

***Economic Freedom in the Long Run:
Evidence from OECD Countries (1850-2007)***¹

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Pre-publication 13 February 2015

Published in *The Economic History Review* (2015)

<http://onlinelibrary.wiley.com/resolve/doi?DOI=10.1111%2Fehr.12130#.VfmVGW0QG4k.twitter>

¹ I thank Stefano Battilossi, Forrest Capie, Francisco Comín, Pedro Fraile Balbín, James Gwartney, Michael Huberman, Clemens Jobst, Joost Jonker, Robert Lawson, Pablo Martín-Aceña, Branko Milanovic, Kevin O'Rourke, Nuno Palma, Albrecht Ritschl, Carlos Rodríguez Braun, Blanca Sánchez-Alonso, Isabel Sanz-Villarroya, Antonio Tena-Junguito, and participants at Cambridge, Geneva, LSE, and Venice seminars, the Economic History Society Annual Conference 2014, University of Warwick, and the CEPR Economic History Symposium, Österreichische Nationalbank, Vienna, for their advice and comments. I am especially obliged to Amadeo Petibò for his encouragement. Gayle Allard, Matthias Morys, Peter Nardulli, Dennis Quinn, Jaime Reis, Max Schulze, and Jeffrey Williamson kindly supplied me with their unpublished data. Research assistance by Juana Lamote de Grignon is most appreciated. Financial support from Fundación Rafael del Pino and the Leverhulme Trust (VP2-2012-050 Grant) is gratefully acknowledged.

Economic liberty may be defined as lack of interference or coercion, that is, as negative freedom, in which competitive markets play a central role by protecting individuals 'against encroachments on the part of the police power'.²

A tension has long existed between the view that perceives the extension of economic freedom as the most effective way to promote welfare and equality, and the view that stresses welfare and equality, as prerequisites of economic freedom.³ It has been argued that every society faces a trade-off between preserving individuals' economic freedom and achieving wellbeing.⁴ If such a trade-off exists, does it hold in the long run? To answer this question new measures of negative economic freedom are needed.⁵

Research on economic liberty has been mainly restricted to the theoretical level and only recently economic freedom measures that exhibit wide spatial coverage but limited time dimension appeared (Fraser Institute and Heritage Foundation indices).

It is my purpose to construct indices for the main dimensions of economic freedom that will be combined into an aggregate *Historical Index of Economic Liberty*. The sample of countries chosen covers today's advanced nations, more specifically, OECD members prior to its enlargement from 1994 onwards, *OECD*, hereafter.⁶ The period considered covers from the emergence of free trade and laissez faire to the current recession. During World Wars and their aftermath data are scarcer and less reliable. Thus, economic liberty indices have only been computed for the periods 1850-1914, 1925-39, and 1950-2007. A brief introduction to the concept of economic freedom opens the article, followed by a discussion of how historical indices are constructed. Trends in economic freedom are, then, presented on the basis of a

² Mises, *Anti-Capitalist Mentality*, p. 55.

³ Friedman, *Capitalism*, p.5; Sen, 'Freedom of Choice', pp. 275-9

⁴ Stroup, 'Economic Freedom', p. 52.

⁵ A proxy for positive freedom, a historical index of human development, is already available (Prados de la Escosura, 'World Human Development').

⁶ Pre-1994 OECD included 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. *countries excluded for lack of historical data.

Historical Index of Economic Liberty [HIEL]. Later, the main dimensions of economic freedom are examined and their contributions to the aggregate index assessed. A summary of findings and a research agenda closes the paper.

- I -

The concept and measurement of economic liberty has met the reticence of those who associate it to the Chicago School.⁷ Identifying 'negative' economic liberty with 'market' freedom may be the appropriate way of making the index acceptable to a wide audience. Aside ideological connotations, measuring economic liberty faces a serious challenge, as a largely discretionary approach is unavoidable.⁸

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. The Fraser Institute's *Economic Freedom of the World Index (EFW)* distinguishes five main dimensions of economic freedom: size of government, legal structure and security of property rights, sound money, freedom to trade internationally, and regulation.⁹ On the basis of conceptual and practical criteria I will decide which ones to include in *HIEL*.

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.¹⁰ Institutional settings tend to be favoured as outcomes can be much influenced by the government's policy stance.¹¹ However, in a context of formal and informal institutions, objective rules may not capture the institutional environment¹²,

⁷ Paldam, 'Economic Freedom', p. 463.

⁸ de Haan, 'Economic Freedom', p. 395.

⁹ Gwartney et al., *Economic Freedom 2013*.

¹⁰ de Haan et al., 'Market-oriented Institutions', pp. 162-3.

¹¹ Quinn and Toyoda, 'Capital Account Liberalization', p. 1408.

¹² Woodruff, 'Measuring Institutions', pp. 121-2

as enforcement varies across countries and over time.¹³ Thus, outcomes -although may fail to reflect the durable rules, procedures or norms associated to the term ‘institutions’¹⁴, provide a second best solution. Besides, even in a contemporary index of economic freedom, data constraints force the inclusion of both institutional and policy measures –that is, the rules and the outcomes of the game-. Therefore, any attempt to provide a long run perspective on economic liberty must 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 is consistent over space and time and in which cardinal and objective indicators are given preference over ordinal and subjective ones. Then, the reduced measures for each dimension are combined into a single index of economic liberty.

Following the procedure employed in the construction of the Fraser Institute’s *EFW*, when the indicator’s value is inversely related to the degree of economic freedom, it has been transformed into index form using the expression

$$I_{ij} = 10*(V_{MAX} - V_{ij}) / (V_{MAX} - V_{MIN}) \quad (1)$$

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, it is the following expression the one used,

$$I_{ij} = 10*(V_{ij} - V_{MIN}) / (V_{MAX} - V_{MIN}) \quad (2)$$

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 and assess the available information to construct indices for economic liberty dimensions.

- II -

The government, as provider of protection of the individual from coercion, is essential for economic liberty.¹⁵ Freedom of economic activity implies ‘freedom under the law, not the absence of all government action’.¹⁶ To carry out its legitimate and

¹³ Tabellini, ‘Culture’, pp. 678, 710.

¹⁴ Glaeser et al., ‘Institutions’, pp. 275-9.

¹⁵ Friedman, *Capitalism*, pp. 15, 22-36.

¹⁶ Hayek, *Constitution*, p. 193

limited role –which includes law and order, defence, protection of property rights, contract enforcement, and provision of public goods-, the government requires resources that acquires in many ways.¹⁷ However, any government capable of these tasks is also capable of confiscating the wealth of its citizens¹⁸, so 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. It is assumed that below a certain threshold government spending provides public goods but, above it, distorts individual choice.¹⁹ The insurmountable challenge is establishing the threshold below which government's taxation and expenditure are compatible with economic freedom for any country at any point in time.

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 (the proxy used by *EFW*) remains low²⁰, but this does not imply lower government interference in individual economic decisions.²¹

From a historical perspective, it is far from clear that countries with low government expenditures have necessarily allocated their spending toward freedom protection 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 freedom²², and the government share in total consumption increased with per capita income.²³ The rationale is that, in

¹⁷ Including taxation, borrowing, issuing money, government ownership of production, etc.

¹⁸ Djankov et al., 'New Comparative Economics', p. 596.

¹⁹ Chauffour, 'Freedom and Entitlement'.

²⁰ Beasley et al., 'Weak States', p. 206.

