

UNIVERSIDADE DE SÃO PAULO  
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**Coalitions on international minimum labor standards at ILO:  
an international political economy perspective**

São Paulo  
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Dissertação apresentada ao Programa de Pós-Graduação em Relações Internacionais do Instituto de Relações Internacionais da Universidade de São Paulo, para a obtenção do título de Mestre em Ciências

Orientadora: Profa. Dra. Cristiane de Andrade Lucena Carneiro

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## RESUMO

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Os padrões de ratificação de Convenções da Organização Internacional do Trabalho (OIT) e de coalisões sobre os patamares internacionais mínimos de trabalho, ao longo dos anos, podem ser explicados pela teoria de vantagem comparativa de David Ricardo, pelo modelo Heckser-Olin sobre exportações e pelo teorema de efeitos distributivos de Stolper-Samuelson. Nos últimos anos, alguns autores examinaram variáveis que poderiam potencialmente influenciar a decisão dos Estados de ratificar ou não Convenções da OIT. Sob a perspectiva da economia política internacional, variáveis tais como recursos internos e capacidade de investimentos foram usadas previamente no modelo sobre coalizões no livre comércio criado por Rogowski. Neste artigo, o nível de escolaridade é acrescentado a um modelo teórico que agrupa países de acordo com o seu respectivo fator interno de produção mais abundante, capacidade de investimentos e nível de escolaridade, orientando os respectivos apoios ou recusas em relação à adoção de padrões internacionais mínimos de trabalho. O modelo teórico foi testado por uma análise descritiva dos padrões de ratificação a partir de banco de dados criado para tal finalidade, no qual foram combinados dados oficiais e premissas originais de comparação. O banco de dados poderia ser utilizado para organizar países com base em diversos critérios e, para o objetivo do presente artigo, a conclusão alcançada foi no sentido de que os recursos produtivos internos e a capacidade de investimentos são relevantes para a formação de coalizões em relação à adoção dos patamares internacionais mínimos de trabalho, enquanto que os níveis de escolaridade são irrelevantes.

Palavras-chave: 1. Stolper-Samuelson. 2. Organização Internacional do Trabalho – OIT. 3. Ratificações

## ABSTRACT

TRUNG, Thiago Tâm Huynh. **Coalitions on International Minimum Labor Standards at ILO: An International Political Economy Perspective**. 2016. 56 p. Dissertation (Masters) – International Relations Institute, University of São Paulo, São Paulo, 2016.

The ratification patterns at International Labor Organization (ILO) Conventions and coalitions on minimum International Labor Standards throughout the years can be explained by David Ricardo's theory of comparative advantage, Heckscher-Olin model on exports and the distributional effects of the Stolper-Samuelson theorem. Over the last years, literature has examined variables that could potentially affect States' decision to ratify or not ILO Conventions. Under the international political economy perspective, variables such as endowment and investment capability were previously used in the model on free trade coalitions, designed by Rogowski. In this article, educational attainment is added to a theoretical model that team up countries according to their most abundant internal factor of production, investment capability and educational attainment, guiding their support or disapproval of international minimum labor standards. The theoretical model was tested by a descriptive analysis of ratification patterns for which a database was built, combining official data and original premises of comparison. The database could be used to organize countries by any criterion, and for the purposes of this article the conclusion is that factor endowment and investment capacity are relevant to the formation of coalitions on minimum International Labor Standards at ILO, whereas education attainment is irrelevant.

Palavras-chave: 1. Stolper-Samuelson. 2. International Labor Organization – ILO 3. Ratifications

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## INTRODUCTION

On the eve of its 100<sup>th</sup> anniversary, the International Labor Organization (ILO) faces several challenges. Some of them, as noted by the current Director-General, Mr. Guy Rider, in a statement during his candidature (ILO, 2012), are: developing the social dimension of an increasing globalized international market; enhancing its influence, relevance and usefulness worldwide; building consensus across a myriad of 187 (ILO, 2016a) interest-discrepant Members and reaching the most vulnerable population. The then candidate not only diagnosed the most relevant issues to be addressed during his mandate, but also externalized an effectiveness concerning question: *how successfully has the ILO been in making the difference?* This is a rather difficult question to answer, especially because there are various subject-matters and competences comprised within ILO's original and quite broad scope of promoting humane conditions of work.

ILO's work fronts are twofold. First, ILO provides technical assistance to countries from all continents aiming at capacity building and developing of labor issues. Second, ILO promotes direct discussion on a variety of labor standards<sup>1</sup> among Members during the yearly International Labor Conference with the purpose of reaching an agreement in the form of international convention proposals (Conventions). Once an agreement is obtained, each Member analyzes the Convention under a domestic perspective and hopefully, as a result, the Convention will be enacted internally and ratified at the international level.

This article focuses on the latter of ILO's work fronts, trying to understand, from a political economy perspective, the reasons why countries ratify Conventions.

The research undertaken uses a deductive approach from the general assumption that politicians make informed decisions on the ratification of ILO's Conventions in order to reward their most relevant domestic electorate, based on David Ricardo's theory of comparative advantages, Hecksher-Olin's patterns of exportation and the distributional effects in real economy proposed by the Stolper-Samuelson theorem. The deductive method includes bibliographical research about coalitions formed pursuant to political

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<sup>1</sup> ILO fosters the discussion of all labor-related matters, such as freedom of association, collective bargaining, industrial relations, forced labor, elimination of child labor and protection of children, equality of opportunities and treatment, labor administration and inspection, employment policies, vocational guidance and training, employment security, wages, working time, occupational health and safety, social security, maternity protection, social policy, migrant workers, indigenous and tribal peoples and specific categories of workers that require special attention, such as seafarers, fishers and dockworkers. For the purposes of this article, International Labor Standards mean any and all rights discussed under ILO's structure. For information on the specific International Labor Standards considered in this article for quantification purposes, please see next part.

economy concepts and Stolper-Samuelson distributional effects, statistic to demonstrate ratification patterns based on data obtained from documentary, and data research and graphical analysis of the ratifications patterns of the different coalitions groups.

This article consists of 4 parts. The first part explains the contributions of the proposed original methodological approach. The second part outlines the literature regarding the variables used to identify ratifications patterns of ILO conventions. The third part designs the theoretical model of analysis of the ratification patterns based on the distributional effects in real economy predicted by Stolper-Samuelson theorem. Finally, the fourth part confronts the theoretical model with ratification patterns out of the statistical analysis.

# 1 THE PROPOSED METHODOLOGICAL APPROACH

Analyzing ratification patterns of ILO Conventions poses several methodological questions.

ILO is permanently organized by the General Conference, the Governing Body and the International Labor Office, which have deliberative, executive and administrative competences, respectively. For the purposes of this article, we considered only the activities of the General Conference, namely the Conventions approved by such organ. Being held at least once a year, ILO's General Conference is widely known for its tripartite aspect: each Member appoints four delegates<sup>2</sup>, of whom two shall be delegates appointed by the governments and the two others shall be delegates representing the employers and the workpeople. This constitutional aspect is relevant to understand that approved Conventions are the result of the vote of civil society directly and States, the reason why the mere approval of Conventions does not actually mean international consent on a given International Labor Standard.

ILO Conventions have another singularity: once they are approved by the General Conference, according to Article 19, section 5, letters b and d, of ILO Constitutional Chart, all Members must submit them to their respective national competent authority for due legislative analysis and further domestic enactment and international ratification, if approved. In other words, the usual first action of individual signing the international convention before domestic analysis is substituted by the approval of the General Conference. The array of formal facts that could base the analysis of a Member's individual behavior towards International Labor Standards is then reduced to the votes their respective State delegates cast in the General Conference and to the ratifications of ILO Conventions. In this article, we chose to work with the latter, as ratifications represent formal commitments before the international society that are also in line with domestic law and politics (SIMMONS, 2009, p. 6). Dealing with ratifications also mitigates the issue of false-positive countries, to use a term coined by Simmons (2009, Chapter 3), because voting patterns could be misleading due to their lack of enforceability and the political use thereof for international relations purposes.

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<sup>2</sup> Article 3, paragraph 1, ILO Constitution 1919, as amended.

The analysis of the historical number of ratifications of ILO must address the concern that some of the conventions have gone outdated since 1919 and that the positions on labor markets have changed over the years. In order to avoid concerns relating to the length of the series of data, we opted for using exclusively the Conventions ILO found up-to-date that are recommended for active promotion by the Working Party on Policy Regarding the Revision of Standards between 1995 and 2002 (ILO, 2016b). Although this cut avoids the concern regarding the contemporaneousness of the International Labor Standards analyzed, it also implies a bias consisting of the analysis of countries' behavior during almost 100 years under a current perspective, which is hereby acknowledged.

We also avoided any bias relating to the subject-matters of ILO Conventions by considering ratifications of all 83 conventions and protocols that have been found up-to-date and, regardless their status of Fundamental, Governance or Technical conventions. We worked under the assumption that all Conventions discussed by ILO are an important contribution to International Labor Standards. The up-to-date Conventions and Protocols are listed at the Exhibit II.

Once the selection of Conventions was made, we built the database<sup>3</sup> with the purpose of understanding the ratification percentage of the Conventions approved by the General Conference.

The database is an essential part of the work and it represents an innovative contribution. The database has made possible the analysis of individual or group of countries' patterns of ratifications based on data that, although official was available in spread out sources and was collected from mismatched methods. Most importantly, the database was built under original premises of comparison proposing ways of combinations that solve many of the problems and concerns which are commonly found in any combination of data extracted from different sources and upon disparate forms.

For each year, we calculated the accumulated number of ratifications of up-to-date Conventions until December 31 and then divided it by the total number of possible ratifications, which is the result of the multiplication of the number of Members in a given year by the number of all up-to-date Conventions approved until December 31. In addition, we also calculated the percentage of ratification of each selected Member by dividing the number of accumulated ratifications by the number of up-to-date

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<sup>3</sup> The database is available for download at the following link:  
[https://www.sugarsync.com/pf/D7307987\\_882\\_307272968?\\_ga=1.40100578.1149376100.1448320797](https://www.sugarsync.com/pf/D7307987_882_307272968?_ga=1.40100578.1149376100.1448320797)

Conventions approved by the General Conference until December 31. In the article, we named such percentages as Share of Ratification, as explained later.

After the Shares of Ratification were calculated for each year, we were able to find the average Share of Ratification. As the information of accumulated ratifications were prepared individually, the database may be used to analyze ratification patterns of selected countries individually or as a group by simply adding the amount of accumulated ratifications and dividing the Share of Ratification by the number of elements in such a group.

## **2 STATE OF THE ART OF THE ANALYSIS OF VARIABLES ON ILO CONVENTIONS RATIFICATION PATTERNS**

ILO's capacities of making its members abide by its international rules of law and to enforce such rules against sheer exploration of human labor require careful analysis. Notwithstanding the fact that ILO's Members discuss almost exclusively labor-related matters, at the domestic level all countries are subject to numerous social, economic and political factors that must be internally equalized before ratifying an international rule of law. The Conventions adopted by International Labor Conferences face no similar interferences.

A handful of authors have suggested variables that could potentially affect States' decision to ratify ILO Conventions. For instance, Chau and Kanbur (2001) have reached interesting conclusions after analyzing the ratification patterns of four Fundamental Conventions of ILO, namely the Conventions on the Right to Organize and Collective Bargaining; Abolition of Forced Labor; Discrimination; and Minimum Age. Focusing on two variables, the legal system and peer effects, the authors have found out that: (i) countries with Scandinavian civil law background have higher probability to ratify conventions while in countries with socialist law background this probability is lower; and (ii) peer effects have a major weight in the Conventions on the Right to Organize and Abolition of Forced Labor, with the probability being higher the greater the number of ratifications of a reference group.

Upon adopting a realist approach, Deloach, Das and Conley (2006) have also made an important contribution by analyzing the relation between power and labor standards. Based on a concept of power directly related to international trade, in which a State is more powerful to the extent that its respective cost of barriers are lower, the authors claimed that: (i) powerful countries are less committed to labor standards than less-powerful countries; and (ii) less-developed countries should not be expected to support the same level of labor standards as their wealthier counterparts. In addition, Baccini and Koenig-Archibugi (2014), adopting rationalist and sociological institutionalism perspectives, found curious evidences that States rationally take into consideration the behavior of their trade rivals before committing to ILO Conventions

and are more willing to ratify international minimum labor standards when doing so conforms to a norm of appropriate behavior that is prevalent in a state's peer groups.

