greece	5.7	Portugal	6.9
Greece	6.1	Greece	6.1	Portugal	3.7	Portugal	5.5	Italy	5.7	Greece	6.8
Coefficient of correlation			**0.72**				**0.86**				**0.88**

1985				1990				1995			
EFW4		**HIEL**		**EFW4**		**HIEL**		**EFW4**		**HIEL**	
U.S.A.	8.6	U.S.A.	9.4	U.S.A.	8.8	U.S.A.	9.4	N. Zealand	9.2	N. Zealand	9.5
Switzerland	8.6	Switzerland	9.3	U.K.	8.7	Switzerland	9.3	Ireland	8.9	U.S.A.	9.4
Canada	8.4	U.K.	9.0	Canada	8.7	Canada	9.3	U.S.A.	8.9	Switzerland	9.3
U.K.	8.3	Japan	8.9	Switzerland	8.6	N. Zealand	9.0	U.K.	8.9	Canada	9.3
Netherlands	8.1	Canada	8.9	N. Zealand	8.5	Denmark	9.0	Denmark	8.9	Denmark	9.3
Germany	8.0	Germany	8.9	Germany	8.3	Austria	8.9	Netherlands	8.8	Ireland	9.2
Belgium	8.0	N. Zealand	8.8	Denmark	8.3	Japan	8.9	Finland	8.7	U.K.	9.1
Australia	7.9	Netherlands	8.8	Netherlands	8.3	U.K.	8.9	Canada	8.7	Norway	9.0
Finland	7.6	Austria	8.7	Sweden	8.3	Finland	8.9	Norway	8.7	Australia	9.0
Sweden	7.5	Australia	8.7	Norway	8.2	Australia	8.9	Switzerland	8.6	Sweden	8.8
Denmark	7.4	Finland	8.6	Belgium	8.2	Ireland	8.9	Australia	8.6	Belgium	8.8
Norway	7.4	Ireland	8.5	Australia	8.1	Netherlands	8.9	Sweden	8.5	Austria	8.7
Japan	7.3	Denmark	8.5	Finland	8.0	Germany	8.8	Germany	8.5	Japan	8.7
Austria	7.3	Norway	8.4	Japan	8.0	Norway	8.7	Belgium	8.3	Netherlands	8.7
Ireland	7.1	Sweden	8.2	Austria	8.0	Belgium	8.7	Austria	8.3	Finland	8.7
N. Zealand	6.9	Belgium	8.2	France	8.0	Sweden	8.6	Japan	8.1	Spain	8.6
France	6.7	France	8.0	Ireland	7.5	France	8.4	Spain	8.0	Germany	8.6
Spain	6.6	Spain	7.8	Italy	7.4	Italy	8.3	France	8.0	Italy	8.5
Italy	6.2	Italy	7.8	Spain	7.0	Spain	8.1	Portugal	7.9	Portugal	8.5
Portugal	5.9	Portugal	7.4	Portugal	6.5	Portugal	7.8	Italy	7.4	France	8.4
Greece	5.5	Greece	6.8	Greece	6.3	Greece	7.5	Greece	6.7	Greece	7.9
Coefficient of correlation			**0.89**				**0.92**				**0.87**

Appendix A. Table A2. ***Alternative OECD Country Ranking: Fraser Institute's Index of Economic Freedom (EFW4) and Historical Index of Economic Liberty (HIEL), 1970-2005/7*** **(cont.)**