²¹ For example, in Spain and Portugal under Franco's and Salazar's dictatorships, the state interfered with the market while the government share of consumption was comparatively small, as social transfers were low in the absence of the welfare state (Espuelas, 'Dictatorships').

²² Dincecco, *Political Transformations.*, pp. 116-9

²³ Prados de la Escosura, 'European Patterns', pp. 197, 208.

advanced (open access) societies, as citizenship expands, the government provides public goods lowering the cost of market participation for individuals.²⁴

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 government restrictions to individual choice.²⁵

Therefore, I decided to exclude the *EFW*'s size of government from the historical index.²⁶

- III -

The 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*), that is, 'the extent of institutional constraints on the decision-making powers of the chief executive (...) In Western democracies the executive branch is typically constrained by the legislative and judicial branches of government.'²⁷ In other words, this measure captures the degree of checks and balances. *EXCONST* is not free from objections. For example, Glaeser *et al.*, argue that it is an endogenously constructed measure of political outcomes rather than of durable institutional constraints.²⁸

EXCONST ranges from 1 to 7, with higher values corresponding to more checks and balances. Here I have normalized *EXCONST* between 0 and 10 to make it homogeneous with the rest of the economic liberty indicators.

²⁴ North et al., *Violence*, pp. 110-24.

²⁵ The inclusion of the 'size of government' would introduce a long-term downward bias in *HIEL* as the government share in consumption has increased across countries over the last two centuries.

²⁶ It is worth pointing out that Chauffour, 'Freedom and Entitlement', also excluded it from his revised *EFW* index.

²⁷ Marshall et al., *Polity IV*, p. 62

²⁸ Glaeser et al., 'Institutions', p. 277.

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.*²⁹ *CIM* designates the percentage of deposits in money supply:

$$CIM = (M2 - C) / M2 \quad (3)$$

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.³⁰ A caveat is, nonetheless, necessary: in a context of high inflation *CIM* may be a defective measure of contract enforcement.³¹

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.³² In the *OECD*, this problem affects mainly countries during the second

²⁹ Clague *et al.*, 'Contract-intensive Money', pp. 187-9.

³⁰ Clague *et al.*, 'Contract-intensive Money', pp. 203-5, 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, 'Contract Enforcement'.

³¹ As Clague *et al.*, 'Contract-intensive Money', 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*'.

³² Cuartas-Morató and Rosés, 'Bills of Exchange'; Engdahl and Ögren, 'Multiple Paper Monies'.

half of the nineteenth century with the possible consequence of a downward bias in *CIM*.³³ As a crude correction, I have assumed a 'floor' of 0.2 for *CIM*.³⁴

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.

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 variables *EXCONST* and *CIM*. 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 (2).

- IV -

A reliable and efficient monetary system is essential to protect economic freedom and its main contribution is to provide a regime of stable prices. 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.

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.³⁵

Historical evidence can be gathered to replicate these measures over the long run. Contemporary indices of economic freedom address, however, an inflationary

³³ In the Netherlands, for example, 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, 'Alternative Road').

³⁴ 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 1883), and Switzerland (up to 1854).

³⁵ It can be argued that printing money, as inflation, is a tax, so some of the objections about the use of the government share in consumption as a measure of economic freedom apply here too (de Haan and Sturm, 'On the Relationship', p. 221).

context, so the possibility of deflation is not contemplated. However, phases of sustained decline in the aggregate price level were common before the Second World War, 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 1873-96 and 1921-29) and 'bad' deflations, associated with recessions (1919-21 and 1929-33)³⁶, the practical decision made here has been 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.³⁷

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.³⁸ However, Principal Components Analysis provides roughly equal weights for each of them (the values of the first principal component' loadings) throughout the considered time span.

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).

- V -

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 pre- and post-Second World War periods needs to be made, as differences in regime and data availability require different indicators.

³⁶ Bordo and Filardo, 'Deflation'.

³⁷ I am grateful to James Gwartney and Robert Lawson for their advice on this point. For a discrepant view, see Bagus, 'Deflation'.

³⁸ de Haan and Sturm, 'On the Relationship', p. 223.

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 potential indicators 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*.

$$NT_{ij} = T_{ij} * Q_{ij} / P_{ij} * Q_{ij} \quad (4)$$

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 ($\sum T_i * Q_i$) to the value of total imports ($\sum P_i * Q_i$) 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.³⁹ 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 ($UNP = \sum T_i / \sum P_i$).⁴⁰ Unfortunately, historical data on this measure is only available for a group of European countries at benchmark years over 1913-31.⁴¹

³⁹ Tena-Junguito, 'proteccionismo', pp. 588-91.

⁴⁰ Liepmann, *Tariff Levels*, p. 22.

⁴¹ On the *OECD* countries, Liepmann, *Tariff Levels*, Appendix A, only provides 'potential tariff levels' (unweighted nominal protection) for Austria, Belgium, Denmark, Finland, France, Germany, Italy, Sweden, and Switzerland at the years 1913, 1927, and 1931. Estimates of effective protection, if available, would be a better option.

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.⁴² In *EFW*, *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 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.⁴³

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 so, from a global and long run perspective, restrictions to international labour mobility constitute an important constraint on economic liberty.⁴⁴ Unfortunately, measures of international mobility of labour capturing institutional settings are only available for a few countries.⁴⁵ 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

⁴² Clemens and Williamson, 'Latin America's Tariffs', p. 3.

⁴³ 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.

⁴⁴ Mises, *Clash*, pp. 19-22; Pritchett, *Let Their People Come*.

⁴⁵ Timmer and Williamson, 'Immigration Policy', 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 discretionary nature of these indices is highlighted by Sánchez-Alonso, 'Immigration Policy', who provides her own alternative index for Argentina.

international labour or capital market with hardly any geographical mobility of workers or capital flows.⁴⁶

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 values over a 0-10 range to each country depending on its currency convertibility. Alas, the values assigned in this exploratory exercise are largely discretionary (See Appendix B online).

As for the post-1950 period, Quinn and Toyoda 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.⁴⁷ 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 provide institutional settings measures of liberalization of financial current account restrictions.⁴⁸ 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.⁴⁹ On the basis of the average of these two indicators plus *WNP* and capital mobility an index of freedom to trade internationally have been constructed since 1950.

⁴⁶ Obstfeld and Taylor, *Global Capital Markets*, pp. 46-7.

⁴⁷ Quinn and Toyoda, 'Capital Account Liberalization', pp. 1409-10. Lacking data for 2005-7, I assumed that country's levels for 2004 remained unaltered.

⁴⁸ Quinn and Toyoda, 'Capital Account Liberalization'. Data on institutional settings of openness to capital flows and international trade of goods and services over 1950-2004 have been kindly provided by Dennis Quinn. Countries levels for 2004 are assumed to be acceptable for 2005-7.

⁴⁹ The *Black Market Premium* has been constructed from data in Reinhart and Rogoff, 'Background Material', and 'Modern History'. In the case of Spain the *BMP* is trade-weighted and derived from Prados de la Escosura et al., 'Economic Reforms', in which a detailed explanation of this choice is offered.

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 (2). In the cases of the freedom indices derived from *WNP* and *BMP*, expression (1) 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 one, including also current account restrictions and *BMP*, for the post-1950 era.