Boockmann wrote several articles on ratification patterns from a political economy point of view, each one of them using a different approach. The first article (2000) is dedicated to a duration analysis according to which the author concludes that industrialized countries ratify ILO conventions based on union preferences, while developing countries tend to favor variables relating to the economic costs to implement locally the international norms derived from ratification. Later on 2002, the author makes use of law production literature to conclude that veto players are less relevant to the ratification decision than the participation in the government of a party strongly in favor of ratification, mainly because the veto players opposed to ratification can always be bought off by concession in other policy areas. On another article, Boockmann (2001) empirically sustained that highly developed countries ratify more frequently ILO Conventions either because they have a larger domestic inventory of labor regulations, reducing the costs of ratification, or because Conventions are more suitable to industrialized countries than to others. In his particular, he found no evidence to uphold the position that countries influence each other in the ratification decision. Finally, in an article from 2006, the author concludes that economic factors, such as unemployment rates and sectoral structure of employment, have significant effects on ratification patterns.

Up until now authors have discussed the impact on ratification patterns of domestic legal systems, peer behavior, power derived from international trade capacity and international competition, and specific political and economic aspects, as seen above.

The purpose of this article is to establish a dialogue with Rogowski (2010) in order to propose a model on ratification of International Labor Standards based on political economy concepts. That brings the discussion on ratification patterns of International Labor Standards to a different prospect of the previous works on the matters, which were limited to the variables of endowment and investment capability. Checking whether education attainment is a relevant factor for ratifications is one of the most significant contributions of this work to the global debate.

### 3 THEORETICAL FRAMEWORK AND MODEL

The international competition environment has drastically changed since ILO's foundation in 1919 (DEARDORFF; STERN, 2002). The second half of the 20<sup>th</sup> Century witnessed an increasing globalization intensified by a drastic reduction in transportation costs, the emergence of powerful communication tools leading to globally integrated production systems and markets, and the consolidation of free trade as a global goal represented by the formation of the World Trade Organization (WTO). This paper argues that globalization and free trade have an impact on the behavior adopted by States towards ILO's Conventions, as international competition increases the pressures to cut costs and to achieve greater flexibility in the production system (LEE, 1997). Furthermore, this work seeks to identify and to provide an explanation for patterns of ratifications based on the distributional effects in real economy proposed by the Stolper-Samuelson theorem.

According to Alt and Gilligan (2010), the Stolper-Samuelson theorem states that, under certain assumptions<sup>4</sup>, a change in the price of a product would more than proportionally change the return to the factor that is used intensively in the production of that good. As per the Hecksher-Ohlin theorem, a country will export the good, of which the production uses intensely the abundant factor in the respective country (ALT; GILLIGAN 2010). The combination of both theorems results in the basic theoretical argument upholding the assertion that the liberalization of international trade benefits the most abundant factor.

For the purposes of clarification, assuming that (i) Country A has relatively more labor available in comparison to Country B, which has, on the contrary, relatively more land available if compared to country A; (ii) Country A makes chairs and Country B grows bananas; and (iii) a chair requires relatively more labor to be made than a banana, and a banana uses relatively more land than a chair. According to Hecksher-Olin theorem in a dual trade relationship, Country A will export chairs to Country B, and Country B will export bananas to Country A. As per the Stolper-Samuelson theorem, the prices raise of chairs and bananas derived from the increased demand of such goods would more than proportionally increase the return to labor and land, respectively (*i.e.*,

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<sup>4</sup> Such assumptions are constant returns, perfect competition and equality of the number of factors to the number of products.

in the case of the chair, the factor labor's income would increase more than the income of the factor land, while in the case of the banana, the factor land's income would increase more than the factor labor's).

Based on such distributional effects of international trade liberalization<sup>5</sup> and under the assumption that political leaders would always take decisions for the benefit of the most important domestic economic group (i.e., most abundant factor) in exchange for political support<sup>6</sup>, Rogowski (2010) endeavors efforts to predict domestic political coalitions regarding trade liberalization, dividing countries according to the types of factor endowments and availability of capital. In essence, the author first divides States between advanced economy states, which have abundant capital, and backward economy states, which have scarce capital, and then separates each of the groups between States that have land or labor as abundant inner factor. Inspired by the model designed by Rogowski on free trade coalitions and adding educational attainment as a third possible relevant element, this article argues that it is possible to design international coalitions on international minimum labor standards and to explain Members' behavior, at least partially, based on the Stolper-Samuelson theorem<sup>7</sup>.

Relying on the separation of States proposed by Rogowski (2010) and the assumptions above, and applying the same rationale pursuant to which governments gratify the most abundant factor in exchange for political support, States with high land-labor ratio (Land Countries) would have no direct incentives to support the raise of International Labor Standards, because their most abundant factor is land. Considering an exclusive factor endowment approach, landowners would be the most important domestic political group in those countries, and the raise of International Labor Standards would directly affect the domestic costs of production and reduce their profits. On the other hand, countries with low land-labor ratio (Labor Countries) have labor as the most abundant factor, the reason why the relevant governments would presumably have incentives to vote for the raise of International Labor Standards in order to gain domestic support.

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<sup>5</sup> Political economy analyses based solely on Stolper-Samuelson and Heckscher-Olin theorems, as the one proposed herein, tend to ignore the transaction costs of political participation and to overlook the participants' idiosyncrasies that may limit their ability and willingness to act towards international labor standards. Accordingly, this paper treats participants as they should be, and not as they actually are, having a flagrant must-be nature.

<sup>6</sup> The assumption that States act in the international arena exclusively based on the rational interest of domestic groups restricts the applicability of the conclusions drawn further hereof: if, on one hand, it is widely accepted that States act to benefit the most important domestic coalitions, as argued by Bueno de Mesquita (2010), it is equally true that the Janus-faced States often take positions aiming at causing certain impressions on the international stakeholders about strategic ratification, as suggested by Chau and Kanbur (2001), Simmons (2009) and Baccini and Koenig-Archibugi (2014).

<sup>7</sup> All assumptions that support Stolper Samuelson and Hecksher Ohlin theorems are also undertaken hereby. Such assumptions are: constant returns, perfect competition and equality of the number of factors to the number of products.

The general outcomes deriving from the most abundant inner factor, however, are expected to differ when the component capital is added to the analysis. The intensive use of technology by capital abundant economies (Advanced Economies) tends to reduce the impacts of minimum labor standards, because the accumulation of capital capacitates domestic actors to invest in new technologies and machinery, and to adopt increasingly mechanized production systems, which are far less dependent on human labor and thus render minimum labor standards, when applicable, less relevant to production costs than to labor-intensive organizations. By contrast, countries with scarce availability of capital (Backward Economies) would likely to be more impacted by Conventions than Advanced Economies.

Additionally, skillfulness of the workforce should be included in the analyses. If, on one hand, the accumulation of capital offers increasingly technical positions, continuous formal scholarship, on the other hand, raises the chances of satisfactorily occupying them. Countries with high education attainment are expected not only to have a more specialized workforce and less dependent of minimum labor standards, but also to have presumably reached social achievements as domestic labor regulations and the right of collective bargaining for better working conditions, making ratification of ILO's Conventions less relevant to the internal electorate. In contrariety, countries with low education attainment would have greater political gains from the incorporation of minimum labor standards and thus would be more interested in ratifications of Conventions.

All the assumptions above contribute to the proposed theoretical model pursuant to which the combination of the most abundant inner factor, capital availability and education attainment defines coalitions on International Labor Standards at ILO.

Land Advanced Countries are countries with land as the most abundant inner factor with capital available to invest in the production system. In general, such group of countries would not have motivation to ratify ILO Conventions because: (i) landowners represent the most relevant domestic political group, and they are presumable against the extra costs in the production added by the observance of minimum labor standards; (ii) international minimum labor standards, when applied internationally, could potentially raise technology and machinery costs produced abroad, inflicting additional costs to the domestic production system; and (iii) the domestic political group favored of the minimum labor standards is not only less relevant for governments due to factor endowment issues, but also it is numerically restricted by virtue of the expected high

educational levels, rendering capacity to the workforce to fill in better job positions and to foster domestic social achievements that sets the standards in a higher level than the ones provided by ILO Conventions.

Despite the multiple reasons that influence Land Advanced Countries against international minimum labor standards, it is possible to envisage scenarios in which they strategically need the approval of the international standards. Such is the case of domestic regulations already in accordance with the proposed International Labor Standards in question, when such group of countries would only have interest in the approval of the international standards because it would enhance their competitiveness in the international market by universalizing labor costs that they already face domestically, irrespective of the level of human labor used in the production<sup>8</sup>. The raise of International Labor Standards affecting mechanized phases could also represent a strategic position for Land Advanced Countries, because they could impinge relatively more costs to their international competitors, who use relatively more human work in their domestic production, and thus enhance their competitiveness in the international market. This situation is likely to deepen the concentration of wealth of Land Advanced Countries and it provides clear incentives for such States to embrace the elevation of International Labor Standards. Such strategic actions, however, demand not only efforts towards mapping competitors' domestic labor regulation and production systems, which depends on information that is not always clear or available, but also require a coordinate action amongst competitors.

In a scenario of limited capital to be invested in the production the variables are fewer. Land Backward Countries are expected to oppose to most proposals of increase of labor standards due to the foreseeable negative impacts on the human-intensive domestic production's costs. Differently from Land Advanced Countries, these States normally have a less educated workforce and fewer social achievements leading to higher impacts of minimum labor standards that, even being beneficial to workers, contrast with the interests of the political dominant group. Labor standards would also affect international competitiveness by elevating the costs of production, unless adopted coordinately with direct competitors.

If Land Countries would have little interest in the approval of international minimum labor standards, the opposite occurs with States with low land-labor ratio. Since these

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<sup>8</sup> Boockmann (2000) concluded that pre-existing legislation increases the likelihood of a country ratifying international conventions on labor standards.

countries have labor as the most abundant factor, their governments would presumably have incentives to vote for the raise of International Labor Standards in order to gain domestic support. The general assumption, however, is also influenced by the capital available for investments in the production, skillfulness of the labor force and international competition.

The availability of capital to invest in the production system, or the restriction thereof, has similar effects on Labor Countries as on Land Countries. In a context of scarcity of capital, minimum labor standards would have stronger impacts on Labor Backward Countries because: (i) the low rate of investments entails a production with intensive use of human work with fewer number of specialized positions, exposing a greater number of workers to minimum labor standards; and (ii) educational attainment is expected to be lower in this group of countries and, therefore, the number of people prepared to assume specialized positions is also smaller than in rich countries. The exact opposite is likely to be true for Labor Advanced Countries, where there are fewer incentives to adopt internationally minimum labor standards as high-skilled job positions are expected to significantly outnumber low-skilled ones and the correspondent workforce would possess a high level of educational attainment, qualifying workers for positions not subject to minimum labor standards. According to such rationale, Labor Backward Countries would have more incentives to adopt International Labor Standards than Labor Advanced Countries, but, in the overall, they would have more incentives to do so than Land Countries.

The analysis on Labor Countries must go beyond, however. Backward Countries abundant in labor are inserted in the international organization of labor as cheap workforce providers and compete with a myriad of similar states across the globe. Globalization has amplified such competition by the fast progress of telecommunication and the reduction of transportation costs, which mitigate geographical distances and expand competition for international investments. Politicians from such economies face then the following dilemma: (i) to answer to immediate claims of the abundant factor to avoid raising International Labor Standards in order to preserve full discretion to change domestic standards as means of attraction of international investments, as their competitiveness is largely based on lower labor costs (LEE, 1997)<sup>9</sup>; or (ii) to embrace the raise of labor standards in a discouragement of a race to the bottom that is

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<sup>9</sup> Boockmann [2002?] also notes that governments are hesitant to ratify ILO Conventions during high unemployment rates due to the lower flexibility of labor markets it presumably entails.

ultimately damaging for the countries and their electorate in the long-term. The first alternative is most likely to be adopted by countries with low levels of development, while the second one is expected from States who attained a minimum level of development.

Differently from the case of Land Countries and Labor Backward Countries, which must necessarily explore the local factor to produce wealth, Labor Advanced Countries are not bound to remain onshore. Advanced economies have easy access to low-cost transportation and telecommunication technologies that allow the segregation of the production system across the globe. The main reason why companies are not necessarily attached to boundaries of the territory of their own State is the following: they have the means and the information to fractionate the production and to shop for jurisdictions in which the local labor market is more adequate for a given production phase or the costs of production are lower, including expenses with labor standards, in order to maximize profits. With levels of education often higher than poor countries and infrastructure benefits, Labor Advanced States tend to attract and concentrate job opportunities that require more qualification and often receive higher remuneration than simple tasks. Such fact unveils two main consequences: (i) first, Labor Advanced States tend to keep onshore high-end job opportunities and sometimes even incentive companies to outsource production lines and plants offshore in order to increase profits; and (ii) second, the minimum labor standards have smaller impacts on the labor relationships and domestic electorate, because most of the job opportunities usually stand far from the minimum standards and gather additional benefits to attract high-end workers. Therefore, although there are domestic incentives for the government to stand for the raise of International Labor Standards and reward one of the most abundant factors, there are also incentives to leave them at the current levels to promote an even greater accumulation of capital due to the use of backward economies in the production line.