2000/4				2005/7			
EFW4		**HIEL**		**EFW4**		**HIEL**	
U.K.	9.0	U.S.A.	9.4	N. Zealand	8.9	U.S.A.	9.5
Denmark	9.0	Canada	9.4	Denmark	8.9	Canada	9.5
N. Zealand	9.0	Ireland	9.3	Netherlands	8.8	Denmark	9.4
Netherlands	8.8	Finland	9.3	Ireland	8.8	N. Zealand	9.3
Switzerland	8.8	Switzerland	9.3	U.K.	8.7	Switzerland	9.3
Finland	8.8	Denmark	9.3	Canada	8.7	Ireland	9.3
U.S.A.	8.8	U.K.	9.3	Australia	8.7	Finland	9.3
Canada	8.7	N. Zealand	9.2	Finland	8.6	U.K.	9.2
Ireland	8.7	Germany	9.1	Sweden	8.5	Netherlands	9.2
Sweden	8.6	Sweden	9.1	Austria	8.5	Belgium	9.1
Austria	8.6	Netherlands	9.0	Switzerland	8.5	Germany	9.1
Australia	8.6	Norway	9.0	U.S.A.	8.4	Norway	9.1
Belgium	8.4	Australia	9.0	Belgium	8.3	Australia	9.0
Germany	8.4	Italy	9.0	Japan	8.2	Italy	9.0
France	8.2	Austria	9.0	Germany	8.2	Sweden	9.0
Japan	8.2	Belgium	8.9	France	8.2	Austria	9.0
Norway	8.2	Spain	8.9	Norway	8.1	Spain	9.0
Portugal	8.1	Japan	8.8	Portugal	7.9	Japan	8.9
Spain	8.0	Portugal	8.7	Spain	7.8	Greece	8.7
Italy	7.8	Greece	8.6	Italy	7.5	Portugal	8.7
Greece	7.4	France	8.5	Greece	7.5	France	8.6
Coefficient of correlation			**0.77**				**0.69**

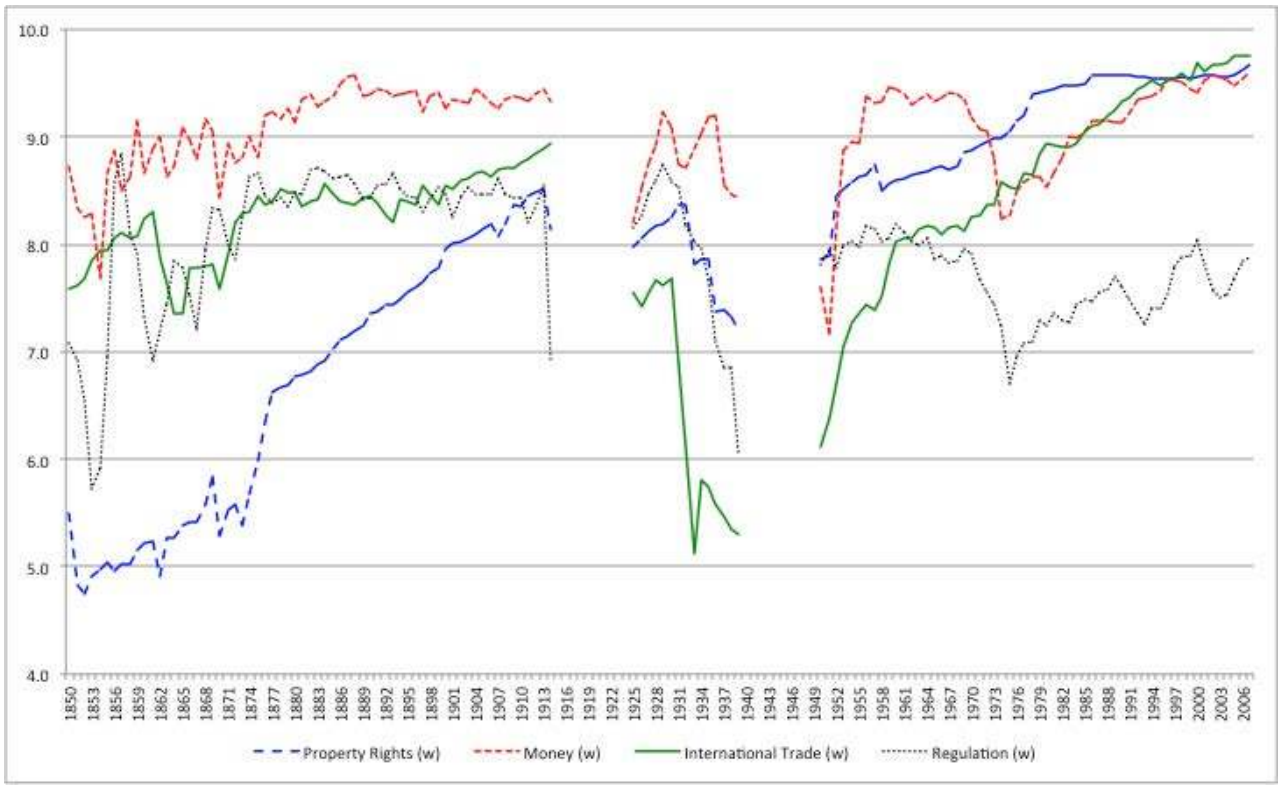

Figure A.1. ***Economic Liberty Dimensions, 1850-2007*** (population-weighted averages)