- VI -

Regulation 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, the extent or, more precisely, the risk of crowding out provides a proxy of the regulation of the private sector credit.⁵⁰ In *EFW* it is approximated by the ratio of the government fiscal deficit to gross domestic investment.⁵¹ However, while the relative size of investment (% GDP) increases over time and along per capita income⁵², 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, instead, the ratio of the budget balance to GDP, as it would mitigate the bias. The index has been computed with expression (1) 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 *EFW*, this measure is constructed on the basis of rating intervals in which countries are graded depending on the extent to which the

⁵⁰ In fact, if negative government saving is offset by an increase in foreign investment no crowding out would take place.

⁵¹ In *EFW* 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.

⁵² Prados de la Escosura, 'European Patterns', pp. 197-200.

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 preferred a cardinal rather than an ordinal approach and 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 may, on the one hand, favour on-the-job training but, on the other, discriminate against those workers on temporary contracts, reducing firms' ability to adjust to market changes.⁵³

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 economic liberty. OECD 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.⁵⁴ 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

⁵³ OECD, *Employment Outlook 2004*. 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, 'Labor Market', pp. 333-4).

⁵⁴ OECD, *Employment Outlook 2008*.

1985-2008 (OECD 2008).⁵⁵ Nicholas Crafts extended the index back to 1960 and I projected it backwards to 1950 using Gayle Allard's estimates.⁵⁶ 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-First World War Europe and the Western Offshoots at benchmark years (1870, 1900, and 1914).⁵⁷ The range of variation of Huberman's indices over 1870-1913 is very wide, even though labour regulation was very low relative to that of the late twentieth century, and this makes comparisons between the two periods difficult. Moreover, 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.

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.⁵⁸

- VII -

So far, different dimensions of economic freedom have been considered, indicators to capture their evolution assessed, and indices for four of them constructed (Table 1). Let us look now at their trends.

In the evolution of the 'legal structure and property rights' dimension of economic freedom, a sustained improvement is observed over the long run,

⁵⁵ OECD, *Employment Outlook 2008*.

⁵⁶ Crafts, 'Regulation'; Allard, 'Measuring Job Security'. 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 in each period.

⁵⁷ Huberman and Lwechuk, 'European Economic Integration', Huberman and Meissner, 'Labor Standards'.

⁵⁸ Unfortunately I have been unable to provide an indicator of business regulations.

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.⁵⁹

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 the First World War, 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-First World War 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

⁵⁹ This is a conventional denomination in economic history for the long postwar boom 1950-1973 (See Crafts, 'Golden Age').

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 United Kingdom).

To sum up, the distinctive trends exhibited by the four dimensions of economic freedom compose a complex image of that unobservable variable, economic liberty. Similar trends, but of different intensity, are shared by all four dimensions up to the First World War, 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 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 the next challenge.

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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.⁶⁰

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 that may blur the meaning of what is really measured.⁶¹ 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.⁶²

⁶⁰ As shown by the widespread practice of summarizing performance into a single scalar shows (i.e., GDP per head, HDI).

⁶¹ Berggren, 'Benefits', pp. 194-6.

⁶² de Haan et al., 'Market-oriented Institutions', p. 165.

Recently, Martin Ravallion depicted the Fraser and Heritage indices of economic freedom as ‘mashup’ indices.⁶³ 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.⁶⁴ 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.

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.⁶⁵ 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.⁶⁶ Initially, the Fraser Institute’s *EFW* indices 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.⁶⁷ 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

⁶³ Ravallion, ‘Mashup Indices’, p. 4.

⁶⁴ 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 main concern.

⁶⁵ Heckelman and Stroup, ‘Comparison’, p. 958.

⁶⁶ Heckelman and Stroup, ‘Comparison’, pp. 954-6.

⁶⁷ Gwartney et al., *Economic Freedom, 1975-1995*.

appeared crucial.⁶⁸ 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.⁶⁹ 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 aggregate index.⁷⁰ Thus, since 2002, the decision was taken that all dimensions would be weighted equally in the *EFW* index.⁷¹

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.⁷² 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.⁷³ Valuing all dimensions of economic freedom alike, as the *EFW* index

⁶⁸ de Haan et al., 'Market-oriented Institutions', p. 165. In their pioneering work, Scully and Slottje, 'Ranking', and 'Measuring', 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 an instrumental variable or hedonic approach.

⁶⁹ Gwartney and Lawson, *Economic Freedom 2000*; Caudill et al., 'Economic Freedom', *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, 'Comparison', p. 958.

⁷⁰ Heckelman and Stroup, 'Comparison', p. 957.

⁷¹ Gwartney et al., *Economic Freedom 2002*

⁷² Kešeljević and Spruk, 'Endogenous Economic Freedom'. The authors employ the IV-2SLS panel data estimation methodology to a panel of 135 countries over 1996-2011.

⁷³ 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.

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).⁷⁴ Thus,

$$HIEL = (IEL_{\text{property rights}} + IEL_{\text{money}} + IEL_{\text{trade}} + IEL_{\text{regulation}}) / 4 \quad (5)$$

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, 1913-38, and 1950-2007, as it could be argued that dimensions' weights do not remain constant over time, as well as for the entire 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 2. It can be observed that the resulting weights are not far from the equal weights suggested by the agnostic approach.

A long run view of the evolution of economic liberty in the OECD can be derived as an average of countries' levels. In Figure 3 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.⁷⁵ Moreover, when a population-weighted aggregate index is computed for each country sample, the resulting indices of economic liberty are also highly coincidental. 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

⁷⁴ 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.

⁷⁵ 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, 1925-39, and 1950-2007 in all tables and figures.

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 1)-, and the reduced index (*RIEL*), constructed on the basis of a common set of indicators 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, or for each of the three periods distinguished (Table 2). When fixed single *PCA*-weights are employed throughout 1850-2007, the resulting index matches closely the one derived through the unweighted arithmetic average of the dimensions' indices, except for pre-First World War, when the *PCA*-weighted index appears higher (Figure 6). The reason is the larger weight assigned to the areas of money and international trade, which had higher levels. If, alternatively, different *PCA*-weights are used for each of the three main phases, the resulting index matches closely the equally weighted index, with the *PCA*-weighted index exhibiting only higher levels since the late 1970s. The explanation is found in regulation, as its weight for 1950-2007 is lower when first principal component's loadings are used. Thus, for the sake of simplicity, 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 *EFW* index, built on the basis of a much more comprehensive database, for the *OECD* country sample? Contrasting *HIEL* -a reduced index that incorporates up to 12 indicators- with *EFW4* -that includes 37 variables- provides a crosscheck on its accuracy. A caveat is needed, 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, to *EFW4*. Figure 7 shows how close a fit casts regressing *HIEL* over *EFW4*.⁷⁶

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Economic liberty in the *OECD* was higher in 2007, the eve of the current recession, than at any time over the last one and a half centuries and, probably, in history, but its evolution has been far from linear (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.⁷⁷ 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 $[(3.3-0.9)/3.3 = 0.73]$.

Different phases can be established over the long run (Table 3). From the mid-nineteenth century to the eve of the First World War 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. 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 the First World War. Two sub-periods can be

⁷⁶ Caution is called for when comparing the *HIEL* and *EFW4* ratings. As the way the ratings are established in *HIEL* is different from the one used in *EFW4*. I owe this remark to an anonymous referee.