In summary:

(i) Labor Countries are expected to ratify more ILO Conventions than Land Countries;

(ii) Advanced Countries, irrespective of their inner relative factor endowment, are expected to act less supportive of minimum labor standards than Backward

Countries, due to the fact that high-end job positions created by accumulation of capital fall far from minimum labor standards;

(iii) Labor Advanced Countries are expected to have a decreasing interest in supporting international minimum labor standards due to the increasing possibility of exploring low-regulated jurisdictions to reduce production costs;

(iv) Labor Backward Countries are expected to initially have a lethargic position on the promotion of minimum labor standards, in order to keep low labor standards and attract international investments, and gradually become more supportive of ILO, in order to avoid race-to-the-bottom competition and preserve and enhance local welfare;

(iv) Land Advanced Countries are expected to have a low interest in international minimum labor standards due to the low impact in the domestic electorate and to a technology-intensive production system;

(v) Countries with a high proportion of workers limited to primary education attainment, likely Backward Countries, are expected to ratify more ILO Conventions due to the large impact of minimum labor standards on the internal electorate, which would be prepared to take-up low-end job positions; and

(vi) Countries with a high proportion of workers who completed tertiary education, likely Advanced Countries, are expected to ratify fewer ILO Conventions due to the restricted impact of minimum labor standards on the internal electorate, which would be prepared to take-up high-end job positions.

## 4 THE STATISTICAL ANALYSIS

### 4.1 Introduction to statistical analysis

Following the design of the theoretical framework, there is a need to check whether it reflects the reality of facts. We have gathered information regarding ratifications of *up-to-date* Conventions<sup>10</sup> available at ILO's website throughout the years and distributed the selected Members in groups according to their most abundant factors of endowment, investments in research and development and educational attainment. Then, the levels of ratification across the different groups were compared in order to provide a descriptive analysis of ratification patterns, similarly to what Haas (1962) did in the early 1960's based on variables such as location, political system, economic development, economic institutions and political alignment.

Ratified ILO Conventions are the best objective data to analyze a country's position towards minimum labor standards and to understand international coalitions thereon, as they represent binding commitments alongside with potentially important consequences for law and politics (SIMMONS, 2009, page 6), both domestically and internationally<sup>11</sup>. The quantitative analysis was entirely based on the concept of *Share of Ratification of ILO Conventions*, which purports to demonstrate how supportive of ILO countries, or group of countries, has been acting throughout the years. A Member's Share of Ratification mathematically consists of the division of the respective number of ratifications of up-to-date Conventions by the number of up-to-date conventions generally available for ratification in a given year. Each Member had its Share of Ratification calculated for every year<sup>12</sup> it held the title of Member of ILO and, then, it was possible to draft line graphics with the historical data and also to calculate an overall

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<sup>10</sup> It is noted that labor markets and political positions towards them have drastically changed since the constitution of ILO, especially considering the almost one hundred years of developing of International Labor Standards. The methodology used in this article recognizes that the position of the countries towards International Labor Standards is analyzed under the lenses of current values, as we used the information on ratification regarding the conventions and protocols that have been found up-to-date and recommended for active promotion by the Working Party on Policy Regarding the Revision of Standards between 1995 and 2002. Conventions status as per the information available at The ILO, 2016. For further information, please see Exhibit II – Methodological Approach.

<sup>11</sup> According to Article 19, section 5, letters b and d, of ILO Constitutional Chart, all Members must submit any convention adopted at the International Labor Conference to their respective national competent authority for due legislative analysis and further domestic enactment and international ratification, if approved.

<sup>12</sup> As of December 31st of each year.

Average of Share of Ratification for each country. Share of Ratifications (SoR) and Average Share of Ratifications (ASoR) can be represented as follows:

$$SoR_y = \frac{R_y}{C_y}$$

Where:

$SoR_y$  is the Individual Share of Ratification of a given Year;

$R_y$  is the number of ratification in a given year;

$C_y$  is the number of conventions available for ratification in a given year;

ASA is the Average Share of Ratifications;

and

$$ASoR = \frac{\sum SoR_y}{n}$$

Where:

ASoR is the Average Share of Ratification;

$\sum SoR_y$  is the sum of all Shares of Ratification of a given period;

$n$  is the number of years of a given period

Once the Individual Share of Ratification is sorted out, it is possible to determine the Group Share of Ratification of any given group of Countries by summing the respective number of ratifications of ILO Conventions and dividing the result by the possible number of ratification of such a group for each year, which is the number of up-to-date conventions generally available for ratification multiplied by the number of Members. The Group Average Share of Ratification is calculated exactly the same way as the Individual Average Share of Ratification. The algebraic representation of the concept of Group Share of Ratification is:

$$GSoR_y = \frac{R_a + R_b + R_c + R_x}{C_y \times X}$$

Where:

$GSoR_y$  is the Group Share of Ratification of a given Year;

$R_a, R_b, R_c$  and  $R_x$  are the number of ratification in a given year of specific countries;

$C_y$  is the number of conventions available for ratification in a given year;

$X$  is the number of countries in a given group.

Once the information on ratification is organized as outlined above, which enables the analysis of the formal behavior of countries, we chose variables that could separate countries in accordance with the theoretical model to test its likelihood.

Initially, the model suggests that the relation between the factor endowments land and labor have real economy distributional effects that guide political leaders in the decision of ratification of ILO Conventions. With the purpose of distributing countries in groups according to their most abundant inner factor endowments, i.e. land or labor, we ranked them in accordance with the quotient *hectares per working age person*, which is the result of the division between the arable hectares<sup>13</sup> of a given country by its working age population<sup>14</sup> as available in the database of the World Bank (Land-Labor Quotient). Considering the purpose of identifying countries' behavior towards ratifications throughout the years, we calculated individual Land-Labor Quotients per year since 1960, which is the oldest data available in the database, and then we extracted the average of the yearly Land-Labor Quotients (Average Land-Labor Quotient).

The mere ranking of Countries is not sufficient to determine their respective comparative advantage in the international market. The rationale behind Stolper-Samuelson theorem is only applicable to a bilateral relationship, without allowing a multilateral approach. Therefore, a precise distribution of countries per factor endowment was obtained by the comparison of the Average Land-Labor Quotient of a given country against the relative Average Land-Labor Quotient of the World, which is the division of the total arable land minus the arable of such given country by the total working age population minus the working age population of the relevant country (*Relative World Land-Labor Average Quotient*). After such calculation was individually done, countries were distributed according to their relative abundant factor endowments as indicated in *Exhibit III – Table 1 – Countries per Factor Endowment*.

The number of analyzed countries was fairly restricted due to the availability of data on investments in research and development. The model suggests that

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<sup>13</sup> The number of hectares was not directly available at the database of World Bank. It was calculated by multiplying the land area for the percentage of agricultural land as presented in the database. Land area is defined as the *country's total area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes*, while agricultural land is defined as *share of land area that is arable, under permanent crops, and under permanent pastures. Arable land includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded. Land under permanent crops is land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest, such as cocoa, coffee, and rubber. This category includes land under flowering shrubs, fruit trees, nut trees, and vines, but excludes land under trees grown for wood or timber. Permanent pasture is land used for five or more years for forage, including natural and cultivated crops.* Ref. WORLD BANK Ref. THE WORLD BANK. Agricultural land (% of land area) - Data. Available from: <<http://data.worldbank.org/indicator/AG.LND.AGRI.ZS?view=chart>>. Accessed on March 13, 2016.

<sup>14</sup> The working age population each country was not directly available at the database of World Bank. It was calculated by multiplying the total population for the percentage of working age population. The total population is *based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. The values shown are midyear estimates.* Working age population is the percentage of the total population that is in the age group 15 to 64. Ref. WORLD BANK, Age dependency ratio (% of working age population) – Data. Available from: <<http://data.worldbank.org/indicator/SP.POP.DPND?view=chart>>. Accessed on March 13, 2016.

concentration of capital is a relevant factor for forming the decision of ratifying ILO Conventions. However, no mere accumulation of capital should have such an impact on positions towards international minimum labor standards, but only the one that actually enhances production and increases a country's ability to compete in the international market. For that reason, we collected data on the World Bank database on investments in research and development (R&D) since 1996, the oldest worldwide information available, and ranked the countries following to the quotient *Investments per Worker*, which is the result of the division of the average of investments in R&D in US Dollars for the working age population. *Exhibit III – Table 2 – Investment per Worker* summarizes the rank of countries following to their respective average investments in R&D and indicates whether they are above or below the average *Investment per Worker* of the 45 countries on which we could retrieve data (*Selected Countries*).

At last, the proposed model suggests that skillfulness of labor force also has an impact on the Share of Ratifications. Although we acknowledge and understand that skillfulness varies according to experience, formal and informal education and professional training, quantitative data on lifelong learning and informal education are sparse. That is the reason why the best available indicators to assess the skillfulness of a country's workforce are levels of formal educational attainment, as it embodies a country's capacity of competing internationally, absorbing new technologies and strengthen and upgrade employability<sup>15</sup>. We used in this article the data organized by ILO based on UNESCO Institute for Statistics' work on the matter, which is basically divided into five schooling levels in accordance with the International Standard Classification of Education (ISCED): less than one year, and pre-primary, primary, secondary and tertiary levels.

For the purposes of this article, we limited the collection of data to primary education and tertiary education because these are the categories that impact the most on the capacity provided to workers. Primary education aims at providing a solid foundation in reading, writing and mathematics and elementary understanding of general matters as history, geography, natural science, social sciences, art and music<sup>16</sup>. It may also include training for specific occupations as well as apprenticeship programs for skilled trades. Workers who stopped their education at the primary level should be

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<sup>15</sup> Conf. The Educational attainment and illiteracy Manuscript from the Key Indicators of the Labor Market (KILM – ILO, 2015).

<sup>16</sup> Conf. The 2011 Operational Manual from the International Standard Classification of Education (ISCED) (OECD, EUROPEAN UNION, UNESCO INSTITUTE FOR STATISTICS, 2015).

prepared to take low or semi-skilled positions in the labor market<sup>17</sup>. On the other hand, tertiary education aims at a high level of complexity and specialization, including academic education and advanced vocational or professional education: programmes are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes or practical orientation for particular vocational high-level technicians fields. *Exhibit III – Table 3 – Countries per Educational Attainment* shows countries separated according to the share of their respective population that completed solely primary education and that completed tertiary education, as well as indicates whether the countries are above or below the average of the Selected Countries.

## 4.2 Statistical analysis results

First of all, not all countries have organizational capacities to collect and to organize data on the indicators used in this article, particularly investments in R&D. A complete data was available for only 45 of the 187 ILO Members. Figure 1 below shows a higher level of ratifications amongst the Selected Countries, throughout time, with an Average Share of Ratification of 34.80% against an Average Share of Ratification of 26.52% of the global ensemble. Although the restricted availability of data itself implies an endogenous bias as it excludes countries with lower organizational capacities, it was not detrimental to the analysis because as shown by Figure 1, the Selected Countries behave in a very similar way to the entire group of ILO Members and, likewise, to the countries without sufficient data to qualify for the research.