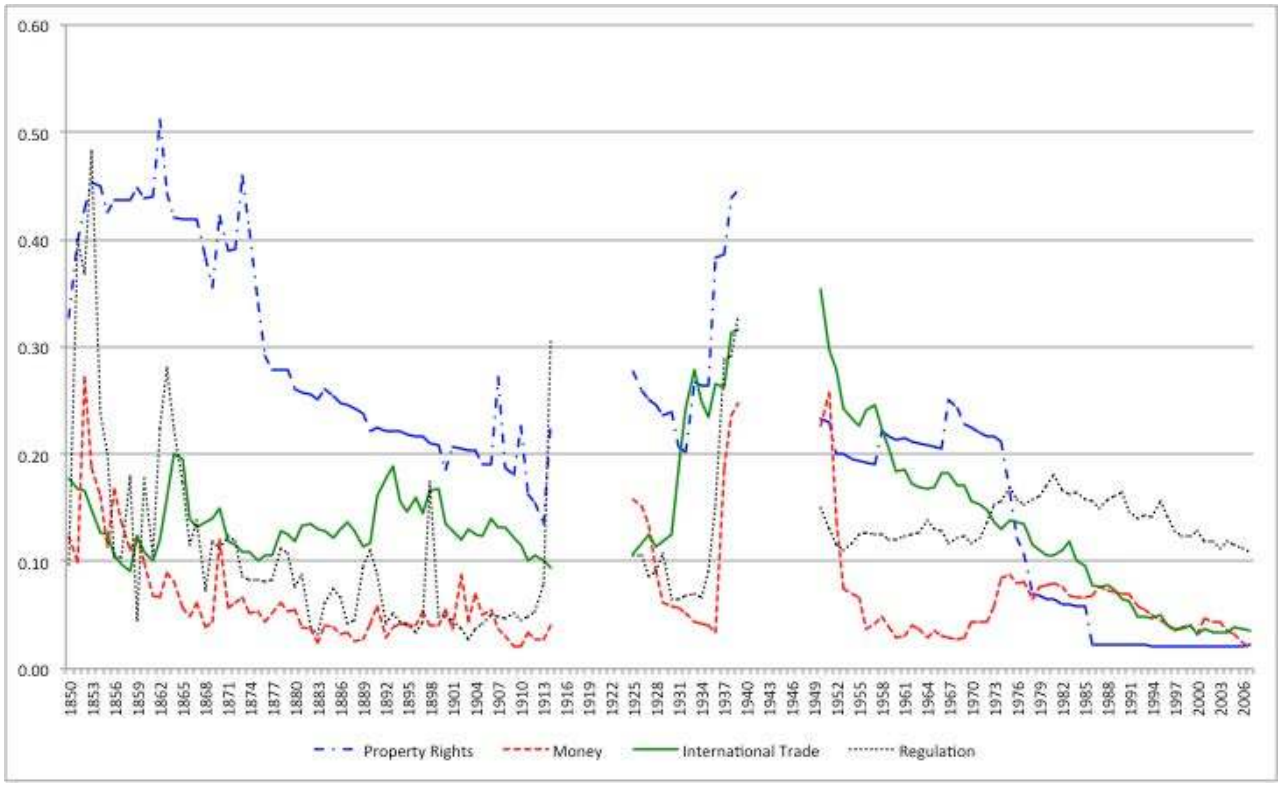

Figure A.2. ***Dispersion of Economic Liberty Dimensions, 1850-2007***
(coefficient of variation) (unweighted averages)

Appendix on Sources

Legal Structure and Security of Property Rights

A) Constraint on the executive (EXCONST).