⁷⁷ Sen, 'Public Action', p. 292.

distinguished in the pre-First World War 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, the recovery was fast and peaked by 1929. The Great Depression pushed down economic freedom again. 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 the Second World War, stabilised during the 1960s around the late 1920s level (and above it, close to 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. In fact, discrepant behaviour of individual countries from the aggregate trends was exceptional (Table 3). Prior to the First World War, only Italy improved more after 1880. Later, the United Kingdom and Spain were the exceptions making larger gains over 1960/4-1980/4 than in the 1950s. A simple metric, the coefficient of variation, suffices to answer this concern (Figure 8). A sustained process of convergence in economic freedom levels is observed up the eve of the First World War, in which the rapid decline in dispersion was

punctuated by reversal episodes associated to international economic crisis. Post-First World War 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 late 1930s dispersion persisted during the early 1950s and remained high during the Golden Age. After another divergence episode as a result of the oil shocks, 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 postwar era, convergence in economic liberty has taken place across OECD countries during the last hundred and sixty years.

Country rankings are provided in Table 4. It can be observed how stable positions have been. Up to the First World War, Belgium, Switzerland, Australia, New Zealand, and, especially, the United Kingdom, dominated the top quartile. In the Interwar, Sweden, followed by Canada, the United States, Netherlands, and Switzerland appear at the top position. Then, between 1950 and 2007, three countries remained in the upper quartile: the United States -always at the top position-, Canada, and Switzerland. As regards the bottom, 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. These results seem to support the view that common law institutions are more supportive of economic freedom than civil law. Australia, Canada, New Zealand, the United Kingdom, and the United States, countries of common law traditions, have usually achieved higher levels of economic freedom.⁷⁸

A closer look suggests, however, convergence episodes coexisted with country ranking stability. 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

⁷⁸ I thank an anonymous referee for pointing out this to me.

opposite happened in Germany, Australia, or France. Catching up during 1880-1914 came from the *Periphery*, with Italy, Greece, Finland, Portugal, and Japan initially at the bottom experiencing the largest improvements in economic freedom. In another phase of economic liberty expansion, 1950-2007, *Peripheral* countries, 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 Italy, Ireland, Greece, and Spain, alongside Denmark and New Zealand.

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The results provided by the aggregate economic freedom index may convey the understanding that its dimensions evolved along the same path. However, 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*?

Improvements in economic liberty derived, however, from different dimensions (Figure 9). Over 1850-1914, the improvement in property rights made the main contribution to the reduction of the shortfall to less than half. A closer look reveals that it was freedom from regulation what largely accounted for the difference between the intense gains before the early 1880s and the slower ones afterwards. Then, during the first half of the twentieth century, it was the collapse of freedom to trade internationally and, to less extent, monetary distortions, what account for the contraction in economic liberty. 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. A closer look highlights the complementary role of the money dimension in the economic freedom expansion of the 1950s. During the 1960s and 1970s, increases in regulation and unsound monetary policies represented a deterrent for the advance in economic liberty, offsetting the gains in freedom to trade and improvements in property rights. In the second wave of expanding economic liberty, 1980-2007, international trade was, again, the overall leading force of economic liberty in the reduction of the shortfall to one-half. During 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 it.

A similar breakdown at country level provides useful insights (Table 5). Thus, it can be observed that, up to the First World War, 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. In the first half of the twentieth century, the negative role played by international trade is stressed at country level.

A closer look at the 1950s stresses the leading role of international trade in the expansion of economic freedom, with the exception of Japan and the United States in which monetary stability led. In Austria, Italy, and Australia, money matched the contribution of international trade. Deregulation, in turn, played a leading role in New Zealand, and Portugal. In the 1960s and 1970s, regulation and price instability represented an obstacle to economic liberty, with Sweden and Germany being the most affected countries. In Canada and the United States, however, the main setback in economic freedom was caused by money distortions. In the second wave of expanding economic liberty, 1980-2007, international trade drove the 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 shared it with trade liberalisation), while in the United States 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 of long-term achievements in economic liberty. The only exceptions were the United States and the United Kingdom, in which trade liberalization made the most distinctive contribution, and Australia and New Zealand, in which it came from deregulation.

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, the First World War brought with it a major setback. A postwar recovery up to 1929 was followed by a dramatic decline in the 1930s and, by the eve of the Second World War, the level of economic freedom had shrunk to pre-1850 levels. Significant progress in economic freedom during the Golden Age (1950-73) fell short from the pre-First World War peak. A steady advance 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 research challenge.

Table 1

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

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

Sources: See the text

Table 2

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

Table 3. 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										
<i>Unweighted</i>	48.0	16.8	56.7	-50.0	-75.8	30.8	-0.4	48.9	64.5	73.0
<i>Weighted</i>	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

Sources: See the text

Table 4. 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 4. 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 5. 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				
	TOTAL (%)	Due to				TOTAL (%)	Due to			
	Prop. Rights	Money	Trade	Regulation	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										
<i>Unweighted</i>	56.7	0.40	0.20	0.14	0.23	48.0	0.29	0.22	0.13	0.34
<i>Weighted</i>	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.

Sources: See text.

Table 5. Drivers of Economic Liberty: Decomposing the Percentage Change in Shortfall in OECD Countries, 1850-2007 (five-year averages) (cont.)

	1880/4-1910/4				
	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					
<i>Unweighted</i>	16.8	1.03	0.13	0.23	-0.40
<i>Weighted</i>	22.3	1.02	0.05	0.27	-0.34

Table 5. 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				
	TOTAL (%)	Prop. Rights	Due to			TOTAL (%)	Prop. Rights	Due to		
			Money	Trade	Regulation			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										
<i>Unweighted</i>	-75.8	-0.03	0.25	0.66	0.11	-50.0	0.20	-0.07	0.57	0.29
<i>Weighted</i>	-69.3	0.03	0.33	0.58	0.05	-59.2	0.16	-0.01	0.49	0.36

Table 5. 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				
	TOTAL (%)	Prop. Rights	Due to			TOTAL (%)	Prop. Rights	Due to		
			Money	Trade	Regulation			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										
<i>Unweighted</i>	64.5	0.24	0.19	0.59	-0.01	30.8	0.08	0.34	0.51	0.07
<i>Weighted</i>	63.5	0.24	0.24	0.54	-0.02	35.1	0.12	0.39	0.44	0.05

Table 5. 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				
	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										
<i>Unweighted</i>	-0.4	-32.94	25.99	-30.38	38.32	48.9	0.09	0.28	0.39	0.24
<i>Weighted</i>	5.5	2.54	-1.80	2.60	-2.35	40.5	0.08	0.34	0.37	0.22

Table 5. Drivers of Economic Liberty: Decomposing the Percentage Change in Shortfall in OECD Countries, 1850-2007 (five-year averages) (cont.)

	1850/4-2005/7				
	TOTAL (%)	Prop. Rights	Due to		
			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					
<i>Unweighted</i>	73.0	0.49	0.17	0.21	0.12
<i>Weighted</i>	73.5	0.51	0.14	0.22	0.15

Note: * 1860/4-2005/7

The four columns add up to 1.