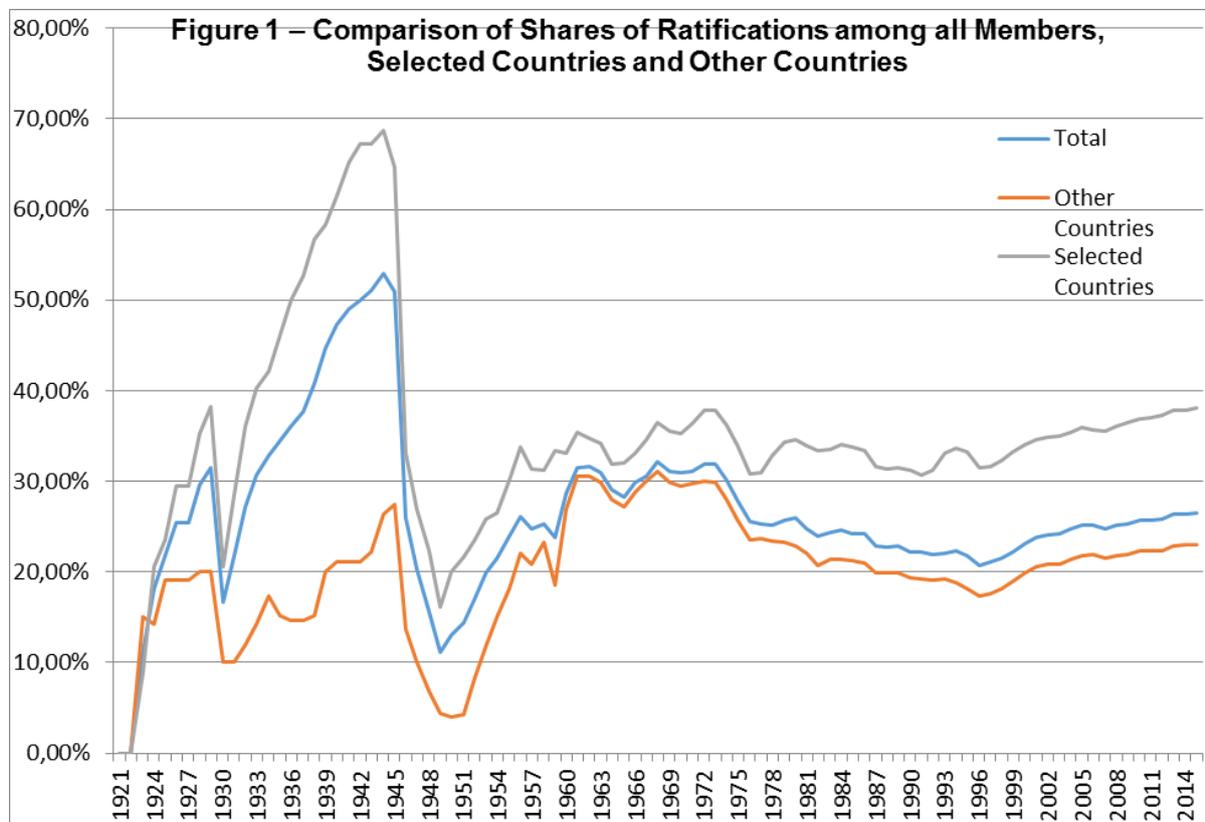
It is interesting to note how the patterns of ratifications change. Before the World War II, countries were cautious with ILO, but the general Average Share of Ratification was 30.67% (39.44% for the Selected Countries) with a positive trend, confirmed by the growth at a rate of 1.99% per year (2.83% for the Selected Countries). The peak of the Share of Ratification happened during the World War II. That is due to the fact that, out of the 38 Members in 1935, 6 countries left the organization during the conflict, reducing

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<sup>17</sup> Conf. The 2011 Operational Manual from the International Standard Classification of Education (ISCED) (OECD, EUROPEAN UNION, UNESCO INSTITUTE FOR STATISTICS, 2015, page 44): whenever there is a vocational programmes at this level, options are offered "for young people wishing to prepare for direct entry to the labor market in low or semi-skilled jobs".

the possible number of possible ratifications. Such rationale also explains why the Share of Ratification drastically dropped in the years subsequent to 1944, when 5 countries joined or rejoined the organization, disturbing the balance of the Share of Ratifications. Pursuant to Figure 1, no event after the World War II was capable of severely disrupting the ratification trends.

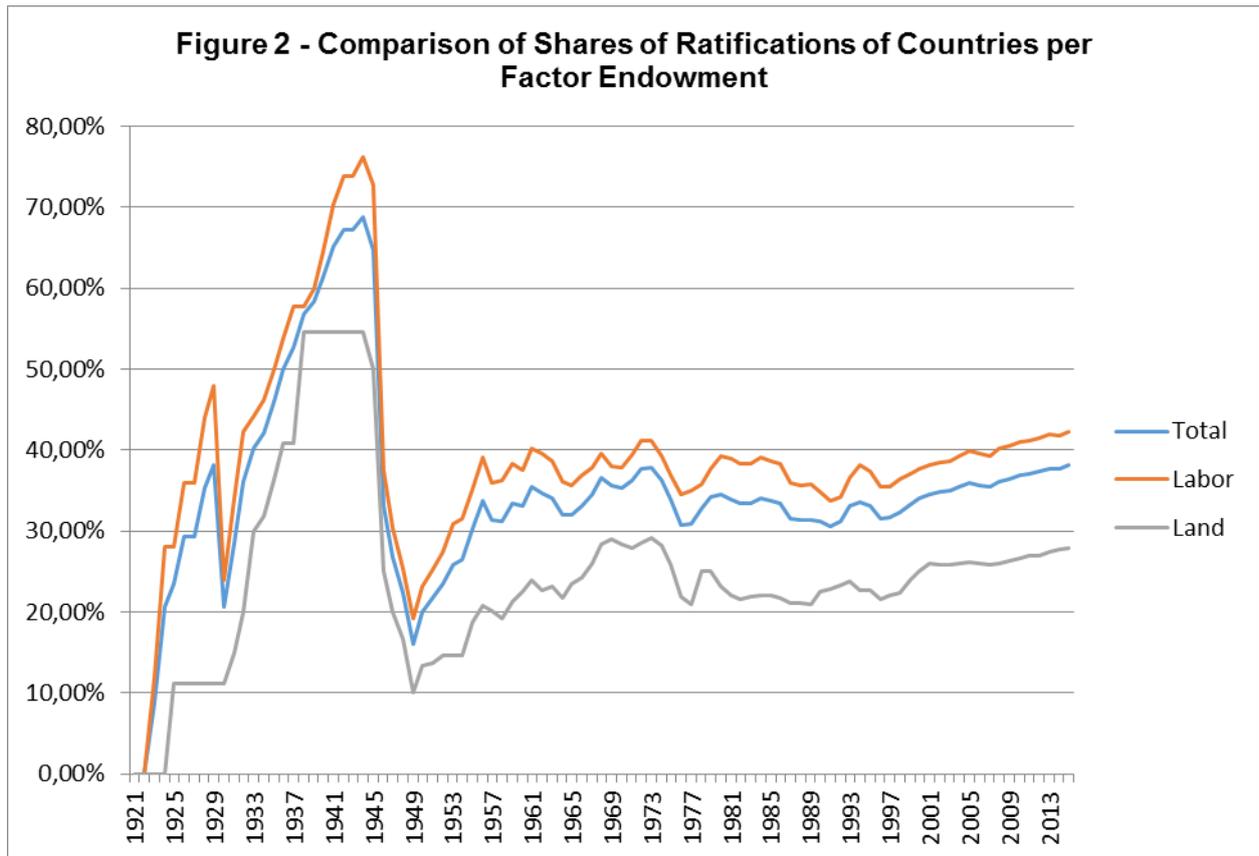
Comments on the general trends are a good exercise to understand major events that disrupted the world order, but do not relate to the scope of this article, which seeks to understand whether free trade, represented by the Stolper-Samuelson rationale, could have an impact on the share of ratifications. Accordingly, it is noteworthy that the turning point of the curve is located in the 1990's, specifically in 1996, 2 years after the conclusion of the negotiations on the Uruguay round, which formed World Trade Organization and established free trade as an accepted principle in the international economic order. Since 1994, the general trend of Share of Ratification is positive at a rate of 0.26% per year, while previously it showed negatives rates at -0.25%, -0.23% and -0.28% for the periods comprised between 1945-1959, 1960-1979 and 1980-1993, respectively (Table 4 – Trends of Share of Ratification).



Source: Database

*Exhibit III, Table 1 – Countries per Factor Endowment* shows that out of the Selected Countries, 13 have land and 32 have labor as relative abundant factor, because they have Land-Labor Average Quotients higher or lower than the Land-Labor Relative Average Quotient of the World, respectively. For instance, Australia is the country with the highest Land-Labor Quotient, with 45.89 arable hectares per worker and individual Share of Ratification of 21.48%. Yet, the lowest quotient belongs to Belgium, with just 0.05 arable hectares per worker and individual Share of Ratification of 46.54%. Based on the data, labor is the most abundant factor for over 70% of the Selected Countries, which would presumably imply strong general support to international minimum labor standards. However, the distribution of the Selected Countries pursuant to the Quotient Hectares per Worker demonstrates counter-intuitive results: for example, countries with small territories such as Iceland and New Zealand have respectively 13.03 and 7.31 hectares per worker, probably because they are sparsely occupied, classifying them as Land Countries.

In Figure 2 a comparison is made amongst the overall Shares of Ratifications between Labor Countries and Land Countries, resulting in the findings that Labor Countries have always ratified more conventions than Land Countries, even before the enunciation of Stolper-Samuelson theorem in 1941. That evidence make us infer that the decision to support international minimum labor standards, internationally, has always considered the most abundant domestic factor endowment, probably based on David Ricardo's comparative advantages theory, but not necessarily the domestic distributional effects of free trade. Labor Countries present an Average Share of Ratification at 39.03%, whereas the entire population of the Selected Countries and the Land Countries display Average Share of Ratification at 34.80% and 24.55%, respectively, corroborating that Labor Countries would be more inclined to support minimum labor standards than Land Countries. Labor Countries' trends of ratification are generally lower than Land Countries' ones, except for the periods between 1945 and 1959 and the one starting in 1994, as per the *Exhibit III – Table 4 – Ratification Trends*. A possible explanation for the apparent inconsistency between a higher Average Share Ratification and the significant lower rate of trends could be that Labor Countries ratify a higher number of conventions upon membership and afterwards ratifications become more selective, reducing the trend's ratio.

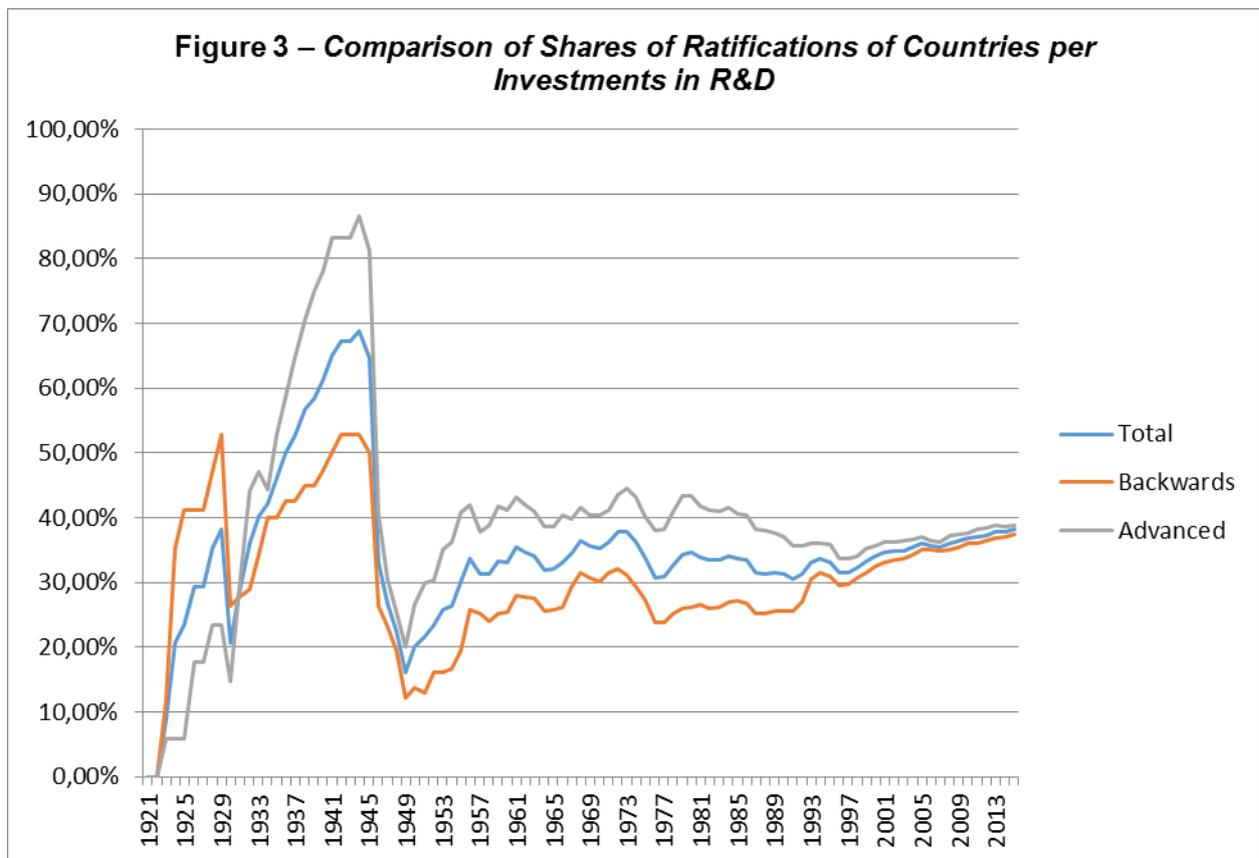


Source: Database

*Exhibit III – Table 2 – Countries per Investments in R&D* presents the Selected Countries sorted by the average of Investments in R&D per Working Person since 1996. Twenty countries are above average (“High Investments per Worker”) and twenty-five countries are below average (“Low Investments per Worker”). The average of Investment per Worker of the Selected Countries is USD493.67 per year, Indonesia and Switzerland presenting the lowest and the highest averages of Investments per Workers with USD1.57 and UD1,597.77, respectively. The general distribution of the Selected Countries confirms the common sense that developed countries invest larger amounts of funds in R&D then developing countries.