This measure focuses on the operational independence of chief executive. Thus, it relates to "the extent of institutionalized constraints on the decision-making powers of chief executives" and aims at capturing "the checks and balances between the various parts of the decision-making process" (Marshall et al. 2013: 24). Its value ranges between 1 and 7. A value of 1 would correspond a situation in which "there are no regular limitations on the executive's actions" while a value of 7 is that of a situation in which "accountability groups have effective authority equal to or greater than the executive in most activity" (Marshall et al. 2013: 24-25). Its source is Marshall (2013).

B) Contract-Intensive Money (CIM)

The "contract intensive money" (*CIM*) measures the percentage of deposits in money supply: $CIM = (M2 - C) / M2$,

In which *C* represents currency outside banks and *M2* the money supply including all (current and term) deposits.

In the construction of the transformed index, the range within which *CIM* fluctuates, 1 and 0, has provided the upper and lower bounds.

The sources used for each country are,

Australia

Vamplew (1987), up to 1983; IMF, 1984-2001; Reserve Bank of Australia (RBA), 2002 onwards

Austria

Mitchell (2008), currency outside banks, up to 1937. Demand and time and savings deposits, Komlos (1987), 1867-1913; Mitchell (2008), 1925-1937; IMF, since 1950.

Belgium

Up to 1939, Mitchell (2008), banknote in circulation and time and savings deposits; Banks (2010), demand deposits except for 1870-74 in which the level for 1875 is

projected backwards with banknotes in circulation; Mitchell (2008), 1950-1968; IMF, since 1969.

Canada

Mitchell (2008), 1856-1870; McInnis (2001), 1871-1913; Canadian Historical Statistics, 1913-1939; IMF, 1950-2000; Statistics Canada, 2001 onwards.

Denmark

Mitchell (2008), 1850-1939; IMF, from 1950 onwards.

Finland

Mitchell (2008), 1862-1939; IMF from 1950 onwards.

France

Mitchell (2008), currency outside banks and time and savings deposits, 1850-1939; Saint-Marc (1983), demand deposits, 1850-1939; IMF from 1950 onwards.

Germany

Mitchell (2008), 1850-1913; Ritschl (2002), 1925-1939; IMF from 1950 onwards.

Greece

Kostelenos et al. (2007), 1850-1938; Lazaretou (2009), 1939; IMF, from 1953 onwards. Estimates for 1950-52 were computed by projecting the CIM level for 1953 with an alternative CIM derived with M1 from Mitchell (2008).

Ireland

Mitchell (2008), 1913, 1925-1939; IMF, from 1950 onwards

Italy

de Bonis et al. (2012)

Japan

Currency outside banks, Mitchell (2008), 1913, 1925-1939, 1950-1952; Deposits, Patrick (1967), 1888-1910; Yamamura (1972), 1911-1926. Estimates for 1873-1887, 1927-1939, and 1950-1952 were computed with Mitchell (2008) re-scaled to match the levels for 1888, 1926, and 1953, respectively. IMF, from 1953 onwards

Netherlands

1850-1912, Data on demand deposits is lacking. The persistence of the *prolongatie* market explains the slow development of deposits in Dutch commercial banking (Jonker 1997: 101-102) and, perhaps, why there is no record of demand deposits. In fact, the public used money put on *prolongatie* as a form of interest-bearing demand

deposits backed by securities, and thus it provides a substitute for demand deposits (I owe this remark to Joost Jonker). As a crude alternative, M1 (that is, currency outside banks and demand deposits) was estimated over 1850-1912 by projecting its level in 1913 backwards with data on currency outside banks from Mitchell (2008). Time and savings deposits also come from Mitchell (2008). 1925-1939, from Mitchell (2008); 1950 onwards, from IMF.

New Zealand

Currency outside banks, Mitchell (2008), 1870-1939; IMF, 1950-1988; Statistics New Zealand, 1989-2004; Reserve Bank of New Zealand, from 2005 onwards. Demand deposits, 1850-1913, Statistics New Zealand; Time and savings deposits, Mitchell (2008); All deposits, Statistics New Zealand, 1925-1964; IMF, 1965-2006; Reserve Bank of New Zealand, 2007.

