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The Legatum Prosperity Index and non-cooperative tax jurisdictions (2021)

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Abstract

This paper aims to establish what are the differences in The Legatum Prosperity Index between 15 non-cooperative tax jurisdictions and the rest of the countries in their geographic regions? Our data were 149,739 records (from 2021) out of the 2,165,925 (2007-2021) available from the Legatum index. We used the Friedman test to verify the significance of the differences. We found that except for Angola and Yemen, the rest of the non-cooperative tax jurisdictions (Bahrain, Cabo Verde, Guyana, Hong Kong, Kuwait, Lebanon, Liberia, Mauritius, Oman, Qatar, Seychelles, Trinidad and Tobago, Singapore) performed better on the Prosperity Legatum index than the countries of the region. Analyzing specifically the tax havens with the best performance in the index, we identify that Singapore achieves a better performance in all 12 pillars, while Hong Kong has a worse performance only in "social capital". All this in comparison to the rest of the countries in the Asia Pacific region. This study opens the door to future works related to the reasons why 13 of the 15 non-cooperative tax jurisdictions perform better on the indicators and elements that make up each of the 12 pillars of prosperity.

Keywords: tax haven, quality of life, Hong Kong, Singapore, The Legatum Prosperity Index, data mining, non-cooperative tax jurisdictions.

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1. Introduction

Tax havens are territories that are generally related to tax fraud, tax evasion, money laundering and several illicit activities. Some investors, whether natural or legal persons, look for places where to deposit large sums of money that have a flexible fiscal control and maintain the secrecy about its origin ([1], [2]). Even countries considered as tax havens prefer, in many cases, not to be publicly recognized as such, as this could affect not only their image but also trade relations with other countries.

Tax havens have been in continuous movement or evolution over the years since their emergence in the mid-twentieth century, as it is recognized that they are not static territories, but on the contrary, they have modified their tax laws [3]. In this sense, and because of the benefits they can bring to a nation's economy, they are considered a phenomenon of interest to develop multiple studies and to be approached from different perspectives.

Some of the approaches include the study of the challenges and opportunities for multinational companies in the Asia-Pacific region [3]. This considers the growth and expansion of several multinational companies in this area. Other approaches analyze cases. For example, the work of [2] studies how Mauritius entered the offshore financial sector. It presents a critique of the negative effects of the strategy associated with high dependence on foreign exchange and international financial behavior.

A third group of papers seeks to establish the relationship between the existence of tax havens and other variables of interest. In the case of [1] this correlation was explored between financial reporting transparency of countries and companies. This paper refutes the negative relationship between transparency and tax havens, finding that a third variable is the country in which the company is located.

The European Union recognizes the nations that have this practice [4], but it is not known whether these territories obtain any type of benefit. Therefore, the following research question arises: what are the differences in Legatum's prosperity index between non-cooperative tax jurisdictions and the rest of the countries in their geographic regions?

The rest of the paper is organized as follows. First, we show the methodology. Then, the results are presented by comparing the Legatum Prosperity Index of 15 non-cooperating tax jurisdictions with their regions, highlighting the two with the highest performance to analyze the 12 pillars of the Legatum index for each of them. In addition, the results are statistically verified with the Friedman Test. Finally, conclusions are provided.

2. Method

The study is quantitative, with a non-experimental design and explanatory scope. We compared the differences in the Legatum Prosperity Index[1] [5], initially for a group of 15 non-cooperating tax jurisdictions (Bahrain, Cabo Verde, Guyana, Hong Kong, Kuwait, Lebanon, Liberia, Mauritius, Oman, Qatar, Seychelles, Trinidad and Tobago, Singapore, Angola, and Yemen) and their respective geographic regions. Then, with these results, we delve into two specific cases (Hong Kong and Singapore). These countries were selected for having the highest Legatum scores in 2021.

Additionally, to determine if there were statistically significant differences, we applied the Friedman test ("a non-parametric alternative to the one-factor ANOVA test for repeated measures") ([6], [7], [8]).