Except for the early years of ILO, Advanced Countries have historically shown a higher Average of Share of Ratifications: while the Selected Countries and Backward Countries have an Average Share of Ratifications of 34.80% and 30.56%, respectively, Advanced Countries have it at 39.46%. Figure 3 demonstrates that the difference between the Averages Share of Ratifications was larger between 1950 and early 1990: the difference in such period totaled 13.52% and then started to reduce consistently until 2015, when the percentage attained 1.40%. The main reason for such a decrease

is the consistent increase of the number of ratifications by Backward Countries, which started in 1994 with a Share of Ratification at 25.71% and, in 2015, this number has rise to 37.50%, as the Share of Ratification of Advanced Countries dropped slightly from 39.22% to 38.90%. The Backward Countries' interest in ratifying ILO's conventions seems to have a strong connection with the formation of WTO, as the line becomes positive after the consolidation of the WTO, in 1996, and kept a positive trend at a rate of 0.36% when the WTO negotiation has begun, from 1994 onwards.



Source: Database

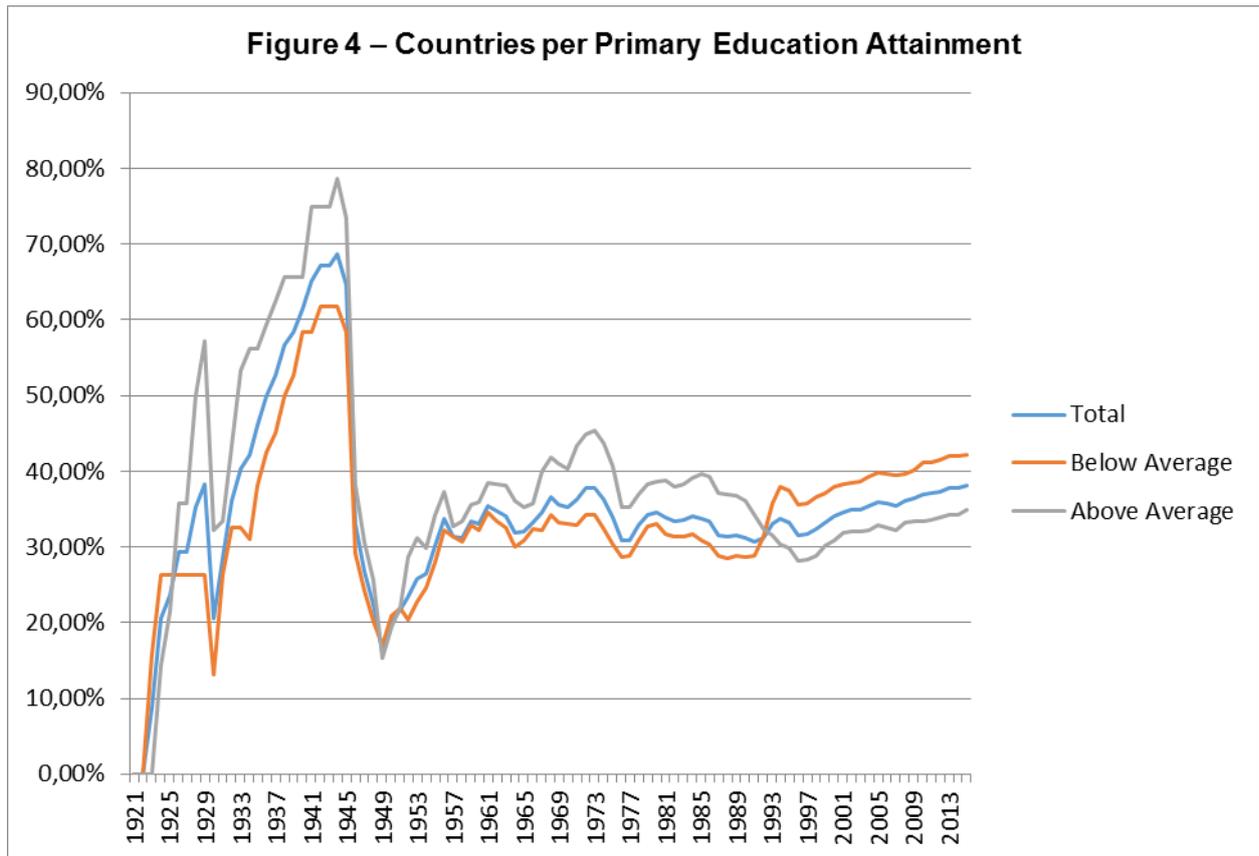
The fact that Advanced Countries had the highest trends of ratification between 1921 and 1944 of 4.26%, against 1.54% of Backward Countries and 2.83% of the overall Selected Countries, for the same period, means that labor minimum standards were originally of concern to developed economies, as a way to enable them to deal with poorly regulated jurisdictions in an international competition ambiance. A fair explanation to the change of behavior of Backward Countries is that such group of countries initially perceived ILO's conventions as a threaten to their ability to compete internationally with products and services brought up with low or absent regulation of

labor standards. Such behavior changed as soon as it emerged the perception that fighting the race to the bottom in labor standards, internationally, is a necessary step to promote the well being of States populations, just like the posture adopted by developed countries in the earlier period. On the other hand, the relative steadiness of Advanced Countries' Share of Ratification at a high level since 1950 seems compatible with the idea that rich countries have supported ILO in the past when international regulation was determinant to protect their economies due to the immobility of investments and dependence upon national workforce, whereas nowadays they lack incentives to give an even stronger support to minimum labor standards, which is also in line with the theoretical model.

*Figure 4 – Countries per Primary Education Attainment* presents the Selected Countries<sup>18</sup> sorted by the percentage of the workforce who completed only primary education. Countries above the average have a less qualified workforce than those below the average. The average percentage of the workforce who completed just primary education among the Selected Countries is 26.26%, Portugal presenting the higher percentage with 68.60% and New Zealand, the lowest, with 7.01%. The results of such analysis do not entirely confirm the common sense supposing that developed countries would have a smaller part of their population with just primary education: out of the 21 Advanced Countries, 9 are above average, which means that 42.85% of such countries have more workforce that attained only primary education than the average of the Selected Countries, while 11 of the 23 Backward Countries, or 47%.82, placed below average. Although the majority of Advanced Countries position themselves below average and the majority of Backward Countries are above it, it is worth noting that such majorities are not as great as expected. A fair explanation would be that the division between Advanced and Backward Countries for the purposes hereof is based on the levels of investments in research and development per worker, and not actually on GDP or other indexes capable of assessing more precisely a country's wealthy and its level of social development.

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<sup>18</sup> Except for China, where there were no available information on education attainment.



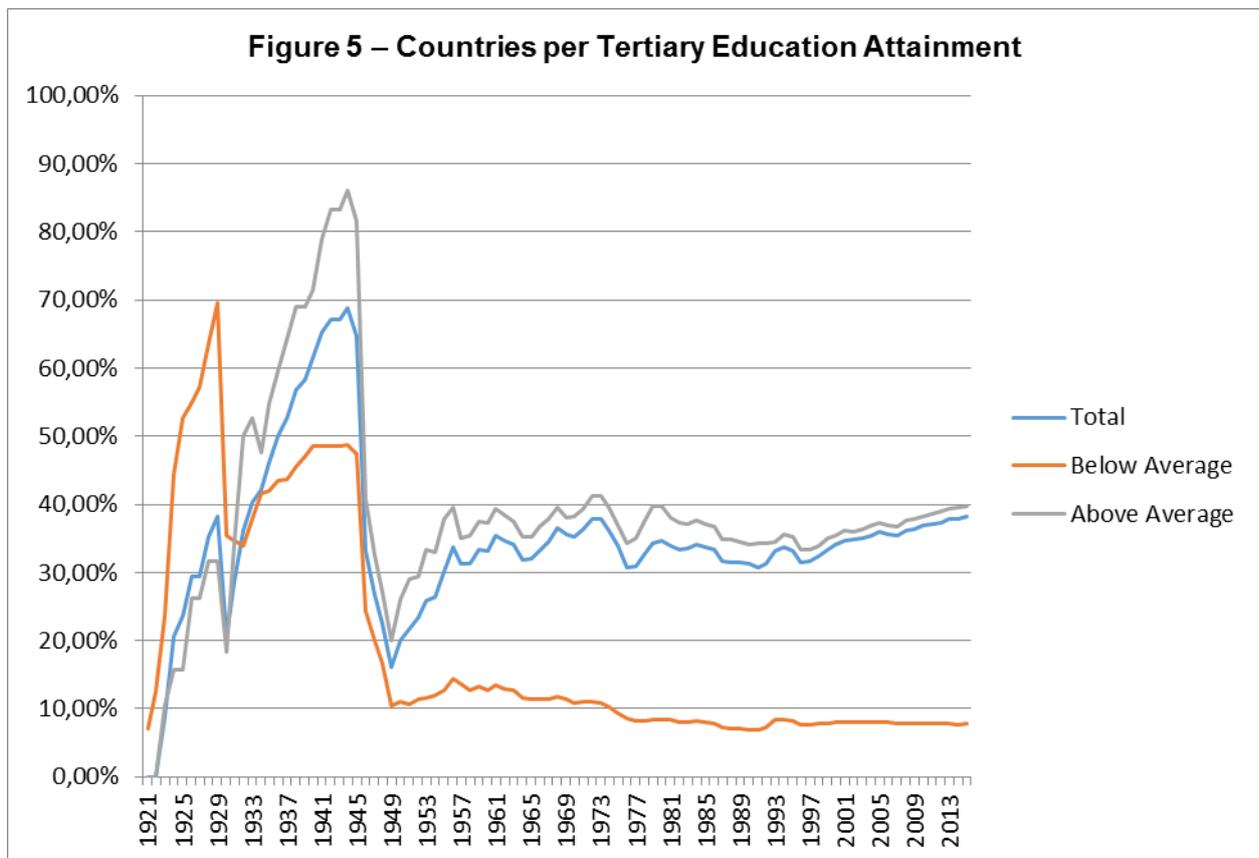
Source: Database

Less qualified workforce Countries have had a higher Share of Ratification until 1993, when more qualified workforce countries surpassed them. The 2015 averages of Share of Ratifications are at 42.12% and 34.88%, respectively. The data does not back the theoretical model, pursuant to which countries with a higher percentage of population with exclusively primary education would be more interested in ratifying ILO Conventions because the workforce is prepared mostly to low-end jobs and hence more exposed to minimum labor standards. Primarily, it means that education attainment kept in lower levels are not directly relevant in the decision-making process of ratifying ILO Conventions. A possible explanation for the results could be the low capacity of uneducated parts of the population to organize and to put pressure on policy makers.

*Figure 5 – Countries per Tertiary Education Attainment* presents the Selected Countries sorted by the percentage of the workforce who completed tertiary education. Countries in which the percentage is above average have a more qualified workforce than those in which the percentage is below average. The average percentage of the workforce who completed tertiary education among the Selected Countries<sup>19</sup> is 24.91%,

<sup>19</sup> Except for China, where there were no available information on education attainment.

Canada presenting the highest percentage with 45.55% and Indonesia, the lowest, with 6.60%. In opposition to the data regarding primary education, the data on tertiary education confirms the common sense that Advanced Countries have a more qualified workforce than Backward Countries: out of the 21 Advanced Countries, 18 are above average, which means that 85.71% of such countries have more workforce that completed tertiary education than the average of the Selected Countries, while 18 of the 23 Backward Countries, or 78.26%, are below average.