Norway

Klovland (2004) and Eitrheim et al. (2007)

Portugal

Reis (1990), 1854-1912; Reis (2001), 1850-1853, 1913-1939; Pinheiro (1997), 1950-1952; IMF, 1953 onwards

Spain

1850-1855, Tortella (1982), currency in circulation, and Tedde (1999), notes in circulation. 1856-1873, Banco de España (1970), currency outside banks; 1850-1873, Martín-Aceña and Pons (2005), demand deposits; Time and savings deposits: (Tortella 1985) deposits estimates less sight deposits in private banks, from Martín-Aceña and Pons (2005), provide an estimate of time deposits, to which I added non-banking savings deposits from Titos (1999). Money supply and its components: Tortella (1974), 1874-1899; Martín-Aceña (1985), 1900-1935; Martín-Aceña (1988), 1950-1962; Martín-Aceña and Pons (2005), 1963 onwards.

Sweden

Mitchell (2008), 1850-1870; Edvisson (2011), 1871-1980; Statistics Sweden, 1981 onwards

Switzerland

Historical Statistics of Switzerland, 1851-1905, In the absence of data on time and savings deposits, it was assumed that it moved along demand deposits, so the level of

total deposits in 1906 was backwards projected with the data on demand deposits; Mitchell (2008), 1906-1939; IMF, 1950 onwards.

United Kingdom

Currency outside banks, 1850-1870, Mitchell (1988), coin level for 1870 was backwards projected with Huffman and Lothian (1980) figures and added up to Mitchell (2008) banknotes in circulation. 1871-1981, Capie and Webber (1985); from 1982 onwards, Hills et al. (2010). 1850-1870, Collins (1983), demand deposits; Mitchell (1988, 2008), savings deposits. 1871-1981, Capie and Webber (1985), all deposits; 1982-2007, Hills et al. (2010), all deposits. Pre-1982 figures were adjusted to match the level of 1982 derived from data in Hills et al. (2010).

Currency outside banks, 1850-1870. Two alternative estimates were derived and its average taken. On the one hand, Mitchell (1988), coin level for 1870 was backwards projected with Huffman and Lothian (1980) figures and added up to Mitchell (2008) banknotes in circulation. On the other, Hills et al. (2010) currency outside banks in 1870 was projected backwards with Huffman and Lothian (1980) total figures for coin and notes outside banks. 1871-1981, the average of estimates by Hills et al. (2010) and by Capie and Webber (1985) was used. From 1982 onwards, Hills et al. (2010) was employed. All deposits, 1850-1870: Collins (1983), demand deposits (derived from net public liabilities of commercial banks, which include notes and deposits); and Mitchell (1988, 2008), savings deposits. All deposits: 1871-1981, Capie and Webber (1985); 1982-2007, Hills et al. (2010). Pre-1982 figures were adjusted to match the level of 1982 derived from data in Hills et al. (2010).

United States

1850-1866, Anderson (2003), currency outside banks derived by projecting its level in 1867 backwards with the series of all notes and coin; figures for all deposits obtained by projecting backwards Anderson (2003) level for 1867 with the series of deposits provided by Mitchell (2008); Anderson (2003), 1867-1939; IMF, 1950-1959; IHS_Global Insight, 1959-2005; Federal Insurance Deposit Corporation, 2006-2007

Money

A) Inflation Rate

The consumer price index (CPI) has been used as the measure of inflation for this component. When the CPI was unavailable, the implicit GDP deflator was used.

B) Standard Inflation Variability during the last five years

The GDP deflator was used as the measure of inflation for this component. When unavailable, the CPI was used.

C) Money Growth Differential

Derived as the average annual growth of the money supply in the last five years minus the average annual growth of real GDP in the last ten years. M1 figures were used to measure the growth rate of the money supply.

The sources used are,

Australia

CPI, Mitchell (2008), 1861-1870; Maddison (1991), 1870-1939; IMF, 1950-2007

GDP deflator derived from current GDP, Vamplew (1987), and real GDP in Maddison (2010), up to 1960; and Australian System of National Accounts, 1960 onwards.