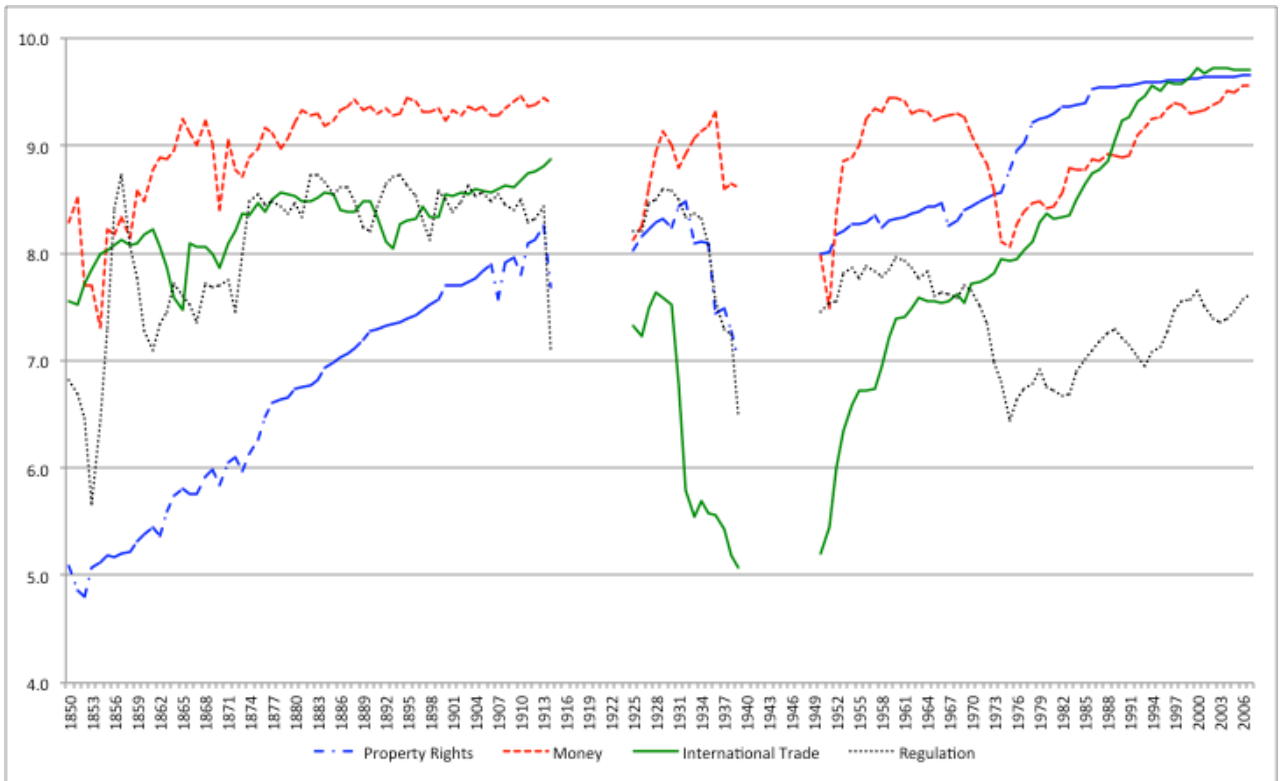


Figure 1. Economic Liberty Dimensions, 1850-2007 (unweighted averages)

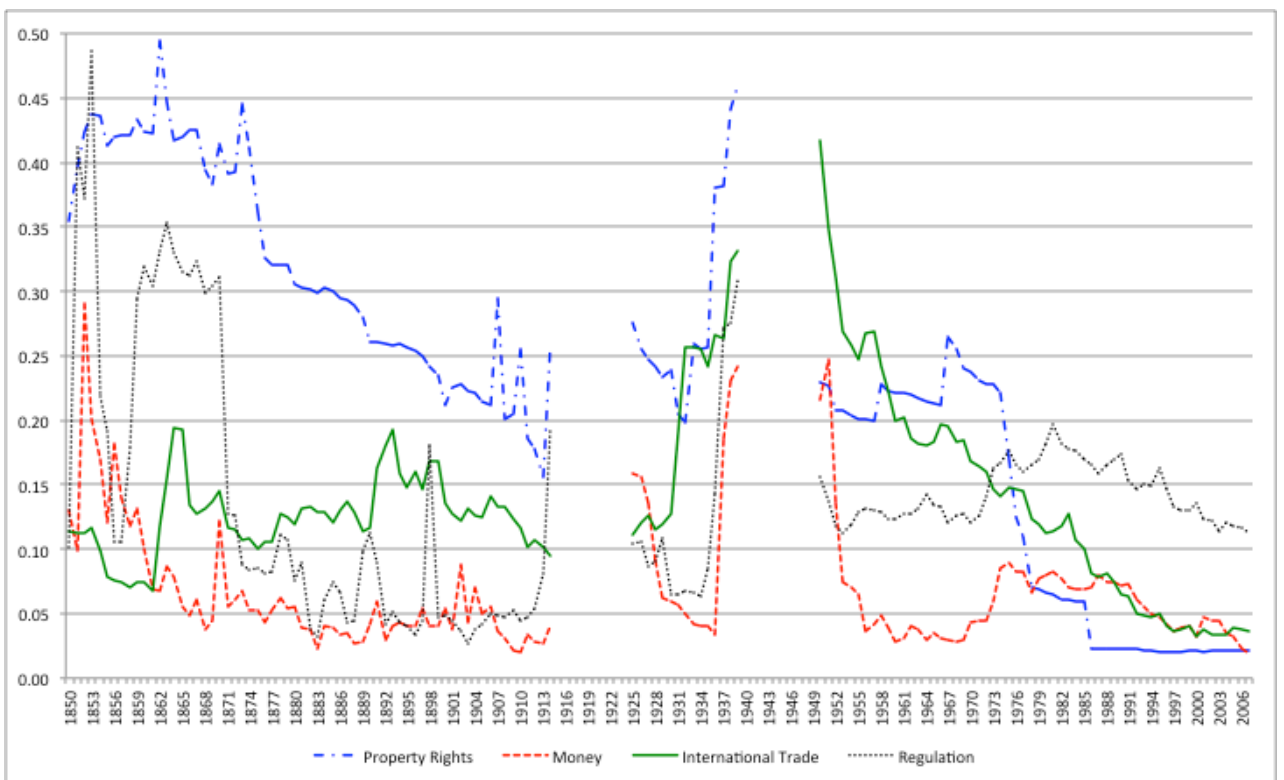


Figure 2. Dispersion of Economic Liberty Dimensions, 1850-2007 (coefficient of variation) (unweighted averages)