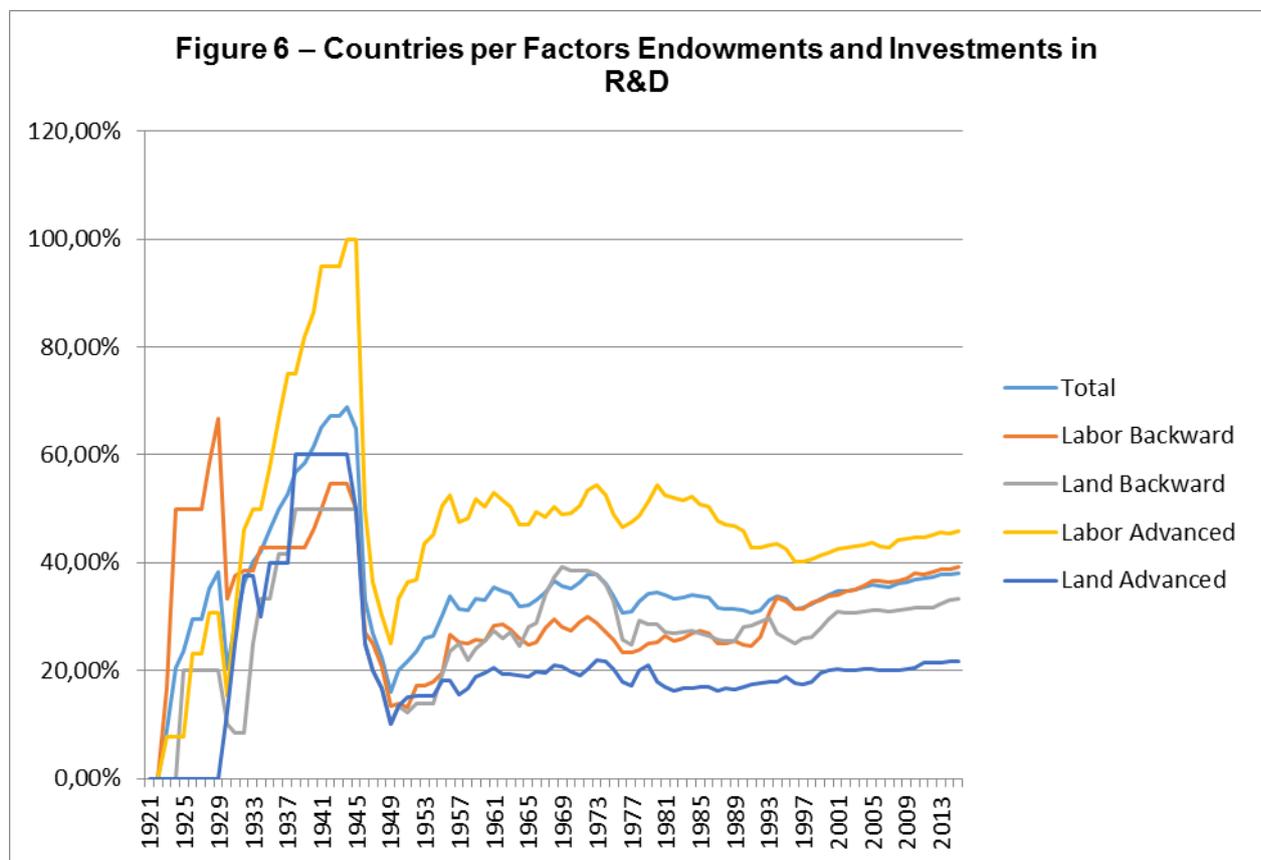
Source: Database

Countries with a higher percentage of the workforce with tertiary education have higher Share of Ratification than those with lower percentage thereof. The 2015 averages of Share of Ratifications are at 39.76% and 7.77%, respectively. Again, the data does not back the theoretical model, regarding the assumption that Countries with a high percentage of population with complete tertiary education would be less interested in ratifying ILO Conventions because the workforce is prepared to high-end jobs and hence less exposed to minimum labor standards. Essentially, it confirms the

conclusion that education attainment kept in higher levels are not relevant in the decision-making process of ratifying ILO' Conventions.

The individual analysis of Education Attainment showed that such indicator is not directly relevant in the decision-making process of ratifying ILO's Conventions. That seems to suggest the existence of high-end job positions created by the accumulation of capital are more important to the ratification decision than the capacity of the workforce to assume them (i.e., the demand for qualified workers is more important than the supply of it).

According to the individual statistical analysis of the variables presented by the theoretical model, the factor endowment and investments in R&D are relevant to the decision of ratification of ILO Conventions, whereas the factor education attainment does not have such pertinence. Advancing the discussion and focusing on the first two variables, *Figure 6 – Countries per Factors Endowments and Investments in R&D* presents the Selected Countries sorted by both factor endowment and investments in R&D.



Source: Database

Labor Advanced Countries have a historical higher Share of Ratifications, with a current Average of Share of Ratification of 47.04% and, except for the early years of ILO, they have always been the most supportive group for minimum labor standards. As per *Exhibit III – Table 4 – Trends of Ratification*, we see that such group of Countries increased its Share of Ratification at a rate of 4.73% per year from 1921 until 1944. The trend of the period from 1945 until 1993 becomes negative, at an average rate of -0.43%, and had its lowest level between 1980 and 1993, with an average rate of -0.91%. From 1994 onwards, the trend reverted to positive again at a significant lower rate of 0.22%.

The line of Labor Advanced Countries seems to confirm the theoretical model proposed. The initial strong support of ILO is underlined by the fact that the creation of such organization has targeted the protection of Labor Advanced Countries' labor markets from international competition based on low labor standards. At that time, it was not easy to invest abroad and to fractionate the production lines, mainly due to obstacles in the areas of transportation and telecommunication, increasingly surpassed in the second half of the 20<sup>th</sup> Century. The reasons for the following negative trend is probably twofold: the exploration of Labor Backward Countries' labor markets with low regulations, as predicted in the model, and the struggle to maintain a high Share of Ratifications. The final positive trend does not find explicit explanation in the theoretical model, except for the fact that such countries have labor as their most abundant inner factor. However, the trend of 0,22% is lower than the 0.36% presented by Labor Backward Countries, as seen in the theoretical model.

Although nowadays the Labor Backward Countries represent the second group that most support ILO, with an Average Share of Ratification of 31.88%, they showed smaller enthusiasm in the beginning of ILO with a rate of increasing Share of Ratification at 1.15% between 1921 and 1944. The trend turns to negative patterns between 1945 and 1993, and then it reverts to a positive rate at 0.36% from 1994 onwards. Out of the 4 groups, Labor Backward Countries have the lowest trend between 1921 and 1944, which means that they actually perceived a greater menace in ILO's regulation to their domestic markets, than any other group of countries at the time. On the other hand, the Share of Ratification trend from 1994 onwards is the highest amongst the groups, followed closely by Land Backward Countries, at rates of 0.36% and 0.35%, correspondingly, demonstrating a shift towards enhancing International Labor Standards, which could eventually be interpreted as the realization that a race to

the bottom in labor regulations is prejudicial to such group of countries. It is interesting to note that the positive trend that started in the 1990's led Labor Backward Countries' Share of Ratification to line up with the Selected Countries' Share of Ratification until definitely surpass it in 2004.

The comparison between the Share of Ratification trends of Labor Advanced Countries (0.22%) and Labor Backward Countries (0.36%) demonstrates that the first group has been acting less supportive than the second one since 1994. That evidence backs the theoretical model that suggested the Labor Advanced Countries would have fewer incentives to support ILO than Labor Backward Countries because they could explore low labor regulations abroad to enhance profitability. Although current data does not completely back the theoretical model in the sense that Labor Backward Countries would be more willing to support ILO Conventions than Labor Advanced Countries, the difference in the positive trends shows that Labor Backward Countries are likely to surpass Labor Advanced Countries in Share of Ratifications in 2059.

Land Advanced Countries were highly supportive in the years following to the creation of ILO, with a positive trend in the Share of Ratifications of 3.45%, above the trend of the Selected Countries of 2.83%. Such positive trend dropped significantly in the period between 1945 and 1993 to -0.29% and became positive for the period from 1994 onwards at 0.18%, which is the lowest trend out of the 4 groups of Countries, as predicted in the model. They are also the group that has the lowest Average of Share of Ratifications of 21.47%.

Also confirming the model, Land Backward Countries have the second lowest Average Share of Ratifications, at 27.64%, which is higher only than Land Advanced Countries. They do show, however, a surprisingly high ratification trend at 0.35% from 1994 onwards, which is almost equal to the Labor Poor Countries' one. The model did predict restricted support in order to avoid a race to the bottom competition, although it was not expected such a significant high trend of ratification because of the most abundant inner factor.

## 5 CONCLUSIONS

There is descriptive evidence that political economy concerns have impact on each Country's decision on ratification of ILO Conventions. Countries may be gathered in coalitions that support or avoid International Labor Standards according to their respective inner most abundant factor of production and capacity of investing in R&D.

Essentially, the data confirmed in great part the theoretical model, which is briefly summarized in Exhibit I – Theoretical Model, namely that: (i) Labor Countries ratify more conventions than Land Countries; (ii) Advanced Countries started as strong supporters of ILO and have been acting decreasingly supportive, while Backward Countries have been behaving inversely towards an increasing support to International Labor Standards; (iii) Labor Advanced Countries showed a decreasing interest in supporting international minimum labor standards and, although they form the coalition with the highest Share of Ratifications at the moment, their positive trend is lower than the trend of Labor Backward Countries, which are expected to become the most supportive coalition in 2059; (iv) Labor Backward Countries had initially held a lethargic position on the promotion of international minimum labor standards, but are growing more supportive of ILO; and (v) Land Advanced Countries form the less supportive coalition. The results of the research are not merely explanatory, as they can assist policymakers in designing ILO Conventions and other international initiatives in order to address concerns with the analyzed structural variables of the countries in order to increase support of International Labor Standards in general.

The data did not confirm the influence of formal education attainment in the ratification decision. A possible complementary research to confirm that theory should probably encompass a comparison of turn-over rates of high-end job positions in Countries with low supply of qualified workforce in order to understand whether such job positions are being satisfactorily executed by the local population; high turn-over rates are expected in Advanced Countries with population with low attainment to tertiary education. Alternatively, new researches could be designed with a larger group of Countries.

It is interesting to note how trends and ratification patterns significantly changed after the creation of the World Trade Organization, evidencing a strong connection

between free international trade and International Labor Standards. As suggested hereby, such connection seems to derive from the Hecksher-Olin model on exports and the distributional effects predicted by the Stolper-Samuelson theorem, which predict economic and commercial patterns in free trade. Stimulating capacity building on these two key concepts of international political economy could in fact increase support to ILO Conventions and foster international cooperation in favor of International Labor Standards.

Finally, the database used to test the proposed theoretical model was designed for the benefit of the research community for works that are about to come in the future. The database can be used and tested as a tool for as many and as different variables as required for each one of their specific research purposes, in the search of patterns for ratification of ILO Conventions amongst Selected Countries.

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## **EXHIBITS**

## EXHIBIT A

### Theoretical model

Coalition	Factor Endowment	Capital Accumulation		Factor Endowment and Capital	Education			Position on ILO Conventions	
	General Position	Number of Low End Jobs	Number of High End Jobs	Impacts of International Labor Standards	Number of People Subject to Low End Jobs	Number of People Prepared to High End Jobs	Social Achievements	Reasons for Ratification	Reasons for Non-Ratification
Land Advanced Countries	Against	Low	High	Low	Low	High	High	<ul style="list-style-type: none"> <li>Low International Impact: attempt to increase competitiveness by universalizing domestic labor costs and raising international labor costs of mechanized phases of production, when international coordination is possible.</li> </ul>	<ul style="list-style-type: none"> <li>High Political Cost: against interests of the most abundant factor.</li> <li>Limited Political Gain: low number of low-end jobs and low number of people subject to them.</li> <li>Limited Domestic Impact: accumulated social achievements reduce political costs and gains. Political costs remain higher than political gains, though.</li> </ul>
Land Backward Countries	Against	High	Low	High	High	Low	Low	<ul style="list-style-type: none"> <li>High International Impact: avoiding race to the bottom when adopted coordinately.</li> </ul>	<ul style="list-style-type: none"> <li>High Political Cost: against interests of the most abundant factor.</li> <li>Limited Political Gain: despite the high number of low-end jobs and high number of people subject to them, labor is not the most abundant factor.</li> <li>High International Impact: decreasing competitiveness of labor-intensive production when adopted unilaterally.</li> <li>High Domestic Impact: low levels of social achievements augments political gains and costs. Political costs remain higher than political gains.</li> </ul>

Coalition	Factor Endowment	Capital Accumulation		Factor Endowment and Capital	Education			Position on ILO Conventions	
	General Position	Number of Low End Jobs	Number of High End Jobs	Impacts of International Labor Standards	Number of People Subject to Low End Jobs	Number of People Prepared to High End Jobs	Social Achievements	Reasons for Ratification	Reasons for Non-Ratification
Labor Advanced Countries	Favorable	Low	High	Biddable	Low	High	High	<ul style="list-style-type: none"> <li>• Low Political Cost: in favor of the most abundant factor.</li> <li>• Limited Domestic Impact: accumulated social achievements reduce political costs and gains. Political gains remain higher than political costs, though.</li> </ul>	<ul style="list-style-type: none"> <li>• Limited Political Gain: low number of low-end jobs and low number of people subject to them.</li> <li>• High International Impact: accumulation of capital facilitates exploration of other jurisdictions, reducing the overall costs of the production chain and increasing profits.</li> </ul>
Labor Backward Countries	Favorable	High	Low	High	High	Low	Low	<ul style="list-style-type: none"> <li>• Low Political Cost: in favor of the most abundant factor.</li> <li>• High Political Gain: high number of low-end jobs and high number of people subject to them.</li> <li>• High International Impact: avoiding race to the bottom when adopted coordinately.</li> <li>• High Domestic Impact: low levels of social achievements augments political gains and costs. Political gains remain higher than political costs.</li> </ul>	<ul style="list-style-type: none"> <li>• High International Impact: decreasing competitiveness of labor-intensive production when adopted unilaterally.</li> </ul>