Real GDP, Maddison (2010)

Austria

CPI, Maddison (1991), 1875-1939; IMF, 1950 onwards

GDP deflator, derived from nominal GDP, Mitchell (2008), 1925-1937, and IMF, 1950 onwards, and real GDP, Maddison (2010)

Real GDP, Schulze (1997), up to 1913; Maddison (2010) thereafter

Belgium

CPI, Maddison (1991), 1850-1939; IMF, 1950 onwards

GDP deflator, 1850-1913, Horlings (1997); 1925-1939, average of Buyst (1997), income and expenditure, and Horlings (1997), output deflators; IMF, 1950 onwards

Real GDP, 1850-1913, Horlings (1997); 1925-1939, average of Buyst (1997), income and expenditure, and Horlings (1997), output; Maddison (2010) thereafter

Canada

CPI, Maddison (1991), 1870-1939; IMF, 1950 onwards

GDP deflator, Urquhart (1993), 1870-1939; IMF, from 1950 onwards

Real GDP, Urquhart (1993), 1870-1939; Maddison (2010) thereafter

Denmark

CPI, Mitchell (2008), 1850-1870; Maddison (1991), 1870-1939; IMF, 1950 onwards

GDP deflator, Derived from current GDP, Hansen (1974), 1850-1939 and IMF, 1950 onwards, and real GDP from Maddison (2010).

Real GDP, Maddison (2010)

Finland

CPI, Heikkinen (1997), 1850-1913; Hjerppe (1996), 1913-1939; IMF, 1950 onwards

GDP deflator, derived from current GDP Hjerppe (1996), 1860-1974, and IMF, 1975 onwards, and real GDP, Maddison (2010).

Real GDP, Maddison (2010)

France

CPI, Lévy-Leboyer and Bourguignon (1985), 1850-1913; Maddison (1991), 1913-1950; IMF, 1950 onwards

GDP deflator, Toutain (1997), 1850-1962; IMF, 1963 onwards

Real GDP, Toutain (1997) and Maddison (2010)

Germany

CPI, Mitchell (2008), 1850-1870; Maddison (1991), 1870-1939; IMF, 1950-1993; DeStatis www.destatis.de, 1993 onwards

GDP deflator, Ritschl and Spoerer (1997), 1901-1939; CPDS, 1960 onwards

Real GDP Burhop and Wolff (2005), 1851-1913; Ritschl and Spoerer (1997), 1913-1950

Greece

CPI, Mitchell (2008), 1914-1939; IMF, 1950 onwards

GDP deflator, Kostelenos et al. (2007), 1850-1937;UN (1950), 1937-1939; IMF, 1950 onwards

Real GDP from Kostelenos et al. (2007), 1850-1939; IMF, 1950 onwards

Ireland

CPI, Mitchell (2008), 1925-1939; IMF, 1950 onwards

GDP deflator, IMF, 1950 onwards

Real GDP, Mitchell (1988), 1926-1938; and IMF, 1950 onwards

Italy

CPI, ISTAT

GDP deflator, Baffigi (2011)

Real GDP, Baffigi (2011)

Japan

CPI, Maddison (1991), 1879-1939; IMF, 1950 onwards

GDP deflator, derived from nominal GDP, Ohkawa and Shinohara (1979), 1885-1951, and IMF, 1951-1955, and real GDP (Maddison 2010), 1885-1955; Historical Statistics Japan, 1955 onwards

Real GDP, Maddison (2010)

Netherlands

CPI, Maddison (1991), 1870-1939; IMF, 1950 onwards

GDP deflator, Smits et al. (2000), 1850-1913; den Bakker et al. (1990), 1925-1939; IMF, 1950-2001; Statistics Netherlands, 2002 onwards

New Zealand

CPI, Statistics New Zealand, 1857-2004; IMF, 2004 onwards

GDP deflator, Statistics New Zealand, 1860-2000; IMF, 2001 onwards

Real GDP, Statistics New Zealand, 1860-2004; Maddison (2010) thereafter

Norway

CPI, Grytten (2004a) updated

GDP deflator, Grytten (2004b) updated

Real GDP, Grytten (2004b) updated.