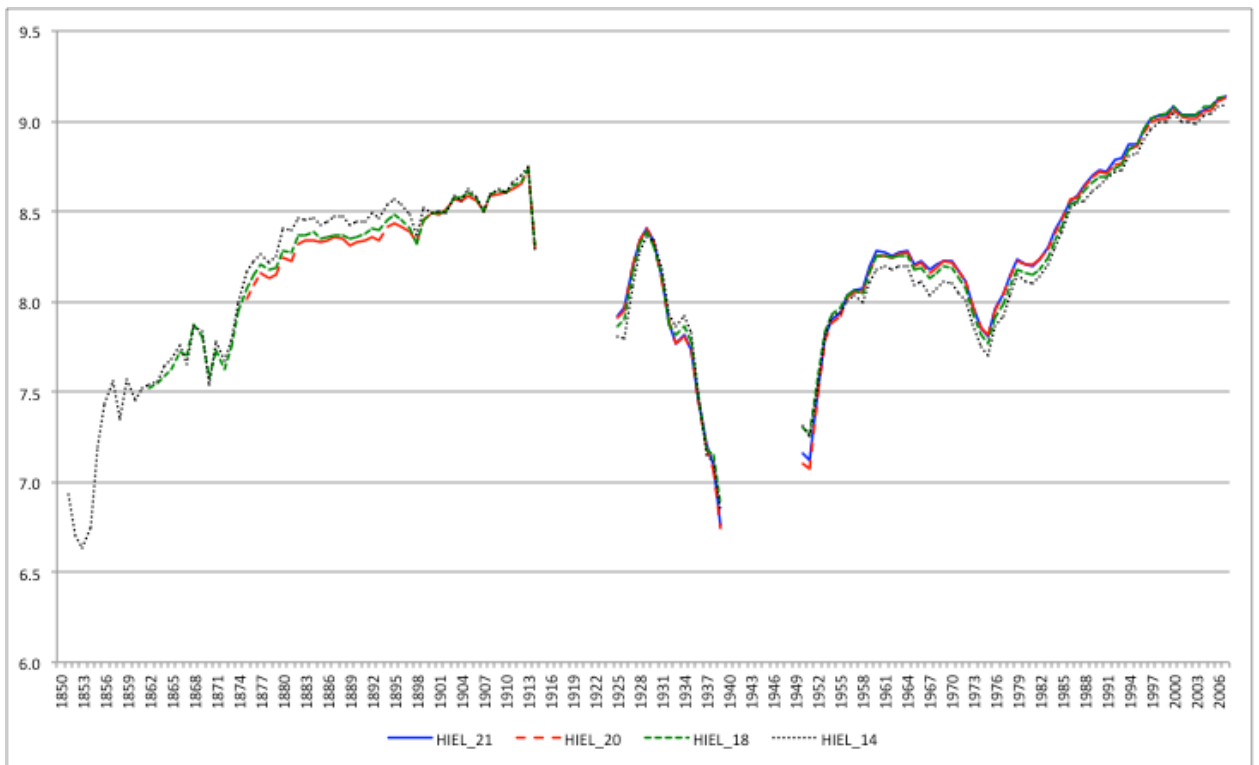


Figure 3. Indices of Economic Liberty: Alternative Samples (unweighted averages)

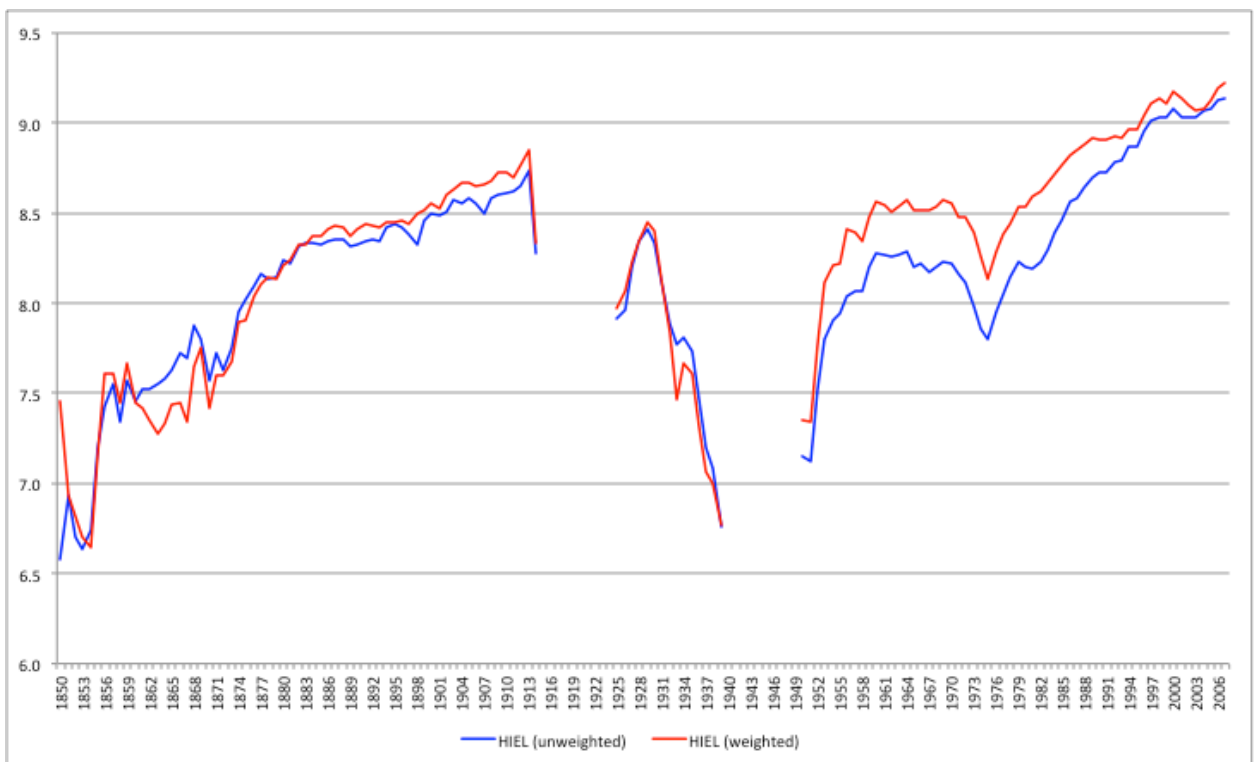


Figure 4. Historical Indices of Economic Liberty (HIEL) in OECD, 1850-2007: Unweighted and Population-weighted Averages (spliced)

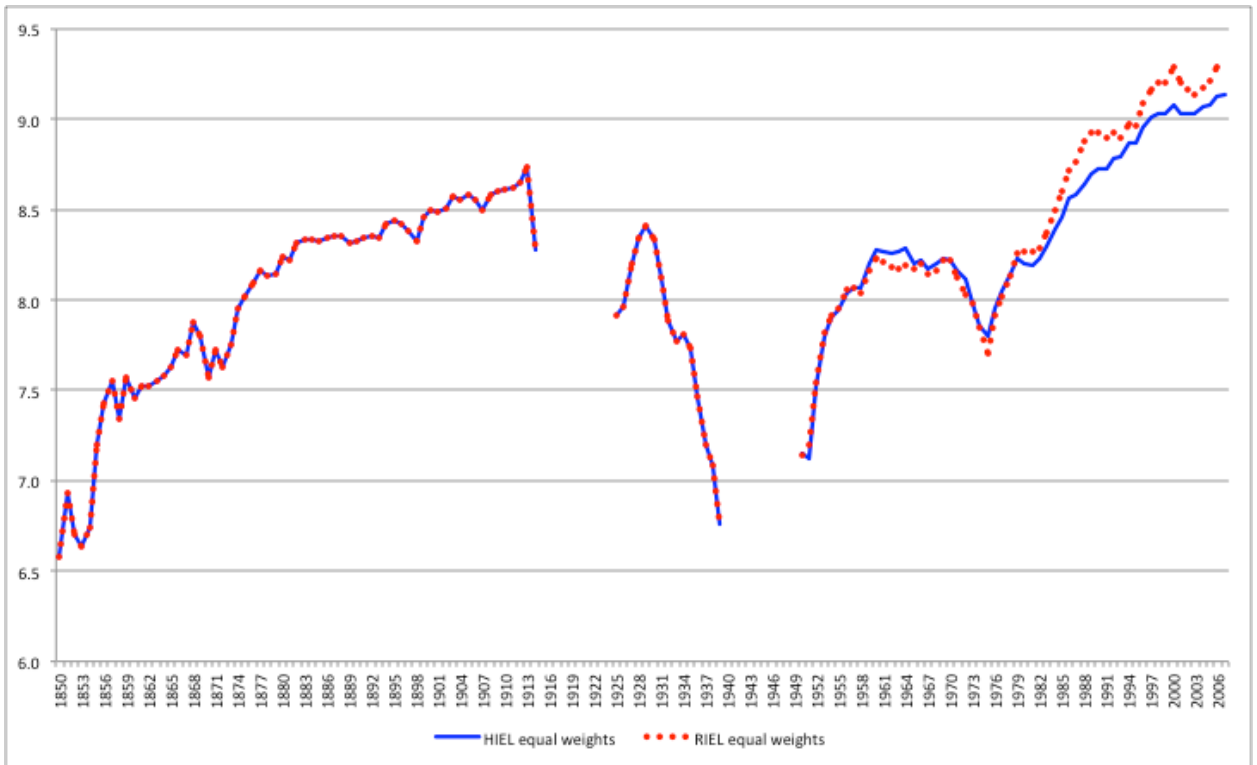


Figure 5. Alternative Historical Indices of Economic Liberty with Full (HIEL) and Reduced (RIEL) Set of Indicators for 1950-2007 (average spliced estimates (Unweighted))