## Exhibit B

### Methodological Approach – Selected ILO Conventions

Convention	Year of Adoption	Current Status
C014 - Weekly Rest (Industry) Convention, 1921 (No. 14)	1921	Up-to-date instrument (Technical Convention).
C029 - Forced Labour Convention, 1930 (No. 29)	1930	Up-to-date instrument (Fundamental Convention).
C077 - Medical Examination of Young Persons (Industry) Convention, 1946 (No. 77)	1946	Up-to-date instrument (Technical Convention).
C078 - Medical Examination of Young Persons (Non-Industrial Occupations) Convention, 1946 (No. 78)	1946	Up-to-date instrument (Technical Convention).
C081 - Labour Inspection Convention, 1947 (No. 81)	1947	Up-to-date instrument (Governance (Priority) Convention).
C087 - Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)	1948	Up-to-date instrument (Fundamental Convention).
C094 - Labour Clauses (Public Contracts) Convention, 1949 (No. 94)	1949	Up-to-date instrument (Technical Convention).
C095 - Protection of Wages Convention, 1949 (No. 95)	1949	Up-to-date instrument (Technical Convention).
C097 - Migration for Employment Convention (Revised), 1949 (No. 97)	1949	Up-to-date instrument (Technical Convention).
C098 - Right to Organise and Collective Bargaining Convention, 1949 (No. 98)	1949	Up-to-date instrument (Fundamental Convention).
C100 - Equal Remuneration Convention, 1951 (No. 100)	1951	Up-to-date instrument (Fundamental Convention).
C102 - Social Security (Minimum Standards) Convention, 1952 (No. 102)	1952	Up-to-date instrument (Technical Convention).
C105 - Abolition of Forced Labour Convention, 1957 (No. 105)	1957	Up-to-date instrument (Fundamental Convention).
C106 - Weekly Rest (Commerce and Offices) Convention, 1957 (No. 106)	1957	Up-to-date instrument (Technical Convention).
C110 - Plantations Convention, 1958 (No. 110)	1958	Up-to-date instrument (Technical Convention).
C111 - Discrimination (Employment and Occupation) Convention, 1958 (No. 111)	1958	Up-to-date instrument (Fundamental Convention).
C115 - Radiation Protection Convention, 1960 (No. 115)	1960	Up-to-date instrument (Technical Convention).
C118 - Equality of Treatment (Social Security) Convention, 1962 (No. 118)	1962	Up-to-date instrument (Technical Convention).
C120 - Hygiene (Commerce and Offices) Convention, 1964 (No. 120)	1963	Up-to-date instrument (Technical Convention).
C121 - Employment Injury Benefits Convention, 1964 [Schedule I amended in 1980] (No. 121)	1964	Up-to-date instrument (Technical Convention).
C122 - Employment Policy Convention, 1964 (No. 122)	1964	Up-to-date instrument (Governance (Priority) Convention).
C124 - Medical Examination of Young Persons (Underground Work) Convention, 1965 (No. 124)	1965	Up-to-date instrument (Technical Convention).
C128 - Invalidity, Old-Age and Survivors' Benefits Convention, 1967 (No. 128)	1967	Up-to-date instrument (Technical Convention).
C129 - Labour Inspection (Agriculture) Convention, 1969 (No. 129)	1969	Up-to-date instrument (Governance (Priority) Convention).
C130 - Medical Care and Sickness Benefits Convention, 1969 (No. 130)	1969	Up-to-date instrument (Technical Convention).
C131 - Minimum Wage Fixing Convention, 1970 (No. 131)	1970	Up-to-date instrument (Technical Convention).
C135 - Workers' Representatives Convention, 1971 (No. 135)	1971	Up-to-date instrument (Technical Convention).
C138 - Minimum Age Convention, 1973 (No. 138)	1973	Up-to-date instrument (Fundamental Convention).
C139 - Occupational Cancer Convention, 1974 (No. 139)	1974	Up-to-date instrument (Technical Convention).
C140 - Paid Educational Leave Convention, 1974 (No. 140)	1974	Up-to-date instrument (Technical Convention).
C141 - Rural Workers' Organisations Convention, 1975 (No. 141)	1975	Up-to-date instrument (Technical Convention).

Convention	Year of Adoption	Current Status
C142 - Human Resources Development Convention, 1975 (No. 142)	1975	Up-to-date instrument (Technical Convention).
C143 - Migrant Workers (Supplementary Provisions) Convention, 1975 (No. 143)	1975	Up-to-date instrument (Technical Convention).
C144 - Tripartite Consultation (International Labour Standards) Convention, 1976 (No. 144)	1976	Up-to-date instrument (Governance (Priority) Convention).
C145 - Continuity of Employment (Seafarers) Convention, 1976 (No. 145)	1976	Up-to-date instrument (Technical Convention).
C146 - Seafarers' Annual Leave with Pay Convention, 1976 (No. 146)	1976	Up-to-date instrument (Technical Convention).
C147 - Merchant Shipping (Minimum Standards) Convention, 1976 (No. 147)	1976	Up-to-date instrument (Technical Convention).
C148 - Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148)	1977	Up-to-date instrument (Technical Convention).
C149 - Nursing Personnel Convention, 1977 (No. 149)	1977	Up-to-date instrument (Technical Convention).
C150 - Labour Administration Convention, 1978 (No. 150)	1978	Up-to-date instrument (Technical Convention).
C151 - Labour Relations (Public Service) Convention, 1978 (No. 151)	1978	Up-to-date instrument (Technical Convention).
C152 - Occupational Safety and Health (Dock Work) Convention, 1979 (No. 152)	1979	Up-to-date instrument (Technical Convention).
C154 - Collective Bargaining Convention, 1981 (No. 154)	1981	Up-to-date instrument (Technical Convention).
C155 - Occupational Safety and Health Convention, 1981 (No. 155)	1981	Up-to-date instrument (Technical Convention).
C156 - Workers with Family Responsibilities Convention, 1981 (No. 156)	1981	Up-to-date instrument (Technical Convention).
C157 - Maintenance of Social Security Rights Convention, 1982 (No. 157)	1982	Up-to-date instrument (Technical Convention).
P110 - Protocol of 1982 to the Plantations Convention, 1958	1982	Up-to-date instrument.
C159 - Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983 (No. 159)	1983	Up-to-date instrument (Technical Convention).
C160 - Labour Statistics Convention, 1985 (No. 160)	1985	Up-to-date instrument (Technical Convention).
C161 - Occupational Health Services Convention, 1985 (No. 161)	1985	Up-to-date instrument (Technical Convention).
C162 - Asbestos Convention, 1986 (No. 162)	1986	Up-to-date instrument (Technical Convention).
C163 - Seafarers' Welfare Convention, 1987 (No. 163)	1987	Up-to-date instrument (Technical Convention).
C164 - Health Protection and Medical Care (Seafarers) Convention, 1987 (No. 164)	1987	Up-to-date instrument (Technical Convention).
C165 - Social Security (Seafarers) Convention (Revised), 1987 (No. 165)	1987	Up-to-date instrument (Technical Convention).
C166 - Repatriation of Seafarers Convention (Revised), 1987 (No. 166)	1987	Up-to-date instrument (Technical Convention).
C167 - Safety and Health in Construction Convention, 1988 (No. 167)	1988	Up-to-date instrument (Technical Convention).
C168 - Employment Promotion and Protection against Unemployment Convention, 1988 (No. 168)	1988	Up-to-date instrument (Technical Convention).
C169 - Indigenous and Tribal Peoples Convention, 1989 (No. 169)	1989	Up-to-date instrument (Technical Convention).
C170 - Chemicals Convention, 1990 (No. 170)	1990	Up-to-date instrument (Technical Convention).
C171 - Night Work Convention, 1990 (No. 171)	1990	Up-to-date instrument (Technical Convention).
P089 - Protocol of 1990 to the Night Work (Women) Convention (Revised), 1948	1990	Up-to-date instrument.
C172 - Working Conditions (Hotels and Restaurants) Convention, 1991 (No. 172)	1991	Up-to-date instrument (Technical Convention).
C173 - Protection of Workers' Claims (Employer's Insolvency) Convention, 1992 (No. 173)	1992	Up-to-date instrument (Technical Convention).
C174 - Prevention of Major Industrial Accidents Convention, 1993 (No. 174)	1993	Up-to-date instrument (Technical Convention).
C175 - Part-Time Work Convention, 1994 (No. 175)	1994	Up-to-date instrument (Technical Convention).
C176 - Safety and Health in Mines Convention, 1995 (No. 176)	1995	Up-to-date instrument (Technical Convention).
P081 - Protocol of 1995 to the Labour Inspection Convention, 1947	1995	Up-to-date instrument.

Convention	Year of Adoption	Current Status
C177 - Home Work Convention, 1996 (No. 177)	1996	Up-to-date instrument (Technical Convention).
C178 - Labour Inspection (Seafarers) Convention, 1996 (No. 178)	1996	Up-to-date instrument (Technical Convention).
C179 - Recruitment and Placement of Seafarers Convention, 1996 (No. 179)	1996	Up-to-date instrument (Technical Convention).
C180 - Seafarers' Hours of Work and the Manning of Ships Convention, 1996 (No. 180)	1996	Up-to-date instrument (Technical Convention).
P147 - Protocol of 1996 to the Merchant Shipping (Minimum Standards) Convention, 1976	1996	Up-to-date instrument.
C181 - Private Employment Agencies Convention, 1997 (No. 181)	1997	Up-to-date instrument (Technical Convention).
C182 - Worst Forms of Child Labour Convention, 1999 (No. 182)	1999	Up-to-date instrument (Fundamental Convention).
C183 - Maternity Protection Convention, 2000 (No. 183)	2000	Up-to-date instrument (Technical Convention).
C184 - Safety and Health in Agriculture Convention, 2001 (No. 184)	2001	Up-to-date instrument (Technical Convention).
P155 - Protocol of 2002 to the Occupational Safety and Health Convention, 1981	2002	Up-to-date instrument.
C185 - Seafarers' Identity Documents Convention (Revised), 2003 (No. 185)	2003	Up-to-date instrument (Technical Convention).
MLC - Maritime Labour Convention, 2006 (MLC, 2006)	2006	Up-to-date instrument (Technical Convention).
C187 - Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)	2006	Up-to-date instrument (Technical Convention).
C188 - Work in Fishing Convention, 2007 (No. 188)	2007	Up-to-date instrument (Technical Convention).
C189 - Domestic Workers Convention, 2011 (No. 189)	2011	Up-to-date instrument (Technical Convention).
P029 - Protocol of 2014 to the Forced Labour Convention, 1930	2014	Up-to-date instrument.