Portugal

CPI, Valério (2001), 1850-1939; IMF, 1950 onwards

GDP deflator, Lains (2003), 1850-1910; Batista et al. (1997), 1910-1953; Pinheiro (1997), 1953 onwards

Real GDP from Lains (2003), 1850-1910; Batista et al. (1997), 1910-1953; Pinheiro (1997), 1953 onwards

Spain

CPI, Maluquer de Motes (2005, 2006), 1850-2001; INE, http://www.ine.es/, 2001 onwards

GDP deflator and Real GDP, Prados de la Escosura (2003, updated)

Sweden

CPI, Edvinsson and Söderberg (2007), 1850-2006; Statistics_Sweden, 2007

GDP deflator, Schön and Krantz (2012)

Real GDP from Schön and Krantz (2012)

Switzerland

CPI, Historical Statistics Switzerland, 1850-2005; IMF, 2006-2007

GDP deflator, Historical Statistics Switzerland, 1851-2001; IMF, 2001 onwards

Real GDP, Historical Statistics Switzerland

United Kingdom

CPI, Hills et al. (2010)

GDP deflator, Hills et al. (2010)

Real GDP from Hills et al. (2010)

United States

CPI, Officer and Williamson (2013)

GDP deflator, Williamson (2013)

Real GDP from Williamson (2013)

Freedom to Trade Internationally

A) Customs revenues as a percentage of the current value of imports

Mitchell (2008) World Bank (2013) for the post-1970 era, were complemented, when necessary, with national sources.

Australia

Vamplew (1987), 1850-1900; Mitchell (2008), 1900-

Austria

Trade, crude computations from data on the share of Imperial Austria in Austria-Hungary trade derived from Eddie (1980) for 1880-1913 and extended back to 1850. Eddie (1980) provides Imperial Austria's share in Austria-Hungary trade and, therefore, trade by Imperial Austria can be derived, which includes re-exports to and from Hungary. Eddie presents shares of Austria in Hungary's trade, so Austrian trade with the rest of the World can easily be computed. A difficulty appears as regards the share of Austrian trade with Hungary that represents domestic exports and retained or net imports and not just re-exports. Given the lack of information, I decided to consider re-

exports negligible and to attribute all the trade between Imperial Austria and Hungary to domestic exports and retained imports. The computed share of Austria in Austria-Hungary trade for 1880 was applied to trade figures for Dual Monarchy in earlier years in order to derive Austrian exports and imports back to 1850

Canada

Williamson (private communication), Customs revenue to imports ratio re-scaled to customs revenues/exports + imports with imports to exports and imports ratio in 1868, from Mitchell (2008), 1865-1867.

France

Customs revenues, Mitchell (2008); exports and imports, Lévy-Leboyer (1977), 1850-1913; Mitchell (1993, 2005), 1914-1939

Germany

Williamson (private communication), Customs revenue to imports ratio re-scaled to customs revenues/exports + imports with imports to commodity trade ratio in 1880, from Mitchell (2008), 1865-1879.

Greece

Williamson (private communication), Customs revenue to imports ratio re-scaled to customs revenues/exports + imports with imports to commodity trade ratio from Mitchell (2008).

Japan

Williamson (private communication), Customs revenue to imports ratio re-scaled to customs revenues/exports + imports with imports to commodity trade ratio from Mitchell (2008), 1865-1867.

Netherlands

Smits et al. (2000), 1850-1913; 1925-1939, customs revenues, Mitchell 2008); exports and imports, den Bakker et al. (1990).

New Zealand

Customs revenues, Mitchell (2008); exports and imports, Statistics New Zealand

Portugal

Lains (1995) and Valério (2001)

Spain

Tena (2005)

B) Trade restrictions from 1950 onwards

For the post-1950 period, Quinn and Todoya (2008) provide institutional settings (de jure) measures of liberalization of financial current account restrictions that capture trade restrictions. In particular, "how compliant a government is with its obligations under the IMF's Article VIII to free from government restriction the proceeds from international trade of goods and services" (Quinn and Toyoda 2008: 1409). The index contemplates commodity and services trade and ranges from 0 to 8 (full compliance) that the authors transformed into a 0-100 scale.

C) Difference between official exchange rate and black-market rate

The Black Market Premium (BMP) is the difference between the official and the parallel market exchange rate. Data for all countries come from Reinhart and Rogoff (2003, 2004) database since 1946 except for Spain, for which a weighted measure from Prados de la Escosura et al. (2012) has been used.