This test contrasts the following hypotheses:

Ho - Null hypothesis: There are no differences between the groups

Ha - Alternative hypothesis: There are differences between the groups.

For this case, it is necessary to

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[1] "The Prosperity Index, conducted by the Legatum Institute, seeks to measure prosperity in the world, not only as the definition of wealth accumulation, but also as the possibility for countries to offer a better quality of life, as well as the promise of a better future", it is built from 12 pillars The pillars are: "Safety and Security, Personal Freedom, Governance, Social Capital, Investment Environment, Enterprise Conditions, Infrastructure and Market Access, Economic Quality, Living Conditions, Health, Education, and Natural Environment" [5].

- Consider a data table $\{x_{ij}\}_{dxn}$, where d are the rows or blocks and n are the columns or treatments. The order of each data in its block is calculated.
- Replace the original table with another $\{r_{ij}\}_{dxn}$, where r_{ij} is the order of x_{ij} in each block i.
  - Calculate the intra- and inter-group variances, thus: $SS\ Factor = SS_t = n \sum_{j=1}^{d}(\overline{r_j} - \overline{r})^2$, being

    $$\overline{r_j} = \frac{1}{d}\sum_{i=1}^{d} r_{ij} \text{ , and } \overline{r} = \frac{1}{d*m} \sum_{i=1}^{d} \sum_{j=1}^{n} r_{ij}$$

  - $SS\ Error = SS_e = \frac{1}{d(n-1)} \sum_{i=1}^{d} \sum_{j=1}^{n}(r_{ij} - \overline{r})^2$

The contrast statistic corresponds to: $Fr = \frac{SS\ Factor}{SS\ Error}$.

Where:

   SS Factor: is the sum of squares between the groups formed by each factor category.

   SS Error: is the sum of squares within the groups formed by each factor category.

The decision criterion corresponds to: $\boldsymbol{P}(\chi_{n-1}^2 \geq Fr)$.

3. Results

Figure 1 shows the countries identified as non-cooperative tax jurisdictions for tax purposes. We initially sampled 15 non-cooperative tax jurisdictions that were in the Legatum index database (Bahrain, Cabo Verde, Guyana, Hong Kong, Kuwait, Lebanon, Liberia, Mauritius, Oman, Qatar, Seychelles, Trinidad and Tobago, Singapore, Angola, and Yemen). We compared the performance of each country and the geographic region in which it was located.

We found that except for Angola and Yemen, the rest of the non-cooperating jurisdictions performed better on the Legatum index than the countries of the region (Table 1).

Cooperates with the EU and has implemented all its commitments (met the criteria at the time of the latest revision) ■ Cooperates with the EU in implementing its commitments (status will be reviewed regularly) ■ Listed: Does not cooperate with the EU or has not fully implemented its commitments (status will be reviewed regularly)
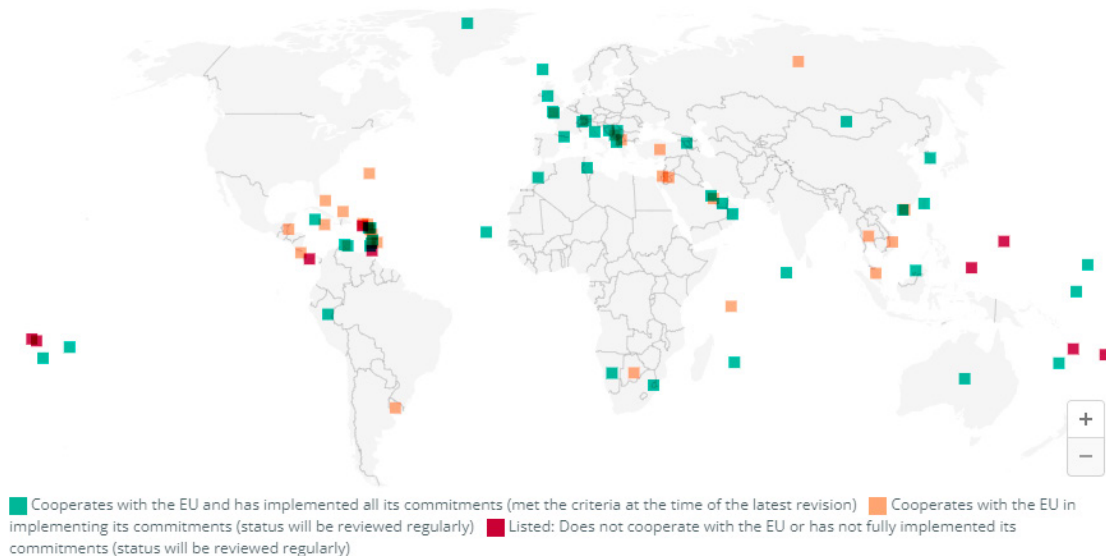
Fig. 1. Non-cooperative tax jurisdictions. Situation as of February 2022. Source: European Council [4].