## Exhibit C - Tables

### Table 1 – Countries per factor endowment

Country	Country's Average Quotient	Relative World Average Quotient	Relative Abundant Factor Endowment
Argentina	7,02	1,68	Land
Australia	45,89	1,56	Land
Austria	0,71	1,72	Labor
Belgium	0,05	1,72	Labor
Brazil	2,90	1,69	Land
Canada	4,02	1,70	Land
Switzerland	0,37	1,72	Labor
Chile	2,12	1,72	Land
China	0,70	2,01	Labor
Colombia	2,66	1,72	Land
Czech Republic	0,23	1,72	Labor
Germany	0,34	1,72	Labor
Denmark	0,84	1,72	Labor
Spain	1,24	1,72	Labor
Estonia	0,43	1,72	Labor
Finland	0,76	1,62	Labor
France	0,86	1,72	Labor
United Kingdom	0,49	1,72	Labor
Greece	1,37	1,72	Labor
Hungary	0,92	1,72	Labor
Indonesia	0,46	1,72	Labor
India	0,41	1,72	Labor
Ireland	2,44	1,72	Land
Iceland	13,03	1,72	Land
Israel	0,22	1,72	Labor
Italy	0,46	1,72	Labor
Japan	0,07	1,72	Labor
Korea, Rep.	0,09	1,72	Labor
Lithuania	0,55	1,72	Labor

<b>Country</b>	<b>Country's Average Quotient</b>	<b>Relative World Average Quotient</b>	<b>Relative Abundant Factor Endowment</b>
<b>Luxembourg</b>	0,11	1,72	Labor
<b>Latvia</b>	0,50	1,72	Labor
<b>Mexico</b>	2,61	1,67	Land
<b>Netherlands</b>	0,22	1,72	Labor
<b>Norway</b>	0,37	1,76	Labor
<b>New Zealand</b>	7,31	1,72	Land
<b>Poland</b>	0,78	1,72	Labor
<b>Portugal</b>	0,62	1,72	Labor
<b>Russian Federation</b>	0,89	1,72	Labor
<b>Saudi Arabia</b>	18,39	1,72	Land
<b>Slovak Republic</b>	0,23	1,72	Labor
<b>Slovenia</b>	0,15	1,72	Labor
<b>Sweden</b>	0,64	1,72	Labor
<b>Turkey</b>	1,44	1,72	Labor
<b>United States</b>	2,74	1,76	Land
<b>South Africa</b>	5,55	1,71	Land
<b>World</b>	1,72	1,72	None

## Exhibit C - Tables

### Table 2 – Countries per investments in R&D

Country	Average Investment in R&D	Average Working Age Population	USD per Working Age Person
Argentina	1424427916,84	38942590,44	36,58
Australia	15296082916,91	20432905,33	748,60
Austria	7294430569,53	8191475,83	890,49
Belgium	7381367322,71	10548500,22	699,76
Brazil	14256312759,48	186171523,22	76,58
Canada	21104799674,00	32233124,83	654,76
Switzerland	11941472253,23	7473856,50	1597,77
Chile	731989626,14	15998358,28	45,75
China	53777846124,42	1295561944,44	41,51
Colombia	389224998,73	42886185,72	9,08
Czech Republic	1832743571,11	10323907,28	177,52
Germany	72309305200,73	81998226,89	881,84
Denmark	6709508574,22	5427951,50	1236,10
Spain	12150536471,23	43254184,06	280,91
Estonia	206621866,99	1360727,89	151,85
Finland	6572628068,60	5258183,44	1249,98
France	45131665244,50	62847815,67	718,11
United Kingdom	35730512692,79	60619876,39	589,42
Greece	1507888749,18	11015807,33	136,88
Hungary	985828495,85	10108884,67	97,52
Indonesia	352623702,99	225082290,00	1,57
India	6660039236,04	1133205904,50	5,88
Ireland	2301725766,68	4146045,33	555,16
Iceland	321508966,23	297571,83	1080,44
Israel	6745927731,47	6874355,56	981,32
Italy	19406485963,85	58025103,28	334,45
Japan	150649513019,70	127349243,72	1182,96
Korea, Rep.	25091711812,48	48051119,22	522,19
Lithuania	205716648,41	3317320,28	62,01
Luxembourg	687632716,39	468133,44	1468,88
Latvia	94735885,65	2246513,67	42,17
Mexico	3317365471,77	109646197,17	30,26
Netherlands	11757369187,09	16232203,11	724,32
Norway	5388317184,21	4661672,61	1155,88
New Zealand	1167277053,24	4091911,11	285,26
Poland	2162045417,16	38257538,11	56,51
Portugal	1965440626,61	10409093,56	188,82
Russian Federation	10317775243,06	144720786,94	71,29
Saudi Arabia	189814802,02	24484895,89	7,75
Slovak Republic	376744002,52	5385013,72	69,96
Slovenia	620333635,05	2011805,83	308,35

<b>Country</b>	<b>Average Investment in R&amp;D</b>	<b>Average Working Age Population</b>	<b>USD per Working Age Person</b>
<b>Sweden</b>	14255934126,81	9098006,00	1566,93
<b>Turkey</b>	3331726409,88	67298562,28	49,51
<b>United States</b>	322318412630,39	294015905,61	1096,26
<b>South Africa</b>	2167750699,84	46905661,39	46,22
<b>World</b>	20178933279,70	4336938884,11	4,65

## Exhibit C - Tables

Table 3 – General summary of countries

Country	Country Code	Mean Primary Education (%)	Mean Tertiary Education (%)	Most Abundant Factor	Investment in R&D per Working Age Person	Rank in Primary Education	Rank in Tertiary Education
Argentina	ARG	34,23	27,11	Land	Backward	above	above
Australia	AUS	32,67	32,18	Land	Advanced	above	above
Austria	AUT	19,89	15,94	Labor	Advanced	below	below
Belgium	BEL	27,25	33,85	Labor	Advanced	above	above
Brazil	BRA	22,20	9,08	Land	Backward	below	below
Canada	CAN	15,78	45,55	Land	Advanced	below	above
Switzerland	CHE	16,33	26,55	Labor	Advanced	below	above
Chile	CHL	28,39	19,11	Land	Backward	above	below
China	CHN			Labor	Backward		
Colombia	COL	27,54	22,63	Land	Backward	above	below
Czech Republic	CZE	9,00	14,06	Labor	Backward	below	below
Germany	DEU	16,01	24,08	Labor	Advanced	below	below
Denmark	DNK	22,16	27,70	Labor	Advanced	below	above
Spain	ESP	50,93	28,21	Labor	Backward	above	above
Estonia	EST	11,17	33,37	Labor	Backward	below	above
Finland	FIN	20,91	32,43	Labor	Advanced	below	above
France	FRA	28,39	26,79	Labor	Advanced	above	above
United Kingdom	GBR	19,75	29,10	Labor	Advanced	below	above
Greece	GRC	38,61	22,09	Labor	Backward	above	below
Hungary	HUN	17,57	19,06	Labor	Backward	below	below
Indonesia	IDN	54,48	6,60	Labor	Backward	above	below
India	IND	21,13	7,23	Labor	Backward	below	below
Ireland	IRL	30,39	30,60	Land	Advanced	above	above
Iceland	ISL	35,31	25,44	Land	Advanced	above	above
Israel	ISR	15,20	43,99	Labor	Advanced	below	above
Italy	ITA	43,93	13,38	Labor	Backward	above	below
Japan	JPN	38,99	34,73	Labor	Advanced	above	above
Korea, Republic of	KOR	32,98	24,18	Labor	Advanced	above	below
Lithuania	LTU	10,17	34,49	Labor	Backward	below	above
Luxembourg	LUX	28,55	27,91	Labor	Advanced	above	above
Latvia	LVA	13,92	23,18	Labor	Backward	below	below
Mexico	MEX	43,26	19,99	Land	Backward	above	below
Netherlands	NLD	27,43	28,16	Labor	Advanced	above	above
Norway	NOR	16,59	33,16	Labor	Advanced	below	above
New Zealand	NZL	7,01	32,79	Land	Advanced	below	above
Poland	POL	14,40	18,46	Labor	Backward	below	below
Portugal	PRT	68,60	13,41	Labor	Backward	above	below
Russian Federation	RUS	9,36	42,13	Labor	Backward	below	above

Country	Country Code	Mean Primary Education (%)	Mean Tertiary Education (%)	Most Abundant Factor	Investment in R&D per Working Age Person	Rank in Primary Education	Rank in Tertiary Education
<b>Saudi Arabia</b>	SAU	32,94	18,59	Land	Backward	above	below
<b>Slovakia</b>	SVK	9,70	19,11	Labor	Backward	below	below
<b>Slovenia</b>	SVN	18,47	20,19	Labor	Backward	below	below
<b>Sweden</b>	SWE	17,50	29,37	Labor	Advanced	below	above
<b>Turkey</b>	TUR	60,99	13,08	Labor	Backward	above	below
<b>United States</b>	USA	7,62	33,17	Land	Advanced	below	above
<b>South Africa</b>	ZAF	37,86	13,94	Land	Backward	above	below
<b>General mean</b>		26,26	24,91				

## Exhibit C - Tables

### Table 4 – Trends of share of ratification

Country Code	1921-1944	1945-1959	1960-1979	1980-1993	1994-2015
ARG	2,93%	2,22%	-1,45%	0,19%	0,39%
AUS	3,11%	-1,88%	0,94%	0,20%	0,13%
AUT	0,00%	4,17%	-0,14%	-0,87%	0,11%
BEL	1,70%	0,36%	-0,71%	-0,32%	0,61%
BRA	0,00%	2,39%	0,85%	0,87%	0,53%
CAN	3,04%	-1,72%	0,28%	-0,15%	0,21%
CHE	5,11%	-2,96%	0,20%	-0,03%	0,10%
CHL	3,67%	-3,75%	0,25%	-0,23%	0,66%
CHN	3,11%	-1,88%	-0,18%	0,39%	0,45%
COL	3,13%	-1,88%	1,10%	-0,26%	0,34%
CZE	0,00%	0,00%	0,00%	1,21%	0,37%
DEU	0,00%	3,26%	0,63%	-1,13%	0,23%
DNK	6,15%	-0,32%	-0,70%	-0,63%	0,03%
ESP	0,17%	1,36%	2,73%	-1,42%	-0,38%
EST	-1,02%	-1,88%	-0,18%	-0,06%	0,75%
FIN	1,91%	-0,55%	1,15%	-0,32%	0,18%
FRA	3,98%	2,39%	0,37%	-1,00%	-0,38%
GBR	6,09%	0,95%	-0,51%	-1,37%	0,12%
GRC	2,63%	0,72%	-0,78%	1,05%	-0,13%
HUN	0,00%	4,06%	-0,29%	0,05%	0,27%
IDN	0,00%	1,32%	-0,14%	-0,17%	0,38%
IND	-1,02%	0,21%	-0,71%	-0,53%	0,17%
IRL	5,98%	-0,85%	-0,31%	-0,43%	0,26%
ISL	0,00%	1,91%	-0,99%	0,09%	0,23%
ISR	0,00%	6,86%	-1,89%	-1,29%	0,02%
ITA	-1,22%	2,19%	-0,82%	-0,58%	-0,18%
JPN	1,37%	2,11%	0,54%	-0,05%	0,25%
KOR	0,00%	0,00%	0,00%	0,00%	0,00%
LTU	3,04%	-1,88%	-0,18%	-0,06%	0,63%
LUX	2,24%	-0,14%	-0,51%	-0,58%	2,03%
LVA	-0,20%	-1,88%	-0,18%	0,96%	0,34%
MEX	5,70%	-1,49%	-0,57%	0,40%	-0,27%
NLD	3,13%	1,72%	1,27%	-0,99%	0,36%
NOR	9,00%	-0,97%	-0,81%	-0,88%	-0,20%
NZL	5,17%	-2,99%	-0,41%	-0,05%	0,18%
POL	-0,20%	0,73%	-0,85%	-0,90%	0,47%
PRT	2,24%	-1,03%	-0,33%	1,14%	0,24%
RUS	0,00%	3,22%	-0,08%	-0,45%	0,91%
SAU	0,00%	0,00%	0,46%	-0,43%	0,08%
SLV	0,00%	0,00%	0,00%	2,24%	0,64%
SVK	0,00%	0,00%	0,00%	1,21%	0,69%

Country Code	1921-1944	1945-1959	1960-1979	1980-1993	1994-2015
<b>SWE</b>	6,09%	-0,62%	0,72%	-0,12%	-0,12%
<b>TUR</b>	0,00%	0,77%	0,12%	-0,38%	0,55%
<b>USA</b>	0,00%	0,00%	0,00%	0,60%	0,08%
<b>ZAF</b>	0,00%	0,00%	0,00%	0,00%	0,72%
<b>All Countries</b>	1,99%	-0,25%	-0,23%	-0,28%	0,26%
<b>Non Selected Countries</b>	3,00%	-0,29%	-0,20%	-0,13%	0,36%
<b>Selected Countries</b>	2,83%	-0,37%	-0,01%	-0,25%	0,29%
<b>G20</b>	2,62%	-0,44%	0,23%	-0,39%	0,20%
<b>Non G-20</b>	0,55%	0,64%	-0,29%	-0,26%	0,27%
<b>Labor Countries</b>	2,88%	-0,34%	-0,08%	-0,39%	0,30%
<b>Land Countries</b>	2,92%	-0,67%	0,12%	0,07%	0,27%
<b>Backward Countries</b>	1,54%	-0,43%	-0,03%	0,09%	0,36%
<b>Advanced Countries</b>	4,26%	-0,35%	0,01%	-0,60%	0,21%
<b>Labor Backward</b>	1,15%	-0,45%	-0,13%	0,09%	0,36%
<b>Land Backward</b>	2,49%	-0,42%	0,23%	0,09%	0,35%
<b>Labor Advanced</b>	4,73%	-0,35%	-0,03%	-0,91%	0,22%
<b>Land Advanced</b>	3,45%	-0,92%	0,01%	0,04%	0,18%
<b>Primary Education above Average</b>	2,45%	-0,16%	-0,10%	-0,08%	0,29%
<b>Primary Education below Average</b>	3,28%	-0,53%	0,12%	-0,51%	0,28%
<b>Tertiary Education above Average</b>	0,72%	-1,22%	-0,26%	-0,09%	-0,01%
<b>Tertiary Education below Average</b>	3,81%	-0,74%	0,02%	-0,40%	0,28%