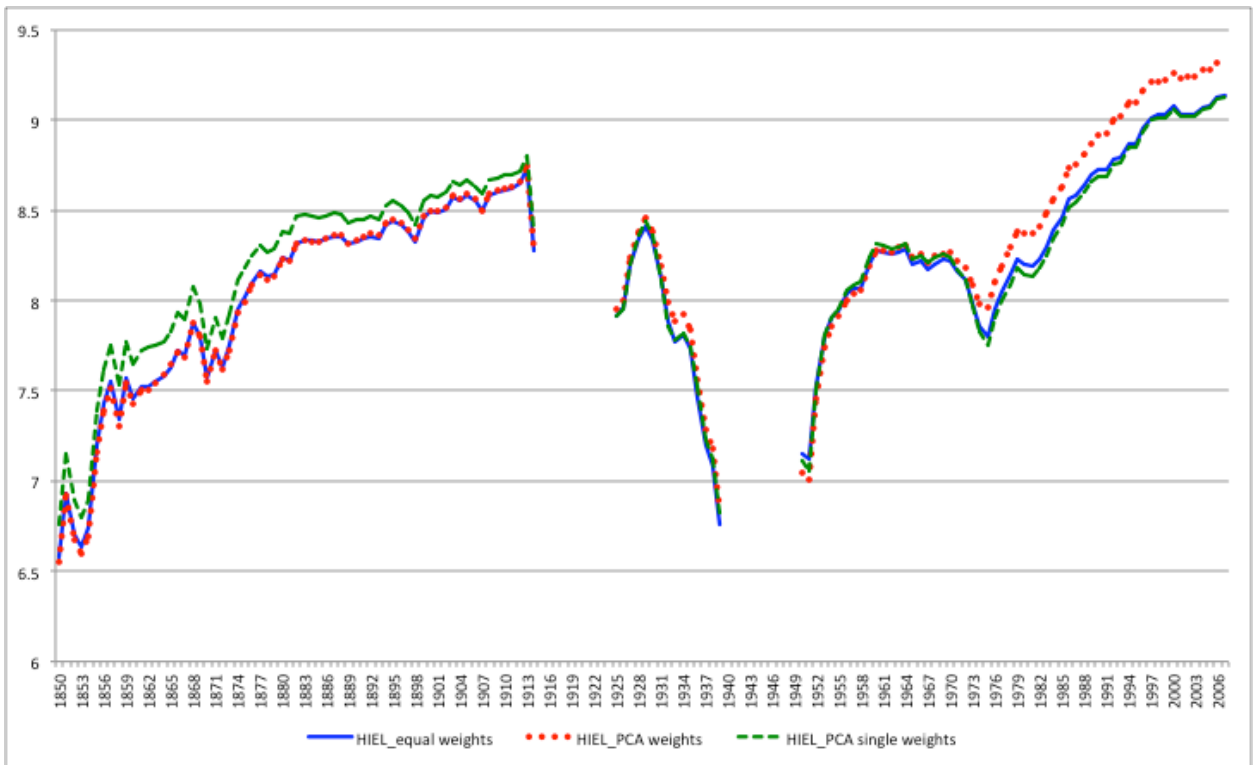


Figure 6. Alternative Historical Indices of Economic Liberty (HIEL) with Equal and PCA Weighting (average spliced estimates) (Unweighted)

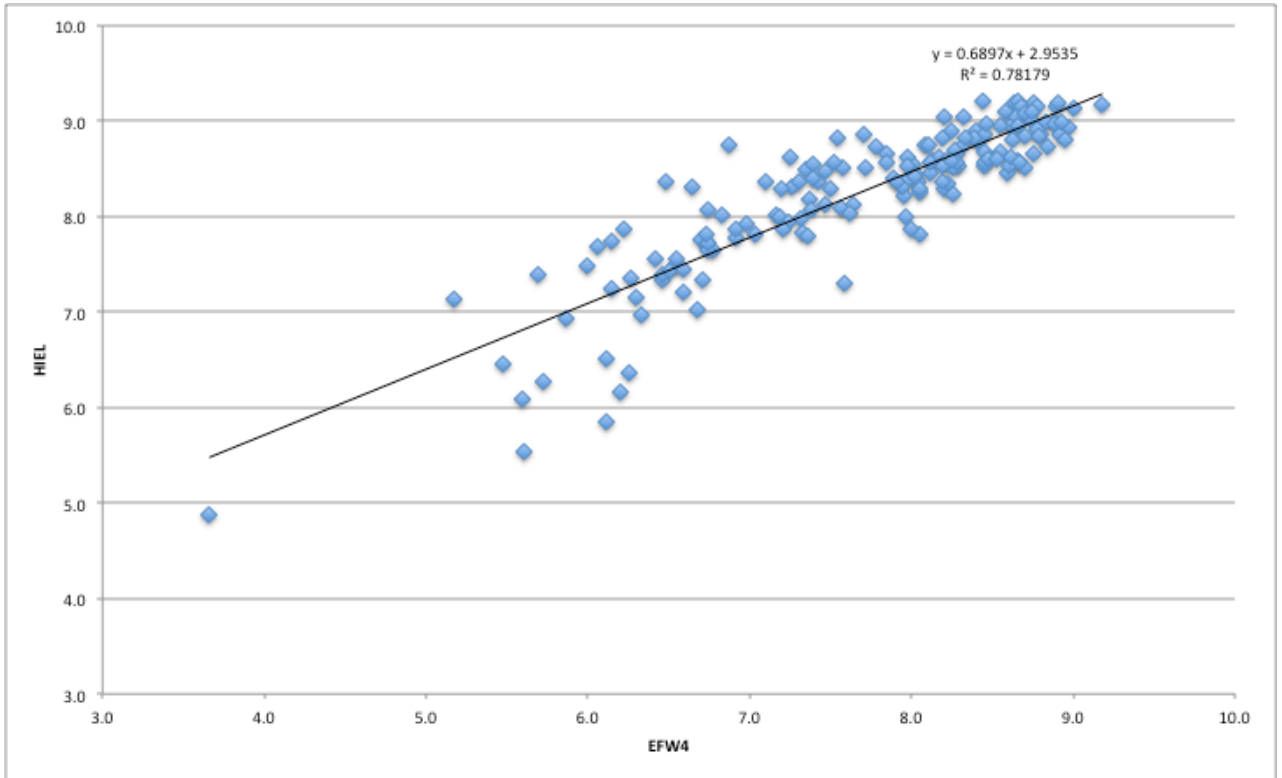


Figure 7. Historical Index of Economic Liberty (HIEL) [vertical] and Fraser Institute's Index of Economic Freedom (EFW4) [horizontal], 1970-2005/7