Table 1. Differences in the Legatum Prosperity Index

Country	Area group	Region Score 2021	Country Score 2021	Difference	Interpretation
Bahrain	Middle East and North Africa	50,1	61,3	11	Better than the region
Cabo Verde	Sub-Saharan Africa	43,6	57,4	14	Better than the region
Guyana	Latin America and the Caribbean	50,1	55,7	6	Better than the region
Hong Kong	Asia-Pacific	57,4	77,9	20	Better than the region
Kuwait	Middle East and North Africa	50,1	61,2	11	Better than the region

Country	Area group	Region Score 2021	Country Score 2021	Difference	Interpretation
Lebanon	Middle East and North Africa	50,1	51,9	2	Better than the region
Liberia	Sub-Saharan Africa	43,6	44,1	1	Better than the region
Mauritius	Sub-Saharan Africa	43,6	66,4	23	Better than the region
Oman	Middle East and North Africa	50,1	59,9	10	Better than the region
Qatar	Middle East and North Africa	50,1	66,3	16	Better than the region
Seychelles	Sub-Saharan Africa	43,6	63,8	-0	Better than the region
Trinidad and Tobago	Latin America and the Caribbean	57,5	61,0	4	Better than the region
Singapore	Asia-Pacific	57,4	79,1	22	Better than the region
Angola	Sub-Saharan Africa	43,6	39,1	-4	Worse than the region
Yemen	Middle East and North Africa	50,1	33,3	-17	Worse than the region

Source: Own elaboration.

We selected the two countries with the highest Legatum index: Hong Kong [9] and Singapore [10]. Both countries belong to the Asia-Pacific region. We sought to compare the results of the 12 pillars (Table 2. Table 3) and establish whether there were statistically significant differences using the Friedman test. In the case of Singapore, in all pillars this territory performs better than the regional average (Table 3). As for Hong Kong, the only pillar in which there is a worse performance than in the region is that of social capital (Table 2). This pillar is composed of 5 elements (Personal and Family Relationships, Personal and Family Relationships, Social Networks, Interpersonal Trust, and Civic and Social Participation) and 17 indicators (Help from family and friends when in trouble, Family give positive energy, Respect, Opportunity to make friends, Helped another household, Generalized interpersonal trust, Helped a stranger, Confidence in local police, Public trust in politicians, Confidence in financial institutions and banks, Confidence in judicial system and courts, Confidence in national government, Confidence in military, Donated money to charity, Voter turnout, Volunteering, and Voiced opinion to a public official).

Table 2. Regional differences of the 12 pillars of the Legatum index with respect to Hong Kong

Country	Region Score 2021 (Asia-Pacific)	Hong Kong	Difference	Interpretation
Economic Quality	54,98	76,49	21,51	Better than the region
Education	63,68	86,54	22,86	Better than the region
Enterprise Conditions	58,01	87,48	29,47	Better than the region
Governance	50,64	78,88	28,24	Better than the region
Health	73,20	81,28	8,08	Better than the region
Investment Environment	55,46	81,23	25,77	Better than the region
Living Conditions	70,12	91,02	20,90	Better than the region
Market Access and Infrastructure	56,60	84,32	27,73	Better than the region
Natural Environment	52,82	62,65	9,83	Better than the region
Personal Freedom	52,04	63,82	11,78	Better than the region
Safety and Security	67,57	88,79	21,23	Better than the region
Social Capital	56,12	51,75	-4,37	Worse than the region

Source: Own elaboration.