D) International capital market controls

For the pre-1939 period I have built an index of capital mobility that assigns values over a 0-10 range to each country, depending on its currency convertibility (see the main text). The values assigned in this exploratory exercise are, unfortunately, largely discretional.

Data for most countries come from Flandreau and Zumer (2004), completed with my own estimates built on the basis of data in Bordo and Schwartz (1996), Eichengreen (1992), Eichengreen and Flandreau (1996), the League of Nations (1925-1939), and Reinhart and Rogoff (2003, 2004, 2010).

For the post-1950 period, Quinn and Todoya (2008) provide institutional settings (de jure) measures of liberalization of capital account controls up to 2004 that, lacking data, I have assumed remained unaltered up to 2007. This indicator ranges from 0 to 4 (full openness) that the authors transformed into a 0-100 scale.

Regulation of Credit, Labour, and Business

A) Credit market regulation: 1) interest rate controls

I transformed the original values of the real interest rate into index form using upper and lower bounds of 20 and -20 per cent. It is worth noting that in the

computation of real interest rates, negative rates of inflation have previously been made equal to zero since the real interest rates that would result under negative inflation would exaggerate the measure of freedom of credit regulation. This decision is consistent with the view that price stability is what guarantees economic freedom. Data on short-run interest rates come from Homer and Sylla (2005) and IMF, from 1950 onwards, unless expressed explicitly in each country sources. Inflation rates from the sources used for Sound Money.

The sources used are,

Australia

Vamplew (1987), 1850-1936; Homer and Sylla (2005), 1937-1968; IMF, 1969-2007

Austria

Flandreau and Zumer (2004), 1876-1913; Morys (private communication), 1925-1939; IMF, 1950 onwards

Belgium

Homer and Sylla (2005), 1850-1939; IMF, 1950 onwards

Canada

1871-1939, McInnis (2001); Homer and Sylla (2005), 1950-1989; IMF, 1990 onwards

Denmark

Abildgren (2005), 1875-2003; IMF, 2004 onwards

Finland

Bank of Finland, 1867-1939; IMF, 1950 onwards

France

Lévy-Leboyer and Bourguignon (1985), 1850-1862; Homer and Sylla (2005), 1863-1939; IMF, 1950 onwards

Germany

Homer and Sylla (2005), 1850-1913, 1925-1939; IMF, 1950 onwards

Greece

SEEMNH (2009), 1850-1869; Flandreau and Zumer (2004), 1870-1913; Lazaretou (2008), 1928-1939; IMF, 1950 onwards

Ireland

Hills et al. (2010), Bank of England rated accepted in the absence of information about Ireland, 1925-1939; IMF, 1950 onwards

Italy

De Bonis et al. (2012)

Japan

Homer and Sylla (2005), 1883-1939; Historical Statistics Japan, 1950-2000; IMF, 2001 onwards

Netherlands

Homer and Sylla (2005), 1850-1954; IMF, 1955 onwards

New Zealand

Homer and Sylla (2005), 1934-1939; Statistics New Zealand, 1950-2003; IMF, 2004 onwards; the level for 1934 was backwards projected to 1859 with Australia's series.

Norway

Eitrheim et al. (2007)

Portugal

Reis (2007), 1863-1887; Flandreau and Zumer (2004), 1888-1890; Valério (2001) and Pinheiro (1997), 1891-1998; IMF, 1999 onwards

Spain

1850-1873, Tortella (1973), Banco de Barcelona; 1874-2000, Martín-Aceña and Pons (2005); Banco de España, 2001 onwards

Sweden

Homer and Sylla (2005), 1850-1855; Waldeström (2007), 1856 onwards

Switzerland

Swiss National Bank, Lombard rates up to 1906

United Kingdom

Hills et al. (2010)

United States

Officer (2013)

A) Credit market regulation: 2) Budget Balance (% GDP)

The data come from Mauro, P., R. Romeu, A. Binder, and A. Zaman (2013), except for Portugal, from Marinheiro (2006), and Spain, Comín (2005), private communication.

B) Labour market regulation

The OECD (2008) aggregate index of employment protection legislation for 1985-2008 (OECD 2008) has been extended back to 1950 with estimates in Crafts (2006) and Allard (2004).

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