Sources: See the text and Gwartney et al. (2012)

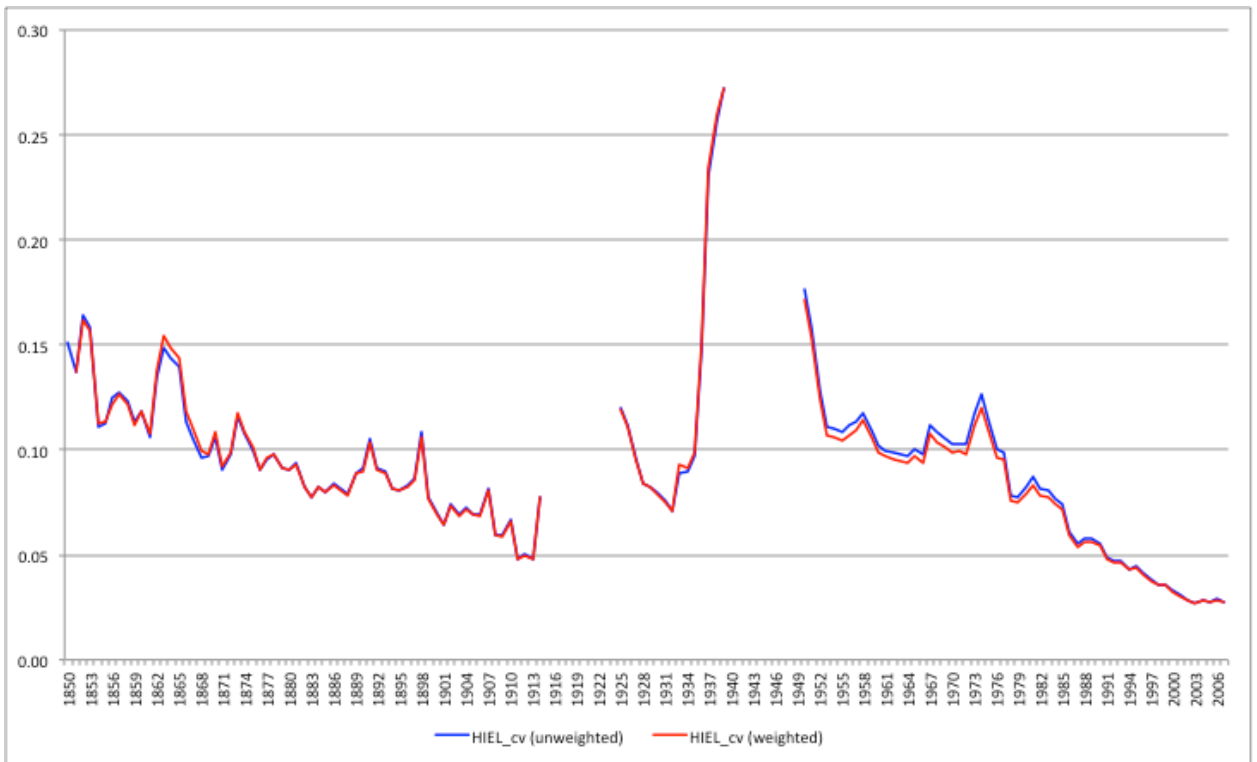


Figure 8. Dispersion of Economic Liberty in OECD Countries, 1850-2007 (coefficient of variation) (Unweighted and Population-weighted)

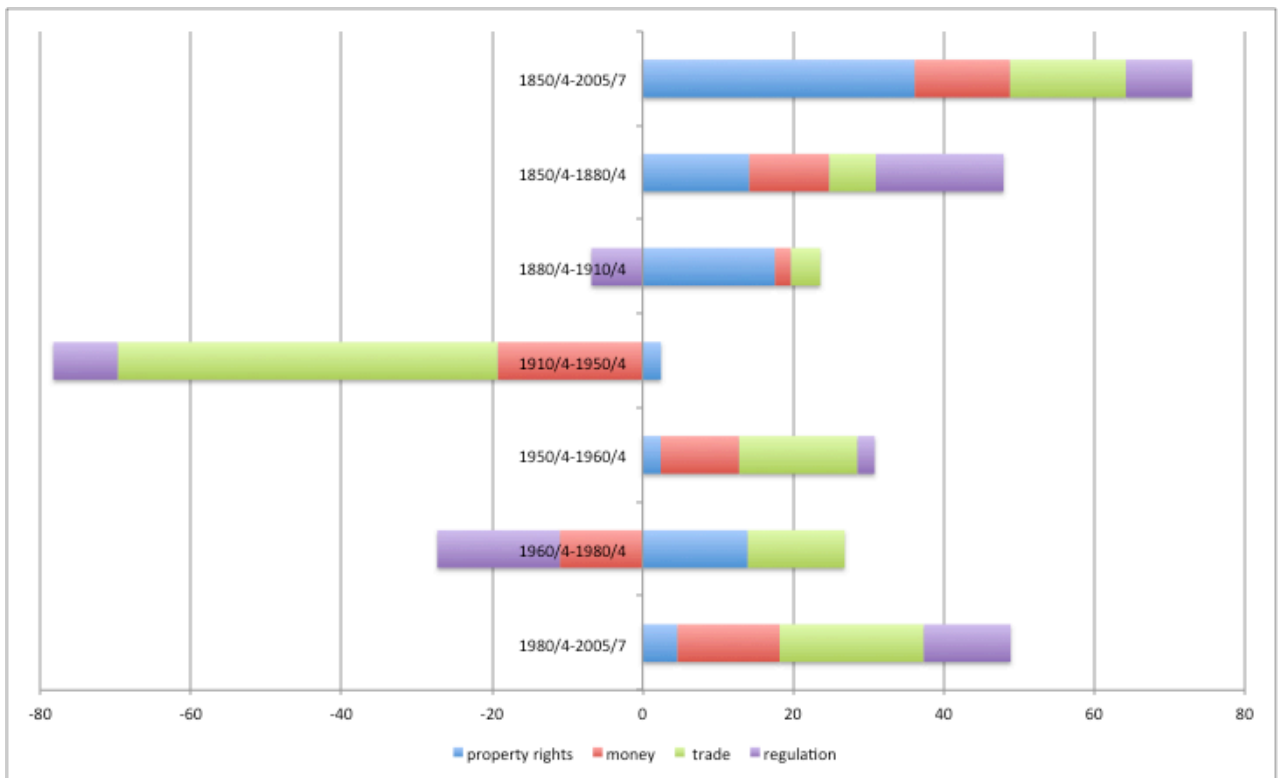


Figure 9. Drivers of Economic Freedom over Long Swings: Decomposing the Percentage Shortfall in the OECD, 1850-2007 (unweighted average)

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

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Appendix B. Sources and Procedures

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 Toyoda (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. The values assigned in this exploratory exercise are, unfortunately, largely discretionary.

Thus, before 1914, a value of 10 has been assigned to 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. However, each country’s value deviates from the initial level on the basis of its exchange rate volatility (*ERV*) against the Sterling (Table 1).

In the Interwar years (defined here as the period 1925-39), 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 (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: 132-45).

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

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 (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, and 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, and 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.

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), '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 and Labour

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). Since Crafts' indices are provided at period averages (1960-64, 1965-72, 1973-79, 1980-87), these average values have been assigned to each year in each period. Levels for 1960 have been projected backwards to 1950 with Allard's index.

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