Table 3. Regional differences of the 12 pillars of the Legatum index with respect to Singapore

Country	Region Score 2021 (Asia-Pacific)	Singapore	Difference	Interpretation
Economic Quality	54,98	75,39	20,41	Better than the region
Education	63,68	91,27	27,59	Better than the region
Enterprise Conditions	58,01	83,19	25,18	Better than the region
Governance	50,64	75,30	24,66	Better than the region
Health	73,20	86,12	12,92	Better than the region
Investment Environment	55,46	86,43	30,97	Better than the region
Living Conditions	70,12	94,22	24,10	Better than the region
Market Access and Infrastructure	56,60	87,96	31,37	Better than the region
Natural Environment	52,82	55,01	2,19	Better than the region
Personal Freedom	52,04	53,39	1,35	Better than the region
Safety and Security	67,57	92,18	24,61	Better than the region
Social Capital	56,12	68,15	12,04	Better than the region

Source: Own elaboration.

To verify the significance of the differences found, we used the Friedman test ([12], [13]). The results are summarized in Figure 2. We can see that in the first three contrasts tested, the differences are statistically significant at 1%. This confirms that Hong Kong and Singapore are performing better than the rest of the Asia-Pacific region. Regarding the fourth contrast, the data showed that the values obtained in the Legatum index pillars by Hong Kong and Singapore do not differ statistically from each other.

Regions vs. Non-cooperative Jurisdictions The Legatum Prosperity Index Score	Asia-Pacific vs. Hong Kong The Legatum Prosperity Index Pillars	Asia-Pacific vs. Singapore The Legatum Prosperity Index Pillars	Hong Kong vs. Singapore The Legatum Prosperity Index Pillars
The X^2_r statistic is 8.0667 (1, N = 15).	The X^2_r statistic is 8.3333 (1, N = 12).	The X^2_r statistic is 12 (1, N = 12).	The X^2_r statistic is 0.3333 (1, N = 12).
The p-value is .00451.	The p-value is .00389.	The p-value is .00053.	The p-value is .5637.
The result is significant at $p < .01$.	The result is significant at $p < .01$.	The result is significant at $p < .01$.	The result is *not* significant at $p < .01$.

Fig 2. Friedman Test´ Results

These results are novel, given that most studies with information on countries are qualitative ([2], [3]) or use only descriptive statistic ([14]). In this way, the findings of this paper open the discussion on the moral dilemmas and advantages of some of the countries considered as tax havens in obtaining benefits and better performance than other tax cooperative jurisdictions.

4. Conclusions

In this paper we use a non-parametric test (Friedman Test) to analyze 149,739 records available from the Legatum Prosperity Index. We compared the performance of each country and the geographic region in which it is located and found positive and significant differences for 13 of the 15 non-cooperative taxing jurisdictions. The exceptions were Angola and Yemen.

These findings lead to review the possible benefits for territories such as Hong Kong and Singapore, their tax flexibility, open economies, and easy mobility. It leads to think about how these countries do or do not accept capital inflows and the use they make of these resources to improve the welfare of the population.

Some of the limitations of this study are: (i) the impossibility of analyzing all tax havens simultaneously, (ii) the use of a cross-sectional and not a longitudinal or panel study to consider the evolution of the scores. From another point of view, one of the possible extensions of the paper is to elaborate a more detailed analysis of the indicators and elements that make up the 12 pillars of the index for all non-cooperative tax jurisdictions. Also, based on in-depth case studies, to understand the determinants of the unequal performance of Yemen and Angola. Multivariate analysis of panel data could also be included as in the work of [15].

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